ASTMH
AMERICAN SOCIETY OF TROPICAL MEDICINE & HYGIENE
ADVANCING GLOBAL HEALTH SINCE 1903

VOLUME 95 NOVEMBER 2016 NUMBER 5 SUPPLEMENT

# 65th Annual Meeting

## November 13–17, 2016

Atlanta Marriott Marquis

Atlanta, Georgia USA


astmh.org | ajtmh.org | #TropMed16

Supplement to

**The American Journal of Tropical Medicine and Hygiene**

**Dear Colleague:**

Welcome to the Annual Meeting, your platform to access all that is new, evolving, challenging, successful and exciting in tropical medicine and global health. In addition to our yearly assemblage of stimulating research, clinical advances and special lectures, we have a number of special guests and exciting events planned.

We look forward to hearing from our keynote speaker, Dr. Carissa Etienne, Director of PAHO, a global leader whose determined focus on global partnerships and solutions has been invaluable during the Zika virus outbreak. Other highlights include the invited lectures from Drs. Albert Icksang Ko, Zulfiqar Bhutta and Suneth Buddhika Agampodi.

Also included this year are some prime extras and first-time features:

- The Refugee Journey to Wellbeing, an interactive exhibit presented by CDC and partners, highlighting the public health aspects of the refugee experience
- Free Wi-Fi and Meeting App
- Recordings of selected sessions included in your registration fee

Lastly, we are grateful to our supporters and exhibitors. Please be sure to attend the Opening Reception, where you can enjoy complimentary food and drink while visiting and speaking with these partners who make an important contribution to both our meeting and the field.

Please check the Meeting App and/or on-line planner for all that this rich meeting offers.

Welcome to ASTMH and Atlanta,

**Daniel G. Bausch, MD, MPH&TM, FASTMH**
Scientific Program Chair

**Chers Collègues:**

Bienvenue à notre Réunion Annuelle, votre plate-forme pour accéder à l'innovation et aux grandes évolutions en cours dans notre discipline. Il s'agit d'une opportunité unique, riche et enthousiasmante dans les domaines de la médecine tropicale et de la santé globale. En plus de notre assemblée générale annuelle sur les derniers résultats obtenus en termes de recherche, des avancées cliniques et des conférences spéciales, nous avons invités plusieurs personnalités marquantes pour notre discipline.

Nous avons le plaisir d'accueillir notre principale conférencière, la Dr Carissa Etienne, Directeur de l'OPS, un leader mondial dont le travail acharné sur le développement des partenariats et des solutions globales a été déterminant lors de l'épidémie à virus Zika. Autres points forts inclus les conférences par nos conférenciers distingués, Drs. Albert Icksang Ko, Zulfiqar Bhutta et Suneth Buddhika Agampodi.

Cette année, nous inaugurons également des nouvelles sessions et de nouveaux outils interactifs :

- Le Voyage des Réfugiés vers le Bien-être, une exposition interactive présentée par le CDC et ses partenaires, organisée autour des aspects santé publiques tiré des expériences des réfugiés
- Une connexion Wi-Fi gratuite et un App spécifique dédiée à cette réunion annuelle
- La mise à disposition des enregistrements des sessions sélectionnées a été incluse dans vos frais d'inscription

Enfin, nous sommes reconnaissants aux partenaires et aux exposants de cette édition qui ont permis ces innovations/ améliorations. Nous vous recommandons chaudement d'assister à la réception d'ouverture, où vous pourrez profiter de la gratuité de la restauration tout en pouvant visiter les stands et discuter avec nos partenaires qui ont contribué de manière significative tant à notre réunion que sur le terrain.

Sans plus attendre, allez consulter l'App de la Réunion et/ou le planning en ligne des différentes sessions et évènements de cette édition de notre Réunion Annuelle afin que vous puissiez en profiter pleinement.

Soyez bienvenus à ASTMH et à Atlanta,

**Stephen Higgs, PhD, FRES, FASTMH**
President

**Estimados Colegas:**

Bienvenido a la Reunión Anual, su plataforma para acceder a todo lo que es nuevo, en evolución, desafiante, exitoso y emocionante en medicina tropical y salud global. Además de nuestra asamblea anual de reportes estimulantes sobre investigaciones, avances clínicos y conferencias especiales, tenemos planeada una serie de invitados importantes y eventos emocionantes.

Esperamos con interés escuchar de nuestro orador principal, la Dra. Carissa Etienne, Directora de la OPS, un líder global cuyo enfoque enérgico sobre las asociaciones y soluciones globales ha sido inestimablemente valioso durante el brote del virus Zika. Otros puntos destacados incluyen las conferencias de los Doctores invitados Albert Icksang Ko, Zulfiqar Bhutta y Suneth Buddhika Agampodi.

Este año, también se incluyen algunos adicionales de primera calidad y temas nuevos:

- El Viaje de los Refugiados al Bienestar, una exposición interactiva presentada por el CDC y colaboradores, destacando los aspectos de salud pública en la experiencia de los refugiados
- Wi-Fi gratuito y la App de la Reunión
- Grabaciones de algunas sesiones seleccionadas incluidas en la cuota de inscripción

Por último, estamos agradecidos a nuestros patrocinadores y expositores. Por favor asegúrese de asistir a la Recepción de Apertura, donde podrá disfrutar de comida y bebidas de cortesía mientras visita y conversa con estos socios que contribuyen de una manera importante tanto para nuestra reunión como para el campo.

Por favor, compruebe el App de la Reunión y/o planificador en línea para encontrar todo lo que esta rica reunión ofrece.

Bienvenido a ASTMH y Atlanta,

**Karen A. Goraleski**
Executive Director
ASTMH

JOHNNY ISAKSON
GEORGIA

United States Senate
WASHINGTON, D.C.

November 13, 2016

American Society of Tropical
Medicine and Hygiene
One Parkview Plaza
Suite 800
Oakbrook Terrace, Illinois 60181

Greetings:

It is a pleasure to welcome everyone to Atlanta, Georgia, for the American Society of Tropical Medicine and Hygiene annual conference. This conference provides opportunities for members to foster relationships while promoting the advancement of science and the improvement of global health. I appreciate the work each of you do to help educate millions of people around the world to live a life free from dangerous diseases. Thank you for your commitment to research and development.

I send my best wishes for a productive conference, and I hope you enjoy your time in this great state.

Sincerely,

Johnny Isakson

JI/sav

DAVID PERDUE
GEORGIA

# United States Senate

November 13, 2016

American Society of Tropical Medicine and Hygiene:

It is my pleasure to extend a warm welcome to all of you for attending and participating in the 65th ASTMH annual conference. I was pleased to learn that your annual conference will be held in the city of Atlanta. I hope you will take some time over the coming days to explore the city and experience all of the great offerings Atlanta provides to visitors.

Over the next several days, the discussions and scientific sessions that take place will significantly contribute to the research being conducted at your respective institutions to combat and prevent the spread of infectious diseases. Recent events surrounding infectious disease outbreaks demonstrate the need to have access to diagnostics and treatments in order to take effective action. I hope that the professional development among colleagues will help to further develop current and future efforts that will protect Americans both domestically and abroad.

Thank you all for your dedication to research on global health. As a member of the Senate Foreign Relations Committee, and Chairman of the Subcommittee on State Department and USAID Management, International Operations, and Bilateral International Development, I understand and value the importance of your work.

Sincerely,

David Perdue
U.S. Senator

383 Russell Senate Office Building
Washington, DC 20510

191 Peachtree Street, NE, STE 3250
Atlanta, GA 30303

# ASTMH Thanks the Following Sponsors

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# ASTMH Thanks the Following Donors

**David Lyerly**

**William A. Petri, Sr.**

**Petri Family**

# Table of Contents




American Society of Tropical Medicine and Hygiene
One Parkview Plaza, Suite 800
Oakbrook Terrace, IL 60181 USA
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info@astmh.org
astmh.org


ASTMH
AMERICAN SOCIETY OF TROPICAL MEDICINE & HYGIENE
ADVANCING GLOBAL HEALTH SINCE 1903

## About the American Society of Tropical Medicine and Hygiene

The American Society of Tropical Medicine and Hygiene, founded in 1903, is the largest international scientific organization of experts dedicated to reducing the worldwide burden of tropical infectious diseases and improving global health. We accomplish this through generating and sharing scientific evidence, informing health policies and practices, fostering career development, recognizing excellence, and advocating for investment in tropical medicine/global health research.

**NEW THIS YEAR!**

**Meeting App & FREE Wi-Fi at the Marriott**

## ASTMH Membership

### Be a Member — Join ASTMH

We invite you to join ASTMH and benefit from membership in the premier international organization for professionals involved in tropical medicine and global health. ASTMH provides a forum for sharing scientific advances, exchanging ideas, fostering new research and providing professional education. Join online at astmh.org.

### Advantages of ASTMH Membership

- Active specialty subgroups in the areas of clinical tropical medicine, medical entomology, virology, global health and molecular, cellular and immunoparasitology
- The Clinical Consultants Directory — a listing of physicians who offer clinical consultative service in tropical medicine, medical parasitology and travelers' health
- Online access to the *American Journal of Tropical Medicine and Hygiene*, the foremost peer-reviewed publication for communicating new findings in tropical medicine
- Reduced page charges for publishing in the *American Journal of Tropical Medicine and Hygiene*

### Educational Opportunities

- Reduced registration rates for the Annual Meeting, the premier gathering of tropical medicine professionals, featuring the latest cutting-edge research and program developments via symposia, plenary and interactive sessions, contributed and invited abstracts and impromptu networking opportunities
- Reduced rates for the Update Course in Clinical Tropical Medicine and Travelers' Health
- Examination Leading to a CTropMed® — Certificate of Knowledge in Clinical Tropical Medicine and Travelers' Health

### Professional Development Opportunities

- Funding, fellowship and sponsorship opportunities tailored to members' specific research and clinical needs
- Innovative Annual Meeting
- Access to the leading minds working and studying in tropical medicine today
- Annual awards and scholarships for excellence across disciplines
- Access to a professional network
- Members recognized as leaders in the tropical medicine and hygiene field
- Opportunities for leadership and skills-building through Council, subgroup and committee participation

### Affiliate Members

**Patron**

UTMB
The University of Texas Medical Branch

Thank You
Peter Melby, *Professor; Director, UTMB Center for Tropical Diseases, Department of Internal Medicine, Division of Infectious Diseases, University of Texas Medical Branch*

**Contributor**

USF
UNIVERSITY OF SOUTH FLORIDA

Thank You
Wilbur Milhous, *Professor; Associate Dean of Research; Director, Center for Global Health Infectious Disease Research, University of South Florida*

### Membership Dues

Student (Undergraduate, Graduate, Pre-Doctoral): **$15**

Trainee (Post-Doctoral, Resident, Fellow): **$25**

Regular Member: **$230**

Regular Member: Low/Lower-Middle Income Countries: **$25**

Fellow of ASTMH (FASTMH): **$50** voluntary contribution

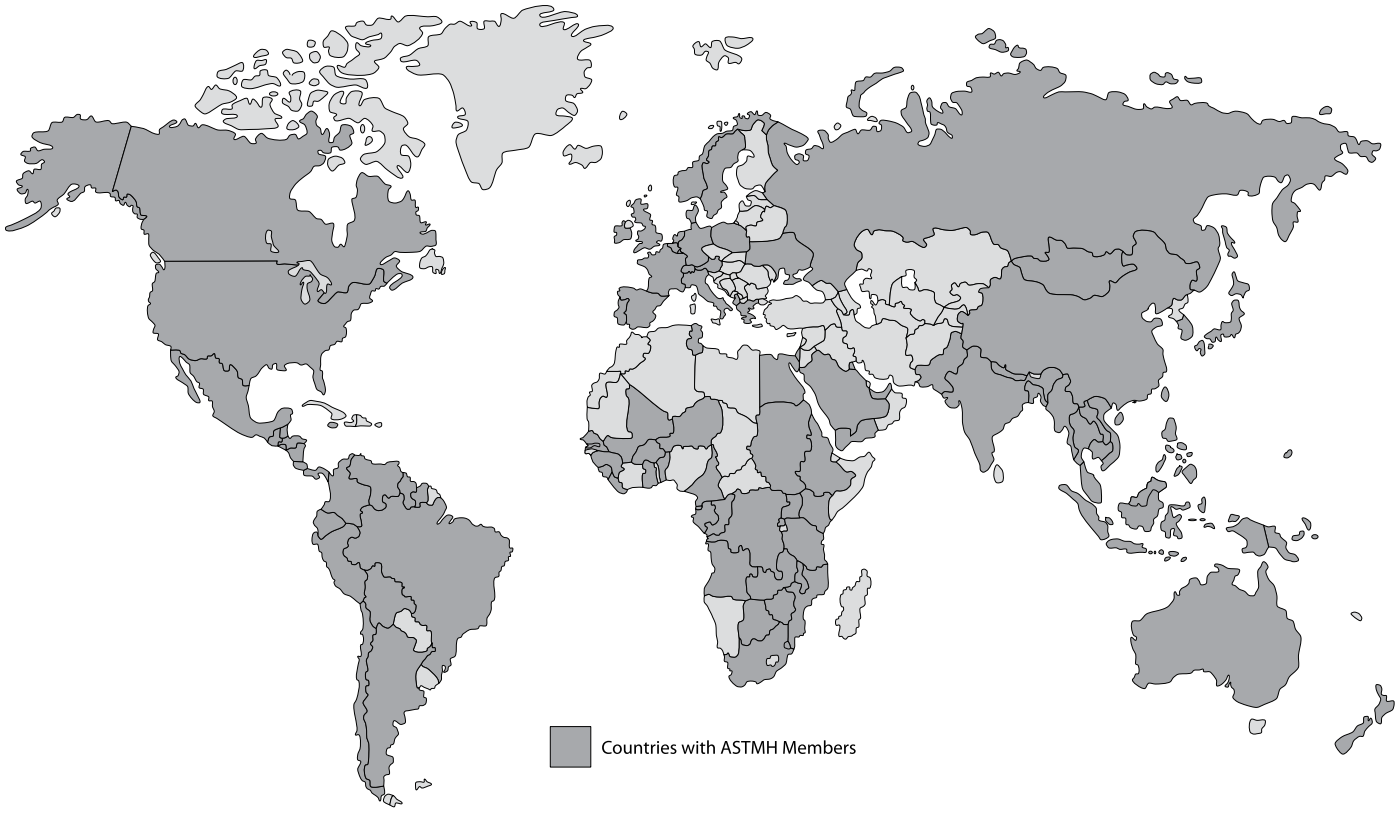
Lifetime: **$4,600**

**Welcome ASTMH Members from Low and Lower-Middle Income Countries!**

**Reduced Regular Membership Dues for Low and Lower-Middle Income Countries ($25)**

This is open to all citizens and legal residents of World Bank low and lower-middle income countries and WHO/HINARI classification countries of A & B. Visiting researchers or others on short-term assignments do not qualify.

# ASTMH Members are Located in 100 Countries Across Six Continents

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United Kingdom
United States of America
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Vietnam
Zambia

# ASTMH 65th Annual Meeting

## Sunday, November 13, 2016

| | Marriott International Hall | Marriott Imperial A | Marriott Imperial B | Marriott Marquis Ballroom | Marriott M103/M104/ M105 | Marriott Atrium B | Marriott Room A601 | Marriott Room A602 | Marriott Room A701 | Marriott Room A703 |
|---|---|---|---|---|---|---|---|---|---|---|
| **7 – 7:30 a.m.** | | Clinical Pre-Meeting Course P. 72 | Clinical Pre-Meeting Course P. 72 | | Parasitology Pre-Meeting Course P. 73 | | Global Health Pre-Meeting Course P. 74 | Arbovirology and Medical Entomology Pre-Meeting Course P. 73 | Young Investigator Award Session B P. 77 | Young Investigator Award Session C P. 78 |
| **7:30 – 8 a.m.** | | | | | | | | | | |
| **8 – 8:30 a.m.** | | | | | | | | | | |
| **8:30 – 9 a.m.** | | | | | | | | | | |
| **9 – 9:30 a.m.** | | | | | | | | | | |
| **9:30 – 10 a.m.** | | | | | | | | | | |
| **10 – 10:30 a.m.** | | | | | | | | | | |
| **10:30 – 11 a.m.** | | | | | | | | | | |
| **11 – 11:30 a.m.** | | | | | | | | | | |
| **11:30 a.m. – Noon** | | | | | | | | | | |
| **Noon – 12:30 p.m.** | | | | | | | | | | |
| **12:30 – 1 p.m.** | | | | | | | | | | |
| **1 – 1:30 p.m.** | | | | | | | | | | |
| **1:30 – 2 p.m.** | | | | | | | | | | |
| **2 – 2:30 p.m.** | | | | | | | | | | |
| **2:30 – 3 p.m.** | | | | | | First-Time Attendee Orientation | | | | |
| **3 – 3:30 p.m.** | | | | | | | | | | |
| **3:30 – 4 p.m.** | | | | | | | | | | |
| **4 – 4:30 p.m.** | | | | | | | | | | |
| **4:30 – 5 p.m.** | | | | | | | | | | |
| **5 – 5:30 p.m.** | | | | | | | | | | |
| **5:30 – 6 p.m.** | | | | 1 Opening Plenary Session P. 85 | | | | | | |
| **6 – 6:30 p.m.** | | | | | | | | | | |
| **6:30 – 7 p.m.** | | | | | | | | | | |
| **7 – 7:30 p.m.** | Opening Reception and Exhibits Open | | | | | | | | | |
| **7:30 – 8 p.m.** | | | | | | | | | | |
| **8 – 8:30 p.m.** | | | | | | | | | | |
| **8:30 – 9:30 p.m.** | | | | | | | | | | |

# ASTMH 65th Annual Meeting

## Sunday, November 13, 2016

| | Marriott Room A704 | Marriott Room A706 | Marriott Room A707 | Marriott Room A708 | Marriott Room M201 | Marriott Room M302 | Marriott Room M303 | Marriott Room M304 | Marriott Rooms L401/L402 | Marriott Skyline Level |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 – 7:30 a.m. | | | | | | | | | | |
| 7:30 – 8 a.m. | | | | | | | | | | |
| 8 – 8:30 a.m. | | | | | | | | | | |
| 8:30 – 9 a.m. | | | | | | | | | | |
| 9 – 9:30 a.m. | | | | | | | | | | |
| 9:30 – 10 a.m. | | | | | | | | | | |
| 10 – 10:30 a.m. | Young Investigator Award Session D P. 79 | | Young Investigator Award Session E P. 81 | Young Investigator Award Session A P. 76 | | | | | | |
| 10:30 – 11 a.m. | | | | | | | | | | |
| 11 – 11:30 a.m. | | | | | | | | | ACAV SIE | |
| 11:30 a.m. – Noon | | | | | | | | | | |
| Noon – 12:30 p.m. | | Elsevier-ASTMH Clinical Research Award P. 83 | | | | | | | ACAV SIRACA | |
| 12:30 –1 p.m. | | | | | | | | | | |
| 1 – 1:30 p.m. | | | | | | | | | | |
| 1:30 – 2 p.m. | | | | | | | | | | |
| 2 – 2:30 p.m. | | | | | | | | | ACAV SALS | |
| 2:30 – 3 p.m. | | | | | | | | | | |
| 3 – 3:30 p.m. | | | | | | | | | | |
| 3:30 – 4 p.m. | | | | | Clinical Group Council Meeting | ACMCIP Council Meeting | ACGH Council Meeting | | | |
| 4 – 4:30 p.m. | | | | | | | | ACME Council Meeting | ACAV Council Meeting | Student Reception |
| 4:30 – 5 p.m. | | | | | | | | | | |
| 5 – 5:30 p.m. | | | | | | | | | | |
| 5:30 – 6 p.m. | | | | | | | | | | |
| 6 – 6:30 p.m. | | | | | | | | | | |
| 6:30 – 7 p.m. | | | | | | | | | | |
| 7 – 7:30 p.m. | | | | | | | | | | |
| 7:30 – 8 p.m. | | | | | | | | | | |
| 8 – 8:30 p.m. | | | | | | | | | | |
| 8:30 – 9 p.m. | | | | | | | | | | |

**Online Meeting Program**
Search the Annual Meeting program online by abstract keyword, title, subject, author and/or presentation time at astmh.org/annual-meeting. The full text of all abstracts, including Late-Breaker Abstracts, can be found in the Online Program Planner.

**Meeting App**
Download the meeting app for easy access to all ASTMH program information. Use the app to view the meeting schedule, session and presenter information, full abstracts, exhibitors, maps and Twitter feed.

**Program Changes**
Times and/or locations of activities or sessions are subject to change. A Program Update is included in your registration packet.

**Online Abstract Book**
The Annual Meeting Abstract Book is accessible at astmh.org/annual-meeting. View the full text of the abstracts presented.

# ASTMH 65th Annual Meeting

## Monday, November 14, 2016

| | Marriott International Hall | Hilton Grand Ballroom and Grand Salon | Marriott Imperial A | Marriott Imperial B | Marriott Marquis A | Marriott Marquis B | Marriott Marquis C | Marriott Marquis D |
|---|---|---|---|---|---|---|---|---|
| **7 – 7:30 a.m.** | | | | | | | | |
| **7:30 – 8 a.m.** | | | | | | | | |
| **8 – 9:45 a.m.** | Exhibits Open 9:30 - 10:30 | | 2 Scientific Session Filariasis: Epidemiology and Control I P. 86 | 3 Scientific Session Bacteriology: Cholera P. 87 | | 4 Symposium CRISP/Cas Gene Drive Technologies for Vector Control P. 88 | 5 Scientific Session Malaria: Epidemiology - Intervention Studies and Evaluation P. 89 | 6 Scientific Session Malaria: Drug Development - Preclinical to Clinical Trials P. 90 |
| **9:45 – 10:15 a.m.** | Coffee Break | Poster Session A Setup | | | | | | |
| **10:15 a.m. – Noon** | | Poster Session A Viewing | 14 Scientific Session Filariasis: Epidemiology and Control II P. 95 | 15 Scientific Session Dengue: Vaccines/ Epidemiology P. 96 | 16 Scientific Session Malaria: Chemotherapy and Looking for Drug P. 97 | 17 Symposium Characterizing Spatiotemporal Patterns of Insecticide Resistance P. 98 | 18 Symposium Refugee Health: Clinical Case Studies P. 98 | 19 Symposium Disease Elimination and Eradication: Programmatic Best Practices P. 99 |
| **Noon – 12:15 p.m.** | Exhibit Hall Open and Light Lunch | 26 Poster Session A Presentations and Light Lunch P. 104 | | | | | | |
| **12:15 – 12:30 p.m.** | | | 27 Late Breakers in Clinical Tropical Medicine and Global Health P. 145 | | 28 Accelerate to Equal: Engaging Women in Vector Control P. 145 | | | |
| **12:30 – 12:45 p.m.** | | | | | | | | |
| **12:45 – 1:30 p.m.** | | | | | | | | |
| **1:30 – 1:45 p.m.** | | | | | | | | |
| **1:45 – 3:30 p.m.** | Exhibits Open 3:15 -4:15 | Poster Session A Viewing | 30 Scientific Session Filariasis: Molecular Biology, Immunology and Diagnostics P. 146 | 31 Scientific Session West Nile and Other Flaviviruses P. 147 | 32 Symposium Seasonal Malaria Chemoprevention at Scale P. 148 | 33 Symposium Generating Evidence for Malaria Elimination in the Greater Mekong P. 148 | 34 Scientific Session Malaria Vaccines: Diverse Approaches P. 149 | 35 Symposium Malaria Metabolomics, Data Integration Challenges and Progress P. 150 |
| **3:30 – 4 p.m.** | Coffee Break | | | | | | | |
| **4 – 5:45 p.m.** | | | 41 Symposium Terrorism, Conflict, Epidemics and Acts of God P. 154 | 42 Scientific Session Chikungunya and Other Alphaviruses P. 154 | 43 Scientific Session One Health: Interface of Human Health/ Animal Diseases P. 155 | 44 Symposium Next-Generation Sequencing Technologies to Advance Global Research P. 156 | 45 Symposium Bridging the Gap towards Defining the Burden of Typhoid P. 156 | 46 Scientific Session Malaria: Epidemiology II - Descriptive and Risk Factor Studies P. 157 |
| **5:45 – 6:15 p.m.** | | | | | | | | |
| **6:15 – 7 p.m.** | | | | | | 52 Plenary II Craig Lecture P. 162 | | |
| **7 – 7:15 p.m.** | | Poster Session A Dismantle | | | | | | |
| **7:15 – 8 p.m.** | | | Sponsored Symposium Management of Infectious Diseases to Address Chronic Illness P. 41 and P. 162 | | | | | Sponsored Symposium Malaria: Faster and More Accurate Diagnosis for Eradication P. 41 and P. 162 |
| **8 – 8:30 p.m.** | | | | | | | | |
| **8:30 – 9 p.m.** | | | | | | | | |
| **9 – 9:30 p.m.** | | | | | | | | |

# ASTMH 65th Annual Meeting

## Monday, November 14, 2016

| | Marriott Room M103/M104/M105 | Marriott Atrium A | Marriott Atrium B | Marriott Room A601 | Marriott Room A602 | Marriott Room A703/A704 | Marriott Room A706/A707 |
|---|---|---|---|---|---|---|---|
| **7 – 7:30 a.m.** | | | | | | | |
| **7:30 – 8 a.m.** | | | | | | | |
| **8 – 9:45 a.m.** | 7 Symposium Influence of Behavior and Culture within WASH Interventions P. 90 | 8 Symposium CadMIA and CHAMPS: Pathways toward Defining Preventable Causes of Death P. 91 | 9 Symposium Zika Virus: Public Health Response and Disease Manifestations P. 92 | 10 Scientific Session Cestodes: Cysticercosis and Echinococcosis P. 92 | 11 Scientific Session Malaria: Biology and Pathogenesis P. 93 | 12 Scientific Session Mosquitoes: Operational Control P. 94 | 13 Symposium Hot Topics in Leishmaniasis P. 94 |
| **9:45 – 10:15 a.m.** | | | | | | | |
| **10:15 a.m. – Noon** | 20 Scientific Session Malaria: Vector Control Interventions in Africa - LLINs and Beyond P. 100 | 21 Scientific Session Clinical Tropical Medicine I P. 100 | | 22 Symposium Developing Responsible Data Sharing for Tropical Medicine P. 101 | 23 Scientific Session ACMCIP: Helminths: Cellular, Molecular and Immunoparasitology P. 102 | 24 Symposium Immune Memory Responses in Malaria P. 103 | 25 Symposium Tailored Surveillance Strategies for High-Risk Populations in Malaria P. 103 |
| **Noon – 12:15 p.m.** | | | | | | | |
| **12:15 – 12:30 p.m.** | 29 Meet the Professors A P. 146 | | | | | | |
| **12:30 – 12:45 p.m.** | | | | | | | |
| **12:45 – 1:30 p.m.** | | | | | | | |
| **1:30 – 1:45 p.m.** | | | | | | | |
| **1:45 – 3:30 p.m.** | 36 Symposium Emerging Infectious Diseases and Social Media P. 150 | 37 Symposium The President's Malaria Initiative, 2006-2015 P. 151 | 38 Symposium Ebola: Sequelae, Asymptomatic Infection and Transmission Dynamics P. 152 | | | 39 Scientific Session Schistosomiasis: Epidemiology and Control P. 152 | 40 Scientific Session Mosquitoes: Vector Biology - Epidemiology I P. 153 |
| **3:30 – 4 p.m.** | | | | | | | |
| **4 – 5:45 p.m.** | 47 Scientific Session Kinetoplastida: Epidemiology and Diagnosis P. 158 | 48 Inaugural Alan J. Magill Malaria Eradication Symposium P. 159 | 49 Symposium Global Health Education, Service and Research Opportunities for Trainees P. 159 | | 50 Symposium Mapping the Denominator P. 160 | | 51 Scientific Session Mosquitoes: Vector Biology - Epidemiology II P. 161 |
| **5:45 – 6:15 p.m.** | | | | | | | |
| **6:15 – 7 p.m.** | | | | | | | |
| **7 – 7:15 p.m.** | | | | | | | |
| **7:15 – 8 p.m.** | | | | | | | |
| **8 – 8:30 p.m.** | | | | | | | |
| **8:30 – 9 p.m.** | | | | | | | |
| **9 – 9:30 p.m.** | | | | | | | |

**INCLUDED WITH YOUR REGISTRATION FEE**

### Audio Recordings of Select Sessions

Registrants will receive free access to audio recordings and slides of select sessions.

Please note that the entire content of the Annual Meeting will not be available.

# ASTMH 65th Annual Meeting

## Tuesday, November 15, 2016

| | Marriott International Hall | Hilton Grand Ballroom and Grand Salon | Marriott Imperial A | Marriott Imperial B | Marriott Marquis A | Marriott Marquis B | Marriott Marquis C | Marriott Marquis D |
|---|---|---|---|---|---|---|---|---|
| **7 – 7:30 a.m.** | | | | | | | | |
| **7:30 – 8 a.m.** | | | | | | | | |
| **8 – 9:45 a.m.** | Exhibits Open 9:30 - 10:30 | | 53 ACMCIP Symposium: Parasitology and the CRISPR-Cas Revolution P. 163 | 54 Symposium Advanced Diagnostics in Filarial Infections P. 164 | 55 Symposium Malaria Elimination Strategies: Lessons from the Field P. 164 | 56 Scientific Session Global Health: Ebola P. 165 | 57 Scientific Session Water, Sanitation, Hygiene and Environmental Health I P. 165 | 58 Symposium Molecular Basis of Severe Malarial Anemia P. 166 |
| **9:45 – 10:15 a.m.** | Coffee Break | Poster Session B Setup | | | | | | |
| **10:15 a.m. – Noon** | | Poster Session B Viewing | 66 Symposium Strategies to Control Hepatitis E Virus P. 171 | 67 Symposium Perspectives on Burden of Diarrhea and Strategies for Quantification P. 172 | 68 Symposium Moving toward a PfSPZ Malaria Vaccine P. 173 | 69 Symposium Ivermectin to Reduce Malaria: Clinical Trials, Models, Pathways P. 173 | 70 Symposium Building Clinical Research Capacity: Lessons from Africa and South Asia P. 174 | 71 Symposium Key Elements for Improving Management of Pneumonia in Children P. 174 |
| **Noon – 12:15 p.m.** | Exhibit Hall Open and Light Lunch | 79 Poster Session B Presentations and Light Lunch P. 180 | | | | | | |
| **12:15 – 12:30 p.m.** | | | 80 Late Breakers in Basic Science and Molecular Biology P. 222 | | | | | |
| **12:30 – 12:45 p.m.** | | | | | | | | |
| **12:45 – 1:30 p.m.** | | | | | | | | |
| **1:30 – 1:45 p.m.** | | | | | | | | |
| **1:45 – 3:30 p.m.** | Exhibits Open 3:15 - 4:15 | Poster Session B Viewing | 82 Symposium Congenital Vector-Borne Diseases and Early P. 222 | 83 Scientific Session Bacteriology: Diarrhea - Determinants and Prevention P. 223 | 84 Symposium Human Babesiosis: A Neglected Tick-Borne Parasitic Disease P. 224 | 85 Symposium Remote Sensing and Models from NASA in Predicting/ Mitigating Outbreaks P. 224 | 86 Symposium ACAV I: Business Meeting, Awards and Research Presentations P. 225 | 87 Symposium Call to Increase Coverage of Preventive Treatment in Pregnancy P. 225 |
| **3:30 – 4 p.m.** | Coffee Break | | | | | | | |
| **4 – 5:45 p.m.** | | | 93 Symposium Co-Administration of Drugs for NTDs: Efficacy, Efficiency and Safety P. 230 | 94 Symposium Malaria Economics Research Priorities P. 231 | 95 Symposium Current Challenges for Treating Malaria in the Greater Mekong Subregion P. 231 | 96 Symposium Mass Drug and Vector Control Approaches for Malaria Elimination P. 232 | 97 Symposium ACAV II: Emergence, Evolution, and Control of Zika Virus P. 233 | 98 Symposium Pneumonia Etiology Research for Child Health Study (PERCH) P. 233 |
| **5:45 – 6:15 p.m.** | | | | | | | | |
| **6:15 – 7 p.m.** | | | | | | | 104 Plenary III Commemorative Fund Lecture P. 237 | |
| **7 – 7:15 p.m.** | | Poster Session B Dismantle | | | | | | |
| **7:15 – 8 p.m.** | | | | | | 105 Symposium The Refugee Journey to Wellbeing P. 237 | | |
| **8 – 8:30 p.m.** | | | | | | | | |
| **8:30 – 9 p.m.** | | | | | | | | |
| **9 – 9:30 p.m.** | | | | | | | | |

# ASTMH 65th Annual Meeting

## Tuesday, November 15, 2016

| | Marriott Room M103/M104/M105 | Marriott Atrium A | Marriott Atrium B | Marriott Room A601 | Marriott Room A602 | Marriott Room A703/A704 | Marriott Room A706/A707 | Marriott Room M301/M302/M303/M304 |
|---|---|---|---|---|---|---|---|---|
| **7 – 7:30 a.m.** | | | | | | | | |
| **7:30 – 8 a.m.** | | | | | | | | |
| **8 – 9:45 a.m.** | 59 Scientific Session Bacteriology: Trachoma P. 167 | 60 Symposium ACGH I: Building a Successful Career - Leaders Share Their Experiences P. 168 | 61 Scientific Session Clinical Tropical Medicine II P. 168 | 62 Symposium ACME I: Business Meeting, Awards and Reception P. 169 | 63 Symposium Schistosomiasis Control with a View toward Elimination P. 169 | 64 Symposium Where Will the Next Malaria Medicines Come From? P. 170 | 65 Symposium If You Neglect It, It Will Grow: Addressing Fungal Infections in HIV P. 171 | |
| **9:45 – 10:15 a.m.** | | | | | | | | |
| **10:15 – Noon** | 72 Scientific Session ACMCIP: Malaria and Protozoal Diseases: Biology and Pathogenesis P. 175 | 73 Symposium ACGH II: Building a Successful Career - Interactive Session with Experts P. 176 | 74 Symposium Recent Advances in Development of New Treatments for Chronic Chagas Disease P. 177 | 75 Symposium ACME II: Applied Medical Entomology: Bridging Field and Laboratory Studies P. 177 | 76 Symposium Tools of Genomics and Evolution to Study and Control Malaria P. 178 | 77 Scientific Session Soil-Transmitted Helminths: Epidemiology and Control P. 178 | 78 Symposium Update on Research and Control of Viral Diseases in Cuba P. 179 | |
| **Noon – 12:15 p.m.** | | | | | | | | |
| **12:15 – 12:30 p.m.** | 81 Meet the Professors B P. 222 | | | | | | | |
| **12:30 – 12:45 p.m.** | | | | | | | | |
| **12:45 – 1:30 p.m.** | | | | | | | | |
| **1:30 – 1:45 p.m.** | | | | | | | | |
| **1:45 – 3:30 p.m.** | | 88 Scientific Session Integrated Control Measures for Neglected Tropical Diseases P. 226 | 89 Symposium Clinical Group (ACCTMTH) I P. 227 | | 90 Symposium The Washington, DC Primer: Advocating for R&D Funding P. 228 | 91 Scientific Session Malaria: Elimination Strategies and New Tools P. 228 | 92 New Approaches to Examining Antigenic Variation in *Plasmodium* P. 229 | |
| **3:30 – 4 p.m.** | | | | | | | | |
| **4 – 5:45 p.m.** | 99 Scientific Session Schistosomiasis: Immunology, Pathology and Diagnostics P. 234 | 100 Symposium Quantitative Approaches to Support Achievement of Elimination Targets P. 235 | 101 Symposium Clinical Group (ACCTMTH) II P. 235 | | | | 102 Symposium Approaches, Advances, Needs for Elimination of African Trypanosomiasis P. 236 | 103 Speed-Networking with the Experts P. 236 |
| **5:45 – 6:15 p.m.** | | | | | | | | |
| **6:15 – 7 p.m.** | | | | | | | | |
| **7 – 7:15 p.m.** | | | | | | | | |
| **7:15 – 8 p.m.** | | | | | | | | |
| **8 – 8:30 p.m.** | | | | | | | | |
| **8:30 – 9 p.m.** | | | | | | | | |
| **9 – 9:30 p.m.** | | | | | | | | |

## ASTMH Arts and Culture Special Event

**"Humanitarian Response": A One-Act Play about Ebola**

**Tuesday, November 15, 7 p.m. - 10 p.m.**

*Georgia State University (Atlanta), Troy Moore Library, English Department*
*25 Park Place N.E., Room 2343 (23rd floor)*


The Ebola epidemic is devastating West Africa, and American medical volunteers respond to this humanitarian crisis. But what happens when Ebola strikes one of their own compatriots? Based on a true incident, this short play explores the struggle between individuals and the group confronted with the lethal virus.

This professional performance will be followed by a Q&A panel and a social mixer. This free satellite event is only a short walking distance from the main conference, but seating is limited to 40 people.

7 p.m. "Humanitarian Response": A One-Act Play by Leo Liu, presented by Working Title Playwrights
8 p.m. Panel with Ebola response workers
9 p.m. Reception with light refreshments

# ASTMH 65th Annual Meeting

**Wednesday, November 16, 2016**

| | Marriott International Hall | Hilton Grand Ballroom and Grand Salon | Marriott Imperial A | Marriott Imperial B | Marriott Marquis A | Marriott Marquis B | Marriott Marquis C | Marriott Marquis D |
|---|---|---|---|---|---|---|---|---|
| **7 – 7:30 a.m.** | | | | | | | | |
| **7:30 – 8 a.m.** | | | | | | | | |
| **8 – 9:45 a.m.** | Exhibits Open 9:30 - 10:30 | | 106 Symposium Community Providers for NTD Control: "Building Blocks" for Program Success P. 238 | 107 Scientific Session Dengue: Pathogenesis/ Immunology P. 239 | 108 Scientific Session Protozoa P. 240 | 109 Scientific Session ACMCIP: Malaria and Protozoans: Molecular Biology P. 241 | 110 Scientific Session Pneumonia, Respiratory Infections and Tuberculosis I P. 241 | 111 Scientific Session Malaria: Diagnostics P. 242 |
| **9:45 – 10:15 a.m.** | Coffee Break | Poster Session C Setup | | | | | | |
| **10:15 a.m. – Noon** | Exhibit Hall Open and Light Lunch (lunch through 1:45 p.m.) | Poster Session C Viewing | 118 Symposium Implications of Insecticide Resistance on Malaria Vector Control P. 247 | 119 Symposium Yellow Fever P. 248 | 120 Symposium Brain-Eating Amoebae P. 248 | 121 Scientific Session Bacteriology: Febrile illnesses - Leptospirosis and Others P. 249 | 122 Scientific Session Ectoparasite-Borne Disease P. 250 | 123 Scientific Session ACMCIP: Kinetoplastida – Molecular, Cellular and Immunobiology P. 250 |
| **Noon – 12:15 p.m.** | | 131 Poster Session C Presentations and Light Lunch P. 256 | | | | | | |
| **12:15 – 12:30 p.m.** | | | 132 Late Breakers in Malaria P. 296 | | | | | |
| **12:30 – 12:45 p.m.** | | | | | | | | |
| **12:45 – 1:30 p.m.** | | | | | | | | |
| **1:30 – 1:45 p.m.** | | | | | | | | |
| **1:45 – 3:30 p.m.** | | Poster Session B Viewing | 134 Symposium Global Antibiotic Resistance Partnership and ResistanceMap P. 297 | 135 Symposium MalERA: Refreshing the Malaria Eradication Research Agenda P. 297 | 136 Scientific Session Global Health: mHealth, Vaccines and Strategies P. 298 | 137 Symposium Rebuilding Health Systems for Ebola Survivors P. 299 | 138 Symposium Confronting the Burden of Shigellosis through Vaccine Development P. 299 | 139 Symposium Unleashing the Potential: *Plasmodium* Diversity Network Africa P. 299 |
| **3:30 – 4 p.m.** | | | | | | | | |
| **4 – 5:45 p.m.** | | | 147 Scientific Session Global Health: Febrile Illness and Malaria P. 304 | 148 Symposium Novel Phenotypic and Genotypic Markers of Piperaquine Resistance in Cambodia P. 305 | | 149 Symposium Prospects for Development of Vaccines against ETEC P. 306 | 150 Towards Better Surveillance: Platforms for Elimination P. 306 | 151 Symposium Shift in Biting Behavior: Outdoor Host Seeking Behavior of Vectors P. 307 |
| **5:45 – 6:15 p.m.** | | | | | | | | |
| **6:15 – 7 p.m.** | | | | | | 158 Plenary IV President's Address Annual Business Meeting P. 311 | | |
| **7 – 7:15 p.m.** | | Poster Session C Dismantle | | | | | | |
| **7:15 – 8 p.m.** | | | | | | | | |
| **8 – 8:30 p.m.** | | | | | | | | |
| **8:30 – 9 p.m.** | | | | | | | | |
| **9 – 9:30 p.m.** | | | | | | | | |

# ASTMH 65th Annual Meeting

## Wednesday, November 16, 2016

| | Marriott Room M103/M104/M105 | Marriott Atrium A | Marriott Atrium B | Marriott Room A601 | Marriott Room A602 | Marriott Room A703/A704 | Marriott Room A706/A707 |
|---|---|---|---|---|---|---|---|
| **7 – 7:30 a.m.** | | | | | | | |
| **7:30 – 8 a.m.** | | | | | | | |
| **8 – 9:45 a.m.** | 112 Scientific Session Kinetoplastida: Diagnosis, Treatment and Vaccine Development P. 243 | 113 Scientific Session Malaria: Chemotherapy for Control and Elimination P. 244 | 114 Symposium Febrile Illness - Epidemiology, Diagnostics, Management P. 245 | 115 Symposium Understanding, Detecting, Preventing Fertilization of *Plasmodia* P. 245 | | 116 Scientific Session Arthropods: Other Arthropods P. 246 | 117 Scientific Session Malaria Control Interventions: Operational Innovations and Challenges P. 246 |
| **9:45 – 10:15 a.m.** | | | | | | | |
| **10:15 a.m. – Noon** | 124 Symposium Evaluating Readiness and Quality of Essential Surgical Services P. 251 | 125 Scientific Session Virology: Ebola P. 252 | 126 Symposium State of the Art in Human Infection Models for Tropical Diseases P. 253 | 127 Symposium Elimination of Schistosomiasis japonica from China P. 253 | 128 Scientific Session Malaria: Immunology P. 254 | 129 Scientific Session Malaria: Modeling P. 254 | 130 Scientific Session Mosquitoes: Biochemistry and Molecular Biology P. 255 |
| **Noon – 12:15 p.m.** | | | | | | | |
| **12:15 – 12:30 p.m.** | 133 Meet the Professors C P. 297 | | | | | | |
| **12:30 – 12:45 p.m.** | | | | | | | |
| **12:45 – 1:30 p.m.** | | | | | | | |
| **1:30 – 1:45 p.m.** | | | | | | | |
| **1:45 – 3:30 p.m.** | 140 Scientific Session Schistosomiasis and Other Trematodes: Transmission and Treatment P. 300 | 141 Scientific Session Zika P. 301 | 142 Symposium Access to Chagas Treatment: Lessons from Latin America and USA P. 302 | 143 Symposium Integrated Community Case Management (iCCM) and Continuum of Care P. 302 | 144 Scientific Session Mosquitoes: Molecular Genetics and Genomics P. 303 | 145 Symposium Novel Biomarkers and Predictors of Cerebral Malaria Severity P. 303 | 146 Symposium Malaria Pre-Elimination: Ensuring Correct Care of Reproductive Age Women P. 304 |
| **3:30 – 4 p.m.** | | | | | | | |
| **4 – 5:45 p.m.** | | 152 Symposium Careers in Refugee Health: Case-Based Perspectives and Descriptions P. 307 | 153 Symposium An Integrated Approach to Tropical Dermatology P. 308 | 154 Symposium The WASH Benefits Study: Cluster-Randomized Trials P. 308 | 155 Symposium Fifteen Years of Nipah Virus in Bangladesh P. 309 | 156 Scientific Session Malaria: Parasite, Vector and Host Genomics P. 309 | 157 Symposium Poor Quality Medicines-The Third Man Threat P. 310 |
| **5:45 – 6:15 p.m.** | | | | | | | |
| **6:15 – 7 p.m.** | | | | | | | |
| **7 – 7:15 p.m.** | | | | | | | |
| **7:15 – 8 p.m.** | | | | | | | |
| **8 – 8:30 p.m.** | | | | | | | |
| **8:30 – 9 p.m.** | | | | | | | |
| **9 – 9:30 p.m.** | | | | | | | |

**Online Meeting Program**
Search the Annual Meeting program online by abstract keyword, title, subject, author and/or presentation time at astmh.org/annual-meeting. The full text of all abstracts, including Late-Breaker Abstracts, can be found in the Online Program Planner.

**Meeting App**
Download the meeting app for easy access to all ASTMH program information. Use the app to view the meeting schedule, session and presenter information, full abstracts, exhibitors, maps and Twitter feed.

**Program Changes**
Times and/or locations of activities or sessions are subject to change. A Program Update is included in your registration packet.

**Online Abstract Book**
The Annual Meeting Abstract Book is accessible at astmh.org/annual-meeting. View the full text of the abstracts presented.

# ASTMH 65th Annual Meeting

## Thursday, November 17, 2016

| | Marriott Marquis Foyer | Marriott Imperial A | Marriott Imperial B | Marriott Marquis A | Marriott Marquis B | Marriott Marquis C | Marriott Marquis D | Marriott Room M103/M104/M105 |
|---|---|---|---|---|---|---|---|---|
| **7 – 7:30 a.m.** | | | | | | | | |
| **7:30 – 8 a.m.** | | | | | | | | |
| **8 – 9:45 a.m.** | | 159 Symposium New Tools and Rules for River Blindness Elimination P. 312 | 160 Symposium Zika Virus in Salvador, Brazil and in Puerto Rico P. 312 | 161 Scientific Session Mosquitoes: Insecticide Resistance and Control P. 313 | | 162 Symposium Towards Regional Eradication of Malaria in Mesoamerica P. 314 | 163 Scientific Session Water, Sanitation, Hygiene and Environmental Health II P. 314 | 164 Scientific Session Soil-Transmitted Helminths - Biology and Immunology P. 315 |
| **9:45 – 10:15 a.m.** | Coffee Break | | | | | | | |
| **10:15 a.m. – Noon** | | 170 Symposium Making Money Matter: Cost-Effectiveness and NTD Interventions P. 319 | 171 Scientific Session Virology: Other Viruses P. 320 | 172 Symposium Knowledge Gaps Concerning Interventions on Malaria Transmission P. 320 | 173 Scientific Session Pneumonia, Respiratory Infections and Tuberculosis II P. 321 | | 175 Symposium Non-Typhoidal *Salmonella* in Africa: Epidemiology, Vaccine Development and Genomics P. 322 | 176 Scientific Session Kinetoplastida: Molecular Biology and Immunology P. 322 |

# Notes:

**Online Meeting Program**
Search the Annual Meeting program online by abstract keyword, title, subject, author and/or presentation time at astmh.org/annual-meeting. The full text of all abstracts, including Late-Breaker Abstracts, can be found in the Online Program Planner.

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# ASTMH 65th Annual Meeting

**Thursday, November 17, 2016**

| | Marriott Atrium A | Marriott Atrium B | Marriott Room A601 | Marriott Room A602 | Marriott Room A703/A704 | Marriott Room A706/A707 |
|---|---|---|---|---|---|---|
| **7 – 7:30 a.m.** | | | | | | |
| **7:30 – 8 a.m.** | | | | | | |
| **8 – 9:45 a.m.** | | 165 Symposium Clinical Update - What's New in Literature? P. 316 | 166 ACMCIP: Helminths: Immunology P. 316 | 167 Symposium Ending Preventable Maternal and Child Deaths Due to Tuberculosis P. 317 | 168 Scientific Session ACMCIP: Malaria: Biology and Pathogenesis P. 317 | 169 Scientific Session Malaria Control Interventions: Assessment of Quality and Effectiveness P. 318 |
| **9:45 – 10:15 a.m.** | | | | | | |
| **10:15 a.m. – Noon** | 177 Symposium Advancing Global Health Security: Lessons from West Africa Ebola P. 323 | 178 Scientific Session Filariasis: Clinical P. 324 | 179 Symposium Gene Drives on the Horizon P. 325 | 180 Scientific Session Global Health: Maternal and Child Health P. 325 | 181 Symposium Enhanced Surveillance, Response, Elimination through Diagnostics P. 326 | 182 Scientific Session HIV and Tropical Co-Infections P. 327 |

## Special Interactive Experience: The Refugee Journey to Wellbeing

*Marriott — Atrium Foyer (Atrium Level)*

At the end of 2015, there were an estimated 65.3 million people displaced around the world, largely because of extended conflicts in the Middle East, Northern and sub-Saharan Africa, and Asia. The American Society of Tropical Medicine and Hygiene and the U.S. Centers for Disease Control and Prevention (CDC), with participation from a number of domestic and international partners, are hosting this unique interactive experience on refugee health. Through video, photos, live testimonials, hands-on activities and replicated scenes from the field, The Refugee Journey to Wellbeing highlights the clinical and public health aspects of the refugee experience from displacement to resettlement.


For a description of each session, consult the page number corresponding to the session title.

# Meeting Room Directory

## Atlanta Marriott Marquis

**International Level**
International Hall (Exhibit Hall)
International A (Speaker Ready Room)

**Marquis Level**
Walkway to Hilton
Imperial A
Imperial B
Marquis A
Marquis B
Marquis C
Marquis D
Marquis Foyer (Registration, Internet Nook)
Room M101
Room M102 (Press Room)
Room M103/M104/M105
Room M106
Room M107
Room M108
Room M109
Room M201
Room M202
Room M301
Room M302
Room M303
Room M304

**Lobby Level**
Room L401
Room L402
Room L403
Room L404
Room L405
Room L406
Room L501
Room L502
Room L503
Room L504
Room L505
Room L506
Room L507
Room L508

**Atrium Level**
Atrium A
Atrium B
Atrium C
Atrium Foyer (Special Interactive Experience: The Refugee Journey to Wellbeing)
Atrium Loft (The TropStop – Student/Trainee Lounge)
Room A601
Room A602
Room A701
Room A702
Room A703
Room A704
Room A705
Room A706
Room A707
Room A708

**10th Floor**
Skyline

## Hilton Atlanta

**Second Floor**
Walkway to Marriott
Grand Ballroom (Poster Hall)
Grand Salon (Poster Hall)
Room 201
Room 202
Room 203
Room 204
Room 205
Room 206
Room 207
Room 208
Room 209
Room 210
Room 211
Room 212
Room 213
Room 214

**Fourth Floor**
Room 401
Room 402
Room 403
Room 404
Room 405
Room 406
Room 407
Room 408
Room 409
Room 410

**29th Floor**
Point of View Lounge

# ASTMH Council, Subgroup Leadership and Fellows of ASTMH (FASTMH)

ASTMH extends a special thank you to its Council members for their outstanding contributions throughout the year and their dedication to advancing the Society's mission.

## Executive Committee

*Indicates voting member

President*
Stephen Higgs
*Kansas State University, United States*

President-Elect*
Patricia F. Walker
*University of Minnesota and HealthPartners Travel and Tropical Medicine Center, United States*

Immediate Past President*
Christopher V. Plowe
*University of Maryland, United States*

Secretary-Treasurer
David R. Hill
*Quinnipiac University, United States*

Chair, Scientific Program Committee
Daniel G. Bausch
*World Health Organization, Switzerland*

Editor-in-Chief, *American Journal of Tropical Medicine and Hygiene*
Philip Rosenthal
*University of California San Francisco, United States*

Executive Director
Karen A. Goraleski

## Councilors

Nicole Achee* (2015-2019)
*University of Notre Dame, United States*

Serap Aksoy* (2013-2017)
*Yale School of Public Health, United States*

Rick Fairhurst* (2015-2016)
*National Institute of Allergy and Infectious Diseases, United States*

David Fidock* (2015-2019)
*Columbia University Medical Center, United States*

Eva Harris* (2012-2016)
*University of California Berkeley, United States*

Laura Kramer* (2014-2018)
*New York State Department of Health, Wadsworth Center, United States*

Ann Powers* (2014-2018)
*Centers for Disease Control and Prevention, United States*

Laurence Slutsker* (2013-2017)
*PATH, United States*

### Subgroup Leadership

American Committee of Medical Entomology (ACME)
*Chair:* Lyric Bartholomay
*University of Wisconsin Madison, United States*

American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP)
*President:* Julian Rayner
*Wellcome Trust Sanger Institute, United Kingdom*

American Committee on Arthropod-Borne Viruses (ACAV)
*Chair:* Kathryn A. Hanley
*New Mexico State University, United States*

American Committee on Clinical Tropical Medicine and Travelers' Health (ACCTMTH – Clinical Group)
*President:* Duane Hospenthal
*University of Texas Health Science Center at San Antonio, United States*

ASTMH Committee on Global Health (ACGH)
*President:* Juliette Morgan
*Centers for Disease Control and Prevention, Tbilisi, Georgia*

## Fellows of ASTMH (FASTMH)

Fellow member status in the Society is an honor recognizing sustained professional excellence in any phase of tropical medicine, hygiene, global health and related disciplines.

2016 Fellows will be announced and recognized at the Awards Program on Sunday, November 13.

### 2015 Fellows

J. Kevin Baird, *Eijkman-Oxford Clinical Research Unit, Indonesia*

Frank Bia, *Yale University School of Medicine, United States*

Hector Gorbea, *University of Puerto Rico School of Medicine, United States*

Daniel Gordon, *DMGordon Consulting, LLC, United States*

Christopher King, *Case Western Reserve University, United States*

Beth Kirkpatrick, *University of Vermont, United States*

William Klein, *78th Medical Group, Air Force, United States*

Nirbhay Kumar, *Tulane University School of Public Health and Tropical Medicine, United States*

Sanjai Kumar, *Food and Drug Administration, United States*

Jean Lang, *Sanofi Pasteur, France*

David Morens, *National Institutes of Health, United States*

Amy Morrison, *University of California Davis, United States*

Nicanor Obaldia, *Tropical Medicine Research/Gorgas Memorial Institute of Health Studies, Panama*

Sheral Patel, *Food and Drug Administration, United States*

Mark Polhemus, *SUNY Upstate Medical University, United States*

John Sanders, *Wake Forest University, United States*

Lynn Soong, *University of Texas Medical Branch, United States*

J. Brice Weinberg, *Duke University Duke University and Veterans Administration Medical Center, United States*

**ASTMH Staff**

Karen A. Goraleski, *Executive Director*

Howard Burkat, *Controller*

Tonya Cabrera, *Assistant Conference Administrator*

Madhuri Carson, *Manager, Partnership Opportunities*

Greg Cashman, *Director of Financial Planning and Analysis*

Judy DeAcetis, *Administrator*

Doug Dusik, *Senior Communications Executive*

Buffy Finn, *Member Services Administrator*

Brenda Howe, *Conference Administrator*

Alison Jaeb, *AJTMH Editorial Assistant*

Lyn Maddox, *Director of Meetings*

Brian McGowan, *Graphic Designer*

Lauren Rich, *Coordinator, Partnership Opportunities*

Kismet Saglam, *Director of Education Services*

Rhonda Schultz, *Coordinator, Awards and Fellowships*

Cathi Siegel, *AJTMH Managing Editor*

Chris Viglione, *Meeting Manager*

**Additional Annual Meeting Onsite Support**

Heather Currier, *Assistant Meeting Manager*

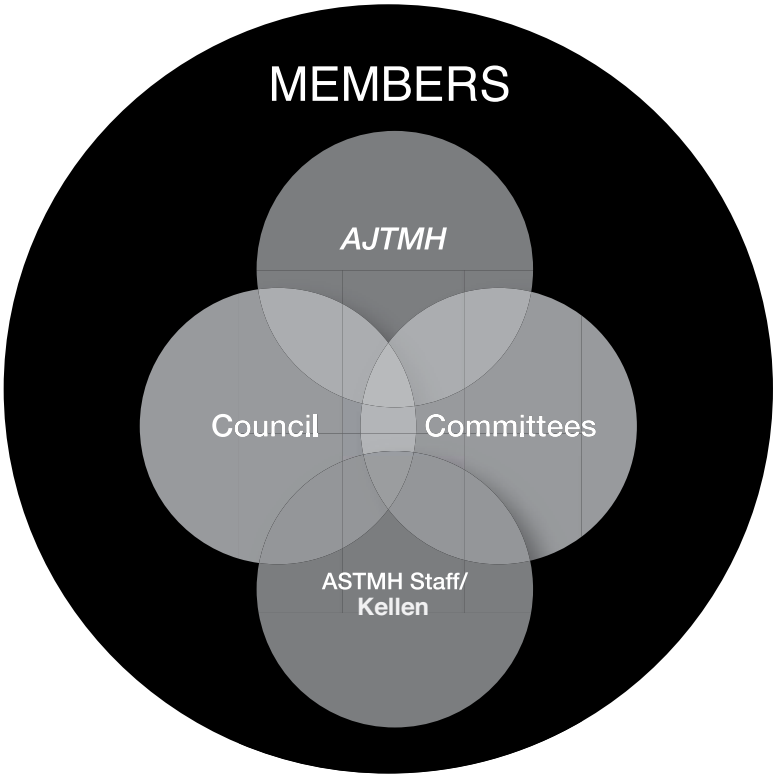
Jill Hronek, *Assistant Meeting Manager*

Matthew Davis, *Burness*

Bridget DeSimone, *Burness*

Preeti Singh, *Burness*

## ASTMH Organizational Chart




# ASTMH Subgroups and Committees

## Subgroups

**American Committee of Medical Entomology (ACME)**
ACME promotes medical entomology within ASTMH and in organizations with scopes of activities that include the area of human diseases transmitted by arthropods.
*Chair and Councilor:* Lyric Bartholomay
Gonzalo Vazquez, *Chair-Elect and Councilor*; Nicole Achee, *Past Chair and Councilor*; Rebekah Kading, *Secretary-Treasurer and Councilor*; Philip Armstrong, *Councilor;* Kate Aultman, *Councilor;* Dan Kline, *Councilor*; Kristin Michel, *Councilor*; Alvaro Molina-Cruz, *Councilor;* Michael Reddy, *Councilor;* Jason Richardson, *Councilor;* Michel Slotman, *Councilor;* Maria Diuk Wasser, *Councilor*; Lyric Bartholomay, *Hoogstraal Medal Coordinator*; Ellen Dotson, *Student Award Coordinator*

**American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP)**
ACMCIP facilitates interactions among scientists within ASTMH who work in the varied disciplines of parasitology, especially in basic laboratory, pre-clinical and translational research, clinician sciences and population-based sciences.
*President:* Julian Rayner
Christine Petersen, *President-Elect;* Manoj Duraisingh, *Past President;* Niraj Tolia, *Secretary-Treasurer;* Amy Bei, *Councilor for Trainees;* Rick Fairhurst, *Councilor;* Andres Lescano, *International Councilor;* Timothy Yoshino, *Councilor for Communications*

**American Committee on Arthropod-Borne Viruses (ACAV)**
ACAV provides a forum for exchange of information among people interested in arbovirus research.
*Chair and Councilor:* Kathryn Hanley
Nikos Vasilakis, *Chair-Elect and Councilor*; Christopher Mores, *Past Chair and Councilor;* Lark Coffey, *Secretary;* Scott Weaver, *Treasurer;* Donald Burke, *Archivist/Historian*; Brad Blitvich, *Councilor;* Aaron Brault, *Councilor;* Laura Kramer, *Councilor;* Desiree LaBeaud, *Councilor;* Rebecca Rico-Hesse, *Councilor*

**American Committee on Clinical Tropical Medicine and Travelers' Health (ACCTMTH – Clinical Group)**
The Clinical Group (ACCTMTH) is the clinicians' group within ASTMH and includes civilian, military and governmental experts in travelers' health, tropical infection and tropical disease.
*President:* Duane Hospenthal
John Sanders, *President-Elect;* Susan McLellan, *Past President;* Latha Rajan, *Secretary-Treasurer;* Miguel Cabada, *Councilor*; Walter (Ted) Kuhn, *Councilor*; Frederique Jacquerioz, *Councilor*

**ASTMH Committee on Global Health (ACGH)**
ACGH promotes the development of the field of global health within ASTMH and addresses multidisciplinary transnational approaches to health issues that unfavorably affect underserved and under-resourced populations.
*President:* Juliette Morgan
Christina Polyak, *President-Elect;* Johanna Daily, *Past President*; Leslie Enane, *Secretary-Treasurer;* Koya Allen, *Councilor;* Jessica Fairley, *Councilor*; Teshome Gebre, *Councilor;* Daouda Ndiaye, *Councilor*

## Administration

**Audit/Finance**
*Chair:* David R. Hill
Patricia F. Walker; Stephen Higgs; Christopher V. Plowe; Karen A. Goraleski

**Clinical Standards and Treatment Guidelines**
*Chair: Ed Ryan*
Naomi Aronson; Josh Berman; Philip Coyne; Johanna Daily; David Freedman; Robert Gasser; Hector Gorbea; David R. Hill; Eric Houpt; Chandy John; Kevin Kain; James Maguire; Jean Nachega; William Stauffer; Joseph Vinetz; Mary Wilson

**Editorial Board*, American Journal of Tropical Medicine and Hygiene***
Jonathan Berman; Brett Forshey; Hector Garcia; Eric Halsey; Patrick Lammie; Philip LoVerde; Steven Meshnick; Thomas Nutman; Rebeca Rico-Hesse; Terrie Taylor; Robert Tesh; David Walker; A. Clinton White

*Editorial Staff:* Philip Rosenthal (Editor-in-Chief)*;* Joseph Vinetz (Associate Editor)*;* Cathi Siegel (Managing Editor); Alison Jaeb (Editorial Assistant); Daniel Tisch (Biostatistical Editor)
*Section Editors:* J. Kevin Baird; Bradley Blitvich; Aaron Brault; J. Stephen Dumler; Duane Hospenthal; James Kazura; Miriam Laufer; Yukari Manabe; Regina Rabinovich; John Sanders; Tom Scott; Maxine Whittaker; Mary Wilson

**Nominations**
*Chair:* James Kazura
Rick Fairhurst; Hector Gorbea; Anthony James; Tom Kanyok; Kent Kester; Andres Lescano; Victoria McGovern; Christopher V. Plowe; Rebecca Rico-Hesse; Ken Stuart; Sarah Volkman

**One World, One Health Representative**
Tom Monath

# ASTMH Subgroups and Committees (cont.)

## Annual Meeting

**Commemorative Fund Lectureship**
*Chair:* Stephen Higgs

**Fred L. Soper Lecture and Charles F. Craig Lecture**
*Chair:* Robert Tesh
Donald Burke; David Freedman; Peter Hotez; William Petri

**Scientific Program**
*Chair:* Daniel G. Bausch
*Assistant Chair:* Stephanie Yanow
See full committee roster on page 25.

**Travel Awards**
*Chair:* Nirbhay Kumar
James Burns; John Donelson; Erin Eckert; Brian Foy; Nisha Garg; Kent Kester; Sanjai Kumar; Desiree LaBeaud; Kim Lindblade; Kevin Macaluso; James Maguire; Indu Malhotra; Dan Milner; Julie Moore; Ann Moormann; Hira Nakhasi; Christina Polyak; Richard Reithinger; John Sanders; Clive Shiff; Mary Stevenson; Diane Wallace Taylor; Jefferson Vaughan; Venkatachalam Udhayakumar; Eileen Villasante; Joseph Vinetz; Sarah Volkman; Wei-Kung Wang; Yimin Wu

**Young Investigator Award**
*Chair:* Daniel Tisch
Subash Babu; Christopher Barker; Jeffrey Bailey; Vitaliano Cama; Peter Crompton; Stephen Davies; Brian Foy; Brian Grimberg; Nicole Gottdenker; Albert Ko; Matthew Laurens; Edward Mitre; Ann Moormann; David Narum; Miranda Oakley; Roshanak Semnani; Anne Stewart; Edward Walker

## Awards and Professional Recognition

**Medals**
*Chair:* David Walker
Stephanie James; Christopher V. Plowe

**Communications Award**
*Co-Chairs:* Peter Hotez, Karen A. Goraleski
Caroline Ash; Adam Cole; Brian Foy; Heather Jameson; Kristy Murray; Katherine Taylor

## CTropMed® Exam

**CTropMed® Examination**
*Chair:* Susan McLellan
Vernon Ansdell; David Boulware; Lin Chen; Robert DeFraites; David Freedman; Davidson Hamer; Patrick Hickey; Jeffrey Jones; Patricia Joyce; Gregory Juckett; Amy Klion; Walter (Ted) Kuhn; Gregory Martin; Obinna Nnedu; Matthew Rollosson; Reinaldo Rosas; Carlo Rossi; Bonnie Smoak

**CTropMed® Exam Credentialing Committee**
*Co-Chairs:* Larry Laughlin, Susan McLellan
David Freedman; David R. Hill; Jay Keystone; Christopher King; Herbert Tanowitz

**CTropMed® Exam Executive Committee**
*Chair:* Susan McLellan
Stephen Higgs; David R. Hill; Duane Hospenthal; Larry Laughlin; Latha Rajan

**Diploma Course Certification Committee**
*Chair:* Susan McLellan
David Freedman; Richard Guerrant; Rocio Hurtado; James Kazura; Donald Krogstad; Larry Laughlin; Anne McCarthy; Alan Spira

## Courses

**Courses Committee**
*Co-Chairs:* Christina Coyle, Michael Libman
Daniel G. Bausch; Philip Coyne; Rick Fairhurst; David R. Hill; Eric Houpt; Christopher King; Jonathan Ripp

**Update Course in Clinical Tropical Medicine and Travelers' Health**
*Co-Chairs:* Christina Coyle, Michael Libman

## Education/Fellowships/Grant Awards

**Alan J. Magill Fellowship**
*Chair:* Kent Kester
Janiine Babcock; Mark Fukuda; Karen A. Goraleski; Andres Lescano; Bruno Moonen; Christopher V. Plowe; Rick Steketee; Mahamadou Ali Thera; Sarah K. Volkman

**Education**
*Chair:* Peter Zimmerman
Nora Besansky; Noah Craft; Hector Gorbea; Laura Harrington; Joshua Hartzell; Patrick Hickey; Sandy Hoar; Risa Hoffman; Kenton Kramer; Kevin Macaluso; Victoria McGovern; Claire Panosian; Ann Powers; Jonathan Ripp; Sarah Volkman; Sarah Ziegler

**Benjamin H. Kean Travel Fellowship in Tropical Medicine**
*Chair:* Chandy John
James Cummings; Linnie Golightly; Michael Hawkes; Colette Kean; Desiree LaBeaud; Myaing Myaing Nyunt; Mark Polhemus; Mark Travassos

# ASTMH Subgroups and Committees (cont.)

**Burroughs Wellcome Fund-ASTMH Fellowship**
*Co-Chairs:* Terrie Taylor, Joseph Tucker
Ravi Durvasula; Molly Hughes; Victoria McGovern; Dan Milner; Joseph Vinetz; Mary Wilson

**Centennial Travel Award**
*Chair:* Joseph Vinetz
Michael Cappello; David Fidock; D.J. Perkins; Sarah Volkman

**Robert E. Shope International Fellowship**
*Chair:* Ann Powers
Charles Calisher; Tom Scott; Richard Shope; Tom Yuill; Ex-Officio: Kathryn Hanley

## Membership

**Membership**
*Chair:* David R. Hill
Daniel G. Bausch; Joel Breman; Sarah Schaffer DeRoo; Tim Endy; Rick Fairhurst; Karen A. Goraleski; Martin Grobusch; Davidson Hamer; Selma Jeronimo; Kent Kester; Beth Kirkpatrick; Kevin Macaluso; Wilbur Milhous; John Waitumbi; Scott Weaver; Pete Zimmerman

**Honorary International Fellow of ASTMH (FASTMH)**
*Chair:* Dyann Wirth
John Aaskov; Myron Levine

**FASTMH (Fellow of ASTMH)**
*Chair:* David R. Hill
Josh Berman; Stephen Higgs; Laura Kramer; Rick Steketee; Mary Wilson

## Ad Hoc

**Blue Ribbon Task Force and Working Groups**
*Co-Chairs:* James Kazura, Bill Stauffer

**Diploma Accreditation Working Group**
*Chair:* Patrick Hickey
David Boulware; Christina Greenaway; Jonathan Juliano; Walter (Ted) Kuhn; David Meya; Latha Rajan

**Update Course Working Group**
*Chair:* Lin Chen
David Boulware; Christina Coyle; Anne Fox; Anne Frosch; Michael Libman; Bobbi Pritt; Andrea Summer; Patricia Walker

**CTropMed® Working Group**
*Chair:* Desiree LaBeaud
David Boulware; Philip Coyne; Eileen Farnon; Stefan Hagmann; Shamim Islam; Charles King; Susan McLellan; Bobbi Pritt; James Kazura

**Awards Task Force**
*Chair:* Patricia F. Walker
Myriam Arevalo-Herrera; Kate Aultman; Karen A. Goraleski; Stephen Higgs; David R. Hill; Christopher V. Plowe; Watcharapong Piyaphanee; Mahamadou Thera; Sarah Volkman

## Scientific Program Committee

The Society and the Annual Meeting attendees offer special thanks to the Scientific Program Committee for their work in determining the robust agenda offered at this year's meeting.

*Chair:* Daniel G. Bausch, *World Health Organization*

*Assistant Scientific Program Chair:* Stephanie Yanow, *University of Alberta*

**Bacterial Illness and Diarrhea**
*Chair:* Ed Ryan, *Massachusetts General Hospital*
Richelle Charles, *Massachusetts General Hospital*
Robert Hall, *National Institutes of Health*
Daniel Leung, *University of Utah*
Megan Reller, *Duke University*
Mark Simons, *Naval Medical Research Unit #6*
Duncan Steele, *Bill & Melinda Gates Foundation*

**Clinical Tropical Medicine**
*Chair:* Elizabeth Barnett, *Boston University*
Josh Berman, *Fast Track Drugs*
Bradley Connor, *Weill Cornell Medical College*
Janine Danko, *Walter Reed Military Medical Center*
John Gawoski, *Lahey Clinic*
Brett Hendel-Paterson, *University of Minnesota*
Mark Kortepeter, *Uniformed Services University of the Health Sciences*
Jason Maguire, *Pfizer*
Joseph Vinetz, *University of California San Diego*

**Ectoparasite-Borne Diseases**
*Chair*: J. Stephen Dumler, *Uniformed Services University of the Health Sciences*
Robert Smith, *Maine Medical Center*
Sam Telford, *Tufts University*
Jefferson Vaughan, *University of North Dakota*

**Entomology**
*Chair:* Michel Slotman, *Texas A&M University*
Kate Aultman
Greg Lanzaro, *University of California Davis*
Tom Scott, *University of California Davis*
Igor Sharakhov, *Virginia Tech*
Jiannong Xu, *New Mexico State University*

# ASTMH Subgroups and Committees (cont.)

**Filariasis**
*Chair:* LeAnne Fox, *Centers for Disease Control and Prevention*
Subash Babu, *NIH-NIRT-ICER*
Peter Fischer, *Washington University*
Shelly Michalski, *University of Wisconsin Oshkosh*
Roshanak Semnani, *National Institute of Allergy and Infectious Diseases*
Daniel Tisch, *Case Western Reserve University*

**Global Health**
*Chair:* Richard Reithinger, *RTI International*
Erin Eckert, *United States Agency for International Development*
Philip Gould, *World Health Organization*
Davidson Hamer, *Boston University*
Mary Hayden, *National Center for Atmospheric Research*
Louise Ivers, *Partners In Health/Brigham and Women's Hospital*
Kayla Laserson, *Centers for Disease Control and Prevention*
Mark Paris, *Mark Paris, MD*
Jose Stoute, *Pennsylvania State University*
Katherine Taylor, *University of Notre Dame*
Theresa Townley, *Creighton University*

**HIV and Tropical Co-Infections**
*Chair:* Christina Polyak, *Military HIV Research Program*
David Boulware, *University of Minnesota*
Daniel Leung, *University of Utah*
Jean Nachega, *Johns Hopkins University*

**Integrated Control of Neglected Tropical Diseases**
*Chair:* Charles King, *Case Western Reserve University*
Darin Evans, *United States Agency for International Development*
Eric Ottesen, *Task Force for Global Health*

**Intestinal and Tissue Helminths, Cestodes**
*Chair:* Siddhartha Mahanty, *National Institute of Allergy and Infectious Diseases*
David Abraham, *Thomas Jefferson University*
Enrico Brunetti, *University of Pavia*
Jose Serpa-Alvarez, *Baylor College of Medicine*
Francesca Tamarozzi, *University of Pavia*

**Kinetoplastida**
*Chair:* Lynn Soong, *University of Texas Medical Branch*
Caryn Bern, *University of California San Francisco*
Edgar Carvalho, *Federal University of Bahia*
Nisha Garg, *University of Texas Medical Branch*
Shaden Kamhawi, *National Institute of Allergy and Infectious Diseases*
Hira Nakhasi, *Food and Drug Administration*

**Late-Breakers in Basic Science/Molecular Biology**
*Chair:* Gregory Ebel, *Colorado State University*
Naomi Forrester, *University of Texas Medical Branch*

**Late-Breakers in Clinical Tropical Medicine and Global Health**
*Co-Chair:* Barbara Herwaldt, *Centers for Disease Control and Prevention*
*Co-Chair:* Jason Maguire, *Pfizer*
Noreen Hynes, *Johns Hopkins University*

**Late-Breakers in Malaria**
*Co-Chair:* Stefan Kappe, *Center for Infectious Disease Research*
*Co-Chair:* Carol Sibley, *University of Washington*
Jonathan Juliano, *University of North Carolina*
Kent Kester, *Sanofi Pasteur*
Urszula Krzych, *Walter Reed Army Institute of Research*
Sanjai Kumar, *Food and Drug Administration*

**Malaria**
*Chair:* Carol Sibley, *University of Washington*
Johanna Daily, *Albert Einstein College of Medicine*
Arlene Dent, *Case Western Reserve University*
Meghna Desai, *Centers for Disease Control and Prevention*
Kamel Hamed, *Novartis*
Mary Hamel, *Centers for Disease Control and Prevention*
Jonathan Juliano, *University of North Carolina*
Patrick Kachur, *Centers for Disease Control and Prevention*
Stefan Kappe, *Center for Infectious Disease Research*
Kent Kester, *Sanofi Pasteur*
Urszula Krzych, *Walter Reed Army Institute of Research*
Sanjai Kumar, *Food and Drug Administration*
Miriam Laufer, *University of Maryland*
Andres Lescano, *Universidad Peruana Cayetano Heredia*
Kim Lindblade, *Centers for Disease Control and Prevention*
Sarah Volkman, *Harvard School of Public Health*
Kim Williamson, *Uniformed Services University of the Health Sciences*
Yimin Wu, *PATH Malaria Vaccine Initiative*

**Meet the Professors**
*Chair:* David Boulware, *University of Minnesota*

**Molecular Parasitology**
*Chair:* Manoj Duraisingh, *Harvard School of Public Health*
David Abraham, *Thomas Jefferson University*
Ahmed Aly, *Tulane University*
Kami Kim, *Albert Einstein College of Medicine*
Peter Kima, *University of Florida*
Peter Melby, *University of Texas Medical Branch*
Dylan Pillai, *University of Calgary*
Niraj Tolia, *Washington University*
Kim Williamson, *Uniformed Services University of the Health Sciences*

# ASTMH Subgroups and Committees (cont.)

**One Health: The Interface of Human Health and Animal Diseases**
*Chair:* Christopher Woods, *Durham Veterans Affairs Medical Center*
Claire Cornelius, *United States Army*
David Morens, *National Institute of Allergy and Infectious Diseases*
Kristy Murray, *Baylor College of Medicine*

**Opportunistic and Anaerobic Protozoa**
*Chair:* Upinder Singh, *Stanford University*
Boris Striepen, *University of Georgia*

**Pneumonia, Respiratory Infections and Tuberculosis**
*Chair:* Robert Breiman, *Emory University*
Abdullah Brooks, *Johns Hopkins University*
Davidson Hamer, *Boston University*
Natasha Hochberg, *Boston University*
Keith Klugman, *Bill & Melinda Gates Foundation*
Samba Sow, *Center for Vaccine Development Mali*

**Schistosomiasis-Helminths**
*Chair:* Jennifer Friedman, *Brown University*
Stephen Davies, *Uniformed Services University of the Health Sciences*
Robert Greenberg, *University of Pennsylvania*
Michael Hsieh, *Biomedical Research Institute*

**Virology**
*Chair:* Rebeca Rico-Hesse, *Baylor College of Medicine*
Anna Durbin, *Johns Hopkins University Bloomberg School of Public Health*
Sharone Green, *University of Massachusetts*
Maria Guzman, *"Pedro Kouri" Tropical Medicine Institute*
Christopher Mores, *Louisiana State University*
Lyle Petersen, *Centers for Disease Control and Prevention*

**Water, Sanitation, Hygiene and Environmental Health**
*Chair:* Pavani Ram, *University at Buffalo*
Joseph Eisenberg, *University of Michigan*
Eric Mintz, *Centers for Disease Control and Prevention*
Christine Moe, *Emory University*


# ASTMH Travel Awards, Fellowships and Grants

## ASTMH Annual Meeting Travel Awards

*Chair:* Nirbhay Kumar, *Tulane University, United States*

ASTMH offers travel awards to qualified students, early career investigators and scientists actively working in the tropical medicine field to attend the Annual Meeting. These awards facilitate participation for those who might not otherwise be able to attend.

BILL & MELINDA GATES foundation

ASTMH gratefully acknowledges the support received from the Bill & Melinda Gates Foundation.

**Pedro Aguiar**, *Fiocruz, Brazil*
Abstract 573

**Shehu Awandu**, *University of Pretoria, South Africa*
Abstract 293

**Sujata Balasubramanian**, *University of North Carolina, United States*
Abstract 77

**Etienne Bilgo**, *IRSS/Center Muraz, Burkina Faso*
Abstract 48

**Rebecca Brander**, *University of Washington, United States*
Abstract 429

**Guido Camargo Espana**, *University of Notre Dame, United States*
Abstract 709

**Hsiao-Han Chang**, *Harvard T.H. Chan School of Public Health, United States*
Abstract 1842

**Zaydah de Laurent**, *U.S. Army Medical Research Directorate/Walter Reed Project, Kenya*
Abstract 341

**Michelle Dao Dong**, *University of Western Ontario, Canada*
Abstract 1124

**Renato Errea**, *Universidad Peruana Cayetano Heredia, Peru*
Abstract 1127

**Amal Gadalla**, *Sultan Qaboos University, Oman*
Abstract 236

**Gabriela Garcia**, *Fiocruz, Brazil*
Abstract 1849

**Patricia Gomez-Perez**, *Barcelona Center for International Health Research, Spain*
Abstract 361

**Sarah Gunter**, *University of Texas Health Science Center, United States*
Abstract 1149

**Claire Heath**, *Stanford University, United States*
Abstract 708

**Anita Iyer**, *University of Utah, United States*
Abstract 12

**John Jimah**, *Washington University at St. Louis, United States*
Abstract 694

**Flora Kano**, *Centro de Pesquisas Rene Rachou, Brazil*
Abstract 359

**Christian Koepfli**, *Walter and Eliza Hall Institute, Australia*
Abstract 647

**Fanny Legrand**, *National Institute of Allergy and Infectious Diseases/National Institutes of Health, United States*
Abstract 596

**Trancizeo Lipenga**, *Malawi-Liverpool-Wellcome Trust Clinical Research Program, Malawi*
Abstract 346

**Gathsaurie Neelika Malavige**, *University of Sri Jayawardenapura, Sri Lanka*
Abstract 101

**Vanessa Moraes**, *Oswaldo Cruz Foundation, Brazil*
Abstract 1226

**Fred Mugabo**, *University of Rwanda, Rwanda*
Abstract 143

**Mary Muhindo**, *Infectious Diseases Research Collaboration, Uganda*
Abstract 388

.

**Peninnah Muiruri**, *Jomo Kenyatta University of Agriculture and Technology/United States Army Medical Research Unit-Kenya*
Abstract 245

**Patrick Mukadi Kakoni**, *Institut National de Recherche Biomedicale, Congo*
Abstract 147

**Julius Mulindwa**, *Makerere University, Uganda*
Abstract 1148

**Gladymar Perez**, *Universidad Central de Venezuela, Venezuela*
Abstract 1125

**Ailie Robinson**, *London School of Hygiene & Tropical Medicine, United Kingdom*
Abstract 628

**Miryam Romano**, *Instituto de Investigaciones en Enfermedades Tropicales, Universidad Nacional de Salta-Argentina*
Abstract 1902

**Marlon Saavedra Romero**, *Asociacion Benefica Prisma, Peru*
Abstract 176

**R. Tedjo Sasmono**, *Eijkman Institute for Molecular Biology, Indonesia*
Abstract 122

**Smriti Sharma**, *Institute of Medical Sciences, India*
Abstract 1904

**Maria Simoes**, *Johns Hopkins University, United States*
Abstract 1414

**David Smith**, *Queen's University Belfast, United Kingdom*
Abstract 1814

**Itziar Ubillos**, *Escriche, ISGlobal, Spain*
Abstract 1320

**Andrew Walakira**, *Infectious Diseases Research Collaboration, Uganda*
Abstract 234

**Tiendrebeogo Wendpayangde**, *University of Copenhagen, Denmark*
Abstract 358

**Kristine Werling,** *Harvard School of Public Health, United States*
Abstract 1828

# ASTMH Travel Awards, Fellowships and Grants (cont.)

## Burroughs Wellcome Fund-ASTMH Postdoctoral Fellowship in Tropical Infectious Diseases

Following are abstract presentations to be made by recipients of the Burroughs Wellcome Fund-ASTMH Postdoctoral Fellowship in Tropical Infectious Diseases:

**Lauren Cohee,** *University of Maryland, United States*
Abstract 15

**Andrew DiNardo,** *Baylor College of Medicine, United States*
Abstract 1895

**Katherine Dobbs,** *Case Western Reserve University, United States*
Abstract 364

**John Openshaw,** *Stanford University, United States*
Abstract 447

## American Committee of Medical Entomology (ACME) Student Travel Awards

*Chair:* Ellen Dotson, *Centers for Disease Control and Prevention, United States*

The ACME travel awards support travel to the Annual Meeting for Master's, doctoral and post-doctoral students whose work involves arthropods of medical importance.

**2016 Recipients**
**Young Investigator Award – Graduate**
Rebecca Love, *University of Notre Dame, United States*

**Young Investigator Award – International**
Allan Muhwezi, *Makerere University, Uganda*

**Young Investigator Award – Post-Doc**
Laura Dickson, *Pasteur Institute, France*

## American Committee of Molecular, Cellular and Immunoparasitology Travel Award for Low and Low-Middle Income (LMIC) Trainees

*Chair:* Julian Rayner, *Wellcome Trust Sanger Institute, United Kingdom*

The ACMCIP student travel award recognizes a student or trainee conducting basic parasitology research who is primarily based in a Low or Low-Middle Income Country (LMIC).

**2016 Recipient**
Emma Harigua Souiai, *Institut Pasteur de Tunis, Tunisia*

## American Committee on Arthropod-Borne Viruses (ACAV) Student/ Post-Doc Travel Awards

*Chair:* Patricia Aguilar, *University of Texas Medical Branch, United States*

The ACAV travel awards support travel to the Annual Meeting for graduate students or postdoctoral fellows who are actively conducting arbovirus research.

**2016 Recipients**
Joseph R. Fauver, *Colorado State University, United States*

Claire Jane Heath, *Stanford University, United States*

Debora Charles Kajeguka, *Kilimanjaro Christian Medical University College, United Republic of Tanzania*

Devika Sirohi, *Purdue University, United States*

James David Weger, Jr., *University of Wisconsin Madison, United States*

## ASTMH Committee on Global Health (ACGH) Student/Post-Doc Travel Awards

*Chair*: Juliette Morgan, *Centers for Disease Control and Prevention, Tbilisi, Georgia*

The ACGH travel award program supports travel to the Annual Meeting for a student or postdoctoral fellow whose research directly promotes the practice of global health.

**2016 Recipients**
Louisa Alexandra Messenger, *London School of Hygiene & Tropical Medicine, United Kingdom*

E. Ross Colgate, *University of Vermont, United States*

# ASTMH Travel Awards, Fellowships and Grants (cont.)

## Young Investigator Awards

ASTMH gratefully accepts support for these awards in honor of William A. Petri, Sr., and in memory of Annie Liberati.

***ASTMH appreciates the donation of these awards from: TECHLAB Inc. •* ACS Infectious Diseases*/ACS Publications The Petri Family • David Lyerly***

*Chair:* Daniel Tisch, *Case Western Reserve University, United States*

Young Investigator Awards are given to young scientists who have completed the majority of work described in their accepted abstracts as undergraduates, graduate students or during the first two years of postdoctoral research. The early career investigators hold a primary role in the reported experimental work, as evidenced by first-author status on their abstracts. 2016 recipients will be determined at the competitive judging event held on Sunday, November 13, during the Annual Meeting. Winners will be announced during the Awards Program at the opening session.

**Congratulations to the 2015 Recipients**
(Selected during ASTMH 64th Annual Meeting, October 2015)
Melanie Abongwa, *Iowa State University, United States*
Brandi Freeman, *Albert Einstein College of Medicine, United States*
Emily Gallichotte, *University of North Carolina at Chapel Hill, United States*
Sarah Short, *Johns Hopkins Bloomberg School of Public Health, United States*
Hugo Valdivia, *Universidade Federal de Minas Gerais, Brazil*

**First-Tier Mention**
Sarah Boudova, *University of Maryland School of Medicine, United States*
Jesse Erasmus, *University of Texas Medical Branch, United States*
Richard Pinapati, *University of Notre Dame, United States*
Brandyce St. Laurent, *National Institutes of Health, United States*
Estela Shabani, *University of Minnesota and Indiana University, United States*

**Honorable Mention**
Albert Jonathan Auguste, *University of Texas Medical Branch, United States*
Jagrati Jain, *University of Mississippi, United States*
Samantha Nava, *University of Texas Medical Branch, United States*
Rahajeng Tunjungputri, *Diponegoro University, The Netherlands*
Andreea Waltmann, *The Walter and Eliza Hall Institute of Medical Research, Australia*

## Elsevier-ASTMH Clinical Research Award

**ASTMH appreciates the support of this award by Elsevier.**

*Chair:* M. Patricia Joyce, *Centers for Disease Control and Prevention, United States*

This award recognizes excellence in clinically oriented research presented by students (within 6 months of completing undergraduate or Master's level training, including medical undergraduate degrees) or those in graduate medical training, of work submitted and presented at the Annual Meeting.

2016 recipients will be determined at the competitive judging event held on Sunday, November 13 during the Annual Meeting. Winners will be announced during the Awards Program at the opening session.

**2015 Recipients** (selected during ASTMH 64th Annual Meeting, October 2015)

**First Place** Rahajeng N. Tunjungputri*, Diponegoro University, The Netherlands*

**Second Place:** Sarah Boudova, *University of Maryland School of Medicine, United States*

**Third Place:** Ross Boyce, *Massachusetts General Hospital, United States*

# ASTMH Travel Awards, Fellowships and Grants (cont.)

## Burroughs Wellcome Fund – ASTMH Postdoctoral Fellowship in Tropical Infectious Diseases ($65,000)

**ASTMH is grateful for the continuing commitment from the Burroughs Wellcome Fund.**

*Co-Chairs:* Terrie Taylor, *Michigan State University, United States;* Joseph Tucker, *UNC China Project, China*

This fellowship encourages long-term career development in tropical infectious diseases by providing support to individuals who will pursue careers focused on clinical research in tropical or developing areas of the world.

**2015 Recipients**

Lauren Cohee, *University of Maryland, United States*

Heidi Hillesland, *University of Washington, United States*

Matthew Kelly, *Duke University Medical Center, United States*

**#TropMed16**
**#IamTropMed**

## Benjamin H. Kean Travel Fellowship in Tropical Medicine

*Chair:* Chandy John, *Indiana University, United States*

Named after renowned educator, physician and researcher Benjamin H. Kean (1912-1993), this fellowship provides travel support to medical students who arrange clinical tropical medicine or tropical medicine research electives overseas.

**2016 Recipients**

Meagan Barry, *Baylor College of Medicine, United States*
Michael Clark, *University of Notre Dame, United States*
Elizabeth Dupont, *Albert Einstein College of Medicine, United States*
Jessica Eby, *University of Pennsylvania, United States*
Zachary Enumah, *Johns Hopkins University, United States*
Max Feinstein, *Case Western Reserve University, United States*
Michael Harper, *University of Colorado, United States*
Adam Kley, *University of Texas Medical Branch, United States*
Christine Kley, *University of Texas Medical Branch, United States*
Vinay Krupadev, *Northeast Ohio Medical University, United States*
Daniel Liauw, *University of North Carolina at Chapel Hill, United States*
Andrew Mullin, *Wake Forest University, United States*
Ryan Nightingale, *SUNY Upstate Medical University, United States*
Brady Page, *Tulane University, United States*
Anthony Puthumana, *SUNY Upstate Medical University, United States*
Kristi Ray, *Nova Southeastern University College of Osteopathic Medicine, United States*
David Allen Roberts, *University of Washington, United States*
Katherine Ryken, *University of Iowa, United States*
Gurmeet Sohi, *University of Manitoba, Canada*
Brenna Stanczyk, *University of North Carolina, United States*
Tiange (Philip) Zhang, *Loyola University Chicago, United States*

# ASTMH Travel Awards, Fellowships and Grants (cont.)

## Centennial Travel Award in Basic Science Tropical Disease Research ($25,000)

*Chair:* Joseph Vinetz*, University of California San Diego, United States*

This award provides support to individuals with doctoral-level degrees who travel to laboratories in the tropics to perform molecular, cellular or immunological studies of tropical infectious diseases.

**2016 Recipient**

Heather Glasgow, *Albert Einstein College of Medicine, United States*

## Robert E. Shope International Fellowship in Infectious Diseases ($25,000)

*Chair:* Ann Powers, *Centers for Disease Control and Prevention, United States*

Named for ASTMH past president Robert E. Shope (1929-2004), one of the world's foremost authorities on insectborne viruses, this fellowship provides support for travel, living expenses and research for doctoral-level scientists working in laboratories overseas on studies pertaining to arbovirology and/or emerging tropical infectious diseases.

**2016 Recipient**

Kayla Barnes, *Liverpool School of Tropical Medicine, United Kingdom*

## American Committee of Medical Entomology (ACME) Breakthroughs in Medical Entomology Award

*Chair:* Lyric Bartholomay, *University of Wisconsin Madison, United States*

This award recognizes outstanding recent contributions (within the past 5 years) to the study and/or practice of medical entomology that ultimately will contribute to reducing the burden of human diseases transmitted by arthropods. This award is designed to encourage and acknowledge significant advances in the field by investigators at any career stage.

**2016 Recipient**

Serap Aksoy, *Yale University School of Medicine, United States*

## American Committee of Molecular Cellular and Immunoparasitology (ACMCIP) Award for Advanced Training

*Chair:* Julian Rayner, *Wellcome Trust Sanger Institute, United Kingdom*

This award supports travel expenses for trainees to attend practical training courses in the fields of molecular, cellular or immunoparasitology. Trainees can use the award to attend any post-graduate level training course of at least one day in duration to explore new parasitological systems, gain hands-on skills in working with parasites and their hosts, and obtain advanced knowledge in cutting-edge research topics and technologies.

**2016 Recipient**

Vanessa Moraes, *Oswaldo Cruz Foundation, Brazil*

# Program Information

## Elsevier-ASTMH Clinical Research Award Competition

***Marriott – Room A706 (Atrium Level)***
**Sunday, November 13, Noon – 3:30 p.m.**

This award recognizes excellence in clinically oriented research presented by students (within 6 months of completing undergraduate or Master's level training, including medical undergraduate degrees) or those in graduate medical training, of work submitted and presented at the Annual Meeting. Support these young scientists by attending their presentations during this session. View the session schedule on page 83.

## Young Investigator Award Competition

***Marriott – Rooms A701, A703, A704, A707, A708 (Atrium Level)***
**Sunday, November 13, 10 a.m. – 3 p.m.**

The Young Investigator Award is presented to outstanding young researchers during the Annual Meeting. This award encourages developing young scientists to pursue careers in various aspects of tropical disease research. Support these young scientists by attending their presentations during this session. View the session schedule on page 75.

## Late-Breaker Abstracts

These sessions feature brief presentations of important new data obtained after the closing date for abstract submission. The schedule for oral Late-Breaker Abstract sessions appears below. Late-Breaker poster presentations will take place during the poster sessions on Monday, Tuesday and Wednesday. A schedule of Late-Breaker Abstract presentations can be found in your registration packet.

## Inaugural Alan J. Magill Malaria Eradication Symposium (Symposium 48)

***Marriott - Atrium A***
**Monday, November 14, 4 p.m. - 5:45 p.m.**
***Supported with funding from the Bill & Melinda Gates Foundation***

*Alan J. Magill*

To honor the life and work of ASTMH Past President Alan Magill, who at the time of his untimely death in 2015 was promoting the bold goal of global malaria eradication as the Malaria Director at the Bill & Melinda Gates Foundation, a symposium on malaria eradication will be held each year during the Annual Meeting.

This inaugural symposium will include a historical review of lessons from previous malaria eradication campaigns, cutting-edge science that may transform malaria eradication strategies, the latest results of applications of molecular and immunological tools to understand malaria transmission, and challenges and progress in the development of a Single Encounter Radical Cure and Prophylaxis (SERCaP) drug for malaria eradication. These talks will be followed by a panel discussion of prospects of and progress toward malaria eradication during which diverse viewpoints will be solicited from the panelists and audience.

## Meet the Professors Sessions

Although open to all meeting attendees, students and trainees are especially encouraged to attend the Meet the Professors sessions. The speaker will present a clinical case of a tropical disease specific to a particular region that they have found challenging to manage or diagnose.

## ACMCIP Abstracts

Throughout this book, you will notice that some abstracts are followed by the notation "(ACMCIP abstract)." This notation means the abstract content pertains to molecular, cellular or immunoparasitology. ACMCIP refers to the American Committee of Molecular, Cellular and Immunoparasitology, an ASTMH subgroup. For more information, go to astmh.org/subgroups/acmcip.

# Program Information

## Calling All Early- and Mid-Career Attendees

Are you a trainee or otherwise fairly new to research, global public health or clinical tropical medicine? The following sessions are designed to help build fundamental skills and perspectives for a successful start to your career. Mark your planner on the ASTMH Annual Meeting app and learn from experienced members of the various ASTMH professional communities.

**Symposium 49**
Global Health Education, Service and Research Opportunities for Medical Students and Trainees: Successes, Challenges and Opportunities
Monday, November 14, 4 p.m. – 5:45 p.m.
***Marriott – Atrium B***

**Symposium 60**
ACGH Symposium I: Building a Successful Career in Global Health: Global Health Leaders from Around the Globe Share their Experiences
Tuesday, November 15, 8 a.m. – 9:45 a.m.
***Marriott – Atrium A***

**Symposium 73**
ACGH Symposium II: Building a Successful Career in Global Health: An Interactive Session with Global Health Experts
Tuesday, November 15, 10:15 a.m. – Noon
***Marriott - Atrium A***

## Events for Students, Trainees, Fellows, Residents and Junior Faculty

**Refreshments served*

### The TropStop — Student/Trainee Lounge
***Marriott – Atrium Loft (Atrium Level)***

This casual setting, designed with students, trainees and residents in mind (free coffee and free internet), is your place for a break from the fast-pace of the meeting and to relax with colleagues and friends. Back again this year, check out the "Office Hours," held in the TropStop. This will be your opportunity to meet up-and-coming professionals in the fields of tropical medicine, global health, science and industry who will share their personal career paths and answer your questions about the various bumps and forks in the road.

### TropStop Office Hours – *Faculty Available*
Monday, November 14, 10 – 11 a.m.
Tuesday, November 15, 10 – 11 a.m.
Wednesday, November 16, 10 – 11 a.m.

## Point of Entry: First-Time Attendee Orientation

**Sunday, November 13**
**2:30 p.m. – 3:30 p.m.**
*Marriott — Atrium B*

Are you new to the ASTMH Annual Meeting and want to get the lay of the land? Don't miss our Point of Entry session on Sunday afternoon. ASTMH staff will orient new attendees to the schedule, session structure and highlights of the Annual Meeting. Meet others attending the meeting for the first time and expand your professional network while learning the ins and outs of where to go and what to attend.

### Young Investigator Award Competition
Sunday, November 13, 10 a.m. – 3 p.m.
***Marriott – Rooms A701, A703, A704, A707, A708 (Atrium Level)***

### Elsevier-ASTMH Clinical Research Award Competition
Sunday, November 13, Noon – 3:30 p.m.
***Marriott – Room A706 (Atrium Level)***

### Student Reception
Sunday, November 13, 4 p.m. – 5 p.m.
***Marriott – Skyline (10th Floor)***

The ASTMH Council invites all students, postdoctoral fellows and residents to the student reception. This reception is an opportunity to meet fellow trainees, network with colleagues and mentors and engage in conversation with Society leaders.

**Meet the Professors 29**
**Meet the Professors A**
Monday, November 14, 12:15 p.m. - 1:30 p.m.
***Marriott – Room M103/M104/M105 (Marquis Level)***

**Meet the Professors 81**
**Meet the Professors B**
Tuesday, November 15, 12:15 p.m. - 1:30 p.m.
***Marriott – Room M103/M104/M105 (Marquis Level)***

**Meet the Professors 133**
**Meet the Professors C**
Wednesday, November 16, 12:15 p.m. - 1:30 p.m.
***Marriott – Room M103/M104/M105 (Marquis Level)***

# Onsite Meeting Information

## Poster Sessions

***Hilton – Grand Ballroom and Grand Salon (Second Floor)***
Three poster sessions will be held in the Grand Ballroom and Grand Salon of the Hilton. During these sessions, presenters will be available at their posters for discussion. There are additional times for poster viewing (presenters need not be in attendance during these time periods). We encourage attendees to visit the Poster Hall throughout the day.

**Poster Session Schedule**
**Poster Session A**
**Monday, November 14**

| | |
|---|---|
| Setup | 9:45 a.m. – 10:15 a.m. |
| Viewing | 10:15 a.m. – 7 p.m. |
| Presentations/Light Lunch | Noon – 1:45 p.m. |
| Dismantle | 7 p.m. – 8 p.m. |

**Poster Session B**
**Tuesday, November 15**

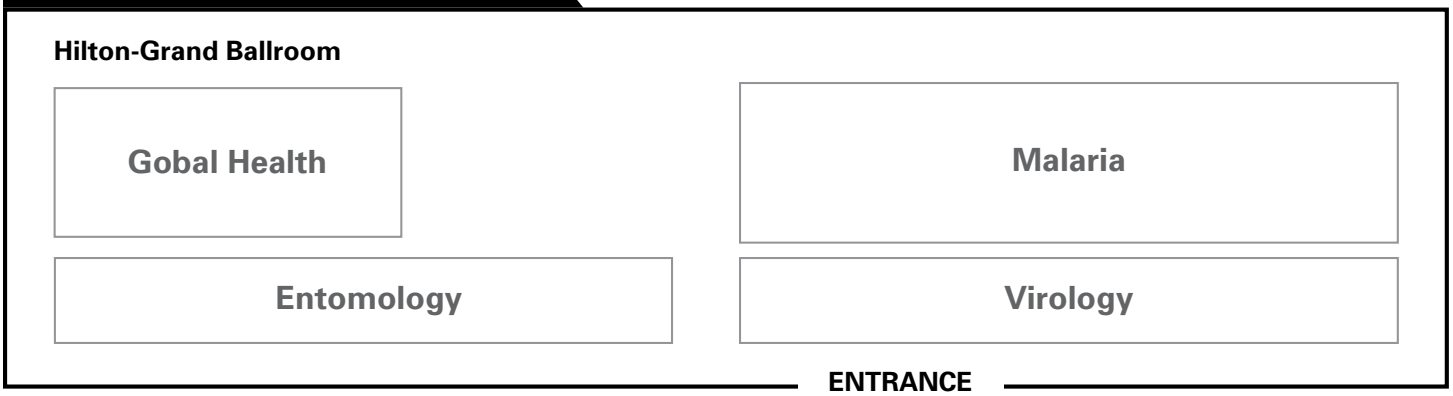
| | |
|---|---|
| Setup | 9:45 a.m. – 10:15 a.m. |
| Viewing | 10:15 a.m. – 7 p.m. |
| Presentations/Light Lunch | Noon – 1:45 p.m. |
| Dismantle | 7 p.m. – 8 p.m. |

**Poster Session C**
**Wednesday, November 16**

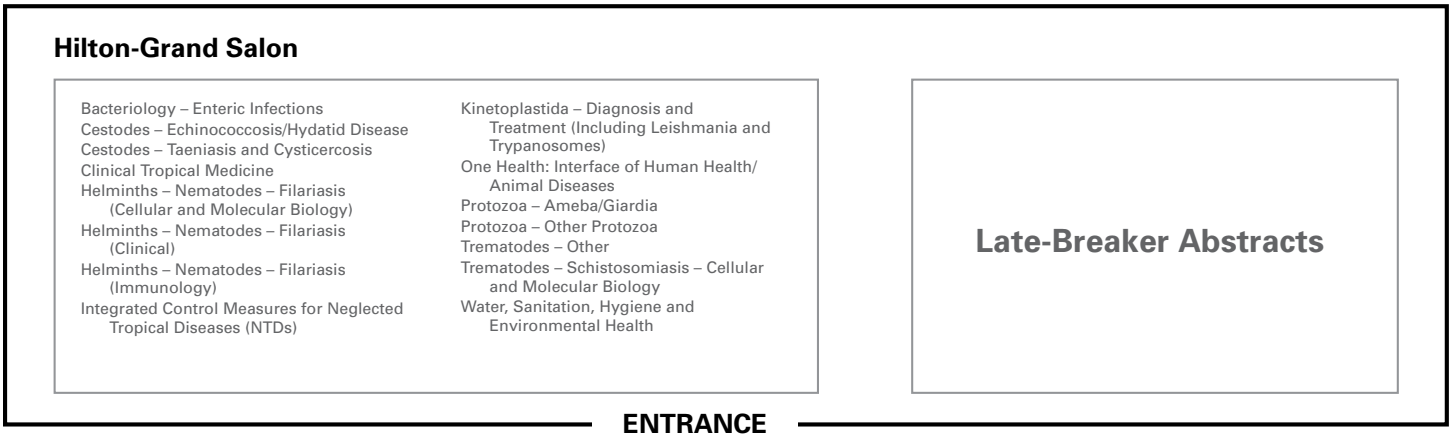
| | |
|---|---|
| Setup | 9:45 a.m. – 10:15 a.m. |
| Viewing | 10:15 a.m. – 7 p.m. |
| Presentations/Light Lunch | Noon – 1:45 p.m. |
| Dismantle | 7 p.m. – 8 p.m. |

## POSTER SESSION A

**Hilton-Grand Ballroom**




**Hilton-Grand Salon**



# Program Information

## POSTER SESSION B

**Hilton-Grand Ballroom**

Gobal Health

Malaria

Entomology

Virology

**ENTRANCE**

**Hilton-Grand Salon**

Bacteriology – Enteric Infections
Bacteriology – Other Bacterial Infections
Clinical Tropical Medicine
Helminths – Nematodes – Filariasis (Epidemiology)
Helminths – Nematodes – Filariasis (Other)
Helminths – Nematodes – Intestinal Nematodes
HIV and Tropical Co-Infections
Kinetoplastida – Epidemiology (Including Leishmania and Trypanosomes)
Pneumonia, Respiratory Infections and Tuberculosis
Trematodes – Schistosomiasis – Epidemiology, Diagnosis and Treatment
Water, Sanitation, Hygiene and Environmental Health

Late-Breaker Abstracts

**ENTRANCE**

## POSTER SESSION C

**Hilton-Grand Ballroom**

Gobal Health

Malaria

Entomology

Virology

**ENTRANCE**

**Hilton-Grand Salon**

Bacteriology – Enteric Infections
Bacteriology – Systemic Infections
Bacteriology – Trachoma
Clinical Tropical Medicine
Helminths – Nematodes – Intestinal Nematodes
HIV and Tropical Co-Infections
Kinetoplastida – Cellular and Molecular Biology (Including Leishmania and Trypanosomes)
Kinetoplastida – Immunology (Including Leishmania and Trypanosomes)
Pneumonia, Respiratory Infections and Tuberculosis
Trematodes – Schistosomiasis – Epidemiology, Diagnosis and Treatment
Trematodes – Schistosomiasis – Immunology
Water, Sanitation, Hygiene and Environmental Health

Late-Breaker Abstracts

**ENTRANCE**

## Social Media at the 65th Annual Meeting

Follow the 65th Annual Meeting on ASTMH social media channels. Visit astmh.org where you can access all social media outlets as follows:

Subscribe to the ASTMH Facebook page for updates from the Annual Meeting and for relevant content year round.

Follow @ASTMH. During the conference, you will be able to follow what your colleagues are saying by using the **#TropMed16** and **#IamTropMed** hashtags.

Enjoy classic interviews of pioneers in the field, such as William Reeves, Calista and Ottis Causey, Thomas Weller and Jordi Casals.

## ASTMH Twitter Board

***Sponsored by Takeda Pharmaceuticals International AG***

If you're tweeting during the meeting, be sure to add the hashtag **#TropMed16** to your tweets so that your message gets through to other attendees or those following the meeting exclusively on Twitter. Using the hashtag is a great way to connect with your fellow tweeps, pick up new followers or, for exhibitors, drive traffic to your booth.


## Miss a Session?

**All Registrants Receive a Webcast Library**

Can't figure out how to be in two places at once? Problem solved! All registrants will receive access to audio recordings and slides of select sessions immediately after the Annual Meeting.

Please note that the entire content of the Annual Meeting will not be available.

# Onsite: What, When, Where

## Registration

***Marriott – Marquis Foyer***

### Pre-Meeting Course Registration Hours

Saturday, November 12 . . . . . .10 a.m. – 2 p.m.

### Annual Meeting Registration Hours

Sunday, November 13 . . . . . .7 a.m. – 6 p.m.
Monday, November 14. . . . . .7 a.m. – 5 p.m.
Tuesday, November 15. . . . . .7 a.m. – 5 p.m.
Wednesday, November 16. . . . . .7 a.m. – 5 p.m.
Thursday, November 17 . . . . . .7 a.m. – 10:30 a.m.

### The following food functions are included in the registration fee:

- Opening reception (Sunday)
- Poster session lunches (Monday, Tuesday, Wednesday)
- Coffee breaks

### Badges/Meeting Access

Participation in the Annual Meeting is limited to registered attendees. An official badge is required for admission to all sessions, social activities and exhibit area. Do not place a business card into your badgeholder as identification. If there is an error on a badge, please have it corrected at the registration desk.

### Spouse/Guest Registration

*(Only for those outside the tropical medicine and global health field.)*
Spouse/guest registration includes admission to the opening reception on Sunday and admission to the exhibit hall, plenary sessions, poster sessions and food functions only.

## Hotel

The Atlanta Marriott Marquis and the Hilton Atlanta are the sites for all Annual Meeting activities. They are connected by a covered bridge from the Marquis level of the Marriott to the second floor of the Hilton.

**Atlanta Marriott Marquis**
265 Peachtree Center Avenue
Atlanta, GA 30303 USA
Phone +1-404-521-0000
Fax +1-404-586-6299
**Valet parking fee:** $35 USD daily

**Hilton Atlanta**
255 Courtland Street, N.E.
Atlanta, GA 30303 USA
Phone +1-404-659-2000
Fax +1-404-221-6368
**Valet parking fee:** $36 USD daily

### Messages and Emergency Calls

A message board will be available in the ASTMH registration area on the Marquis level of the Marriott. Check the message board often to retrieve your messages. Phone calls should be directed to +1-404-521-0000, the main switchboard of the Marriott. Callers should ask to be connected to the ASTMH registration desk. Faxes can be sent to the hotel at +1-404-586-6299.

### Americans with Disabilities Act (ADA)

ASTMH fully complies with the legal requirements of the ADA and the rules and regulations thereof.

### Camera/Recording Restrictions and Unauthorized Photography

Only registered members of the media and attendees who receive prior approval from ASTMH staff may take cameras into the exhibit hall or use recording devices during sessions. Still and video photography, including photography using mobile phones, is strictly prohibited in educational sessions. Attendees found to be using cameras in educational sessions without permission will be asked to leave the conference and will not be issued a refund.

### Impromptu Meeting Rooms for Attendees

Rooms 206 and 207 on the second floor of the Hilton are designated for committee meetings and other group meetings. Meeting room reservations are available on a first-come, first-served basis. Use the sign-up sheet located outside the room to reserve meeting time for your group.

### Solicitations

Sales and promotional activities are restricted to exhibitors and must take place in their assigned exhibit area. Solicitations by unauthorized persons are strictly prohibited.

### Press Room

***Marriott – Room M102 (Marquis Level)***
The press room is available for professional journalists reporting on the conference. ASTMH media kits are available. Media announcements and other details can be found in the press room.
Press room hours of operation are:
Sunday, November 13 . . . . . Noon – 5:30 p.m.
Monday, November 14 . . . . . 7:45 a.m. – 5 p.m.
Tuesday, November 15 . . . . . 8 a.m. – 5 p.m.
Wednesday, November 16 . . . . . 8 a.m. – 5 p.m.

### Exhibits

***Marriott – International Hall***
The Annual Meeting features an exposition of displays by leading suppliers and vendors. A complete exhibitor and supporter directory starts on page 58.

# Onsite: What, When, Where

### Exhibit Hours

| | |
|---|---|
| Sunday, November 13 | 7 p.m. – 9:30 p.m. |
| Monday, November 14 | 9:30 a.m. – 10:30 a.m.<br>Noon – 1:45 p.m.<br>3:15 p.m. – 4:15 p.m. |
| Tuesday, November 15 | 9:30 a.m. – 10:30 a.m.<br>Noon – 1:45 p.m.<br>3:15 p.m. – 4:15 p.m. |
| Wednesday, November 16 | 9:30 a.m. – 10:30 a.m.<br>Noon – 2:30 p.m. |

### ASTMH Subgroup Information Tables

***Marriott – International Hall***

Visit the information tables in the ASTMH exhibit hall to learn about programs and activities for these subgroups:

- American Committee of Medical Entomology (ACME)
- American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP)
- American Committee on Arthropod-Borne Viruses (ACAV)
- American Committee on Clinical Tropical Medicine and Travelers' Health (ACCTMTH – Clinical Group)
- ASTMH Committee on Global Health (ACGH)

### Internet Nook — FREE Online Access

***Marriott – Imperial Foyer***

***Sponsored by Takeda Pharmaceuticals International AG***

Visit the Internet Nook in the Imperial Foyer on the Marquis level of the Marriott. As a courtesy to other attendees, please limit your computer use to 10 minutes per visit.

### Career Development Employment Opportunities

Bulletin boards for posting employment opportunities are available in the registration area.

### Career Center

Our online Career Center, available at astmh.org, features a wide range of available positions in the tropical medicine and hygiene field. Members can post resumes anonymously and search for jobs by keyword, location and job type. Employers can set up an account, post open positions on the ASTMH website and search the ASTMH resume bank for qualified applicants.

### Continuing Education Credit

**Continuing Medical Education (CME) Accreditation**

ASTMH is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

ASTMH designates this live activity for a maximum of 32.25 *AMA PRA Category 1 Credits™.* Physicians should claim only the credit commensurate with the extent of their participation in the activity.

### Register for CME Credit

The CME documentation fee is $150. CME certificates will be mailed in early January 2017. Visit the ASTMH Internet Nook on the Marquis level of the Marriott and complete your online CME Attendance and Evaluation Form while at the meeting or access the evaluation form at astmh.org/annual-meeting.

### Physician Assistant Continuing Education Credit

AAPA accepts certificates of participation for educational activities certified for *AMA PRA Category 1 Credit™* from organizations accredited by ACCME or a recognized state medical society. Physician Assistants may receive a maximum of 32.25 *AMA PRA Category 1 Credits™* for completing this program. Register for CME credit ($150) at the ASTMH registration desk and submit an evaluation following the conference at astmh.org/annual-meeting.

### Veterinarian Continuing Education Credit

To better serve the continuing education needs of the full range of disciplines participating in the Annual Meeting, ASTMH offers accredited CE sessions for veterinarians. The Society's application is reviewed by the determining body, the American Association of Veterinary State Boards RACE Committee. Anticipating approval, ASTMH is typically notified just prior to the start of the Annual Meeting. Visit the onsite registration desk for a veterinarian continuing education evaluation form. This form will indicate the specific sessions that qualify for veterinary CE credits. Pay the $150 documentation fee at the registration desk. Complete and return the evaluation form either to the registration desk by Thursday, November 17 at 10:30 a.m. or send the form to the ASTMH office following the meeting. A continuing education certificate will be sent by postal mail in January 2017.

### Full Disclosure Policy Affecting CME Activities

Consistent with ASTMH policy, faculty are required to disclose any economic or other personal interests that create, or may be perceived as creating, a conflict of interest related to the material discussed. ASTMH has policies in place to resolve all conflicts of interest. Faculty are required to disclose at the beginning of their presentation(s) any relevant financial relationships, as well as any product or drug mentioned during the presentation that is not labeled for the use under discussion or is still investigational. This policy is intended to allow attendees to form their own judgments about such material.

## Disclaimer

ASTMH is not responsible for the opinions expressed by speakers or the content of speaker slides and handout materials.

## Information for Speakers: Speaker Ready Room and Audiovisual Guidelines

***Marriott – International A***

**Hours**

Sunday, November 13 . . . . . Noon – 6 p.m.
Monday, November 14 . . . . . 7 a.m. – 5 p.m.
Tuesday, November 15 . . . . . 7 a.m. – 5 p.m.
Wednesday, November 16 . . . . . 7 a.m. – 5 p.m.
Thursday, November 17 . . . . . 7 a.m. – 10:30 a.m.

**Important: Widescreen Format for Slide Presentations! The slide presentation format is widescreen HD format (16:9 aspect ratio).**
Audio-visual staff will be available in the Speaker Ready Room to answer questions about the slide presentation format or to assist in converting presentations to the widescreen HD format. Please note that slide presentations using the 4:3 aspect ratio will display correctly, but black frames will appear on the sides of the screen when presented.

**Important Things to Remember**

- The slide presentation format is widescreen HD format (16:9 aspect ratio)
- Slide presentations using the 4:3 aspect ratio will display correctly, but black frames will appear on the sides of the screen when presented
- Save your presentation as a Microsoft PowerPoint file in a format that is compatible with PowerPoint 2013 or as an Adobe PDF file
- Save your file in a PPTX format for both Macintosh and PC
- All meeting rooms will be equipped with one Windows 7 computer and PowerPoint 2013 software

Load your presentation in the Speaker Ready Room 24 hours prior to your session. If you are unable to do so, visit the Speaker Ready Room as early as possible on the morning of your presentation. Speakers can begin accessing the Speaker Ready Rooms on Sunday, November 13 at noon.

**Slide Presentation Format Guidelines**

- Save your presentation as a Microsoft PowerPoint file in a format that is compatible with PowerPoint 2013 or as an Adobe PDF file.
- Macintosh and PC versions of PowerPoint, Canvas and Keynote allow you to save presentations in a variety of formats that meet these specifications. Please save your file in a PPTX format for both Macintosh and PC.
- Test your presentation on a Windows machine running Windows 7 to ensure your presentation runs properly.
- For Macintosh PowerPoint users, insert pictures using "insert" —"picture" — "from file," rather than copying and pasting, to ensure they will display properly on a Windows PC.

All meeting rooms will be equipped with one Windows 7 computer and PowerPoint 2013 software, screen, LCD projector display device, microphone and laser pointer. You will not be permitted to connect your own computer to the LCD projector. Your presentation will be run from the AV technician's PC-based computer. Therefore, you should arrive at the Speaker Ready Room in advance of your session, with your presentation saved to a USB storage device (USB flash drive.

**Embedded Videos**

If your presentation includes video, it is imperative that you visit the Speaker Ready Room in advance of your presentation to ensure compatibility with meeting equipment. It is best to use a "wmv," "avi" or "Mpg" or "MP4" format for embedded video, not QuickTime "mov." Do not use Sorenson compression on avi files from Mac computers. You must upload your video files, as well as your PowerPoint file, for the videos to play.

**Saving Your Presentation File for Onsite Submission in Speaker Ready Room**

- Save your file(s) to a USB storage device (USB Flash Drive).
- When building your presentation, all files (PowerPoint and external fonts) associated with your presentation must reside in one folder/location.
- When creating your media for transfer, copy the entire folder to the portable disk.
- To ensure success of your presentation, create a backup copy of your presentation on a separate portable disk.
- If you are speaking in more than one session, you must organize and clearly label your presentations in separate folders.
- Do not put more than one presenter's files on the same flash drive. Each presenter must have his or her own media.
- We recommend that you scan your USB Flash Drive or USB portable devices with your computer's antivirus software. This procedure is the best precaution against spreading any hidden viruses or malware to other computers. Viruses can often cause presentations to run poorly or not at all, as well as affect the performance of the computers provided for the meeting.

# Sponsored Symposia

## Applying Experience from the Management of Infectious Diseases to Address the Rise of Chronic Illness in the Developing World

***Sponsored by Novartis Social Business***
*Marriott - Imperial A*
*Monday, November 14, 2016 7:15 p.m. – 9 p.m.*

Novartis has a wealth of experience in tackling infectious diseases through the Malaria Initiative business and is also leading in operational innovation in social business models to target non-communicable diseases (NCDs) with the launch of the Novartis Access business for NCD medicines in low-income countries. This session is intended to cover themes of Access to Medicines by applying learnings from Malaria to the rising tide of NCDs. The panelists will discuss how the progress in the fight against Malaria contributes to higher life expectancy and the rise of NCDs, the policy and operational implications of addressing the dual burden of diseases, how learning from impact measurement from infectious diseases can inform M&E for future Access initiatives for chronic diseases, and what is the vision to lead the pharmaceutical industry in Sustainable Development Goals era.

CHAIR

Richard G. Marlink
*Director, Rutgers Global Health Institute, Founding Henry Rutgers Professor of Global Health, Rutgers Biomedical Health Sciences (RBHS), New Brunswick, NJ, United States*

**PROGRESS IN MALARIA CONTROL AND ELIMINATION AND THE RISE OF NON-COMMUNICABLE DISEASES**

Charles Nelson
*Chief Executive, Malaria Consortium, London, United Kingdom*

**EVALUATING THE IMPACT OF ACCESS TO MEDICINES PROGRAMS**

Peter Rockers
*Assistant Professor, Global Health, Boston University School of Public Health, Boston, MA, United States*

**MINISTRY OF HEALTH PERSPECTIVE ON POLICY AND OPERATIONAL IMPLICATIONS WHEN ADDRESSING DUAL DISEASE BURDEN**

Marie Aimee Muhimpundu
*Medical Epidemiologist, NCD Unit, Rwanda Biomedical Centre, Kigali, Rwanda*

**THE NOVARTIS VISION TO LEAD THE PHARMACEUTICAL INDUSTRY IN THE SUSTAINABLE DEVELOPMENT GOALS ERA**

Harald Nusser
*Global Head, Novartis Malaria Initiative and Novartis Access, Basel, Switzerland*

**Q&A SESSION**

Moderated by Richard G. Marlink
*Director, Rutgers Global Health Institute, Founding Henry Rutgers Professor of Global Health, Rutgers Biomedical Health Sciences (RBHS), New Brunswick, NJ, United States*

## Malaria. Faster and More Accurate Diagnosis is Vital in the Fight for Eradication

***Sponsored by Meridian Bioscience, Inc.***
*Marriott - Marquis D*
*Monday, November 14, 2016 7:15 p.m. – 9 p.m.*

An overview from two key experts on the challenges and advances for diagnosing Malaria in two different settings: pre-elimination areas in developing countries and imported Malaria to developed countries. In Sub-Sahara Africa, the sub-microscopic malaria is not just for the carrier but also for the community they live in. Adults with malaria may express low/delayed symptoms that might be transmitted to the youngest in the community. This ongoing threat of submicroscopic infection calls for additional diagnostic tools needed to track the malaria reservoir. On the other hand, European cities like London, Paris and Rome are seeing malaria increase as migration rises, and the magnitude of the problem is thought to be much greater than the statistics indicate.

CHAIR

Daouda Ndiaye, PharmD, PhD
*Professor of Parasitology and Mycology, University Cheikh Anta Diop, Dakar, Senegal*

Carlo Severini
*Senior Researcher, Department of Infectious, Parasitic and Immunomediated Diseases, Istituto Superiore di Sanità, Rome, Italy*

**DIAGNOSING MALARIA RESERVOIR IN PRE-ELIMINATION REGIONS**

Daouda Ndiaye, PharmD, PhD
*Professor of Parasitology and Mycology, University Cheikh Anta Diop, Dakar, Senegal*

**IMPORTED MALARIA IN EUROPE: CURRENT SITUATION AND FUTURE PROSPECTIVE**

Carlo Severini
*Senior Researcher, Department of Infectious, Parasitic and Immunomediated Diseases, Istituto Superiore di Sanità, Rome, Italy*

# ASTMH is at Work All Year Round!

### Diploma Courses in Clinical Tropical Medicine and Travelers' Health

The Society advocates and facilitates the development of new training programs in clinical tropical medicine and travelers' health and has established a mechanism for accrediting them. These courses, known as Diploma Courses, may vary considerably in format and even in broad objectives, but to be accredited by the Society they cover the topic matter included on the Certificate Exam and have an expectation of conferring on the examinee a certain degree of competence in the key subjects. Most confer a Diploma in Clinical Tropical Medicine and Travelers' Health; some confer a different diploma or degree in which the same expectations are included.

### Update Course in Clinical Tropical Medicine and Travelers' Health

This two-day condensed course provides a broad overview of core topics in clinical tropical medicine and travelers' health. It is designed for all healthcare providers working in tropical medicine or travelers' health and for those planning to take the ASTMH Certificate Examination (CTropMed®).

### 2017 Update Course in Clinical Tropical Medicine and Travelers' Health

**In Collaboration with the North American Refugee Health Conference**
**June 14-15, 2017**
*Sheraton Centre Toronto*
*Toronto, Ontario, Canada*

JUNE 2017
14-15

### CTropMed® — Certificate of Knowledge in Clinical Tropical Medicine and Travelers' Health

Fostering professional development in the fields of clinical tropical medicine and travelers' health is one of the Society's highest priorities. To that end, ASTMH developed the Certificate of Knowledge in Clinical Tropical Medicine and Travelers' Health (CTropMed®) as a means to distinguish individuals who have demonstrated advanced knowledge and experience in clinical tropical medicine and travelers' health. The CTropMed® is conferred on licensed medical professionals who 1) have passed an ASTMH-accredited diploma course or have extensive professional experience in clinical tropical medicine, 2) have experience in a clinical setting in the tropics, and 3) have passed the ASTMH Examination in Clinical Tropical Medicine and Travelers' Health.

### Save the Date for the 2018 CTropMed®!

The next CTropMed® Exam open for registration will be held on Saturday, October 27, 2018, in conjunction with the ASTMH 67th Annual Meeting, October 28 – November 1, 2018, Sheraton New Orleans, New Orleans, LA.

OCTOBER 2018
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### Fellow of ASTMH (FASTMH)

Fellow member status (also known as Fellowship) in the Society is an honor recognizing sustained professional excellence in any phase of tropical medicine, hygiene, global health and related disciplines.

### Membership Directory

This resource, available exclusively to ASTMH members, puts thousands of experts in tropical medicine and global health at your fingertips. The directory provides member listings in alphabetical order and by geographic location to ease the search for colleagues around the world.

### *The American Journal of Tropical Medicine and Hygiene*

The *American Journal of Tropical Medicine and Hygiene*, the leading international journal in tropical medicine, is a peer-reviewed journal published on a monthly basis. Content includes original scientific articles and cutting-edge science covering new research with an emphasis on laboratory science and the application of technology in the fields of tropical medicine, parasitology, immunology, infectious diseases, epidemiology, basic and molecular biology, virology and international medicine. The *Journal* publishes unsolicited peer-reviewed manuscripts, invited review articles, short reports, case studies, reports on the efficacy of new drugs and methods of treatment, prevention and control methodologies, new testing methods and equipment, book reports and letters to the Editor. Topics range from applied epidemiology in such relevant areas as AIDS to the molecular biology of vaccine development.

### MARK YOUR CALENDAR
### World Malaria Day 2017
**April 25, 2017**

APRIL 2017
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World Malaria Day is observed each year on April 25 to give countries in affected regions a chance to learn from each other's experiences and support one another's efforts in the fight against malaria; to enable new donors to join in a global partnership against malaria, and for research and academic institutions to reveal scientific advances to the public; and to give international partners, companies and foundations a chance to showcase their efforts and reflect on how to scale up what has worked.

# Session Topic Guide

## General Interest/Multidisciplinary

### Sunday

**Plenary Session 1: Plenary Session I:** Keynote Address and Awards Program

### Monday

**Poster Session 26: Poster Session A:** Presentations and Light Lunch

**Plenary Session 52:** Plenary Session II: Charles Franklin Craig Lecture

### Tuesday

**Poster Session 79: Poster Session B:** Presentations and Light Lunch

**Symposium 90:** The Washington, DC Primer: Advocating for R&D Funding – The Who, What, Where, Why and How

**Plenary Session 104: Plenary Session III:** Commemorative Fund Lecture

### Wednesday

**Poster Session 131: Poster Session C:** Presentations and Light Lunch

**Plenary Session 158: Plenary Session IV:** President's Address and Annual Business Meeting

## Clinical Tropical Medicine

### Monday

**Symposium 18:** Refugee Health: Clinical Case Studies

**Scientific Session 21:** Clinical Tropical Medicine I

**Late Breaker Abstract Session 27:** Late Breakers in Clinical Tropical Medicine and Global Health

**Meet the Professors 29: Meet the Professors A:** Enigmatic and Teaching Cases

**Symposium 44:** Next-Generation Sequencing Technologies to Advance Global Infectious Disease Research

### Tuesday

**Scientific Session 61:** Clinical Tropical Medicine II

**Meet the Professors 81: Meet the Professors B:** Enigmatic and Teaching Cases

**Symposium 89:** Clinical Group Symposium I (American Committee on Clinical Tropical Medicine and Travelers' Health - ACCTMTH)

**Symposium 101:** Clinical Group Symposium II (American Committee on Clinical Tropical Medicine and Travelers' Health - ACCTMTH)

### Wednesday

**Symposium 114:** Febrile Illness - Epidemiology, Diagnostics, Management

**Symposium 120:** Brain-Eating *Amoebae*: Shining Light on the Most Neglected Tropical Diseases

**Symposium 126:** State of the Art in Controlled Human Infection Models for Tropical Diseases

**Meet the Professors 133: Meet the Professors C:** Enigmatic and Teaching Cases

**Symposium 153:** An Integrated Approach to Tropical Dermatology

### Thursday

**Symposium 165:** Clinical Update - What's New in Literature?

## Diarrhea and Bacterial Illness

### Monday

**Scientific Session 3:** Bacteriology: Cholera

**Symposium 45:** Bridging the Gap Towards Defining the Burden of Typhoid in Sub-Saharan Africa and Southeast Asia

### Tuesday

**Scientific Session 59:** Bacteriology: Trachoma

**Symposium 67:** Perspectives on the Global Burden of Diarrhea and Refined Strategies for Quantification

**Scientific Session 83:** Bacteriology: Diarrhea - Determinants and Prevention

### Wednesday

**Scientific Session 121:** Bacteriology: Febrile Illnesses - Leptospirosis and Others

**Symposium 138:** Confronting the Burden of Shigellosis Through Vaccine Development

**Symposium 149:** Prospects for Development of Standalone and Combination Vaccines against ETEC

### Thursday

**Symposium 175:** Non-Typhoidal Salmonella Invasive Infections in Africa: Epidemiology, Vaccine Development and Genomics

# Session Topic Guide (cont.)

## Ectoparasite-Borne Diseases

### Tuesday
**Symposium 84:** Human Babesiosis: A Neglected Tick-Borne Parasitic Disease

### Wednesday
**Scientific Session 122:** Ectoparasite-Borne Diseases

## Entomology

### Monday
**Symposium 4:** CRISP/Cas Gene Drive Technologies for Vector Control

**Scientific Session 12:** Mosquitoes: Operational Control

**Symposium 17:** Characterizing Spatiotemporal Patterns of Insecticide Resistance in Disease Vectors, Identifying the Drivers behind These Patterns and Understanding Their Impact

**Scientific Session 40:** Mosquitoes: Vector Biology - Epidemiology I

**Scientific Session 51:** Mosquitoes: Vector Biology - Epidemiology II

### Tuesday
**Symposium 62:** American Committee of Medical Entomology (ACME) Symposium I: Annual Business Meeting, Awards and Hoogstraal Medal Presentations and Networking Reception

**Symposium 75:** American Committee of Medical Entomology (ACME) Symposium II: Applied Medical Entomology: Bridging Field and Laboratory Studies

### Wednesday
**Scientific Session 116:** Arthropods: Other Arthropods

**Scientific Session 130:** Mosquitoes: Biochemistry and Molecular Biology

**Scientific Session 144:** Mosquitoes: Molecular Genetics and Genomics

**Symposium 151:** A Shift in Biting Behavior: Outdoor Host-Seeking Behavior of Malaria Vectors and the Potential Impact on Malaria Control

### Thursday
**Scientific Session 161:** Mosquitoes: Insecticide Resistance and Control

## Filariasis

### Monday
**Scientific Session 2:** Filariasis: Epidemiology and Control I

**Scientific Session 14:** Filariasis: Epidemiology and Control II

**Scientific Session 30:** Filariasis: Molecular Biology, Immunology and Diagnostics

### Tuesday
**Symposium 54:** Advanced Diagnostics in Filarial Infections

### Thursday
**Scientific Session 178:** Filariasis: Clinical

## Global Health

### Monday
**Symposium 8:** CadMIA and CHAMPS: Pathways towards Defining Preventable Causes of Death in Children in High Mortality Areas via Minimally Invasive Tissue Sampling (MITS)

**Symposium 19:** Disease Elimination and Eradication: Programmatic Best Practices, Lessons Learned and Challenges

**Symposium 22:** Developing Responsible Data Sharing for Tropical Medicine

**Symposium 28:** Accelerate to Equal: Engaging Women in Vector Control

**Symposium 36:** Emerging Infectious Diseases and Social Media

**Symposium 37:** A Decade of U.S. Government Commitment to Combatting Malaria and Saving Lives: The President's Malaria Initiative, 2006-2015

**Symposium 41:** Terrorism, Conflict, Epidemics and Acts of God: The Impact of the Unpredictable on NTD Programs

**Symposium 44:** Next-Generation Sequencing Technologies to Advance Global Infectious Disease Research

**Symposium 49:** Global Health Education, Service and Research Opportunities for Medical Students and Trainees: Successes, Challenges and Opportunities

**Symposium 50:** Mapping the Denominator

### Tuesday
**Scientific Session 56:** Global Health: Ebola

**Symposium 60:** ASTMH Committee on Global Health (ACGH Symposium I: Building a Successful Career in Global Health-Global Health Leaders from Around the Globe Share Their Experiences

# Session Topic Guide (cont.)

**Symposium 70:** Building Clinical Research Capacity in Resource-Limited Countries: Lessons from Sub-Saharan Africa and South Asia

**Symposium 73:** ASTMH Committee on Global Health (ACGH)

**Symposium II:** Building a Successful Career in Global Health - An Interactive Session with Global Health Experts

**Symposium 82:** Congenital Vector-Borne Diseases and Early Child Neurodevelopmental Outcomes

**Symposium 85:** Using Remote Sensing Technology and Models from NASA Satellite in Predicting and Mitigating Outbreaks of Infectious Disease

**Symposium 90:** The Washington, DC Primer: Advocating for R&D Funding – The Who, What, Where, Why and How

**Symposium 94:** Malaria Economics Research Priorities: Are We Supporting Program Scale Up Effectively?

**Plenary Session 104: Plenary Session III:** Commemorative Fund Lecture

**Symposium 105:** The Refugee Journey to Wellbeing

## Wednesday

**Symposium 114:** Febrile Illness - Epidemiology, Diagnostics, Management

**Symposium 126:** State of the Art in Controlled Human Infection Models for Tropical Diseases

**Symposium 134:** Global Antibiotic Resistance Partnership and ResistanceMap

**Scientific Session 136:** Global Health: mHealth, Vaccines and Strategies

**Symposium 137:** Rebuilding Health Systems for Ebola Survivors

**Symposium 142:** Bridging the Gap between Patients and Access to Chagas Treatment: Lessons Learned from Scaling-up Models in Latin America and the USA

**Symposium 143:** Integrated Community Case Management (iCCM) and the Continuum of Care: Strategy to Improve Quality of Care and Rational Drug Use

**Scientific Session 147:** Global Health: Febrile Illness and Malaria

**Symposium 152:** Careers in Refugee Health: Case-Based Perspectives and Descriptions

**Symposium 157:** Poor Quality Medicines - The Third Man Threat (with apologies to Graham Greene)

**Plenary Session 158: Plenary Session IV:** President's Address and Annual Business Meeting

## Thursday

**Symposium 159:** New Tools and New Rules for River Blindness Elimination: Where Do We Go from Here?

**Symposium 160:** Zika Virus in Salvador, Brazil and in Puerto Rico

**Symposium 174:** The Value of Innovative Drugs for Low-Resource Settings: Can We Develop Novel Access Policies for Novel Medicines?

**Symposium 177:** Advancing Global Health Security through Social, Behavioral and Communications Science: Lessons from the West Africa Ebola Outbreak

**Scientific Session 180:** Global Health: Maternal and Child Health

**Symposium 181:** Enhancement of Syndromic Surveillance, Outbreak-Response and Disease Elimination through Innovative Laboratory Diagnostics

### HIV and Tropical Co-Infections

## Tuesday

**Symposium 65:** If You Neglect It, It Will Grow: Addressing Fungal Infections in Advanced HIV Care

## Thursday

**Scientific Session 182:** HIV and Tropical Co-Infections

### Integrated Control Measures for Neglected Tropical Diseases (NTDs)

## Monday

**Symposium 19:** Disease Elimination and Eradication: Programmatic Best Practices, Lessons Learned and Challenges

**Symposium 41:** Terrorism, Conflict, Epidemics and Acts of God: The Impact of the Unpredictable on NTD Programs

## Tuesday

**Scientific Session 88:** Integrated Control Measures for Neglected Tropical Diseases

**Symposium 93:** Co-Administration of Drugs for NTDs: Efficacy, Efficiency and Safety in Mass Drug Administration Programs

**Symposium 100:** Quantitative Approaches to Support the Achievement of Elimination Targets for Intensified Disease Management NTDs

# Session Topic Guide (cont.)

## Wednesday

**Symposium 106:** Community Providers for Neglected Tropical Disease Control: The "Building Blocks" for Program Success

**Symposium 124:** Evaluating Readiness and Quality of Essential Surgical Services: Evidence from Morbidity Management and Disability Prevention of Neglected Tropical Diseases

**Symposium 127:** Elimination of *Schistosomiasis japonica* from China

## Thursday

**Symposium 170:** Making Money Matter: Cost-Effectiveness and NTD Interventions

### Intestinal and Tissue Helminths, Cestodes

## Monday

**Scientific Session 10:** Cestodes: Cysticercosis and Echinococcosis

## Tuesday

**Scientific Session 77:** Intestinal and Tissue Helminths: Soil-Transmitted Helminths – Epidemiology and Control

## Thursday

**Scientific Session 164:** Intestinal and Tissue Helminths: Soil-Transmitted Helminths – Biology and Immunology

### Kinetoplastida

## Monday

**Symposium 13:** Hot Topics in Leishmaniasis

**Scientific Session 47:** Kinetoplastida: Epidemiology and Diagnosis

## Tuesday

**Symposium 74:** Recent Advances in the Development of New Treatments for Chronic Chagas Disease

**Symposium 102:** Approaches, Advances and Needs for the Elimination of Human African Trypanosomiasis (HAT)

## Wednesday

**Scientific Session 112:** Kinetoplastida: Diagnosis, Treatment and Vaccine Development

## Thursday

**Scientific Session 176:** Kinetoplastida: Molecular Biology and Immunology

### Malaria

## Monday

**Scientific Session 5:** Malaria: Epidemiology I - Intervention Studies and Evaluation

**Scientific Session 6:** Malaria: Drug Development - Preclinical to Clinical Trials

**Scientific Session 11:** Malaria: Biology and Pathogenesis

**Scientific Session 16:** Malaria: Chemotherapy and Drug Resistance - Looking for Drug Resistance

**Scientific Session 20:** Malaria: Vector Control Interventions in Africa - LLINs and Beyond

**Symposium 24:** Immune Memory Responses in Malaria

**Symposium 25:** Tailored Surveillance Strategies for High-Risk Populations in Malaria Elimination Settings

**Symposium 32:** Seasonal Malaria Chemoprevention at Scale: Evidence from Eight Countries

**Symposium 33:** Generating Evidence for Malaria Elimination in the Greater Mekong Sub-Region

**Scientific Session 34:** Malaria: Vaccines - Diverse Approaches

**Symposium 37:** A Decade of U.S. Government Commitment to Combatting Malaria and Saving Lives: The President's Malaria Initiative, 2006-2015

**Scientific Session 46:** Malaria: Epidemiology II - Descriptive and Risk-Factor Studies

**Symposium 48:** Inaugural Alan J. Magill Malaria Eradication Symposium

## Tuesday

**Symposium 55:** Malaria Elimination Strategies Using Targeted and Mass Drug Administration: Lessons from the Field

**Symposium 58:** Molecular Basis of Severe Malarial Anemia (SMA): Bridging the Gap between Findings in Human Studies, Pathogenic Mechanisms in Non-Human Primates and Mathematical Modeling

**Symposium 64:** Where Will the Next Malaria Medicines Come From?

**Symposium 68:** Moving Toward a PfSPZ Malaria Vaccine for Protecting Travelers and Use in Elimination Campaigns

**Symposium 69:** Ivermectin to Reduce Malaria Parasite Transmission: Clinical Trials, Models, and Regulatory Pathways to Accelerate Implementation

**Symposium 76:** How Can We Use the Tools of Genomics and Evolution to Study and Control Malaria?

**Symposium 87:** Global Call to Action to Increase Coverage of Intermittent Preventive Treatment in Pregnancy: Progress and Lessons Learned

**Scientific Session 91:** Malaria: Elimination Strategies and New Tools

**Symposium 92:** New Approaches to Examining Antigenic Variation in Multiple *Plasmodium* Species and in the Course of Infections in Humans, Non-Human Primates and Mosquitoes

**Symposium 94:** Malaria Economics Research Priorities: Are We Supporting Program Scale Up Effectively?

**Symposium 95:** Current Challenges and Opportunities for Treating and Eliminating ACT-Resistant *Plasmodium falciparum* Malaria in the Greater Mekong Subregion

**Symposium 96:** Integration of Mass Drug Administration with Vector Control Approaches: An Enhanced Malaria Elimination Package

## Wednesday

**Scientific Session 111:** Malaria: Diagnostics

**Scientific Session 113:** Malaria: Chemotherapy for Control and Elimination

**Symposium 115:** Understanding, Detecting, Preventing the Fertilization of *Plasmodium* Parasites

**Scientific Session 117:** Malaria: Control Interventions - Operational Innovations and Challenges

**Symposium 118:** Implications of Insecticide Resistance on Malaria Vector Control: Outcomes from a Multi-Country Evaluation

**Scientific Session 128:** Malaria: Immunology

**Scientific Session 129:** Malaria: Modeling

**Late Breaker Abstract Session 132:** Late Breakers in Malaria

**Symposium 135:** malERA Refresh: Updating the Malaria Eradication Research Agenda

**Symposium 139:** Unleashing the Potential of Malaria Parasite Genetics Research in Africa: An Update on the *Plasmodium* Diversity Network Africa (PDNA)

**Symposium 145:** Novel Biomarkers and Predictors of Cerebral Malaria Severity and Targets for Intervention

**Symposium 146:** Malaria Pre-Elimination: Ensuring Correct Care of Reproductive Age Women

**Symposium 148:** Novel Phenotypic and Genotypic Markers of Piperaquine Resistance and Dihydroartemisinin-Piperaquine Treatment Failure in Cambodia

**Symposium 150:** Towards Better Surveillance: Assessing and Building on Routine Systems to Develop Specialized Surveillance Platforms for Elimination

**Symposium 151:** A Shift in Biting Behavior: Outdoor Host-Seeking Behavior of Malaria Vectors and the Potential Impact on Malaria Control

**Scientific Session 156:** Malaria: Parasite, Vector and Host Genomics

## Thursday

**Symposium 162:** Towards Regional Eradication of Malaria in Mesoamerica

**Scientific Session 169:** Malaria: Control Interventions - Assessment of Quality and Effectiveness

**Symposium 172:** Key Knowledge Gaps Concerning the Impact of Interventions on Malaria Transmission

# Molecular Parasitology

## Monday

**Scientific Session 23:** American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Helminths - Cellular, Molecular and Immunoparasitology

**Symposium 35:** Malaria Metabolomics, Data Integration Challenges and Progress

## Tuesday

**Symposium 53:** The 14th Annual American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP) Symposium: Parasitology and the CRISPR-Cas Revolution

**Scientific Session 72:** American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Malaria and Protozoal Diseases - Biology and Pathogenesis

**Late Breaker Abstract Session 80:** Late Breakers in Basic Science/Molecular Biology

## Wednesday

**Scientific Session 109:** American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Malaria and Protozoans – Molecular Biology

**Scientific Session 123:** American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Kinetoplastida – Molecular, Cellular and Immunobiology

## Thursday

**Scientific Session 166:** American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Helminths - Immunology

**Scientific Session 168:** American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Malaria - Biology and Pathogenesis

**Symposium 179:** Gene Drives on the Horizon: Advancing Science, Navigating Uncertainty and Aligning Research with Public Values

# Session Topic Guide (cont.)

## One Health: Interface of Human Health/Animal Diseases

### Monday
**Scientific Session 43:** One Health: Interface of Human Health/Animal Diseases

### Wednesday
**Symposium 155:** Fifteen Years of Nipah Virus in Bangladesh: The Latest Findings on Viral Genetics, Transmission in Humans and the Reservoir Host, and Prospects for a Human Vaccine

## Opportunistic and Anaerobic Protozoa

### Wednesday
**Scientific Session 108:** Protozoa

**Symposium 120:** Brain-Eating *Amoebae*: Shining Light on the Most Neglected Tropical Diseases

## Pneumonia, Respiratory Infections and Tuberculosis

### Tuesday
**Symposium 71:** Key Elements for Improving Management of Pneumonia in Children in Resource-Poor Settings

**Symposium 98:** Results from the Pneumonia Etiology Research for Child Health Study (PERCH)

### Wednesday
**Scientific Session 110:** Pneumonia, Respiratory Infections and Tuberculosis I

### Thursday
**Symposium 167:** Ending Preventable Maternal and Child Deaths Due to Tuberculosis

**Scientific Session 173:** Pneumonia, Respiratory Infections and Tuberculosis II

## Schistosomiasis-Helminths

### Monday
**Scientific Session 39:** Schistosomiasis: Epidemology and Control

### Tuesday
**Symposium 63:** Schistosomiasis Control with a View Toward Elimination

**Scientific Session 99:** Schistosomiasis: Immunology, Pathology and Diagnostics

### Wednesday
**Symposium 127:** Elimination of *Schistosomiasis japonica* from China

**Scientific Session 140:** Schistosomiasis and Other Trematodes: Transmission and Treatment

## Virology

### Sunday
**Plenary Session 1:** Plenary Session I: Keynote Address and Awards Program

### Monday
**Symposium 9:** Zika Virus: Public Health Response and Disease Manifestations

**Scientific Session 15:** Dengue: Vaccines/Epidemiology

**Scientific Session 31:** West Nile and Other Flaviviruses

**Symposium 38:** Ebola: Drivers of Transmission, Vaccines, Clinical Sequelae and Asymptomatic Infection

**Scientific Session 42:** Chikungunya and Other Alphaviruses

**Plenary Session 52: Plenary Session II:** Charles Franklin Craig Lecture

### Tuesday
**Symposium 66:** Strategies to Control Hepatitis E Virus, an Emerging Global Pathogen

**Symposium 78:** Update on Research and Control of Viral Diseases in Cuba

**Symposium 86:** American Committee on Arthropod-Borne Viruses (ACAV) Symposium I: Annual Business Meeting, Awards and Research Presentations by Previous Awardees

**Symposium 97:** American Committee on Arthropod-Borne Viruses (ACAV) Symposium II: Emergence, Evolution and Control of Zika Virus

# Session Topic Guide (cont.)

## Wednesday

**Scientific Session 107:** Dengue: Pathogenesis/Immunology

**Symposium 119:** Yellow Fever: Scientific and Logistical Challenges for a Preventable Disease

**Scientific Session 125:** Virology: Ebola

**Scientific Session 141:** Zika

**Symposium 155:** Fifteen Years of Nipah Virus in Bangladesh: The Latest Findings on Viral Genetics, Transmission in Humans and the Reservoir Host, and Prospects for a Human Vaccine

## Thursday

**Scientific Session 171:** Virology: Other Viruses

### Water, Sanitation, Hygiene and Environmental Health

## Monday

**Symposium 7:** The Influence of Behavior and Culture within WASH Interventions and Environmental Disease Transmission

## Tuesday

**Scientific Session 57:** Water, Sanitation, Hygiene and Environmental Health I

## Wednesday

**Symposium 154:** The WASH Benefits Study: Cluster-Randomized Trials in Bangladesh and Kenya to Measure the Effects of Individual and Combined Water Quality, Sanitation, Handwashing and Nutrition Interventions on Child Growth and Diarrhea

## Thursday

**Scientific Session 163:** Water, Sanitation, Hygiene and Environmental Health II

# ASTMH Council, Subgroup and Committee Meetings

## Saturday, November 12

**ASTMH Council Meeting**
*Marriott - Marquis D*
Saturday, November 12, Noon - 6 p.m.

## Sunday, November 13

**American Committee on Arthropod-Borne Viruses (ACAV) SIE Subcommittee**
*Marriott - Room L401/L402*
Sunday, November 13, 11 a.m. - Noon

**American Committee on Arthropod-Borne Viruses (ACAV) SIRACA Subcommittee**
*Marriott - Room L401/L402*
Sunday, November 13, Noon - 2 p.m.

**American Committee on Arthropod-Borne Viruses (ACAV) SALS Subcommittee**
*Marriott - Room L401/L402*
Sunday, November 13, 2 p.m. - 3:30 p.m.

**Young Investigator Award Committee Meeting**
*Marriott - Room A701*
Sunday, November 13, 3 p.m. - 4 p.m.

**American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP) Council Meeting**
*Marriott - Room M302*
Sunday, November 13, 3:30 p.m. - 5:30 p.m.

**ASTMH Committee on Global Health (ACGH) Council Meeting**
*Marriott - Room M303*
Sunday, November 13, 3:30 p.m. - 5:30 p.m.

**Clinical Group Council Meeting (American Committee on Clinical Tropical Medicine and Travelers' Health- ACCTMTH)**
*Marriott - Room M201*
Sunday, November 13, 3:30 p.m. - 5:30 p.m.

**American Committee on Arthropod-Borne Viruses (ACAV) Council Meeting**
*Marriott - Room L401/L402*
Sunday, November 13, 4 p.m. - 5:30 p.m.

**American Committee of Medical Entomology (ACME) Council Meeting**
*Marriott - Room M304*
Sunday, November 13, 4 p.m. - 5:30 p.m.

## Monday, November 14

**Clinical Standards and Treatment Guidelines Committee Meeting**
*Marriott - Room M304*
Monday, November 14, 7 a.m. - 8 a.m.

**ASTMH Diploma Course Directors Meeting**
*Marriott - Room M303*
Monday, November 14, 7 a.m. - 8 a.m.

**ASTMH Travel Awards Meeting**
*Marriott - Room M301/M302*
Monday, November 14, 7 a.m. - 8 a.m.

**Courses Committee Meeting**
*Marriott - Room M304*
Monday, November 14, 12:15 p.m. - 1:30 p.m.

**Kean Fellowship Committee Meeting**
*Marriott - Room M303*
Monday, November 14, 12:15 p.m. - 1:30 p.m.

## Tuesday, November 15

**Education Committee Meeting**
*Marriott - Room M108*
Tuesday, November 15, 7 a.m. - 8 a.m.

**Clinical Group (ACCTMTH) Past Presidents Meeting**
*Hilton - Room 205*
Tuesday, November 15, 7 a.m. - 8 a.m.

***AJTMH* Editorial Board Meeting**
*Marriott - Room M202*
Tuesday, November 15, 7 a.m. - 8 a.m.

**Shope Fellowship Committee Meeting**
*Hilton - Room 208*
Tuesday, November 15, 7 a.m. - 8 a.m.

**CTropMed® Exam Executive Committee Meeting**
*Marriott - Room M108*
Tuesday, November 15, 12:15 p.m. - 1:30 p.m.

# ASTMH Council, Subgroup and Committee Meetings

## Wednesday, November 16

**Scientific Program Committee Meeting**
*Marriott - Room L401/L402/L403*
Wednesday, November 16, 7 a.m. - 8 a.m.

**ASTMH Past Presidents Meeting**
*Marriott - Room M101*
Wednesday, November 16, 7 a.m. - 8 a.m.

**Diploma Course Certification Committee Meeting**
*Marriott - Room M108*
Wednesday, November 16, 7 a.m. - 8 a.m.

**Burroughs Wellcome Fund/ASTMH Fellowship Committee Meeting**
*Marriott - Room M302*
Wednesday, November 16, 8 a.m. - 10 a.m.

**CTropMed® Exam Committee Meeting**
*Marriott - Room M301*
Wednesday, November 16, 12:15 p.m. - 1:30 p.m.

**Membership Committee Meeting**
*Marriott - Room M108*
Wednesday, November 16, 12:15 p.m. - 1:30 p.m.

## Thursday, November 17

**ASTMH Council Meeting**
*Marriott - Room A708*
Thursday, November 17, 7:30 a.m. - 9:30 a.m.

# Related Organization Meetings (at press time)

## Friday, November 11

**Johns Hopkins Malaria Research Institute - Malawi and Southern Africa ICEMR Scientific Advisory Group Meeting**
*Marriott - Room M202*
Friday, November 11, 8 a.m. - 5 p.m.

**Jhpiego/MCSP Malaria Team Retreat Meeting**
*Marriott - Room L405*
Friday, November 11, 8:30 a.m. - 5 p.m.

## Saturday, November 12

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room M103*
Saturday, November 12, 7 a.m. - 4 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room M106/M107*
Saturday, November 12, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room M201*
Saturday, November 12, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room M303*
Saturday, November 12, 7 a.m. - 7 p.m.

**University of California, Davis - P01 Iquitos Meeting**
*Marriott - Room M302*
Saturday, November 12, 8 a.m. - 5 p.m.

**Johns Hopkins Malaria Research Institute - Malawi and Southern Africa ICEMR Scientific Advisory Group Meeting**
*Marriott - Room M202*
Saturday, November 12, 8 a.m. - 5 p.m.

**Jhpiego/MCSP Malaria Team Retreat Meeting**
*Marriott - Room M108*
Saturday, November 12, 9 a.m. - 5 p.m.

**Health & Development International Meeting**
*Marriott - Room L405*
Saturday, November 12, 9 a.m. - 5 p.m.

## Sunday, November 13

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room M106/M107*
Sunday, November 13, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L506*
Sunday, November 13, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L507*
Sunday, November 13, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L508*
Sunday, November 13, 7 a.m. - 7 p.m.

**Clinton Health Access Initiative - Malaria Mapping and Mobility Meeting**
*Hilton - Room 208*
Sunday, November 13, 8 a.m. - 5 p.m.

**Meridian Bioscience**
*Marriott - Room L404*
Sunday, November 13, 8 a.m. - 8 p.m.

**Novartis - Malaria Initiative**
*Marriott - Room L504*
Sunday, November 13, 8 a.m. - 8 p.m.

**Population Services International Meeting Room**
*Hilton - Room 209*
Sunday, November 13, 8 a.m. - 8 p.m.

**Malaria Eradication Scientific Alliance (MESA) Meeting**
*Hilton - Room 407*
Sunday, November 13, 8 a.m. - 8 p.m.

**Sustainable Sciences Institute - Dengue Immune Correlates P01 Annual Meeting**
*Hilton - Room 214*
Sunday, November 13, 8:30 a.m. - 4 p.m.

**Malaria Branch, U.S. Centers for Disease Control and Prevention - CDC-PMI Staff Management and Administration Meeting**
*Marriott - Room M301*
Sunday, November 13, 9 a.m. - 4 p.m.

# Related Organization Meetings (at press time)

**University of Rhode Island - DHF Project Investigators Meeting**
*Hilton - Room 211*
Sunday, November 13, 9 a.m. - 5 p.m.

**Health & Development International Meeting**
*Hilton - Room 409*
Sunday, November 13, 9 a.m. - 5 p.m.

**World Health Organization/Global Malaria Program: Implications of Insecticide Resistance S Meeting**
*Hilton - Room 410*
Sunday, November 13, 9 a.m. - 5 p.m.

**International Society of Travel Medicine - GeoSentinel Mid-Year Meeting**
*Marriott - Room M202*
Sunday, November 13, 9 a.m. - 5 p.m.

**University Hospital Bonn - Take Off Meeting**
*Hilton - Room 408*
Sunday, November 13, 10 a.m. - 2 p.m.

**Emory Global Health Institute - SAPORT Advisory Panel and Investigators Meeting**
*Hilton - Room 203*
Sunday, November 13, Noon - 5 p.m.

**PATH - Diarrhea Innovations Group Meeting**
*Hilton - Room 201*
Sunday, November 13, 1 p.m. - 5 p.m.

**Washington University School of Medicine - DOLF Investigator Meeting**
*Hilton - Room 401/402*
Sunday, November 13, 2 p.m. - 5:30 p.m.

**London School of Hygiene & Tropical Medicine Meeting**
*Marriott - Room L403*
Sunday, November 13, 2 p.m. - 6 p.m.

## Monday, November 14

**ClinicalRM - Private Meetings**
*Hilton - Room 405*
Monday, November 14, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L506*
Monday, November 14, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L507*
Monday, November 14, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L508*
Monday, November 14, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room M106/M107*
Monday, November 14, 7 a.m. - 7 p.m.

**Harvard University - HarvardX Recording Sessions**
*Marriott - Parlor 9th Floor*
Monday, November 14, 8 a.m. - 6 p.m.

**PATH Malaria Vaccine Initiative - PATH MVI Side Meeting**
*Hilton - Room 213*
Monday, November 14, 8 a.m. - 7 p.m.

**PATH Malaria Vaccine Initiative - PATH MVI Side Meeting**
*Hilton - Room 214*
Monday, November 14, 8 a.m. - 7 p.m.

**IVCC Meeting**
*Hilton - Room 410*
Monday, November 14, 8 a.m. - 6 p.m.

**Population Services International Meeting Room**
*Hilton - Room 209*
Monday, November 14, 8 a.m. - 8 p.m.

**Malaria Eradication Scientific Alliance (MESA) Meeting**
*Hilton - Room 407*
Monday, November 14, 8 a.m. - 8 p.m.

**Meridian Bioscience**
*Marriott - Room L404*
Monday, November 14, 8 a.m. - 8 p.m.

**Novartis - Malaria Initiative**
*Marriott - Room L504*
Monday, November 14, 8 a.m. - 8 p.m.

**Infectious Diseases Data Observatory (IDDO)/ WorldWide Antimalarial Resistance Network (WWARN) Stakeholder Meeting**
*Marriott - Room A702*
Monday, November 14, 8 a.m. - 8 p.m.

**Global Health Strategies Meeting**
*Hilton - Room 211*
Monday, November 14, 9 a.m. - 5 p.m.

**JHUCCP - ITN Durability Monitoring Investigators Meeting**
*Hilton - Room 408*
Monday, November 14, Noon - 2 p.m.

# Related Organization Meetings (at press time)

**DNDi - DNDi/USAID GDA Update Meeting**
*Hilton - Room 409*
Monday, November 14, Noon - 2 p.m.

**Public Library of Science - PLOS NTDs Editorial Board Summit Meeting**
*Marriott - Room M101*
Monday, November 14, 1 p.m. - 5 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L402*
Monday, November 14, 6 p.m. - 8:30 p.m.

**Bill & Melinda Gates Foundation Grantee and Partner Reception**
*Marriott - Atrium B*
Monday, November 14, 7 p.m. - 10 p.m.

**University of Sciences, Techniques and Technologies of Bamako - USTTB-NIH Annual Meeting**
*Marriott - Room A701*
Monday, November 14, 7:30 p.m. - 10 p.m.

## Tuesday, November 15

**University of Virginia - UVA TAC Card Projects Meeting**
*Hilton - Room 404*
Tuesday, November 15, 7 a.m. - 8 p.m.

**Jhpiego Roll Back Malaria - Malaria in Pregnancy Working Group Meeting**
*Marriott - Room L401/L402*
Tuesday, November 15, 7 a.m. - 8 a.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L506*
Tuesday, November 15, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L507*
Tuesday, November 15, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L508*
Tuesday, November 15, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room M106/M107*
Tuesday, November 15, 7 a.m. - 7 p.m.

**ClinicalRM - Private Meetings**
*Hilton - Room 405*
Tuesday, November 15, 7 a.m. - 7 p.m.

**Harvard University - HarvardX Recording Sessions**
*Marriott - Parlor 9th Floor*
Tuesday, November 15, 8 a.m. - Noon

**IVCC Meeting**
*Hilton - Room 410*
Tuesday, November 15, 8 a.m. - 6 p.m.

**AWOL Consortium - Winter Meeting**
*Marriott - Room A708*
Tuesday, November 15, 8 a.m. - 6 p.m.

**PATH Malaria Vaccine Initiative - PATH MVI Side Meeting**
*Hilton - Room 213*
Tuesday, November 15, 8 a.m. - 7 p.m.

**PATH Malaria Vaccine Initiative - PATH MVI Side Meeting**
*Hilton - Room 214*
Tuesday, November 15, 8 a.m. - 7 p.m.

**Population Services International Meeting Room**
*Hilton - Room 209*
Tuesday, November 15, 8 a.m. - 8 p.m.

**Bayer - Private Stakeholder Meeting**
*Hilton - Room 210*
Tuesday, November 15, 8 a.m. - 8 p.m.

**Malaria Eradication Scientific Alliance (MESA) Meeting**
*Hilton - Room 407*
Tuesday, November 15, 8 a.m. - 8 p.m.

**Meridian Bioscience**
*Marriott - Room L404*
Tuesday, November 15, 8 a.m. - 8 p.m.

**Novartis - Malaria Initiative**
*Marriott - Room L504*
Tuesday, November 15, 8 a.m. - 8 p.m.

**Infectious Diseases Data Observatory (IDDO)/ WorldWide Antimalarial Resistance Network (WWARN) Stakeholder Meeting**
*Marriott - Room A702*
Tuesday, November 15, 8 a.m. - 8 p.m.

**Coalition against Typhoid - Typhoid, Paratyphoid and Invasive Non-Typhoidal *Salmonella*: A Time for Action Meeting**
*Hilton - Room 205*
Tuesday, November 15, 4 p.m. - 6 p.m.

# Related Organization Meetings (at press time)

**ClinicalRM - Infectious Disease Biobanking: A Global Necessity to Accelerate Vaccine and Therapeutic Development across the Equator Meeting**
*Hilton - Room 201*
Tuesday, November 15, 7 p.m. - 9 p.m.

**FHI 360 - Partnering for Impact Meeting**
*Hilton - Room 401/402*
Tuesday, November 15, 7 p.m. - 9 p.m.

**Harvard University and Johns Hopkins Alumni Reception**
*Hilton - Point of View Lounge*
Tuesday, November 15, 7:15 p.m. - 8:45 p.m.

**University of Notre Dame - Eck Institute for Global Health**
*Marriott - Room L401/L402*
Tuesday, November 15, 7:30 p.m. - 10 p.m.

**Population Services International ACTwatch/PSI Reception Meeting**
*Marriott - Room A701*
Tuesday, November 15, 7:15 p.m. - 10 p.m.

## Wednesday, November 16

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room M106/M107*
Wednesday, November 16, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L506*
Wednesday, November 16, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L507*
Wednesday, November 16, 7 a.m. - 7 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L508*
Wednesday, November 16, 7 a.m. - 7 p.m.

**ClinicalRM - Private Meetings**
*Hilton - Room 405*
Wednesday, November 16, 7 a.m. - 7 p.m.

**PATH Malaria Vaccine Initiative - PATH MVI Side Meeting**
*Hilton - Room 213*
Wednesday, November 16, 8 a.m. - 7 p.m.

**PATH Malaria Vaccine Initiative - PATH MVI Side Meeting**
*Hilton - Room 214*
Wednesday, November 16, 8 a.m. - 7 p.m.

**IVCC Meeting**
*Hilton - Room 410*
Wednesday, November 16, 8 a.m. - 6 p.m.

**Malaria Eradication Scientific Alliance (MESA) Meeting**
*Hilton - Room 407*
Wednesday, November 16, 8 a.m. - 8 p.m.

**Meridian Bioscience**
*Marriott - Room L404*
Wednesday, November 16, 8 a.m. - 8 p.m.

**The Walter and Eliza Hall Institute of Medical Research - Project Meeting**
*Marriott - Room L502*
Wednesday, November 16, 8 a.m. - 8 p.m.

**Novartis - Malaria Initiative**
*Marriott - Room L504*
Wednesday, November 16, 8 a.m. - 8 p.m.

**Infectious Diseases Data Observatory (IDDO)/ WorldWide Antimalarial Resistance Network (WWARN) Stakeholder Meeting**
*Marriott - Room A702*
Wednesday, November 16, 8 a.m. - 8 p.m.

**Population Services International Meeting Room**
*Hilton - Room 209*
Wednesday, November 16, 8 a.m. - 8 p.m.

**London School of Hygiene & Tropical Medicine - SMC General Meeting**
*Hilton - Room 205*
Wednesday, November 16, 1 p.m. - 6 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L402*
Wednesday, November 16, 6 p.m. - 8:30 p.m.

## Thursday, November 17

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room M106/M107*
Thursday, November 17, 7 a.m. - 5 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L507*
Thursday, November 17, 7 a.m. - 5 p.m.

# Related Organization Meetings (at press time)

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L508*
Thursday, November 17, 7 a.m. - 5 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L506*
Thursday, November 17, 7 a.m. - 5 p.m.

**UCSD - Peru/Brazil ICEMR Scientific Advisory Group Annual Meeting**
*Marriott - Room L403*
Thursday, November 17, 7:30 a.m. - 2 p.m.

**Meridian Bioscience**
*Marriott - Room L404*
Thursday, November 17, 8 a.m. - 1 p.m.

**Novartis - Malaria Initiative**
*Marriott - Room L504*
Thursday, November 17, 8 a.m. - 1 p.m.

**Infectious Diseases Data Observatory (IDDO)/ WorldWide Antimalarial Resistance Network (WWARN) Stakeholder Meetings**
*Marriott - Room A702*
Thursday, November 17, 8 a.m. - 1 p.m.

**IVCC Meeting**
*Hilton - Room 410*
Thursday, November 17, 8 a.m. - 6 p.m.

**International Vaccine Institute - GDAC CMC Meeting**
*Marriott - Room L502*
Thursday, November 17, 9 a.m. - 1 p.m.

**University of California, San Francisco - PRISM-SAG Meeting**
*Hilton - Room 209*
Thursday, November 17, Noon - 6 p.m.

**RTI International - ZIP Study Investigator Meeting**
*Marriott - Room M303*
Thursday, November 17, 1 p.m. - 5 p.m.

**SIGHTM - Sanaria Institute for Global Health and Tropical Medicine - I-PfSPZ Consortium Meeting**
*Hilton - Room 210/211*
Thursday, November 17, 1 p.m. - 6 p.m.

## Friday, November 18

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room M106/M107*
Friday, November 18, 7 a.m. - 5 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L504/505*
Friday, November 18, 8 a.m. - 8 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L506/L507*
Friday, November 18, 8 a.m. - 8 p.m.

**Bill & Melinda Gates Foundation Side Meeting**
*Marriott - Room L508*
Friday, November 18, 8 a.m. - 8 p.m.

**SIGHTM - Sanaria Institute for Global Health and Tropical Medicine - I-PfSPZ Consortium Meeting**
*Marriott - Room M104*
Friday, November 18, 9 a.m. - 5:30 p.m.

## Exhibit Hall Floor Plan

# Exhibitor, Sponsor and Supporter Directory (at press time)

### Abt Associates
**Booth 110**
Contact: Mariandrea Chamorro, Associate
55 Wheeler St.
Cambridge, MA 02138 USA
Phone: +1-617-520-2425
Email: yuliya_vartanova@abtassoc.com
Website: www.abtassociates.com

Abt Associates is a mission-driven, global leader in research, evaluation and implementing programs in the fields of health, social and environmental policy, and international development. Known for its rigorous approach to solving complex challenges, Abt Associates is regularly ranked as one of the top 20 global research firms and was named one of the 40 international development innovators. The company has offices in the U.S., Australia and the U.K., and program offices in more than 40 countries.

### Access Bio, Inc.
**Booth 622**
Contact: Dr. Young Hong, Director
65 Clyde Road, Suite A
Somerset, NJ 08873 USA
Phone: +1-732-873-4040
Email: jyang@accessbio.net
Website: www.accessbio.net

Access Bio is dedicated to the prevention and early diagnosis of infectious diseases through research, development, and manufacturing of in vitro rapid diagnostic tests, biosensor, and molecular diagnostic products. Particularly, early and accurate diagnosis is a key to effective treatment of patients. Our core in vitro diagnostic technology includes immunochemical, biochemical and molecular products. Access Bio strives to establish a foundation for wellbeing of all people.

### ACE Research
**Booth 511**
Contact: Amos Ndhere, Chief Medical Officer
The White Court Apartments
PO Box 3964
Kisumu, Kenya
Phone: +254 722 449 357
Email: info@aceresearchafrica.com
Website: www.clinicalrmafrica.com

ACE Research is a Pan-Africa full service CRO specializing in early-to-late stage clinical trial services for development of vaccines, drugs, diagnostics, devices, and global health systems innovations. We promote a one-of-a-kind synergy, bringing together government bodies, NGOs, academic research institutions, pharmaceutical and medical device companies, and international scientific leadership, all of whom share a common mission in fighting global disease. We offer proactive and flexible CRO solutions including feasibility studies and protocol development, site selection, patient recruitment and retention, regulatory and EC submission, clinical trial monitoring, project management, GCP training, staff augmentation, clinical supplies and material transfer management, and translation.

### ACS Publications SPONSOR AND SUPPORTER
**Booth 427**
Contact: Brooke Howell, Marketing Manager
1155 Sixteenth St. NW
Washington, DC 20036 USA
Phone: +1-202-872-4600
Email: b_howell@acs.org
Website: http://pubs.acs.org

ACS Infectious Diseases is the first journal to highlight chemistry and its role in the multidisciplinary and collaborative field of infectious disease research. With editors well-versed in both chemistry and the biology on infectious diseases, this journal published by ACS Publications amis to bridge the gap between these two disciiplines. ACS Infectious Diseases welcomes submissions of articles with a balance of chemistry and biology, and encourages discussions centered in specific pathogen- and disease-related issues.

### Advanced Cell Diagnostics
**Booth 219**
7707 Gate Way Blvd.
Newark, CA 94560 USA
Website: www.acdbio.com

### Altona Diagnostics USA, Inc.
**Booth 422**
Contact: Tyler Carney, General Manager
185 Berry St., Suite 4610
San Francisco, CA 94107 USA
Phone: +1-415-777-1712
Email: tyler.carney@altona-diagnostics.com
Website: www.altona-diagnostics.com

Altona Diagnostics USA, Inc. is a San Francisco, CA based company with headquarters in Hamburg, Germany. The company focuses on the sales and technical support of real-time PCR based reagents for the detection of pathogen specific DNA/RNA, developed and manufactured by their scientists in Hamburg.

# Exhibitor, Sponsor and Supporter Directory (at press time)



### Antigen Discovery, Inc.
**Booth 326**
Contact: Xioawu Liang, CEO
1 Technology Drive, Suite E309
Irvine, CA 92618 USA
Phone: +1-949-679-4068
Email: info@antigendiscovery.com
Website: www.antigendiscovery.com

Antigen Discovery, Inc. provides proteomic immunoprofiling services that streamline biomarker discovery. Scientists use our novel technology to study causes of disease, potential new therapies, vaccines, diagnostics, and drugs. Diseases currently available on our protein microarray platform include babesiosis, brucellosis, Burkitt's lymphoma/EBV, chikungunya, chlamydia, dengue, HIV, Lyme, malaria, meliodosis (Burkholderia pseudomallei), MRSA (Staphylococcus aureus), onchocerciasis (river blindness), pneumonia (Steptococcus pneumoniae), Salmonella, Shigellosis and E. coli, tuberculosis, tularemia, Vaccinia, West Nile, Yellow fever, Zika and human autoimmunity.

### Aquila Diagnostic Systems Inc.
**Booth 409**
Contact: Brent James, CEO
9207 117 St.
Edmonton, AB T6G 1S2 Canada
Phone: +1-604-418-9969
Email: brent@aquiladiagnostics.com
Website: www.aquiladiagnostics.com

Point of Care hydrogel PCR (molecular) diagnostic system for malaria diagnosis and surveillance. Low cost instrument and disposables. 16 tests per run in 1.5 hours. No sample preparation/DNA extraction step.

### ARCTEC
**Booth 419**
Contact: Dr. James Logan, Director
Keppel St.
London, WC1E 7HT United Kingdom
Phone: +02 0792 72883
Email: artec@lshtm.ac.uk
Website: arctec.lshtm.ac.uk

ARCTEC is a world leading independent testing centre for arthropod pest control technologies. Our services include development and evaluation of insecticides, repellents for human and veterinary use, after bite treatments and head lice treatment products. We offer unique access to internationally renowned scientists and laboratory facilities, including field sites in Africa, South East Asia, The Americas and Europe. Our experts also offer bespoke outsourcing of entomologists for research projects, consultancy, training, monitoring and school education.

### Barcelona Institute for Global Health (ISGlobal)
**Booth 320**
Contact: Dr. Núria Casamitjana, Director of Training and Education
C/ Rosselló, 132, 5º 2ª
Barcelona, 08036 Spain
Phone: +34 93 227 1806
Email: info@isglobal.org
Website: www.isglobal.org

The Barcelona Institute for Global Health (ISGlobal) is a public-private sector alliance to address challenges in global health. It works through a value chain of scientific research, knowledge translation and innovation, policy and global development, and a rigorous academic program for professionals from diverse fields.

The Malaria Eradication Scientific Alliance (MESA) advances an evidence-based approach to eradication, providing knowledge management tools to expand the impact of the evidence base and accelerating relevant research. The MESA Secretariat is hosted by ISGlobal.

### Bayer SPONSOR
**Booth 310**
Contact: Justin McBeath
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Phone: +49 174 283 0125
Email: justin.mcbeath@bayer.com
Website: www.vectorcontrol.bayer.com

Bayer CropScience (Environmental Science) is a research and development focused organization with a history of involvement in vector control spanning more than 60 years. We develop and supply a range of solutions for various vector control interventions and have active development projects primarily focused on addressing challenges associated with insecticide resistance. We welcome approaches to our exhibit from researchers and other individuals with common interests to ours.

### BEI Resources
**Booth 423**
Contact: Tim Stedman, Principal Investigator
10810 University Blvd.
Manassas, VA 20110 USA
Phone: +1-703-365-2700 x 2020
Email: kgarcia@atcc.org
Website: www.beiresources.org

BEI Resources, funded by NIAID, is the leading source for high-quality cultures, reagents, and arthropod vectors for studying emerging and tropical diseases, including malaria, zika, dengue, chikungunya, and tuberculosis, among other parasitic, viral, and bacterial diseases. Explore the benefits we offer at www.beiresources.org, and let us serve as a catalyst for your research efforts worldwide. We'll take care of the details while you focus on your research.

# Exhibitor, Sponsor and Supporter Directory (at press time)

### Bill & Melinda Gates Foundation SPONSOR

P.O. Box 23350
Seattle, WA 98102 USA
Phone: +1-206-709-3100
Email: info@gatesfoundation.org
Website: www.gatesfoundation.org

Guided by the belief that every life has equal value, the Bill & Melinda Gates Foundation works to help all people lead healthy, productive lives. In developing countries, it focuses on improving people's health and giving them the chance to lift themselves out of hunger and extreme poverty. In the United States, it seeks to ensure that all people – especially those with the fewest resources – have access to the opportunities they need to succeed in school and life. Based in Seattle, the foundation is led by CEO Dr. Susan Desmond-Hellmann and co-chair William H. Gates, Sr., under the direction of Bill and Melinda Gates and Warren Buffett.

### BioMed Central

**Booth 124**

Contact: Dana Berry, Senior Journal Development Editor
236 Gray's Inn Road
London, WC1X 8HB United Kingdom
Phone: +1-212-460-1600
Email: exhibits-ny@springer.com
Website: www.biomedcentral.com

BioMed Central is an online STM publisher of more than 270 peer-reviewed, open access journals. Our portfolio of journals spans all areas of biology, biomedicine and medicine, such as Journal of Cardiovascular Magnetic Resonance and Journal of Therapeutic Ultrasound. All original research articles published by BioMed Central are made freely accessible online immediately upon publication, whilst authors retain copyright of their work. BioMed Central is owned by Springer Nature, and also hosts the SpringerOpen platform.

### Burroughs Wellcome Fund SUPPORTER

**Booth 325**

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Email: jkramarik@bwf.org
Website: wellcome.ac.uk

The Burroughs Wellcome Fund is an independent private foundation dedicated to advancing the biomedical sciences by supporting research and other scientific and educational activities.

Wellcome exists to improve health for everyone by helping great ideas to thrive. We're a global charitable foundation, both politically and financially independent. We support scientists and researchers, take on big problems, fuel imaginations and spark debate.

### Carramore International Ltd

**Booth 309**

Contact: Alasdair Grant
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Website: www.carramore.com

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### Centre for Tropical Medicine and Global Health, University of Oxford

**Booth 225/227**

Contact: Anne Whitehouse
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Old Road Campus, Headington
Oxford, OX3 7FZ United Kingdom
Phone: +44 1865 612984
Email: info@iddo.org
Website: www.tropicalmedicine.ox.ac.uk

The Centre for Tropical Medicine and Global Health is a world-leading Centre within the Nuffield Department of Clinical Medicine, University of Oxford. The Centre is comprised of research groups who are permanently based in Africa and Asia as well as in Oxford, UK. Our research ranges from clinical studies to behavioural sciences, with capacity building integral to all of our activities. Find out more at http://www.tropicalmedicine.ox.ac.uk.

# Exhibitor, Sponsor and Supporter Directory (at press time)

### ClinicalRM SPONSOR
**Booth 206**
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1265 Ridge Road
Hinckley, OH 44233 USA
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Email: atrotch@clinicalrm.com
Website: www.clinicalrm.com

ClinicalRM is a full-service CRO specializing in preclinical through Phase-IV support of clinical research and clinical trial services for biologics, drugs and devices. The organization helps customers get their products to market faster with a wide array of research, regulatory and sponsor services. From international partnerships and affiliates to government relations and local alliances, ClinicalRM delivers specialized collaborations, expertise in infectious diseases, and a distinct ability to provide rapid-response efforts to global health crises. With registered branch offices in Sierra Leone and Liberia, ClinicalRM is known internationally for its efforts during the 2014 West Africa EVD outbreak, coupled with its ongoing EVD projects in the region funded by the Bill and Melinda Gates Foundation.

### Consortium for Health Action
**Booth 625**
Contact: Colin Ohrt, Founder, President
35 Trung Van Road
Hanoi, 10000 Vietnam
Phone: +84 126 909 2856
Email: colin8994@gmail.com
Website: www.ConsortiumHA.org
We use simple but powerful information technology and partnerships to "connect the dots."
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- To improve intervention targeting - for more effective use of donor funding
- To reduce poverty - the root cause of malaria and many other unneeded deaths
- To experience Vietnam - learning from war, teaching English

### DCN Diagnostics, Inc.
**Booth 307**
Contact: Brendan O'Farrell, President
6354 Corte Del Abeto, Suite B
Carlsbad, CA 92011 USA
Phone: +1-760-804-3886
Email: info@dcndx.com
Website: www.dcndx.com

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### Drugs for Neglected Diseases *initiative* (DND*i*)
**Booth 418**
Contact: Ilan Moss, Communications Manager
40 Wall St., 24th Floor
New York, NY 10005 USA
Phone: +1-646-616-8681
Email: imoss@dndi.org
Website: www.dndi.org

The Drugs for Neglected Diseases initiative (DNDi) is a patient-needs driven, not-for-profit research and development (R&D) organization discovering and developing safe, effective, and affordable medicines for neglected diseases that afflict millions of the world's poorest people. DNDi focuses on developing new treatments for the most neglected patients suffering from little-known, often fatal diseases including human African trypanosomiasis (sleeping sickness), leishmaniasis, Chagas disease, filaria, mycetoma, pediatric HIV, and hepatitis C.

### eLife Sciences Publications Ltd
**Booth 507**
First Floor, 24 Hills Road
Cambridge, CB2 1JP United Kingdom
Email: staff@elifesciences.org
Website: www.elifesciences.org

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### EuPathDB - University of Pennsylvania/University of Georgia
**Booth 513**
EuPathDB - University of Pennsylvania: Omar Harb
EuPathDB - University of Georgia: Susanne Warrenfeltz
University of Pennsylvania
304J Lynch Labs
433 S. University Ave.
Philadelphia, PA 19104 USA
Phone: +1-215-746-7019
Email: oharb@upenn.edu
Website: http://eupathdb.org/eupathdb/

NIH/NIAID funded Bioinformatics Resource Centers consist of five on-line databases that provide data, analysis tools and services to infectious disease pathogen researchers. Each center specializes in different groups of pathogens: The Eukaryotic Pathogen Database (www.EuPathDB.org) specializes in eukaryotic pathogens,VectorBase (www.vectorbase.or) covers invertebrate vectors of human pathogens, ViPR (www.viprbrc.org) encompasses human

viral pathogens, IRD (www.fludb.org) focuses on influenza virus, and PATRIC (www.patricbrc.org) supports bacteria. Each research center provides services to analyze and query functional data from each of the maintained organisms. Representatives will be available to answer questions and help with queries.

### FHI 360
**Booth 719**
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Email: shamrick@fhi36.org
Website: www.fhi360.org

FHI 360 is a nonprofit human development organization dedicated to improving lives in lasting ways by advancing integrated, locally driven solutions. Our staff includes experts in health, education, nutrition, environment, economic development, civil society, gender, youth, research, technology, communication and social marketing — creating a unique mix of capabilities to address today's interrelated development challenges. FHI 360 serves more than 70 countries and all U.S. states and territories.

### GenArraytion, Inc.
**Booth 207**
Contact: R. Paul Schaudies, CEO
9610 Medical Center Drive, Suite 230
Rockville, MD 20850 USA
Phone: +1-240-453-6312
Email: pschaudies@genarraytion.com
Website: www.genarraytion.com

GenArraytion, Inc. is dedicated to the development and commercialization of multiplexed molecular assays for infectious diseases, environmental and epidemiological applications, veterinary and biodefense markets. GenArraytion MultiFLEX™ Bioassays improve infection detection, prevention, response and treatment. GenArraytion's MultiFLEX assays are designed for both the Luminex magnetic beaded platform as well as real-time instruments. Existing assay panels include mosquito and tick-borne pathogens. Targets include plasmodium species, Zika, chikungunya and all four Dengue serotypes. Custom configurations are available.

### Genetic Signatures
**Booth 318**
Contact: Mike Aicher, Executive Director, U.S. Operations
Level 9, Lowy Packer Building
405 Liverpool St.
Darlinghurst, NSW 2153 Australia
Phone: US: +1-310-386-7863
AUS: +612 9870 7580
Email: maicher@geneticsignatures.com
Website: www.geneticsignatures.com
Genetic Signatures is transforming infectious disease detection with novel, rapid, multiplex real-time PCR technology.

Genetic Signatures provides research kits and analyte specific reagents for the development of multiplex, real-time PCR assays for pathogen detection. These kits and reagents utilize Genetic Signatures' patented 3base™ technology that improves the efficiency of multiplex real-time PCR and is compatible with existing laboratory instrumentation. Our universal sample preparation technology allows for uniform nucleic acid isolation with reduced contamination risk, and can be automated via commonly available extraction and liquid handling platforms.

### Global Health Fellows Program II
**Booth 523**
Contact: Maribel Sierra, Communications and Outreach Specialist
555 12th St., Suite 1050
Oakland, CA USA
Phone: +1-510-285-5662
Email: msierra@ghfp.net
Website: www.ghfp.net

Through the Global Health Fellows Program (GHFP) II, USAID is strengthening the GH workforce by engaging adaptable and resilient individuals with unique skills, experiences and backgrounds, in order to meet the challenges that arise in global health. GHFP-II offers multiple entry points into the field through its fellowships, internships, and partner opportunities.

### Global Health NOW, Johns Hopkins Bloomberg School of Public Health
**Booth 411**
Contact: Brian W. Simpson, Editor-in-Chief
615 N. Wolfe St., Suite E2142
Baltimore, MD 21205 USA
Phone: +1-410-502-3938
Email: bsimpso1@jhu.edu
Website: www.jhsph.edu

Global Health NOW is an essential daily read for the global health community. Every weekday, GHN aggregates and summarizes the latest global health news—delivering all the day's critical stories to your inbox and our news website <www.globalhealthnow.org>. Stop by and sign up for your free subscription to our enewsletter.

### Global Health Service Partnership
**Booth 221**
Contact: Brianna Geary, Program Assistant
1111 20th St NW
Washington, DC 20526 USA
Phone: +1- 202-692-2250
Email: ghsp@peacecorps.gov
Website: www.peacecorps.gov/globalhealth

The Global Health Service Partnership (GHSP) helps address critical shortages of health care professionals globally by sending physicians and nurses to work alongside local medical and nursing faculty for 12 months to build institutional capacity and help strengthen the quality of medical and nursing education. GHSP Volunteers serve in Liberia, Malawi, Swaziland(nurse openings only), Tanzania, and Uganda.

### The Henry M. Jackson Foundation for Advancement of Military Medicine
**Booth 407**
Contact: Edward Wright, Senior Capture Manager
6720A Rockledge Drive, Suite 100
Bethesda, MD 20817 USA
Phone: +1-443-622-2407
Email: ewright@hjf.org
Website: www.hjf.org

The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. is a private, not-for-profit organization authorized by Congress to support medical research and education at the Uniformed Services University and throughout the military community. Our workforce of 2,450 provides scientific and research services to medical researchers worldwide.

### IAMAT – International Association for Medical Assistance to Travellers
SUPPORTER
67 Mowat Avenue, Suite 036
Toronto, ON M6K 3E3 Canada
Email: info@iamat.org
Website: www.iamat.org

IAMAT's mission is to make the world a healthier place to travel. As an advocate for travelers' health since 1960, IAMAT protects the well-being of travelers with up-to-date and impartial health information, and an international network of English-speaking doctors. The non-profit organization also awards travel medicine scholarships to enhance healthcare standards in clinics and hospitals abroad. Since 1990, IAMAT has sponsored the annual ASTMH Vincenzo Marcolongo Memorial Lecture in honor of IAMAT's founder, a specialist in tropical medicine who dedicated his life to the medical needs of travelers.

### ICF
**Booth 313**
Contact: Jui Shah, Senior Monitoring & Evaluation Associate
9300 Lee Highway
Fairfax, VA 22031 USA
Phone: +1-301-572-0408
Email: jui.shah@icfi.com
Website: www.icfi.com

ICF works at the forefront of data collection, use, and analysis to support public health policies and programs. ICF is part of the MEASURE Evaluation consortium, which provides technical leadership through collaboration at all levels to advance global health monitoring and evaluation. ICF also implements the Demographic and Health Surveys (DHS) Program, which has provided technical assistance to over 300 surveys in 90 countries, advancing understanding of health and population trends.

### Infectious Diseases Society of America (IDSA) and IDWeek
**Booth 311**
Contact: Dana Johnston, Manager, Convention Operations and Meetings
1300 Wilson Blvd., Suite 300
Arlington, VA 22209 USA
Phone: +1-703-299-0200
Email: djohnston@idsociety.org
Website: www.idsociety.org

The Infectious Diseases Society of America (IDSA) represents over 10,000 physicians, scientists and other health care professionals from nearly 100 countries. IDSA publishes JID, CID, and the open access journal, OFID. IDSA also issues clinical practice guidelines, advocates for attention ot hte problem of antibiotic resistance, and promotes evidence-based U.S. action on global HIV and TB. IDSA partners with SHEA, HIVMA, PIDS to organize IDWeek (www.idweek.org), the premier international meeting in infectious diseases. www.idweek.org

### INMED - Institute for International Medicine
**Booth 410**
Contact: Nicholas Comninellis, INMED CEO & President
2340 E Meyer Blvd., Building 1, Suite 338
Kansas City, MO 64132 USA
Phone: +1-816-444-6400
Email: office@inmed.us
Website: inmed.us
professionals and students to serve the world's most forgotten people:

- Self-Paced On-Line Courses in the major global health topics
- Formal hybrid courses in both International Medicine and in Public Health
- Service learning experience in both International Medicine and in Public Health in 25 nations
- Credentialing via the Diploma in International Medicine (DIMPH) & International Public Health (DIPH)
- The annual INMED Humanitarian Health Conference

Please visit www.inmed.us

### Institute for Health Metrics & Evaluation
**Booth 424**
Contact: Erin Faulconer, Communications Officer
2301 5th Ave., Suite 600
Seattle, WA 98121 USA
Phone: +1-206-897-2800
Email: engage@healthdata.org
Website: www.healthdata.org

The Institute for Health Metrics and Evaluation (IHME) is an independent global health research center at the University of Washington that provides rigorous and comparable measurement of the world's most important health problems and evaluates the strategies used to address them. IHME makes this information freely available so that policymakers have the evidence they need to make informed decisions about how to allocate resources to best improve population health.

### International Society of Travel Medicine
**Booth 213**
Contact: Diane Nickolson, Executive Director
1200 Ashwood Parkway, Suite 310
Dunwoody, GA 30338 USA
Phone: +1-404-373-8282
Email: amartin@istm.org
Website: www.istm.org

The ISTM, with more than 3,500 members in close to 100 countries, is the largest organization of professionals dedicated to the advancement of the specialty of travel medicine. Members include physicians, nurses and other health professionals from academia, government and the private sector. In cooperation with health care providers, academic centers, the travel industry and the media, ISTM advocates and facilitates education, service, and research activities in the field of travel medicine.

### IVCC
**Booth 306/308**
Contact: Dr. Nick Hamon, CEO
Pembroke Place
Liverpool, L3 5QA United Kingdom
Phone: +44 (0) 7841 919606
Email: nick.hamon@ivcc.com
Website: www.ivcc.com

IVCC creates solutions and develops products focused on insects; to control, eliminate and eradicate vector borne disease.

### London School of Hygiene & Tropical Medicine
**Booth 312**
Contact: Jessie Schmitz
Keppel St.
London, WC1E 7HT United Kingdom
Phone: +00 4479 4072 8211
Email: jessie.schmitz@lshtm.ac.uk
Website: www.lshtm.ac.uk

The London School of Hygiene & Tropical Medicine is a world-leading centre for research and postgraduate education in public and global health, with 4,000 students and more than 1,000 staff working in over 100 countries. The School is highly rated in various university league tables. It was named the world's leading research-focused graduate school by Times Higher Education, and third in the world for social science and public health in the US News Best Global Universities Ranking. The School was also recognised for the impact of its research and was ranked second in the UK government's Research Excellence Framework and top in Europe for impact by the Leiden Ranking. www.lshtm.ac.uk

### Luminex Corporation
**Booth 118**
Contact: Matt Lesho, Senior Director, Government Business Development
12212 Technnology Blvd.
Austin, TX 78727 USA
Phone: +1-512-348-2386
Email: mlesho@luminexcorp.com
Website: www.luminexcorp.com

Luminex is committed to creating innovative, breakthrough solutions to help our customers improve health and advance science worldwide. We serve the needs of our customers in diverse markets including clinical diagnostics, pharmaceutical drug discovery, biomedical research, including genomic and proteomic research, personalized medicine, biodefense research and food safety. Our goal is to transform global healthcare and life science research through the development, manufacturing, and marketing of proprietary instruments and assays that deliver cost-effective, rapid results to clinicians and researchers.

### Manhiça Health Research Center
**Booth 322**
Contact: Teresa Machai, Engineer
Rua 12, Bairro Cambeve, Distrito da Manhica, Mozambique
Maputo, Maputo 1929 Mozambique
Phone: +25 882 314 8500
Email: teresa.machai@manhica.net
Website: www.manhica.org

Trianual reports, Books regarding the Research center, Brochure of results of research publications, newsletters, trianual reports; Leaflets, Posters, metal frames for posters, pend-rives, projector, Laptop; photograph Machine/camera; brochures, Roll ups; t-shirts, Caps, pens; Insect House, Lantern to collect mosquitoes, mosquito trap, battery for mosquito trap, microscopy; molesquines

### Manta Ray Media
**Booth 212**
Contact: Steve Lacey
Zetland House, 5-25 Scrutton St.
London, EC2A 4HJ United Kingdom
Phone: +44 (0)20 3815 7155
Email: steve@mantaraymedia.co.uk
Website: www.mantaraymedia.co.uk

Manta Ray Media is a specialist web and film company supporting global health and development organisations all over the world. Our mission is to help our clients make a greater difference and impact by overcoming the challenges they face in engaging, communicating and sharing knowledge with their audiences. We have a proven track record of delivering branding, websites, complicated databases and data visualisations to help our clients transform people's lives through their research and work.

### Medical Care Development International
**Booth 620**
Contact: Anne Woodworth, Senior Business Development Manager
8401 Colesville Road
Silver Spring, MD 20910 USA
Phone: +1-301-562-1920
Email: mcdi@mcd.org
Website: www.mcdinternational.org

Since its founding in 1977, Medical Care Development International has provided assistance to the health systems over 40 countries in Africa, the Caribbean, Central and South America, and the Middle East. We have worked in concert with a wide spectrum of organizations, from grassroots community groups to multi-lateral donor institutions, to improve the quality and quantity of care and to make that care affordable and accessible to the neediest people on Earth.

### Medical School for International Health
**Booth 208**
Contact: Kelly Coleman, Recruitment Coordinator
601 West 168th St., Suite 63
New York, NY 10032 USA
Phone: +1-212-995-1231
Email: coleman@post.bgu.ac.il
Website: msih.net

The MSIH is a four year, North American-style medical school that incorporates global health coursework into all years of the medical school curriculum. The MSIH is an English-language track at Ben-Gurion University and is affiliated with Columbia University's College of Physicians and Surgeons. The first three years of instruction take place in Israel, while fourth-year clinical electives take place at Columbia University Medical Center, the University of Pennsylvania, and other affiliated hospitals in North America.

### Meridian Bioscience, Inc.
SPONSORED SYMPOSIUM ORGANIZER
**Booth 412**
Contact: Monica Penagos,
Director of Marketing
3471 River Hills Drive
Cincinnati, OH 45244 USA
Phone: +1-513-271-3700
Email: linda.derose@meridianbioscience.com
Website: www.meridianbioscience.com

Meridian Bioscience is a leading manufacturer that develops, manufactures, markets and distributes a broad range of innovative diagnostic tests. These products are designed to enhance patient well-being while reducing total outcome costs of healthcare and provide definitive results through accuracy, simplicity and speed for the early diagnosis and treatment of medical conditions, such as gastrointestinal, viral and respiratory infections. Visit Meridian's website at www.meridianbioscience.com

### MMDP Project/Helen Keller International
**Booth 420**
Contact: Emily Toubali, MMDP Project Director
352 Park Ave. South, Suite 1200
New York, NY 10010 USA
Phone: +1-202-842-2397
Email: Etoubali@hki.org
Website: mmdpproject.org

The USAID MMDP Project is a $35 million project funded by the United States Agency for International Development. The project is led by Helen Keller International and aims to help countries reach their disease elimination goals for trachoma and lymphatic filariasis through support of the planning, implementation, and monitoring of the scale-up of trachomatous trichiasis surgery, hydrocele surgery, and lymphedema management.

# Exhibitor, Sponsor and Supporter Directory (at press time)

### New England Biolabs, Inc.

SPONSOR

240 County Road
Ipswich, MA 01938 USA
Phone: +1-978-927-5054
Website: www.neb.com

Established in the mid 1970's, New England Biolabs, Inc. (NEB) is the industry leader in the discovery and production of enzymes for molecular biology applications and now offers the largest selection of recombinant and native enzymes for genomic research. NEB continues to expand its product offerings into areas related to PCR, gene expression, sample preparation for next generation sequencing, synthetic biology, glycobiology, genome editing epigenetics and RNA analysis. Additionally, NEB is focused on strengthening alliances that enable new technologies to reach key market sectors, including molecular diagnostics development.

### NIH Schistosomiasis Resource Center at the Biomedical Research Institute

**Booth 421**

Contact: Margaret Mentink-Kane, Manager, NIH SRC
9410 Key West Ave.
Rockville, MD 20850 USA
Phone: +1-301-881-3300
Email: mmentinkkane@afbr-bri.com
Website: www.afbr-bri.com

For over 40 years, the National Institute of Allergy and Infectious Disease of the National Institutes of Health has supported the Schistosomiasis Resource Center (SRC), through which investigators can obtain schistosome life stages, free of charge. The SRC is housed at the Biomedical Research Institute. Through this contract, the three major schistosome species affecting humans (Schistosoma mansoni, S. haematobium, and S. japonicum) can be obtained either in their specific snail hosts or in infected mammals.

### NIH-NIAID Filariasis Research Reagent Resource Center (FR3)

**Booth 425**

Contact: Corine McCarthy, Lab Manager
800 Algoma Blvd.
Department of Biology and Microbiology
Oshkosh, WI 54901 USA
Phone: +1-920-424-0438
Email: mccarthc@uwosh.edu
Website: www.filariasiscenter.org

The Filariasis Research Reagent Resource Center (FR3) has provided a central resource of filariasis reagents, protocols and technical support for the international NTD research community since 1969. Supported by the National Institute of Health (NIH) and National Institute of Allergy and Infectious Diseases (NIAID), the FR3 acquires and distributes parasites, vectors, and molecular and serological reagents. The FR3 is based at the University of Georgia College of Veterinary Medicine. The University of Georgia subcontracts with Smith College for molecular resource development and production and with University of Wisconsin-Oshkosh to maintain the filarial parasite Acanthocheilonema vitaea.

### NO MO Foundation

**Booth 211**

Contact: Sam Darling, President
114 The Alameda
San Anselmo, CA 94960 USA
Phone: +1-250-538-0200
Email: darling@shaw.ca
Website: delcielo.net
Non profit distribution of a high-efficacy repellent to disease-endemic countries of Africa.

### Omega Diagnostics Ltd

**Booth 223**

Contact: John Bannister
Omega House, Hillfoots Business Village
Alva, Clackmannanshire FK12 5DQ
Scotland, United Kingdom
Phone: +44 (0) 1259 763030
Email: odl@omegadiagnostics.co.uk
Website: www.omegadiagnostics.co.uk

Omega Diagnostics manufacture and provide high quality IVD products for use in clinical diagnosis to over 100 countries worldwide. We will be showcasing the latest VISITECT® CD4 Point-of-Care test, an affordable and easy-to-use device that includes digital connectivity via smartphone App allowing data recording and analysis, a new range of malaria RDTs developed according to WHO guidelines and other infectious disease tests including a wide range of options for syphilis diagnosis.

### Oxford University Press

**Booth 122**

Contact: Michelle Kelly, Marketing
198 Madison Ave.
New York, NY 10016 USA
Phone: +1-800-451-7556
Email: custserv.us@oup.com
Website: global.oup.com

Oxford University Press publishes some of most respected and prestigious books and journals in the world. Visit our booth or www.oup.com for more information.

### PanTheryx, Inc.
**Booth 126**
Contact: Mark Grabowsky, Vice President of Public Innovations
5480 Valmont Road, Suite 325
Boulder, CO 80301 USA
Phone: +1-202-358-6308
Email: mgrabowsky@pantheryx.com
Website: www.pantheryx.com

PanTheryx's diarrhea relief product is not a drug or antibiotic, it's made from naturally derived ingredients that rapidly restore normal function to the intestinal tract. It's safe for children as young as 1, and was selected in Reimagining Global Health as 1 of 30 leading healthcare innovations with great promise to transform global health by 2030. This recognition was led by PATH and supported by the Bill & Melinda Gates Foundation and USAID, among others.

### Population Services International/ACTwatch
**Booth 413**
Contact: Tarryn Haslam, Deputy Director-Malaria and Child Survival
1120 19th St. NW
Washington, DC 20036 USA
Phone: +1-202-572-4010
Email: thaslam@psi.org
Website: www.psi.org

PSI is a global non-profit organization dedicated to improving the health of people in the developing world by focusing on serious challenges like a lack of family planning, HIV and AIDS, barriers to maternal health, and the greatest threats to children under five, including malaria, diarrhea, pneumonia and malnutrition. ACTwatch is a multi-country research project implemented by PSI that is designed to provide timely, relevant and high quality antimalarial market evidence to help inform malaria control and elimination strategies.

### Precision Antibody
**Booth 524**
Website: www.precisionantibody.com

Precision Antibody is recognized within the biotechnology industry for our rapid antibody development (40-60 days), customer service, and ability to deliver application specific antibodies. Precision Antibody comprehensive antibody services include antigen production, antibody development, high-throughput screening, Octet & Biacore affinity analysis, large and small scale antibody production, and assay development.

### Royal Society of Tropical Medicine and Hygiene
**Booth 521**
Contact: Tamar Ghosh
Northumberland House, 303-306 High Holborn
London, WC1V 7JZ United Kingdom
Phone: +0044 (0)20 7405 2628
Email: info@rstmh.org
Website: www.rstmh.org

RSTMH promotes and advances the study, control and prevention of disease in humans and other animals in the tropics and plays a leading role in increasing awareness throughout the world of tropical medicine and global health.

Through our international network of Fellows we facilitate training, education and exchange of information between clinicians, health-related scientists, nongovernmental development organisations and students across all disciplines in the fields of tropical medicine and global health.

### RTI International
**Booth 210**
Contact: Ned Burns, Business Development Associate
3040 E Cornwallis Road
Durham, NC 27709 USA
Phone: +1-919-541-6000
Email: nburns@rti.org
Website: www.rti.org

As one of the world's leading research institutes, RTI International implements large-scale global health programs that focus on strengthening health systems, controlling and eliminating neglected tropical diseases, and supporting programs to combat HIV, malaria, and other infectious diseases. Drop by our booth to meet our experts, discuss global health challenges and opportunities, and win prizes.

### Sanofi Pasteur
SPONSOR
Contact:
Roman Chicz, Head, External Research and Development
1541 avenue Marcel Mérieuxérieux
Marcy l'Etoile, 69280 France
Email: roman.chicz@sanofipasteur.com
Website: www.sanofipasteur.com

Sanofi Pasteur is the vaccines division of Sanofi. We distribute more than 1 billion doses of vaccine per year, making it possible to vaccinate more than 500 million people across the globe. Our broad portfolio protects against infectious diseases such as: cholera, diphtheria, dengue, Haemophilus influenzae type b infections, hepatitis A, hepatitis B, influenza, Japanese encephalitis, measles, meningococcal infections, mumps, pertussis, pneumococcal infections, poliomyelitis, rabies, rubella, tatanus, tuberculosis, typhoid fever and yellow fever.

# Exhibitor, Sponsor and Supporter Directory (at press time)

### Shin Poong Pharmaceutical Co., Ltd.
**Booth 406**
Contact: Jangsik Shin, Pyramax Project Leader
161 Yeoksam-ro, Gangnam-gu
Seoul, 06246 South Korea
Phone: +82 2 2189 3468
Email: jsshin@shinpoong.co.kr
Website: www.shinpoong.co.kr

Since 2002, Shin Poong has developed PYRAMAX® in cooperation with Medicines for Malaria Venture. In 2012, PYRAMAX® became the first ACT to receive a positive scientific opinion from EMA under Article 58 for the treatment of both P. falciparum and P. vivax in children and adults over 20kg body weight. In 2015 PYRAMAX® is available in child-friendly granules for children from 5 to 20kg. Also, PYRAMAX® is referred in WHO's list of prequalified medicines.

### Southeast Medical Books
**Booth 509**
Contact: Ralph Chiles, President
407 Peachtree Forest Terrace
Norcross, GA 30092 USA
Phone: +1-678-777-9078
Email: ralphchiles@gmail.com
Representing the worlds leading medical publishers.

### Takeda Pharmaceuticals International AG
SPONSOR
**Booth 218**
Contact: Nigel Glover, Senior Manager-Global Congresses
Thurgauerstrasse 130
Zurich, 8152 Glattpark-Opfikon Switzerland
Phone: +44 7824 592266
Email: nigel.glover@takeda.com
Website: www.takeda.com

Takeda Pharmaceutical Company Limited is a global, research and development-driven pharmaceutical company committed to bringing better health and a brighter future to patients by translating science into life-changing medicines. Takeda focuses its R&D efforts on oncology, gastroenterology and central nervous system therapeutic areas plus vaccines. Takeda conducts R&D both internally and with partners to stay at the leading edge of innovation. New innovative products, especially in oncology and gastroenterology, as well as our presence in Emerging Markets, fuel the growth of Takeda. For more information, visit http://www.takeda.com/news.

### TECHLAB, Inc.
SPONSOR
**Booth 106/108**
Contact: Donna T. Link, Director of Regulatory & Compliance
2001 Kraft Drive
Blacksburg, VA 24060 USA
Phone: +1-540-953-1664
Email: dlink@techlab.com
Website: www.techlab.com

TECHLAB has over 25 years of experience focused on the development and manufacturing of quality rapid non-invasive enteric in vitro diagnostics. Today the company continues to develop, manufacture and distribute intestinal diagnostics worldwide retaining an emphasis on science and collaboration with universities both international and domestic. Products are focused in the areas of intestinal inflammation, antibiotic-associated diarrhea and parasitology. Research continues on C. difficile, intestinal inflammation, Shiga toxin, and parasites including Giardia, Cryptosporidium, and Entamoeba histolytica.

### The Special Programme for Research and Training in Tropical Diseases (TDR)
**Booth 408**
Contact: Jamie Guth, Communications Manager
20, avenue Appia
Geneva, 1211 Switzerland
Phone: +44 79 441 2289
Email: guthj@who.int
Website: www.who.int/tdr

The TDR display will provide information about current and upcoming grants, research support and news on infectious diseases of poverty. The TDR Global platform with more than 2500 experts will be launched at ASTMH. It's the perfect place to look for an expert or design a multi-disciplinary team. In addition, a new massive open online course (MOOC) on implementation research will be available for testing.

### Time Research Limited
**Booth 224**
Contact: Lorraine Colley, Associate Director
Time House, 56b Crewys Road
London, NW2 2AD United Kingdom
Phone: +44 208 209 2020
Email: lorraine.colley@timeresearch.co.uk
Website: www.timeresearch.co.uk
Time Research is a market research company based in London, England.

We warmly invite delegats from around the world to participate in our questionnaire. One of our friendly interviewers will walk you through the survey and input your responses. Your views are very valuable and we hope to see you at our booth.

# Exhibitor, Sponsor and Supporter Directory (at press time)

### TwistDx
**Booth 618**
Contact: David Brooks, Business Development Manager
Babraham Research Campus
Cambridge, CB22 3AT United Kingdom
Phone: +44 1223 919 726
Email: d.brooks@twistdx.co.uk
Website: www.twistdx.co.uk

TwistDx designs and manufactures Recombinase Polymerase Amplification or RPA, a multiplexable isothermal DNA/RNA amplification and detection technology that works amazingly fast. RPA is a portable alternative to PCR and is ideally suited to point-of-use molecular assays for digital, microfluidics, agriculture, veterinary and biodefense applications.

### University of Notre Dame's Eck Institute for Global Health
**Booth 519**
Contact: Sarah Craig, Communications Director
120 Brownson Hall
Notre Dame, IN 46556 USA
Phone: +1-574-631-2665
Email: craig.20@nd.edu
Website: http://globalhealth.nd.edu/

The University of Notre Dame's Eck Institute for Global Health is a university-wide enterprise that recognizes health as a fundamental human righ and endeavors to promote research, training, and service to advance health standards for all people, especially people in low-and middle-income countries who are disproportionately impacted by preventable diseases. We support research for faculty, post docs, doctoral students, undergraudates in our member's labs, and our Master of Science in Global Health professional degree program.

### University Research Co., LLC
**Booth 324**
Contact: Taylor Price, Senior Program Officer
7200 Wisconsin Ave., Suite 600
Bethesda, MD 20814 USA
Phone: +1-301-941-8477
Email: Tprice@urc.chs.com
Website: www.urc-chs.com

University Research Co., LLC (URC) is a global company dedicated to improving the quality of health care, social services, and health education in over 40 countries. We improve health and education systems by empowering communities to identify and implement locally appropriate solutions to critical problems. Specific technical areas include education; maternal, newborn, and child health; infectious diseases including HIV/AIDS, TB, and malaria; reproductive health and family planning; food and nutrition; mental health; and vulnerable children and families.

### VectorBase
**Booth 513**
Contact: Gloria Giraldo-Calderon, VectorBase Scientific Liaison/ Outreach Manager
University of Notre Dame
315 Galvin Life Sciences Building
Notre Dame, IN 46556 USA
Phone: +1-574-631-8045
Email: info@vectorbase.org
Website: https://www.vectorbase.org/

NIH/NIAID funded Bioinformatics Resource Centers consist of five on-line databases that provide data, analysis tools and services to infectious disease pathogen researchers. Each center specializes in different groups of pathogens: The Eukaryotic Pathogen Database (www.EuPathDB.org) specializes in eukaryotic pathogens,VectorBase (www.vectorbase.or) covers invertebrate vectors of human pathogens, ViPR (www.viprbrc.org) encompasses human viral pathogens, IRD (www.fludb.org) focuses on influenza virus, and PATRIC (www.patricbrc.org) supports bacteria. Each research center provides services to analyze and query functional data from each of the maintained organisms. Representatives will be available to answer questions and help with queries.

### Walter Reed Army Institute of Research (WRAIR)
**Booth 525/527**
Contact: Douglas Davis, Senior Administrative Officer
503 Robert Grant Ave.
Silver Spring, MD 20910 USA
Phone: +1-301-319-9544
Email: douglas.r.davis10.civ@mail.mil
Website: http://wrair-www.army.mil

The Walter Reed Army Institute of Research is the largest biomedical research laboratory in the DoD and is based in Maryland with facilities throughout the world. The Institute is committed to innovation and excellence with a military-specific focus to protect the health and readiness of the Warfighter. Through its extensive array of capabilities the Institute develops countermeasures to infectious disease threats and conducts research that promotes psychological resilience, enhances neurological functioning, and improves operational readiness among our service members.

**Zymo Research Corp.**
**Booth 120**
Contact: Jessica Rathbun, Scientist
17062 Murphy Ave.
Irvine, CA 92614 USA
Phone: +1-949-679-1190
Email: jrathbun@zymoresearch.com
Website: www.zymoresearch.com

Since 1994, Zymo Research has been offering innovative, quality and easy-to-use tools for nucleic acid purification and Epigenetics research. Our innovative products and services simplify complex processes while at the same time improving results. All of our products are supported by unparalleled customer support. Zymo Research – Innovation. Quality. Simplicity.

# DETAILED PROGRAM

## Saturday, November 12

### ASTMH CTropMed® Examination Registration

*Marriott - Marquis Foyer*
Saturday, November 12, 7 a.m. - 8 a.m.

### ASTMH CTropMed® Examination

*Marriott - Marquis C*
Saturday, November 12, 8 a.m. - Noon

### Pre-Meeting Course Registration

*Marriott - Marquis Foyer*
Saturday, November 12, 10 a.m. - 2 p.m.

### ASTMH Council Meeting

*Marriott - Marquis D*
Saturday, November 12, Noon - 6 p.m.

### Clinical (ACCTMTH) Pre-Meeting Course: Clinical Ultrasound in Resource-Limited Settings — From Basic to Advanced

*Marriott - Imperial A and Imperial B*
Saturday, November 12, 12:30 p.m. - 6 p.m.
***Supported in part by GE Healthcare***

This intensive 1.5-day workshop will combine hands-on ultrasound training with expert discussion of most of the common illnesses found in resource-limited settings that are amenable to evaluation by point-of-care ultrasound. The course is aimed at all skill levels, from those who have never touched an ultrasound to those who use it in their day-to-day practice. Participants will be provided with three separate hands-on scanning blocks throughout the 1.5-day course. Hands-on sessions will include evaluation of the liver, spleen, aorta, heart, lungs, lower extremity veins and eyes. There will also be a hands-on ultrasound-guided procedures workshop. Scanning sessions progress from basic to advanced, with lectures, panel discussions and case presentations covering the ultrasonographic characteristics of the common diseases seen in resource-limited settings. These include, but are not limited to: extrapulmonary tuberculosis, HIV/AIDS, echinococcus, schistosomaisis, filariasis, rheumatic valvular heart disease, cardiomyopathy and lung infections. All faculty have ultrasound expertise and significant experience in point-of-care ultrasound in resource-limited settings. Hands-on faculty-to-participant ratio will be 1:5 to ensure everyone has ample opportunity to practice hands-on scanning using live models.

CHAIR

Enrico Brunetti
*University of Pavia, Pavia, Italy*

Daniel Kaminstein
*Medical College of Georgia, Augusta, GA, United States*

Walter (Ted) Kuhn
*Medical College of Georgia, Augusta, GA, United States*

12:30 p.m.
**INTRODUCTION TO ULTRASOUND AND COURSE LOGISTICS - HANDS-ON SCANNING**
Walter (Ted) Kuhn
*Medical College of Georgia, Augusta, GA, United States*

12:45 p.m.
**FAST (FOCUSED ASSESSMENT WITH SONOGRAPHY FOR TRAUMA) HANDS-ON SCANNING**
Richard Gordon
*Medical College of Georgia, Augusta, GA, United States*

1:15 p.m.
**RENAL - HANDS-ON SCANNING**
Richard Gordon
*Medical College of Georgia, Augusta, GA, United States*

1:45 p.m.
**LIVER - HANDS-ON SCANNING**
Lee LaRavia
*Medical College of Georgia, Augusta, GA, United States*

2:15 p.m.
**SPLEEN - HANDS-ON SCANNING**
Lee LaRavia
*Medical College of Georgia, Augusta, GA, United States*

2:45 p.m.
**COFFEE BREAK**

3 p.m.
**FASH (FOCUSED ASSESSMENT WITH SONOGRAPHY) FOR HIV-TB**
Tom Heller
*Kamuzu Central Hospital, Lilongwe, Malawi*

3:30 p.m.
**ECHINOCOCCUS**
Enrico Brunetti
*University of Pavia, Pavia, Italy*

4 p.m.
**SCHISTOSOMIASIS**
Daniel Kaminstein
*Medical College of Georgia, Augusta, GA, United States*

4:30 p.m.
**TROPICAL ECHOCARDIOGRAPHY**
Matthew Lyon
*Medical College of Georgia, Augusta, GA, United States*

5 p.m.
**ATTENDEE RECEPTION**

FACILITATORS

Rebecca J. Etheridge
*Medical College of Georgia, Augusta, GA, United States*

Maria Teresa Giordani
*San Bortolo Hospital, Vicenza, Italy*

Claudia Wallrauch
*Kamuzu Central Hospital, Lilongwe, Malawi*

# Sunday, November 13

## Registration

*Marriott - Marquis Foyer*
Sunday, November 13, 7 a.m. - 6 p.m.

## Clinical (ACCTMTH) Pre-Meeting Course: Clinical Ultrasound in Resource-Limited Settings — From Basic to Advanced

*Marriott - Imperial A and Imperial B*
Sunday, November 13, 7 a.m. - 5 p.m.
***Supported in part by GE Healthcare***

This intensive 1.5-day workshop will combine hands-on ultrasound training with expert discussion of most of the common illnesses found in resource-limited settings that are amenable to evaluation by point-of-care ultrasound. The course is aimed at all skill le vels, from those who have never touched an ultrasound to those who use it in their day-to-day practice. Participants will be provided with three separate hands-on scanning blocks throughout the 1.5-day course. Hands-on sessions will include evaluation of the liver, spleen, aorta, heart, lungs, lower extremity veins and eyes. There will also be a hands-on ultrasound-guided procedures workshop. Scanning sessions progress from basic to advanced, with lectures, panel discussions and case presentations covering the ultrasonographic characteristics of the common diseases seen in resource-limited settings. These include, but are not limited to: extrapulmonary tuberculosis, HIV/AIDS, echinococcus, schistosomaisis, filariasis, rheumatic valvular heart disease, cardiomyopathy and lung infections. All faculty have ultrasound expertise and significant experience in point-of-care ultrasound in resource-limited settings. Hands-on faculty-to-participant ratio will be 1:5 to ensure everyone has ample opportunity to practice hands-on scanning using live models.

CHAIR

Enrico Brunetti
*University of Pavia, Pavia, Italy*

Daniel Kaminstein
*Medical College of Georgia, Augusta, GA, United States*

Walter (Ted) Kuhn
*Medical College of Georgia, Augusta, GA, United States*

7 a.m.
**NETWORKING BREAKFAST**

7:45 a.m.
**CARDIAC - HANDS-ON SCANNING**
Matthew Lyon
*Medical College of Georgia, Augusta, GA, United States*

8:45 a.m.
**ABDOMINAL VASCULATURE - HANDS-ON SCANNING**
Jedidiah Ballard
*Augusta University, Augusta, GA, United States*

9:45 a.m.
**COFFEE BREAK**

10 a.m.
**LIVER ABSCESS**
Enrico Brunetti
*University of Pavia, Pavia, Italy*

10:30 a.m.
**FILARIASIS**
Francesca Tamarozzi
*University of Pavia, Pavia, Italy*

11 a.m.
**CIRRHOSIS MADE SIMPLE**
Tom Heller
*Kamuzu Central Hospital, Lilongwe, Malawi*

11:30 a.m.
**TROPICAL ULTRASOUND RESEARCH**
Francesca Tamarozzi
*University of Pavia, Pavia, Italy*

Noon
**LUNCH ON YOUR OWN**

1:30 p.m.
**DVT AND PROCEDURE WORKSHOP**
Eric Zevallos
*Medical College of Georgia, Augusta, GA, United States*

3 p.m.
**BREAK**

3:30 p.m.
**ULTRASOUND LOGISTICS**
Walter (Ted) Kuhn
*Medical College of Georgia, Augusta, GA, United States*

4 p.m.
**CASES**
Tom Heller
*Kamuzu Central Hospital, Lilongwe, Malawi*

Daniel Kaminstein
*Medical College of Georgia, Augusta, GA, United States*

4:30 p.m.
**PANEL DISCUSSION**
Enrico Brunetti
*University of Pavia, Pavia, Italy*

Tom Heller
*Kamuzu Central Hospital, Lilongwe, Malawi*

Daniel Kaminstein
*Medical College of Georgia, Augusta, GA, United States*

Walter (Ted) Kuhn
*Medical College of Georgia, Augusta, GA, United States*

5 p.m.
**COURSE ADJOURNS**

FACILITATORS

Rebecca J. Etheridge
*Medical College of Georgia, Augusta, GA, United States*

Maria Teresa Giordani
*San Bortolo Hospital, Vicenza, Italy*

Claudia Wallrauch
*Kamuzu Central Hospital, Lilongwe, Malawi*

## Arbovirology (ACAV) and Medical Entomology (ACME) Pre-Meeting Course: Know Thine Enemy: Methods to Identify Mosquitoes and the Viruses They Carry

*Marriott - A602*

Sunday, November 13, 7:30 a.m. - 3:45 p.m.

In the wake of major outbreaks of arthropod-borne viruses in the Americas, the course organizers have joined forces and gathered expertise from the American Committee of Medical Entomology (ACME) and the American Committee on Arthropod-Borne Viruses (ACAV) to speak to the challenges of identifying the culprit vector and virus in a mosquito-borne disease epidemic. The course will review the process of vector incrimination, whereby the mosquito vector and viral etiologic agent are revealed. From the vector perspective, speakers will discuss methods for knowing thine enemy via arthropod identification, vector competence studies, targeted trapping informed by an understanding of vector biology and biogeography. From the virus perspective, faculty will discuss approaches to cast a broad net in order to identify and isolate a variety of arboviruses using classical and state-of-the-art culture and sequencing approaches, along with field-applicable rapid diagnostics for particular virus species of interest. During the course, participants will have opportunities to see live mosquito specimens and receive basic training in mosquito identification. Select participants will have an additional opportunity to visit the CDC and MR4 laboratories to experience a hands-on clinic in mosquito identification and to see how mosquito colonies are maintained and mosquitoes are manipulated for vector competence studies.

CHAIR

Lyric Bartholomay
*University of Wisconsin Madison, Madison, WI, United States*

Kathryn Hanley
*New Mexico State University, Las Cruces, NM, United States*

7:30 a.m.
**LIGHT CONTINENTAL BREAKFAST**

8 a.m.
**COURSE INTRODUCTION - OVERVIEW OF THE COURSE**

Lyric Bartholomay
*University of Wisconsin Madison, Madison, WI, United States*

Kathryn Hanley
*New Mexico State University, Las Cruces, NM, United States*

8:15 a.m.
**MOSQUITO IDENTIFICATION**

Richard Wilkerson
*National Museum of Natural History, Suitland, MD, United States*

8:45 a.m.
**MAPPING AND TRACKING MOSQUITO BIONOMICS**

Yvonne-Marie Linton
*Walter Reed Biosystematics Unit, Silver Spring, MD, United States*

9:15 a.m.
**MOSQUITO ECOLOGY**

Gonzalo Vazquez-Prokopec
*Emory University, Atlanta, GA, United States*

9:45 a.m.
**COFFEE BREAK**

10 a.m.
**TARGETED TRAPPING**

Scott Ritchie
*James Cook University, Cairns, Australia*

10:45 a.m.
**VECTOR COMPETENCE**

Laura D. Kramer
*Wadsworth Center, Slingerlands, NY, United States*

11:30 a.m.
**LUNCH ON YOUR OWN**

12:45 p.m.
**CLASSICAL APPROACHES FOR IDENTIFICATION AND ISOLATION OF VIRUSES FROM MOSQUITO SAMPLES**

Robert B. Tesh
*University of Texas Medical Branch, Galveston, TX, United States*

1:15 p.m.
**RAPID TESTS FOR IDENTIFICATION OF VIRUSES FROM MOSQUITO SAMPLES**

Michael Turell
*Frederick, MD, United States*

1:45 p.m.
**NUCLEIC ACID DETECTION FOR IDENTIFICATION OF VIRUSES IN MOSQUITO SAMPLES**

Lark Coffey
*University of California Davis, Davis, CA, United States*

2:15 p.m.
**BREAK**

2:30 p.m.
**NEXT-GEN SEQUENCING FOR IDENTIFICATION OF VIRUSES IN MOSQUITO SAMPLES**

Mark Stenglein
*Colorado State University, Fort Collins, CO, United States*

3:15 p.m.
**PANEL DISCUSSION: WE HAVE MET THE ENEMY, AND THEY ARE ZIKA VIRUS**

3:45 p.m.
**COURSE ADJOURNS**

## Parasitology (ACMCIP) Pre-Meeting Course: Chemical Biology: A New Tool for Parasite Biology and Drug Development

*Marriott - Room M103/M104/M105*

Sunday, November 13, 7:30 a.m. - 4 p.m.

***Supported with funding from*** **ACS Infectious Diseases/ACS Publications**

In recent years there has been a revolution in high-throughput screening and molecular techniques that have led to discovery of compounds with activity against parasites. These compounds drive biologic knowledge and drug development for parasites. The compounds, if their targets can be discovered, become molecular probes into biological processes of parasites and can be applied

throughout lifecycles to elucidate target function. In addition, many collaborations between academic and industry groups have arisen, generating promising compounds for drug development. This pre-meeting course will present processes that lead to the discovery of small molecules with antiparasite activity. The course will examine how targets of these compounds are elucidated, using chemical-genomic approaches and ligand-based approaches. Speakers will investigate how the molecular structure of compound targets are elucidated and how iterative co-crystallography can be used to improve the potency and general properties of compounds. Faculty will give examples of kinetoplastid and helminthic drug discovery programs and how industry-academic drug discovery interactions occur. The course will explore how pharmacokinetics and safety interact with drug discovery programs to enhance success. Finally, the course will examine recent examples of antiparasitic resistance and how those resistance mechanisms are characterized.

CHAIR

Kevin J. Esch
*Zoetis, Kalamazoo, MI, United States*

Wesley Van Voorhis
*University of Washington, Seattle, WA, United States*

7:30 a.m.
**LIGHT CONTINENTAL BREAKFAST**

**PART 1: CHEMICAL BIOLOGY APPROACHES: FROM COMPOUND TO TARGET**

8 a.m.
**PHENOTYPIC SCREENS TO CHEMICAL-GENETIC APPROACHES TO TARGETS (MALARIA)**
Elizabeth Ann Winzeler
*University of California San Diego, La Jolla, CA, United States*

8:45 a.m.
**LIGAND APPROACHES TO LINK CHEMICALS TO TARGETS**
Sonja Ghidelli-Disse
*Cellzome - A GlaxoSmithKline Company, Heidelberg, Germany*

9:30 a.m.
**STRUCTURE-BASED DRUG DEVELOPMENT: RECENT EXAMPLES OF SUCCESSES IN MALARIA**
David Matthews
*University of Toronto, Toronto, ON, Canada*

10:15 a.m.
**COFFEE BREAK**

**PART 2: ANTIPARASITIC DRUG DEVELOPMENT**

10:30 a.m.
**KINETOPLASTID DRUG DEVELOPMENT**
Frederick S. Buckner
*University of Washington, Seattle, WA, United States*

11:15 a.m.
**HELMINTH DRUG DISCOVERY, USING MODEL ORGANISMS TO SCREEN FOR ANTHELMINTICS**
Timothy G. Geary
*McGill University, Ste-Anne-de-Bellevue, QC, Canada*

Noon
**LUNCH ON YOUR OWN**

**PART 3: FROM DISCOVERY TO PRODUCT**

1:30 p.m.
**ARTEMESININ RESISTANCE AND BEYOND IN MALARIA**
David A. Fidock
*Columbia University, New York, NY, United States*

2:15 p.m.
**INDUSTRY-ACADEMIC PARTNERSHIPS: THE TRES CANTOS/ GSK STORY**
Elena Fernández Álvaro
*GlaxoSmithKline, Tres Cantos, Madrid, Spain*

3 p.m.
**BREAK**

3:15 p.m.
**CUTTING-EDGE SAFETY - PRECLINICAL *IN VITRO* MODELS**
John P. Wikswo
*Vanderbilt University, Nashville, TN, United States*

4 p.m.
**COURSE ADJOURNS**

## Global Health (ACGH) Pre-Meeting Course: The Science of Disease Elimination

*Marriott - Room A601*
Sunday, November 13, 8 a.m. - 3:30 p.m.

Eradication of disease is the aspirational goal of global public health efforts, and yet only one infectious disease of humans – smallpox – has been eradicated to-date. There are ongoing efforts to eradicate poliomyelitis, dracunculiasis, yaws and malaria, and five more infectious diseases have been identified as potentially eradicable. Diseases that are potentially eradicable share a number of critical features, including the absence of a non-human reservoir or environmental amplification, availability of diagnostics, and an efficient and effective intervention. Additional factors such as financial support to implement interventions and political commitment are crucial to mount a successful eradication campaign. In recent years, health leaders have put forward the concept of disease elimination while calling upon scientists and policymakers to determine ways to achieve this noble aspiration. Global commitments to finance disease control programs worldwide have made this concept a tangible reality. Although these commitments are unprecedented in their amounts, they may still fall short in being able to reach the desired outcome unless progress can be demonstrated. Progress inspires continued support, because without continued support, elimination and - ultimately - eradication are not possible. Meanwhile, breakthroughs in program management, treatment, diagnostics, informatics, mapping, modelling and analysis to eliminate or eradicate diseases are notable. This course will focus on highlighting elimination topics, explaining their scientific theory and describing the implementation of elimination strategies and their evaluation to assess their utility in helping to drive transmission to zero and maintain it there. The course will also explore what is needed to develop successful partnerships

and how the science can assist in gaining support for policy and political will. Speakers will also present disease-specific topics that integrate the range of elimination science topics to demonstrate how the components of elimination science came together to help drive particular diseases to elimination or near-elimination, as well as successes and challenges from existing disease elimination and eradication programs.

COURSE ORGANIZER

Kim Lindblade
*Centers for Disease Control and Prevention, Bangkok, Thailand*

COURSE CO-CHAIRS

Koya C. Allen
*U.S. European Command Headquarters, U.S. Department of Defense, Stuttgart, Germany*

Juliette Morgan
*Centers for Disease Control and Prevention South Caucasus, Tibilisi, Georgia*

Christina Polyak
*Military HIV Research Program, Walter Reed Army Institute of Research, Washington, DC, United States*

Richard Reithinger
*RTI International, Washington, DC, United States*

8 a.m.
**LIGHT CONTINENTAL BREAKFAST**

8:30 a.m.
**WELCOME AND COURSE LOGISTICS**

8:45 a.m.
**THE SCIENCE OF DIAGNOSTICS FOR DISEASE ERADICATION**
Kimberly Won
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

9:15 a.m.
**QUESTION AND ANSWER SESSION**

9:30 a.m.
**THE SCIENCE OF MODELING FOR DISEASE ERADICATION**
Maria-Gloria Basáñez
*Imperial College London, London, United Kingdom*

10 a.m.
**QUESTION AND ANSWER SESSION**

10:15 a.m.
**COFFEE BREAK**

10:30 a.m.
**PANEL DISCUSSION: SURVEILLANCE**
Koya C. Allen, Moderator
*U.S. European Command Headquarters, U.S. Department of Defense, Stuttgart, Germany*

Richard W. Steketee
*MACEPA, PATH, Seattle, WA, United States*

Gregory Armstrong
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

11 a.m.
**MODERATED DISCUSSION/QUESTION AND ANSWER SESSION**

11:15 a.m.
**KEYNOTE ADDRESS: AN OVERVIEW OF GETTING TO ZERO**
Frank Richards
*The Carter Center, Atlanta, GA, United States*

11:45 a.m.
**QUESTION AND ANSWER SESSION**

Noon
**LUNCH ON YOUR OWN**

1:15 p.m.
**THE SCIENCE AND ART OF COMMUNITY ENGAGEMENT IN DISEASE ELIMINATION AND ERADICATION**
Teshome Gebre Kanno
*The Task Force for Global Health, Addis Ababa, Ethiopia*

1:45 p.m.
**QUESTION AND ANSWER SESSION**

2 p.m.
**THE ECONOMICS OF DISEASE ERADICATION**
Kimberly Thompson
*University of Central Florida College of Medicine, Orlando, FL, United States*

2:30 p.m.
**QUESTION AND ANSWER SESSION**

2:45 p.m.
**THE SCIENCE OF POLITICAL AND FINANCIAL SUPPORT FOR DISEASE ERADICATION**
Ellyn W. Ogden
*United States Agency for International Development, Washington, DC, United States*

3:15 p.m.
**QUESTION AND ANSWER SESSION**

3:30 p.m.
**COURSE ADJOURNS**

## Young Investigator Award Sessions

The Young Investigator Award is presented to outstanding young researchers during the Annual Meeting. This award encourages developing young scientists to pursue careers in various aspects of tropical disease research. Young Investigator Award sessions are open to all meeting attendees. Support these young scientists by attending their presentations during this session.

ASTMH is grateful for the support of these awards in honor of William A. Petri, Sr. and in memory of Annie Liberati.

ASTMH appreciates support of these awards from:
The Petri Family
David Lyerly
TECHLAB Inc. CONTRIBUTOR
*ACS Infectious Diseases*/ACS Publications CONTRIBUTOR

## Young Investigator Award Session A

*Marriott - Room A708*
Sunday, November 13, 10 a.m. - 3 p.m.

JUDGE

Stephen Davies
*Uniformed Services University, Bethesda, MD, United States*

Edward Mitre
*Uniformed Services University, Bethesda, MD, United States*

Roshanak T Semnani
*National Institutes of Health, Bethesda, MD, United States*

### 89

### *SCHISTOSOMA MANSONI* INFECTION IMPAIRS REPRODUCTION IN MICE

**Monica C. Botelho**[1], Graça Lopes[2], Mario Sousa[2], Fatima Gartner[2], Helena Alves[1], Joachim Richter[3]
*[1]National Institute of Health Dr. Ricardo Jorge, Porto, Portugal, [2]ICBAS, Porto, Portugal, [3]Faculty of Medicine of the Heinrich-Heine University, Duesseldorf, Germany*

### 306

### IMPROVING IVERMECTIN´S EFFICACY AS A VECTOR CONTROL TOOL: REDUCING ITS METABOLISM AND EXCRETION TO PROLONG THE MOSQUITO-KILLING WINDOW

**Carlos J. Chaccour**[1], Sandra Castejon[2], Gloria Abizanda[3], Ángel Irigoyen[4], Azucena Aldaz[2], Felix Hammann[5], José Luis Del Pozo[2]
*[1]Instituto de Salud Tropical Universidad de Navarra, Pamplona, Spain, [2]Clínica Universidad de Navarra, Pamplona, Spain, [3]Centro de Investigación Médica Aplicada, Pamplona, Spain, [4]Drug Developing Unit Universidad de Navarra, Pamplona, Spain, [5]University Hospital Basel, Basel, Switzerland*

### 322

### MAPPING CLIMATIC, GEOGRAPHIC AND SOCIO-ECONOMIC DETERMINANTS OF MALARIA IN MALAWI FOR MALARIA RISK ASSESSMENT

**James Chirombo**[1], Rachel Lowe[2], Dianne J. Terlouw[3], Pietro Ceccato[4], Madeleine C. Thomson[4], Peter J. Diggle[5], Jonathan M. Read[5]
*[1]Lancaster University Medical School/Malawi Liverpool Wellcome Trust Clinical Research Programme, Blantyre, Malawi, [2]Institut Català de Ciències del Clima (IC[3]), Barcelona, Spain, [3]Malawi Liverpool Wellcome Trust Clinical Research Programme/ Liverpool School of Tropical Medicine, Blantyre, Malawi, [4]International Research Institute for Climate and Society, New York, NY, United States, [5]Lancaster University Medical School, Lancaster, United Kingdom*

### 476

### MALARIA PREVENTIVE MEASURES DURING ROUTINE CARE AMONG CHILDREN WITH SICKLE CELL DISEASE IN MALAWI

**Graham Ellis**[1], Godwin Chipoka[2], Pilirani Mafunga[2], Christopher Stanley[2], Tisungane Mvalo[2], Portia Kamthunzi[2], Isobel Kambalami[2], Peter Wasswa[3], Kate Westmoreland[4], Seyed Nouraie[5], Nigel Key[4], Kenneth Ataga[4], Satish Gopal[2]
*[1]Howard University College of Medicine, Washington, DC, United States, [2]UNC Project Malawi, Lilongwe, Malawi, [3]Baylor College of Medicine, Lilongwe, Malawi, [4]University of North Carolina at Chapel Hill, Chapel Hill, NC, United States, [5]University of Pittsburgh Medical Center, Pittsburgh, PA, United States*

### 497

### DEWORMING IN PRE-SCHOOL AGE CHILDREN IN NIGERIA: ARE THOSE WHO NEED IT THE MOST RECEIVING TREATMENT?

**Ifeoma D. Ozodiegwu**[1], Daniel Owusu[1], Candice Collins[1], Ifeoma N. Anagbogu[2], Henry V. Doctor[3], Megan A. Quinn[1]
*[1]East Tennessee State University, Johnson City, TN, United States, [2]Federal Ministry of Health, NTDs Control and Elimination Programme, Abuja, Nigeria, [3]World Health Organization, Regional Office for the Eastern Mediterranean, Cairo, Egypt*

### 565

### COMPARISON OF TWO RECOMBINANT ANTIGENS FOR DIAGNOSIS OF CHRONIC HUMAN FASCIOLIASIS

**Angel Hsu**[1], Isabel McAuliffe[2], Lorna Cruz[3], Ana M. Espino[3], Sukwan Handali[2]
*[1]Emory University, Atlanta, GA, United States, [2]Centers for Disease Control and Prevention, Atlanta, GA, United States, [3]University of Puerto Rico, San Juan, PR, United States*

### 643

### PARASITES IN THE PARK: AN EPIDEMIOLOGIC STUDY OF NYC PARKS FOR *TOXOCARA* SPECIES

**Donna L. Tyungu**[1], Carla Lee Lau[1], Rojelio Mejia[2], Henry Pollack[1]
*[1]New York University, New York, NY, United States, [2]National School of Tropical Medicine, Baylor College of Medicine, Houston, TX, United States*

### 677

### WATER, SANITATION AND HYGIENE (WASH) AND ENVIRONMENTAL RISK FACTORS FOR SOIL-TRANSMITTED HELMINTH INTENSITY OF INFECTION IN TIMOR-LESTE, USING REAL TIME PCR

**Suzy J. Campbell**[1], Susana Nery[1], Rebecca Wardell[1], Catherine D'Este[1], Darren Gray[1], James McCarthy[2], Rebecca Traub[3], Ross Andrews[4], Stacey Llewellyn[2], Andrew Vallely[5], Gail Williams[6], Archie Clements[1]
*[1]Australian National University, Canberra, ACT, Australia, [2]QIMR Berghofer Medical Research Institute, Brisbane, QLD, Australia, [3]University of Melbourne, Melbourne, VIC, Australia, [4]Charles Darwin University, Casuarina, NT, Australia, [5]University of New South Wales, Sydney, NSW, Australia, [6]University of Queensland, Brisbane, QLD, Australia*

### 1222

### HOST EXPOSURE TO EARLY LIFE STAGES OF *SCHISTOSOMA HAEMATOBIUM* DOES NOT ALTER THE BLADDER RESPONSE TO EGGS

**Loc Le**, Michael Hsieh
*Biomedical Research Institute, Rockville, MD, United States*

### 1226

### AN EGG PROTEIN FROM *SCHISTOSOMA MANSONI* IS PROMISING FOR DEVELOPMENT OF HIGH-SPECIFICITY DIAGNOSTICS IN THE ERA OF INTENSIFIED CONTROL

**Vanessa Silva-Moraes**[1], Paulo M. Coelho[1], Donald A. Harn[2], Flavia F. Couto[1], William C. Borges[3], Rafaella F. Grenfell[1], Ana Lucia T. Rabello[1], Lisa M. Shollenberger[2]
*[1]Rene Rachou Research Center - Oswaldo Cruz Foundation, Belo Horizonte, Brazil, [2]University of Georgia, Athens, GA, United States, [3]University Federal of Ouro Preto, Ouro Preto, Brazil*

### 1228

### A NOVEL CELL FREE DNA DETECTION ASSAY FOR THE DIAGNOSIS OF *SCHISTOSOMIASIS JAPONICA*

**Kosala G. Weerakoon**, Catherine A. Gordon, Geoffrey N. Gobert, Pengfei Cai, Donald P. McManus
*QIMR Berghofer Medical Research Institute, Brisbane, Australia*

### 1861

### WOMEN'S SANITATION EXPERIENCES ARE ASSOCIATED WITH MENTAL HEALTH IN RURAL, ODISHA INDIA

**Bethany A. Caruso**, Hannah L. Cooper, Regine Haardoerfer, Craig Hadley, Kathryn Yount, Thomas Clasen
*Emory University, Atlanta, GA, United States*

## 1910

### THE MACROFILARICIDAL ACTIVITY OF A SINGLE DOSE OF IVERMECTIN, ALBENDAZOLE AND DIETHYLCARBAMAZINE AGAINST *WUCHERERIA* BANCROFTI IN CÔTE D'IVOIRE

**Catherine M. Bjerum**[1], Allassane Ouattara[2], Benjamin G. Koudou[3], Abdoulaye Meite[4], James W. Kazura[5], Gary Weil[6], Christopher L. King[5]
*[1]Case Western Reserve University, Cleveland, OH, United States, [2]Centre Suisse de Recherche en Cote d'Ivoire, Abidjan, Côte D'Ivoire, [3]Liverpool School of Tropical Medicine, Pembroke Place, Liverpool, United Kingdom, [4]Programme National de Lutte Contre la Schistosomiase, les Geohelminthiases et la Filariose Lymphatique, Abidjan, Côte D'Ivoire, [5]Center for Global Health and Diseases, Case Western Reserve University, Cleveland, OH, United States, [6]Infectious Diseases Division, Department of Internal Medicine, Washington University School of Medicine, St. Louis, MO, United States*

## Young Investigator Award Session B

*Marriott - Room A701*
Sunday, November 13, 10 a.m. – 3 p.m.

JUDGE

Christopher Barker
*University of California Davis, Davis, CA, United States*

Brian D. Foy
*Colorado State University, Fort Collins, CO, United States*

Edward D. Walker
*Michigan State University, East Lansing, MI, United States*

## 182

### MEASURING SPECIES- AND REGION-SPECIFIC MARKERS OF MOSQUITO BITES BY SMALL PEPTIDE ARRAYS

**Andrew Pike**[1], Jason A. Bailey[1], John C. Tan[2], Jigar J. Patel[2], Matthew B. Laurens[1], Drissa Coulibaly[3], Amadou Niangaly[3], Mahamadou A. Thera[3], Ogobara K. Doumbo[3], Tracking Resistance to Artemisinin Collaboration, Mark A. Travassos[1], Andrea A. Berry[1], Christopher V. Plowe[1]
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## 532

### INFLUENCE OF CO-INFECTION ON CARRIAGE OF HUMAN PATHOGENS IN BROWN RATS FROM AN URBAN SLUM SETTING

**Ticiana S. Carvalho Pereira**[1], Fábio Souza[2], Luana Santos[2], Ruth Walker[2], Arsinoê Pertile[2], Gabriel Pedra[3], Thiago Bahiense[4], Eduardo da Silva[5], Mitermayer Reis[2], Albert Ko[6], James Childs[6], Michael Begon[3], Federico Costa[7]
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## 580

### DUAL RNA-SEQ RESPONSES OF FIELD-DERIVED SPECIMENS OF THE AFRICAN SNAIL *BIOMPHALARIA PFEIFFERI* TO INFECTION WITH THE HUMAN PARASITE, SCHISTOSOMA MANSONI PROVIDE INSIGHT INTO HOST-PARASITE RELATIONSHIPS AND REPRODUCTIVE IMPLICATIONS OF PARASITISM

**Sarah K. Buddenborg**[1], Lijing Bu[1], Si-Ming Zhang[1], Gerald M. Mkoji[2], Eric S. Loker[1]
*[1]University of New Mexico, Albuquerque, NM, United States, [2]Kenya Medical Research Institute, Nairobi, Kenya*

## 589

### THE ASSOCIATION BETWEEN HEAVY RAINFALL EVENTS AND DIARRHEAL DISEASE: THE INFLUENCE OF URBAN AND RURAL GEOGRAPHY

**Aniruddha Deshpande**, Howard H. Chang, Karen Levy
*Emory University, Atlanta, GA, United States*

## 591

### BURDEN OF DISEASE ATTRIBUTED TO WATER-BORNE TRANSMISSION OF SELECTED GASTROINTESTINAL PATHOGENS, AUSTRALIA 2010

**Katherine B. Gibney**, Joanne O'Toole, Martha Sinclair, Karin Leder
*Monash University, Melbourne, Australia*

## 628

### INVESTIGATING THE INFLUENCE OF *PLASMODIUM* INFECTION ON THE HUMAN VOLATILE ODOUR PROFILE IN AN ENDEMIC SETTING

**Ailie Robinson**[1], Jetske de Boer[2], Annette O. Busula[3], Stephen Powers[4], John Caulfield[4], Mike Birkett[4], John A. Pickett[4], Willem Takken[2], James Logan[1]
*[1]London School of Hygiene & Tropical Medicine, London, United Kingdom, [2]Wageningen University, Wageningen, Netherlands, [3]International Centre of Insect Physiology and Ecology, Nairobi, Kenya, [4]Rothamsted Research, Harpenden, United Kingdom*

## 665

### GENERIC AND STANDARDIZED DATA COLLECTION FORMS AND DATABASE APPLICABLE TO DIVERSE ENTOMOLOGICAL STUDIES OF MOSQUITOES

**Samson S. Kiware**[1], Alpha Malishee[1], Dickson Msaky[1], George Corliss[2], Gerry Killeen[1]
*[1]Ifakara Health Institute, Dar Es Salaam, United Republic of Tanzania, [2]Marquette University, Milwaukee, WI, United States*

## 694

### CELL TRAVERSAL BY MALARIA PARASITES: *PLASMODIUM* CELTOS BINDS AND DISRUPTS PLASMA MEMBRANES FROM THE CYTOPLASMIC FACE TO ENABLE THE EXIT OF PARASITES FROM CELLS DURING HOST AND VECTOR CELL TRAVERSAL

**John R. Jimah**, Nichole D. Salinas, Monica Sala-Rabanal, Nathaniel G. Jones, L. David Sibley, Colin Nichols, Paul Schlesinger, Niraj H. Tolia
*Washington University School of Medicine, St. Louis, MO, United States*

## 1012

### EVALUATING THE POTENTIAL TO TRANSMIT MALARIA FROM HUMANS TO MOSQUITOES DURING CONTROLLED HUMAN MALARIA INFECTION WITH P. FALCIPARUM AND P. VIVAX

**Katharine A. Collins**[1], Matthew Adams[1], Hayley Mitchell[1], Romal Stewart[1], Claire Wang[2], Caroline Dobbin[1], Teun Bousema[3], Robert Sauerwein[3], Stephan Chalon[4], Joerg Moehrle[4], James McCarthy[1]
*[1]QIMR Berghofer Medical Research Institute, Brisbane, Australia, [2]QPID Pty Ltd, Brisbane, Australia, [3]Radboud University Medical Centre, Nijmegen, Netherlands, [4]Medicines for Malaria Venture, Geneva, Switzerland*

## 1051

### SCRUB TYPHUS: A LONG NEGLECTED PUBLIC HEALTH THREAT IN THE ASIA-PACIFIC AREA AND WORLDWIDE

**Guang Xu**, Christine M. Arcari, Daniel Jupiter, Peter C. Melby, David H. Walker
*The University of Texas Medical Branch, Galveston, TX, United States*

## 1281

### SPATIO-TEMPORAL ANALYSIS AND *TRYPANOSOMA CRUZI* (AGENT OF CHAGAS DISEASE) INFECTION PREVALENCE OF CITIZEN-COLLECTED TRIATOMINE VECTORS ACROSS THE SOUTHERN USA

**Rachel Curtis-Robles**[1], Lisa D. Auckland[1], Sage Lane[1], Michael Z. Levy[2], Gabriel L. Hamer[1], Sarah A. Hamer[1]
*[1]Texas A&M University, College Station, TX, United States, [2]University of Pennsylvania, Philadelphia, PA, United States*

## 1297

### LONG-TERM EFFECT OF MASS DRUG ADMINISTRATION FOR SCABIES IN FIJI: EXPERIENCE FROM THE SHIFT TRIAL

**Lucia Romani**[1], Margot Whitfeld[2], Josefa Koroivueta[3], Mike Kama[3], Handan Wand[1], Lisi Tikoduadua[3], John Kaldor[1], Ross Andrews[4], Andrew Steer[5]
*[1]Kirby Institute, Sydney, Australia, [2]St. Vincent's Hospital, Sydney, Australia, [3]Ministry of Health, Suva, Fiji, [4]Menzies School of Health Research, Sydney, Australia, [5]Murdoch Childrens Research Institute, Melbourne, Australia*

## 1334

### THERE AND BACK AGAIN: A MOSQUITO SPERM'S JOURNEY FROM INSEMINATION TO FERTILIZATION

**Ethan Degner**, Laura Harrington
*Cornell University, Ithaca, NY, United States*

## 1338

### EVOLUTIONARY INFLUENCES ON THE REDUCTION IN ENZOOTIC CIRCULATION AND HUMAN INCIDENCE OF WESTERN EQUINE ENCEPHALITIS

**Nicholas A. Bergren**[1], Shannan L. Rossi[1], Richard A. Bowen[2], Scott C. Weaver[1]
*[1]University of Texas Medical Branch, Galveston, TX, United States, [2]Colorado State University, Fort Collins, CO, United States*

## 1830

### HYBRID ALLELIC IMBALANCE AND GENE EXPRESSION EVOLUTION IN THE *ANOPHELES GAMBIAE* SPECIES COMPLEX

**Kevin C. Deitz**[1], Willem Takken[2], Michel A. Slotman[1]
*[1]Texas A&M University, College Station, TX, United States, [2]Wageningen University, Wageningen, Netherlands*

# Young Investigator Award Session C

*Marriott - Room A703*
Sunday, November 13, 10 a.m. – 3 p.m.

JUDGE

Jeff Bailey
*Case Western Reserve University, Cleveland, OH, United States*

Brian Grimberg
*Case Western Reserve University, Cleveland, OH, United States*

Matthew B. Laurens
*Institute for Global Health, University of Maryland School of Medicine, Baltimore, MD, United States*

David L. Narum
*National Institutes of Health, Rockville, MD, United States*

## 266

### FALSE-NEGATIVE MALARIA RAPID DIAGNOSTIC TESTS IN RWANDA: IMPACT OF *P. FALCIPARUM* ISOLATES LACKING HRP2 AND IMPROVED MALARIA CONTROL

Christina T. Kozycki[1], Noella Umulisa[2], Stephen Rulisa[3], Corine Karema[2], Emil I. Mwikarago[4], Jean Pierre Habimana[4], Donald J. Krogstad[1]
*[1]Tulane University, New Orleans, LA, United States, [2]Malaria and Other Parasitic Diseases Division, Rwanda Biomedical Centre, Ministry of Health, Kigali, Rwanda, [3]University of Rwanda, Faculty of Medicine, Kigali, Rwanda, [4]National Reference Laboratory, Rwanda Biomedical Centre, Ministry of Health, Kigali, Rwanda*

## 271

### EVOLUTION AND SPREAD OF "STEALTH" PFHRP2 DELETIONS IN *PLASMODIUM FALCIPARUM* IN THE DEMOCRATIC REPUBLIC OF THE CONGO

**Jonathan B. Parr**[1], Robert Verity[2], Stephanie Doctor[1], Kelly Carey-Ewend[1], Breanna Turman[1], Mark Janko[1], Corinna Keeler[1], Amy Whitesell[1], Kashamuka Mwandagalirwa[1], Azra Ghani[2], Joris Likwela[3], Antoinette Tshefu[4], Michael Emch[1], Jonathan Juliano[1], Steven Meshnick[1]
*[1]University of North Carolina, Chapel Hill, NC, United States, [2]Imperial College London, London, United Kingdom, [3]Programme National de la Lutte contre le Paludisme, Kinshasa, Congo, Democratic Republic of the, [4]University of Kinshasa School of Public Health, Kinshasa, Democratic Republic of the Congo*

## 398

### PHASE I VACCINE TRIAL FOR EBA-175 RII INDUCES HIGH LEVELS OF BINDING INHIBITORY ANTIBODIES THAT TARGET KEY FUNCTIONAL EPITOPES

**Vashti Irani**[1], Annie Mo[2], Ivo Mueller[3], Peter Siba[4], Paul Ramsland[5], Jack Richards[1], James Beeson[1]
*[1]Burnet Institute, Melbourne, Australia, [2]National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, [3]Walter and Eliza Hall Institute, Parkville, Melbourne, Australia, [4]Papua New Guinea Institute of Medical Research, Goroka, Papua New Guinea, [5]School of Science, RMIT University, Melbourne, Australia*

## 855

### *PLASMODIUM FALCIPARUM* PARASITE CLEARANCE IN THE PERUVIAN AMAZON AS PART OF A DOD HARMONIZED CLINICAL TRIAL

**Edward S. Smith**[1], Salomon Durand[2], Laura L. Tapia[1], Cesar Cabezas[3], Paul E. Pachas[3], Moises Sihuincha[4], Kimberly A. Edgel[5], Geral C. Baldeviano[1], Andres G. Lescano[6], Sarah B. Ballard[1]
*[1]U.S. Naval Medical Research Unit - [6], Lima, Peru, [2]U.S. Naval Medical Research Unit - [6], Iquitos, Peru, [3]Instituto Nacional de Salud, Lima, Peru, [4]Hospital Iquitos Cesar Garayar García, Iquitos, Peru, [5]Naval Medical Research Center, Bethesda, MD, United States, [6]Universidad Peruana Cayetano Heredia, Lima, Peru*

## 873

### STRUCTURAL AND FUNCTIONAL EFFECTS OF HEME BINDING TO RCPFHRP2: IMPLICATIONS FOR MALARIA DIAGNOSIS

**Anna L. Bitting**[1], Christine F. Markwalter[1], Robert A. Burton[2], David W. Wright[1]
*[1]Vanderbilt University, Nashville, TN, United States, [2]PATH, Seattle, WA, United States*

## 875

### ALL-IN-ONE, MULTIPLEXED ON-BEAD ELISA FOR MALARIAL BIOMARKERS PLDH AND PFHRPII

**Christine F. Markwalter**, Keersten M. Ricks, Anna L. Bitting, David W. Wright
*Vanderbilt University, Nashville, TN, United States*

## 886

### APTAMER-BASED LOW RESOURCE DIAGNOSTICS FOR DETECTION OF MALARIAL BIOMARKER PLASMODIUM LACTATE DEHYDROGENASE

**Andrew G. Kantor**, David Wright
*Vanderbilt University, Nashville, TN, United States*

## 937

### TEMPORAL DYNAMICS OF GENOME-WIDE TRANSCRIPTION IN MALARIAL CHILDREN IN BURKINA FASO

**Aissatou Diawara**[1], Massar Dieng[1], Aboubacar S. Coulibaly[2], Alfred B. Tiono[2], Sodiomon Sirima[2], Issiaka Soulama[2], Youssef Idaghdour[1]
*[1]New York University Abu Dhabi, Abu Dhabi, United Arab Emirates, [2]Centre National de Recherche et de Formation sur le Paludisme (CNRFP), Ouagadougou, Burkina Faso*

## 940

### TURNING BACK THE CLOCK: A HISTORY OF APICOMPLEXAN SPECIES DIVERGENCE

**Kyle Tretina**, Kara Moser, Olukemi O. Ifeonu, James B. Munro, Joana C. Silva
*University of Maryland Baltimore, Baltimore, MD, United States*

## 941

### DETERMINATION OF THE *PLASMODIUM VIVAX* RECURRENCE PATTERN IN INDIVIDUALS OF THE COMMUNITIES OF CAHUIDE AND LUPUNA OF THE PERUVIAN AMAZON

**Jhonatan J. Alarcón Baldeón**[1], Oscar Nolasco Cárdenas[1], Paulo Manrique Valverde[1], Gabriel Carrasco-Escobar[1], Mitchel Guzmán[1], Elmer Llanos-Cuentas[2], Joseph Vinetz[3], Dionicia Gamboa[1]
*[1]Universidad Peruana Cayetano Heredia, Lima, Peru, [2]Instituto de Medicina Tropical Alexander von Humbold, Lima, Peru, [3]University of California San Diego, San Diego, CA, United States*

## 948

### EVIDENCE OF SELECTION AND GENE COPY NUMBER VARIATIONS IN VIRULENCE FACTORS AND RESISTANCE GENES IN *PLASMODIUM FALCIPARUM* FROM LORETO - PERU

**Hugo Oswaldo Valdivia**[1], Andres G. Lescano[2], Viviana Pinedo-Cancino[3], Lastenia Ruiz[4], Julian Rayner[5], Oralee Branch[6]
*[1]Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, [2]Universidade Peruana Cayetano Heredia, Lima, Peru, [3]Fundación para el Desarrollo Sostenible de la Amazonia Baja del Perú, Iquitos, Peru, [4]Centro de Investigación de Recursos Naturales de la Amazonia, Universidad Nacional de la Amazonia Peruana, Iquitos, Peru, [5]Malaria Programme, Wellcome Trust Sanger Institute, Hinxton, Peru, [6]New York University Langone Medical Center, New York, NY, United States*

## 999

### A HYBRID P. VIVAX BLOOD STAGE-TRANSMISSION BLOCKING VACCINE CANDIDATE ELICITS ROBUST CELLULAR IMMUNE RESPONSES AND LONG-LIVED FUNCTIONAL ANTIBODIES

**Jairo A. Fonseca**[1], Balwan Singh[1], Caitlin Bohannon[1], Monica Cabrera-Mora[1], Joshy Jacob[1], Myriam Arevalo-Herrera[2], Alberto Moreno[1]
*[1]Emory Vaccine Center, Atlanta, GA, United States, [2]Caucaseco Scientific Research Center, Malaria Vaccine and Drug Development Center (MVDC), Cali, Colombia*

## 1319

### ATYPICAL ACTIVATION OF HUMAN PRIMARY DENDRITIC CELLS BY PLASMODIUM FALCIPARUM

**Anton Goetz**, Maureen Ty, Ana Rodriguez
*New York University School of Medicine, New York, NY, United States*

## 1514

### DETECTION OF MALARIA INFECTION BY HEMOZOIN CONTENT COMPARED TO RDTS AND MICROSCOPY FROM PERUVIAN AMAZON SAMPLES

**Torrey T. Byrd**[1], G. Christian Baldeviano[2], Vincent R. Gerbasi[2], Elisa Vidal[2], Rafael Saavedra-Langer[3], Katty M. Arista[3], Viviana Pinedo-Cancino[3], Brian T. Grimberg[1]
*[1]Case Western Reserve University, Cleveland, OH, United States, [2]U.S. Naval Medical Research Unit - [6], Lima, Peru, [3]Universidad Nacional de la Amazonia Peruana, Iquitos, Peru*

## 1612

### ELUCIDATING NATURAL KILLER CELL-MEDIATED ANTIBODY-DEPENDENT CELLULAR CYTOTOXICITY TOWARDS RED BLOOD CELLS INFECTED BY *PLASMODIUM FALCIPARUM*

**Gunjan Arora**, Geoffrey T. Hart, Sanjay A. Desai, Eric O. Long
*National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, MD, United States*

## 1903

### PHENOTYPIC AND FUNCTIONAL CHARACTERISTICS OF HLA-DR+ NEUTROPHILS IDENTIFIED IN CIRCULATION OF BRAZILIAN CUTANEOUS LEISHMANIASIS PATIENTS

**Richard E. Davis**[1], Smriti Sharma[2], Jacilara Conceicao[3], Pedro P. Carneiro[3], Shyam Sundar[2], Olivia Bacellar[3], Edgar M. Carvalho[3], Mary E. Wilson[1]
*[1]University of Iowa, Iowa City, IA, United States, [2]Banaras Hindu University, Varanasi, India, [3]Universidade Federal da Bahia, Salvador, Brazil*



## Young Investigator Award Session D

*Marriott - Room A704*
Sunday, November 13, 10 a.m. – 3 p.m.

JUDGE

Peter Crompton
*National Institutes of Health, Rockville, MD, United States*

Ann M. Moormann
*University of Massachusetts, Worcester, MA, United States*

Miranda Oakley
*Food and Drug Administration, Silver Spring, MD, United States*

Ann Stewart
*Walter Reed Army Institute of Research, Silver Spring, MD, United States*

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### *PLASMODIUM FALCIPARUM* PHISTC PROTEINS ARE REQUIRED FOR ANTIGEN DELIVERY TO THE INFECTED ERYTHROCYTE SURFACE

**Deepali B. Ravel**, Pierre-Yves Mantel, Kathleen W. Dantzler, William C. Beyer, Nicolas M. Brancucci, Manoj T. Duraisingh, Matthias Marti
*Harvard School of Public Health, Boston, MA, United States*

## 696

### THROMBOSPONDIN RELATED SPOROZOITE PROTEIN IS IMPORTANT FOR THE ESTABLISHMENT OF *P. FALCIPARUM* LIVER STAGE INFECTION

**Charlie Jennison**[1], Matthew T. O'Neill[1], Jennifer S. Armistead[1], Annie S. Yang[1], Sash Lopaticki[1], Norman M. Kneteman[2], Justin A. Boddey[1]
*[1]Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia, [2]University of Alberta, Edmonton, AB, Canada*

## 841

### MOLECULAR DISSECTION OF THE PLASMODIUM SPOROZOITE SURFACE GAPDH FOR MALARIA LIVER INVASION

**Sung-Jae Cha**, Marcelo Jacobs-Lorena
*Johns Hopkins University, Baltimore, MD, United States*

## 846

### DEVELOPMENTAL CYCLE AND TISSUE SEQUESTRATION OF *P. VIVAX* TRANSMISSION STAGES IN THE NON-HUMAN PRIMATE MODEL

**Elamaran Meibalan**[1], Nicanor Obaldia III[2], Juliana Sa[3], Siyuan Ma[1], Pedro Mejia[1], Roberto Moraes Barros[3], William Otero[2], Manoj T. Duraisingh[1], Danny Milner[1], Curtis Huttenhower[1], Dyann F. Wirth[1], Tom Wellems[3], Matthias Marti[1]
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## 912

### HIGH LEVEL OF SUBMICROSCOPIC INFECTIONS OF FOUR *PLASMODIUM* SPECIES DURING PRE-ELIMINATION PHASE IN NORTH SUMATERA, INDONESIA

**Inke N. Lubis**[1], Hendri Wijaya[2], Munar Lubis[2], Khalid Beshir[1], Chairuddin P. Lubis[2], Colin J. Sutherland[1]
*[1]London School of Hygiene & Tropical Medicine, London, United Kingdom, [2]University of North Sumatera, Medan, Indonesia*

## 926

### ASSOCIATION BETWEEN CARRIAGE OF ASYMPTOMATIC INFECTIONS AND TIME TO CLINICAL MALARIA IN MALAWI: DATA FROM A LONGITUDINAL COHORT STUDY

**Andrea G. Buchwald**[1], Alick Sixpence[2], Millius Damson[2], Mabvuto Chimenya[2], Andy Bauleni[2], Syze Gama[2], John D. Sorkin[1], Karl Seydel[3], Don Mathanga[4], Terrie E. Taylor[3], Miriam K. Laufer[1]
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## 966

### LONGITUDINAL ASSESSMENT OF PFSPZ-SPECIFIC T CELL RESPONSES IN MALARIA-NAÏVE ADULTS VACCINATED WITH PFSPZ VACCINE

**Andrew S. Ishizuka**[1], Kirsten E. Lyke[2], Sumana Chakravarty[3], Andrea A. Berry[2], Adam DeZure[1], Eric R. James[3], Thomas L. Richie[3], Adam J. Ruben[3], Tao Li[3], B Kim Lee Sim[3], Julie E. Ledgerwood[1], Stephen L. Hoffman[3], Robert A. Seder[1]
*[1]National Institutes of Health, Bethesda, MD, United States, [2]Institute for Global Health, University of Maryland School of Medicine, Baltimore, MD, United States, [3]Sanaria Inc., Rockville, MD, United States*

## 1243

### POPULATION GENOMICS OF PLASMODIUM FALCIPARUM TO INFORM THE DESIGN AND EFFICACY OF WHOLE ORGANISM MALARIA VACCINES

**Kara A. Moser**[1], Amed Ouattara[1], Elliott F. Drabek[1], Sergey Koren[2], Adam Phillippy[2], Matt Adams[1], Amadou Niangaly[3], Karim Traore[3], Abdoulaye K. Kone[3], Drissa Coulibaly[3], Mahamadou A. Thera[3], Ogobara K. Doumbo[3], Miriam K. Laufer[1], Matthew B. Laurens[1], Krisada Jongsakul[4], Chanthap Lon[5], David Saunders[4], Kay Thwe Han[6], Myaing M. Nyunt[1], Robert W. Sauerwein[7], B. Kim Lee Sim[8], Toa Li[8], Mark A. Travassos[1], Shannon Takala Harrison[1], Stephen L. Hoffman[8], Christopher V. Plowe[1], Joana C. Silva[1]
[1]University of Maryland School of Medicine, Baltimore, MD, United States, [2]National Human Genome Research Institute, Bethesda, MD, United States, *[3]University Science, Techniques and Technologies, Bamako, Mali, [4]Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand, [5]Armed Forces Research Institute of Medical Sciences, Phnom Penh, Cambodia, [6]Ministry of Health, Yangon, Myanmar, [7]Radboud University Medical Center, Nijmegen, Netherlands, [8]Sanaria Inc., Rockville, MD, United States*

## 1257

### VALIDATION OF ULTRASENSITIVE DETECTION OF ASYMPTOMATIC MALARIA USING DRIED BLOOD SPOTS

**Kayvan Zainabadi**[1], Matthew Adams[1], Zay Yar Han[2], Hnin Wai Lwin[2], Kay Thwe Han[2], Myaing Nyunt[1], Christopher Plowe[1]
*[1]Institute for Global Health, Division of Malaria Research, University of Maryland School of Medicine, Baltimore, MD, United States, [2]Department of Medical Research, Ministry of Health, Yangon, Myanmar*

## 1307

### CHARACTERIZATION OF THE TRYPANOSOMATID SECONDARY ALTERNATIVE OXIDASE - A NOVEL POTENTIAL DRUG TARGET

**Stefanie Kate Menzies**, Lindsay B. Tulloch, Andrew L. Fraser, Eoin R. Gould, Elizabeth F. King, Marija K. Zacharova, Gordon J. Florence, Terry K. Smith
*University of St. Andrews, St. Andrews, United Kingdom*

## 1317

### GAMETOCYTE-SPECIFIC IMMUNITY PROVIDES A RATIONALE FOR NOVEL TRANSMISSION BLOCKING INTERVENTIONS IN *P. FALCIPARUM*

**Kathleen Dantzler**[1], Sanna Rijpma[2], Siyuan Ma[1], Dingying Tao[3], Will Stone[2], Karl Seydel[4], Miriam Laufer[5], Huw Davies[6], Phil Felgner[6], Rhoel Dinglasan[3], Terrie Taylor[4], Curtis Huttenhower[1], Teun Bousema[2], Matthias Marti[1]
*[1]Harvard T.H. Chan School of Public Health, Boston, MA, United States, [2]Radboud University Nijmegen Medical Center, Nijmegen, Netherlands, [3]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, [4]Michigan State University, East Lansing, MI, United States, [5]University of Maryland School of Medicine, Baltimore, MD, United States, [6]University of California Irvine, Irvine, CA, United States*

## 1476

### CHARACTERIZATION OF ANTIBODIES AGAINST *P. FALCIPARUM* INVASION PROTEIN PFMSP10.

**Elizabeth M. Villasis**, Jorge Bendezu, Katherine Garro, Oscar Nolasco, Katherine Torres, Beronica Infante, Dionicia Gamboa, Joseph Vinetz
*Universidad Peruana Cayetano Heredia, Lima, Peru*

## 1606

### PLACENTAL MALARIA IS ASSOCIATED WITH ALTERED FETAL CYTOKINE PROFILES

**Sarah Boudova**[1], Titus Divala[2], Randy Mungwira[2], Patricia Mawindo[2], Tamiwe Tamoka[3], Marcelo B. Sztein[4], Kirsten E. Lyke[1], Cristiana Cairo[5], Miriam K. Laufer[1]
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## 1748

### ARTEMISININ DIMERS AS PROMISING NEW DRUG LEADS FOR VISCERAL LEISHMANIASIS

**Surendra K. Jain**[1], Waseem Gul[2], Mahmoud A. Elsohly[2], Babu L. Tekwani[1]
*[1]National Center for Natural Products Research, Department of BioMolecular Sciences, School of Pharmacy, University of Mississippi, University, MS, United States, [2]ElSohly Laboratories, Inc., Oxford, MS, United States*

## 1750

### PROTEOMIC ANALYSIS OF PLASMA-DERIVED EXTRACELLULAR VESICLES IN NATURAL INFECTIONS OF *PLASMODIUM VIVAX, TRYPANOSOMA CRUZI* AND *FASCIOLA HEPATICA*

**Joan Segui Barber**[1], Alicia Galiano[2], Isabel Diaz[3], Emanuella Fajardo[4], Antonio Marcilla[5], Igor C. Almeida[4], Antonio Osuna[3], Hernando A. del Portillo[6]
*[1]Barcelona Institute for Global Health (ISGlobal), Barcelona, Spain, [2]Area de*

*Parasitologia, Departament de Biologia Cellular i Parasitologia, Universitat de València, Valencia, Spain, [3]Institute of Biotechnology, Biochemistry and Molecular Parasitology, University of Granada, Granada, Spain, [4]Border Biomedical Research Center, Department of Biological Sciences, University of Texas, El Paso, TX, United States, [5]Area de Parasitologia, Departament de Biologia Cellular i Parasitologia, Universitat de València, Joint Research Unit on Endocrinology, Nutrition and Clinical Dietetics, Universitat de València-Health Research Institute La Fe, Valencia, Spain, [6]ICREA at ISGlobal Institute for Global Health, Hospital Clínic, Universitat de Barcelona, and Institut d'Investigació Germans Trias i Pujol (IGTP), Badalona, Spain*

## 1844

### WHOLE GENOME SEQUENCING USED TO DISTINGUISH *PLASMODIUM VIVAX* RELAPSE FROM REINFECTION AND PRIMAQUINE RESISTANCE IN PERU

**Annie Cowell**[1], Hugo Valdivia[2], Sesh Sundararaman[3], Elizabeth Loy[3], Andres G. Lescano[4], Christian Baldeviano[5], Salomon Durand[5], Vince Gerbasi[5], Beatrice Hahn[3], Elizabeth Winzeler[1]

*[1]University of California San Diego, La Jolla, CA, United States, [2]Universidade Federal de Minas Gerais, Belo Horizone, Brazil, [3]University of Pennsylvania, Philadelphia, PA, United States, [4]Universidad Peruana Cayetano Heredia, Lima, Peru, [5]U.S. Naval Medical Research Unit - [6], Lima, Peru*

## 1904

### HLA DR EXPRESSING LOW DENSITY NEUTROPHIL SUBSETS EXPAND DURING HUMAN VISCERAL LEISHMANIASIS AND CAN CONTRIBUTE TO T CELL PROLIFERATION.

**Smriti Sharma**[1], Richard Davis[2], Susanne Nylen[3], David L. Sacks[4], Shyam Sundar[1], Mary E. Wilson[2]

*[1]Institute of Medical Sciences, Banaras Hindu University, Varanasi, India, [2]University of Iowa, Iowa City, IA, United States, [3]Karolinska Institutet, Stockholm, Sweden, [4]NIH, Bethesda, MD, United States*

## 1907

### INVOLVEMENT OF NUCLEOTIDE-BINDING DOMAIN LEUCINE-RICH REPEAT PROTEIN 12 (NLRP12) IN VISCERAL LEISHMANIASIS (VL)

**Diogo Valadares**, Gwendolyn Clay, Richard E. Davis, Bayan Sudan, Yani Chen, Breanna Scorza, Fayyaz Sutterwala, Mary E. Wilson

*University of Iowa, Iowa City, IA, United States*

# Young Investigator Award Session E

*Marriott - Room A707*

Sunday, November 13, 10 a.m. – 3 p.m.

JUDGE

Subash Babu
*National Institutes of Health, Bethesda, MD, United States*

Vitaliano A Cama
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

Nicole Gottdenker
*University of Georgia, Athens, GA, United States*

Albert Ko
*Yale School of Public Health, New Haven, CT, United States*

## 84

### MATERNAL PARASITIC INFECTIONS ALTER INFANT ANTIBODY RESPONSE TO PNEUMOCOCCAL IMMUNIZATION

**Noah D. McKittrick**[1], David M. Vu[1], Derek Boothroyd[1], Indu Malhotra[2], Charles H. King[2], Francis M. Mutuku[3], Angelle Desiree LaBeaud[1]

*[1]Stanford University, Palo Alto, CA, United States, [2]Case Western Reserve University School of Medicine, Cleveland, OH, United States, [3]Technical University of Mombasa, Mombasa, Kenya*

## 200

### USING AN INNOVATIVE TELEHEALTH MODEL TO SUPPORT PROVIDERS IN GEOGRAPHICALLY DISPERSED AREAS WHO DELIVER CARE TO HIV-POSITIVE PREGNANT WOMEN

**Tara Ness**[1], Mary F. Annese[2], Natalia Martinez-Paz[2], Kenton T. Unruh[2], David H. Spach[2], Brian R. Wood[2]

*[1]University of Washington, Seattle, WA, United States, [2]University of Washington, Frontier AETC, Seattle, WA, United States*

## 224

### LOW COST, IMAGING BASED DEVICE FOR PERFORMING A WHITE BLOOD CELL COUNT AND 3-PART DIFFERENTIAL AT THE POINT OF CARE

**Catherine E. Majors**, Michal Pawlowski, Tomasz Tkaczyk, Rebecca Richards-Kortum

*Rice University, Houston, TX, United States*

## 237

### COMBATING ANEMIA WITH IRON SUPPLEMENTATION MAY INEVITABLY CAUSE A TRANSIENT INCREASE IN MALARIA RISK

**Morgan M. Goheen**[1], Rita Wegmuller[2], Amat Bah[2], Bakary Darboe[2], Ebrima Danso[2], Andrew M. Prentice[3], Carla Cerami[1]

*[1]University of North Carolina at Chapel Hill School of Medicine, Chapel Hill, NC, United States, [2]MRC International Nutrition Group, Keneba, Gambia, [3]London School of Hygiene & Tropical Medicine, London, United Kingdom*

## 481

### A NOVEL ELECTRONIC ALGORITHM USING HOST BIOMARKER POINT-OF-CARE TESTS FOR MANAGEMENT OF FEVER IN UNDER-FIVES IN RESOURCE-POOR SETTINGS (E-POCT): A CONTROLLED, NON-INFERIORITY STUDY

**Kristina Keitel**[1], Frank Kagoro[2], John Masimba[2], Tarsis Mlaganile[2], Zamzam Said[2], Josephine Samaka[2], Hosiana Temba[3], Willy Sangu[4], Alain Gervaix[5], Valérie D'Acremont[6], Blaise Genton[7]

*[1]Swiss Tropical and Public Health Institute/Boston Children's Hospital, Basel, Switzerland, [2]Ifakara Health Institute, Dar es Salaam, United Republic of Tanzania, [3]Ifakara Health Institute, Basel, United Republic of Tanzania, [4]Dar es Salaam City Council, Dar es Salaam, United Republic of Tanzania, [5]University Children's Hospital Geneva, Geneva, Switzerland, [6]Swiss Tropical and Public Health Institute/Policlinique Universitaire Médicale Lausanne, Basel, Switzerland, [7]Swiss Tropical and Public Health Institute/University Hospital Lausanne, Basel, Switzerland*

## 536

### RISK FACTORS FOR ACUTE HUMAN BRUCELLOSIS IN NORTHERN TANZANIA

**Shama Cash-Goldwasser**[1], Michael J. Maze[2], Matthew P. Rubach[3], Holly M. Biggs[3], Robyn A. Stoddard[4], Katrina J. Sharples[5], Jo E. Halliday[6], Sarah Cleaveland[6], Michael Shand[6], Blandina T. Mmbaga[7], Charles Muiruri[1], Wilbrod Saganda[8], Bingileki F. Lwezaula[8], Rudovick R. Kazwala[9], Venance P. Maro[7], John A. Crump[2]

*[1]Duke Global Health Institute, Duke University, Durham, NC, United States, [2]Centre for International Health, University of Otago, Dunedin, New Zealand, [3]Division of Infectious Diseases, Duke University Medical Center, Durham, NC, United States, [4]Centers for Disease Control and Prevention, Bacterial Special Pathogens Branch, Atlanta, GA, United States, [5]Department of Mathematics and Statistics, University of Otago, Dunedin, New Zealand, [6]Boyd Orr Centre for Population and Ecosystem Health, Institute of Biodiversity, Animal Health and Comparative Medicine, University of Glasgow, Glasgow, United Kingdom, [7]Kilimanjaro Christian Medical Centre, Moshi, United Republic of Tanzania, [8]Mawenzi Regional Referral Hospital, Moshi, United Republic of Tanzania, [9]Department of Veterinary Medicine and Public Health, Sokoine University of Agriculture, Morogoro, United Republic of Tanzania*

## 538

### *LEPTOSPIRA* SEROPREVALENCE AND RISK FACTORS IN HEALTH CENTRE PATIENTS IN HOIMA DISTRICT, WESTERN UGANDA

**Jonathan Dyal**[1], Anou Dreyfus[2], Raewynne Pearson[3], Clovice Kankya[4], Charles Kajura[5], Lordrick Anaitwe[4], Steven Kakooza[4], Katey Pelican[6], Dominic Travis[6], Michael Mahero[6], David R. Boulware[7], Lawrence Mugisha[4]

*[1]Baylor College of Medicine, Houston, TX, United States, [2]University of Zurich, Zurich, Switzerland, [3]Massey University, Palmerston North, New Zealand, [4]College of Veterinary Medicine, Makerere University, Kampala, Uganda, [5]Hoima District Government, Hoima, Uganda, [6]College of Veterinary Medicine, University of Minnesota, Minneapolis, MN, United States, [7]Department of Medicine, University of Minnesota, Minneapolis, MN, United States*

## 539

### IMPACT OF REV1 LIVESTOCK VACCINATION ON THE RISK OF HUMAN BRUCELLOSIS IN AZERBAIJAN

**Ian Kracalik**[1], Rita Ismayilova[2], Mehriban Baghirova[3], Jason K. Blackburn[1]

[1]University of Florida, Gainesville, FL, United States, [2]Anti-Plague Station, *Baku, Azerbaijan, [3]State Veterinary Service, Baku, Azerbaijan*

## 640

### RISK FACTORS FOR ACUTE LEPTOSPIROSIS IN NORTHERN TANZANIA

**Michael J. Maze**[1], Shama Cash-Goldwasser[2], Holly M. Biggs[3], Matthew P. Rubach[3], Renee L. Galloway[4], Katrina J. Sharples[5], Kathryn J. Allan[6], Jo E. Halliday[6], Sarah Cleaveland[6], Michael C. Shand[6], Charles Muiriri[2], Rudovick R. Kazwala[7], Wilbrod Saganda[8], Bingileki F. Lwezaula[8], Blandina T. Mmbaga[9], Venance P. Maro[9], John A. Crump[1]

*[1]Centre for International Health, University of Otago, Dunedin, New Zealand, [2]Duke Global Health Institute, Durham, NC, United States, [3]Division of Infectious Diseases, Duke University Medical Center, Durham, NC, United States, [4]Centers for Disease Control and Prevention, Bacterial Special Pathogens Branch, Atlanta, GA, United States, [5]Department of Mathematics and Statistics, University of Otago, Dunedin, New Zealand, [6]Boyd Orr Centre for Population and Ecosystem Health, Institute of Biodiversity, Animal Health and Comparative Medicine, University of Glasgow, Glasgow, United Kingdom, [7]Department of Veterinary Medicine and Public Health, Sokoine University of Agriculture, Morogoro, United Republic of Tanzania, [8]Mawenzi Regional Referral Hospital, Moshi, United Republic of Tanzania, [9]Kilimanjaro Christian Medical Centre, Moshi, United Republic of Tanzania*

## 708

### IDENTIFICATION OF FACTORS ASSOCIATED WITH CHRONIC CHIKUNGUNYA DISEASE IN PATIENTS IN GRENADA, WEST INDIES

**Claire J. Heath**[1], Jason Lowther[2], Trevor P. Noël[2], Idis Mark-George[2], Derek B. Boothroyd[1], Calum N. MacPherson[2], A. Desiree LaBeaud[1]

*[1]Stanford University, San Francisco, CA, United States, [2]WINDREF, St. George's University, St. George's, Grenada*

## 761

### RISK FACTORS FOR ANTIBODY LOSS AFTER HEPATITIS E VIRUS NATURAL INFECTION OR VACCINATION: RESULTS OF A MULTI-SITE COHORT STUDY

**Brittany L. Kmush**[1], Ting Wu[2], Tuly Rahman[3], Huan Yu[2], Kenrad Nelson[1], James W. Shih[2], K. Zaman[3], Alain B. Labrique[1]

*[1]Johns Hopkins School of Public Health, Baltimore, MD, United States, [2]National Institute of Diagnostics and Vaccine Development in Infectious Diseases, The Key Laboratory of the Ministry of Education for Cell Biology and Tumour Cell Engineering, Xiamen University, Xiamen, China, [3]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh*

## 835

### LINKING HOUSEHOLD AND POINT-OF-CARE DATA TO ESTIMATE COVERAGE OF APPROPRIATE MANAGEMENT OF CHILDHOOD ILLNESS IN SOUTHERN PROVINCE, ZAMBIA

**Emily Carter**[1], Micky Ndhlovu[2], Emmy Nkhama[2], Melinda Munos[1], Joanne Katz[3], Thomas P. Eisele[4]

*[1]Institute for International Programs, Johns Hopkins School of Public Health, Baltimore, MD, United States, [2]Chainama College of Health Sciences, Lusaka, Zambia, [3]Johns Hopkins School of Public Health, Baltimore, MD, United States, [4]Center for Applied Malaria Research and Evaluation, Tulane School of Public Health and Tropical Medicine, New Orleans, LA, United States*

## 1030

### RISK FACTORS ASSOCIATED WITH TYPICAL ENTEROPATHOGENIC ESCHERICHIA COLI INFECTION AMONG CHILDREN <5 YEARS OLD WITH MODERATE-TO-SEVERE DIARRHEA IN RURAL WESTERN KENYA, 2008-2012

**Kirsten Fagerli**[1], Richard Omore[2], Sunkyung Kim[3], John B. Ochieng[2], Tracy Ayers[3], Tamer H. Farag[4], Dilruba Nasrin[4], Sandra Panchalingam[4], Roy M. Robins-Browne[5], James P. Nataro[4], Karen L. Kotloff[4], Myron M. Levine[4], Joseph Oundo[2], Michele B. Parsons[3], Kayla Laserson[6], Eric D. Mintz[3], Robert F. Breiman[7], Ciara E. O'Reilly[3]

*[1]Emory University, Atlanta, GA, United States, [2]Kenya Medical Research Institute/ Centers for Disease Control and Prevention, Kisumu, Kenya, [3]Division of Foodborne, Waterborne and Environmental Diseases, Centers for Disease Control and Prevention, Atlanta, GA, United States, [4]University of Maryland, School of Medicine, Center for Vaccine Development, Baltimore, MD, United States, [5]Department of Microbiology and Immunology, The University of Melbourne, Victoria, Australia, [6]Centers for Disease Control and Prevention, Kisumu, Kenya, [7]Centers for Disease Control and Prevention, Nairobi, Kenya*

## 1049

### METHICILLIN-SENSITIVE AND METHICILLIN-RESISTANT *STAPHYLOCOCCUS* AUREUS (MRSA) CARRIAGE AT A UGANDAN REGIONAL REFERRAL HOSPITAL

**Lisa M. Bebell**[1], Arnold Ayebare[2], Yap Boum II[3], Mark J. Siedner[1], Joel Bazira[2], Steven J. Schiff[4], Joshua P. Metlay[1], David R. Bangsberg[1], Stephen Ttendo[2], Paul G. Firth[1]

*[1]Massachusetts General Hospital, Boston, MA, United States, [2]Mbarara University of Science and Technology, Mbarara, Uganda, [3]Epicentre Research Base, Mbarara, Uganda, [4]The Pennsylvania State University, Hershey, PA, United States*

## 1905

### ACTIVATION OF HUMAN KERATINOCYTES BY LEISHMANIA SPP.: DIVERGENT EFFECTS OF *LEISHMANIA INFANTUM* VERSUS *LEISHMANIA MAJOR*

**Breanna Scorza**, Mark Wacker, Kelly Messingham, Janet Fairley, Mary Wilson

*University of Iowa, Iowa City, IA, United States*

## 1917

### HIGH SERUM ZINC LEVELS PROTECT AGAINST ROTAVIRUS INFECTION BUT NOT OTHER DIARRHEA-ASSOCIATED PATHOGENS IN A BIRTH COHORT IN BANGLADESH

**E. Ross Colgate**[1], Dorothy M. Dickson[1], Rashidul Haque[2], Mami Taniuchi[3], James A. Platts-Mills[3], Josyf C. Mychaleckyj[3], Uma Nayak[3], Marya P. Carmolli[1], William A. Petri[3], Beth D. Kirkpatrick[1]

*[1]University of Vermont College of Medicine, Burlington, VT, United States, [2]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, [3]University of Virginia, Charlottesville, VA, United States*

## 1928

### ASSESSING IMPACT OF COMMUNITY-BASED ANTIRETROVIRAL THERAPY AND ITS SCALE UP: PERSPECTIVES FROM FOUR PRIORITY LOCAL GOVERNMENT AREAS IN LAGOS, NIGERIA

**Chinedu O. Oraka**[1], Babatunde Odusolu[1], Adegbenga Olarinoye[1], Chinedu Agbakwuru[2], Titi Badru[2], Ifeyinwa Ndubuisi[1], Mariam Adeyemi[1], Ebere Iwerumoh[1], Adedoyin Ogunyemi[1]

*[1]FHI 360, Lagos, Nigeria, [2]FHI 360, Abuja, Nigeria*

## American Committee on Arthropod-Borne Viruses (ACAV) SIE Subcommittee Meeting

*Marriott - Room L401/L402*
Sunday, November 13, 11 a.m. - Noon

## Speaker Ready Room

*Marriott - International A*
Sunday, November 13, Noon - 6 p.m.

## Press Room

*Marriott - Room M102*
Sunday, November 13, Noon - 5:30 p.m.

## TropStop- Student/Trainee Lounge

*Marriott - Atrium Loft*
Sunday, November 13, Noon - 5 p.m.

This casual setting, designed with students, trainees and residents in mind (coffee, internet), is your place for a break from the fast-pace of the meeting and relax with colleagues and friends. Check out the "Office Hours," held in the TropStop. This will be your opportunity to meet up-and-coming professionals in the fields of tropical medicine, global health, science and industry who will share their personal career paths and answer your questions about the various bumps and forks in the road.

## Internet Nook

*Marriott - Imperial Foyer*
Sunday, November 13, Noon - 6 p.m.
***Sponsored by Takeda Pharmaceuticals International AG***

PREMIER

## Meeting Sign-Up Room

*Hilton - Rooms 206 and 207*
Sunday, November 13, Noon - 10 p.m.

## American Committee on Arthropod-Borne Viruses (ACAV) SIRACA Subcommittee Meeting

*Marriott - Room L401/L402*
Sunday, November 13, Noon - 2 p.m.

## American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP) Mentor/Trainee Lunch

*Marriott - Room A702*
Sunday, November 13, Noon - 1:30 p.m.

A mentoring event for matched ACMCIP trainees to have lunch with a senior/faculty member in a similar interest area(s). By invitation only.

## Elsevier-ASTMH Clinical Research Award

*Marriott - Room A706*
Sunday, November 13, Noon - 3:15 p.m.

This award recognizes excellence in clinically-oriented research presented by students (within six months of completing undergraduate or master's level training, including medical undergraduate degrees) or those in graduate medical training, of work submitted and presented (oral or poster) at the ASTMH Annual Meeting. Support these young scientists by attending their presentations during this session.

ASTMH appreciates the continued support of this award from Elsevier.

ORGANIZER

M. Patricia Joyce
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

JUDGE

Miguel M. Cabada
*Instituto de Medicina Tropical Alexander von Humboldt, Universidad Peruana Cayetano Heredia, Cusco, Peru*

Duane Hospenthal
*University of Texas Health Science Center at San Antonio, San Antonio, TX, United States*

Latha Rajan
*Tulane University, New Orleans, LA, United States*

12:05 p.m.

### 1140

**PREVALENCE OF PREECLAMPSIA AMONG HIV-POSITIVE PREGNANT WOMEN AS COMPARED TO HIV-NEGATIVE WOMEN IN IBADAN**

**Richard O. Olayide**, Timothy A. Oluwasola, Olubukola A. Adesina
*University College Hospital, Ibadan, Nigeria*

12:20 p.m.

### 457

**EPIDEMIOLOGY OF LEPTOSPIROSIS AMONG PATIENTS PRESENTING WITH ACUTE FEBRILE ILLNESS TO LAKESIDE HEALTH CENTERS IN RURAL RWANDA**

**Marc Munyengabe**, DeVon Hale, Tim Walker, Cyprien Ntirenganya, Etienne Ntabanganyimana
*University Teaching Hospital Butare, Huye, Rwanda*

12:35 p.m.

### 855

***PLASMODIUM FALCIPARUM* PARASITE CLEARANCE IN THE PERUVIAN AMAZON AS PART OF A DOD HARMONIZED CLINICAL TRIAL**

**Edward S. Smith**[1], Salomon Durand[2], Laura L. Tapia[1], Cesar Cabezas[3], Paul E. Pachas[3], Moises Sihuincha[4], Kimberly A. Edgel[5], Geral C. Baldeviano[1], Andres G. Lescano[6], Sarah B. Ballard[1]
*[1]U.S. Naval Medical Research Unit - 6, Lima, Peru, [2]U.S. Naval Medical Research Unit - 6, Iquitos, Peru, [3]Instituto Nacional de Salud, Lima, Peru, [4]Hospital Iquitos Cesar Garayar García, Iquitos, Peru, [5]Naval Medical Research Center, Bethesda, MD, United States, [6]Universidad Peruana Cayetano Heredia, Lima, Peru*

12:50 p.m.

### 1308

**UNDERSTANDING THE ROLE OF *LEISHMANIA* RNA VIRUS-1 (LRV-1) IN THE PATHOGENESIS OF AMERICAN TEGUMENTARY LEISHMANIASIS USING A HUMAN MACROPHAGE MODEL**

**Ruwandi Kariyawasam**[1], Jugvinder Grewal[1], Andrew Purssell[2], Rachel Lau[3], Braulio M. Valencia[4], Alejandro Llanos-Cuentas[4], Andrea K. Boggild[1]
*[1]University of Toronto, Toronto, ON, Canada, [2]University of British Columbia, Vancouver, BC, Canada, [3]Public Health Ontario Laboratories, Toronto, ON, Canada, [4]Instituto de Medicina Tropical "Alexander von Humboldt", Lima, Peru*

1:05 p.m.

## 461

### INFECTIOUS ETIOLOGIES OF FEBRILE ILLNESSES IN CAMEROON

**Obadia Mfuh Kenji**[1], Samuel Tassi Yunga[1], Obase Bekindaka[2], Calixt Mbakop[3], Olivia A. Achonduh-Atijegbe[2], Diane W. Taylor[1], Rose G. Leke[2], Vivek R. Nerurkar[1]
*[1]University of Hawaii, Honolulu, HI, United States, [2]University of Yaounde I, Yaounde, Cameroon, [3]National Medical Research Institute, Yaounde, Cameroon*

1:20 p.m.

## 12

### IMMUNE RESPONSE TO ORAL CHOLERA VACCINE (SHANCHOL) IN INTERNALLY DISPLACED PERSONS IN SOUTH SUDAN

**Anita S. Iyer**[1], Malika Bouhenia[2], John Rumunu[3], Abdinasir Abubakar[2], Randon Gruninger[1], Jane Pita[3], Richard Laku[3], Lul Deng[3], Joesph F. Wamala[2], Edward T. Ryan[4], Stephen Martin[5], Dominique Legros[5], Justin Lessler[6], David Sack[7], Francisco J. Luquero[8], Daniel T. Leung[9], Andrew S. Azman[6]
*[1]Division of Infectious Diseases, Department of Internal Medicine, University of Utah, Salt Lake City, UT, United States, [2]World Health Organization, Juba, South Sudan, [3]Republic of South Sudan Ministry of Health, Juba, South Sudan, [4]Department of Immunology and Infectious Diseases, Massachusetts General Hospital, Boston, MA, United States, [5]World Health Organization, Geneva, Switzerland, [6]Department of Epidemiology, Johns Hopkins University, Baltimore, MD, United States, [7]Department of International Health, Johns Hopkins University, Baltimore, MD, United States, [8]Epicenter, Paris, France, [9]Division of Infectious Diseases, Department of Internal Medicine, Division of Microbiology and Immunology, Department of Pathology, University of Utah, Salt Lake City, UT, United States*

1:35 p.m.
**BREAK**

1:55 p.m.

## 367

### IMMUNOLOGICAL EFFECT OF SEASONAL MALARIA CHEMOPREVENTION (SMC) WITH SULFADOXINE-PYRIMETHAMINE (SP) AND AMODIAQUINE (AQ) IN CHILDREN UNDER 10 YEARS IN THE SOUTHEASTERN PART OF SENEGAL

**Khadime Sylla**, Roger Clement Tine, Doudou Sow, Magatte Ndiaye, Jean Louis Ndiaye, Daouda Ndiaye, Oumar Gaye, Babacar Faye
*University Cheikh Anta Diop, Dakar, Dakar, Senegal*

2:10 p.m.

## 468

### PARASITE AND MYCOBACTERIUM TUBERCULOSIS CO-INFECTION IN IMMIGRANTS

**Lauren A. Saag**[1], Rachel L. Epstein[2], Jackson B. Mesick[1], Sondra S. Crosby[2], Sarah L. Kimball[2], Elizabeth D. Barnett[2], Natasha S. Hochberg[2]
*[1]Boston University School of Public Health, Boston, MA, United States, [2]Boston University School of Medicine, Boston, MA, United States*

2:25 p.m.

## 478

### IRON DEFICIENCY IS COMMON IN UGANDAN CHILDREN WITH SICKLE CELL ANEMIA

**Aubri S. Carman**[1], Andrea L. Conroy[1], Robert O. Opoka[2], Adam Lane[3], Russell E. Ware[3], Sarah E. Cusick[4], Chandy C. John[1]
*[1]Ryan White Center for Pediatric Infectious Disease and Global Health, Indiana University School of Medicine, Indianapolis, IN, United States, [2]Department of Paediatrics and Child Health, Makerere University College of Health Sciences, Kampala, Uganda, [3]Division of Hematology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, United States, [4]Division of Global Pediatrics, The University of Minnesota Medical School, Minneapolis, MN, United States*

2:40 p.m.

## 476

### MALARIA PREVENTIVE MEASURES DURING ROUTINE CARE AMONG CHILDREN WITH SICKLE CELL DISEASE IN MALAWI

**Graham Ellis**[1], Godwin Chipoka[2], Pilirani Mafunga[2], Christopher Stanley[2], Tisungane Mvalo[2], Portia Kamthunzi[2], Isobel Kambalami[2], Peter Wasswa[3], Kate Westmoreland[4], Seyed Nouraie[5], Nigel Key[4], Kenneth Ataga[4], Satish Gopal[2]
*[1]Howard University College of Medicine, Washington, DC, United States, [2]UNC Project Malawi, Lilongwe, Malawi, [3]Baylor College of Medicine, Lilongwe, Malawi, [4]University of North Carolina at Chapel Hill, Chapel Hill, NC, United States, [5]University of Pittsburgh Medical Center, Pittsburgh, PA, United States*

## American Committee on Arthropod-Borne Viruses (ACAV) SALS Subcommittee Meeting

*Marriott - Room L401/L402*
Sunday, November 13, 2 p.m. - 3:30 p.m.

## Point of Entry: First-Time Attendee Orientation

*Marriott - Atrium B*
Sunday, November 13, 2:30 p.m. - 3:30 p.m.

Are you new to the ASTMH Annual Meeting and want to get the lay of the land? Don't miss our Point of Entry session. ASTMH staff will orient new attendees to the schedule, session structure and highlights of the Annual Meeting. Meet others attending the conference for the first time and expand your professional network while learning the ins and outs of the meeting.

## Young Investigator Award Committee Meeting

*Marriott - Room A701*
Sunday, November 13, 3 p.m. - 4 p.m.

## American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP) Council Meeting

*Marriott - Room M302*
Sunday, November 13, 3:30 p.m. - 5:30 p.m.

## ASTMH Committee on Global Health (ACGH) Council Meeting

*Marriott - Room M303*
Sunday, November 13, 3:30 p.m. - 5:30 p.m.

## Clinical Group Council Meeting (American Committee on Clinical Tropical Medicine and Travelers' Health- ACCTMTH)

*Marriott - Room M201*
Sunday, November 13, 3:30 p.m. - 5:30 p.m.

## Student Reception

*Marriott - Skyline Level*
Sunday, November 13, 4 p.m. - 5 p.m.

## American Committee of Medical Entomology (ACME) Council Meeting

*Marriott - Room M304*
Sunday, November 13, 4 p.m. - 5:30 p.m.

## American Committee on Arthropod-Borne Viruses (ACAV) Council Meeting

*Marriott - Room L401/L402*
Sunday, November 13, 4 p.m. - 5:30 p.m.

## Plenary Session 1

## Plenary Session I: Keynote Address and Awards Program

*Marriott - Marquis Ballroom*
Sunday, November 13, 5:30 p.m. - 7 p.m.

CHAIR

Stephen Higgs
*Kansas State University, Biosecurity Research Institute, Manhattan, KS, United States*

Daniel G. Bausch
*World Health Organization, Geneva, Switzerland*

5:30 p.m.
**WELCOMING REMARKS**

Daniel G. Bausch
*World Health Organization, Geneva, Switzerland*

5:45 p.m.
**KEYNOTE ADDRESS: Zika: A Storm in the Making**

**Carissa F. Etienne, MBBS, MSc**
*Director, Pan American Health Organization*

Dr. Carissa F. Etienne was elected Director of the Pan American Health Organization (PAHO) by the Member States of the Organization in September 2012 and began her five-year term in February 2013. From March 2008 until November 2012, Dr. Etienne served as Assistant Director-General for Health Systems and Services at the World Health Organization in Geneva, Switzerland. Prior to that, as Assistant Director of PAHO from July 2003 to February 2008, she led five technical areas: Health Systems and Services; Technology, Health Care and Research; Health Surveillance and Disease Management; Family and Community Health; and Sustainable Development and Environmental Health.

During her tenures at WHO and PAHO, Dr. Etienne led the efforts to renew primary healthcare and to strengthen health systems based on primary healthcare, promoting integration and improved functioning of health systems. She also spearheaded policy directions for reducing health inequalities and advancing health for all through universal coverage, people-centered care, the integration of health into broader public policies, and inclusive and participatory health leadership. *The World Health Report 2010 – Health systems financing: The path to universal coverage* was produced under the direction of Dr. Etienne and WHO's Deputy Director-General. The report is recognized worldwide for providing an agenda for action by countries at all stages of development to move more quickly and in a sustainable manner toward universal coverage, while proposing ways in which the international community can better support efforts to achieve universal coverage and improve health outcomes. Dr. Etienne has also led the WHO global agenda to support universal access to safe and efficacious medical products and the development of a global code of practice for the international recruitment of health personnel. Additionally, she chaired the International Health Partnership (IHP+) initiative, which seeks to commit partners to work together and put into practice international principles for effective aid and development cooperation in the health sector. In her native Dominica, Dr. Etienne began her career as a medical officer at the Princess Margaret Hospital, where she eventually became the Chief Medical Officer. She also served in other high-level posts in Dominica, including Coordinator of the National AIDS Program, Disaster Coordinator for the Ministry of Health, Chair of the National Advisory Council for HIV/AIDS, and Director of Primary Health Care Services. Dr. Etienne received her medical degree (Bachelor of Medicine and Bachelor of Surgery-MBBS) from the University of the West Indies, Jamaica, and her Master in Science (MSc) in Community Health in Developing Countries from the London School of Hygiene & Tropical Medicine, University of London.

6:15 p.m.
**AWARDS PROGRAM**

Presiding Officer: Stephen Higgs
*Biosecurity Research Institute, Kansas State University, Manhattan, KS, United States*

- Recognition of ASTMH/BMGF Annual Meeting Travel Awards
- Recognition of Young Investigator Awards
- Recognition of Elsevier-ASTMH Clinical Research Award
- Recognition of Burroughs Wellcome Fund - ASTMH Postdoctoral Fellowship in Tropical Infectious Diseases

**WILLIAM TRAGER AWARD FOR BASIC PARASITOLOGY (ACMCIP)**

Stefan Kappe
*Center for Infectious Disease Research, Seattle, WA, United States*

**BREAKTHROUGHS IN MEDICAL ENTOMOLOGY AWARD (ACME)**

Serap Aksoy
*Yale University School of Medicine, New Haven, CT, United States*

**HARRY HOOGSTRAAL MEDAL (ACME)**

Patricia Nuttall
*University of Oxford, Oxford, United Kingdom*

**DALRYMPLE-YOUNG AWARD (ACAV)**

Kathryn Hanley
*New Mexico State University, Las Cruces, NM, United States*

**RICHARD M. TAYLOR AWARD (ACAV)**

John (Jack) P. Woodall
*Federal University of Rio de Janeiro, Rio de Janeiro, Brazil*

**RECOGNITION OF FELLOWS OF ASTMH (FASTMH)**

**HONORARY INTERNATIONAL FELLOWS OF ASTMH (FASTMH)**

Graham V. Brown
*University of Melbourne, Melbourne, Australia*

Rodrigo Correa-Oliveira
*FIOCRUZ, Belo Horizonte, Brazil*

Ogobara Doumbo
*Malaria Research & Training Center, Bamako, Mali*

Rashidul Haque
*International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh*

Ayoade MJ. Oduola, PhD
*University of Ibadan, Ibadan, Nigeria*

**COMMUNICATIONS AWARD**

Warren Cornwall
*Science*

Presented by

Peter J. Hotez
*Baylor College of Medicine, Houston, TX, United States*

Karen A. Goraleski
*American Society of Tropical Medicine and Hygiene, Oakbrook Terrace, IL, United States*

**BAILEY K. ASHFORD MEDAL**

Stefan Kappe
*Center for Infectious Disease Research, Seattle, WA, United States*

**BEN KEAN MEDAL**

Terrie E. Taylor
*Michigan State University, East Lansing, MI, United States*

## Exhibit Hall Open

*Marriott - International Hall*
Sunday, November 13, 7 p.m. – 9:30 p.m.

## Opening Reception

*Marriott - International Hall*
Sunday, November 13, 7 p.m. - 9:30 p.m.

***Sponsored in part by Bayer*** CONTRIBUTOR

# Monday, November 14

## Registration

*Marriott - Marquis Foyer*
Monday, November 14, 7 a.m. - 5 p.m.

## Speaker Ready Room

*Marriott - International A*
Monday, November 14, 7 a.m. - 5 p.m.

## TropStop - Student/Trainee Lounge

*Marriott - Atrium Loft*
Monday, November 14, 7 a.m. - 5 p.m.

This casual setting, designed with students, trainees and residents in mind (coffee, internet), is your place for a break from the fast-pace of the meeting and relax with colleagues and friends. Check out the "Office Hours," held in the TropStop. This will be your opportunity to meet up-and-coming professionals in the fields of tropical medicine, global health, science and industry who will share their personal career paths and answer your questions about the various bumps and forks in the road.

## Internet Nook

*Marriott - Imperial Foyer*
Monday, November 14, 7 a.m. - 5 p.m.

***Sponsored by Takeda Pharmaceuticals International AG***

PREMIER

## Meeting Sign-Up Room

*Marriott - Hilton Rooms 206 and 207*
Monday, November 14, 7 a.m. - 10 p.m.

## Clinical Standards and Treatment Guidelines Committee Meeting

*Marriott - Room M304*
Monday, November 14, 7 a.m. - 8 a.m.

## ASTMH Diploma Course Directors Meeting

*Marriott - Room M303*
Monday, November 14, 7 a.m. - 8 a.m.

## ASTMH Travel Awards Meeting

*Marriott - Room M301/M302*
Monday, November 14, 7 a.m. - 8 a.m.

## Press Room

*Marriott - Room M102*
Monday, November 14, 7:45 a.m. - 5 p.m.

**Scientific Session 2**

## Filariasis: Epidemiology and Control I

*Marriott - Imperial A*
Monday, November 14, 8 a.m. - 9:45 a.m.

CHAIR

Julie Harris
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

Daniel J. Tisch
*Case Western Reserve University, Cleveland, OH, United States*

8 a.m.

**1**

### LYMPHATIC FILARIASIS RESIDUAL TRANSMISSION HOTSPOTS IN AMERICAN SAMOA

**Patricia M. Graves**[1], Colleen Lau[2], Maureen Roineau[1], Stephanie Ryan[1], Athena Andreosso[1], Sarah Sheridan[3], Saipale Fuimano[4], Joseph Tufa[4]
*[1]James Cook University, Cairns, Qld, Australia, [2]Australia National University, Canberra, ACT, Australia, [3]University of Queensland, Brisbane, Qld, Australia, [4]Department of Health, Pago Pago, American Samoa*

8:15 a.m.

**2**

### EXCESS MORTALITY ASSOCIATED WITH HIGH *LOA LOA* MICROFILAREMIA IN THE EAST REGION OF CAMEROON: A RETROSPECTIVE COHORT STUDY

**Cédric B. Chesnais**[1], Innocent Takougang[2], Marius Paguele[3], Michel Boussinesq[1], Sébastien D. Pion[1]
*[1]Institut de Recherche pour le Développement, Montpellier, France, [2]Department of Public Health, Faculty of Medicine and Biomedical Sciences, University of Yaounde I, Yaoundé, Cameroon, [3]Regional Delegation of Health, Ministry of Public Health, Bertoua, Cameroon*

8:30 a.m.

**3**

### PROGRESS TOWARDS ONCHOCERCIASIS ELIMINATION IN THE PARTICIPATING COUNTRIES OF THE AFRICAN PROGRAM FOR ONCHOCERCIASIS CONTROL: EPIDEMIOLOGICAL EVALUATION RESULTS

**Afework H. Tekle**[1], Honorat G. Zouré[1], Mounkaila Noma[1], Michel Boussinesq[2], Luc E. Coffeng[3], Wilma A. Stolk[3], Jan H. Remme[4]
*[1]African Programme for Onchocerciasis Control, Ouagadougou, Burkina Faso, [2]Institut de Recherche pour le Développement (IRD), Montpellier, France, [3]Erasmus MC, Rotterdam, Netherlands, [4]Consultant, Ornex, France*

8:45 a.m.

**4**

### DETECTING INFECTION HOTSPOTS: MODELING THE SURVEILLANCE CHALLENGE FOR ELIMINATION OF LYMPHATIC FILARIASIS AND OTHER DISEASES

**Julie Harris**, Ryan Wiegand
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

9 a.m.

**5**

### USE OF AN ADULT TRANSMISSION ASSESSMENT SURVEY TO ASSESS PERSISTENCE OF LYMPHATIC FILARIASIS AT THE EVALUATION UNIT LEVEL IN GALLE, SRI LANKA

**Sandhya D. Samarasekera**[1], Ramakrishna U. Rao[2], Kumara C. Nagodavithana[1], Manjula W. Punchihewa[3], Gary J. Weil[2]
*[1]Ministry of Health and Nutrition, Anti-Filariasis Campaign, Colombo, Sri Lanka, [2]Washington University School of Medicine, St. Louis, MO, United States, [3]Ministry of Health and Nutrition, Regional Anti-Filariasis Campaign, Galle, Sri Lanka*

9:15 a.m.

**6**

### IMPACT OF LONG LASTING INSECTICIDE TREATED BEDNETS ON LYMPHATIC FILARIASIS PREVALENCE IN PAPUA NEW GUINEA

**Daniel J. Tisch**[1], Yao-Chieh Cheng[1], Samson Satofan[2], Naomi Vincent[2], Lisa Reimer[3], Christopher King[1], Peter Siba[4], James W. Kazura[1], Peter A. Zimmerman[1]
*[1]Case Western Reserve University, Cleveland, OH, United States, [2]Papua New Guinea Institute of Medical Research, Maprik, Papua New Guinea, [3]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [4]Papua New Guinea Institute of Medical Research, Goroka, Papua New Guinea*

9:30 a.m.

**7**

### IMPACT OF ANNUAL AND SEMIANNUAL MASS DRUG ADMINISTRATION IN AREAS CO-ENDEMIC FOR *BRUGIA TIMORI* AND *WUCHERERIA BANCROFTI* IN EAST NUSA TENGGARA, INDONESIA

**Taniawati Supali**[1], Yenny Djuardi[1], Roospita Maylasari[1], Difa Stefanie[1], Elisa Iskandar[1], Gary J. Weil[2], Peter Uwe Fischer[2]
*[1]Department of Parasitology, University of Indonesia, Jakarta, Indonesia, [2]Washington University School of Medicine, St. Louis, MO, United States*

## Scientific Session 3

## Bacteriology: Cholera

*Marriott - Imperial B*
Monday, November 14, 8 a.m. - 9:45 a.m.

CHAIR
Andrew Azman
*Johns Hopkins School of Public Health, Baltimore, MD, United States*

Richelle C. Charles
*Massachusetts General Hospital, Boston, MA, United States*

8 a.m.

**8**

### EL NIÑO AND THE SHIFTING GEOGRAPHY OF CHOLERA IN AFRICA

**Sean M. Moore**, Andrew S. Azman, Heather McKay, Justin Lessler
*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

8:15 a.m.

**9**

### SURVEILLANCE FOR CHOLERA MORTALITY DURING AN URBAN EPIDEMIC—DAR ES SALAAM, TANZANIA, 2016

**Lindsey S. McCrickard**[1], Amani Elibariki Massay[2], Rupa Narra[1], Janneth Mghamba[3], Ahmed Abade Mohamed[4], Rogath Saika Kishimba[2], Loveness John Urio[4], Neema Rusibayamila[3], Grace Magembe[5], Muhammad Bakari[3], James J. Gibson[6], Robert E. Quick[1]
*[1]Centers for Disease Control and Prevention, Atlanta, GA, United States, [2]Tanzania Field Epidemiology and Laboratory Training Program and Ministry of Health, Community Development, Gender, Elderly and Children, Dar es Salaam, United Republic of Tanzania, [3]Ministry of Health, Community Development, Gender, Elderly and Children, Dar es Salaam, United Republic of Tanzania, [4]Tanzania Field Epidemiology and Laboratory Training Program, Dar es Salaam, United Republic of Tanzania, [5]DSM Regional Secretariat, Dar es Salaam, United Republic of Tanzania, [6]Centers for Disease Control and Prevention, Dar es Salaam, United Republic of Tanzania*

8:30 a.m.

**10**

### THE PLASMA AND MUCOSAL ANTIBODY RESPONSE TO THE COMPLETE *VIBRIO CHOLERAE* O1 PROTEIN IMMUNOME AND O-SPECIFIC POLYSACCHARIDE IN ADULTS WITH INABA OR OGAWA CHOLERA IN BANGLADESH

**Richelle C. Charles**[1], Rie Nakajima[2], Li Liang[2], Amanda Berger[1], Daniel T. Leung[3], Meagan Kelly[1], Peng Xu[4], Pavol Kovac[4], Fahima Chowdhury[5], Ashraful I. Khan[5], Stephen B. Calderwood[1], Taufiqur Rahman Bhuiyan[5], Jason B. Harris[1], Philip L. Felgner[2], Firdausi Qadri[5], Edward T. Ryan[1]
*[1]Massachusetts General Hospital, Boston, MA, United States, [2]University of California Irvine, Irvine, CA, United States, [3]University of Utah School of Medicine, Salt Lake City, UT, United States, [4]National Institutes of Health, Bethesda, MD, United States, [5]International Centre of Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh*

8:45 a.m.

## 11

### THE EARLY B CELL RESPONSE TO THE *VIBRIO CHOLERAE* O1 ANTIGEN IS CHARACTERIZED BY A HIGH DEGREE OF CLONALITY, SOMATIC HYPERMUTATION AND RECALL OF PRIOR ANTIGEN EXPOSURE

**Jason B. Harris**[1], Robert Kauffman[2], Taufiqur Bhuiyan[3], Leslie Mayo-Smith[1], Rasheduzzaman Rashu[3], Rie Nakajima[4], Fahima Chowdhury[3], Ashraful Kahn[3], Regina LaRocque[1], Richelle Charles[1], Stephen Calderwood[1], Edward Ryan[1], Phillip Felgner[4], Firduasi Qadri[3], Jens Wrammert[2]

*[1]Massachusetts General Hospital, Boston, MA, United States, [2]Emory University, Atlanta, GA, United States, [3]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, [4]University of California Irvine, Irvine, CA, United States*

9 a.m.

## 12

### IMMUNE RESPONSE TO ORAL CHOLERA VACCINE (SHANCHOL) IN INTERNALLY DISPLACED PERSONS IN SOUTH SUDAN

**Anita S. Iyer**[1], Malika Bouhenia[2], John Rumunu[3], Abdinasir Abubakar[2], Randon Gruninger[1], Jane Pita[3], Richard Laku[3], Lul Deng[3], Joesph F. Wamala[2], Edward T. Ryan[4], Stephen Martin[5], Dominique Legros[5], Justin Lessler[6], David Sack[7], Francisco J. Luquero[8], Daniel T. Leung[9], Andrew S. Azman[6]

*[1]Division of Infectious Diseases, Department of Internal Medicine, University of Utah, Salt Lake City, UT, United States, [2]World Health Organization, Juba, South Sudan, [3]Republic of South Sudan Ministry of Health, Juba, South Sudan, [4]Department of Immunology and Infectious Diseases, Massachusetts General Hospital, Boston, MA, United States, [5]World Health Organization, Geneva, Switzerland, [6]Department of Epidemiology, Johns Hopkins University, Baltimore, MD, United States, [7]Department of International Health, Johns Hopkins University, Baltimore, MD, United States, [8]Epicenter, Paris, France, [9]Division of Infectious Diseases, Department of Internal Medicine, Division of Microbiology and Immunology, Department of Pathology, University of Utah, Salt Lake City, UT, United States*

9:15 a.m.

## 13

### THE EFFECTIVENESS OF ONE DOSE OF ORAL CHOLERA VACCINE IN RESPONSE TO AN OUTBREAK

**Andrew S. Azman**[1], Lucy A. Parker[2], John Rumunu[3], Fisseha Tadesse[4], Francesco Grandesso[4], Lul L. Deng[3], Richard Lako[3], Bior K. Bior[3], Anne-Laure Page[4], Michael Lasuba[3], Lameck Ontweka[5], Augusto Llosa[4], Sandra Cohuet[4], Lorenzo Pezzoli[6], Dossou Vincent Sodjinou[7], Abdinasir Abubakar[8], Amanda K. Debes[1], Allan M. Mpairwe[9], Joseph F. Wamala[9], Christine Jamet[10], Justin Lessler[1], David A. Sack[1], Marie-Laure Quilici[11], Iza Ciglenecki[10], Francisco J. Luquero[4]

*[1]Johns Hopkins School of Public Health, Baltimore, MD, United States, [2]CIBER Epidemiología y Salud Pública, Universidad Miguel Hernández, Alicante, Spain, [3]Ministry of Health, Juba, South Sudan, [4]Epicentre, Paris, France, [5]AMREF, Juba, South Sudan, [6]World Health Organization, Geneva, Switzerland, [7]World Health Organization, Brazzaville, Republic of the Congo, [8]World Health Organization, Cairo, Egypt, [9]World Health Organization, Juba, South Sudan, [10]Médecins Sans Frontières, Geneva, Switzerland, [11]Institut Pasteur, Paris, France*

9:30 a.m.

## 14

### ORAL CHOLERA VACCINE STUDIES IN HIGH CHOLERA ENDEMIC SETTINGS IN BANGLADESH

**Firdausi Qadri**

*International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh*

## Symposium 4

# CRISP/Cas Gene Drive Technologies for Vector Control

*Marriott - Marquis B*

Monday, November 14, 8 a.m. - 9:45 a.m.

Vector-borne diseases represent a major global health challenge. They undermine the health as well as the social and economic development of the most vulnerable and resource-poor regions of the world. In spite of the remarkable progress achieved in the recent years in reducing the burden of malaria, dengue and yellow fever, the perspective of eradicating these diseases is considered beyond reach in the foreseeable future. The lack of sufficient resources, the emergence of insecticide-resistant vectors and drug-resistant parasites, and the uncertainty of sustained political and economical commitment conjure against the implementation of effective disease eradication solutions. Innovations in gene drive technology offer now the possibility to develop a new generation of powerful genetic vector control tools that may change this scenario. While mosquitoes genetically engineered to interfere with the ability to transmit diseases or to impair the reproductive capability have been available for a while, the spread of the genetic modifications to wild type populations has represented a daunting challenge. Recently the CRISP/Cas system, a nuclease that can be programmed to target virtually any genomic sequence with unprecedented flexibility, has been adapted to develop efficient synthetic genetic drive in mosquitoes that can permanently alter entire species. CRISPR drive mosquitoes engineered to spread modifications altering either vector capability or reproductive capability may soon be field-ready for population replacement and population suppression strategies respectively. Key challenges concern the identification of the most effective gene drive strategy in term of risk benefits, the definition of a regulatory roadmap to bridge scientific progress with deployment and the forecast of consequences. This symposium will provide the needed exposure to gene drive technologies for vector control and stimulate discussion around key scientific, social and regulatory gaps. The symposium will focus specifically on understanding how the technology can be used to develop different vector strategies and equally importantly on identifying social, safety and ethical implications of editing mosquito species for vector control.

CHAIR

Andrea Crisanti
*Imperial College London, London, United Kingdom*

Kevin Esvelt
*Massachusetts Institute of Technology, Cambridge, MA, United States*

8 a.m.

### LA ZANZARA VITRUVIANO, SYNTHETIC BIOLOGY AND MALARIA

Anthony A. James
*University of California Irvine, Irvine, CA, United States*

8:20 a.m.

### CRIP/CAS GENE DRIVE FOR SUPPRESSING MOSQUITO VECTOR POPULATION

Andrea Crisanti
*Imperial College London, London, United Kingdom*

8:40 a.m.

### MOSQUITO GENE DRIVE IN THE CONTEST OF INTEGRATE VECTOR MANAGEMENT

Steve Lindsay
*University of Durham, Durnham, United Kingdom*

9 a.m.

### THE REGULATORY AND SOCIAL CHALLENGES OF GENE DRIVE DEPLOYMENT STRATEGIES FOR ACCELERATING THE TIMETABLE IN AN ETHICAL MANNER

Megan J. Palmer
*Stanford University, Stanford, CA, United States*

## Scientific Session 5

# Malaria: Epidemiology I - Intervention Studies and Evaluation

*Marriott - Marquis C*
Monday, November 14, 8 a.m. - 9:45 a.m.

CHAIR

Amadou Barry
*Malaria Research and Training Center, University of Bamako, Bamako, Mali*

S. Patrick Kachur
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

8 a.m.

### Presentation by Burroughs Wellcome Fund–ASTMH Fellowship Recipient

**15**

### EVIDENCE TO OPTIMIZE THE DESIGN OF SCHOOL-BASED INTERVENTIONS AGAINST MALARIA

**Lauren M. Cohee**[1], Clarissa Valim[2], Jenna E. Coalson[3], Sarah Schaffer DeRoo[4], Moses Chilombe[5], Karl Seydel[6], Don Mathana[5], Terrie E. Taylor[6], Mark L. Wilson[3], Miriam K. Laufer[1]
*[1]University of Maryland Baltimore, Baltimore, MD, United States, [2]Harvard School of Public Health, Boston, MA, United States, [3]University of Michigan School of Public Health, Ann Arbor, MI, United States, [4]University of Maryland School of Medicine, Baltimore, MD, United States, [5]Malaria Alert Center, Blantyre, Malawi, [6]Blantyre Malaria Project, Blantyre, Malawi*

8:15 a.m.

**16**

### EVALUATION OF A PRIMARY SCHOOL-BASED MALARIA CASE MANAGEMENT PROGRAM ON SCHOOL ATTENDANCE IN SOUTHERN MALAWI

**Stefan Witek-McManus**[1], Katherine E. Halliday[1], Charles Opondo[1], Austin Mtali[2], Elizabeth Allen[1], Andy Bauleni[3], Saidi Ndau[4], Emmanuel Phondiwa[5], Doreen Ali[6], Virginia Kachigunda[7], John Sande[6], Allison Verney[2], Tiyese Chimuna[8], David Melody[8], Helen Moestue[9], Natalie Roschnik[9], Simon J. Brooker[1], Don P. Mathanga[3]
*[1]London School of Hygiene & Tropical Medicine, London, United Kingdom, [2]Save the Children International, Zomba, Malawi, [3]Malaria Alert Centre, College of Medicine, University of Malawi, Blantyre, Malawi, [4]District Health Office, Zomba, Malawi, [5]District Education Office, Zomba, Malawi, [6]National Malaria Control Programme, Ministry of Health, Lilongwe, Malawi, [7]Department of School Health, Nutrition, HIV and AIDS, Ministry of Education, Science and Technology, Lilongwe, Malawi, [8]Save the Children International, Lilongwe, Malawi, [9]Save the Children USA, Washington, DC, United States*

8:30 a.m.

**17**

### FACILITY-BASED ENHANCED MALARIA SURVEILLANCE TO MEASURE VECTOR-CONTROL INTERVENTION IMPACT IN WESTERN KENYA, 2012-2015

**Nabie Bayoh**[1], Elizabeth Marube[2], Maurice Ombok[2], Peter Ouma[2], Simon Kariuki[2], Rebecca Kiptui[3], Christine Hershey[4], Jessica Butts[5], Meghna Desai[5], Anthony Fiore[5], John Gimnig[5], John Williamson[5], Ann M. Buff[6]
*[1]Centers for Disease Control and Prevention, Kisumu, Kenya, [2]Kenya Medical Research Institute, Kisumu, Kenya, [3]Ministry of Health, Nairobi, Kenya, [4]United States Agency for International Development, Washington, DC, United States, [5]Centers for Disease Control and Prevention, Atlanta, GA, United States, [6]Centers for Disease Control and Prevention, Nairobi, Kenya*

8:45 a.m.

**18**

### COMPARISON OF THREE VERSUS FOUR ROUNDS OF SEASONAL MALARIA CHEMOPREVENTION ON THE INCIDENCE OF CLINICAL MALARIA IN MALI

**Amadou Barry**[1], Djibrilla Issiaka[1], Tiangua Traore[1], Daouda Kone[1], Boubacar Diarra[2], Diakaridia Kone[3], Issaka Sagara[1], Erin Gabriel[4], Ogobara Doumbo[1], Patrick Duffy[5], Fried Michal[5], Alassane Dicko[1]
*[1]Malaria Research and Training Center, Bamako, Mali, [2]Centre de Santé de Reference de Ouelessebougou, Ouelessebougou, Mali, [3]Programme National de Lutte contre le Paludisme, Bamako, Mali, [4]Biostatistical Research Branch, National Institute of Allergy and Infectious Diseases/National Institutes of Health, Rockville, MD, United States, [5]Laboratory of Malaria Immunology and Vaccinology, National Institute of Allergy and Infectious Diseases/National Institutes of Health, Bethesda, MD, United States*

9 a.m.

**19**

### SUBPATENT MALARIA INFECTION IS NOT ASSOCIATED WITH POOR BIRTH OUTCOMES IN KENYAN WOMEN RECEIVING INTERMITTENT SCREENING AND TREATMENT OR INTERMITTENT PREVENTIVE TREATMENT FOR MALARIA IN PREGNANCY

**Julie Gutman**[1], JoAnne L'Ianziva[2], Kephas Otieno[3], John Williamson[4], Simon Kariuki[3], Peter Ouma[3], Vincent Were[3], Feiko O. ter Kuile[5], Meghna Desai[1]
*[1]Malaria Branch, Division of Parasitic Diseases and Malaria, US Centers for Disease Control and Prevention, Atlanta, GA, United States, [2]Centers for Disease Control and Prevention, Nairobi, Kenya, [3]Kenya Medical Research Institute, Centre for Global Health Research, Kisumu, Kenya, [4]Malaria Branch, Division of Parasitic Diseases and Malaria, U.S. Centers for Disease Control and Prevention, Atlanta, GA, United States, [5]Liverpool School of Tropical Medicine, Liverpool, United Kingdom*

9:15 a.m.

**20**

### IGNORING PEOPLE 'WHO ARE NOT THERE' MAY MITIGATE SUCCESS OF MASS DRUG ADMINISTRATION FOR MALARIA: FINDINGS FROM A MIXED-METHOD STUDY IN THE GAMBIA

**Katja Siling**[1], Susan Dierickx[2], Julia Mwesigwa[3], Umberto D'Alessandro[3], Koen Peeters Grietens[1]
*[1]Institute of Tropical Medicine Antwerp, Antwerp, Belgium, [2]Amsterdam Institute of Social Science Research, Amsterdam, Netherlands, [3]Medical Research Council Unit, Fajara, Gambia*

9:30 a.m.

**21**

### COST-EFFECTIVENESS OF FOCAL MASS DRUG ADMINISTRATION AND MASS DRUG ADMINISTRATION WITH DIHYDROARTEMISININ-PIPERAQUINE FOR MALARIA PREVENTION IN SOUTHERN PROVINCE, ZAMBIA: RESULTS OF A COMMUNITY RANDOMIZED CONTROL TRIAL

**Joshua O. Yukich**[1], Callie Scott[2], Kafula Silumbe[3], Bruce Larson[4], Adam Bennett[5], Timothy Finn[1], Travis Porter[1], Joseph Keating[1], Thomas P. Eisele[1], Richard W. Steketee[2], John M. Miller[3]
*[1]Tulane University School of Public Health and Tropical Medicine, New Orleans, LA, United States, [2]PATH/MACEPA, Seattle, WA, United States, [3]PATH/MACEPA, Lusaka, Zambia, [4]Boston University, Boston, MA, United States, [5]University of California San Francisco, San Francisco, CA, United States*

## Scientific Session 6

## Malaria: Drug Development - Preclinical to Clinical Trials

*Marriott - Marquis D*

Monday, November 14, 8 a.m. - 9:45 a.m.

CHAIR

Eamon Comer
*Broad Institute, Cambridge, MA, United States*

James S. McCarthy
*QIMR Berghofer Medical Research Institute, Herston, Australia*

8 a.m.

### 22

### DISCOVERY AND DEVELOPMENT OF A MULTISTAGE ANTIMALARIAL WITH NEW MECHANISM OF ACTION USING NEXT GENERATION SYNTHESIS

**Eamon Comer**[1], Nobutaka Kato[1], Micah Maetani[1], Tomoyo Sakata Kato[2], Amanda K. Lukens[2], Marshall Morningstar[1], Elizabeth A. Winzeler[3], Christina A. Scherer[1], Dyann F. Wirth[2], Stuart Schreiber[1]
*[1]Broad Institute, Cambridge, MA, United States, [2]Harvard T.H. Chan School of Public Health, Boston, MA, United States, [3]University of California San Diego, La Jolla, CA, United States*

8:15 a.m.

### 23

### TARGETING RESISTANCE: EXPLOITING EVOLUTION IN DRUG DISCOVERY

Tomoyo Sakata-Kato[1], Leila S. Ross[1], Maria Jose Lafuente-Monasterio[2], Francisco-Javier Gamo[2], Dyann F. Wirth[1], **Amanda K. Lukens**[3]
*[1]Harvard T. H. Chan School of Public Health, Boston, MA, United States, [2]GlaxoSmithKline, Tres Cantos, Spain, [3]The Broad Institute, Cambridge, MA, United States*

8:30 a.m.

### 24

### A NEW BENZOXABOROLE WITH AN APPARENT NOVEL MECHANISM OF ACTION AGAINST *P. FALCIPARUM*

**Kirthana Mysore Vasudevarao Sindhe**[1], Ebere Sonoiki[1], Denghui Guo[1], Jiri Gut[1], Jenny Legac[1], Yen Tran[2], Yong-Kang Zhang[2], Pamela Berry[2], Vic Ciaravino[2], Francisco-Javier Gamo[3], Laura Sanz[3], Eric E. Easom[2], Joseph L. DeRisi[1], Jacob J. Plattner[2], Yvonne R. Freund[2], Philip J. Rosenthal[1]
*[1]University of California San Francisco, San Francisco, CA, United States, [2]Anacor Pharmaceuticals, Inc., Palo Alto, CA, United States, [3]GlaxoSmithKline, Inc., Tres Cantos, Spain*

8:45 a.m.

### 25

### NOVEL CLINICAL STUDY AND PHARMACOMETRIC MODELLING TO FIND THE MINIMUM INHIBITORY CONCENTRATION (MIC) OF A NEW ANTIMALARIAL

**Joel Tarning**[1], Tran Tinh Hien[2], Nicholas J. White[1], Nguyen Thanh Thuy Nhien[3], Nhu Thi Hoa[3], Phung Duc Thuan[3], Nguyen Thanh Tong[3], Huynh Thi Thuy Van[3], Francois Nosten[4], Baldur Magnusson[5], Jay Prakash Jain[6], Micha Levi[7], Kamal Hamed[7]
*[1]Mahidol Oxford Tropical Medicine Research Unit, Bangkok, Thailand, [2]Centre for Tropical Medicine and Global Health, Nuffield Department of Clinical Medicine, University of Oxford, Oxford, United Kingdom, [3]Oxford University Clinical Research Unit – Hospital for Tropical Diseases, Ho Chi Minh City, Vietnam, [4]Mahidol-Oxford Tropical Medicine Research Unit, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand, [5]Novartis Pharma AG, Basel, Switzerland, [6]Novartis Healthcare Pvt. Ltd., Hyderabad, India, [7]Novartis Pharmaceuticals Corporation, East Hanover, NJ, United States*

9 a.m.

### 26

### ASSESSING THE SPEED OF CLEARANCE OF *PLASMODIUM VIVAX* FROM THE BLOOD FOLLOWING TREATMENT WITH A LICENSED AND EXPERIMENTAL ANTIMALARIALS

**James S. McCarthy**[1], Louise Marquart[1], John Woodford[1], Paul Griffin[2], Joerg Moehrle[3]
*[1]QIMR Berghofer Medical Research Institute, Herston, Australia, [2]Q-Pharm, Herston, Australia, [3]Medicines for Malaria, Geneva, Switzerland*

9:15 a.m.

### 27

### FOSMIDOMYCIN-PIPERAQUINE AS NON-ARTEMISININ-BASED COMBINATION THERAPY FOR ACUTE UNCOMPLICATED *PLASMODIUM FALCIPARUM* MALARIA

**Ghyslain Mombo-Ngoma**[1], Jonathan Remppis[1], Moritz Sievers[1], Rella Zoleko Manego[1], Lilian Endamne[1], Bertrand Lell[1], David Hutchinson[2], Peter G. Kremsner[1]
*[1]Centre de Recherches Medicales de Lambaréné (CERMEL), Lambaréné, Gabon, [2]Jomaa Pharma GmbH, Hamburg, Germany*

9:30 a.m.

### 28

### MALARIA, MALNUTRITION, AND ADVERSE BIRTH OUTCOMES AMONG PREGNANT WOMEN: A POOLED ANALYSIS

**Jordan Cates**[1], Holger W. Unger[2], Valerie Briand[3], Nadine Fievet[3], Innocent Valea[4], Halidou Tinto[4], Umberto d'Alessandro[5], Sarah H. Landis[6], Seth Adu-Afarwuah[7], Kathryn G. Dewey[8], Feiko Ter Kuile[9], Meghna Desai[10], Stephanie Dellicour[9], Peter Ouma[11], Julie Gutman[10], Martina Oneko[11], Laurence Slutsker[10], Dianne J. Terlouw[12], Simon Kariuki[11], John Ayisi[11], Mwayi Madanitsa[13], Linda Kalilani-Phiri[13], Per Ashorn[14], Kenneth Maleta[13], Ivo Mueller[15], Danielle Stanisic[16], Christentze Schmiegelow[17], John Lusingu[17], Anna Maria van Eijk[9], Melissa Bauserman[1], Linda Adair[1], Steve Cole[1], Steven Meshnick[1], Daniel Westreich[1], Stephen Rogerson[18]
*[1]University of North Carolina-Chapel Hill, Chapel Hill, NC, United States, [2]Edinburgh Royal Infirmary, Edinburgh, United Kingdom, [3]Mère et enfant face aux infections tropicales (UMR216), Paris, France, [4]Institut de Recherche en Sciences de la Santé-DRO, Bobo-Dioulasso, Burkina Faso, [5]Medical Research Council Unit, Serrekunda, Gambia, [6]GlaxoSmithKline, Uxbridge, United Kingdom, [7]University of Ghana, Accra, Ghana, [8]University of California, Davis, CA, United States, [9]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [10]Center for Global Health, Centers for Disease Control and Prevention, Atlanta, GA, United States, [11]Kenya Medical Research Institute (KEMRI)/Centre for Global Health Research, Kisumu, Kenya, [12]Malawi-Liverpool-Wellcome Trust Clinical Research Programme Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [13]University of Malawi, Blantyre, Malawi, [14]University of Tampere and Tampere University Hospital, Tampere, Finland, [15]Walter and Eliza Hall Institute, Parkville, Australia, [16]Griffith University, Gold Coast, Australia, [17]University of Copenhagen, Copenhagen, Denmark, [18]The University of Melbourne, Parkville, Australia*

## Symposium 7

## The Influence of Behavior and Culture within WASH Interventions and Environmental Disease Transmission

*Marriott - Room M103/M104/M105*

Monday, November 14, 8 a.m. - 9:45 a.m.

To appropriately characterize infectious disease transmission, it is paramount to understand social and behavioral dynamics at both the individual and community levels. Indeed, health behavior theory emphasizes that an individual's behaviors is influenced by his or her own demographic factors and also by social processes. Yet, despite several available conceptual frameworks that provide important context for environmental pathogen transmission and social/behavioral processes, only recently has infectious disease literature provided examples of

the role that social context plays within pathogen transmission. Such literature is critical for understanding underlying drivers of transmission dynamics and also for developing and implementing holistic health interventions. This symposium draws from work in emerging pathogen and enteric pathogen transmission dynamics that incorporate environment as well as human behavior.

CHAIR

Velma Lopez
*University of Michigan School of Public Health, Ann Arbor, MI, United States*

Sonia Hegde
*University of Michigan School of Public Health, Ann Arbor, MI, United States*

8 a.m.
**THE CULTURAL ANTHROPOLOGICAL CONTRIBUTION TO WASH BENEFITS INTERVENTIONS**

Stephen Luby
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:25 a.m.
**BEHAVIOR, SOCIAL STRUCTURE AND INFECTIOUS DISEASE TRANSMISSION**

James Jones
*Stanford University, Stanford, CA, United States*

8:50 a.m.
**UNDERSTANDING SOCIAL NORMS OF HANDWASHING**

Pavani Ram
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

9:15 a.m.
**SOCIAL, CULTURAL AND BEHAVIORAL CORRELATES OF HOUSEHOLD WATER TREATMENT AND STORAGE**

Maria-Elena Figueroa
*Johns Hopkins University, Baltimore, MD, United States*

## Symposium 8

## CadMIA and CHAMPS: Pathways towards Defining Preventable Causes of Death in Children in High Mortality Areas via Minimally Invasive Tissue Sampling (MITS)

*Marriott - Atrium A*
Monday, November 14, 8 a.m. - 9:45 a.m.

Nearly six million children under five years old die each year, with the vast majority in sub-Saharan Africa and South Asia. New sustainable development goals are calling for dramatic reduction of childhood mortality by 2030, and the end to all preventable deaths in children. To achieve these goals, detailed understanding of the causes of deaths among neonates, infants and older children are required so limited resources can optimally target diseases associated with greatest mortality. Current data about child mortality are hampered by the need for extrapolation and modeling from datasets with limited clinical and diagnostic information. The Cause of Death and Minimally Invasive Autopsies (CaDMIA) project and the Child Health and Mortality Prevention Surveillance (CHAMPS) Network, both funded by the Bill & Melinda Gates Foundation, are synergistic projects designed to yield high-quality evidence on mortality burden, and to drive action to reduce preventable child deaths. CaDMIA has investigated whether collecting post-mortem tissues through a non-disfiguring, rapid technique – originally called "minimally invasive autopsy" (MIA) and now termed "minimally invasive tissue sampling" (MITS) – is comparable to the gold-standard technique of conventional diagnostic autopsy (CDA) for determining cause of death. CADMIA also explored the theoretical acceptability of the minimally invasive technique to probe child deaths using social behavioral science methods across a wide variety of stakeholders in Mozambique, Mali, Kenya, Pakistan, and Gabon. CHAMPS will combine social behavioral science and community engagement, a variety of surveillance techniques, strengthened diagnostic and pathology capacity, and MITS to define causes of neonatal, infant and under-five mortality in six sites in sub-Saharan Africa and South Asia. The ultimate vision is for CHAMPS to establish a network of 20 surveillance sites over 20 years that will produce and make available a wide range of primary data and routine analyses regarding the spectrum of causes of child mortality. This symposium will focus on the use of minimally invasive tissue sampling techniques to determine cause of death in settings with high child mortality. The objectives of this symposium are: 1) to describe shortcomings in existing methods to determine the burden of global child mortality, and surveillance approaches to remedy this deficit; 2) demonstrate feasibility and acceptability of minimally invasive techniques with respect to complete diagnostic autopsies, from the perspective of histopathology, microbiology, and social behavioral science; 3) describe early findings from CHAMPS pilot on pediatric deaths in South Africa, and 4) discuss strategies for how CHAMPS surveillance data may be analyzed and used for mortality prevention.

CHAIR

Robert Breiman
*Emory Global Health Institute, Atlanta, GA, United States*

Clara Menendez
*Barcelona Institute for Global Health (ISGlobal)/Hospital Clinic-University of Barcelona, Barcelona, Spain*

8 a.m.
**SHORTCOMINGS OF EXISTING METHODS TO DETERMINE GLOBAL MORTALITY BURDEN—RATIONALE FOR NEW POST-MORTEM METHODS**

Quique Bassat
*Barcelona Institute for Global Health (ISGlobal)/Hospital Clinic-University of Barcelona, Barcelona, Spain*

8:20 a.m.
**VALIDATION OF A MINIMALLY INVASIVE TISSUE SAMPLING (MITS) PROTOCOL COMPARED WITH FULL AUTOPSY: EVIDENCE FROM CADMIA**

Jaume Ordi
*Barcelona Institute for Global Health (ISGlobal)/Hospital Clinic-University of Barcelona, Barcelona, Spain*

8:40 a.m.
**FEASIBILITY AND ACCEPTABILITY OF POST-MORTEM STUDIES USING MITS: RESULTS FROM CADMIA AND RELEVANCE TO ENGAGING COMMUNITIES IN CHAMPS MORTALITY SURVEILLANCE**

Khatia Munguambe
*Manhiça Health Research Center (CISM) and Eduardo Mondlane University, Mozambique, Maputo, Mozambique*

9 a.m.
**A GLIMPSE INTO CAUSES OF NEONATAL, INFANT AND CHILD DEATHS AND STILLBIRTHS: FINDINGS FROM A CHAMPS PILOT STUDY IN SOUTH AFRICA**

Susan Nzenze
*University of Witswatersrand, Johannesburg, South Africa*

9:20 a.m.
**CHILD MORTALITY SURVEILLANCE METHODS USING MITS: FROM ANALYSIS TO ACTION**

Pratima Raghunathan
*Emory University and Centers for Disease Control and Prevention, Atlanta, GA, United States*

## Symposium 9

## Zika Virus: Public Health Response and Disease Manifestations

*Marriott - Atrium B*
Monday, November 14, 8 a.m. - 9:45 a.m.

With the recent spread of ZIKV virus throughout the Americas and the novel clinical presentation of birth-defects and Guillain-Barre Syndrome that have been linked to the spread of the virus, it has been critical from a public health perspective to fully understand the associations between virus infection and adverse outcomes. Public health officials have worked swiftly over the past year to assess how the virus might be associated with these clinical syndromes and how frequently they occur in population, cohort, and case-control studies. This session will address the findings of these investigations and the implications for public health response and control efforts.

CHAIR

Stephen Higgs
*Kansas State University, Biosecurity Research Institute, Manhattan, KS, United States*

Ann Powers
*Centers for Disease Control and Prevention, Fort Collins, CO, United States*

8 a.m.
**HISTORY OF THE ZIKA VIRUS**

Ann Powers
*Centers for Disease Control and Prevention, Fort Collins, CO, United States*

8:15 a.m.
**OUTBREAKS OF ZIKV IN ISLAND COMMUNITIES**

Thane Hancock
*Centers for Disease Control and Prevention, Mangilao, Guam*

8:35 a.m.
**ADVERSE PREGNANCY AND INFANT OUTCOMES ASSOCIATED WITH MATERNAL ZIKV INFECTION**

Peggy Honein
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:55 a.m.
**EPIDEMIC OF MICROCEPHALY IN BRAZIL AND LINK WITH CONGENITAL ZIKA SYNDROME**

Albert Ko
*Yale School of Public Health, New Haven, CT, United States*

9:15 a.m.
**ROLE OF ZIKV IN THE DEVELOPMENT OF GUILLAIN-BARRE SYNDROME**

James J. Sejvar
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

## Scientific Session 10

## Cestodes: Cysticercosis and Echinococcosis

*Marriott - Room A601*
Monday, November 14, 8 a.m. - 9:45 a.m.

CHAIR

Veronique Dermauw
*Institute of Tropical Medicine, Antwerp, Belgium*

Theodore E. Nash
*National Institutes of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States*

8 a.m.
**29**

**ASSESSING ULTRASONOGRAPHY AS A DIAGNOSTIC TOOL FOR PORCINE CYSTICERCOSIS**

**Robert H. Flecker**[1], Saul Santivanez[2], Ian Pray[3], Viterbo Ayvar[4], Claudio Muro[4], Ricardo Gamboa[4], Ruth Atto[4], Luz Maria Moyano[4], Armando E. Gonzalez[5], Hector H. Garcia[2], Seth E. O'Neal[6], for The Cysticercosis Working Group in Peru[7]
*[1]School of Public Health, Oregon Health & Sciences University and Portland State University, Portland, OR, United States, [2]Center for Global Health, Universidad Peruana Cayetano Heredia, Lima, Peru, [3]Oregon Health and Sciences University, Portland, OR, United States, [4]Center for Global Health, Universidad Peruana Cayetano Heredia, Tumbes, Peru, [5]School of Veterinary Medicine, Universidad Nacional Mayor de San Marcos, Lima, Peru, [6]School of Public Health, Oregon Health and Sciences University and Portland State University, Portland, OR, United States, [7]Universidad Peruana Cayetano Heredia, Lima, Peru*

8:15 a.m.
**30**

**VASCULAR LEAKAGE IN THE BRAIN IN PORCINE NEUROCYSTICERCOSIS IS ASSOCIATED WITH ANGIOGENESIS**

**Carla Cangalaya**[1], Miguel Angel Orrego[1], Javier Mamani[1], Renzo Gutierrez-Loli[1], Carlota Roca[1], Armando E Gonzalez[2], HH García[3], Cristina Guerra-Giraldez[1], Siddartha Mahanty[4], Theodore Nash[4], For the Cysticercosis Working Group in Peru
*[1]Universidad Peruana Cayetano Heredia, Lima, Peru, [2]Universidad Nacional Mayor de San Marcos, Lima, Peru, [3]Unidad de Cisticercosis, Instituto Nacional de Ciencias Neurológicas, Lima, Peru, [4]National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States*

**(ACMCIP Abstract)**

8:30 a.m.
**31**

**AMYLOID-BETA PEPTIDE AND EXPRESSION OF AMYLOID PRECURSOR PROTEIN GENE (APP) ARE INDUCED BY ANTHELMINTIC TREATMENT IN PORCINE NEUROCYSTICERCOSIS**

**Renzo Gutierrez-Loli**[1], Carla Cangalaya[1], Miguel Angel Orrego[1], Hector Hugo Garcia[2], Siddhartha Mahanty[3], Theodore Nash[3], Cristina Guerra-Giraldez[4], Cysticercosis Working Group in Peru
*[1]Laboratorio de Inmunopatología en Neurocisticercosis, Facultad de Ciencias y Filosofía, Universidad Peruana Cayetano Heredia, Lima, Peru, [2]Unidad de Cisticercosis, Instituto Nacional de Ciencias Neurológicas Santo Toribio de Mogrovejo, Lima, Peru, [3]Laboratory of Parasitic Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, [4]Departamento de Ciencias Celulares y Moleculares, Facultad de Ciencias y Filosofía, Universidad Peruana Cayetano Heredia, Lima, Peru*

**(ACMCIP Abstract)**

8:45 a.m.

## 32

### *TAENIA SOLIUM* CYSTICERCOSIS SEROCONVERSION AND SEROREVERSION CUMULATIVE INCIDENCE IN A LARGE-SCALE COMMUNITY TRIAL IN BURKINA FASO

**Veronique Dermauw**[1], Hélène Carabin[2], Rasmané Ganaba[3], Assana Cissé[4], Sarah Gabriël[1], Zékiba Tarnagda[5], Pierre Dorny[1], Athanase Millogo[6]
*[1]Institute of Tropical Medicine, Antwerp, Belgium, [2]University of Oklahoma Health Sciences Center, Oklahoma City, OK, United States, [3]AFRICSanté, Bobo Dioulasso, Burkina Faso, [4]Institute of Research in Health Sciences, Bobo Dioulasso, Burkina Faso, [5]Institute of Research in Health Sciences, Bobo Dioulasso, Belgium, [6]University of Ouagadougou, Bobo Dioulasso, Belgium*

9 a.m.

## 33

### USE OF DIFFERENTIALLY EXPRESSED MONOCYTE GENES TO DISTINGUISH BETWEEN NEUROCYSTICERCOSIS-ASSOCIATED EPILEPSY AND IDIOPATHIC EPILEPSY

**Vasuvedan Prabhakaran**[1], Govindan Ramajayam[1], Josephine J. Babu[1], Anna Oommen[2], Douglas A. Drevets[3], Anderson Michael[3], Vedantam Rajshekhar[1], Hélène Carabin[3]
*[1]Christian Medical College, Vellore, India, [2]Gudalur Adivasi Hospital, Gudalur, India, [3]University of Oklahoma Health Sciences Center, Oklahoma City, OK, United States*

9:15 a.m.

## 34

### VENTRICULAR NEUROCYSTICERCOSIS IN THE UNITED STATES: TREATMENT, COMPLICATIONS AND OUTCOME IN A TERTIARY REFERRAL CENTER

**Theodore E. Nash**, JeanAnne M. Ware, Siddhartha Mahanty
*National Institutes of Health, Bethesda, MD, United States*

9:30 a.m.

## 35

### RISK FACTORS FOR SEIZURE RECURRENCE AFTER SUCCESSFUL ANTIPARASITIC TREATMENT IN PARENCHYMAL NEUROCYSTICERCOSIS

**Kevin R. Duque**[1], Javier A. Bustos[1], Isidro Gonzales[1], Herbert Saavedra[2], Javier Pretell[3], Hector H. Garcia[1], for the Cysticercosis Working Group in Peru
*[1]Center of Global Health - Tumbes, Universidad Peruana Cayetano Heredia, Lima, Peru, [2]Cysticercosis Unit, National Institute of Neurological Science, Lima, Peru, [3]Hospital Nacional Alberto Sabogal, Essalud, Callao, Peru*

## Scientific Session 11

## Malaria: Biology and Pathogenesis

*Marriott - Room A602*

Monday, November 14, 8 a.m. - 9:45 a.m.

CHAIR

Andrea Conroy
*Indiana University School of Medicine, Indianapolis, IN, United States*

Miranda Oakley
*Food and Drug Administration, Silver Spring, MD, United States*

8 a.m.

## 36

### FUNCTIONAL ANALYSIS OF DIVERGENT GPCR-LIKE PROTEINS DURING *PLASMODIUM CHABAUDI* BLOOD-STAGE DEVELOPMENT

Rachel Milne, Gabriella Lindergard, Wiebke Nahrendorf, Philip Spence, **Joanne Thompson**
*Immunology and Infection Research, Edinburgh, United Kingdom*

8:15 a.m.

## 37

### A NOVEL POPULATION OF TCR$\alpha\beta$-EXPRESSING CD11BHIGHCD14+F4/80+ MACROPHAGES IS INDUCED BY *PLASMODIUM BERGHEI* ANKA MURINE MALARIA

**Miranda Oakley**, Joanna Chorazeczewski, Victoria Majam, Bhavna Chawla, Maya Aleshnick, Kazuyo Takeda, Adovi Akue, Mark KuKuruga, Sanjai Kumar
*Food and Drug Administration, Silver Spring, MD, United States*

**(ACMCIP Abstract)**

8:30 a.m.

## 38

### *PLASMODIUM FALCIPARUM* PHISTC PROTEINS ARE REQUIRED FOR ANTIGEN DELIVERY TO THE INFECTED ERYTHROCYTE SURFACE

**Deepali B. Ravel**, Pierre-Yves Mantel, Kathleen W. Dantzler, William C. Beyer, Nicolas M. Brancucci, Manoj T. Duraisingh, Matthias Marti
*Harvard School of Public Health, Boston, MA, United States*

**(ACMCIP Abstract)**

8:45 a.m.

## 39

### EXPLORING THE ROLE OF *PLASMODIUM VIVAX* DUFFY BINDING PROTEIN 1 IN INVASION OF DUFFY-NULL AFRICANS

**Karthigayan Gunalan**[1], Eugenia Lo[2], Jessica B. Hostetler[3], Delenasaw Yewhalaw[4], Jianbing Mu[3], Daniel E. Neafsey[5], Guiyun Yan[2], Louis H. Miller[1]
*[1]National Institute of Health, Rockville, MD, United States, [2]Program in Public Health, College of Health Sciences, University of California, Irvine, CA, United States, [3]National Institutes of Health, Rockville, MD, United States, [4]Department of Medical Laboratory Sciences and Pathology, College of Health Sciences, Jimma University, Jimma, Ethiopia, [5]Broad Institute of Massachusetts Institute of Technology and Harvard, Cambridge, MA, United States*

9 a.m.

## 40

### GLUCOSE-6-PHOSPHATE DEHYDROGENASE DEFICIENCY PREVALENCE: GENETIC VARIANTS AND THEIR INFLUENCE ON HEMOLYTIC EFFECT IN MALARIA ENDEMIC AREAS OF COLOMBIA

**Sonia M. Herrera**[1], Iván Dario Ocampo[1], Maria Isabel Arce[1], Alberto Alzate[1], Judith Recht[2], Julio Padilla[3], Pablo Chaparro[4], Myriam Arévalo Herrera[5]
*[1]Caucaseco Scientific Research Center/Centro Latino Americano de Investigación en Malaria (CLAIM), Cali, Colombia, [2]Caucaseco Scientific Research Center, Cali, Colombia, [3]Instituto Nacional de Salud, Bogotá, Colombia, [4]Ministerio de Salud y Protección Social, Bogotá, Colombia, [5]Caucaseco Scientific Research Center/ Universidad del Valle, Cali, Colombia*

9:15 a.m.

## 41

### ACUTE KIDNEY INJURY IS COMMON IN UGANDAN CHILDREN WITH SEVERE MALARIA, AND STRONGLY ASSOCIATED WITH SEQUESTERED PARASITE BIOMASS AND MORTALITY

**Andrea L. Conroy**[1], Robert O. Opoka[2], Paul Bangirana[2], Chandy C. John[1]
*[1]Indiana University School of Medicine, Indianapolis, IN, United States, [2]Makerere University College of Health Sciences, Kampala, Uganda*

**(ACMCIP Abstract)**

9:30 a.m.

**42**

### PFHRP2 PERSISTENCE IN « ONCE INFECTED RBC » ENABLES A RAPID PREDICTION OF POST-ARTESUNATE DELAYED HEMOLYSIS

**Papa Alioune Ndour**[1], Sébastien Larréché[2], Oussama Mouri[3], Nicolas Argy[4], Camille Roussel[1], Stéphane Jauréguiberry[3], Claire Perillaud[5], Dominique Langui[6], Sylvestre Biligui[3], Nathalie Chartrel[3], Audrey Mérens[2], Arjen Dondorp[7], Sandrine Houzé[4], Frédéric Gay[5], Serge Bonnefoy[8], Marc Thellier[3], Charlie Woodrow[9], Pierre Buffet[1], French Artesunate working group

*[1]National Institute of Blood Transfusion/Inserm U1134 - Paris 5 University, Paris, France, [2]UF Bactériologie – Parasitologie – Mycologie, Hôpital d'instruction des armées Bégin, Paris, France, [3]APHP Pitiè-Salpêtrière - Centre National du Paludisme Pitiè-Salpêtrière, Paris, France, [4]APHP Bichat - Centre National du Paludisme Bichat, Paris, France, [5]APHP Pitiè-Salpêtrière, Paris, France, [6]University Paris 6, Paris, France, [7]MORU - Université d'oxford, Bangkok, Thailand, [8]Institut Pasteur de Paris, Paris, France, [9]MORU - Université d'oxford, Paris, Thailand*

**(ACMCIP Abstract)**

## Scientific Session 12

## Mosquitoes: Operational Control

*Marriott - Room A703/A704*

Monday, November 14, 8 a.m. - 9:45 a.m.

CHAIR

Etienne M. Bilgo
*Unité de Recherche Paludisme et Maladies Tropicales Negligées, IRSS/Centre Muraz, Bobo Dioulasso, Burkina Faso*

Haripriya Mukundarajan
*Stanford University, Stanford, CA, United States*

8 a.m.

**43**

### EVALUATE MOSQUITO NETS FASTER AND CHEAPER: RESULTS FOR PUBLIC HEALTH INTEREST

**Sanjiarizaha Randriamaherijaona**[1], Thomas Kesteman[1], Emilie Pothin[2], Mickael Green[3], Ray Beach[3], Sebastien Boyer[1]

*[1]Institut Pasteur de Madagascar, Antananarivo, Madagascar, [2]Swiss Tropical and Public Health Institute, Basel, Switzerland, [3]Malaria Branch, Division of Parasitic Diseases and Malaria, Center for Global Health, U.S. Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:15 a.m.

**44**

### INTERROGATING MOSQUITO-PATHOGEN COMMUNITIES USING HIGH-THROUGHPUT MICROFLUIDICS

**Felix J. Hol**, Haripriya Mukundarajan, Manu Prakash
*Stanford University, Stanford, CA, United States*

8:30 a.m.

**45**

### A PROMISING NEW MODE OF ACTION CHEMISTRY INDOOR RESIDUAL SPRAY PRODUCT TO CONTROL RESISTANT MOSQUITOES

**John Lucas**[1], John Invest[1], Takao Ishiwatari[2], Yoshihiro Takebayashi[2], Kazunori Ohashi[2], Edi Constant[3], Mouhamadou Chouaïbou[3], Benjamin Koudu[3], David Malone[4], Pie Muller[5]

*[1]Sumitomo Chemical Company Ltd, London, United Kingdom, [2]Sumitomo Chemical Company Ltd, Tokyo, Japan, [3]Centre Suisse de Recherches Scientifiques, Abidjan, Côte D'Ivoire, [4]Innovative Vector Control Consortium, Liverpool, United Kingdom, [5]Swiss Tropical and Public Health Institute and University of Basel, Basel, Switzerland*

8:45 a.m.

**46**

### SHAZAM FOR MOSQUITOES: CROWDSOURCING VECTOR SURVEILLANCE BY USING MOBILE PHONES AS ACOUSTIC SENSORS

**Haripriya Mukundarajan**, Felix J. Hol, Erica A. Castillo, Cooper Newby, Manu Prakash
*Stanford University, Stanford, CA, United States*

9 a.m.

**47**

### AUTOCIDAL MOSQUITO CONTROL: ALLOWING MOSQUITOES TO HELP US WITH OUR WORK

**Stephen L. Dobson**[1], Corey Brelsfoard[2], James Mains[2]

*[1]University of Kentucky, Lexington, KY, United States, [2]MosquitoMate, Inc., Lexington, KY, United States*

9:15 a.m.

**48**

### TRANSGENIC INSECT KILLING FUNGUS BETTER KILLS INSECTICIDE-RESISTANT, MALARIA-VECTOR MOSQUITOES

**Etienne M. Bilgo**[1], Brian Richard Lovett[2], Raymond St.Leger[2], Roch K. Dabiré[1], Antoine Sanon[3], Abdoulaye Diabaté[1]

*[1]IRSS/Centre Muraz, Bobo Dioulasso, Burkina Faso, [2]University of Maryland College Park, College Park, MD, United States, [3]Université de Ouagadougou, Ouagadougou, Burkina Faso*

9:30 a.m.

**49**

### COMPARING THE EFFICACY OF INSECTICIDE MIXTURE AND COMBINATION STRATEGIES FOR IMPROVED CONTROL AND MANAGEMENT OF PYRETHROID RESISTANT MALARIA VECTORS IN SOUTHERN BENIN, WEST AFRICA

**Corine Ngufor**[1], Jessica Critchley[1], Raphael N'Guessan[1], Martin Akogbeto[2], Mark Rowland[1]

*[1]London School of Hygiene & Tropical Medicine, London, United Kingdom, [2]Centre de Recherche Entomologique de Cotonou, Cotonou, Benin*

## Symposium 13

## Hot Topics in Leishmaniasis

*Marriott - Room A706/A707*

Monday, November 14, 8 a.m. - 9:45 a.m.

This symposium updates the audience on exciting new areas of investigation in the tropical neglected disease, leishmaniasis. First, the *Leishmania* RNA virus (LRV1) and its association with both metastatic infection and treatment failure in cutaneous leishmaniasis is explored. This is followed by review of recent Medecin Sans Frontieres' experience in clinical trials of treatment for visceral leishmaniasis, including the challenge of HIV co-infection. Next, the session will explore new advances in vaccines against leishmaniasis, focusing on the recent discovery of a parasite antigen, PEPCK, that elicits cross-protection across *Leishmania* species. Lastly, the symposium will discuss the role of the sand fly saliva and its implications in leishmaniasis severity, including the new discovery of a family of sand fly salivary proteins that can attract neutrophils to the bite site, as a novel insect derived chemokine-like molecule.

CHAIR

Naomi E. Aronson
*Uniformed Services University of the Health Sciences, Bethesda, MD, United States*

Fabiano Oliveira
*National Institute of Allergy and Infectious Diseases, Rockville, MD, United States*

8 a.m.
**ENDOGENOUS RNA VIRUSES AS VIRULENCE FACTORS IN PARASITIC PROTOZOA**

Stephen Beverley
*Washington University School of Medicine, St. Louis, MO, United States*

8:25 a.m.
**MSF FIELD RESEARCH EXPERIENCE IN VISCERAL LEISHMANIASIS - LESSONS LEARNED AND FUTURE CHALLENGES**

Sakib Burza
*Medecins Sans Frontieres, Spain, Barcelona, Spain*

8:50 a.m.
**A LEISHMANIASIS VACCINE BREAKTHROUGH? A BROADLY CONSERVED AND CROSS-SPECIES PROTECTIVE *LEISHMANIA* VACCINE CANDIDATE**

Jude Uzonna
*University of Manitoba, Winnipeg, MB, Canada*

9:15 a.m.
**NEUTROPHILS IN PERIL: HOW BITE-INOCULATED SAND FLY SALIVA SUBVERTS THE EARLY NEUTROPHIL RESPONSE IN THE SKIN WITH IMPLICATIONS FOR *LEISHMANIA* DISEASE OUTCOME**

Fabiano Oliveira
*National Institute of Allergy and Infectious Diseases, Rockville, MD, United States*

## Special Interactive Experience: The Refugee Journey to Wellbeing

*Marriott - Atrium Foyer*
Monday, November 14, 9:30 a.m. - 7 p.m.

At the end of 2015, there were an estimated 65.3 million people displaced around the world, largely because of extended conflicts in the Middle East, Northern and sub-Saharan Africa, and Asia. The American Society of Tropical Medicine and Hygiene and the U.S. Centers for Disease Control and Prevention (CDC), with participation from a number of domestic and international partners, are hosting this unique interactive experience on refugee health. Through video, photos, live testimonials, hands-on activities and replicated scenes from the field, The Refugee Journey to Wellbeing highlights the clinical and public health aspects of the refugee experience from displacement to resettlement.

## Exhibit Hall Open

*Marriott - International Hall*
Monday, November 14, 9:30 a.m. - 10:30 a.m.

## Coffee Break

*Marriott - International Hall*
Monday, November 14, 9:45 a.m. - 10:15 a.m.

***Sponsored by Takeda Pharmaceuticals International AG***

PREMIER

## Poster Session A Set-Up

*Hilton - Grand Ballroom and Grand Salon*
Monday, November 14, 9:45 a.m. - 10:15 a.m.

## TropStop Office Hours

*Marriott - Atrium Loft*
Monday, November 14, 10 a.m. - 11 a.m.

Meet up-and-coming professionals in the fields of tropical medicine, global health, science and industry who will share their personal career paths and answer questions you may have.

PRESENTERS

Kevin J. Esch
*Zoetis, Kalamazoo, MI, United States*

Christine Petersen
*University of Iowa, Iowa City, IA, United States*

## Poster Session A Viewing

*Hilton - Grand Ballroom and Grand Salon*
Monday, November 14, 10:15 a.m. - Noon

**Scientific Session 14**

## Filariasis: Epidemiology and Control II

*Marriott - Imperial A*
Monday, November 14, 10:15 a.m. - Noon

CHAIR

Philip J. Budge
*Washington University in St. Louis, St. Louis, MO, United States*

Colleen Lau
*Research School of Population Health, Australian National University, Brisbane, Queensland, Australia*

10:15 a.m.

**50**

**LYMPHATIC FILARIASIS ELIMINATION IN AMERICAN SAMOA: EVALUATION OF MOLECULAR XENOMONITORING AS A SURVEILLANCE TOOL IN THE ENDGAME**

**Colleen L. Lau**[1], Kimberly Y. Won[2], Patrick J. Lammie[2], Patricia M. Graves[3]
*[1]Research School of Population Health, Australian National University, Canberra, Australia, [2]Division of Parasitic Diseases and Malaria, Centers for Disease Control and Prevention, Atlanta, GA, United States, [3]World Health Organization Collaborating Centre for Lymphatic Filariasis, Soil-Transmitted Helminths and Other Neglected Tropical Diseases, James Cook University, Cairns, Australia*

10:30 a.m.

## 51

### FILARIASES IN GABON: EMPIRIC ASSESSMENTS REDEFINE DISTRIBUTION AND TREATMENT STRATEGIES FOR ONCHOCERCIASIS AND LOIASIS

Julienne Atsame[1], **Kira A. Barbre**[2], Kristen Renneker[2], Maria P. Rebollo[2], Honorat Zoure[3]

*[1]Ministry of Health Gabon, Libreville, Gabon, [2]The Task Force for Global Health, Decatur, GA, United States, [3]Regional Office for Africa, World Health Organization, Brazzaville, Republic of the Congo*

10:45 a.m.

## 52

### HIGH PREVALENCE OF EPILEPSY IN ONCHOCERCIASIS ENDEMIC REGIONS IN THE DEMOCRATIC REPUBLIC OF THE CONGO (DRC)

**Robert Colebunders**[1], Floribert Tepage[2], Michel Mandro[3], Kenneth Pfarr[4], Jean Marie Kashama[5], Bethanie Levick[6], Deogratias Rossy[3], Alliance Tagoto[7], Anne Laudisoit[1]

*[1]University of Antwerp, Antwerp, Belgium, [2]Programme National de lutte contre l'onchocercose, Kisangani, Democratic Republic of the Congo, [3]Provincial Health Division Ituri, Bunia, Democratic Republic of the Congo, [4]University Hospital Bonn, Bonn, Germany, [5]Université de Kinshasa, Kinshasa, Democratic Republic of the Congo, [6]University of Liverpool, Liverpool, United Kingdom, [7]Ministry of Health, Kisangani, Democratic Republic of the Congo*

11 a.m.

## 53

### SIMULATING THE EFFECT OF EVALUATION UNIT SIZE IN DETERMINING ELIGIBILITY TO STOP MASS DRUG ADMINISTRATION FOR LYMPHATIC FILARIASIS IN HAITI

**Natalya Kostandova**[1], Luccene Desir[2], Abdel Direny[3], Alaine Knipes[4], Jean Frantz Lemoine[5], Franck Monestime[6], Fayette Carl Renand[6], Michael S. Deming[4], Amy Kirby[1], Katherine Gass[7]

*[1]Rollins School of Public Health, Decatur, GA, United States, [2]Hopital Ste. Croix, Leogane, Haiti, [3]ENVISION Project, RTI International, Washington, DC, United States, [4]Centers for Disease Control and Prevention, Atlanta, GA, United States, [5]Ministry of Public Health and Population, Port-au-Prince, Haiti, [6]IMA World Health, Port-au-Prince, Haiti, [7]NTD Support Center, Task Force for Global Health, Decatur, GA, United States*

11:15 a.m.

## 54

### PREVALENCE OF OV16 ANTIBODIES AMONG SCHOOL-AGE CHILDREN AFTER TWENTY YEARS OF MASS TREATMENT WITH IVERMECTIN IN TOGO

**Ameyo M. Dorkenoo**[1], Yao M. Agbo[2], Wemboo Halatoko[3], Yao Layibo[3], Kossi Yakpa[1], Efoe Sossou[1], Poukpessi Adjeloh[1], Gbati Datagni[4], Ignace Amegbo[4], Stephanie Richard[5], Anders Seim[6], Potchoziou Karabou[1], Koffi S. Sognikin[1], Rachel N. Bronzan[7]

*[1]Ministère de la santé, Lomé, Togo, [2]Université de Lomé, Lomé, Togo, [3]Institut National d'Hygiène, Lomé, Togo, [4]HDI, Lomé, Togo, [5]HDI, Rockville, MD, United States, [6]HDI, Oslo, Norway, [7]HDI, Seattle, WA, United States*

11:30 a.m.

## 55

### TOWARDS ELIMINATION OF LYMPHATIC FILARIASIS IN MALI BY 2020

Massitan Dembélé[1], **Seydou Goita**[2], Salif Seriba Doumbia[3], Benoit Dembele[2], Boubacar Guindo[2], Modibo Keita[2], Housseini Dolo[3], Zana Berthé[2], Abdoul Karim Sidibé[1], Steven Reid[4], Marily Knieriemen[2], Yaya Ibrahim Coulibaly[3], Yaobi Zhang[5]

*[1]Direction Nationale de la Santé, Ministère de la Santé et de l'Hygiène Publique, Bamako, Mali, [2]Helen Keller International, Bamako, Mali, [3]Malaria Research and Training Center, Filariasis Research Unit, Bamako, Mali, [4]Helen Keller International, New York, NY, United States, [5]Helen Keller International, Regional Office for Africa, Dakar, Senegal*

11:45 a.m.

## 56

### EMPLOYING THE NEW OV16 RAPID DIAGNOSTIC TEST (RDT) TO EVALUATE ONCHOCERCIASIS IN AFRICA

**Kristen Renneker**[1], Julienne Atsame[2], Mamadou O. Traore[3], Lawson Sitima[4], Yisa Saka[5], Cristovao Manjuba[3], Naomi Pitchouna Awaca[6], Joseph Kamgno[7], Maria Rebollo Polo[1], Afework Tekle[8], Honorat Zoure[9]

*[1]The Task Force for Global Health, Decatur, GA, United States, [2]Ministry of Health, Libreville, Gabon, [3]Ministry of Health, Bamako, Mali, [4]Ministry of Health, Lilongwe, Malawi, [5]Ministry of Health, Abuja, Nigeria, [6]Ministry of Health, Kinshasa, Democratic Republic of the Congo, [7]University of Yaounde, Yaounde, Cameroon, [8]World Health Organization, Geneva, Switzerland, [9]Regional Office for Africa, World Health Organization, Ouagadougou, Burkina Faso*

## Scientific Session 15

## Dengue: Vaccines/Epidemiology

*Marriott - Imperial B*

Monday, November 14, 10:15 a.m. - Noon

CHAIR

Christopher Mores
*U.S. Naval Medical Research Unit - 6, Lima, Peru*

Rebeca Rico-Hesse
*Baylor College of Medicine, Houston, TX, United States*

10:15 a.m.

## 57

### A SINGLE DOSE OF TV005 ELICITS COMPLETE PROTECTION AGAINST CHALLENGE WITH THE HETEROTYPIC DENV-2, RDEN2Δ30

**Anna P. Durbin**[1], Beth D. Kirkpatrick[2], Cecilia M. Tibery[1], Palmtama Grier[1], Kristen K. Pierce[2], Helen He[1], Yolanda Eby[1], Marya P. Carmolli[2], Cassandra Ventrone[2], Sean A. Diehl[2], Stephen S. Whitehead[3]

*[1]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, [2]University of Vermont College of Medicine, Burlington, VT, United States, [3]National Institutes of Allergy and Infectious Disease, National Institutes of Health, Bethesda, MD, United States*

10:30 a.m.

## 58

### HUMAN CD4+ T CELL RESPONSES INDUCED BY A LIVE ATTENUATED TETRAVALENT DENGUE VACCINE PARALLEL THOSE INDUCED BY NATURAL INFECTION, IN MAGNITUDE, HLA RESTRICTION AND FINE ANTIGEN SPECIFICITY

**Daniela Weiskopf**[1], Michael A. Angelo[1], Alba Grifoni[1], John Sidney[1], Sinu Paul[1], Bjoern Peters[1], Aruna D. de Silva[2], Aravinda M. de Silva[3], Sean A. Diehl[4], Beth Kirkpatrick[4], Stephen Whitehead[5], Anna Durbin[6], Alessandro Sette[1]

*[1]La Jolla Institute for Allergy and Immunology, La Jolla, CA, United States, [2]Genetech, Colombo, Sri Lanka, [3]University of North Carolina, Chapel Hill, NC, United States, [4]University of Vermont, College of Medicine, Burlington, VT, United States, [5]National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, [6]Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD, United States*

10:45 a.m.

## 59

### A PHASE I CLINICAL TRIAL EVALUATING THE IMPACT OF TETRAVALENT RECOMBINANT SUBUNIT DENGUE VACCINE BOOST ADMINISTERED TO SUBJECTS WHO HAVE PREVIOUSLY BEEN VACCINATED WITH A LIVE-ATTENUATED TETRAVALENT DENGUE VACCINE

**Beth-Ann G. Coller**[1], Anna Durbin[2], Beth Kirkpatrick[3], Kristen Pierce[3], Palmtama Grier[4], Beulah Sabundayo[2], Catherine Larsson[3], Helen He[2], Michele Sausser[1], Amy Russell[1], Jason Martin[1], Jeff Sachs[1], Andrew W-T Lee[1], Villarreal Stephanie[1], Long Wang[1], Adel Coren[1], Stacey Traina[1], Stephen S. Whitehead[5]

*[1]Merck and Company, North Wales, PA, United States, [2]Johns Hopkins University, Baltimore, MD, United States, [3]University of Vermont, Burlington, VT, United States,*

[4]Johns Hopkins, Baltimore, MD, United States, [5]National Institute of Allergy and Infectious Disease, Bethesda, MD, United States

11 a.m.

**60**

### TETRAVALENT DENGUE HETEROLOGOUS PRIME-BOOST VACCINATION - SAFETY, HUMORAL, AND CELL-MEDIATED IMMUNITY AT 1 AND 6 MONTHS

**Leyi Lin**[1], Kristopher M. Paolino[1], Richard G. Jarman[1], Kenneth H. Eckels[1], Rafael De La Barrera[1], Jeffrey R. Currier[1], Heather L. Friberg-Robertson[1], Marvin J. Sklar[2], Naomi E. Aronson[3], Erica L. Sondergaard[1], Paul B. Keiser[1], Louis E. Jasper[4], Stephen J. Thomas[1]
*[1]Walter Reed Army Institute of Research, Silver Spring, MD, United States, [2]Naval Medical Research Center, Silver Spring, MD, United States, [3]Uniformed Services University of the Health Sciences, Bethesda, MD, United States, [4]USAMMDA Pharmaceutical Systems, Fort Detrick, MD, United States*

11:15 a.m.

**61**

### TAKEDA'S TETRAVALENT DENGUE VACCINE (TDV) CANDIDATE PROGRESSES TO PHASE III: SAFETY AND IMMUNOGENICITY OF TDV

**Derek Wallace**[1], Vianney Tricou[1], Dan Stinchcomb[2], Kwasi Amfo[1], Astrid Borkowski[3]
*[1]Takeda Vaccines Pte Ltd, Singapore, Singapore, [2]Takeda Vaccines Inc, Deerfield, IL, United States, [3]Takeda Pharmaceuticals International AG, Zurich, Switzerland*

11:30 a.m.

**62**

### CONTRIBUTIONS OF SILENT INFECTIONS TO DENGUE VIRUS TRANSMISSION

**Quirine A. ten Bosch**[1], Hannah E. Clapham[2], Louis Lambrechts[3], Benjamin M. Althouse[4], Alun L. Lloyd[5], Lance A. Waller[6], Amy C. Morrison[7], Uriel Kitron[6], Gonzalo M. Vazquez-Prokopec[6], Thomas W. Scott[7], Alex T. Perkins[1]
*[1]University of Notre Dame, Notre Dame, IN, United States, [2]Johns Hopkins School of Public Health, Baltimore, MD, United States, [3]Institut Pasteur, Paris, France, [4]Institute for Disease Modeling, Bellevue, WA, United States, [5]North Carolina State University, Raleigh, NC, United States, [6]Emory University, Atlanta, GA, United States, [7]University of California Davis, Davis, CA, United States*

11:45 a.m.

**63**

### PREDICTORS FOR SEVERE DENGUE - RESULTS FROM A PROSPECTIVE MULTI-CENTRE STUDY IN 8 COUNTRIES ACROSS ASIA AND LATIN AMERICA

**Phung Khanh Lam**[1], Kerstin Rosenberger[2], Dong Thi Hoai Tam[1], Ngoun Chanpheaktra[3], Lucy Lum Chai See[4], Ernesto Pleités Sandoval[5], Ida Safitri Laksono[6], Malabika Sarker[7], Ernesto T. Marques[8], Adriana Tami[9], Cameron Simmons[1], Marcel Wolbers[1], Bridget Wills[1], Thomas Jaenisch[2]
*[1]Oxford University Clinical Research Unit, Ho Chi Minh City, Vietnam, [2]Section Clinical Tropical Medicine, Heidelberg University Hospital, Heidelberg, Germany, [3]Angkor Hospital for Children, Siem Reap, Cambodia, [4]University of Malaya Medical Centre, Kuala Lumpur, Malaysia, [5]Hospital Nacional de Niños Benjamin Bloom, San Salvador, El Salvador, [6]The Gadjah Mada University, Yogyakarta, Indonesia, [7]James P. Grant School of Public Health, BRAC University, Dhaka, Bangladesh, [8]Centro de Pesquisas Aggeu Magalhaes, Fundacao Oswaldo Cruz, Recife, Brazil, [9]Departamento de Parasitología, Facultad de Ciencias de la Salud, Universidad de Carabobo, Valencia, Bolivarian Republic of Venezuela*

## Scientific Session 16

## Malaria: Chemotherapy and Drug Resistance - Looking for Drug Resistance

*Marriott - Marquis A*
Monday, November 14, 10:15 a.m. - Noon

CHAIR

Ghulam Awab
*Nangarhar University, Jalalabad, Afghanistan*

Kamal Hamed
*Novartis Pharmaceuticals Corporation, East Hanover, NJ, United States*

10:15 a.m.

**64**

### ACT PARTNER DRUG EROSION—EVIDENCE OF PPQ RESISTANT PARASITES FROM CAMBODIA

**Selina Bopp**[1], Pamela Magistrado[1], Wesley Wong[1], Angana Mukherjee[2], Charles J. Woodrow[3], Elizabeth Ashley[4], Nicholas White[4], Arjen Dondorp[4], Rick M. Fairhurst[5], Dyann F. Wirth[1], Sarah K. Volkman[1]
*[1]Harvard T. H. Chan School of Public Health, Boston, MA, United States, [2]Université Laval, Québec, QC, Canada, [3]Oxford University, Oxford, United Kingdom, [4]Mahidol-Oxford Tropical Medicine Research Unit, Bangkok, Thailand, [5]Laboratory of Malaria and Vector Research, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, MD, United States*

10:30 a.m.

**65**

### ARTESUNATE-MEFLOQUINE EFFECTIVELY TREATS DIHYDROARTEMISININ-PIPERAQUINE-RESISTANT *PLASMODIUM FALCIPARUM* MALARIA IN CAMBODIA

**Chanaki Amaratunga**[1], Pharath Lim[1], Sokunthea Sreng[2], Sivanna Mao[3], Vitya Tin[4], Baramey Sam[5], Dalin Dek[2], Jennifer M. Anderson[1], Joel Tarning[6], Seila Suon[2], Rick M. Fairhurst[1]
*[1]Laboratory of Malaria and Vector Research, National Institutes of Health, Rockville, MD, United States, [2]National Center for Parasitology, Entomology and Malaria Control, Phnom Penh, Cambodia, [3]Sampov Meas Referral Hospital, Pursat, Cambodia, [4]16 Makara Referral Hosptial, Preah Vihear, Cambodia, [5]Ratanakiri Referral Hosptial, Ratanakiri, Cambodia, [6]Mahidol-Oxford Tropical Medicine Research Unit, Mahidol University, Bangkok, Thailand*

10:45 a.m.

**66**

### SIGNIFICANT DIFFERENT LEVELS OF ARTEMISININ MONOTHERAPY EFFICACY ON *P. FALCIPARUM* IN MALI

**Sekou Sissoko**, Bakary Fofana, Cheick C. Sangare, Sekou Toure, Kassim Sanogo, Aminatou Kone, Hamadoun Diakite, Siaka H. Toure, Demba Dembele, Boubou Sangare, Khadidiatou Haidara, Diagassan Doumbia, Hamidou Niangaly, Issaka Sagara, Ogobara K. Doumbo, Abdoulaye A. Djimde
*University of Science, Techniques and Technologies of Bamako, Bamako, Mali*

11 a.m.

**67**

### CLINICAL EFFICACY OF ARTEMETHER-LUMEFANTRINE INRELATION TO DRUG EXPOSURE IN CHILDREN WITH UNCOMPLICATED SEVERE ACUTE MALNUTRITION

**Lise Denoeud-Ndam**[1], Alassane Dicko[2], Elisabeth Baudin[1], Ousmane Guindo[3], Francesco Grandesso[1], Halimatou Diawara[2], Sibiri Sissoko[2], Koualy Sanogo[2], Seydou Traore[2], Sekouba Keta[2], Amadou Barry[2], Martin de Smet[4], Estrella Lasry[5], Michiel Smit[6], Lubbe Wiesner[6], Karen I. Barnes[7], Abdoulaye A. Djimde[2], Rebecca F. Grais[1], Ogobara K. Doumbo[2], Jean-Francois Etard[1]
*[1]Epicentre, Paris, France, [2]Malaria Research and Training Center, Bamako, Mali, [3]Epicentre, Niamey, Niger, [4]Médecins Sans Frontières, Bruxelles, Belgium, [5]Médecins Sans Frontières, Paris, France, [6]Division of Clinical Pharmacology, University of Cape Town, Cape Town, South Africa, [7]WorldWide Antimalarial Resistance Network, Oxford, United Kingdom*

11:15 a.m.

**68**

### ZINC-FINGER NUCLEASE-MEDIATED GENE EDITING ILLUSTRATES THE ROLE OF PFMDR1 N86Y IN MODULATING *PLASMODIUM FALCIPARUM* SUSCEPTIBILITY TO ARTEMISININ-BASED COMBINATION THERAPIES

Satish K. Dhingra[1], Maria Isabel Veiga[2], Philipp P. Henrich[1], Judith Straimer[1], Nina Gnadig[1], Anne-Catrin Uhlemann[1], Rowena E. Martin[3], Adele M. Lehane[3], **David A. Fidock**[1]

*[1]Columbia University, New York, NY, United States, [2]University of Minho, Braga, Portugal, [3]The Australian National University, Canberra, Australia*

**(ACMCIP Abstract)**

11:30 a.m.

**69**

### UNSUPERVISED PRIMAQUINE FOR *PLASMODIUM VIVAX* RADICAL CURE LACKS EFFECTIVENESS IN SOUTHERN PAPUA

Nicholas M. Douglas[1], Jeanne Rini Poespoprodjo[2], Rian Patriani[3], Michael Malloy[4], Enny Kenangalem[5], Paulus Sugiarto[6], Julie A. Simpson[4], Yati Soenarto[7], Nicholas M. Anstey[1], **Ric N. Price**[1]

*[1]Menzies School of Health Research, Darwin, Australia, [2]University Gadjah Mada, Yogyakarta, Indonesia, [3]University of Gadjah Mada, Yogyakarta, Indonesia, [4]University of Melbourne, Melbourne, Australia, [5]Papuan Health and Community Development Foundation, Timika, Indonesia, [6]Rumah Sakit Mitra Masyarakat, Timika, Indonesia, [7]University Gadjah Mada, Yogyakarta, Indonesia*

11:45 a.m.

**70**

### ESTIMATING THE RISK OF *PLASMODIUM VIVAX* RELAPSES IN AFGHANISTAN

**Ghulam R. Awab**[1], Mallika Imwong[2], Germana Bancone[2], Nicholas P. Day[2], Nicholas J. White[2], Charles J. Woodrow[2]

*[1]Nangarhar Medical Faculty, Nangarhar University, Afghanistan, [2]Mahidol-Oxford Tropical Medicine Research Unit, Bangkok, Thailand*

## Symposium 17

## Characterizing Spatiotemporal Patterns of Insecticide Resistance in Disease Vectors, Identifying the Drivers behind These Patterns and Understanding Their Impact

*Marriott - Marquis B*

Monday, November 14, 10:15 a.m. - Noon

Studies of insecticide resistance in disease vectors have been carried out within many countries. The aim of this symposium is to synthesize the results from across countries and years to identify trends. This session will first explore trends within a single country that has a wealth of data, Burkina Faso, and then review the current state of knowledge for anopheline vectors of malaria across Africa. Speakers will also review progress in modelling the effect modification of insecticide resistance on malaria transmission and control. Finally, before opening the discussion, a new project will be introduced that will bring together results and expertise for multiple species and genera to characterize spatiotemporal patterns of resistance and identify the drivers behind these patterns. The discussion will revolve around the four talks, including the following topics: the factors that should be considered when analyzing both the drivers of resistance and the effect of resistance on transmission, in the context of control; the progress made so far and the data needed to address these issues; differences between global regions; and the design of studies to measure the impact of resistance.

CHAIR

Michael Coleman
*Liverpool School of Tropical Medicine, Liverpool, United Kingdom*

Peter W. Gething
*University of Oxford, Oxford, United Kingdom*

10:15 a.m.

### THE SPREAD OF INSECTICIDE RESISTANCE IN BURKINA FASO

Kounbobr Roch Dabiré
*Institut de Recherche en Science de la Santé, Bobo Dioulasso, Burkina Faso*

10:35 a.m.

### AN OVERVIEW OF THE SPREAD OF INSECTICIDE RESISTANCE IN AFRICA

Janet Hemingway
*Liverpool School of Tropical Medicine, Liverpool, United Kingdom*

10:55 a.m.

### MODELING THE EFFECT MODIFICATION OF INSECTICIDE RESISTANCE

David L. Smith
*University of Washington, Seattle, WA, United States*

11:15 a.m.

### FUTURE PLANS TO MODEL SPATIOTEMPORAL PATTERNS OF RESISTANCE AND USE THESE TO EXPLORE THE DRIVERS AND IMPACT OF RESISTANCE

Catherine L. Moyes
*University of Oxford, Oxford, United Kingdom*

## Symposium 18

## Refugee Health: Clinical Case Studies

*Marriott - Marquis C*

Monday, November 14, 10:15 a.m. - Noon

UNHCR estimates that there are 60 million forcibly displaced persons living outside their country of origin, the highest number ever recorded. Twenty-eight countries participate in refugee resettlement, including the addition of Italy in 2015 and a new three-year pilot program by the Republic of Korea. The United States is the top resettlement country, with sizable resettlement to Australia, Canada and the Nordic countries. Canada has recently agreed to resettle 25,000 Syrian refugees. From 1975 through December 31, 2015, the United States resettled 3.25 million refugees from Asia, the former Soviet Union, the Near East and South Asia, Africa, Europe and elsewhere. As each new wave of refugees arrive, clinicians in resettlement countries struggle with keeping up to date on current tropical medicine issues facing patients from widely disparate regions of the world. They are often faced with unfamiliar tropical diseases, some of which may have long latency periods. Significant morbidity and mortality has been documented as a result, in part related to access to care, as well as to lack of clinician familiarity with clinical tropical medicine. Refugees have higher prevalence rates for tuberculosis, chronic hepatitis B, intestinal nematodes and other more uncommon infections such as neurocysticercosis, strongyloidiasis and schistosomiasis. Some tropical infectious diseases may be diagnosed late, with significant implications for both personal and public health. Data from Europe has shown refugees are more likely to die from infectious diseases than

native born Danes, for example. This symposium aligns with the CDC/ASTMH refugee exhibit at the ASTMH Annual Meeting called The Refugee Journey to Wellbeing, and will feature clinical tropical medicine experts on the front lines of caring for refugees in resettlement countries.They will present unknown diseases in an interactive case based format, highlighting acute and chronic tropical infections seen in refugees after resettlement.

CHAIR

Patricia F. Walker
*University of Minnesota, Minneapolis, MN, United States*

Brett H. Paterson
*University of Minnesota, Minneapolis, MN, United States*

10:15 a.m.
**"WHAT COULD BE WRONG WITH MY LIVER, DOCTOR?" A REFUGEE FAMILY WITH ABNORMAL LIVER FUNCTION TESTS**

Elizabeth Barnett
*Boston University School of Medicine, Boston, MA, United States*

10:30 a.m.
**"THE FRIEND WHO DOESN'T WANT TO LEAVE" – AN UNUSUALLY ILL PATIENT**

Michael Libman
*McGill University, Montreal, Canada*

10:45 a.m.
**"WHAT IS CAUSING THIS FEVER, DOCTOR?" AN IMMIGRANT WITH FEVER AFTER TRAVELING**

Anne McCarthy
*Tropical Medicine and International Health Clinic, Ottawa, Canada*

11 a.m.
**"THE GREAT MASQUERADER" - A YOUNG IMMIGRANT WITH *HEMATURIA***

Christina Coyle
*Albert Einstein College of Medicine, Bronx, NY, United States*

**Symposium 19**

## Disease Elimination and Eradication: Programmatic Best Practices, Lessons Learned and Challenges

*Marriott - Marquis D*
Monday, November 14, 10:15 a.m. - Noon

Increased global health funding has led to great progress in reducing morbidity and mortality of various diseases, including HIV, tuberculosis, malaria and various neglected tropical diseases (NTDs). For some diseases progress has been such that transmission, elimination and even eradication are now targeted. However, what is the science, policy and operational must-haves to get us to that point? What are we learning from decade-long elimination and eradication efforts that have been successful? What are the challenges to get the "job done"? Why have some efforts been less successful, stalled, or not even taken off the ground? This symposium will discuss updates and keys to success of two eradication programs (Guinea worm disease [GWD] and polio) and a successful elimination program (malaria in Sri Lanka); it will also discuss why progress of one elimination effort (Chagas disease) has been uneven. The GWD eradication campaign began in 1986, when 3.5 million cases occurred annually in 20 countries in Africa and Asia. By 2015, 22 cases were reported from 20 out of 4,000+ villages under active surveillance in the 4 remaining GWD endemic countries (Chad, Ethiopia, Mali, South Sudan). The campaign aims to interrupt transmission in 2016, but insecurity is a challenge in South Sudan and Mali, as is the peculiar GWD epidemiology in Chad. In 1988, when the Global Polio Eradication Initiative started, polio paralyzed 1,000+ children each day. Since then, due to 200+ countries and 20 million volunteers cooperating, 2.5+ billion children have been immunized against polio. Global incidence has declined by 99.9%: four of six WHO regions are certified as polio-free and Africa has not had a confirmed polio case in nearly two years; only two countries (Afghanistan, Pakistan) remain endemic. Tackling the last 0.01% of cases is difficult due to conflict, political instability, hard-to-reach populations, program management gaps, difficult communication, community distrust and poor infrastructure. In 1999, the Sri Lankan malaria program reported 264,549 confirmed malaria cases. Since 2012 there have been no autochthonous malaria cases; 36 travel-related cases were reported in 2015. Work now focuses on certifying the country to be malaria-free and on ensuring that existing systems prevent re-emergence of autochthonous transmission. Ten-to-twenty million people live with Chagas disease, one of the most important parasitic diseases in the Americas. Great progress was made to control vector- and blood-borne disease transmission in the 1990s and 2000s, which led WHO to announce in 2007 a renewed strategy to eliminate Chagas disease in the Americas by 2010. However, six years later, a clear strategy for elimination has yet to be defined, with variable progress of elimination efforts in endemic countries.

CHAIR

Richard Reithinger
*RTI International, Washington, DC, United States*

Frank Richards
*The Carter Center, Atlanta, GA, United States*

10:15 a.m.
**GUINEA WORM DISEASE ERADICATION: AN UPDATE**

Ernesto Ruiz-Tiben
*The Carter Center, Atlanta, GA, United States*

10:30 a.m.
**POLIO ERADICATION: AN UPDATE**

Ellyn Ogden
*U.S. Agency for International Development, Washington, DC, United States*

10:45 a.m.
**MALARIA IN SRI LANKA: ON THE PATH CERTIFICATION**

Rajitha Wickremasinghe
*University of Kelaniya, Kelaniya, Sri Lanka*

11 a.m.
**CHAGAS DISEASE ELIMINATION: WHERE ARE WE NOW?**

Ricardo Guertler
*Universidad de Buenos Aires-CONICET, Buenos Aires, Argentina*

## Scientific Session 20

## Malaria: Vector Control Interventions in Africa - LLINs and Beyond

*Marriott - Room M103/M104/M105*
Monday, November 14, 10:15 a.m. - Noon

CHAIR

Joseph Mugasa
*National Institute for Medical Research, Amani Medical Research Centre, Tanga, United Republic of Tanzania*

Willem Takken
*Wageningen University, Wageningen, Netherlands*

10:15 a.m.

### 71

### IMPACT OF NEW COMBINATION LLINS ON ENTOMOLOGICAL MEASURES OF MALARIA TRANSMISSION IN MALI

**Moussa Cisse**[1], Raymond F. Beach[2], Dereje Dengela[3], Richard Oxborough[3], Bradford Lucas[3], Abdourhamane Dicko[4], Djibril Sangare[1], Jules Mihigo[5], Aboubacar Sadou[6], Kristen George[7], Christen Fornadel[7], Laura Norris[7], Allison Belemvire[7], Suzanne Powell[8]
*[1]United States Agency for International Development PMI AIRS Project, Abt Associates, Bamako, Mali, [2]Entomology Branch, U.S. Centers for Disease Control and Prevention, Atlanta, GA, United States, [3]United States Agency for International Development PMI AIRS Project, Abt Associates, Bethesda, MD, United States, [4]Programme National de Lutte contre le Paludisme, Bamako, Mali, [5]U.S. President's Malaria Initiative, U.S. Centers for Disease Control and Prevention, Bamako, Mali, [6]U.S. President's Malaria Initiative, U.S. Agency for International Development, Bamako, Mali, [7]U.S. President's Malaria Initiative, U.S. Agency for International Development, Washington, DC, United States, [8]U.S. President's Malaria Initiative, U.S. Centers for Disease Control and Prevention, Atlanta, GA, United States*

10:30 a.m.

### 72

### IMPACT OF COMBINING INDOOR RESIDUAL SPRAYING AND LONG-LASTING INSECTICIDAL NETS ON *ANOPHELES ARABIENSIS* IN ETHIOPIA: PRELIMINARY FINDINGS OF A RANDOMIZED CONTROLLED TRIAL

**Oljira Kenea**[1], Meshesha Balkew[1], Habte Tekie[1], Teshome Gebre-Michael[1], Wakgari Deressa[1], Eskindir Loha[2], Hans J. Overgaard[3], Bernt Lindtjorn[4]
*[1]Addis Ababa University, Addis Ababa, Ethiopia, [2]Hawassa University, Hawassa, Ethiopia, [3]Norwegian University of Life Sciences, Aas, Norway, [4]University of Bergen, Bergen, Norway*

10:45 a.m.

### 73

### IMPLEMENTATION OF A NON-PYRETHROID INSECTICIDE-TREATED DURABLE WALL LINING FOR MALARIA CONTROL UNDER OPERATIONAL CONDITIONS IN RURAL TANZANIA

**Joseph Mugasa**[1], Louisa A. Messenger[2], George Mtove[1], Robert C. Malima[1], Peter Mangesho[1], Franklin Magogo[1], Abraham Mwambuli[1], Abubakary Mziray[1], George Olang[3], Edward Sambu[1], Dionise Rwegeshora[1], Yara A. Halasa[4], Donald S. Shepard[4], John Thomas[5], Mark Rowland[2], William N. Kisinza[1]
*[1]National Institute for Medical Research, Amani Medical Research Centre, Muheza, United Republic of Tanzania, [2]Department of Disease Control, London School of Hygiene & Tropical Medicine, London, United Kingdom, [3]The Kenya Medical Research Institute (KEMRI), Kisumu, Kenya, [4]Brandeis University, Waltham, MA, United States, [5]Phoenix Ordinary LLC, Bridgewater, NJ, United States*

11 a.m.

### 74

### EXPERIMENTAL HUT EVALUATION OF A NEW NON-PYRETHROID INSECTICIDE-TREATED DURABLE WALL LINERS FOR CONTROL OF PYRETHROID RESISTANT *ANOPHELES GAMBIAE* AND *ANOPHELES FUNESTUS SENSU STRICTO* IN MUHEZA, TANZANIA

Robert C. Malima[1], **Louisa A. Messenger**[2], Joseph Mugasa[3], Bernard Batengana[1], Basiliana Emid[1], George Mtove[1], Abraham Mwambuli[1], Richard M. Oxborough[2], Wema Sudi[1], Sophie J. Weston[2], Laura C. Norris[4], Meera Venkatesan[4], Mark Rowland[2], Frank W. Mosha[5], William N. Kisinza[1]
*[1]National Institute for Medical Research, Amani Medical Research Centre, Muheza, United Republic of Tanzania, [2]Department of Disease Control, London School of Hygiene & Tropical Medicine, London, United Kingdom, [3]National Institute for Medical Research, Amani Research Centre, Muheza, United Republic of Tanzania, [4]U.S. President's Malaria Initiative, United States Agency for International Development, Washington, DC, United States, [5]Kilimanjaro Christian Medical Centre, Moshi, United Republic of Tanzania*

11:15 a.m.

### 75

### THE AVECNET TRIAL TO ASSESS WHETHER ADDITION OF PYRIPROXYFEN, AN INSECT JUVENILE HORMONE MIMIC, TO LONG-LASTING INSECTICIDAL MOSQUITO NETS PROVIDES ADDITIONAL PROTECTION AGAINST CLINICAL MALARIA OVER CURRENT BEST PRACTICE IN AN AREA WITH PYRETHROID-RESISTANT VECTORS IN RURAL BURKINA FASO: A CLUSTER-RANDOMIZED CONTROLLED TRIAL USING A STEP-WEDGE DESIGN

**Alfred B. Tiono**[1], Margaret Pinder[2], N'Fale Sagnon[1], Moussa Guelbeogo[1], Brian Faragher[3], Alphonse Ouedraogo[1], Daouda Ouattara[1], Tom Smith[4], Sodiomon Sirima[1], Steve Lindsay[2]
*[1]Centre National de Recherche et de Formation sur le Paludisme (CNRFP), Ouagadougou, Burkina Faso, [2]Durham University, Durham, United Kingdom, [3]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [4]Swiss Tropical and Public Health Institute, Basel, Switzerland*

11:30 a.m.

### 76

### ODOR-BAITED TRAPS AS A NOVEL TOOL FOR MALARIA CONTROL - THE SOLARMAL TRIAL

Alexandra Hiscox[1], Tobias Homan[1], Thomas A. Smith[2], Daniel Masiga[3], Wolfgang R. Mukabana[4], Mariabeth Silky[2], Collins K. Mweresa[3], Prisca Oria[1], Jane Alaii[5], Cees Leeuwis[1], Teun Bousema[6], Nicolas Maire[2], Aurelio DePasquale[2], **Willem Takken**[1]
*[1]Wageningen University, Wageningen, Netherlands, [2]Swiss Tropical and Public Health Institute, Basel, Switzerland, [3]International Centre for Insect Physiology and Ecology, Nairobi, Kenya, [4]University of Nairobi, Nairobi, Kenya, [5]Context Factor Solutions, Nairobi, Kenya, [6]Radboud University Medical Centre, Nijmegen, Netherlands*

11:45 a.m.

### 77

### *ANOPHELES DIRUS* EFFICIENTLY TRANSMITS MIXED SPECIES AND MULTIPLE CLONE MALARIA INFECTIONS IN CAMBODIA

**Sujata Balasubramanian**[1], Rifat S. Rahman[2], Christian M. Parobek[1], Panita Gosi[3], David L. Saunders[3], Chantap Lon[4], Ratawan Ubalee[3], Steven R. Meshnick[1], Jonathan J. Juliano[1], Jessica T. Lin[1]
*[1]University of North Carolina, Chapel Hill, Chapel Hill, NC, United States, [2]Duke University, Durham, NC, United States, [3]Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand, [4]Armed Forces Research Institute of Medical Science, Phnom Penh, Cambodia*

## Scientific Session 21

## Clinical Tropical Medicine I

*Marriott - Atrium A*
Monday, November 14, 10:15 a.m. - Noon

CHAIR

Rebecca Susann Fischer
*Baylor College of Medicine, Houston, TX, United States*

Mark S. Riddle
*Naval Medical Research Center, Silver Spring, MD, United States*

10:15 a.m.

**78**

### MESOAMERICAN NEPHROPATHY (MEN) IN NICARAGUA: ACUTE INTERSTITIAL NEPHRITIS OF INFECTIOUS ORIGIN?

**Rebecca Susann Fischer**, Sreedhar Mandayam, Denis Chavarria, Melissa N. Garcia, Rodion Gorchakov, Kristy O. Murray
*Baylor College of Medicine, Houston, TX, United States*

10:30 a.m.

**79**

### SEVERE AND HIGHLY FATAL OUTBREAK OF HISTOPLASMOSIS AMONG TUNNEL WORKERS — DOMINICAN REPUBLIC, 2015

**Paige Armstrong**[1], John Beard[1], Sae-Rom Chae[1], Luis Bonilla[2], Mark Lindsley[3], Delia Castillo[4], Ramona Nuñez[4], Tom Chiller[3], Nelson Arboleda[2], Raquel Pimentel[4], Snigdha Vallabhaneni[3]
*[1]Epidemic Intelligence Service, Centers for Disease Control and Prevention, Atlanta, GA, United States, [2]Centers for Disease Control and Prevention, Santo Domingo, Dominican Republic, [3]Mycotic Diseases Branch, Centers for Disease Control and Prevention, Atlanta, GA, United States, [4]Ministerio de Salud Pública y Asistencia Social, Santo Domingo, Dominican Republic*

10:45 a.m.

**80**

### PERFORMANCE CHARACTERISTICS OF THE WHATMAN FTA ELUTE CARD AND TAQMAN ARRAY CARD PCR ASSAY AS AN ALTERNATIVE METHOD OF STORAGE OF FECAL SAMPLES AND ENTEROPATHOGEN DETECTION AS PART OF THE TRAVELERS' DIARRHEA TREATMENT TRIAL

**Tahaniyat Lalani**[1], Michele Tisdale[1], Jie Liu[2], Indrani Mitra[3], Cliff Philip[4], Elizabeth Odundo[4], Faviola Reyes[5], Jamie Fraser[3], Emma Hutley[6], Patrick Connor[6], Stephen Becker[2], Eric Houpt[2], David Tribble[3], Mark Riddle[7]
*[1]Infectious Disease Clinical Research Program, Uniformed Services University of the Health Sciences, Portsmouth, VA, United States, [2]University of Virginia, Charlottesville, VA, United States, [3]Infectious Disease Clinical Research Program, Uniformed Services University of the Health Sciences, Bethesda, MD, United States, [4]United States Army Medical Research Directorate Kenya, Kericho, Kenya, [5]Joint Task Force Bravo, Soto Cano Air Base, Honduras, [6]Department of Military Medicine, Royal Centre for Defense Medicine, Birmingham, United Kingdom, [7]Naval Medical Research Center, Silver Spring, MD, United States*

11 a.m.

**81**

### RESULTS FROM THE TRIAL EVALUATING AMBULATORY THERAPY OF TRAVELERS' DIARRHEA (TREAT TD) STUDY: A RANDOMIZED CONTROLLED TRIAL COMPARING THREE SINGLE DOSE ANTIBIOTIC REGIMENS WITH LOPERAMIDE

**Mark S. Riddle**[1], Patrick Connor[2], Jamie Fraser[3], Chad K. Porter[1], Brett Swierczewski[4], Emma J. Hutley[2], Brook A. Danboise[5], Mark Simons[6], Tahaniyat Lalani[3], Christine Hulseberg[7], Ramiro L. Gutierrez[1], David R. Tribble[3], on behalf of the TrEAT TD Study Team
*[1]Naval Medical Research Center, Silver Spring, MD, United States, [2]Department of Military Medicine, Royal Centre for Defense Medicine, Birmingham, United Kingdom, [3]Infectious Diseases Clinical Research Program, Uniformed Services University of the Health Sciences, Bethesda, MD, United States, [4]Armed Forces Research Institute for the Medical Sciences, Bangkok, Thailand, [5]U.S. Army Medical Research Unit, Kericho, Kenya, [6]U.S. Naval Medical Research Unit - 6, Lima, Peru, [7]U.S. Army Research Unit Kenya, Kericho, Kenya*

11:15 a.m.

**82**

### EFFICACY AND SAFETY OF A SINGLE-DOSE MEBENDAZOLE 500 MG CHEWABLE TABLET IN THE TREATMENT OF *ASCARIS LUMBRICOIDES* AND *TRICHURIS TRICHIURA* INFECTION IN PEDIATRIC PATIENTS: A DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED, PHASE 3 STUDY

**Steven Silber**[1], Ermias Diro[2], Netsanet Workneh[3], Zeleke Mekonnen[3], Bruno Levecke[4], Peter Steinmann[5], Irenee Umulisa[6], Marc Engelen[7], Benny Baeten[7], Peter Hu[1], Andrew Friedman[1], Alan Baseman[1], Joseph Mrus[1]
*[1]Janssen Research & Development LLC, New Jersey, NJ, United States, [2]University of Gondar, Gondar, Ethiopia, [3]Jimma University, Jimma, Ethiopia, [4]Ghent University, Merelbeke, Belgium, [5]Swiss Tropical and Public Health Institute and University of Basel, Basel, Switzerland, [6]Rwanda Biomedical Centre, Kingali, Rwanda, [7]Janssen Pharmaceutica NV, Beerse, Belgium*

11:30 a.m.

**83**

### ILLNESS AMONG MIGRANTS TO CANADA: SURVEILLANCE REPORT FROM CANTRAVNET SURVEILLANCE DATA, 2015

**Andrea K. Boggild**[1], Jennifer Geduld[2], Michael Libman[3], Cedric Yansouni[3], Anne McCarthy[4], Jan Hajek[5], Wayne Ghesquiere[5], Jean Vincelette[6], Susan Kuh[7], Pierre Plourde[8], David Freedman[9], Kevin Kain[1]
*[1]University of Toronto, Toronto, ON, Canada, [2]Public Health Agency of Canada, Ottawa, ON, Canada, [3]McGill University, Montreal, QC, Canada, [4]University of Ottawa, Ottawa, ON, Canada, [5]University of British Columbia, Vancouver, BC, Canada, [6]Université de Montréal, Montreal, QC, Canada, [7]University of Calgary, Calgary, AB, Canada, [8]Winnipeg Regional Health Authority, Winnipeg, MB, Canada, [9]University of Alabama Birmingham, Birmingham, AL, United States*

11:45 a.m.

**84**

### MATERNAL PARASITIC INFECTIONS ALTER INFANT ANTIBODY RESPONSE TO PNEUMOCOCCAL IMMUNIZATION

**Noah D. McKittrick**[1], David M. Vu[1], Derek Boothroyd[1], Indu Malhotra[2], Charles H. King[2], Francis M. Mutuku[3], Angelle Desiree LaBeaud[1]
*[1]Stanford University, Palo Alto, CA, United States, [2]Case Western Reserve University School of Medicine, Cleveland, OH, United States, [3]Technical University of Mombasa, Mombasa, Kenya*

**(ACMCIP Abstract)**



## Symposium 22

## Developing Responsible Data Sharing for Tropical Medicine

*Marriott - Room A601*
Monday, November 14, 10:15 a.m. - Noon

Many funders of biomedical research now encourage, and in some cases oblige, grant-holders to "share" their primary data with external researchers to allow secondary analysis. An increasing number of journals now require that primary data used to prepare a manuscript be made available upon publication. The assumption is that data shared will be data reused, for reanalysis, to be compared with outputs or conclusions from similar studies, or pooled with similar data sets for large scale meta-analysis. The expectation is that data reuse will avoid duplication of effort, identify clear gaps in knowledge, save human and material resources and translate into better public health policies and practice. However, the institutions that encourage data sharing rarely offer clear guidance on which data sets should be shared, where and how the data and associated meta-data should be deposited and how those who did the hard work of data collection will be recognized for their contributions. Sharing the results of research performed in low- and middle-income countries especially highlights these complex issues of equity and reciprocity and the distribution of credit and reward. This symposium will provide an opportunity to address these challenges collaboratively and begin to devise creative responses to assure that responsible data sharing will benefit the whole public health community. The speakers have had varied

experiences of data sharing in malaria, schistosomiasis and Ebola Virus Disease. Professor Gaye has contributed actively to several analyses of pooled primary data from individual clinical trials of antimalarial efficacy. Dr. Narcis Kabatereine heads the Schistosomiasis Control Initiative, a group that has just begun to consider the challenges their research community must resolve if all members are to benefit from a common data sharing platform. The International Rescue Committee responded early to last year's EVD outbreak and Dr. Adam Levine is part of a large collaboration to agree appropriate terms for ethical, responsible sharing of data collected during treatment of EVD patients. Laura Merson will use her experience in negotiating collaborative data sharing agreements during and after outbreaks to highlight the challenges and initiate the audience focused panel discussion on solutions.

CHAIR

Philippe J. Guerin
*University of Oxford, Oxford, United Kingdom*

Estrella Lasry
*Medecins Sans Frontieres, New York, NY, United States*

10:15 a.m.
**DATA SHARING IN THE MALARIA COMMUNITY - A LONG JOURNEY**

Oumar Gaye
*Université Cheikh Anta Diop de Dakar, Dakar, Senegal*

10:35 a.m.
**DATA SHARING IN SCHISTOSOMIASIS - BEGINNING THE DISCUSSION**

Narcis B. Kabatareine
*Schistosomiasis Control Initiative of Imperial College, London, United Kingdom*

10:55 a.m.
**DATA SHARING IN OUTBREAKS AND EMERGENCIES - EBOLA**

Adam C. Levine
*International Medical Corps, Washington, DC, United States*

11:15 a.m.
**NAVIGATING DATA SHARING IN TROPICAL MEDICINE - WHERE DO WE GO FROM HERE**

Laura Merson
*University of Oxford, Oxford, United Kingdom*

## Scientific Session 23

## American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Helminths - Cellular, Molecular and Immunoparasitology

*Marriott - Room A602*
Monday, November 14, 10:15 a.m. - Noon

***Supported with funding from the Burroughs Wellcome Fund***

CHAIR

Monica C. Botelho
*National Institute of Health Dr. Ricardo Jorge, Porto, Portugal*

Papa M. Drame
*National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States*

10:15 a.m.

### 1930

**DIALOGUE BETWEEN NEUTROPHILS AND HOOKWORMS DETERMINES PARASITE DEVELOPMENT**

**Tiffany Bouchery**[1], Beatrice Volpe[1], Graham LeGros LeGros[2], Nicola Harris[1]
*[1]UPHARRIS, Global Health Institute, EPFL, Lausanne, Switzerland, [2]Malaghan Institute of Medical Research, Wellington, New Zealand*

10:30 a.m.

### 85

**POPULATION GENOMICS OF *WUCHERERIA BANCROFTI* FROM ARCHIVED SAMPLES USING SELECTIVE WHOLE GENOME AMPLIFICATION**

**Scott T. Small**[1], David Serre[2], Christopher King[1], Patrick Lammie[3], Yaya Coulibaly[4], Abdallah Diallo[4], Thomas Nutman[5], Peter Zimmerman[1]
*[1]Case Western Reserve University, Cleveland, OH, United States, [2]Cleveland Clinic Foundation, Cleveland, OH, United States, [3]Centers for Disease Control and Prevention, Atlanta, GA, United States, [4]National Institute of Allergy and Infectious Diseases-Mali ICER, Bamako, Mali, [5]National Institutes of Health, Bethesda, MD, United States*

10:45 a.m.

### 86

**POST-GENOMIC EMPIRIC IMMUNOMIC ANALYSES IDENTIFY NOVEL BIOMARKERS FOR ACTIVE *O. VOLVULUS* INFECTION**

**Sasisekhar Bennuru**[1], Georgiette Oduro-Boateng[1], Alexandra Grote[2], Jose M. Ribeiro[3], Elodie Ghedin[2], Sara Lustigman[4], Thomas B. Nutman[1]
*[1]National Institutes of Health, Bethesda, MD, United States, [2]Center for Genomics and Systems Biology, New York University, New York, NY, United States, [3]National Institutes of Health, Rockvile, MD, United States, [4]New York Blood Center, New York, NY, United States*

11 a.m.

### 87

**NOVEL BIOMARKERS FOR THE IMMUNE-BASED QUANTIFICATION OF *LOA LOA* MICROFILARIAE AND THE DIAGNOSIS OF LOIASIS**

**Papa M. Drame**, Sasisekhar Bennuru, Thomas B. Nutman
*National Institute of Allergy and Infectious Diseases/National Institutes of Health, Bethesda, MD, United States*

**(ACMCIP Abstract)**

11:15 a.m.

### 88

**ALLERGIC SENSITIZATION UNDERLIES HYPER-REACTIVE ANTIGEN-SPECIFIC CD4+ T-CELL RESPONSES IN COINCIDENT FILARIAL INFECTION**

**Pedro H. Gazzinelli-Guimaraes**[1], Sandra Bonne-Annee[1], Ricardo T. Fujiwara[2], Helton C. Santiago[2], Thomas B. Nutman[1]
*[1]National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, [2]Federal University of Minas Gerais, Belo Horizonte, Brazil*

**(ACMCIP Abstract)**

11:30 a.m.

### 89

***SCHISTOSOMA MANSONI* INFECTION IMPAIRS REPRODUCTION IN MICE**

**Monica C. Botelho**[1], Graça Lopes[2], Mario Sousa[2], Fatima Gartner[2], Helena Alves[1], Joachim Richter[3]
*[1]National Institute of Health Dr. Ricardo Jorge, Porto, Portugal, [2]ICBAS, Porto, Portugal, [3]Faculty of Medicine of the Heinrich-Heine University, Duesseldorf, Germany*

**(ACMCIP Abstract)**

11:45 a.m.

**90**

**THE EFFECTS OF PRAZIQUANTEL ON THE TEMPORAL INTERACTION BETWEEN THE HELMINTH PARASITE *SCHISTOSOMA MANSONI* AND ITS MURINE HOST**

**Melissa C. Sanchez**[1], Amalia Sanchez Parra[1], Christain von Cabanlong[1], Pauline M. Cupit[2], Charles Cunningham[1]

*[1]Center for Evolutionary and Theoretical Immunology, Department of Biology, University of New Mexico, Albuquerque, NM, United States, [2]Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California, San Diego, CA, United States*

**(ACMCIP Abstract)**

## Symposium 24

## Immune Memory Responses in Malaria

*Marriott - Room A703/A704*

Monday, November 14, 10:15 a.m. - Noon

This symposium is devoted to immunologic memory in malaria and aims to present a wide range of studies that address the issue of immune memory induction and persistence in natural malaria infections, as well as in malaria infection or vaccination model systems. The symposium will include presentations and discussions concerning memory B cell and T cell responses to *P. falciparum*, *P. vivax*, *P. chabaudi* and *P. berghei*. One of the cardinal features of antigen-specific immune responses elicited by infections or vaccinations is the persistence of optimally effective memory T cell and B cell responses that are inextricably linked to protracted protection. Adequately maintained pools of memory lymphocytes assure fast, effective and specific response against recurring infections. Both the induction and the maintenance of memory lymphocytes have been the subject of many elegantly conducted studies, but mainly in viral infections, and similar studies are urgently needed in malaria, caused by *Plasmodium* spp. It has been documented that the maintenance of antigen-specific immunological memory in malaria is unusual in that it takes many years of exposure to the parasites before persons start developing immune memory responses. Memory B cells that are found in persons exposed to malaria are distinct from the normal memory B cells. Although the atypical B cells appear to develop from the same precursors as normal memory B cells, they are nearly unresponsive to malaria antigens upon re-infection. Contrasting observations were made in *P. chabaudi* model, where memory B cells and plasma cells are maintained in the absence of persisting antigen and are recalled upon reinfection. Similarly, IL-10 memory responses are also maintained in the absence of repeated *P. falciparum*/vivax infections. However, long-lasting protective immunity induced by *P. berghei* RAS is dependent on liver resident effector INFg+CD8 T cells that are sensitive to levels of liver-stage antigen depot. Although it has been generally accepted that memory responses to *Plasmodium* antigens are not adequately developed or maintained, as persons who survive episodes of childhood malaria are still vulnerable to either persistent or intermittent malaria infections, the topics presented during the symposium will cover results in support and against this generally held view. This is a very important topic that will interest not only the malaria community but also scientists interested in memory responses to other infections. Understanding requirements surrounding the induction and maintenance of memory T and B cell responses to *Plasmodium* antigens is needed for future development of a much improved, hence and long-lasting malaria vaccines.

CHAIR

Urszula Krzych
*Walter Reed Army Institute of Research, Silver Spring, MD, United States*

Jean Langhorne
*Crick Institute, London, United Kingdom*

10:15 a.m.
**CD8 T CELL MEMORY AND INFECTIONS**

John Harty
*University of Iowa, Iowa City, IA, United States*

10:35 a.m.
**MEMORY RESPONSES TO *P. CHABAUDI***

Jean Langhorne
*Crick Institute, London, United Kingdom*

10:55 a.m.
**EVIDENCE THAT TH1-POLARIZED TFH CELLS DRIVE ATYPICAL MEMORY B CELL EXPANSION IN MALARIA**

Peter Crompton
*National Institutes of Health, Bethhesda, MD, United States*

11:15 a.m.
**ASSESSING THE LONGEVITY OF ANTIMALARIAL IMMUNITY**

Eleanor Riley
*London School of Hygiene & Tropical Medicine, London, United Kingdom*

## Symposium 25

## Tailored Surveillance Strategies for High-Risk Populations in Malaria Elimination Settings

*Marriott - Room A706/A707*

Monday, November 14, 10:15 a.m. - Noon

The aim of this symposium is to update the malaria research community with the latest approaches malaria elimination programs can use to identify and target groups at high risk of malaria. In much of southeast Asia, Latin America and southern Africa, a large proportion of malaria transmission is driven by high-risk groups that are often mobile, with transmission events occurring away from the home. Mobile and migrant populations in these settings are a key driver of importation across national boundaries and a challenge for elimination programs to identify and access. This symposium will introduce and discuss methods to identify these high-risk groups, so that surveillance strategies and interventions can be designed and targeted appropriately in order to ensure optimal allocation of limited resources and acceptance of interventions by affected communities. Formative assessments amongst key informants and potential high risk populations are a crucial first step to collect qualitative data and plan surveillance strategies. A formative assessment and survey of highly mobile populations in Nepal along the India border will be presented, demonstrating how these assessments can help programs to plan and implement targeted surveillance strategies. Another option available for programs is the use of case-control studies to determine risk factors in enough detail to guide program activities. The next speaker will present the results from case-control studies in different transmission settings in

northern Namibia and Aceh province, Indonesia. Substantial new data on the micro-epidemiology of malaria are being generated, including detailed information on travel patterns. Finding high risk groups through social network malaria surveillance is novel and may be required where populations are more difficult to access due to mobility or high barriers to health services. The next presenter will address findings from a study along the Thai-Myanmar border which used social networking methods to compare malaria prevalence and travel patterns amongst rural versus urban migrant populations. Where forest-going or other occupational groups are at high risk of infection, targeting reactive case detection activities to these networks may lead to greater access of these highly mobile groups and increased coverage of the human parasite reservoir through active surveillance. The final presenter will describe a novel strategy to adapt reactive case detection to networks of forest workers in Aceh province, Indonesia.

CHAIR

Adam Bennett
*University of California San Francisco, San Francisco, CA, United States*

Jimee Hwang
*President's Malaria Initiative, Centers for Disease Control and Prevention, Atlanta, GA, United States*

10:15 a.m.
**FORMATIVE ASSESSMENT OF MOBILE POPULATIONS IN THE NEPAL-INDIA BORDER REGION**

Prakash Ghimire
*Tribhuvan University, Kathmandu, Nepal*

10:35 a.m.
**CASE-CONTROL TOOLS TO DETERMINE RISK FACTORS FOR MALARIA AND GUIDE TARGETED SURVEILLANCE**

Jennifer Smith
*University of California San Francisco, San Francisco, CA, United States*

10:55 a.m.
**RESPONDENT-DRIVEN SAMPLING FOR MALARIA AMONGST MIGRANTS ALONG THE THAI-MYANMAR BORDER**

David Sintasath
*President's Malaria Initiative, United States Agency for International Development, Bangkok, Thailand*

11:15 a.m.
**REACTIVE CASE DETECTION FOR MALARIA IN HIGH RISK POPULATIONS IN ACEH, INDONESIA**

Lenny Ekawati
*Eijkman-Oxford Clinical Research Unit (EOCRU), Eijkman Institute for Molecular Biology, Jakarta, Indonesia*

## ACME Networking Lunch

*Marriott - Room A701*
Monday, November 14, Noon - 1 p.m.

An informal "meet and greet" for ACME members.

## American Committee on Arthropod-Borne Viruses (ACAV) Faculty-Trainee Roundtable Discussions

*Hilton - Rooms 201, 202, 203, 204, 205*
Monday, November 14, Noon - 1 p.m.

These lunch table meetings aim to provide students and postdoctoral fellows an opportunity to interact with established arbovirologists to discuss job opportunities, related scientific work, and receive valuable career guidance and direction.

## Exhibit Hall Open and Light Lunch

*Marriott - International Hall*
Monday, November 14, Noon - 1:45 p.m.

**Poster Session 26**

## Poster Session A: Presentations and Light Lunch

*Hilton - Grand Ballroom and Grand Salon*
Monday, November 14, Noon - 1:45 p.m.

### Poster Session A Directory

**One Health: Interface of Human Health/Animal Diseases: #531 – 544**

**Protozoa – Ameba/Giardia: #545 – 550**

**Protozoa – Other Protozoa: #551 - 564**

**Trematodes – Other: #565 – 570**

**Trematodes – Schistosomiasis – Cellular and Molecular Biology: #571 – 581**

**Water, Sanitation, Hygiene and Environmental Health: #582 - 595**

## *Flaviviridae* - Dengue

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#### DENGUE VIRUS: THE CIRCULATION OF FOUR SEROTYPES IN AN ENDEMIC REGION, DURING NINE SEASONS: SINGULARITIES ON EPIDEMIC DYNAMICS AND GENETIC DIVERSITY

**Danila Vedovello**[1], Leila Sabrina Ullmman[2], Joice M. Biselli-Périco[3], Tatiana E. Colombo[4], Tauyne M. Pinheiro[4], Roberta V. Bronzoni[5], Adriano Mondini[6], Ana carolina B. Terzian[4], João P. Araújo Jr[2], Francisco Chiavanotti-Neto[7], Mauro M. Teixeira[8], Nikos Vasilakis[9], Betânia P. Drumond[8], Paula Rahal[3], Maurício L. Nogueira[4]

*[1]UFABC, São Bernardo do Campo, Brazil, [2]UNESP, Botucatu, Brazil, [3]UNESP, São José do Rio Preto, Brazil, [4]FAMERP, São José do Rio Preto, Brazil, [5]UFMT, Sinop, Brazil, [6]UNESP, Araraquara, Brazil, [7]FSP/USP, São Paulo, Brazil, [8]UFMG, Belo Horizonte, Brazil, [9]University of Texas Medical Branch, Galveston, TX, United States*

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#### EVALUATION OF THE HEALTH-RELATED QUALITY OF LIFE OF CHILDREN WITH DENGUE AND MALARIA IN WESTERN KENYA

**Elizabeth Liu**[1], David Vu[1], Derek Boothroyd[1], Bryson Ndenga[2], Winnie Onyango[2], Victoria Okuta[2], A. Desiree LaBeaud[1]

*[1]Stanford University School of Medicine, Stanford, CA, United States, [2]Kenya Medical Research Institute, Kisumu City, Kenya*

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#### MOLECULAR CHARACTERIZATION OF TWO MAJOR DENGUE OUTBREAKS IN COSTA RICA

**Claudio Soto-Garita**[1], Teresita Somogyi[2], Vicente-Santos Amanda[3], Eugenia Corrales-Aguilar[1]

*[1]Virology-CIET (Research Center for Tropical Diseases), Faculty of Microbiology, University of Costa Rica, San José, Costa Rica, [2]Molecular Diagnostics Unit, Hospital Mexico, Caja Costarricense del Seguro Social, San José, Costa Rica, [3]Conservation Genetics, School of Biology, University of Costa Rica, San José, Costa Rica*

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#### ARTHROPOD EXOSOMES AS NOVEL TRANSMISSION BLOCKING STRATEGIES FOR VECTOR-BORNE PATHOGENS

**Hameeda Sultana**

*Old Dominion University, Norfolk, VA, United States*

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#### *PLASMODIUM FALCIPARUM* CO-INFECTION MODULATES DENGUE DISEASE SEVERITY

**David M. Vu**[1], Kelsey Ripp[2], Noah Mutai[3], Bryson A. Ndenga[3], Claire Heath[1], A. Desiree LaBeaud[1]

*[1]Stanford University School of Medicine, Stanford, CA, United States, [2]Warren Alpert Medical School of Brown University, Providence, RI, United States, [3]Centre for Global Health Research, Kenya Medical Research Institute, Kisumu, Kenya*

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#### LOWER T CELL APOPTOSIS IN THE 2ND INFECTION WITH HETERO-SEROTYPE DENV

**Jintao Li**, Wang Yang, Hongxia Guo, Nan Ye, Tiantian Yu

*Tropical Medicine Institute, Chongqing, China*

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#### PREDISPOSING FACTORS FOR BLEEDING IN ADULT DENGUE PATIENTS

**Ananda D. Wijewickrama**[1], Sunethra Gunasena[2], Gaveshika Abeyrathna[1], Chalaka D. Chandima[1], Damayanthi Idampitiya[1]

*[1]National Institute of Infectious Diseases, Angoda, Sri Lanka, [2]Medical Research Institute, Colombo, Sri Lanka*

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#### PREVALENCE OF DENGUE AND CHIKUNGUNYA VIRUS INFECTIONS IN NORTHEASTERN TANZANIA: A CROSS SECTIONAL STUDY AMONG PARTICIPANTS PRESENTING WITH MALARIA-LIKE SYMPTOMS

**Debora C. Kajeguka**[1], Reginald A. A. Kavishe[1], Robert D. Kaaya[1], Jaffu O. Chilongola[1], Michael Alifrangis[2], Franklin W. Mosha[1], Karin L. Schiøler[2]

*[1]Kilimanjaro Christian Medical University College, Moshi, United Republic of Tanzania, [2]University Of Copenhagen, Copenhagen, Denmark*

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#### NATURAL ANTIBODY RESPONSES TO THE CAPSID PROTEIN OF DENGUE

**Mahesha N. Sigera Nadugala**[1], Chandima Jeewandara[2], Neelika Malavige[2], Prasad H. Premaratne[1], Charitha L. Goonasekara[1]

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#### COCULTURE OF ENDOTHELIAL CELLS AND MONOCYTES AS A POTENTIAL MODEL TO STUDY DENGUE PATHOGENESIS AND SCREEN COMPOUNDS WITH THERAPEUTIC POTENTIAL

**Francielle T. Cardozo**, Camila M. Romano, Ester C. Sabino

*University of Sao Paulo, Sao Paulo, Brazil*

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#### EFFICACY OF RUPATADINE IN THE TREATMENT OF ACUTE DENGUE INFECTION

**Gathsaurie Neelika Malavige**[1], Ananda Wijewickrama[2], Samitha Fernando[1], Praveen Madushanka[1], Chameera Punchihewa[1], Anushka Ginneliya[1], Supun Samarasekara[1], Shiran Paranavitana[1], Damayanthi Idampitiya[2], Chandanie Wanigatunga[1], Harsha Dissanayaka[1], Shamini Prathapan[1], Chandima Jeewandara[1], Laksiri Gomes[1], Graham Ogg[3]

*[1]University of Sri Jayawardenapura, Nugegoda, Sri Lanka, [2]Infectious Diseases Hospital, Colombo, Sri Lanka, [3]University of Oxford, Oxford, United Kingdom*

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#### COMPARISON BETWEEN DENGUE AND CHIKUNGUNYA BY CBC AT THE HOSPITAL OF THE NO. 2 POLICE OF THE CITY OF GUAYAQUIL PERIOD 2015

**Diego A. Vasquez**

*Universidad Católica de Santiago de Guayquil, Guayaquil, Ecuador*

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### A CLINICAL GRADING AND DECISION SUPPORT SYSTEM FOR DENGUE VIRAL INFECTION AND ACCOMPANYING COMORBIDITIES USING SYNDROMIC SURVEILLANCE IN THE HOSPITAL SETTING

**Thomas C. Tsai**[1], Marie Y. Wu[1], Jui-Hung Kao[2], Shu-Chuan Hsu[3], Chih-Hen Chung[3], Chia-Chi Ku[4], Chwan-Chuen King[5]
*[1]National Taiwan University College of Medicine, Taipei City, Taiwan, [2]National Taiwan University Hospital, Taipei City, Taiwan, [3]Kuo General Hospital, Tainan City, Taiwan, [4]National Taiwan University College of Medicine, Institute of Immunology, Taipei City, Taiwan, [5]National Taiwan University College of Public Health, Institute of Epidemiology and Preventive Medicine, Taipei City, Taiwan*

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### INVESTIGATING DENGUE VIRUS INFECTION AS A CAUSE OF FEVER IN KENYAN CHILDREN

**Ana L. Eyherabide**
*Sanatorio de Niños, Rosario, Santa Fe, Argentina*

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### A HUMANIZED MOUSE MODEL FOR STUDYING HUMAN IMMUNOLOGY AND PATHOGENESIS OF DENGUE VIRUS INFECTION

Peifang Sun, Lauren Geary, Nishith Nagabhushana, Zhaodong Liang, Shuenn-Jue Wu, Joel Sklar, Nimfa Teneza-Mora, Maya Williams, Sofia Casares, **Brian Morrison**
*Naval Medical Research Center, USN, Silver Spring, MD, United States*

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### EVALUATING INTERNET-BASED COMMUNICABLE DISEASE BIOSURVEILLANCE METHODS FOR VECTOR BORNE DISEASES: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Simon Pollett**, Peter Bacchetti, Henry F. Chambers, George W. Rutherford
*University of California San Francisco, San Francisco, CA, United States*

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### COMPLEMENTARY USE OF CRYO-ELECTRON MICROSCOPY AND MASS SPECTROMETRY TO ASSESS THE MATURITY OF SANOFI PASTEUR DENGUE VACCINE VIRUSES

Mathieu Trauchessec[1], Pierre Bonnafous[2], Olivier Lambert[3], Yves Berard[4], Fabienne Barrière[4], Céline Huillet[4], Devika Sirohi[5], Richard Kuhn[5], Bruno Guy[4], Frederic Ronzon[4], **Catherine Manin**[4]
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### A STATISTICAL APPROACH TO ESTIMATE DENGUE VIRUS INFECTION HISTORIES, INCLUDING BROADER CRITERIA FOR INAPPARENT INFECTIONS

**Leah C. Katzelnick**[1], Angel Balmaseda[2], Eva Harris[1]
*[1]Division of Infectious Diseases and Vaccinology, School of Public Health, University of California Berkeley, Berkeley, CA, United States, [2]Laboratorio Nacional de Virología, Centro Nacional de Diagóstico y Referencia, Ministry of Health, Managua, Nicaragua*

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### SUSCEPTIBILITY OF NEOTROPICAL PRIMARY BAT CELL LINES TO DENGUE INFECTION

Andrés Moreira-Soto, Claudio Soto-Garita, **Eugenia Corrales-Aguilar**
*Virology-CIET University of Costa Rica, San Pedro, Costa Rica*

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### EFFECTS OF COMMUNITY STRUCTURES AND ENVIRONMENTAL HETEROGENEITIES ON THE SPREAD AND PERSISTENCE OF DENGUE

**Warren S. Tennant**, Mario Recker
*University of Exeter, Penryn, United Kingdom*

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### DEVELOPMENT OF ANTIBODY-DEPENDENT CELLULAR CYTOTOXICITY ASSAYS FOR DENGUE VIRUS

**Nishith Nagabhushana**[1], Jeffrey Currier[2], Zhaodong Liang[1], Jessica Roman[1], Maya Williams[1], Peifang Sun[1], Brian J. Morrison[1]
*[1]Naval Medical Research Center, Silver Spring, MD, United States, [2]Walter Reed Army Institute of Research, Silver Spring, MD, United States*

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### SEROCONVERSION TO DENGUE AND CHIKUNGUNYA IN IMMUNOLOGICALLY NAÏVE ADULTS IN ST. KITTS

**Inaki Deza-Cruz**[1], Aileen Mill[2], Steven Rushton[2], Patrick Kelly[1]
*[1]Ross University, Basseterre, Saint Kitts and Nevis, [2]Newcastle University, Newcastle-upon-Tyne, United Kingdom*

## 113

### FLUORESCENTLY LABELED FLAVIVIRUSES TO TRACK ANTIGEN-SPECIFIC B CELLS

**Anuja Mathew**[1], Marcia Woda[1], Heather Friberg[2], Jeffrey Currier[2], Sharone Green[3], Anon Srikiatkhachorn[3], Louis Macareo[4], Richard Jarman[2], Alan Rothman[1]
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### A CASE OF DENGUE ENCEPHALITIS CAUSED BY DENV-4

**Deborah Ng**, Sapna P. Sadarangani
*Tan Tock Seng Hospital, Singapore, Singapore*

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### PROFILING ANTIBODY RESPONSES TO DENGUE NS1 IN VACCINE STUDIES AND NATURAL HUMAN INFECTIONS USING PEPTIDE MICROARRAYS

**P. Robert Beatty**[1], Tomer Hertz[2], Zachary MacMillen[2], Sarah Killingbeck[1], Eva Harris[1]
*[1]Division of Infectious Diseases and Vaccinology, School of Public Health, University of California Berkeley, Berkeley, CA, United States, [2]Vaccine and Infectious Disease Division, Fred Hutchinson Cancer Research Center, Seattle, WA, United States*

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### POLYCLONAL ANTIBODY RESPONSES TO SEROTYPE-SPECIFIC NEUTRALIZING EPITOPES IN NATURAL DENGUE VIRUS INFECTIONS

**Daniela V. Andrade**[1], Douglas G. Widman[2], Aravinda M. de Silva[3], Ralph S. Baric[2], Eva Harris[1]
*[1]Division of Infectious Diseases and Vaccinology, School of Public Health, University of California Berkeley, Berkeley, CA, United States, [2]Department of Epidemiology, University of North Carolina School of Public Health, Chapel Hill, NC, United States, [3]Department of Microbiology and Immunology, School of Medicine, University of North Carolina, Chapel Hill, NC, United States*

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### ENDURING A DENGUE/ZIKA EPIDEMIC IN RIBEIRAO PRETO, BRAZIL

**Silvia N. Fonseca**, Larissa H. Sigaki, Arthur Teixeira, Elaine C. Bezerra, Maysa Souza, Ystannyslau B. Silva, Flavio L. Cavalari, Juliano C. Santos, Luis F. Medeiros, Maria Luiza F. Freitas, Ivana C. Lucca, Talita Martins, Nayara F.

Sandri, Priscila Valori, Melina Monteiro, Marcus A. Ferez, Woe T. Chan
*Hospital Sao Francisco, Ribeirao Preto, Brazil*

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### ACCESSING HEALTH CARE IN VENEZUELA: A COMMUNITY BASED STUDY ON HEALTH CENTER ATTENDANCE FOR DENGUE AND FEVER

**Jelte Elsinga**[1], Maria F. Vincenti[1], Erley Lizarazo[1], Ajay Bailey[2], Masja Schmidt[1], Luzlexis Arias[3], Alex W. Friedrich[1], Adriana Tami[1]
*[1]Department of Medical Microbiology, University of Groningen, University Medical Center Groningen, Groningen, Netherlands, [2]Population Research Center, Faculty of Spatial Sciences, University of Groningen, Groningen, Netherlands, [3]Instituto de Investigaciones Biomédicas, Universidad de Carabobo, Maracay, Bolivarian Republic of Venezuela*

## 119

### IDENTIFICATION OF CLINICAL AND LABORATORY PARAMETERS THAT DISTINGUISH BETWEEN DENGUE AND NON-DENGUE ILLNESS WITHIN THE FIRST 72 HOURS OF FEVER

**Thomas Jaenisch**[1], Kerstin Rosenberger[1], Phung Khanh Lam[2], Nguyen Tran Nam[2], Varun Kumar[3], Lucy Lum Chai See[4], Gabriela Maron[5], Ida Safitri Laksono[6], Firoz Ahmed[7], Patricia Brasil[8], Robert Tovar[9], Marius Wirths[1], Maria G. Guzman[10], Nguyen Than Ha Quyen[2], Cameron P. Simmons[2], Marcel Wolbers[2], Bridget Wills[2]
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# *Flaviviridae* – Other

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### THE ASSOCIATION BETWEEN DENGUE PRE-EXISTING ANTIBODY ON ZIKA VIRUS INFECTION IN THP-1 MONOCYTES CELL LINE

**Prapapun Ong-ajchaowlerd**[1], Taweewun Hunsawong[1], Rungarun Suthangkornkul[1], Butsaya Thaisomboonsuk[1], Chonticha Klungtong[1], Wudtichai Manasatienkij[1], Stefan Fernandez[2], Louis R. Macareo[1], Damon W. Ellison[1]
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### PREPARATION OF STANDARD ZIKA VIRUS (ZIKV) IGM FOR SEROLOGICAL DIAGNOSIS OF ZIKV INFECTION

**Kanittha Sirikajornpan**[1], Butsaya Thaisomboonsuk[1], Ananda Nisalak[1], Chonticha Klungthong[1], Taweewun Hunsawong[1], Rawiwan Imerbsin[1], In-Kyu Yoon[2], Damon W. Ellison[1], Alden L. Weg[1], Louis R. Macareo[1]
*[1]Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand, [2]Dengue Vaccine Initiative (DVI), International Vaccine (IVI), Seoul, Republic of Korea*

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### CO-CIRCULATION OF ZIKA, CHIKUNGUNYA AND DENGUE VIRUSES DURING DENGUE OUTBREAK IN SUMATRA, INDONESIA

**R. Tedjo Sasmono**[1], Aditya Perkasa[1], Frilasita Yudhaputri[1], Sotianingsih Haryanto[2], Benediktus Yohan[1], Chairin N. Ma'roef[1], Ungke Antonjaya[3], Rahma F. Hayati[1], Jeremy P. Ledderman[4], Ronald Rosenberg[4], Khin S. Myint[1], Ann M. Powers[4]
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### FROM DENGUE TO ZIKA—TAIWAN'S EXPERIENCE

**Tsung-Hua Tung**[1], Ta-Chien Chan[2], Shao-Ching Chen[3], Muh-Yong Yen[4], Chaur-Dong Chen[5], Chi-Kung Ho[6], Fred Lin[7], Chwan-Chuen King[8]
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### POTENTIAL USE OF SALIVA SAMPLES FOR DIAGNOSIS OF ZIKA VIRUS INFECTION

**Laura B. Tauro**
*Centro de Pesquisas Gonçalo Moniz/FIOCRUZ-BA, Salvador, Brazil*

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### THE REEMERGENCE OF ZIKA VIRUS: FROM ARTHROPOD VECTOR TO POSSIBLE SEXUAL TRANSMISSION

**Femi Taiwo**[1], Tatiana Eversley[2], Sarah Jillson[1], Chidinma Okafor[1], David Adams[3], Joseph Miller[1], Daniel Mauck[4], Shawn Patrick[1]
*[1]Armstrong State University, Savannah, GA, United States, [2]Medical University of South Carolina, Charleston, SC, United States, [3]Mercer University School of Medicine, Savannah, GA, United States, [4]University of Miami, Miami, FL, United States*

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### SERODIAGNOSIS OF ZIKA IN TRAVELERS RETURNING FROM FLAVIVIRUS-ENDEMIC REGIONS

**Matthew Collins**, Eileen McGowan, Ramesh Jadi, Aravinda de Silva
*University of North Carolina, Chapel Hill, NC, United States*

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### GUILLAIN-BARRÉ SYNDROME OUTBREAK - BAHIA STATE, BRAZIL, 2016

**Ashley R. Styczynski**[1], Juliane Malta[2], Elisabeth Krow-Lucal[1], Jadher Percio[2], Martha Nobrega[2], Alexander Vargas[2], Tatiana Lanzieri[1], Priscila Leal[2], James Sejvar[1], Giovanini Coelho[2]
*[1]Centers for Disease Control and Prevention, Atlanta, GA, United States, [2]Ministério da Saúde, Brasília, Brazil*

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### THE DIFFERENTIAL IMPACT OF YELLOW FEVER VACCINE ACROSS TRANSMISSION CYCLES: ACCOUNTING FOR HERD IMMUNITY IN THE FACE OF ZOONOTIC TRANSMISSION

Kévin Jean[1], Neil M. Ferguson[1], Maria D. Van Kerkhove[2], Sergio Yactayo[3], William Perea[3], Joseph Biey[4], Messeret E. Shibeshi[5], **Tini Garske**[1]
*[1]Imperial College, London, United Kingdom, [2]Center for Global Health, Pasteur Institute, Paris, France, [3]World Health Organization, Geneva, Switzerland, [4]AFRO West Africa Inter-country Support Team, Ouagadougou, Burkina Faso, [5]AFRO Eastern and Southern Africa Inter-country Support Team, Harare, Zimbabwe*

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### FULL GENOME SEQUENCING OF ZIKA VIRUSES USING A TARGETED AMPLIFICATION APPROACH

**Mariana Leguia**, Vidal Felices, Armando Torre, Carolina Guevara, Gilda Troncos, Victoria Espejo, Christopher Mores
*U.S. Naval Medical Research Unit - 6 (Peru), Washington, DC, United States*

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### ZIKA VIRUS PERSISTENCE IN BODY FLUIDS AMONG PATIENTS WITH ZIKA VIRUS INFECTION IN PUERTO RICO

**Gabriela Paz-Bailey**[1], Janice Perez-Padilla[1], Matthew Lozier[1], Jorge Munoz-Jordan[1], Brad Biggerstaff[1], Olga Lorenzi[1], Carlos Garcia-Gubern[2], Steve Waterman[1], Luisa Alvarado[2], Tyler Sharp[1]
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### EPIDEMIOLOGIC INVESTIGATIONS OF GUILLAIN-BARRÉ SYNDROME INCLUDING CASE-CONTROL INVESTIGATION TO DEFINE ASSOCIATION WITH ZIKA VIRUS INFECTION — PUERTO RICO, 2016

**Emilio Dirlikov**[1], Chelsea Major[1], Marrielle Mayshack[1], Jorge Salinas[2], Cesar Virgen[3], Daniel M. Pastula[4], Jim Sejvar[2], Tyler Sharp[1], Brenda Rivera-García[5]
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### CHARACTERIZATION OF ZIKA VIRUS INFECTIONS AND THE POTENTIAL EFFECT OF PRIOR DENGUE VIRUS EXPOSURE IN CHILDREN IN MANAGUA, NICARAGUA

**Lionel Gresh**[1], Sergio Ojeda[1], Nery Sanchez[1], Guillermina Kuan[2], Andrea Nuñez[3], Aubree Gordon[4], Angel Balmaseda[3], Eva Harris[5]
*[1]Sustainable Sciences Institute, Managua, Nicaragua, [2]Health Center Sócrates Flores Vivas, Ministry of Health, Managua, Nicaragua, [3]Laboratorio Nacional de Virología, Centro Nacional de Diagóstico y Referencia, Ministry of Health, Managua, Nicaragua, [4]Department of Epidemiology, School of Public Health, University of Michigan, Ann Arbor, MI, United States, [5]Division of Infectious Diseases and Vaccinology, School of Public Health, University of California Berkeley, Berkeley, CA, United States*

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### THE SEASONAL INFLUENCE OF CLIMATE AND ENVIRONMENT ON YELLOW FEVER TRANSMISSION ACROSS AFRICA

**Arran Hamlet**[1], Kévin Jean[1], Neil Ferguson[1], Maria Van Kerkhove[2], Sergio Yactayo[3], William Perea[3], Joseph Biey[4], Amadou Sall[5], Tini Garske[1]
*[1]MRC Centre for Outbreak Analysis and Modelling, Imperial College, London, United Kingdom, [2]Centre for Global Health, Institut Pasteur, Paris, France, [3]World Health Organization, Geneva, Switzerland, [4]World Health Organization-AFRO, Ouagodougou, Burkina Faso, [5]Institut Pasteur, Dakar, Senegal*

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### ZIKA VIRUS: KNOWLEDGE GAPS AND VACCINE RESEARCH AND DEVELOPMENT CHALLENGES

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**Noha W. Ibrahim**[1], Christopher M. Hinnerichs[2], Rania M. Kaldas[1], Joseph W. Diclaro II[1]
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**Chizu Sanjoba**[1], Yusuf Ozbel[2], Bunpei Tojo[3], Eisei Noiri[3], Yoshitsugu Matsumoto[1]
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**Ana Clara M. Pires**, Paulo F. Pimenta, Nagila F. Secundino
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**Victor Zorrilla**[1], Liz Espada[1], Marisa Lozano[1], Victor Ocaña[2], Mario Troyes[2], Craig Stoops[1], Gissella Vasquez[1]
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**Luciana C. Pinto**, Ana Clara M. Pires, Luiz M. Villegas, Thais B. Campolina, Alessandra A. Orfano, Paulo F. Pimenta, Nagila F. Secundino
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**Andrea Gómez-Bravo**[1], Claudia Vassena[2], Raúl A. Alzogaray[2], Eduardo Zerba[2], Marcelo C. Abril[1]
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**Marlon P. Saavedra**[1], Marta Moreno[2], Sara A. Bickersmith[3], Carlos Tong[1], Joseph M. Vinetz[2], Jan E. Conn[4]
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**Daniel E. Impoinvil**[1], Yvan St.Jean[2], Joseph Frederick[2], Michelle Chang[1], Jean Frantz Lemoine[2], Ellen M. Dotson[1]
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**Andrew Pike**[1], Jason A. Bailey[1], John C. Tan[2], Jigar J. Patel[2], Matthew B. Laurens[1], Drissa Coulibaly[3], Amadou Niangaly[3], Mahamadou A. Thera[3], Ogobara K. Doumbo[3], Tracking Resistance to Artemisinin Collaboration, Mark A. Travassos[1], Andrea A. Berry[1], Christopher V. Plowe[1]
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**Gabriel Ponce de Léon**[1], Manzambi Ferreira[2], Carolina Ferreira[2], Patrick Gaparayi[3], Lubaki João[3], Olinda Da Costa[3], Parambir Gill[4], Claudete Samutondo[5], Joltim Quivinja[5], Eliane Mbounga[6], Eric S. Halsey[1], Mateusz Plucinski[1], Rafael Dimbu[2], Filomeno Fortes[2]
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**Yao A. Franck**[1], Yerbanga R. Serge[1], Mangano Valentina[2], Avellino Pamela[2], Santolamazza Federica[2], Bancone Germana[3], Cohuet Anna[4], Ouédraogo Jean Bosco[1], David Modiano[2]
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**Olusola Ajibaye**[1], Akinniyi A. Osuntoki[2], Albert O. Ebuehi[2], Bamidele A. Iwalokun[1], Yetunde A. Olukosi[1], Kolapo M. Oyebola[1], Kathleen N. Egbuna[1], Kazumi Narose[3], Kita Kiyoshi[4], Hikoshika Kenji[3], Emmanuel O. Balogun[4]
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**Henry Herrera Milla**[1], Paulo Manrique[1], Oscar Nolasco[1], Roberson Ramirez[1], Mitchel Guzman[1], Alejandro Llanos[1], Joseph Vinetz[2], Dionicia Gamboa[1]
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**Nicholas F. Brazeau**[1], Christian M. Parobek[1], Nicholas J. Hathaway[2], Jessica T. Lin[3], Chanthap Lon[4], David L. Saunders[4], Jonathan J. Juliano[3]
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**Komi Gbedande**[1], Nadine Fievet[2], Sem Ezinmegnon[1], Firmine Viwami[1], Saadou Issifou[1], Yannelle Dossou[1], Jean-Philippe Chippaux[2], Kabirou Moutaïrou[3], Achille Massougbodji[1], Nicaise Tuikue Ndam[2], Ali Salanti[4], Benjamin Mordmüller[5], Philippe Deloron[2], Adrian J. F. Luty[2]
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**Pedro A. Costa**[1], Maria Marta Figueiredo[1], Ana Paula Marino[1], Suelen Queiroz Diniz[1], Mauro Shugiro Tada[2], Dhelio Batista Pereira[2], Ricardo Tostes Gazzinelli[1], Lis Ribeiro Antonelli[1]
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**Gloria P. Gomez-Perez**[1], Matthew B. McCall[2], Gemma Moncunill[3], Sanne E. de Jong[4], Pilar Requena[3], Joseph J. Campo[5], Itziar Ubillos[3], Diana Barrios[3], Alfons Jimenez[3], Pau Cisteró[3], B. Kim Lee Sim[6], Eric James[6], Peter Billingsley[6], Almudena Legarda[3], Peter Kremsner[7], Stephen L. Hoffman[6], Bertrand Lell[7], Pedro L. Alonso[3], Maria Yazdabankhsh[8], Benjamin Mordmüller[9], Carlota Dobaño[3]

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### HIGH TOTAL IGG LEVELS AND IGG1 SUBCLASS AGAINST MSP10 PROTEIN ARE ASSOCIATED TO PROTECTION IN ASYMPTOMATIC SERA FROM *P. FALCIPARUM* INFECTED PATIENTS FROM THE PERUVIAN AMAZON REGION

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**Ronald Ottichilo**[1], Ruth Nyakundi[2], Francis Mutuku[3], Desiree LaBeaud[4], Charles King[5], Indu Malhotra[5]

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**Marcela Parra**, Thomas Schmidt, Jiyeon Yang, Steven Derrick, Amy Yang, Xia Liu, Shafiuddin Siddiqui, Mustafa Akkoyunlu

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**Khadime Sylla**, Roger Clement Tine, Doudou Sow, Magatte Ndiaye, Jean Louis Ndiaye, Daouda Ndiaye, Oumar Gaye, Babacar Faye

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**Logan H. Stuck**[1], Adam Bennett[2], Rudy Yukich[3], Busiku Hamainza[4], Kafula Silumbe[5], Rick Steketee[5], John M. Miller[5], Timothy P. Finn[1], Thomas P. Eisele[1], Joshua Yukich[1]

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**Mary Bushman**, Jaap de Roode, Rustom Antia

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**Ming-Chieh Lee**[1], Yaw Afrane[2], Guiyun Yan[1]
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**Mitsuhiro Iyori**[1], Andrew M. Blagborough[2], Sota Ogata[1], Hidesato Nishiura[1], Miako Sakaguchi[3], Masanori Mizutani[1], Takahiko Tamura[1], Kento Genshi[1], Satoshi Shimada[1], Daisuke S. Yamamoto[1], Hiroyuki Matsuoka[1], Shigeto Yoshida[1]
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### DEVELOPMENT OF A PFSPZ VACCINE REGIMEN TO PROTECT MILITARY PERSONNEL AGAINST *PLASMODIUM FALCIPARUM* INFECTION

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### CHANGING THE PARADIGM OF VACCINE DEVELOPMENT: TURNING THE TARGET PRODUCT PROFILE (TPP) ON ITS HEAD

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**Samuel C. Kahindi**[1], Yahya A. Derua[1], Guofa Zhou[2], Simon Muriu[3], Joseph Mwangangi[4], Harrysone Atieli[5], Andrew Githeko[1], Guiyun Yan[2]

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**Teshome Degefa**[1], Delenasaw Yewhalaw[2], Goufa Zhou[3], Tesfaye Kassa[2], Harrysone Atieli[4], Andrew Githeko[1], Guiyun Yan[3]

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**Molly L. Robertson**[1], Abuchahama Saifodine[2], Baltazar Candrinho[3], Christen Fornadel[4], Tom McLean[5], Lourdes Loch[6], Cara A. Carty[1], Joseph Wagman[1], Francisco Saute[7]

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**Moussa Cisse**[1], Dereje Dengela[2], Richard Oxborough[2], Bradford Lucas[2], Abdourhamane Dicko[3], Jules Mihigo[4], Aboubacar Sadou[5], Kristen George[6], Christien Fornadel[6], Laura Norris[6], Allison Belemvire[6], Suzanne Powell[7], Raymond F. Beach[8]

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**Thomas C. Stabler**[1], Dianna Hergott[1], Guillermo Garcia[1], Aveika Akum[1], Chris Schwabe[1], Immo Kleinschmidt[2]

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**Julia M. Baker**[1], Wladimir J. Alonso[2]
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**Nadia Solomon**[1], Eberhard Zeyhle[2], Malika Kachani[3], Calum N. Macpherson[1]
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### CDNA LIBRARY FROM *TAENIA SOLIUM* RACEMOSE CYST: A NOVEL TOOL FOR TRANSCRIPTOMICS IN NEUROCYSTICERCOSIS

**Jaeson S. Calla-Choque**[1], Miguel A. Orrego[1], Pamela L. Pacheco-Rivera[1], Javier A. Bustos[2], Hector H. Garcia[1], Siddhartha Mahanty[3], Theodore Nash[3], Cristina Guerra-Giraldez[1], Cysticercosis Working Group in Peru
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**Jesica A. Herrick**[1], Anjali Garg[1], Javier Bustos[2], Hector H. Garcia[2], Jeffrey A. Loeb[1], Cysticercosis Working Group in Peru
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**Pierre Dorny**[1], Boubacar Ouedraogo[2], Veronique Dermauw[1], Assana Cissé[3], Athanase Millogo[4], Zékiba Tarnagda[3], Rasmané Ganaba[2], Hélène Carabin[5], Sarah Gabriël[1]
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**Frederic W. Nikiema**, Serge R. Yerbanga, Aminata Fofana, Fabrice A. Some, Zachari Kabre, Jean-Bosco Ouedraogo
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**Lauren A. Saag**[1], Rachel L. Epstein[2], Jackson B. Mesick[1], Sondra S. Crosby[2], Sarah L. Kimball[2], Elizabeth D. Barnett[2], Natasha S. Hochberg[2]
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**Diego Weinberg**, Ana Pereiro, Favio Crudo, Marcelo C. Abril
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**Melanie Abongwa**[1], Fidelis Cho-Ngwa[2], Godfred Ayimele[2], Moses Samje[2], Smith B. Babiaka[2], Judy Sakanari[3], Eman Mostafa[4], Adrian J. Wolstenholme[4], Richard J. Martin[1], Alan P. Robertson[1]

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**Marc P. Hübner**[1], Ludo Quirynen[2], Sophie Lachau-Durand[2], Marc Engelen[2], Achim Hoerauf[1]

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Hanna Sjoberg[1], Nicolas Pionnier[1], Andrew Steven[1], Ghaith Alyyoussi[1], Ludo Quirynen[2], Marc Engelen[2], Benny Baeten[2], Stephen A. Ward[1], Mark J. Taylor[1], **Joseph D. Turner**[1]

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**Rachel H. Clare**[1], Catherine Bardelle[2], Neil Berry[3], Paul Harper[2], Ulf Börjesson[2], Paul O'Neill[3], David Hong[3], Laura Myhill[1], Andrew Cassidy[1], Matthew Collier[2], Jaclyn Bibby[3], Darren Plant[2], Helen Plant[2], Roger Clark[2], Kelly L. Johnston[1], Louise Ford[1], Kirsty Rich[2], Mark Wigglesworth[2], Mark J. Taylor[1], Stephen A. Ward[1]

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### THAT FEELING OF BEING OUT OF PLACE; A MICROFILARIAL TALE

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**Martin Walker**[1], Wilma A. Stolk[2], Matt Dixon[1], Christian Bottomley[3], Lamine Diawara[4], Mamadou O. Traoré[5], Sake J. de Vlas[2], Maria-Gloria Basáñez[1]

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**Biruk Kebede**[1], Abraham Tamiru[1], Fikre H/Kiros[1], Belete Mengistu[2], Anna Kruger[3], Hayley Mableson[4], Louise Kelly-Hope[4], Charles Mackenzie[4], Sarah Martindale[4]

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John Chiphwanya[1], Square Mkwanda[1], Dorothy Emmie Matipula[1], Paul Ndhlovu[1], Michelle Stanton[2], Hannah Betts[2], Charles Mackenzie[2], Sarah Martindale[2], **Louise A. Kelly-Hope**[2]
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**Olabanji A. Surakat**[1], Sammy O. Sam-Wobo[1], Monsuru A. Adeleke[2], Oladunni N. Adekunle[1], Samuel O. Bankole[1], Ehigozie E. Egbeobawaye[3], Atinuke Awoyale[1], Naomi Oyinloye[1]
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**Ole Lagatie**[1], Ann Verheyen[1], Erik Nijs[1], Bieke Van Dorst[1], Linda Batsa Debrah[2], Alex Debrah[3], Lieven J. Stuyver[1]
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**Ifeoma D. Ozodiegwu**[1], Daniel Owusu[1], Candice Collins[1], Ifeoma N. Anagbogu[2], Henry V. Doctor[3], Megan A. Quinn[1]
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**Kalkidan M. Begashaw**[1], Gemechu Leta[1], Addisu Alemayehu[2], Markos Sleshi[2], Michael D. French[2]
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Massitan Dembélé[1], **Benoit Dembele**[2], Zana Berthé[2], Seydou Goita[2], Salif Seriba Doumbia[3], Boubacar Guindo[2], Modibo Keita[2], Abdoul Karim Sidibé[1], Steven Reid[4], Marily Knieriemen[2], Yaobi Zhang[5]
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Lincoln Gankpala[1], Emanuel Brooks[1], Abakar Gankpala[1], Aaron T. Momolu[1], Kerstin Fischer[2], Joshua Bogus[2], Fatorma Bolay[1], Gary J. Weil[2], **Peter Uwe Fischer**[2]
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**Jean-Yves Mukamba**[1], André Bope Bope[2], Annie Ndaya B[3], Eric Swedberg[4], Troy Martin[5]
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**Geordie Woods**[1], Leah Wohlgemuth[1], Brian Fuller[2], Rachel Stelmach[2], Alexis Serna[2], Jean Jacques Tougoue[2], Kathryn Crowley[2], Abdel Direny[2], Margaret Davide-Smith[2], Arianna Serino[3], Lisa Rotondo[2], Philip Downs[2], Margaret Baker[2]
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### A COMPREHENSIVE SUSTAINABILITY FRAMEWORK FOR NEGLECTED TROPICAL DISEASES ELIMINATION PROGRAMS

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### THE ROAD TO ELIMINATION OF SCHISTOSOMIASIS AND SOIL-TRANSMITTED HELMINTHS AS PUBLIC HEALTH PROBLEMS: THE MALAWI STORY SO FAR

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### SHRINKING THE NEGLECTED TROPICAL DISEASE MAP IN TANZANIA: TRACHOMA AND LYMPHATIC FILARIASIS

**Upendo Mwingera**[1], Maria Chikawe[1], Andreas Nshala[1], Jeremiah Ngondi[1], Mathias Kamugisha[2], Sarah Craciunoiu[3], Katie Crowley[4], Mwele Malecela[2]
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**Julia Irani**[1], Maya Ronse[1], Alfred K. Njamnshi[2], Adam Hendy[1], Katja Siling[1], Joseph Kamgno[3], Bob Colebunders[4], Tine Verdonck[1], Sarah O'Neill[1], Koen P. Grietens[1]
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**Boniphace Ilindili**[1], Andreas Nshala[2], Jeremiah Ngondi[3], Jeremiah Ngondi[3], Luke King[4], Mathias Kamugisha[5], Edward Kirumbi[5], Delali Bonuedi[6], Maria Chikawe[5], Upendo Mwingira[1]
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### WHILE YEMEN IS HEADING TOWARDS SCHISTOSOMIASIS ELIMINATION, WAS IT SUCCESSFUL IN ENSURING EQUITY?

**Dhekra A. Annuzaili**[1], Abdulhakim Alkohlani[2], Sami AlHaidari[2], Alaa Hamed[3], Nehad Kamel[3], Ahmed Alsofi[4], Ryadh Bin Ismail[4], Albis Gabriele[4], Michael French[1]
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*Griffith University, Brisbane, Australia*

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**Braulio M. Valencia**[1], Rachel Lau[2], Ruwandi Kariyawasam[3], Alejandro Llanos-Cuentas[1], Andrea K. Boggild[3]
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**Antonia E. Kip**[1], Ahmed Musa[2], Eltahiri A. Khalil[2], Monique Wassuna[3], Fabiana Alves[4], Thomas P. Dorlo[5]
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**Amy J. Jones**[1], Marcel Kaiser[2], Vicky M. Avery[1]
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**Norma Galindo-Sevilla**[1], Francisco Hernandez-Luis[2], Cesar Mendoza-Martinez[3], Alejandro Rodriguez-Lezama[4], Laura Quiñonez-Diaz[5]
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### IMPACT OF REV1 LIVESTOCK VACCINATION ON THE RISK OF HUMAN BRUCELLOSIS IN AZERBAIJAN

**Ian Kracalik**[1], Rita Ismayilova[2], Mehriban Baghirova[3], Jason K. Blackburn[1]
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### CLIMATE CHANGE AND VECTOR-BORNE DISEASES: USE OF PARTICIPATORY EPIDEMIOLOGY TO INVESTIGATE EXPERIENCES IN VULNERABLE, CATTLE-KEEPING HOUSEHOLDS IN TANZANIA

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### DOCUMENTING THE SEROPREVALENCE OF ZOONOTIC AND VECTOR BORNE DISEASES IN RURAL NICARAGUA

**Rebecca S. Fischer**[1], Christiane Duttmann[2], William Jiron Toruno[2], Melissa N. Garcia[1], Rodion Gorchakov[1], Sarah M. Gunter[1], Kristy O. Murray[1]
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Andrew Purssell[1], **Nessikha Karsenti**[2], Rachel Lau[3], Filip Ralevski[3], Ann Chong-Kit[3], Andrea K. Boggild[2]
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### OPTIMIZED METHODS OF GENOMIC DNA EXTRACTION AND MYCOPLASMA DECONTAMINATION FROM DIFFERENT SPECIES OF PATHOGENIC *AMOEBAE*

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**Ibne K. Ali**, Alyssa Kelley, Shantanu Roy
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### IMPACT OF NOVEL *ENTAMOEBA* SPECIES ON DIARRHEAL INFECTIONS IN SOUTH AFRICA

**Renay Ngobeni**[1], Samie Amidou[1], Shannon Moonah[2], William A. Petri[2], Carol Gilchrist[2]
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**Fernanda Nascimento**[1], Yvonne Qvarnstrom[1], Yuping Wei-Pridgeon[1], Wen Li[1], Hediye Nese Cinar[2], Helen R. Murphy[2], Gopal Gopinath[2], Alexandre J. da Silva[2], Delynn Moss[1], Michael J. Arrowood[1]
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### DETECTION OF *CYCLOSPORA CAYETANENSIS* IN FOOD AND CLINICAL SAMPLES USING A GELIFIED REAL-TIME PCR ASSAY

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### A RAPID MOLECULAR TEST TO DIAGNOSE *TOXOPLASMA GONDII* IN MICE AND HUMAN SAMPLES

**Janet Acosta**[1], Jaeson S. Calla-Choque[1], Andrea Diestra[1], Noelia Angulo[1], Francesca Schiaffino[2], Maritza Calderón[1], Alejandro Castellanos-Gonzalez[3], Roberth H. Gilman[2], Toxoplasmosis Working Group in Peru
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### IMMUNOBLOT FOR DIFFERENTIATION BETWEEN ACUTE AND CHRONIC INFECTION OF *TOXOPLASMA GONDII* USING A MURINE MODEL

**Yomara Romero**[1], Noelia Angulo[1], Edith Arocutipa[1], Janet Acosta[1], Miguel Mogollon[2], Alejandro Florentini[1], Cristina Montoya[2], Raul Ynocente[2], Jaeson S. Calla-Choque[1], Juan Jimenez[2], Maritza Calderón[1], Roberth H. Gilman[3], Toxoplasmosis Working Group in Peru
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### STANDARDIZATION OF AN ON-BEAD SANDWICH ELISA FOR THE DETECTION OF *TOXOPLASMA GONDII* ANTIGEN SAG1

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## 562

### URBAN PIGEONS (COLUMBA LIVIA *DOMESTICA*) AS SOURCE OF ENVIRONMENTAL SPREAD OF CRYPTOSPORIDIUM WITH ZOONOTIC POTENTIAL

**Teresa Cristina Bomfim**, Alexandre de Pina Costa
*Federal Rural University of Rio de Janeiro, Veterinary Institute, Department of Animal Parasitology, Rio de Janeiro, Brazil*

## 563

### GENETIC DIVERSITY AND TRANSMISSION DYNAMICS OF CRYPTOSPORIDIUM PARASITES IN CATTLE OF SOUTHERN GHANA

**Bethel Kwansa-Bentum**, Fred Aboagye-Antwi, Henrietta T. Kwansa-Bentum, Ato Mensah, Eric A. Okrah, Joseph Otchere, Michael D. Wilson
*University of Ghana, Legon, Accra, Ghana*

## 564

### PATHOGENICITY OF *DIENTAMOEBA FRAGILIS*

**Damien Stark**[1], Joel Barratt[2], John Ellis[2]
*[1]St. Vincent's Hospital, Darlinghurst, Australia, [2]University of Technology Sydney, Broadway, Australia*

**(ACMCIP Abstract)**

# Trematodes - Other

## 565

### COMPARISON OF TWO RECOMBINANT ANTIGENS FOR DIAGNOSIS OF CHRONIC HUMAN FASCIOLIASIS

**Angel Hsu**[1], Isabel McAuliffe[2], Lorna Cruz[3], Ana M. Espino[3], Sukwan Handali[2]
*[1]Emory University, Atlanta, GA, United States, [2]Centers for Disease Control and Prevention, Atlanta, GA, United States, [3]University of Puerto Rico, San Juan, PR, United States*

## 566

### APICAL SODIUM-DEPENDENT BILE ACID TRANSPORTER OF *CLONORCHIS SINENSIS*: 3D STRUCTURE AND FUNCTIONALITY

**Won Gi Yoo**, Fuhong Dai, Ji-Yun Lee, Sung-Jong Hong
*Chung-Ang University, Seoul, Republic of Korea*

## 567

### OPISTHORCHIS *FELINEUS HEMOZOIN* DEPRESS INTEGRIN CELL SURFACE EXPRESSION ON CHOLANGIOCYTES

**Irina Saltykova**[1], Alexandra Pershina[1], Irina Salkina[1], Victoria Mann[2], Sergey Ryzhov[3], Paul Brindley[2]
*[1]Siberian State Medical University, Tomsk, Russian Federation, [2]George Washington University School of Medicine and Health Sciences, Washington, DC, United States, [3]Center for Molecular Medicine Maine Medical Center Research Institute, Portland, ME, United States*

**(ACMCIP Abstract)**

## 568

### HYDROLOGICAL IMPACTS ON DISEASE TRANSMISSION OF *OPISTHORCHIS VIVERRINI* IN THE LAWA LAKE COMPLEX: A MODELLING PERSPECTIVE

**Tomas Leon**[1], Robert C. Spear[1], Kittiwet Kuntiyawichai[2], Vichian Plermakamon[2], Banchob Sripa[2]
*[1]University of California Berkeley, Berkeley, CA, United States, [2]Khon Kaen University, Khon Kaen, Thailand*

## 569

### *OPISTHORCHIS VIVERRINI* INFECTION EXACERBATES THE SEVERITY OF DIABETIC LIVER INJURY AND NON-ALCOHOLIC FATTY LIVER DISEASE

**Apisit Chaidee**[1], Sudarat Onsurathum[1], Ornuma Haonon[1], Patchareewan Pannangpetch[1], Chatlert Pongchaiyakul[1], Victoria H. Mann[2], Chawalit Pairojkul[1], Wannaporn Ittiprasert[2], Paul J. Brindley[2], Somchai Pinlaor[1]
*[1]Khon Kaen University, Khon Kaen, Thailand, [2]George Washington University, Washington, DC, United States*

**(ACMCIP Abstract)**

## 570

### DEVELOPMENT OF A NOVEL METHOD FOR *OPISTHORCHIS VIVERRINI* DNA DETECTION IN URINE BY PCR ASSAY

**Andrew Ancharski**[1], Paiboon Sithithaworn[2], Chanika Worasith[2], Nadda Kiatsopit[2], Elizabeth Carlton[1]
*[1]Colorado School of Public Health, University of Colorado, Anschutz Medical Campus, Aurora, CO, United States, [2]Khon Kaen University Department of Parasitology, Liver Fluke and Cholangiocarcinoma Research Center, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand*

# Trematodes - Schistosomiasis - Cellular and Molecular Biology

## 571

### MOLECULAR CHARACTERIZATION OF THE LARVAL PHASE OF *SCHISTOSOMA MANSONI* IN *BIOMPHALARIA GLABRATA* MOLLUSKS UNDER EXPERIMENTAL CONDITIONS

Marcia Oliveira Casotti[1], Roseli Tuan Tuan[1], Michele Gomes[2], Emmanuel Dias-Neto[2], João Renato Rebello Pinho[2], Fabiana Martins Paula[2], Flair José Carrilho José Carrilho[2], Expedito José Albuquerque Luna[3], Ronaldo Cesar Borges Borges Gryschek[2], **Maria Cristina Espírito-Santo**[4]
*[1]Superintendência de Controle de Endemias (SUCEN), São Paulo, Brazil, [2]Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil, [3]Instituto de Medicina Tropical, São Paulo, Brazil, [4]Faculdade de Medicina da Universidade de São Paulo, São Paulo; Centro Universitário Fundação Oswaldo Aranha, Rio de Janeiro, Brazil*

**(ACMCIP Abstract)**

## 572

### IDENTIFICATION OF GENES TARGET OF REGULATION BY MAPKS IN *SCHISTOSOMA MANSONI*

**Sandra G. Gava**[1], Naiara C. Paula[1], Anna C. Salim[1], Flávio M. Araújo[1], Guilherme C. Oliveira[2], Marina M. Mourão[1]
*[1]CPqRR, Belo Horizonte/MG, Brazil, [2]ITV, Belém, PA, Brazil*

**(ACMCIP Abstract)**

## 573

### HISTONE MODIFYING ENZYMES ARE POTENTIAL THERAPEUTIC TARGETS AGAINST SCHISTOSOMIASIS AS IT IS ESSENTIAL TO VIABILITY AND REPRODUCTION

**Pedro H. Aguiar**[1], Naiara C. Paula[1], Fernanda S. Coelho[1], Policarpo A. Sales[1], Juliano M. Araujo[1], Luiza F. Andrade[1], Wolfgang Sippl[2], Manfred Jung[3], Antonello Mai[4], Raymond J. Pierce[5], Guilherme C. Oliveira[6], Marina M. Mourao[1]
*[1]CPQRR/FIOCRUZ, Belo Horizonte, Brazil, [2]Martin Luther Universität Halle, Wittenberg, Germany, [3]Albert Ludwigs Universität, Freiburg, Germany, [4]Università degli Studi di Roma La Sapienz, Roma, Italy, [5]Institut Pasteur de Lille, Lille, France, [6]Instituto Tecnológico Vale, Belém, Brazil*

**(ACMCIP Abstract)**

## 574

### CLONING AND CHARACTERIZATION OF A *SCHISTOSOMA JAPONICUM* AQUAGLYCEROPORIN THAT FUNCTIONS IN OSMOREGULATION

**Yuzheng Huang**[1], Wei Li[2], Chunrong Xiong[3], Ying Zhang[3], Kun C. Liu[4], Peng Cao[1]
*[1]Jiangsu Province Academy of Traditional Chinese Medicine, Nanjing, China, [2]Jiangsu Institute of Parasitic Diseases, Wuxi, China, [3]Jiangsu, Wuxi, China, [4]Johns Hopkins Malaria Research Institute, Department Molecular Microbiology and Immunology, Bloomberg School of Public Health, The Johns Hopkins University, Baltimore, MD, United States*

**(ACMCIP Abstract)**

## 575

### THERAPEUTIC EXPLOITATION OF IPSE, A UROGENITAL PARASITE-DERIVED HOST MODULATORY PROTEIN, FOR CHEMOTHERAPY-INDUCED HEMORRHAGIC CYSTITIS

**Evaristus C. Mbanefo**[1], Luke Pennington[2], Theodore Jardetzky[2], Michael Hsieh[1]
*[1]Bladder Immunology Group, Biomedical Research Institute, Rockville, MD, United States, [2]Department of Structural Biology, Stanford University School of Medicine, Stanford, CA, United States*

**(ACMCIP Abstract)**

## 576

### *SCHISTOSOMA HAEMATOBIUM* IPSE, A CANDIDATE PRO-ONCOGENIC FACTOR

**Evaristus Mbanefo**[1], Irina Saltykova[2], Luke Pennington[3], Theodore Jardetzky[3], Paul Brindley[2], Michael Hsieh[1]
*[1]Bladder Immunology Group, Biomedical Research Institute, Rockville, MD, United States, [2]Department of Microbiology, Immunology and Tropical Medicine, and Research Center for Neglected Diseases of Poverty, George Washington University, Washington, DC, United States, [3]Department of Structural Biology, Stanford University School of Medicine, Stanford, CA, United States*

**(ACMCIP Abstract)**

## 577

### PROTON CHANNELS IN *BIOMPHALARIA GLABRATA* EMBRYONIC CELL MEMBRANES: PUTATIVE TARGET FOR *SCHISTOSOMA MANSONI* LARVAL TRANSFORMATION PROTEINS

**Utibe R. Buckram-Wright**, Brandon J. Wright, Jackson B. Meyer, Timothy P. Yoshino
*University of Wisconsin, Madison, WI, United States*

**(ACMCIP Abstract)**

## 578

### CHARACTERIZATION AND FUNCTIONAL STUDIES OF SERINE/THREONINE PROTEIN PHOSPHATASE 1 (PP1) ENCODING GENES FROM *SCHISTOSOMA JAPONICUM*

**Min Hu**, Lu Zhao, Xin He, Junlong Zhao, Qing Ye
*Huazhong Agricultural University, Wuhan, China*

## 579

### INTERACTIONS BETWEEN HOST IMMUNE STATUS AND PARASITE METABOLIC ACTIVITY IN *SCHISTOSOMA MANSONI*

**Kasandra S. Hunter**, Ellen Fox, Stephen J. Davies
*Uniformed Services University of the Health Sciences, Bethesda, MD, United States*

**(ACMCIP Abstract)**

## 580

### DUAL RNA-SEQ RESPONSES OF FIELD-DERIVED SPECIMENS OF THE AFRICAN SNAIL *BIOMPHALARIA PFEIFFERI* TO INFECTION WITH THE HUMAN PARASITE, *SCHISTOSOMA MANSONI* PROVIDE INSIGHT INTO HOST-PARASITE RELATIONSHIPS AND REPRODUCTIVE IMPLICATIONS OF PARASITISM

**Sarah K. Buddenborg**[1], Lijing Bu[1], Si-Ming Zhang[1], Gerald M. Mkoji[2], Eric S. Loker[1]
*[1]University of New Mexico, Albuquerque, NM, United States, [2]Kenya Medical Research Institute, Nairobi, Kenya*

**(ACMCIP Abstract)**

## 581

### SEX-BIASING GENE DRIVE TO ELIMINATE SCHISTOSOMES; A PROPOSAL

**Sergey Iordanskiy**[1], Kevin M. Esvelt[2], Paul J. Brindley[1]
*[1]The George Washington University, Washington, DC, United States, [2]MIT Media Lab, Massachusetts Institute of Technology, Cambridge, MA, United States*

**(ACMCIP Abstract)**

# Water, Sanitation, Hygiene and Environmental Health

## 582

### ADVANCING WATER TREATMENT FOR RESOURCE RECOVERY TO ENHANCE DISEASE MITIGATION

**Elysse Noel Grossi-Soyster**, A. Desiree LaBeaud
*Stanford University School of Medicine, Stanford, CA, United States*

## 583

### PREVALENCE OF SOIL TRANSMITTED HELMINTHS IN WATER, SANITATION AND HYGIENE (WASH) SUPPORTED AND NON-SUPPORTED SCHOOLS IN OGUN STATE, NIGERIA

**Hammed O. Mogaji**[1], Gabriel A. Dedeke[1], Jaiyeola O. Omotola[1], Quudus A. Yussuf[2], Hakeem A. Yussuf[2], Dorcas O. Adeaga[3], Johnson E. Monday[4], Uwem F. Ekpo[1]
*[1]Federal University of Agriculture Abeokuta, Abeokuta, Nigeria, [2]Ogun State Ministry of Health, Oke Imosan, Abeokuta, Nigeria, [3]Rural Water Supply and Sanitation Agency, Ogun State, Abeokuta, Nigeria, [4]UNICEF, Abuja, Nigeria*

## 584

### WATER SUPPLY AND SANITATION CONDITIONS IN RURAL SOUTHERN MOZAMBIQUE AND ITS ASSOCIATION WITH MORBIDITY AND MORTALITY INDICATORS DURING 2012-2015

**Berta Grau-Pujol**[1], Augusto Nhabomba[2], Llorenç Quintó[3], Aina Casellas[3], Carme Subirà[3], Charfudin Sacoor[2], Ricard Gine[4], Jose Muñoz[3]
*[1]Institut de Salut Global de Barcelona (ISGlobal)/Centro de Investigaçao em Saúde da Manhiça (CISM)/Fundación Mundo Sano, Vila de Manhiça, Mozambique, [2]Centro de Investigaçao em Saúde da Manhiça (CISM), Vila de Manhiça, Mozambique, [3]Institut de Salut Global de Barcelona (ISGlobal), Barcelona, Spain, [4]Universitat Politècnica de Catalunya (UPC), Barcelona, Spain*

## 585

### ASSOCIATION OF HOUSEHOLD, COMMUNITY AND SCHOOL SANITATION WITH HOOKWORM INFECTIONS AMONG SCHOOL-AGED CHILDREN IN KWALE COUNTY, KENYA

**William E. Oswald**[1], Katherine E. Halliday[1], Carlos Mcharo[2], Paul M. Gichuki[3], Stefan Witek-McManus[1], Elizabeth Allen[1], Sammy Njenga[3], Charles Mwandawiro[3], Roy Anderson[4], Rachel Pullan[1]
*[1]London School of Hygiene & Tropical Medicine, London, United Kingdom, [2]Evidence Action, Nairobi, Kenya, [3]Eastern and Southern Africa Centre of International Parasite Control, Kenya Medical Research Institute, Nairobi, Kenya, [4]Centre for Neglected Tropical Disease Research, School of Public Health, St. Mary's Campus, Imperial College, London, United Kingdom*

## 586

### THE DRIVERS OF THE CHOLERA EPIDEMIC IN BAUCHI, NORTHEAST NIGERIA 2014

**Hannatu Janada Dimas**[1], Patrick Nguku[1], Charles Akatobi Akatobi[2], Olufemi Ajumobi[3]
*[1]Nigeria Field Epidemiology and Laboratory Training Programme, Abuja, Nigeria, [2]African Field Epidemiology Network (AFENET), Abuja, Nigeria, [3]National Malaria Elimination Programme, Abuja, Nigeria*

## 587

### PREVALENCE OF ROTAVIRUS INFECTION OVER TIME IN RURAL, COASTAL ECUADOR

**Alicia N. Kraay**, Joseph N. Eisenberg
*University of Michigan Ann Arbor, Ann Arbor, MI, United States*

## 588

### A RANDOMIZED CONTROLLED TRIAL OF A HOSPITAL-BASED HANDWASHING WITH SOAP AND WATER TREATMENT INTERVENTION (CHOBI7) TO REDUCE CHOLERA AMONG HOUSEHOLD CONTACTS OF CHOLERA

**Christine Marie George**[1], Shirajum Monira[2], David A. Sack[2], Mahamud-ur Rashid[2], K.m. Saif-Ur-Rahman[2], Toslim Mahmud[2], Zillur Rahman[2], Munshi Mustafiz[2], Sazzadul Islam Bhuyian[2], Peter J. Winch[1], Elli Leontsini[1], Jamie Perin[1], Farzana Begum[2], Fatema Zohura[2], Shwapon Biswas[2], Tahmina Parvin[2], Xiaotong Zhang[1], Danielle Jung[1], Danielle Jung[1], R. Bradley Sack[1], R. Bradley Sack[1], Munirul Alam[2]
*[1]Johns Hopkins University, Baltimore, MD, United States, [2]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh*

## 589

### THE ASSOCIATION BETWEEN HEAVY RAINFALL EVENTS AND DIARRHEAL DISEASE: THE INFLUENCE OF URBAN AND RURAL GEOGRAPHY

**Aniruddha Deshpande**, Howard H. Chang, Karen Levy
*Emory University, Atlanta, GA, United States*

## 590

### MULTI-SECTORAL COLLABORATION BETWEEN THE NTD AND WASH SECTORS: EXPERIENCE FROM UGANDA

**Angelia Sanders**[1], Edridah Tukahebwa[2], Peace Habomugisha[3], Patrick Turaguma[2], E. Kelly Callahan[1]
*[1]The Carter Center, Atlanta, GA, United States, [2]Uganda Ministry of Health, Kampala, Uganda, [3]The Carter Center, Kampala, Uganda*

## 591

### BURDEN OF DISEASE ATTRIBUTED TO WATER-BORNE TRANSMISSION OF SELECTED GASTROINTESTINAL PATHOGENS, AUSTRALIA 2010

**Katherine B. Gibney**, Joanne O'Toole, Martha Sinclair, Karin Leder
*Monash University, Melbourne, Australia*

## 592

### DETECTING AND ENUMERATING SOIL-TRANSMITTED HELMINTH EGGS IN SOIL: NEW METHOD DEVELOPMENT AND RESULTS FROM FIELD TESTING IN BANGLADESH AND KENYA

**Lauren Steinbaum**[1], Laura Kwong[1], Ayse Ercumen[2], Makeda S. Negash[2], Amira J. Lovely[2], Sammy M. Njenga[3], Alexandria B. Boehm[1], Amy J. Pickering[1], Kara L. Nelson[2]
*[1]Stanford University, Stanford, CA, United States, [2]University of California Berkeley, Berkeley, CA, United States, [3]Kenya Medical Research Institute (KEMRI), Nairobi, Kenya*

## 593

### EVALUATING BEHAVIOR CHANGE IN SINGLE AND COMBINED INTERVENTIONS OF A LARGE-SCALE WATER, SANITATION, HYGIENE AND NUTRITION INTERVENTION TRIAL (WASH BENEFITS), IN RURAL BANGLADESH

**Sarker Masud Parvez**[1], Rashidul Azad[1], Md. Mahbubur Rahman[1], Leanne Unicomb[1], Pavani K. Ram[2], Abu Mohd Naser[3], Christine P. Stewart[4], Musarrat J. Rahman[1], Kaniz Jannat[1], Elli Leonstini[5], Peter Winch[5], Stephen P. Luby[6]
*[1]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, [2]Department of Epidemiology and Environmental Health, University of Buffalo, Buffalo, NY, United States, [3]Department of Environmental Health Sciences, Emory University, Rollins School of Public Health, Atlanta, GA, United States, [4]University of California Davis, Davis, CA, United States, [5]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, [6]Stanford University, Stanford, CA, United States*

## 594

### WHO CAN AFFORD GPS POINTS? SCALING A VILLAGE-LEVEL WATER ACCESS INFORMATION SYSTEM IN RURAL ZAMBIA

Laurie Markle[1], Amy Tiwari[1], Alexandra Hoehne[2], Abel Manangi[3], Engervell Musonda[3], Oswell Katooka[3], Rabson Zimba[1], Illenga Nhkata[1], Nicolas Osbert[2], Anna M. Winters[1], Benjamin Winters[1], **David Larsen**[1]
*[1]Akros, Lusaka, Zambia, [2]UNICEF Zambia, Lusaka, Zambia, [3]Ministry of Local Government and Housing, Lusaka, Zambia*

## 595

### QUANTIFYING THE ROLE OF FAILING WATER AND SANITATION INFRASTRUCTURE ON HEALTH, HEALTHCARE COSTS AND SOCIETAL WELLBEING DURING VARYING DISASTER SCENARIOS

Alejandro Cravioto[1], Warren Stevens[1], **Edward J. Mills**[2], Jamie I. Forrest[2], Aranka Anema[3], Tracey Koehlmoos[4]
*[1]Precision Global Health, Seattle, WA, United States, [2]Precision Global Health, Vancouver, BC, Canada, [3]Epidemico, Boston, MA, United States, [4]Uniformed Services University of the Health Sciences, Bethesda, MD, United States*

## Late Breaker Abstract Session 27

## Late Breakers in Clinical Tropical Medicine and Global Health

*Marriott - Imperial A*
Monday, November 14, 12:15 p.m. - 1:30 p.m.

This session is specifically designed for brief presentations of new data obtained after the closing date for abstract submission. See the Late Breaker Abstract Presentation Schedule booklet in your registration packet for the presentation schedule.

CHAIR

Barbara L. Herwaldt
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

Noreen A. Hynes
*Johns Hopkins School of Medicine, Baltimore, MD, United States*

Jason D. Maguire
*JenCare, Chesapeake, VA, United States*

## Symposium 28

## Accelerate to Equal: Engaging Women in Vector Control

*Marriott - Marquis A*
Monday, November 14, 12:15 p.m. - 1:30 p.m.

Recent expansion of Zika virus reinforces the need for innovation in vector control. Engaging women in vector control is more widely recognized as a critical component to reducing vector-borne disease transmission. In least developed countries (LDC), involving women in community and programmatic vector control may also be a path toward their economic independence. Women are the primary caretakers of households and are better positioned to understand the determinants of uptake of specific vector control strategies. As such, they may provide innovative solutions to improve the sustainability of these strategies. Little research has focused on the role women play in the household decision-making process for investing in control strategies or their broader role in leading vector control activities and programs. This symposium will present steps towards transforming vector control programs at the household, community and programmatic levels through investing in women. Symposium presenters will discuss: 1) The U.S. President's Malaria Initiative Africa Indoor Residual Spraying Project (PMI AIRS) has embraced gender equality and female empowerment through quantifying improved uptake of IRS when more women are employed. Starting in 2014 the project implemented systematic gender-equitable policies; results show the percent of women hired as spray operators, team leaders and clinicians has increased. 2) Results of household surveys conducted in Sumba Island, Indonesia and western Kenya will be presented. These surveys, which were contextualized by key informant interviews and focus group discussions, investigated barriers to and promoters of engaging women in innovative vector control. This work is part of a broader initiative by the Bill & Melinda Gates Foundation to put women at the center of development. 3) As part of a Liverpool School of Tropical Medicine project, an intervention led by women in two villages with a history of sleeping sickness endemicity in NW Uganda used cost-effective and simple-to-use tools known as 'tiny targets' to reduce tsetse fly numbers. Feasibility, sustainability, cost-effectiveness and participants' perceptions of managing this intervention were assessed. 4) The Bayer Corporation, in partnership with Rufisque Clinic and a women's association, Banaju Gox Rufisque in Senegal, has shown a dual benefit to engaging women in vector control - reduction of malaria vectors and economic independence for women through sustainable business practices.

CHAIR

Mary H. Hayden
*National Center for Atmospheric Research, Boulder, CO, United States*

Emily C. Zielinski-Gutierrez
*Centers for Disease Control and Prevention, Nairobi, Kenya*

12:15 p.m.
**EMBRACING GENDER EQUITY TO ENHANCE MALARIA CONTROL PROGRAMS**

Allison Belemvire
*United States Agency for International Development/President's Malaria Initiative, Arlington, VA, United States*

12:35 p.m.
**WOMEN'S EMPOWERMENT AND PARTICIPATION IN VECTOR CONTROL STRATEGIES TO REDUCE MALARIA IN WESTERN KENYA AND EAST SUMBA, INDONESIA**

Kacey C. Ernst
*University of Arizona, Tucson, AZ, United States*

12:55 p.m.
**WOMEN IN CONTROL OF TSETSE CONTROL: A PILOT INTERVENTION IN NORTHWESTERN UGANDA**

Vanja Kovacic
*Liverpool School of Tropical Medicine, Liverpool, United Kingdom*

1:15 p.m.
**VECTOR BORNE DISEASE MANAGEMENT – MAKING A DIFFERENCE WITH THE COMMUNITY**

Jacqueline M. Applegate
*Bayer, Lyon, France*

## Meet the Professors 29

## Meet the Professors A: Enigmatic and Teaching Cases

*Marriott - Room M103/M104/M105*
Monday, November 14, 12:15 p.m. - 1:30 p.m.

Students and trainees are especially encouraged to attend these interactive sessions, which are open to all meeting attendees. The speakers will present a clinical case of a tropical disease specific to a particular region that they have found a challenge to manage or diagnose.

CHAIR

David R. Boulware
*University of Minnesota, Minneapolis, MN, United States*

PRESENTER

Joseph R. Zunt
*University of Washington, Seattle, WA, United States*

## Courses Committee Meeting

*Marriott - Room M304*
Monday, November 14, 12:15 p.m. - 1:30 p.m.

## Kean Fellowship Committee Meeting

*Marriott - Room M303*
Monday, November 14, 12:15 p.m. - 1:30 p.m.

## Poster Session A Viewing

*Hilton - Grand Ballroom and Grand Salon*
Monday, November 14, 1:45 p.m. - 7 p.m.

## Scientific Session 30

## Filariasis: Molecular Biology, Immunology and Diagnostics

*Marriott - Imperial A*
Monday, November 14, 1:45 p.m. - 3:30 p.m.

CHAIR

Laura E. Kropp
*Uniformed Services University, Bethesda, MD, United States*

Roshanak T. Semnani
*National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States*

1:45 p.m.

### 596

**A RANDOMIZED, PLACEBO-CONTROLLED, DOUBLE-BLIND PILOT STUDY OF SINGLE-DOSE HUMANIZED ANTI-IL5 ANTIBODY (RESLIZUMAB) FOR THE REDUCTION OF EOSINOPHILIA FOLLOWING DIETHYLCARBAMAZINE TREATMENT OF *LOA LOA* INFECTION**

**Fanny Legrand**[1], Jesica Herrick[2], Michelle Makiya[1], Shakuntala Rampertaap[3], Jennifer Stoddard[3], JeanAnne Ware[1], Michael P. Fay[4], Nicole Holland-Thomas[5], Thomas B. Nutman[1], Amy Klion[1]
*[1]National Institutes of Health, Bethesda, MD, United States, [2]University of Illinois at Chicago, Chicago, IL, United States, [3]Department of Laboratory Medicine, National Institutes of Health, Bethesda, MD, United States, [4]Biostatistics Research Branch, DCR, National Institute of Allergy and Infectious Diseases, Rockville, MD, United States, [5]Clinical Research Directorate/Clinical Monitoring Research Program, Leidos Biomedical Research, Inc., NCI, Frederick, MD, United States*

2 p.m.

### 597

**MOLECULAR DETECTION OF *ONCHOCERCA VOLVULUS* IN SKIN BIOPSIES FROM THE DEMOCRATIC REPUBLIC OF THE CONGO (DRC)**

**Jessica Prince-Guerra**[1], Vitaliano Cama[2], Nana Wilson[3], Josias Likwela[4], Nestor Ndakala Gyamba[5], Jacques Muzinga wa Muzinga[5], Nicholas Ayebazibwe[6], Yassa D. Ndjakani[7], Naomi Awaca Pitchouna[8], Dieudonné Mumba Ngoyi[9], Antoinette K. Tshefu[10], Paul T. Cantey[2]
*[1]ASM/Centers for Disease Control and Prevention Post-Doctoral Fellowship, Division of Parasitic Diseases and Malaria, Centers for Disease Control and Prevention, Atlanta, GA, United States, [2]Division of Parasitic Diseases and Malaria, Centers for Disease Control and Prevention, Atlanta, GA, United States, [3]Epidemic Intelligence Service, Division of Parasitic Diseases and Malaria, Centers for Disease Control and Prevention, Atlanta, GA, United States, [4]Programme National de la Lutte contre l'Onchocercose, Kisangani, Democratic Republic of the Congo, [5]Field Epidemiology and Laboratory Training Program, Kinshasa, Democratic Republic of the Congo, [6]African Field Epidemiology Network, Kampala, Uganda, [7]Division of Global Health Protection, Centers for Disease Control and Prevention, Kinshasa, Democratic Republic of the Congo, [8]Programme Nationale de la Lutte contre l'Onchocercose, Kinshasa, Democratic Republic of the Congo, [9]Institut National de Recherche Biomédicale, Kinshasa, Democratic Republic of the Congo, [10]Ecole de Santé Publique, Kinshasa, Democratic Republic of the Congo*

2:15 p.m.

### 598

**TOLL-LIKE RECEPTOR 2 EXPRESSION ON IMMUNE CELLS IS ELEVATED IN CURED ASYMPTOMATIC INDIVIDUALS IN LYMPHATIC FILARIASIS**

**Jubin Osei-Mensah**[1], Manuel Ritter[2], Linda Batsa-Debrah[1], Anna Albers[2], Yusif Mubarik[1], Laura Layland[2], Kenneth Pfarr[2], Achim Hoerauf[2], Alex Debrah[3]
*[1]Kumasi Centre for Collaborative Research in Tropical Medicine, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana, [2]Institute for Medical Microbiology, Immunology and Parasitology, University Hospital of Bonn, Bonn, Germany, [3]Faculty of Allied Health Sciences of Kwame Nkrumah University of Science and Technology, Kumasi, Ghana*

**(ACMCIP Abstract)**

2:30 p.m.

## 599

### *IN VITRO*-GENERATED AND *EX VIVO*-ISOLATED HUMAN DENDRITIC CELLS RESPOND SIMILARLY TO LIVE MICROFILARIAE OF *BRUGIA MALAYI*

**Kathleen R. Elliott**, Prakash Babu Narasimhan, Sasisekhar Bennuru, Thomas B. Nutman, Roshanak Tolouei Semnani
*National Institutes of Health, Bethesda, MD, United States*

2:45 p.m.

## 600

### *ONCHOCERCA VOLVULUS* PROTEOME-WIDE LINEAR EPITOPE SCANNING USING HIGH-DENSITY PEPTIDE MICROARRAYS AND CONFIRMATION OF IMMUNODOMINANT MOTIFS BY ELISA

**Ole Lagatie**, Bieke Van Dorst, Lieven J. Stuyver
*Janssen Diagnostics, Beerse, Belgium*

**(ACMCIP Abstract)**

3 p.m.

## 601

### THE EFFECT OF *L. SIGMODONTIS* INFECTION ON IGE-MEDIATED ANAPHYLAXIS IN SENSITIZED MICE

**Laura E. Kropp**, Edward Mitre
*Uniformed Services University, Bethesda, MD, United States*

3:15 p.m.

## 602

### MIXTURE MODELING TO DETERMINE POPULATION-SPECIFIC CUTOFFS FOR IMMUNOLOGIC ASSAYS IN NEGLECTED TROPICAL DISEASE SETTINGS APPROACHING ELIMINATION

**Sarah M. Sullivan**[1], Howard H. Chang[1], Amanda Barry[2], Patrick J. Lammie[3], Melissa Torres[4], Kimberly Y. Won[2], Katherine Gass[3]
*[1]Rollins School of Public Health, Emory University, Atlanta, GA, United States, [2]Centers for Disease Control and Prevention, Atlanta, GA, United States, [3]NTD Support Center, Task Force for Global Health, Decatur, GA, United States, [4]Smith College, Northampton, MA, United States*

## Scientific Session 31

## West Nile and Other Flaviviruses

*Marriott - Imperial B*
Monday, November 14, 1:45 p.m. - 3:30 p.m.

CHAIR

Doug E. Brackney
*The Connecticut Agricultural Experiment Station, New Haven, CT, United States*

Kristy Murray
*Baylor College of Medicine, Houston, TX, United States*

1:45 p.m.

## 603

### THE LIVE ATTENUATED CHIMERIC VACCINE RWN/DEN4Δ30 IS WELL-TOLERATED AND IMMUNOGENIC IN HEALTHY FLAVIVIRUS-NAÏVE ADULT VOLUNTEERS 50-65 YEARS OF AGE.

**Kristen K. Pierce**[1], Anna P. Durbin[2], T. Grier[2], C. Tibery[2], A. Janiak[2], J. Lovchik[2], A. Jarvis[1], Marya Carmolli[1], Heather Kenney[3], Alexander Pletnev[3], Steve S. Whitehead[3], Beth D. Kirkpatrick[1]
*[1]University of Vermont College of Medicine, Burlington, VT, United States, [2]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, [3]National Institutes of Health, Bethesda, MD, United States*

2 p.m.

## 604

### ACUTE AND DELAYED MORTALITY FOLLOWING WEST NILE VIRUS INFECTION IN TEXAS

David Philpott[1], Melissa Garcia[1], Nicole Evert[2], Dawn Hesalroad[2], Bonny Mayes[2], Eric Fonken[2], **Kristy O. Murray**[1]
*[1]Baylor College of Medicine and Texas Children's Hospital, Houston, TX, United States, [2]Texas Department of State Health Services, Austin, TX, United States*

2:15 p.m.

## 605

### A SINGLE MUTATION IN THE ENVELOPE PROTEIN ALTERS FLAVIVIRUS ANTIGENICITY, STABILITY AND PATHOGENESIS

**Leslie Goo**[1], Laura A. VanBlargan[2], Kimberly A. Dowd[1], Michael S. Diamond[2], Ted C. Pierson[1]
*[1]National Institutes of Health/National Institute of Allergy and Infectious Diseases, Bethesda, MD, United States, [2]Washington University, St. Louis, MO, United States*

2:30 p.m.

## 606

### AN OPTIMIZED SYNTHETIC TLR-4 AGONIST ADJUVANT FORMULATION INDUCES DURABLE AND FUNCTIONAL IMMUNITY WHEN COMBINED WITH A CLINICAL-STAGE RECOMBINANT WEST NILE VIRUS VACCINE ANTIGEN

**Neal Scott Van Hoeven**[1], Brian J. Granger[1], Tajanna Stinn[1], Sharvari W. Joshi[1], Ghislain I. Nana[1], Christopher Fox[1], Angela Bosco-Lauth[2], Richard A. Bowen[2], David E. Clements[3], Timothy Martyak[3], D. Elliot Parks[3], Scott Winram[4], Susan L. Baldwin[1], Steven G. Reed[1], Rhea N. Coler[1]
*[1]Infectious Disease Research Institute, Seattle, WA, United States, [2]Colorado State University Department of Biomedical Sciences, Ft. Collins, CO, United States, [3]Hawaii Biotech Inc., Honolulu, HI, United States, [4]Leidos Inc., Frederick, MD, United States*

2:45 p.m.

## 607

### DIFFERENTIAL MECHANISMS OF WEST NILE VIRUS-INDUCED PATHOGENESIS IN BIRDS

**Nisha Duggal**[1], Angela Bosco-Lauth[2], Richard A. Bowen[2], Aaron C. Brault[1]
*[1]Centers for Disease Control and Prevention, Fort Collins, CO, United States, [2]Colorado State University, Fort Collins, CO, United States*

3 p.m.

## 608

### THE EFFECT OF CO-INFECTION WITH DENGUE, CHIKUNGUNYA AND ZIKA VIRUS ON VECTOR COMPETENCE OF *AEDES* MOSQUITOES

**Claudia Rückert**, James Weger-Lucarelli, Joseph R. Fauver, Selene M. Garcia-Luna, Gregory D. Ebel
*Arthropod-borne and Infectious Diseases Laboratory, Department of Microbiology, Immunology and Pathology, Colorado State University, Fort Collins, CO, United States*

3:15 p.m.

## 609

### THE INFLUENCE OF GENETIC BOTTLENECKS, RNA INTERFERENCE-MEDIATED DIVERSIFICATION AND SELECTIVE CONSTRAINT ON THE EVOLUTION OF A TICK-BORNE VIRUS

Nathan Grubaugh[1], Claudia Ruckert[1], Philip Armstrong[2], Angela Bransfield[2], John Anderson[2], Gregory Ebel[1], **Doug E. Brackney**[2]
*[1]Colorado State University, Fort Collins, CO, United States, [2]The Connecticut Agricultural Experiment Station, New Haven, CT, United States*

## Symposium 32

## Seasonal Malaria Chemoprevention at Scale: Evidence from Eight Countries

*Marriott - Marquis A*
Monday, November 14, 1:45 p.m. - 3:30 p.m.

Despite the challenges of organizing the delivery of Seasonal Malaria Chemoprevention (SMC), which requires monthly contacts with health workers to receive antimalarial drugs to prevent malaria, National Malaria Control Programs have been quick to adopt this new strategy. SMC is designed specifically for the Sahel subregion. This includes areas with the highest incidence of malaria in the world despite high coverage of insecticide-treated bednets and good access to malaria treatment. About 25 million children live in areas where SMC could be used and about 20 million of these in areas of particularly high incidence. SMC offers a new tool that can be used to protect these children. In 2015 about 7.5 million children received SMC. At the time of writing there is committed funding for 70 million SMC treatments and manufacturing capacity to meet this demand. If these treatments can be delivered, most of the priority areas can receive SMC in 2016. It is important to assess the effectiveness of this rapid scale-up, to ensure that robust systems are in place to monitor the safety of the drugs used, and to assess the costs and potential sustainability of SMC programs. The session will present new findings from surveys in eight countries, comparing coverage achieved through different modes of delivery and in urban and rural areas following scale-up of SMC, and describing the impact this has had on the incidence of malaria in children. This will be followed by a presentation of new results from an in-depth evaluation of the effectiveness of SMC in Mali and its public health impact. Then the efforts that have been made to strengthen safety monitoring systems for SMC programs in the sub-region will be described, and details presented of the adverse event reports to date from implementing countries. Finally, the costs of SMC, from an assessment in 7 countries, will be described, with the key drivers of costs, and an assessment of the financing that will be required each year to sustain SMC at scale.

CHAIR

Paul J. Milligan
*London School of Hygiene & Tropical Medicine, London, United Kingdom*

Ebenezer Baba
*Malaria Consortium, Kampala, Uganda*

1:45 p.m.
**DELIVERING SMC IN THE SAHEL: ANALYSIS OF COVERAGE SURVEYS AND ASSESSMENT OF IMPACT IN 7 COUNTRIES AFTER SCALING UP**

Issaka Sagara
*MRTC, Bamako, Mali*

2 p.m.
**MONITORING THE EFFECTIVENESS OF SMC IN MALI**

Erin Eckert
*United States Agency for International Development, Washington, DC, United States*

2:15 p.m.
**STRENTHENING SYSTEMS FOR SAFETY MONITORING FOR SMC IN THE SAHEL**

Jean Louis NDiaye
*University Cheikh Anta Diop, Dakar, Senegal*

2:30 p.m.
**COSTS OF SMC AT SCALE: ASSESSMENT IN 7 COUNTRIES**

Colin Gilmartin
*Management Sciences for Health, Arlington, VA, United States*

## Symposium 33

## Generating Evidence for Malaria Elimination in the Greater Mekong Sub-Region

*Marriott - Marquis B*
Monday, November 14, 1:45 p.m. - 3:30 p.m.

Countries in the Greater Mekong Sub-Region (GMS) have the made the ambitious goal to eliminate malaria by 2030 and, considering the urgent action required against multidrug resistance in the GMS, to eliminate *Plasmodium falciparum* malaria by 2025. Achievement of elimination goals include universal parasitological confirmation of malaria through reinforcing quality microscopy and increasing access to quality assured Artemisinin based Combination Therapy (ACT), particularly in the private sector, as well as a focus on detecting, protecting and providing access to diagnosis and treatment. To help provide a picture of the current antimalarial landscape and the ACTwatch group will present novel data to showcase antimalarial markets in the region across five GMS countries, collected from over 30,000 screened public and private sector outlets. The performance and readiness of the markets will be presented, including the role of the private sector, the availability of trained and supervised providers and implications for elimination aims. In Vietnam, the National Institute of Malaria, Parasitology and Entomology (NIMPE) will present on the geographic distribution and current functioning of malaria diagnostic access points and discuss the operational relevance for targeting resources to cover diagnostic gaps. NIMPE conducted a survey throughout their national public health system that focused on assessing the availability, usage and quality of existing malaria diagnostic services in Vietnam. This information is then compared against the spatial distribution of malaria burden in order to guide the targeting of future malaria diagnosis interventions and distribution of services. Given alarming availability of oral artemisinin monotherapy in Myanmar's private sector in 2015, Population Services International (PSI)/ Myanmar will present insights on private sector providers who are still stocking oral artemisinin monotherapy. This will improve understanding on barriers towards appropriate case management in the context of strategies that are designed to address this issue and to completely phase out oral artemisinin monotherapy from the market. Finally, the PSI GMS Regional team will present an innovative and novel project implemented in 2016 to strengthen the private sector case management and surveillance as a means to accelerate malaria elimination efforts in Laos, Cambodia and Thailand. This goal of this project is to increase coverage of the private sector to actively test, treat and report on malaria cases. The PSI regional GMS project will describe

their work to address the implementation of this project, the experiences and challenges faced during the project set-up and how evidence can be used to inform the future deployment of interventions.

CHAIR

Ricki Orford
*Population Services International, Washington, DC, United States*

Thomas Kanyok
*TPK Solutions, LLC (research conducted while with the Bill & Melinda Gates Foundation), Seattle, WA, United States*

1:45 p.m.
**UNDERSTANDING MALARIA MEDICINE AND DIAGNOSTIC MARKETS IN THE GREATER MEKONG SUB-REGION: FINDINGS FROM CAMBODIA, LAOS, MYANMAR, THAILAND AND VIETNAM**

Megan Littrell
*Population Services International, Washington, DC, United States*

2:05 p.m.
**MAPPING MALARIA DIAGNOSTIC ACCESS POINTS TO INFORM TARGETING OF INTERVENTIONS**

Nguyen Quang Thieu
*National Institute of Malaria, Parasitology and Entomology, Hanoi, Vietnam*

2:25 p.m.
**WHAT DETERMINES THE SALE OF ORAL ARTEMISININ MONOTHERAPY AMONG PRIVATE SECTOR PROVIDERS IN MYANMAR?**

Si Thu Thein
*Population Services International/Myanmar, Yangon, Myanmar*

2:45 p.m.
**STRENGTHENING PRIVATE SECTOR MALARIA CASE MANAGEMENT AND SURVEILLANCE TO ACCELERATE MALARIA ELIMINATION IN CAMBODIA, LAOS, MYANMAR AND VIETNAM**

Henrietta Allen
*Population Services International, Yangon, Myanmar*

## Scientific Session 34

## Malaria: Vaccines - Diverse Approaches

*Marriott - Marquis C*
Monday, November 14, 1:45 p.m. - 3:30 p.m.

CHAIR

Urszula Krzych
*Walter Reed Army Institute of Research, Silver Spring, MD, United States*

Sophie Roetynck
*Medical Research Council Unit, Fajara, Gambia*

1:45 p.m.
### 610

**MOSQUITO MIDGUT FREP1 IS A POTENTIAL UNIVERSAL MALARIA TRANSMISSION-BLOCKING VACCINE**

**Caio Martinelle França**[1], Guodong Niu[1], Genwei Zhang[1], Wanlapa Roobsoong[2], Nguitragool Wang[2], Xioahong Wang[1], Jang Kim[1], Jetsumon Prachumsri[2], Noah Bulter[3], Jun Li[1]
*[1]University of Oklahoma, Norman, OK, United States, [2]Mahidol University, Bangkok, Thailand, [3]Oklahoma Health Sciences Center, Oklahoma City, OK, United States*

**(ACMCIP Abstract)**

2 p.m.
### 611

**SKIN SCARIFICATION WITH *PLASMODIUM FALCIPARUM* CS PEPTIDE VACCINES USING SYNTHETIC TLR AGONIST ADJUVANTS ELICITS CHEMOKINE/CYTOKINE PATTERNS THAT CORRELATE WITH INDUCTION OF SPOROZOITE NEUTRALIZING ANTIBODIES**

**Robert Mitchell**, Roshawn Johnson, Rita Altszuler, Ute Frevert, Elizabeth Nardin
*New York University School of Medicine, New York, NY, United States*

2:15 p.m.
### 612

**HUMORAL IMMUNE RESPONSES TO AN ADJUVANTED SELF-ASSEMBLING PROTEIN NANOPARTICLE (SAPN) MALARIA VACCINE DISPLAYING THE NANP REPEAT AND *A*TSR REGIONS OF THE *PLASMODIUM FALCIPARUM* CIRCUMSPOROZOITE PROTEIN**

**Stephen A. Kaba**[1], Labdhi Seth[1], Karen Bingham[1], Casey Storme[1], Amanda Wessal[1], Yuwei Zhu[1], Andrew K. Collin[1], Zoltan Beck[1], Gary R. Matyas[1], Carl R. Alving[1], Peter Burkhard[2], David E. Lanar[1]
*[1]Walter Reed Army Institute of Research, Silver Spring, MD, United States, [2]Alpha-O Peptides AG, Riehen, Switzerland*

2:30 p.m.
### 613

**IMMUNOMECHANISM OF PROTECTION FOR E140, A PRE-ERYTHROCYTIC VACCINE CANDIDATE**

**Emily Smith**[1], Keith Limbach[1], Nonenipha Rangel[2], Arnel Belmonte[1], Kyosuke Oda[3], Andrea Renner[2], Sharvari Sonawane[1], Kalpana Gowda[3], Jessica Bolton[1], Rebecca Danner[1], Martha Sedegah[3], Noelle Patterson[1], Eileen Villasante[3], Joao Aguiar[2]
*[1]Henry M. Jackson Foundation, Rockville, MD, United States, [2]Camris International, Bethesda, MD, United States, [3]Naval Medical Research Center, Silver Spring, MD, United States*

2:45 p.m.
### 614

**DEVELOPMENT OF A SEMI-SYNTHETIC WHOLE PARASITE VACCINE**

**Michael F. Good**[1], Ashwin Kumar Giddam[2], Jennifer M. Reiman[1], Mehfuz Zaman[1], Mariusz Skwarczynski[2], Istvan Toth[2]
*[1]Institute for Glycomics, Gold Coast, Australia, [2]School of Chemistry and Molecular Biosciences, Brisbane, Australia*

3 p.m.
### 615

**CORD BLOOD ANTI-PFSEA-1 AND PROTECTION FROM SEVERE MALARIA IN INFANTS**

Jennifer F. Friedman[1], Ian Michelow[1], Sangshin Park[1], Dipak K. Raj[1], Christina E. Nixon[1], Emily A. McDonald[1], Christian P. Nixon[1], Sunthorn Pond-Tor[1], Ambris Jha[1], Edward Kabyemela[2], Michal Fried[3], Patrick E. Duffy[3], **Jonathan D. Kurtis**[1]
*[1]CIHR, Brown University, Providence, RI, United States, [2]Muhimbili University of Health and Allied Sciences, Dar es Salaam, United Republic of Tanzania, [3]National Institutes of Health, Bethesda, MD, United States*

3:15 p.m.
### 616

**IMMUNOGENICITY OF CHAD63/MVA ME-TRAP MALARIA VECTORED VACCINE IS NOT AFFECTED BY CO-ADMINISTRATION WITH ROUTINE EPI VACCINES IN A RANDOMIZED CONTROLLED TRIAL IN GAMBIAN INFANTS AND NEONATES**

**Sophie Roetynck**[1], Victorine Mensah[2], Ebrima Kanteh[1], Georgina Bowyer[3], Amy Ndaw[2], Francis Oko[1], Carly Bliss[3], Riccardo Cortese[4], Alfredo Nicosia[4], Rachel Roberts[3], Flavia D'Alessio[5], Odile Leroy[5], Babacar Faye[2], Beate Kampmann[1], Badara Cisse[2], Kalifa Bojang[6], Stephen Gerry[7], Nicola Viebig[5], Alison Lawrie[3], Ed Clarke[1], Egeruan Imoukhuede[3], Katie Ewer[3], Adrian Hill[3], Muhammed Afolabi[1]
*[1]Medical Research Council Unit, Fajara, Gambia, [2]Universite Cheikh Anta Diop,*

*Dakar, Senegal, [3]The Jenner Institute, University of Oxford, Oxford, United Kingdom, [4]Reithera, Rome, Italy, [5]European Vaccine Initiative, Heidelberg, Germany, [6]Medical Research Council Unit, F, Gambia, [7]Centre for Statistics, University of Oxford, Oxford, United Kingdom*

## Symposium 35

## Malaria Metabolomics, Data Integration Challenges and Progress

*Marriott - Marquis D*

Monday, November 14, 1:45 p.m. - 3:30 p.m.

Metabolomics, the high-throughput profiling of small molecules, has emerged in recent years as a powerful tool for identifying biochemical signatures that are associated with specific diseases and physiologic states. Metabolomics is already being used to address critical questions in malaria. Areas under investigation include understanding the dramatic metabolic changes that occur during *Plasmodium* parasite development at various stages of the life cycle, the effect of antimalarial drugs on parasite metabolism, and within-host metabolic dynamics. With recent advances in analytical technology and informatics, hundreds of metabolites involved in the host-parasite interaction can be profiled in a range of sample types (e.g. parasites, culture media, host RBC, host plasma, urine, etc.) which can be correlated with other parameters during infection such as cellular, genetic, proteomic and immunologic changes. Such data can provide rich information on the complex interplay between host and parasite, and can lead to an understanding of critical areas for intervention. This symposium will begin with an overview of the state of the field of malaria metabolism and metabolic changes associated with the host-parasite interaction during the malaria infection. It will then feature research highlights from in *vitro* studies, *in vivo* experimental model infections, and human cohort studies. The featured talks will address how metabolomics and proteomics can be combined to understand the mechanisms of anti-malarial drug action and resistance. The session will also feature results from plasma metabolome profiling of humans infected with malaria, as well as the dynamic of plasma metabolites across longitudinal infections of non-human primates. Finally, the symposium will feature the results of multi-'omic data analyses from longitudinal malaria infection studies, and a discussion of how data integration can be used to gain a clearer understanding of the host-parasite system.

CHAIR

Dean P. Jones
*Emory University, Atlanta, GA, United States*

Manuel Llinas
*Pennsylvania State University, University Park, PA, United States*

1:45 p.m.
### RECENT ADVANCES TOWARD CHARACTERIZING THE *PLASMODIUM* METABOLOME

Manuel Llinas
*Pennsylvania State University, University Park, PA, United States*

2:05 p.m.
### COMBINING METABOLOMICS WITH PROTEOMICS TO INVESTIGATE MECHANISMS OF ANTI-MALARIAL DRUG ACTION AND RESISTANCE

Darren Creek
*Monash University, Parkville, Australia*

2:25 p.m.
### METABOLIC PROFILES OF HUMANS AND NON-HUMAN PRIMATES DURING INFECTION WITH *PLASMODIUM* SPECIES

Regina Joice
*Emory Vaccine Center, Emory University, Atlanta, GA, United States*

2:45 p.m.
### METABOLOMICS AND MULTI-OMIC DATA INTEGRATION IN LONGITUDINAL STUDIES OF MALARIA

Shuzhao Li
*Emory University, Atlanta, GA, United States*

## Symposium 36

## Emerging Infectious Diseases and Social Media

*Marriott - Room M103/M104/M105*

Monday, November 14, 1:45 p.m. - 3:30 p.m.

Social media is increasingly popular globally. During recent epidemics of Ebola, MERS, and Zika viruses, media attention and public awareness drove social media traffic about these emerging infectious diseases. This symposium will share insights acquired from social media analysis and explore future research directions. Drawing upon a systematic review of literature pertinent to Ebola and social media, the session will provide an overview on how computational analysis and manual coding of social media data may assist public health communication surveillance and inform health communication strategies. This presentation will highlight the uneven landscape of social media research on Ebola and propose new research directions that address current gaps of understandings. The next presenter will address research on the Twitter activity of health authorities during the West African Ebola outbreak, with particular emphasis on the Twitter use by WHO and CDC. Discussion will focus on the overall level of engagement with the general Twitter public that these organizations achieved during the outbreak, as well as the geography of public interest in them, and organizations' responsiveness to their public. The presentation will conclude with insights that health organizations can obtain in real-time from tweets through big data analytics to inform their communication strategies during public health emergencies. While social media is popular globally, public health social media research is primarily conducted with English language data. The next presenter will describe a study that compares the responses to the South Korean MERS outbreak, 2015, by Twitter users who wrote in English, Indonesian, Japanese, Korean and Thai. While Twitter is a global platform, its users write in different languages and share information from different sources. For example, Korean pop music (K-pop) fans are important in raising awareness of the MERS outbreak among Thai Twitter users. The study will highlight the need to understand social media health communication in languages beyond English. The final speaker will present recent findings pertinent to Zika-related Twitter contents. In 2015, Zika-

related tweets were predominantly in Spanish and Portuguese. Beginning in 2016, English Zika-related tweets increased substantially. Zika-related Twitter incidence peaked after WHO announced the Zika epidemic a Public Health Emergency of International Concern. Content analysis revealed Twitter users' concerns on the outbreak's societal impact, responses of various sectors to the outbreak, the outbreak's global pandemic potential, the Zika-associated risk of microcephaly, Zika transmission routes and case reports.

CHAIR

Isaac Chun-Hai Fung
*Georgia Southern University, Statesboro, GA, United States*

1:45 p.m.
**EBOLA AND SOCIAL MEDIA: A SYSTEMATIC REVIEW**

Zion Tsz Ho Tse
*The University of Georgia, Athens, GA, United States*

2:05 p.m.
**EBOLA AND TWITTER: PUBLIC HEALTH ORGANIZATIONS' SOCIAL MEDIA ENGAGEMENT**

Tatiana Vorovchenko
*The University of Oxford, Oxford, United Kingdom*

2:25 p.m.
**MERS AND TWITTER: SOUTH KOREA, 2015**

Isaac Chun-Hai Fung
*Georgia Southern University, Statesboro, GA, United States*

2:45 p.m.
**ZIKA AND TWITTER: THE INITIAL REACTIONS TO THE OUTBREAK**

King-Wa Fu
*The University of Hong Kong, Journalism and Media Studies Centre, Hong Kong, Hong Kong*

## Symposium 37

## A Decade of U.S. Government Commitment to Combatting Malaria and Saving Lives: The President's Malaria Initiative, 2006-2015

*Marriott - Atrium A*
Monday, November 14, 1:45 p.m. - 3:30 p.m.

Global malaria mortality rates declined 60% since 2000. Strong political commitment and increased resources from donors and affected countries have allowed malaria endemic countries to scale-up long-lasting insecticidal nets (LLINs), indoor residual spraying (IRS), intermittent preventive treatment during pregnancy and malaria case management. WHO's Global Technical Strategy aims to reduce malaria incidence and mortality by 90% by 2030, and successes of the last decade demonstrate these goals are achievable. The U.S. President's Malaria Initiative (PMI) began in 2006 as a $1.5 billion initiative and expanded under the Lantos-Hyde Act of 2008. PMI is led by the U.S. Agency for International Development and co-implemented with the Centers for Disease Control and Prevention. Over the past decade, PMI expanded from three to 19 countries in Africa and to three countries in Greater Mekong. PMI is uniquely positioned to provide financial and technical support to National Malaria Control Programs (NMCPs) to further accelerate declines in malaria morbidity and mortality. Moving forward, it is important to identify what has worked and what obstacles persist. This symposium will include an overview of the political genesis of PMI, strategic vision and implementation approach, and how PMI was sustained and expanded into a second Administration through partnerships with NMCPs, RBM, Global Fund and WHO. Two country examples will then describe PMI partnerships with NMCPs: 1) Tanzania's efforts to attain high LLIN ownership and use, expand and document impact of IRS, and implement of a Test, Treat and Track strategy using RDTs, ACTs and data capture via health management information system; and 2) Senegal's efforts to scale up quality assured malaria diagnostics and ACTs, expand integrated community case management and pilot seasonal malaria chemoprevention. Finally, PMI operational research efforts to obtain the evidence base for optimizing existing interventions will be described, along with PMI's commitment to health systems strengthening. The four presentations will be followed by insights from the U.S. Global Malaria Coordinator regarding leadership and challenges as PMI potentially expands in 2017.

CHAIR

Peter D. McElroy
*U.S. President's Malaria Initiative, Centers for Disease Control and Prevention, Atlanta, GA, United States*

Julie Wallace
*Bureau for Global Health/U.S. President's Malaria Initiative, U.S. Agency for International Development, Washington, DC, United States*

1:45 p.m.
**EVOLUTION AND IMPACT OF PMI SINCE INCEPTION**

Bernard Nahlen
*U.S. President's Malaria Initiative, Washington, DC, United States*

2 p.m.
**PMI'S SUCCESSFUL PARTNERSHIPS IN MALARIA CONTROL: TANZANIA**

Renata Mandike
*National Malaira Control Program, Dar es Salaam, United Republic of Tanzania*

2:15 p.m.
**PMI'S SUCCESSFUL PARTNERSHIPS IN MALARIA CONTROL: SENEGAL**

Moustapha Cisse
*National Malaria Control Program, Dakar, Senegal*

2:30 p.m.
**INNOVATIONS TO ENHANCE MALARIA CONTROL PROGRAM IMPLEMENTATION AND HEALTH SYSTEMS STRENGTHENING**

Peter McElroy
*U.S. President's Malaria Initiative, Centers for Disease Control and Prevention, Atlanta, GA, United States*

2:45 p.m.
**REFLECTIONS ON A DECADE OF PMI LEADERSHIP AND IMPLEMENTATION**

Timothy Ziemer
*U.S. Global Malaria Coordinator, Washington, DC, United States*

## Symposium 38

## Ebola: Drivers of Transmission, Vaccines, Clinical Sequelae and Asymptomatic Infection

*Marriott - Atrium B*
Monday, November 14, 1:45 p.m. - 3:30 p.m.

Despite over 28,000 reported cases of Ebola virus disease (EVD) in the 2013-16 pandemic as of March 27, 2016, we are only beginning to trace the complex biosocial processes that have promoted spread of the virus. Important questions remain, including what are the drivers of Ebola virus transmission, how do we use tools such as new vaccines to contain future outbreaks, how do we identify and manage clinical sequelae of EVD, and what are the incidence and transmission dynamics of asymptomatic Ebola virus infection. This symposium will present the latest research on these important questions.

CHAIR

Paul E. Farmer
*Harvard Medical School, Boston, United States*

Eugene T. Richardson
*Brigham and Women's Hospital, Boston, MA, United States*

1:45 p.m.
**EBOLA: DRIVERS OF TRANSMISSION**
Mohamed B. Barrie
*Partners In Health, Freetown, Sierra Leone*

2:05 p.m.
**EBOLA VACCINES**
Mohamed Samai
*College of Medicine and Allied Health Sciences (COMAHS), Freetown, Sierra Leone*

2:25 p.m.
**CLINICAL SEQUELAE IN EBOLA SURVIVORS**
Mosoka P. Fallah
*Partnership for Research on Ebola Virus in Liberia (PREVAIL-3), Monrovia, Liberia*

2:45 p.m.
**ASYMPTOMATIC EBOLA INFECTION**
John D. Kelly
*University of California San Francisco School of Medicine, San Francisco, United States*

## Scientific Session 39

## Schistosomiasis: Epidemology and Control

*Marriott - Room A703/A704*
Monday, November 14, 1:45 p.m. - 3:30 p.m.

CHAIR

Pedro Gazzinelli
*National Institute of Allergy and Infectious Diseases, Bethesda, MD, United States*

Pauline N. Mwinzi
*Kenya Medical Research Institute, Kisumu, Kenya*

1:45 p.m.
**617**

### FIVE-YEAR OUTCOMES OF A RANDOMIZED TRIAL OF SCHOOL- VS COMMUNITY-BASED MASS DRUG ADMINISTRATION FOR *S. MANSONI* CONTROL IN WESTERN KENYA

**Pauline N. Mwinzi**[1], Susan P. Montgomery[2], Ryan E. Wiegand[2], Kennedy Andiego[1], Martin Omedo[1], Geoffrey Muchiri[1], Michael O. Ogutu[1], Fredrick Rawago[1], Maurice R. Odiere[1], Diana M. Karanja[1], W. Evan Secor[2]
*[1]Kenya Medical Research Institute, Kisumu, Kenya, [2]Centers for Disease Control and Prevention, Atlanta, GA, United States*

2 p.m.
**618**

### FEMALE GENITAL SCHISTOSOMIASIS (FGS) IN ABEOKUTA, NIGERIA

**Uwemedimo F. Ekpo**[1], Oluwatosin M. Opeyemi[1], Sammy O. Sam-Wobo[1], Hammed Mogaji[1], Hameedat O. Abdussalam[2], Akinola S. Oluwole[1]
*[1]Federal University of Agriculture Abeokuta, Abeokuta, Nigeria, [2]Federal Medical Centre Abeokuta, Abeokuta, Nigeria*

2:15 p.m.
**619**

### PROGRESS TOWARDS SCHISTOSOMIASIS CONTROL AND ELIMINATION FROM 2004 TO 2015 IN 28 HEALTH DISTRICTS IN MALI

Mahamadou Traoré[1], **Benoit Dembele**[2], Aly Landouré[3], Boubacar Guindo[2], Seydou Goita[2], Modibo Keita[2], Moussa Sacko[3], Zana Berthé[2], Abdoul Karim Sidibé[1], Steven Reid[4], Marily Knieriemen[2], Yaobi Zhang[5]
*[1]Direction Nationale de la Santé, Ministère de la Santé et de l'Hygiène Publique, Bamako, Mali, [2]Helen Keller International, Bamako, Mali, [3]Institut National de la Recherche en Santé Publique au Mali (INRSP), Bamako, Mali, [4]Helen Keller International, New York, NY, United States, [5]Helen Keller International, Regional Office for Africa, Dakar, Senegal*

2:30 p.m.
**620**

### COMMUNITY DIALOGUES FOR PREVENTION AND CONTROL OF SCHISTOSOMIASIS IN MOZQAMBIQUE

**Christian Rassi**[1], Sandrine Martin[2], Kirstie Graham[1], Ana Cristina Castel-Branco[2], Ercílio Jive[3]
*[1]Malaria Consortium, London, United Kingdom, [2]Malaria Consortium, Maputo, Mozambique, [3]Direcção Provincial de Saúde, Nampula, Mozambique*

2:45 p.m.
**621**

### EXPERIENCES WITH A URINE-BASED RAPID DIAGNOSTIC TEST FÜR *SCHISTOSOMA MANSONI* INFECTION IN MIGRANTS

**Sören L. Becker**[1], Mathias Herrmann[1], Jürg Utzinger[2]
*[1]Institute of Medical Microbiology and Hygiene, Saarland University, Homburg, Germany, [2]Swiss Tropical and Public Health Institute, Basel, Switzerland*

3 p.m.
**622**

### ASSOCIATION OF SCHISTOSOMIASIS WITH IMPAIRED FERTILITY IN EAST AFRICA

**Patricia A. Woodall**
*Emory University, Atlanta, GA, United States*

3:15 p.m.

**623**

### REDUCED EFFICACY OF PRAZIQUANTEL AGAINST *SCHISTOSOMA MANSONI* IS ASSOCIATED WITH MULTIPLE-ROUNDS OF MASS DRUG ADMINISTRATION: EPIDEMIOLOGICAL AND GENOMIC DATA FROM UGANDA

**Thomas Crellen**[1], Martin Walker[1], Poppy H. Lamberton[1], Narcis Kabatereine[2], Edridah Muheki[3], James A. Cotton[4], Joanne P. Webster[5]
*[1]Imperial College London, London, United Kingdom, [2]Schistosomiasis Control Initiative, London, United Kingdom, [3]Vector Control Division, Ministry of Health, Kampala, Uganda, [4]Wellcome Trust Sanger Institute, Cambridge, United Kingdom, [5]Royal Veterinary College, London, United Kingdom*

**(ACMCIP Abstract)**

## Scientific Session 40

## Mosquitoes: Vector Biology - Epidemiology I

*Marriott - Room A706/A707*
Monday, November 14, 1:45 p.m. - 3:30 p.m.

CHAIR
Lauren B. Carrington
*Oxford University Clinical Research Unit, Ho Chi Minh City, Vietnam*

Ailie Robinson
*London School of Hygiene & Tropical Medicine, London, United Kingdom*

1:45 p.m.

**624**

### THE PREMONITION TRAP: LABORATORY TRIALS OF A ROBOTIC SMART TRAP FOR MOSQUITOES WITH SPECIES AND SEX RECOGNITION

**Douglas E. Norris**[1], Anandasankar Ray[2], Tom Guda[2], Eamonn Keogh[3], Shailendra Singh[3], Yan Zhu[3], Alex Ching[4], Patrick Therien[4], Ethan K. Jackson[4]
*[1]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, [2]Department of Entomology, University of California Riverside, Riverside, CA, United States, [3]Department of Computer Science, University of California Riverside, Riverside, CA, United States, [4]Microsoft Research, Redmond, WA, United States*

2 p.m.

**625**

### REFINING ESTIMATES OF DENGUE VIRUS TRANSMISSION POTENTIAL IN WILD TYPE AND WMEL-INFECTED *AEDES* AEYGPTI: FIELD REARING CONDITIONS ALTER VIRUS SUSCEPTIBILITY

**Lauren B. Carrington**[1], Tim P. Hurst[2], Long T. Vo[1], Dui T. Le[1], Kien T. Duong[1], Long T. Pham[3], Hung Q. Luu[3], Le H. Nguyen[2], Bridget Wills[1], Scott L. O'Neill[2], Cameron P. Simmons[4]
*[1]Oxford University Clinical Research Unit, Ho Chi Minh City, Vietnam, [2]Monash University, Melbourne, Australia, [3]Eliminate Dengue, Nha Trang, Vietnam, [4]University of Melbourne, Melbourne, Australia*

2:15 p.m.

**626**

### ESTIMATING HUMAN/MOSQUITO CONTACT AND RISK OF EXOTIC ARBOVIRUS TRANSMISSION FROM EGGS COUNTS IN OVITRAP: A CASE STUDY FOR *AEDES ALBOPICTUS* IN ROME (ITALY)

Mattia Manica[1], Roberto Rosa'[2], **Alessandra della Torre**[1], Beniamino Caputo[1]
*[1]University of Rome SAPIENZA, Rome, Italy, [2]Fondazione Edmund Mach, San Michele all'Adige, Italy*

2:30 p.m.

**627**

### IMPACT OF SEASONAL PATTERNS AND PARASITE ASEXUAL STAGE ON *ANOPHELES GAMBIAE* SUSCEPTIBILITY TO *PLASMODIUM FALCIPARUM* INFECTION IN BURKINA FASO

**Awa Gneme**[1], Gustave B. Kabre[1], Wamdaogo M. Guelbeogo[2], Michelle M. Riehle[3], N'Falé Sagnon[2], Kenneth D. Vernick[4]
*[1]Université Ouaga I Pr Joseph KI-ZERBO, Ouagadougou, Burkina Faso, [2]Centre National de Recherche et de Formation sur le Paludisme, Ouagadougou, Burkina Faso, [3]Department of Microbiology, University of Minnesota, Minnesota, MN, United States, [4]Unit of Insect Vector Genetics and Genomics, Department of Parasites and Insect Vectors, Institut Pasteur; CNRS Unit of Hosts, Vectors and Pathogens (URA3012), Paris, France*

2:45 p.m.

**628**

### INVESTIGATING THE INFLUENCE OF *PLASMODIUM* INFECTION ON THE HUMAN VOLATILE ODOUR PROFILE IN AN ENDEMIC SETTING

**Ailie Robinson**[1], Jetske de Boer[2], Annette O. Busula[3], Stephen Powers[4], John Caulfield[4], Mike Birkett[4], John A. Pickett[4], Willem Takken[2], James Logan[1]
*[1]London School of Hygiene & Tropical Medicine, London, United Kingdom, [2]Wageningen University, Wageningen, Netherlands, [3]International Centre of Insect Physiology and Ecology, Nairobi, Kenya, [4]Rothamsted Research, Harpenden, United Kingdom*

3 p.m.

**629**

### CHANGE IN MOSQUITO BEHAVIOR AFTER DISTRIBUTION OF BEDNETS RESULTS IN DECREASED PERSONAL PROTECTION FROM INFECTIVE BITES

Edward Thomsen[1], Gussy Koimbu[2], John Keven[3], Manuel Hetzel[4], **Lisa Reimer**[1]
*[1]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [2]Papua New Guinea Institute of Medical Research, Madang, Papua New Guinea, [3]Michigan State University, East Lansing, MI, United States, [4]Swiss Tropical Public Health Institute, Basel, Switzerland*

3:15 p.m.

**630**

### ACCELERATED ARBOVIRAL TRANSMISSION AND MORE EXPLOSIVE OUTBREAKS IN A WARMER WORLD

**Amir S. Siraj**[1], Rachel J. Oidtman[1], John Huber[1], Moritz U. Kraemer[2], Oliver J. Brady[2], Michael Johansson[3], Alex T. Perkins[1]
*[1]University of Notre Dame, Notre Dame, IN, United States, [2]University of Oxford, Oxford, United Kingdom, [3]Center for Disease Control and Prevention, San Juan, PR, United States*

## Exhibit Hall Open

*Marriott - International Hall*
Monday, November 14, 3:15 p.m. - 4:15 p.m.

## Coffee Break

*Marriott - International Hall*
Monday, November 14, 3:30 p.m. - 4 p.m.

***Sponsored by Takeda Pharmaceuticals International AG***

PREMIER

## Symposium 41

## Terrorism, Conflict, Epidemics and Acts of God: The Impact of the Unpredictable on NTD Programs

*Marriott - Imperial A*

Monday, November 14, 4 p.m. - 5:45 p.m.

Preventive chemotherapy (PC) for neglected tropical diseases (NTD) targets millions of people through mass drug administration (MDA) campaigns in endemic countries every year. As a means of establishing baselines and evaluating progress, NTD mapping and impact assessments are also conducted, either country-wide or in regions or districts where the PC-NTD are prevalent. However, in the past three years alone, several countries have found the implementation of NTD field activities such as these challenged by unexpected large scale events including political and civil unrest, security and safety threats, terrorism and epidemics. In many settings, this instability was not suitable for the gathering of a large number of people for health interventions; thus the situation posed a threat to the successful implementation of NTD activities. Civil unrest and insecurity in a growing number of countries (Burundi, Democratic Republic of Congo, South Sudan, Nigeria and Mali) have a long and devastating effect on NTD efforts. Areas controlled by Boko Haram insurgents in the North of Cameroon and the North East of Nigeria are unfit for routine mass drug campaigns; likewise, the implementation of MDA is stalling in the Northern regions of Mali due to armed conflicts and terrorism. Addressing the displaced populations that are the result of events such as these is also a significant challenge: massive refugee camps along the Ethiopian/South Sudan border represent an unknown prevalence for NTDs and a poorly understood transmission dynamic between host and origin communities. The emergence of epidemics like the Ebola virus in West Africa (Guinea, Liberia and Serra Leone) and the recent Zika virus epidemic in South America (Brazil, Haiti) have negative impacts on the affected countries programs. For example, in Sierra Leone, one of the countries most affected by the Ebola virus, the MDA campaigns were halted and other field interventions stopped for more than a year. These events are threatening to suppress the NTD programs gains. Instability undermines the hard and costly efforts of countries and their partners. Not only do these situations slow down or stop NTD programming but they could potentially roll back the entire human and financial investment made towards the control and elimination of these diseases. The panelists will present and discuss initiatives undertaken to reach the targeted populations in various challenging contexts.

CHAIR

Achille Kabore
*RTI International, Washington, DC, United States*

Penelope Smith
*U.S. Agency for International Development, Washington, DC, United States*

4 p.m.

**THE USE OF THE "HIT AND RUN" STRATEGY FOR MDAS IN INSECURE AREAS IMPACTED BY BOKO HARAM: EXPERIENCE FROM NORTHERN CAMEROON**

Rebecca Djao
*Regional Delegation of Public Health of Far-North, Ministry of Health Cameroon, Maroua, Cameroon*

4:20 p.m.

**CHALLENGES ACHIEVING MASS DRUG ADMINISTRATION COVERAGE IN THE CONTEXT OF EPIDEMICS: A CASE STUDY OF EBOLA IN SIERRA LEONE**

Yakuba Madinah Bah
*Ministry of Health and Sanitation, Sierra Leone, Freetown, Sierra Leone*

4:40 p.m.

**IMPACT OF ARMED CONFLICTS AND TERRORISM ON NTDS IN THE NORTHERN REGIONS OF MALI**

Massitan Dembele
*Ministry of Health - Mali, Bamako, Mali*

5 p.m.

**NOVEL APPROACH FOR MAPPING NTDS IN REFUGEE CAMPS IN GAMBELLA AND BENESHANGUL-GUMUZ (ETHIOPIA): HOST VERSUS ORIGIN COMMUNITIES AS A SOURCE OF NTD INFECTION**

Scott McPherson
*RTI International, Addis Ababa, Ethiopia*

## Scientific Session 42

## Chikungunya and Other Alphaviruses

*Marriott - Imperial B*

Monday, November 14, 4 p.m. - 5:45 p.m.

CHAIR

Alan M. Watson
*University of Pittsburgh, Pittsburgh, PA, United States*

Eva Harris
*University of California Berkeley, Berkeley, CA, United States*

4 p.m.

**631**

**EXPOSURE OF EPITOPE RESIDUES ON THE OUTER FACE OF THE CHIKUNGUNYA VIRUS ENVELOPE TRIMER DETERMINES ANTIBODY NEUTRALIZING EFFICACY**

Rachel H. Fong[1], Soma S. Banik[1], Jin Jing[2], Graham Simmons[2], **Benjamin J. Doranz**[1]
*[1]Integral Molecular, Inc., Philadelphia, PA, United States, [2]Blood Systems Research Institute, San Francisco, CA, United States*

4:15 p.m.

**632**

**BRIDGING THE GAP BETWEEN IMMUNOGENICITY AND SAFETY: AN INSECT-ONLY VIRUS AS A VACCINE PLATFORM**

**Jesse H. Erasmus**[1], Albert J. Auguste[1], Jason Kaelber[2], Shannan L. Rossi[1], Grace Leal[1], Wah Chiu[2], Dal Y. Kim[3], Ilya Frolov[3], Huanle Luo[1], Tian Wang[1], Farooq Nasar[4], Scott C. Weaver[1]
*[1]University of Texas Medical Branch, Galveston, TX, United States, [2]Baylor College of Medicine, Houston, TX, United States, [3]University of Alabama Birmingham, Birmingham, AL, United States, [4]U.S. Army Medical Research Institute of Infectious Diseases, Frederick, MD, United States*

4:30 p.m.

**633**

**PROTECTION AGAINST TWO LETHAL HETEROLOGOUS VIRUSES AFTER SIMULTANEOUS DUAL-AEROSOL CHALLENGE USING A NOVEL IMMUNOTHERAPEUTIC**

**Thomas C. Luke**[1], Eddie Sullivan[2], Hua Wu[2], Jin-an Jiao[2], Christina L. Gardner[3], William Klimstra[3], Kanakatte Raviprakash[4]
*[1]Naval Medical Research Center, The Henry Jackson Foundation, Silver Spring, MD, United States, [2]SAB Biotherapeutics, Inc., Sioux Falls, SD, United States, [3]University of Pittsburgh, Center for Vaccine Research, Pittsburgh, PA, United States, [4]Naval Medical Research Center, Silver Spring, MD, United States*

4:45 p.m.

## 634

### A VIRUS-LIKE PARTICLE VACCINE ELICITS BROAD NEUTRALIZING ANTIBODY RESPONSES IN HUMANS AGAINST DISTINCT CHIKUNGUNYA VIRUS GENOTYPES

Leslie Goo, Kimberly A. Dowd, Tsai-Yu Lin, Barney S. Graham, Julie E. Ledgerwood, **Ted C. Pierson**
*National Institutes of Health/National Institute of Allergy and Infectious Diseases, Bethesda, MD, United States*

5 p.m.

## 635

### HIGH-RESOLUTION IMAGING OF CENTRAL NERVOUS SYSTEM INVASION BY ALPHAVIRUSES DELIVERED BY SUBCUTANEOUS OR AEROSOL ROUTES OF EXPOSURE

**Alan M. Watson**, Christina L. Gardner, Chengqun Sun, Doug S. Reed, Simon C. Watkins, Amy L. Hartman, William B. Klimstra
*University of Pittsburgh, Pittsburgh, PA, United States*

5:15 p.m.

## 636

### ATTACK RATE OF CHIKUNGUNYA IN NICARAGUAN CHILDREN DURING THE FIRST TWO WAVES OF THE EPIDEMIC, 2014-2016

Aubree Gordon[1], Guillermina Kuan[2], Lionel Gresh[3], Nery Sanchez[3], Sergio Ojeda[3], Saira Saborio[4], Yolanda Tellez[4], Marlon Melendez[3], Angel Balmaseda[4], **Eva Harris**[5]
*[1]Department of Epidemiology, School of Public Health, University of Michigan, Ann Arbor, MI, United States, [2]Health Center Sócrates Flores Vivas, Ministry of Health, Managua, Nicaragua, [3]Sustainable Sciences Institute, Managua, Nicaragua, [4]Laboratorio Nacional de Virología, Centro Nacional de Diagóstico y Referencia, Ministry of Health, Managua, Nicaragua, [5]Division of Infectious Diseases and Vaccinology, School of Public Health, University of California Berkeley, Berkeley, CA, United States*

5:30 p.m.

## 637

### 12-MONTH ASSESSMENT OF PERSISTENT ARTHRALGIA ASSOCIATED WITH THE 2014-2015 CHIKUNGUNYA VIRUS OUTBREAK IN THE U.S. VIRGIN ISLANDS

**Leora R. Feldstein**[1], Ali Rowhani-Rahbar[1], Marcia R. Weaver[2], M. Elizabeth Halloran[3], Esther M. Ellis[4]
*[1]Department of Epidemiology, School of Public Health, University of Washington, Seattle, WA, United States, [2]Institute for Health Metrics and Evaluation, Seattle, WA, United States, [3]Center for Inference and Dynamics of Infectious Diseases, Fred Hutchinson Cancer Research Center, Seattle, WA, United States, [4]U.S. Virgin Islands Department of Health, Christiansted, Virgin Islands, U.S.*

## Scientific Session 43

# One Health: Interface of Human Health/Animal Diseases

*Marriott - Marquis A*
Monday, November 14, 4 p.m. - 5:45 p.m.

CHAIR

Megan E. Reller
*Duke University, Durham, NC, United States*

Chris Woods
*Durham Veterans Administration Medical Center, Durham, NC, United States*

4 p.m.

## 638

### HIGH SEROPREVALENCE OF MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-COV) IN CAMELS IS NOT ASSOCIATED WITH MERS-COV SERO-POSITIVITY AMONG CAMEL PASTORALISTS IN KENYA

**Peninah M. Munyua**[1], Victor Corman[2], Austine Bitek[3], Eric Osoro[4], SM Thumbi[5], Rees Murithi[6], Marc-Alain Widdowson[1], Kariuki Njenga[5]
*[1]Centers for Disease Control and Prevention-Kenya, Nairobi, Kenya, [2]Institute of Virology in Bonn, Bonn, Germany, [3]Zoonotic Disease Unit, Ministry of Agriculture Livestock and Fisheries, Nairobi, Kenya, [4]Zoonotic Disease Unit, Ministry of Health, Nairobi, Kenya, [5]Washington State University, Pullman, WA, United States, [6]Ministry of Agriculture Livestock and Fisheries, Nairobi, Kenya*

4:15 p.m.

## 639

### REDRAWING THE BOUNDARIES OF KYASANUR FOREST DISEASE (KFD) IN INDIA- EARLY RESULTS OF GHSA-SUPPORTED ACUTE FEBRILE ILLNESS SURVEILLANCE

**Govindakarnavar Arunkumar**[1], Shaikh Shah Hossain[2], Devadiga Santhosh[1], Sushama Aswathyraj[1], Nittur Sudheesh[1], Abdulmajeed Jazeel[1], Jayaram Anup[1], Prabhu G. Suresha[1], Chameettachal Akhil[1], Maity Hindol[1], D'Souza Raiza Giselle[1], Sasidharan Pillai Sabeena[1], Jagadesh Anitha[1], Aithal Anjali[1], Bhasker Revti[1], Kayla F. Laserson[2]
*[1]Manipal University, UDUPI, Karnataka, India, [2]Centers for Disease Control and Prevention, New Delhi, India*

4:30 p.m.

## 640

### RISK FACTORS FOR ACUTE LEPTOSPIROSIS IN NORTHERN TANZANIA

**Michael J. Maze**[1], Shama Cash-Goldwasser[2], Holly M. Biggs[3], Matthew P. Rubach[3], Renee L. Galloway[4], Katrina J. Sharples[5], Kathryn J. Allan[6], Jo E. Halliday[6], Sarah Cleaveland[6], Michael C. Shand[6], Charles Muiriri[2], Rudovick R. Kazwala[7], Wilbrod Saganda[8], Bingileki F. Lwezaula[8], Blandina T. Mmbaga[9], Venance P. Maro[9], John A. Crump[1]
*[1]Centre for International Health, University of Otago, Dunedin, New Zealand, [2]Duke Global Health Institute, Durham, NC, United States, [3]Division of Infectious Diseases, Duke University Medical Center, Durham, NC, United States, [4]Centers for Disease Control and Prevention, Bacterial Special Pathogens Branch, Atlanta, GA, United States, [5]Department of Mathematics and Statistics, University of Otago, Dunedin, New Zealand, [6]Boyd Orr Centre for Population and Ecosystem Health, Institute of Biodiversity, Animal Health and Comparative Medicine, University of Glasgow, Glasgow, United Kingdom, [7]Department of Veterinary Medicine and Public Health, Sokoine University of Agriculture, Morogoro, United Republic of Tanzania, [8]Mawenzi Regional Referral Hospital, Moshi, United Republic of Tanzania, [9]Kilimanjaro Christian Medical Centre, Moshi, United Republic of Tanzania*

4:45 p.m.

## 641

### PRODUCTION FARMS, CLASS-1 INTEGRONS, AND ANTIBIOTIC RESISTANCE IN *E. COLI* ISOLATES FROM RURAL ECUADOREAN CHICKENS AND HUMANS

**Kara A. Moser**[1], Lixin Zhang[2], Ian Spicknall[1], Jason Goldstick[1], Nikolay P. Braykov[3], Karen Levy[3], Carl F. Marrs[1], Betsy Foxman[1], Gabriel Trueba[4], William Cevallos[5], James Trostle[6], Joseph N. Eisenberg[1]
*[1]University of Michigan School of Public Health, Ann Arbor, MI, United States, [2]Michigan State University, East Lansing, MI, United States, [3]Rollins School of Public Health, Emory University, Atlanta, GA, United States, [4]Universidad San Francisco de Quito, Quito, Ecuador, [5]Universidad Central del Ecuador, Quito, Ecuador, [6]Trinity College, Hartford, CT, United States*

5 p.m.

**642**

### IDENTIFYING CHALLENGES AND OPPORTUNITIES FOR ONE HEALTH SYSTEMS STRENGTHENING IN GUINEA

**Claire J. Standley**[1], Ellen Carlin[2], Erin M. Sorrell[1], Alpha M. Barry[1], Aboubacar S. Diakite[3], Lamine Koivogui[4], Mamady S. Keita[5], Seny Mane[6], Lise Martel[7], Rebecca L. Katz[1]

*[1]George Washington University, Washington, DC, United States, [2]Carlin Communications, New York, NY, United States, [3]Ministry of Health, Conakry, Guinea, [4]Institut National de Santé Publique, Conakry, Guinea, [5]Ministry of Environment, Conakry, Guinea, [6]Ministry of Livestock, Conakry, Guinea, [7]Centers for Disease Control and Prevention, Conakry, Guinea*

5:15 p.m.

**643**

### PARASITES IN THE PARK: AN EPIDEMIOLOGIC STUDY OF NYC PARKS FOR *TOXOCARA* SPECIES

**Donna L. Tyungu**[1], Carla Lee Lau[1], Rojelio Mejia[2], Henry Pollack[1]

*[1]New York University, New York, NY, United States, [2]National School of Tropical Medicine, Baylor College of Medicine, Houston, TX, United States*

5:30 p.m.

**644**

### USE OF TRACKING PLATES TO IDENTIFY HOTSPOTS OF RAT ABUNDANCE IN SLUM COMMUNITIES WITH HIGH ENDEMIC TRANSMISSION OF LEPTOSPIROSIS

**Kathryn P. Hacker**[1], Amanda Minter[2], Carolina Almeida[3], Ramon Reinalde[3], Mike Begon[2], Peter J. Diggle[2], James E. Childs[1], Mitermayer G. Reis[4], Albert I. Ko[1], Federico Costa[3]

*[1]Yale University, New Haven, CT, United States, [2]Institute of Integrative Biology, University of Liverpool, Liverpool, United Kingdom, [3]Instituto de Biologia, Universidade Federal da Bahia, Salvador, Brazil, [4]Centro de Pesquisas Gonçalo Moniz, Fundação Oswaldo Cruz, Salvador, Brazil*

## Symposium 44

## Next-Generation Sequencing Technologies to Advance Global Infectious Disease Research

*Marriott - Marquis B*

Monday, November 14, 4 p.m. - 5:45 p.m.

The development of next-generation sequencing (NGS) technologies has fundamentally changed our ability to diagnose and study infectious diseases around the world. This is especially true for novel, emerging, or re-emerging diseases, which can often remain undiagnosed or underdiagnosed when only traditional assays and techniques are employed. NGS technologies, along with concomitant developments in computing and bioinformatics, are allowing researchers and public health professionals to identify circulating pathogens and detect outbreaks at unprecedented scales in a variety of settings. Unlike ever before, we can now quickly diagnose pathogens in thousands of samples, generate full genomes, thoroughly characterize them molecularly and phylogeographically, and follow them over time and space. Following a brief introduction on the current state of the field, four presentations will cover new developments and studies conducted using the Department of Defenses' global network for surveillance of infectious diseases. This network includes multiple laboratories around the world that engage not only in surveillance detection, response and prevention, but also support partner nation capabilities and comply with WHO IHR (2005). Under the NGS umbrella, the session will cover developments in wet-lab handling of samples and in bioinformatics processing of NGS data, along with both surveillance for and transmission dynamics studies of infectious pathogens. Together, the presentations will illustrate the diversity of applications possible with the use of this powerful new technology.

CHAIR

Mariana Leguia
*U.S. Naval Medical Research Unit - 6, Lima, Peru*

Clarise Starr
*Wright-Patterson Air Force Base, OH, United States*

4 p.m.
### OVERVIEW: CURRENT STATE OF THE FIELD FOR NGS TECHNOLOGIES FOR PATHOGEN IDENTIFICATION AND CHARACTERIZATION

Clarise Starr
*Wright-Patterson Air Force Base, OH, United States*

4:15 p.m.
### UNLEASHING THE POTENTIAL OF NGS WITH AUTOMATED, WEB-ENABLED BIOINFORMATICS

Patrick Chain
*Los Alamos National Lab, Los Alamos, NM, United States*

4:35 p.m.
### DEVELOPMENT OF NGS APPLICATIONS FOR DETECTION AND CHARACTERIZATION OF VIRAL PATHOGENS

Michael R. Wiley
*United States Army Medical Research Institute for Infectious Disease, Frederick, MD, United States*

4:55 p.m.
### SURVEILLANCE OF VIRAL EMERGING INFECTIOUS DISEASES USING NGS

Irina Maljkovic Berry
*Walter Reed Army Institute of Research, Silver Spring, MD, United States*

5:15 p.m.
### WHOLE GENOME SEQUENCING TO UNRAVEL MRSA TRANSMISSION DYNAMICS AMONG SOLDIERS AT FORT BENNING

Gregory Rice
*Naval Medical Research Center - Biological Defense Research Directorate, Frederick, MD, United States*

## Symposium 45

## Bridging the Gap Towards Defining the Burden of Typhoid in Sub-Saharan Africa and Southeast Asia

*Marriott - Marquis C*

Monday, November 14, 4 p.m. - 5:45 p.m.

While the burden of typhoid fever is felt to be considerable—as high as 21.7 million illnesses with > 215,000 deaths has been estimated—there have been very few recent studies to provide granular estimates of incidence, severe disease and mortality at the regional level, as well as to identify ecologic factors influencing disease burden (like urban, rural, refugee settings). To address this gap in knowledge and to provide evidence for policy-making regarding the use of typhoid conjugate vaccines, the Bill & Melinda Gates Foundation has funded two multi-center typhoid disease burden projects: the Severe Typhoid in Africa (SETA) Program and the Surveillance for Enteric Fever in Asia Project

(SEAP). These projects aim to estimate the burden and severity of invasive *Salmonella* infections, report long-term sequelae and associated costs-of-illness, and assess the immune response to natural infection over one year. The focus of this symposium will be to define the current state of knowledge on typhoid disease burden, and to describe the approaches, new tools, scope and expected impacts from these multi-center studies, while alluding to other ongoing and recently completed typhoid disease burden studies. The objectives of the symposium are to define the burden of typhoid fever and describe its associated gaps in knowledge; explore two burden of disease studies and discuss what information will be learned as a result; and describe how data will be interpreted and subsequently utilized in prevention efforts moving forward.

CHAIR

Robert F. Breiman
*Emory Global Health Institute, Atlanta, GA, United States*

Anita Zaidi
*Bill & Melinda Gates Foundation, Seattle, WA, United States*

4 p.m.
**THE HIGHS AND LOWS OF TYPHOID DISEASE BURDEN: A STORY OF INEQUITIES AND MOVING TARGETS**

John A. Crump
*Centre for International Health, University of Otago, Dunedin, New Zealand*

4:20 p.m.
**THE BURDEN OF TYPHOID IN SUB-SAHARAN AFRICA: LESSONS LEARNED FROM THE TYPHOID SURVEILLANCE IN AFRICA PROGRAM (TSAP), AND STEPS FORWARD WITH THE SETA PROGRAM**

Florian Marks
*International Vaccine Institute, Seoul, Republic of Korea*

4:40 p.m.
**CHARACTERIZING THE CURRENT BURDEN OF TYPHOID IN SOUTH ASIA: BUILDING ON EXISTING EVIDENCE THROUGH THE SURVEILLANCE FOR ENTERIC FEVER IN ASIA PROJECT (SEAP)**

Denise Garrett
*Coalition against Typhoid (CaT), Vaccine Advocacy and Education, Sabin Vaccine Institute, Washington, DC, United States*

5 p.m.
**CONSIDERATIONS FOR EXTRAPOLATING SITE-SPECIFIC DATA (SETA|SEAP) TO BROADER REGIONAL AND GLOBAL CONTEXTS**

Jeff Stanaway
*Institute for Health Metrics and Evaluation, University of Washington, Seattle, WA, United States*

5:20 p.m.
**OPPORTUNITIES FOR BRIDGING DATA TO POLICY AND STRATEGIES FOR TYPHOID CONTROL**

Adwoa Bentsi-Enchill
*World Health Organization, Geneva, Switzerland*

## Scientific Session 46

## Malaria: Epidemiology II - Descriptive and Risk-Factor Studies

*Marriott - Marquis D*
Monday, November 14, 4 p.m. - 5:45 p.m.

CHAIR

Elizabeth B. Brickley
*Geisel School of Medicine at Dartmouth College, West Lebanon, NH, United States*

Meghna Desai
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

4 p.m.
**645**

**FRACTION OF ALL UNDER FIVE DEATHS CAUSED DIRECTLY OR INDIRECTLY BY MALARIA IN SUB-SAHARAN AFRICA FROM 2000-2015**

**Donal Bisanzio**[1], Bonnie Mappin[2], Harry S. Gibson[1], Samir Bhatt[1], Daniel J. Weiss[1], Ewan Cameron[1], Ursula Dalrymple[1], Peter W. Gething[1]
*[1]Oxford University, Oxford, United Kingdom, [2]University of Queensland, Brisbane, Australia*

4:15 p.m.
**646**

**THE DISTRIBUTION OF DHPS MUTATIONS IN AFRICA AND THEIR ASSOCIATION WITH DRUG PRESSURE AND TRANSMISSION INTENSITY**

**Lucy Okell**[1], Inbarani Naidoo[2], Cally Roper[3]
*[1]Imperial College London, London, United Kingdom, [2]Malaria Research Unit, Medical Research Council, London, South Africa, [3]London School of Hygiene & Tropical Medicine, London, United Kingdom*

4:30 p.m.
**647**

***PLASMODIUM FALCIPARUM* AND *P. VIVAX* GAMETOCYTE CARRIAGE IN SOUTH AMERICA, ASIA AND THE SOUTH PACIFIC**

**Cristian Koepfli**[1], Eline Kattenberg[2], Wang Nuitragool[3], Andrea Kuehn[4], Andreea Waltmann[1], Maria Ome-Kaius[2], Ingrid Felger[5], Jetsumon Sattabongkot[3], Marcus Lacerda[4], Leanne Robinson[2], Ivo Mueller[1]
*[1]Walter and Eliza Hall Institute, Parkville, Australia, [2]PNG Institute of Medical Research, Madang, Papua New Guinea, [3]Mahidol University, Bangkok, Thailand, [4]Fundação de Medicina Tropical Dr. Heitor Vieira Dourado, Manaus, Brazil, [5]Swiss Tropical and Public Health Institute, Basel, Switzerland*

4:45 p.m.
**648**

**DIABETES AND OBESITY AS RISK FACTORS FOR SEVERE MALARIA: AN OBSERVATIONAL STUDY OF COMORBIDITIES IN *PLASMODIUM FALCIPARUM* CASES DIAGNOSED IN SWEDEN OVER 20 YEARS**

**Katja Wyss**[1], Andreas Wångdahl[2], Maria Vesterlund[1], Dashti Saddudin[1], Pontus Naucler[1], Anna Färnert[1]
*[1]Unit of Infectious Diseases, Department of Medicine Solna, Karolinska Institutet, Stockholm, Sweden, [2]Department of Infectious Diseases, Västerås Central Hospital, Västerås, Sweden*

5 p.m.

## 649

### THE DESCRIPTIVE EPIDEMIOLOGY OF PEDIATRIC SEVERE MALARIAL ANEMIA IN MALI AND TANZANIA

**Elizabeth B. Brickley**[1], Angela M. Wood[2], Edward Kabyemela[3], Alassane Dicko[4], Michal Fried[5], Patrick Duffy[5]

*[1]Geisel School of Medicine at Dartmouth College, West Lebanon, NH, United States, [2]University of Cambridge, Cambridge, United Kingdom, [3]Muheza Designated District Hospital, Muheza, United Republic of Tanzania, [4]Malaria Research and Training Centre, University of Bamako, Bamako, Mali, [5]Laboratory of Malaria Immunology and Vaccinology, National Institute of Allergy and Infectious Diseases, Rockville, MD, United States*

5:15 p.m.

## 650

### TRAVEL PATTERNS AND DEMOGRAPHIC CHARACTERISTICS OF MALARIA CASES: THE CASE STUDY OF SWAZILAND, 2010-2014

Nomcebo Dlamini[1], Natalia Tejedor-Garavito[2], **Deepa Pindolia**[3], Adam Soble[4], Nick Ruktanonchai[2], Victor Alegana[2], Arnaud Le Menach[5], Nyasatu Ntshalintshali[4], Bongani Dlamini[4], David Smith[6], Andrew Tatem[2], Simon Kunene[4]

*[1]National Malaria Control Programme, Swaziland, Mbabane, Swaziland, [2]WorldPop Project, University of Southampton, Southampton, United Kingdom, [3]Clinton Health Access Initiative, Nairobi, Kenya, [4]Clinton Health Access Initiative, Mbabane, Swaziland, [5]Clinton Health Access Initiative, Boston, MA, United States, [6]University of Washington, Seattle, WA, United States*

5:30 p.m.

## 651

### *PLASMODIUM KNOWLESI* MALARIA IN CHILDREN IN MALAYSIA: NO SEVERE DISEASE DESPITE AN INCREASED RISK OF ANAEMIA COMPARED TO ADULTS

**Matthew J. Grigg**[1], Timothy William[2], Bridget E. Barber[1], Giri S. Rajahram[2], Jayaram Menon[2], Christopher S. Wilkes[1], Kaajal Patel[1], Arjun Chandna[1], Christopher J. Drakeley[3], Tsin W. Yeo[1], Nicholas M. Anstey[1]

*[1]Menzies School of Health Research and Charles Darwin University, Darwin, Australia, [2]Infectious Disease Society Kota Kinabalu Sabah - Clinical Research Centre Queen Elizabeth Hospital, Kota Kinabalu, Malaysia, [3]London School of Hygiene & Tropical Medicine, London, United Kingdom*

## Scientific Session 47

# Kinetoplastida: Epidemiology and Diagnosis

*Marriott - Room M103/M104/M105*

Monday, November 14, 4 p.m. - 5:45 p.m.

CHAIR

Caryn Bern
*University of California San Francisco, San Francisco, CA, United States*

Selma M. Jeronimo
*Universidade Federal do Rio Grande do Norte, Natal, Brazil*

4 p.m.

## 652

### ASSESSMENTS OF WILDLIFE RESERVOIRS OF *TRYPANOSOMA CRUZI* AND THEIR INTERACTIONS WITH TRIATOMINE VECTORS ACROSS TEXAS

**Sarah A. Hamer**, Rachel Curtis-Robles, Carolyn L. Hodo, Gabriel L. Hamer
*Texas A&M University, College Station, TX, United States*

4:15 p.m.

## 653

### *LEISHMANIA INFANTUM* PARASITEMIA IN ASYMPTOMATIC BLOOD DONORS IN AN ENDEMIC REGION OF NORTHEAST BRAZIL

**Selma M. Jeronimo**[1], Gloria R. Monteiro[1], Jethe Nunes[1], Jason L. Weirather[2], Joanna G. Valverde[1], Emma L. Mohr[3], Virginia P. Macedo-Silva[1], Jose W. Queiroz[1], Francisco S. Bezerra[4], Kathryn M. Dupnik[5], Richard D. Pearson[6], Mary E. Wilson[2]

*[1]Federal University of Rio Grande do Norte, Natal, Brazil, [2]University of Iowa, Iowa City, IA, United States, [3]Emory University, Atlanta, GA, United States, [4]Universidadae Federal Rural do Semi Arido, Mossoro, Brazil, [5]Cornell University, New York, NY, United States, [6]University of Virginia, Charlottesville, VA, United States*

4:30 p.m.

## 654

### CUTANEOUS AND MUCOCUTANEOUS LEISHMANIASIS IN INTERNATIONAL TRAVELERS: RESULTS FROM THE GEOSENTINEL SURVEILLANCE NETWORK

**Andrea K. Boggild**[1], Eric Caumes[2], Bradley A. Connor[3], Sumontra Chakrabarti[4], Philippe Parola[5], Noreen A. Hynes[6], Jay S. Keystone[1], Michael Libman[7], Theodore Nash[8], Eli Schwartz[9], Adrienne J. Showler[10], Davidson H. Hamer[11], Kevin C. Kain[1]

*[1]University of Toronto, Toronto, ON, Canada, [2]University Pierre et Marie Curie, Paris, France, [3]Weill Cornell Medical College, New York, NY, United States, [4]Trillium Health Sciences Centre, Mississauga, ON, Canada, [5]University Hospital Institute for Infectious Diseases, Aix-Marseille University, Marseille, France, [6]Johns Hopkins University School of Medicine, Baltimore, MD, United States, [7]J.D. MacLean Centre for Tropical Diseases, McGill University Health Centre, Montreal, QC, Canada, [8]National Institutes of Allergy and Infections Diseases, National Institutes of Health, Bethesda, MD, United States, [9]Sheba Medical Center Tel Hashomer & Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel, [10]Johns Hopkins University Bloomberg School Public Health, Baltimore, MD, United States, [11]Boston University School of Public Health; Boston University School of Medicine, Boston, MA, United States*

4:45 p.m.

## 655

### ASSOCIATIONS BETWEEN PARASITOLOGICAL AND SEROLOGICAL INDICATORS OF INFECTION AND THE DEVELOPMENT OF CLINICAL VISCERAL LEISHMANIASIS IN ETHIOPIA

Asrat Hailu[1], **Laura Skrip**[2], Oscar Kirstein[3], Welelta Shiferaw[1], Shewaye Belay[4], Aysheshm Kassahun[1], Asrat Bezuneh[1], Habtamu Belete[1], Alison Galvani[2], Charle Jaffe[3], Alon Warburg[3], Amit Huppert[5]

*[1]Addis Ababa University, Addis Ababa, Ethiopia, [2]Yale School of Public Health, New Haven, CT, United States, [3]The Hebrew University of Jerusalem, Jerusalem, Israel, [4]Mekele University, Mekele, Ethiopia, [5]The Gertner Institute for Epidemiology and Health Policy Research, Ramat Gan, Israel*

5 p.m.

## 656

### PROGRESSION AND MORTALITY RATES FOR MODELLING THE BURDEN OF CHAGAS DISEASE

**Zulma Cucunubá**, Pierre Nouvellet, Omolade Okuwoga, Lesong Conteh, María-Gloria Basañez
*Imperial College London, London, United Kingdom*

5:15 p.m.

## 657

### DEFINITIONS AND FEASIBILITY OF ELIMINATION OF VISCERAL LEISHMANIASIS

**Epke Le Rutte**[1], Lloyd A. Chapman[2], Luc E. Coffeng[1], Sarah Jervis[2], Graham F. Medley[3], Deirdre T. Hollingsworth[2], Sake J. de Vlas[1]

*[1]Erasmus MC, Rotterdam, Netherlands, [2]University of Warwick, Warwick, United Kingdom, [3]London School of Hygiene & Tropical Medicine, London, United Kingdom*

5:30 p.m.

**658**

**VISCERAL LEISHMANIASIS IN THE INDIAN SUBCONTINENT: HOW MUCH DO ASYMPTOMATICS CONTRIBUTE TO TRANSMISSION AND HOW DOES TRANSMISSION DECREASE WITH DISTANCE FROM A CASE?**

**Lloyd Chapman**[1], Rajib Chowdhury[2], Caryn Bern[3], Orin Courtenay[1], Graham Medley[4], Deirdre Hollingsworth[1]
*[1]University of Warwick, Coventry, United Kingdom, [2]KalaCORE Programme, Dhaka, Bangladesh, [3]University of California San Francisco, San Francisco, CA, United States, [4]London School of Hygiene & Tropical Medicine, London, United Kingdom*

## Symposium 48

## Inaugural Alan J. Magill Malaria Eradication Symposium

*Marriott - Atrium A*
Monday, November 14, 4 p.m. - 5:45 p.m.
***Supported with funding from the Bill & Melinda Gates Foundation***

To honor the life and work of ASTMH Past President Alan Magill, who at the time of his untimely death in 2015 was promoting the bold goal of global malaria eradication as the Malaria Director at the Bill & Melinda Gates Foundation, a symposium on malaria eradication will be held each year during the Annual Meeting. This inaugural symposium will include a historical review of lessons from previous malaria eradication campaigns, cutting-edge science that may transform malaria eradication strategies, the latest results of applications of molecular and immunological tools to understand malaria transmission, and challenges and progress in the development of a Single Encounter Radical Cure and Prophylaxis (SERCaP) drug for malaria eradication. These talks will be followed by a panel discussion of prospects of and progress toward malaria eradication at which diverse viewpoints will be solicited from the panelists and audience. Melinda Gates will provide introductory remarks via video.

CHAIR

Christopher V. Plowe
*Institute for Global Health, University of Maryland School of Medicine, Baltimore, MD, United States*

Regina Rabinovich
*Harvard T.H. Chan School of Public Health, Boston, MA, United States*

4 p.m.
**OPENING REMARKS (VIDEO)**
Melinda Gates
*Bill & Melinda Gates Foundation, Seattle, WA, United States*

4:05 p.m.
**THE CASE FOR MALARIA ERADICATION**
Bruno Moonen
*Bill & Melinda Gates Foundation, Seattle, WA, United States*

4:15 p.m.
**MALARIA ERADICATION: HISTORICAL LESSONS AND NEW STRATEGIES**
Pedro Alonso
*World Health Organization, Geneva, Switzerland*

4:35 p.m.
**EXPANDING THE ERADICATION TOOLKIT**
Dyann Wirth
*Harvard T.H. Chan School of Public Health, Boston, MA, United States*

4:55 p.m.
**MALARIA'S FOOTSTEPS: SEEING TRANSMISSION THROUGH THE LENS OF HOST IMMUNITY**
Chris Drakeley
*London School of Hygiene & Tropical Medicine, London, United Kingdom*

5:15 p.m.
**THE KNOCKOUT PUNCH: SINGLE ENCOUNTER RADICAL CURE AND PROPHYLAXIS**
Thierry Diagana
*Novartis Institute for Tropical Diseases, Singapore, Singapore*

5:35 p.m.
**DISCUSSION AND QUESTIONS**

## Symposium 49

## Global Health Education, Service and Research Opportunities for Medical Students and Trainees: Successes, Challenges and Opportunities

*Marriott - Atrium B*
Monday, November 14, 4 p.m. - 5:45 p.m.

There is tremendous interest in global health (GH) among medical students and trainees in high-income countries (HIC). HIC institutions are engaging universities, non-governmental organizations, and other partners in low- and middle-income countries (LMIC) to address key education, service and research GH priorities. While this creates opportunities for education for the trainees and potentially service for the host community, it also creates significant logistical burdens and potential ethical challenges. Medical schools are developing curricula with increasing emphasis on competencies in GH and innovative strategies are being developed to meet the needs of HIC trainees while dealing with the logistical and ethical issues. This symposium will share experiences of faculty who lead unique global health education and research programs in LMIC. Challenges and concerns will be described and discussed and success stories from key GH programs will be shared. The first presenter will discuss the complex ethical issues involved in short-term GH service and research projects involving students and trainees from HIC travelling to LMIC and highlight the importance of a rights-based approach to health. The second presenter is the Executive Director of Andean Health & Development (AHD), which operates hospitals in underserved areas of Ecuador and frequently receives requests from U.S. trainees to perform rotations. This presenter will describe the challenges involved in bearing the costs and the responsibilities to both the trainees and the patients when accepting these requests and financial and academic strategies he has developed

to deal with those challenges. The third speaker will discuss the successes and challenges of implementing an innovative surgery program in the Dominican Republic in collaboration with a corporate sponsor. The final presenter has developed a two-week course in field epidemiology that is very popular with trainees from the U.S. Work is focused on hands-on activities such as case tracing, vector and reservoir collection and control, and respiratory virus surveillance. This presenter will discuss the development of a course with a defined curriculum as an alternative to clinical rotations and the value of partnering with U.S. institutions to tailor courses to the needs of their students as an innovative approach to GH training.

CHAIR

John W. Sanders
*Wake Forest University School of Medicine, Winston-Salem, NC, United States*

Avi Shetty
*Wake Forest University School of Medicine, Winston-Salem, NC, United States*

4 p.m.
**ETHICAL CHALLENGES IN SHORT TERM GLOBAL HEALTH PROJECTS**

Dabney Evans
*Emory University, Rollins School of Public Health, Atlanta, GA, United States*

4:20 p.m.
**MANAGING THE BURDEN OF HOSTING STUDENTS FOR CLINICAL ROTATIONS**

David Gaus
*University of Wisconsin, Madison, WI, United States*

4:40 p.m.
**UNEXPECTED CHALLENGES AND REWARDING SUCCESSES IN DEVELOPING A RECURRING SURGICAL MISSION**

James D. Browne
*Wake Forest University School of Medicine, Winston-Salem, NC, United States*

5 p.m.
**A FIELD EPIDEMIOLOGY COURSE: AN INNOVATIVE ALTERNATIVE APPROACH TO GLOBAL HEALTH TRAINING**

Andres G. Lescano
*Universidad Peruana Cayetano Heredia, School of Public Health and Management, Lima, Peru*

## Symposium 50

## Mapping the Denominator

*Marriott - Room A602*
Monday, November 14, 4 p.m. - 5:45 p.m.

Reliable health metrics are crucial for accurately assessing disease burden, epidemiological modelling and planning of interventions. Moreover, many Sustainable Development Goal (SDG) health indicators will be measured through passive surveillance systems reporting at the level of health facilities or districts and are reliant on estimates of facility catchment or district populations to convert case counts to population-level metrics. Typically, denominators are based on static census-derived estimates or annual projections from these baselines. However, in low-income settings, census population counts can be unreliable and outdated. Moreover, they only provide a single snapshot of estimates, often missing substantial seasonal changes in population distributions. This symposium will provide participants with an overview of ongoing work on 'bottom-up' population mapping, whereby subnational population distributions, demographics and dynamics are estimated in the absence of census data, using a combination of satellite, survey and cellphone data. The first presentation will describe the work being lead by the Gates Foundation in producing detailed maps of settlements, populations and their demographics in Nigeria and other low income countries. The presenter will outline how these data are vital to planning and undertaking polio vaccination in northern Nigeria, and how the maps are being used for wider public health purposes. The second speaker will outline the work of a team in mapping human settlements from 0.5m resolution satellite imagery to provide the basis for mapping population distributions for the Nigeria project. The session will then describe approaches used to integrate the satellite-derived maps of human settlement with ground surveys in statistical models to estimate population distributions and demographics, drawing from applications in Nigeria in collaboration with the Bill & Melinda Gates Foundation, and Afghanistan in collaboration with UNFPA. The final presenter will describe work on mapping population dynamics using mobile phone call data records and demonstrate how this novel data source can be used to derive weekly, monthly and annual estimates of population distributions at high resolution. In collaboration with malaria control programs, the presenter will show how utilizing these denominator estimates over static census-based estimates result in significantly different malaria incidence estimates that better account for seasonal changes in health facility catchment population sizes.

CHAIR

Andrew J. Tatem
*University of Southampton, Southampton, United Kingdom*

4 p.m.
**BOTTOM-UP POPULATION ESTIMATION FOR POLIO VACCINATION PLANNING**

Vince Seaman
*Bill & Melinda Gates Foundation, Seattle, WA, United States*

4:20 p.m.
**MAPPING HUMAN SETTLEMENTS AT HIGH RESOLUTION FROM SATELLITE IMAGERY FOR PUBLIC HEALTH SUPPORT**

Budhu Bhaduri
*Oak Ridge National Laboratories, Knoxville, TN, United States*

4:40 p.m.
**BAYESIAN GEOSTATISTICAL MODELLING OF POPULATION DISTRIBUTIONS AND DEMOGRAPHICS FOR HEALTH APPLICATIONS**

Nicola Wardrop
*WorldPop, Southampton, United Kingdom*

5 p.m.
**THE USE OF CELLPHONE CALL DATA RECORDS TO MAP DENOMINATOR DYNAMICS**

Elisabeth zu Erbach-Schoenberg
*Flowminder Foundation, Stockholm, Sweden*

## Scientific Session 51

## Mosquitoes: Vector Biology - Epidemiology II

*Marriott - Room A706/A707*
Monday, November 14, 4 p.m. - 5:45 p.m.

CHAIR

Marco Pombi
*Sanità Pubblica e Malattie Infettive, Università di Roma, Rome, Italy*

Courtney Shelley
*University of California Davis, Davis, CA, United States*

4 p.m.

### 659

### DOES ARTIMISININ BASED COMBINATION THERAPY INFLUENCE MOSQUITO FITNESS AND HOST-SEEKING BEHAVIOR?

**Jetske de boer**, Annette Busula, Willem Takken
*Wageningen University, Wageningen, Netherlands*

4:15 p.m.

### 660

### UNEXPECTEDLY LOW HUMAN BLOOD INDEX ASSOCIATED TO HIGH *PLASMODIUM* SPOROZOITE RATES IN *ANOPHELES GAMBIAE* COMPLEX SPECIES FROM A LLIN-PROTECTED VILLAGE IN BURKINA FASO

**Marco Pombi**[1], Maria Calzetta[2], Wamdaogo M. Guelbeogo[3], Emiliano Mancini[4], N'Fale Sagnon[3], Hilary Ranson[5], Alessandra della Torre[2]
*[1]Dip. Sanità Pubblica e Malattie Infettive - Università di Roma "Sapienza", Rome, Italy, [2]Dip. Sanità Pubblica e Malattie Infettive - Università di Roma, Rome, Italy, [3]Centre National de Recherche et Formation sur le Paludisme, Ouagadougou, Burkina Faso, [4]Dipartimento di Scienze - Università Roma Tre, Rome, Italy, [5]Liverpool School of Tropical Medicine, Liverpool, United Kingdom*

4:30 p.m.

### 661

### THE WMEL STRAIN OF *WOLBACHIA* REDUCES TRANSMISSION OF ZIKA VIRUS IN *AEDES AEGYPTI*

**Matthew T. Aliota**[1], Stephen A. Peinado[1], Ivan Dario Velez[2], Jorge E. Osorio[1]
*[1]University of Wisconsin Madison, Madison, WI, United States, [2]Programa de Estudio y Control de Enfermedades Tropicales (PECET), Medellin, Colombia*

4:45 p.m.

### 662

### COMBINING CONTACT TRACING WITH TARGETED INDOOR RESIDUAL SPRAYING SIGNIFICANTLY IMPACTS DENGUE TRANSMISSION

**Gonzalo M. Vazquez-Prokopec**[1], Brian Montgomery[2], Peter Horne[3], Julie Clennon[1], Scott Ritchie[4]
*[1]Emory University, Atlanta, GA, United States, [2]Queensland Health, Brisbane, Australia, [3]Queensland Health, Cairns, Australia, [4]James Cook University, Cairns, Australia*

5 p.m.

### 663

### ZIKA VIRUS IN THE AMERICAS: A MODEL-BASED ASSESSMENT OF FACTORS AFFECTING EMERGENCE

**Courtney D. Shelley**, Christopher M. Barker
*University of California Davis, Davis, CA, United States*

5:15 p.m.

### 664

### WIND-ASSISTED LONG-DISTANCE MIGRATION OF MALARIA MOSQUITOES IN THE SAHEL

**Tovi Lehmann**[1], Diana Huestis[1], Alpha Yaro[2], Jenna Florio[1], Moussa Diallo[2], Zana Sanogo[2], Samake Djibril[2], Roy Faiman[1], Jason W. Chapman[3], Donald R. Reynolds[4], Laura E. Burgin[5], Adama Dao[2]
*[1]National Institute of Allergy and Infectious Diseases/National Institutes of Health, Rockville, MD, United States, [2]ICER Mali, Bamako, Mali, [3]Department of AgroEcology, Rothamsted Research, Harpenden, United Kingdom, [4]Department of AgroEcology, Rothamsted Research, Harpenden, United Kingdom, [5]Met Office, London, United Kingdom*

5:30 p.m.

### 665

### GENERIC AND STANDARDIZED DATA COLLECTION FORMS AND DATABASE APPLICABLE TO DIVERSE ENTOMOLOGICAL STUDIES OF MOSQUITOES

**Samson S. Kiware**[1], Alpha Malishee[1], Dickson Msaky[1], George Corliss[2], Gerry Killeen[1]
*[1]Ifakara Health Institute, Dar Es Salaam, United Republic of Tanzania, [2]Marquette University, Milwaukee, WI, United States*

## Peer-to-Peer Networking Session: Navigate as an Early Career Professional and Build Your Peer Network

*Marriott - Room M301/M302*
Monday, November 14, 5:45 p.m. - 6:45 p.m.

***Please note that this meeting is limited to those who pre-registered for the event.***

Peer networking is an essential skill to establish and progress through a career in science, yet often not addressed in graduate research programs. The connections you establish with peers today can be the foundation of future employment, career advancement, key collaborations, successful grants and major scientific advances. This one-hour student networking event will start with a brief overview of tips to navigate toward a first or early career position by professionals currently working within the field of global health, including how to maximize networking platforms like social and other online media. After Q&A with the panelists, students and trainees will participate in a networking exercise and mixer to facilitate a successful interaction among peers. Students will have the opportunity to "build their peer network" with other students and trainees in global health.

CHAIR

Koya C. Allen
*U.S. European Command Headquarters, U.S. Department of Defense, Stuttgart, Germany*

Maha A. Elbadry
*University of Florida, Gainesville, FL, United States*

Simon Pollett
*University of California San Francisco, San Francisco, CA United States*

**Plenary Session 52**

## Plenary Session II: Charles Franklin Craig Lecture

*Marriott - Marquis B*
Monday, November 14, 6:15 p.m. - 7 p.m.


*Charles Franklin Craig*

The Charles Franklin Craig Lecture is an honor bestowed on a distinguished worker in the field of tropical medicine. Charles Franklin Craig (1872-1950) received his MD from Yale University and entered the Army Medical Corps in 1898, as a pathologist and bacteriologist. After holding a variety of far-flung assignments early in his career, he began a long association with the Army Medical School in Washington, DC in 1909, rising to become Professor and Commandant of the School. He wrote ten books on malaria, parasitology and infectious diseases, and he discovered and described *Plasmodium ovale*. In 1931 he retired from the Army to become Professor of Tropical Medicine and head of the Department at Tulane School of Medicine. He was President of the American Society of Tropical Medicine (1915), Editor-in-Chief of the *American Journal of Tropical Medicine* (1927-1946) and Editor of the *Journal of the National Malaria Society* (1942-1944).

CHAIR
Robert B. Tesh
*University of Texas Medical Branch, Galveston, TX, United States*

6:15 p.m.
**INTRODUCTION**
Scott Weaver
*University of Texas Medical Branch, Galveston, TX, United States*

6:30 p.m.
**CHARLES FRANKLIN CRAIG LECTURE:**
**THE EMERGENCE OF ZIKA CONGENITAL SYNDROME**

**Albert Icksang Ko, MD, FACP, FIDSA**
*Professor and Department Chair, Epidemiology of Microbial Diseases*
*Yale School of Public Health*
*Collaborating Investigator, Oswaldo Cruz Foundation, Brazilian Ministry of Health*

After graduating from Harvard Medical School, Albert Ko performed his residency at Brigham and Women's Hospital and infectious disease fellowship at Massachusetts General Hospital. At Weill Medical College of Cornell University faculty, he spent 15 years at the Oswaldo Cruz Foundation in the city of Salvador, Brazil, where he and his colleagues established a Global Infectious Disease Training Program. In 2010, Dr. Ko became Chair of the Department of Epidemiology and Microbiology at the Yale School of Public Health and Medicine. He also serves as its Director for the Fogarty Global Health Equity Scholars Program. Dr. Ko's research centers on health problems that have emerged as a consequence of rapid urbanization and social inequity. He coordinates a research and training program on urban slum health in Brazil and conducts prospective cohort studies on leptospirosis, dengue, meningitis and respiratory infections. His research combines multidisciplinary epidemiology, ecology and translational research-based approaches to identify prevention and control strategies that can be implemented in slum communities. More recently, Dr. Ko and his team have mobilized the public health research capacity at their site in the city of Salvador to investigate the ongoing outbreak of Zika virus infection and microcephaly.

## Poster Session A Dismantle

*Hilton - Grand Ballroom and Grand Salon*
Monday, November 14, 7 p.m. - 8 p.m.

**Sponsored Symposium**

## Applying Experience from the Management of Infectious Diseases to Address the Rise of Chronic Illness in the Developing World

*Marriott - Imperial A*
Monday, November 14, 7:15 p.m. - 9 p.m.
***Sponsored by Novartis Social Business***
See page 41 for information.

**Sponsored Symposium**

## Malaria. Faster and More Accurate Diagnosis is Vital in the Fight for Eradication

*Marriott Marquis D*
Monday, November 14, 7:15 p.m. - 9 p.m.
***Sponsored by Meridian Bioscience, Inc.***
See page 41 for information.

# Tuesday, November 15

## Registration

*Marriott - Marquis Foyer*
Tuesday, November 15, 7 a.m. - 5 p.m.

## Speaker Ready Room

*Marriott - International A*
Tuesday, November 15, 7 a.m. - 5 p.m.

## TropStop - Student/Trainee Lounge

*Marriott - Atrium Loft*
Tuesday, November 15, 7 a.m. - 5 p.m.

This casual setting, designed with students, trainees and residents in mind (coffee, internet), is your place for a break from the fast-pace of the meeting and relax with colleagues and friends. Check out the "Office Hours," held in the TropStop. This will be your opportunity to meet up-and-coming professionals in the fields of tropical medicine, global health, science and industry who will share their personal career paths and answer your questions about the various bumps and forks in the road.

## Internet Nook

*Marriott - Imperial Foyer*
Tuesday, November 15, 7 a.m. - 5 p.m.

***Sponsored by Takeda Pharmaceuticals International AG***

PREMIER

## Meeting Sign-Up Room

*Hilton - Rooms 206 and 207*
Tuesday, November 15, 7 a.m. - 10 p.m.

## *AJTMH* Editorial Board Meeting

*Marriott - Room M202*
Tuesday, November 15, 7 a.m. - 8 a.m.

## Clinical Group (ACCTMTH) Past Presidents Meeting

*Hilton - Room 205*
Tuesday, November 15, 7 a.m. - 8 a.m.

## Education Committee Meeting

*Marriott - Room M108*
Tuesday, November 15, 7 a.m. - 8 a.m.

## Shope Fellowship Committee Meeting

*Hilton - Room 208*
Tuesday, November 15, 7 a.m. - 8 a.m.

## Special Interactive Experience: The Refugee Journey to Wellbeing

*Marriott - Atrium Foyer*
Tuesday, November 15, 7:30 a.m. - 7 p.m.

At the end of 2015, there were an estimated 65.3 million people displaced around the world, largely because of extended conflicts in the Middle East, Northern and sub-Saharan Africa, and Asia. The American Society of Tropical Medicine and Hygiene and the U.S. Centers for Disease Control and Prevention (CDC), with participation from a number of domestic and international partners, are hosting this unique interactive experience on refugee health. Through video, photos, live testimonials, hands-on activities and replicated scenes from the field, The Refugee Journey to Wellbeing highlights the clinical and public health aspects of the refugee experience from displacement to resettlement.

## Press Room

*Marriott - Room M102*
Tuesday, November 15, 8 a.m. - 5 p.m.

**Symposium 53**

## The 14th Annual American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP) Symposium: Parasitology and the CRISPR-Cas Revolution

*Marriott - Imperial A*
Tuesday, November 15, 8 a.m. - 9:45 a.m.

***Supported with funding from the Burroughs Wellcome Fund***

Parasites that cause significant tropical disease span a broad range of species, most of which are only distantly related to model experimental eukaryotes. This means that much of their biology is unique, and must be studied in the organisms themselves rather than inferred from model systems. Genetic manipulation has been a major tool to investigate this unique biology, but its application has often been limited and is currently routine in only a handful of parasite species. Genome editing by the CRISPR-Cas system radically increases the efficiency of genetic manipulation by using short guide RNAs to target an endonuclease to generate double stranded breaks at specific locations in genomes. CRISPR-Cas systems, and variants thereof, are currently revolutionizing genetic manipulation in many areas of biology, and have the potential to do the same to the study of parasite species. This symposium will present the current state of the art in the application of CRISPR-Cas to globally significant parasites species and the vectors that transmit them. In keeping with the breadth of fundamental parasitology covered by ACMCIP, the symposium covers a range of significant species: *Leishmania donovani*, the causative agent of visceral leishmaniasis; *Cryptosporidium parvum*, where genetic manipulation was not possible before the application of CRISPR-Cas; *Plasmodium falciparum*, where CRISPR-Cas is being applied to understand drug resistance and raising the prospect of large-scale genetic screens, and *Anopheles* species, where CRISPR-Cas is being applied to gene drive mechanisms aimed at controlling malaria transmission. The symposium will explain the science behind these revolutionary tools, and outline how they are being used to both understand basic parasite biology as well as to develop novel intervention tools.

CHAIR

Julian C. Rayner
*Wellcome Trust Sanger Institute, Cambridge, United Kingdom*

Christine Petersen
*University of Iowa, Iowa City, United States*

8 a.m.
**CRISPR-CAS DRIVEN GENETIC MANIPULATION OF THE DIARRHEAL PATHOGEN *CRYPTOSPORIDIUM PARVUM***

Boris Striepen
*University of Georgia, Athens, GA, United States*

8:20 a.m.
**NEW TOOLS FOR MANIPULATION OF *PLASMODIUM FALCIPARUM* BY CRISPR-CAS**

Jacquin C. Niles
*Massachussets Institute of Technology, Cambridge, MA, United States*

8:40 a.m.
**CRISPR-CAS, *LEISHMANIA* PARASITES AND ATTENUATED STRAINS FOR VACCINE DEVELOPMENT**

Greg Matlashewski
*McGill University, Montreal, QC, Canada*

9 a.m.
**CRISPR-CAS IN *ANOPHELES* MOSQUITOES: A POWERFUL TOOL TO BLOCK MALARIA TRANSMISSION**

Flaminia Catteruccia
*Harvard T.H. Chan School of Public Health, Cambridge, MA, United States*

9:30 a.m.
**ACMCIP ANNUAL BUSINESS MEETING**

Julian C. Rayner
*Welcome Trust Sanger Institute, Cambridge, United Kingdom*

## Symposium 54

## Advanced Diagnostics in Filarial Infections

*Marriott - Imperial B*
Tuesday, November 15, 8 a.m. - 9:45 a.m.

This symposium will detail the most cutting-edge diagnostics available - and on the horizon - for filarial infections. Emphasis will be placed on rapid point-of-contact approaches to filarial infections, with a particular emphasis on those filarial infections with overlapping geographic distribution (e.g. *Wuchereria bancrofti*, *Onchocerca volvulus*, *Loa loa*, and *Mansonella perstans*).

CHAIR

Thomas B. Nutman
*National Institute of Allergy and Infectious Diseases/National Institutes of Health, Bethesda, MD, United States*

8 a.m.
**MOBILE PHONE BASED VIDEOMICROSCOPY FOR QUANTITATION OF *LOA LOA* (AND OTHER *FILARIA*) MICROFILARIAE**

Daniel Fletcher
*University of California Berkeley, Berkeley, CA, United States*

8:25 a.m.
**MOLECULAR APPROACHES TO THE DIAGNOSIS OF FIALRIAL INFECTIONS OF HUMANS**

Steven A. Williams
*Smith College, Northampton, MA, United States*

8:50 a.m.
**NEW GENERATION RAPID DIAGNOSTIC TESTS IN FILARIAL INFECTIONS**

Tala de los Santos
*PATH, Seattle, WA, United States*

9:15 a.m.
**MULTIPLEXED IMMUNOASSAYS FOR FILARIAL INFECTIONS**

Patrick Lammie
*Centers for Disease Control and Prevention/Task Force for Global Health, Atlanta, GA, United States*

## Symposium 55

## Malaria Elimination Strategies Using Targeted and Mass Drug Administration: Lessons from the Field

*Marriott - Marquis A*
Tuesday, November 15, 8 a.m. - 9:45 a.m.

Attempts to determine the effectiveness of and operationalize community-based treatment strategies to accelerate malaria elimination have gained momentum in recent years. Mass drug administration (MDA) strategies for malaria are being explored in a number of countries and, in combination with vector control strategies, potentially provides an effective compliment to help countries achieve malaria elimination in certain settings. Many questions exist regarding effectiveness or cost-effectiveness of MDA strategies, in combination with other strategies. Further, once effectiveness is known, operational parameters including appropriate levels of transmission, methods for obtaining optimal coverage, frequency of application, and concomitant exit strategies are needed to move from research to policy prior to targeted scale up. Effective combinations of chemotherapeutic and vector control interventions likely also yields dramatic changes in the resulting parasite genomic structure which may provide clues to the progress towards achieving elimination. Research on malaria MDA activities from three countries, Senegal, Zambia and Mozambique will be reviewed to share experiences and lessons learned related to effectiveness, cost-effectives, and operational parameters for success. Zambia has recently completed a two-year community-randomized controlled trial assessing the impact of MDA with dihydroartemisinin + piperaquine (DHAp). This session will present on the effectiveness, cost-effectiveness, coverage and acceptability of MDA strategies from high and low transmission areas in Southern Zambia. The symposium will include a presentation on the extent to which a targeted malaria control strategy combining vector control with indoor residual spraying and chemotherapy reduced malaria in Central Senegal. The session will describe lessons learned from a pilot elimination strategy including results from MDA in a district in southern Mozambique. The final speaker will present on the genetic signals to detect and measure changes in malaria transmission in the context of MDA interventions, including evidence from these three study areas in Senegal, Mozambique and Zambia. This symposium will showcase the collective efforts of these research and implementation groups and will share lessons learned from the application of community-based treatment strategies in combination with vector control from diverse transmission and malaria programming backgrounds, including the latest methods for evaluating malaria elimination strategies.

CHAIR

John M. Miller
*MACEPA, PATH, Lusaka, Zambia*

Thom Eisele
*Tulane University, New Orleans, LA, United States*

8 a.m.

**REVIEW OF THE EXTENT TO WHICH A TARGETED MALARIA CONTROL STRATEGY COMBINING VECTOR CONTROL WITH INDOOR RESIDUAL SPRAYING AND CHEMOTHERAPY, REDUCED MALARIA IN CENTRAL SENEGAL**

Badara Cisse
*Université Cheikh Anta Diop, Dakar, Senegal*

8:15 a.m.

**LESSONS LEARNED FROM A PILOT ELIMINATION STRATEGY INCLUDING RESULTS FROM MDA IN A DISTRICT IN SOUTHERN MOZAMBIQUE**

Pedro Aide
*Centro de Investigação em Saúde de Manhiça (CISM), Manhica, Mozambique*

8:30 a.m.

**THE EFFECTIVENESS, COST-EFFECTIVENESS, COVERAGE AND ACCEPTABILITY OF MDA STRATEGIES FROM HIGH AND LOW TRANSMISSION AREAS IN SOUTHERN ZAMBIA**

Thom Eisele
*International Health and Development, Tulane University, New Orleans, LA, United States*

8:45 a.m.

**GENETIC SIGNALS TO DETECT AND MEASURE CHANGES IN MALARIA TRANSMISSION IN THE CONTEXT OF MDA AND FDA INTERVENTIONS**

Sarah K. Volkman
*Harvard School of Public Health, Boston, MA, United States*

## Scientific Session 56

## Global Health: Ebola

*Marriott - Marquis B*

Tuesday, November 15, 8 a.m. - 9:45 a.m.

CHAIR

Aminata Fofana
*IRSS, Bobo-Dioulallo, Burkina Faso*

Suzanne Van Hulle
*Catholic Relief Services, Baltimore, MD, United States*

8 a.m.

### 666

**IMPLEMENTATION OF A MULTI-COUNTRY RESPONSE TO THE EBOLA VIRUS DISEASE EPIDEMIC IN WEST AFRICA: LESSONS FROM THE FIELD**

**Reshma Roshania**[1], Nelson Dunbar[2], Michaela Mallow[1], Pranav Shetty[1], Taralyn Lyon[1], Kacey Pham[1], Matthew Abad[1], Erin Shedd[1], Alexander Tran[1], Sarah Cundy[1], Adam Levine[3]
*[1]International Medical Corps, Los Angeles, CA, United States, [2]Ministry of Health, Monrovia, Liberia, [3]Warren Alpert Medical School of Brown University, Providence, RI, United States*

8:15 a.m.

### 667

**THE NATURAL HISTORY OF EBOLA VIRUS DISEASE: A RETROSPECTIVE STUDY OF THE WEST AFRICA EPIDEMIC**

**Reshma Roshania**[1], Kelly Skrable[2], Ryan Burbach[1], Nelson Dunbar[3], Adam Levine[2]
*[1]International Medical Corps, Los Angeles, CA, United States, [2]Warren Alpert Medical School of Brown University, Providence, RI, United States, [3]Ministry of Health, Monrovia, Liberia*

8:30 a.m.

### 668

**BIAS ADJUSTMENT OF CASE FATALITY RATE ESTIMATES IN THE EBOLA OUTBREAK IN WEST AFRICA**

**Tini Garske**, World Health Organization Ebola Response Team
*Imperial College, London, United Kingdom*

8:45 a.m.

### 669

**QUANTIFICATION OF THE IMPACT OF SAFE AND DIGNIFIED BURIALS DURING THE 2013-2016 WEST AFRICAN EBOLA VIRUS DISEASE EPIDEMIC**

**Amanda Tiffany**[1], Benjamin Dalziel[2], Ginger Johnson[3], Juliet Bedford[4], Amanda McClelland[5]
*[1]Epicentre, Geneva, Switzerland, [2]Princeton University, Princeton, NJ, United States, [3]Anthrologica, Washington, DC, United States, [4]Anthrologica, Oxford, United Kingdom, [5]International Federation of the Red Cross and Red Crescent Societies, Geneva, Switzerland*

9 a.m.

### 670

**MORTALITY OUTCOMES AMONG PATIENTS WITH VARIABLE INFECTION STATES WITH EBOLA VIRUS DISEASE AND MALARIA IN SIERRA LEONE: A RETROSPECTIVE COHORT STUDY**

**Adam Aluisio**[1], Matthew Waxman[2], Adam Levine[1]
*[1]Warren Alpert Medical School of Brown University, Providence, RI, United States, [2]Olive View – University of California Los Angeles Medical Center, Los Angeles, CA, United States*

9:15 a.m.

### 671

**IMPLEMENTING SEASONAL MALARIA CHEMOPREVENTION (SMC) IN THE CONTEXT OF EBOLA VIRUS DISEASE (EVD) IN GUINEA**

**Suzanne Van Hulle**[1], Timothee Guilavogui[2]
*[1]Catholic Relief Services, Baltimore, MD, United States, [2]National Malaria Control Program of the Republic of Guinea, Conakry, Guinea*

## Scientific Session 57

## Water, Sanitation, Hygiene and Environmental Health I

*Marriott - Marquis C*

Tuesday, November 15, 8 a.m. - 9:45 a.m.

CHAIR

Suzanne J. Campbell
*Australian National University, Canberra, ACT, Australia*

Ayse Ercumen
*University of California Berkeley, Berkeley, CA, United States*

8 a.m.

### 672

**EFFECTS OF FUNCTIONAL LATRINE DENSITY ON HOUSEHOLD DRINKING WATER CONTAMINATION, SOIL-TRANSMITTED HELMINTH INFECTION AND DIARRHEA: A SPATIAL ANALYSIS**

**Heather K. Amato**[1], Howard Chang[1], Sophie Boisson[2], Thomas F. Clasen[1]
*[1]Emory University, Atlanta, GA, United States, [2]London School of Hygiene & Tropical Medicine, London, United Kingdom*

8:15 a.m.

## 673

### FECAL CONTAMINATION ALONG MULTIPLE ENVIRONMENTAL PATHWAYS IS ASSOCIATED WITH SUBSEQUENT DIARRHEA AMONG CHILDREN IN RURAL BANGLADESH

**Amy J. Pickering**[1], Ayse Ercumen[2], Benjamin F. Arnold[2], Laura H. Kwong[1], Sarker Masud Parvez[3], Craig Kullmann[4], Rokeya Ahmed[5], Claire Chase[4], Leanne Unicomb[3], John M. Colford[2], Stephen P. Luby[1]
*[1]Stanford University, Stanford, CA, United States, [2]University of California Berkeley, Berkeley, CA, United States, [3]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, [4]The World Bank, Washington, DC, United States, [5]The World Bank, Dhaka, Bangladesh*

8:30 a.m.

## 674

### QUANTIFYING FECAL CONTAMINATION LEVELS OF DRINKING AND AMBIENT WATERS, HANDS, FOOD, SOIL AND FLIES IN THE DOMESTIC ENVIRONMENT IN RURAL BANGLADESH

**Ayse Ercumen**[1], Amy J. Pickering[2], Benjamin F. Arnold[1], Laura H. Kwong[2], Sarker Masud Parvez[3], Craig Kullman[4], Claire Chase[4], Rokeya Ahmed[5], Leanne Unicomb[3], Stephen P. Luby[2], John M. Colford, Jr.[1]
*[1]University of California Berkeley, Berkeley, CA, United States, [2]Stanford University, Stanford, CA, United States, [3]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, [4]Water and Sanitation Program, World Bank, Washington, DC, United States, [5]Water and Sanitation Program, World Bank, Dhaka, Bangladesh*

8:45 a.m.

## 675

### UNSAFE CHILD FECES DISPOSAL IS ASSOCIATED WITH ENVIRONMENTAL ENTEROPATHY AND IMPAIRED GROWTH

**Christine Marie George**[1], Lauren Oldja[1], Shwapon Biswas[2], Jamie Perin[1], R. Bradley Sack[1], Shahnawaz Ahmed[2], Shahnawaj Ali[2], Rashidul Haque[2], Tahmina Parvin[2], Ishrat J. Azmi[2], Sazzadul Islam Bhuyian[2], Kaisar A. Talukder[2], Abu G. Faruque[2]
*[1]Johns Hopkins University, Baltimore, MD, United States, [2]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh*

9 a.m.

## 676

### THE MAPUTO SANITATION (MAPSAN) TRIAL: ASSESSING A SANITATION INTERVENTION'S IMPACT ON HELMINTHIASIS IN CHILDREN <5 YEARS OLD IN MAPUTO, MOZAMBIQUE

**Trent Sumner**[1], Jacqueline Knee[1], Rassul Nala[2], Joseph Brown[1]
*[1]Georgia Institute of Technology, Atlanta, GA, United States, [2]Ministério de Saúde, Maputo, Mozambique*

9:15 a.m.

## 677

### WATER, SANITATION AND HYGIENE (WASH) AND ENVIRONMENTAL RISK FACTORS FOR SOIL-TRANSMITTED HELMINTH INTENSITY OF INFECTION IN TIMOR-LESTE, USING REAL TIME PCR

**Suzy J. Campbell**[1], Susana Nery[1], Rebecca Wardell[1], Catherine D'Este[1], Darren Gray[1], James McCarthy[2], Rebecca Traub[3], Ross Andrews[4], Stacey Llewellyn[2], Andrew Vallely[5], Gail Williams[6], Archie Clements[1]
*[1]Australian National University, Canberra, ACT, Australia, [2]QIMR Berghofer Medical Research Institute, Brisbane, QLD, Australia, [3]University of Melbourne, Melbourne, VIC, Australia, [4]Charles Darwin University, Casuarina, NT, Australia, [5]University of New South Wales, Sydney, NSW, Australia, [6]University of Queensland, Brisbane, QLD, Australia*

9:30 a.m.

## 678

### WASH FOR WORMS: END-POINT RESULTS FROM A CLUSTER RANDOMIZED CONTROLLED TRIAL OF THE IMPACT OF A COMMUNITY-BASED INTEGRATED WASH AND DEWORMING PROGRAM ON SOIL-TRANSMITTED HELMINTH INFECTIONS

**Susana Vaz Nery**[1], James S. McCarthy[2], Rebecca Traub[3], Edmund Weking[4], Darren Gray[1], Ross Andrews[5], Andrew Vallely[6], Gail Williams[7], Archie Clements[1]
*[1]Australian National University, Canberra, Australia, [2]QIMR Berghofer Medical Research Institute, Brisbane, Australia, [3]University of Melbourne, Melbourne, Australia, [4]WaterAid, Australia, Dili, Timor-Leste, [5]Charles Darwin University, Darwin, Australia, [6]University of New South Wales, Sydney, Australia, [7]University of Queensland, Brisbane, Australia*

**Symposium 58**

## Molecular Basis of Severe Malarial Anemia (SMA): Bridging the Gap between Findings in Human Studies, Pathogenic Mechanisms in Non-Human Primates, and Mathematical Modeling

*Marriott - Marquis D*
Tuesday, November 15, 8 a.m. - 9:45 a.m.

Severe anemia is the most common complication of malaria that accounts for more than 50% of the cases defined as severe. Although severe malaria has traditionally been associated with *Plasmodium falciparum* infections, clinical and epidemiological data demonstrate that *P. vivax* infections can also result in severe disease. The overall goal of the symposium is to bring together an interdisciplinary group of experts on SMA to bridge perspectives ranging from expertise in the basic and clinical sciences through mathematical modeling of the disease. The largest global burden of SMA occurs in children less than five years of age residing in holoendemic areas of *P. falciparum* transmission. The molecular pathways that mediate susceptibility to SMA in pediatric populations will be discussed by the first speaker. Importantly, non-human primate (NHP) models can be utilized to investigate pathogenic mechanisms that are difficult to discern in human-based studies. Two simian malaria parasites, *P. cynomolgi* and *P. coatneyi*, can be utilized in rhesus macaques to investigate the pathogenic mechanisms underlying the clinical outcomes reported in humans infected with *P. vivax* and *P. falciparum*, respectively. Such studies are currently being conducted by the Malaria Host-Pathogen Interaction Center (MaHPIC), a large, system biology consortium studying the complexity of malaria infections in longitudinal investigations of NHP models. The clinical and immunological outcomes occurring in rhesus that are experimentally infected with *P. cynomolgi* or *P. coatneyi*, will be compared and contrasted by the second presenter to highlight both the unique and common features of the experimental models with human disease. The next presenter will discuss the development of a computational model designed to quantify the number of erythrocytes both produced and destroyed during the course of experimental infections in NHPs. The mathematical model will highlight the critical role that "bystander destruction" plays in the pathogenesis of SMA. The following speaker will present a mechanistic basis for the substantial removal of uninfected RBCs that occur during malarial infections. Specifically, the role of auto-antibodies against phosphatidylserine will be discussed in the context of results

collected through a combination of approaches. The final speaker will discuss the clinical profile of *P. vivax* malarial anemia in a unique epidemiological setting of South America. Taken together, the collection of presentations will illustrate the relevance of utilizing high-throughput technologies and mathematical modeling to advance our understanding of the complex host-pathogen interactions in malaria aimed at the development of novel intervention measures and effective adjunctive therapies.

CHAIR

Alberto Moreno
*Emory University, Atlanta, GA, United States*

Douglas Perkins
*University of New Mexico, Albuquerque, NM, United States*

8 a.m.
**UNCOVERING MOLECULAR PATHWAYS FOR PEDIATRIC MALARIAL ANEMIA PATHOGENESIS**

Douglas Perkins
*University of New Mexico, Albuquerque, NM, United States*

8:20 a.m.
**NHP MODELS TO UNRAVEL MECHANISMS OF MALARIAL ANEMIA AND OTHER ADVERSE CLINICAL OUTCOMES**

Chet Joyner
*Emory University, Atlanta, GA, United States*

8:40 a.m.
**A MATHEMATICAL MODEL TO CHARACTERIZE THE REMOVAL OF RBCS IN A NHP MODEL OF MALARIA**

Luis Fonseca
*Georgia Institute of Technology, Atlanta, GA, United States*

9 a.m.
**ANTI-PHOSPHATIDYLSERINE AUTOANTIBODIES IN MALARIAL ANEMIA**

Ana Rodriguez
*New York University School of Medicine, New York, NY, United States*

9:20 a.m.
**GAPS IN THE KNOWLEDGE ABOUT ANEMIA RELATED TO *P. VIVAX* INFECTION: AN AMAZONIAN PERSPECTIVE**

Marcus Lacerda
*Fiocruz Amazônia/Tropical Medicine Foundation Dr. Heitor Vieira Dourado, Manaus, Amazonas, Brazil*

## Scientific Session 59

## Bacteriology: Trachoma

*Marriott - Room M103/M104/M105*
Tuesday, November 15, 8 a.m. - 9:45 a.m.

CHAIR

Kelly Fletcher
*Emory University, Rollins School of Public Health, Atlanta, GA, United States*

Amy Pinsent
*Monash University, Melbourne, Australia*

8 a.m.
**679**

**THE NEW WORLD HEALTH ORGANIZATION APPROACH TO SURVEILLANCE FOR TRACHOMA, EXPERIENCE IN NEPAL AND ADDED BENEFIT OF ANTIBODY PREVALENCE TO *CHLAMYDIA TRACHOMATIS* PGP3 PROTEIN: NESTS STUDY**

**Andrea I. Zambrano**[1], Beatriz E. Muñoz[1], Shekhar Sharma[2], Sailesh Mishra[2], Laura Dize[3], Katherine Crowley[4], Lisa Rotondo[4], Sheila K. West[1]
*[1]Johns Hopkins University, Baltimore, MD, United States, [2]Nepal Netra Jyoti Sangh, Kathmandu, Nepal, [3]International Chlamydia Laboratory, Baltimore, MD, United States, [4]RTI International, Washington, DC, United States*

8:15 a.m.
**680**

**SERO-SURVEILLANCE IS AN INFORMATIVE INDICATOR OF TRACHOMA TRANSMISSION INTENSITY**

**Amy Pinsent**[1], Michael T. White[2], Manoj Gambhir[1], Diana L. Martin[3]
*[1]Monash University, Melbourne, Australia, [2]Imperial College London, London, United Kingdom, [3]Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:30 a.m.
**681**

**INFLUENCE OF INDIVIDUAL AND ENVIRONMENTAL FACTORS ON THE PREVALENCE OF TRACHOMA IN THE HEALTH DISTRICT OF MOKOLO AFTER 3 YEARS OF MASS TREATMENT WITH ZITHROMAX AND TETRACYCLINE**

**Assumpta Lucienne Bella**[1], Emilienne Epée[2], Armelle Ngomba[3], Godefroy Koki[4], Fabrice Nembot Djouma[5], Georges Nko'o Ayissi[2], Julie Akame[6], Patrick Mbia[6], Henri Moungui[6], Yaobi Zhang[7]
*[1]National Programme for the Prevention of Blindness, Ministry of Public Health, Yaoundé, Cameroon, [2]National NTD Coordination Unit, Ministry of Public Health, Yaoundé, Cameroon, [3]Department of Public Health, Faculty of Medicine and Pharmaceutical Sciences, University of Douala, Douala, Cameroon, [4]Faculty of Medicine and Biomedical Sciences, University of Yaoundé, Yaoundé, Cameroon, [5]Department of Epidemiology, University of Dschang, Dschang, Cameroon, [6]Helen Keller International, Yaoundé, Cameroon, [7]Helen Keller International, Regional Office for Africa, Dakar, Senegal*

8:45 a.m.
**682**

**A SPATIAL ANALYSIS OF ENVIRONMENTAL FACTORS AND TRACHOMATOUS-INFLAMMATION FOLLICULAR AMONG CHILDREN 1-9 YEARS IN SOUTH GONDAR, ETHIOPIA**

**Kelly Fletcher**[1], Aisha Stewart[2], Mulat Zerihun[3], Demelash Gessesse[3], Berhanu Melaku[3], Tekola Endeshaw[3], Eshetu Sata[3], Melsew Chanyalew[4], Birhan Gaudie[4], Zerihun Tadessse[3], Kelly Callahan[2], Scott Nash[2]
*[1]Emory University, Rollins School of Public Health, Atlanta, GA, United States, [2]The Carter Center Atlanta, Atlanta, GA, United States, [3]The Carter Center Ethiopia, Addis Ababa, Ethiopia, [4]Amhara Regional Health Bureau, Bahir Dar, Ethiopia*

9 a.m.
**683**

**USE OF MULTIPLE STRATEGIES TO MOBILIZE TRACHOMATOUS TRICHIASIS CASES FOR SURGERY IN 4 DISTRICTS OF KATSINA STATE, NIGERIA**

Shamsudeen Yahaya[1], **Aliyu Mohammed**[2], Olufunto Adewusi[2], Moses Odenyi[2], Nicholas Olobio[3], Yaobi Zhang[4]
*[1]Ministry of Health, Katsina, Nigeria, [2]Helen Keller International, Abuja, Nigeria, [3]Federal Ministry of Health, Abuja, Nigeria, [4]Helen Keller International, Regional Office for Africa, Dakar, Senegal*

9:15 a.m.

**684**

### *CHLAMYDIA TRACHOMATIS* INFECTION IN AMHARA, ETHIOPIA 2011-2015

**Scott D. Nash**[1], Aisha E. Stewart[1], Mulat Zerihun[2], Demelash Gessesse[2], Berhanu Melaku[2], Tekola Endeshaw[2], Eshetu Sata[2], Zerihun Tadessee[2], Melsew Chanyalew[3], Birhan Gaudie[3], Ambahun Chernet[2], Jeanne Moncada[4], Thomas M. Lietman[5], Paul M. Emerson[6], Jonathan D. King[7], E. Kelly Callahan[1]
*[1]The Carter Center, Atlanta, GA, United States, [2]The Carter Center-Ethiopia, Addis Ababa, Ethiopia, [3]Amhara Regional Health Bureau, BahirDar City, Ethiopia, [4]University of California San Francisco, San Francisco, CA, United States, [5]Francis I Proctor Foundation, San Francisco, CA, United States, [6]International Trachoma Initiative, Atlanta, GA, United States, [7]World Health Organization, Geneva, Switzerland*

9:30 a.m.

**685**

### TRACHOMA IMPACT SURVEYS IN MAINLAND TANZANIA: LESSONS LEARNED FROM IMPLEMENTATION OF THE SAFE STRATEGY

**Jeremiah M. Ngondi**[1], George Kabona[2], Mathias Kamugisha[3], Edward Kirumbi[2], Maria Chikawe[2], Andreas Nshala[2], Boniphace , Idindili[4], Delali Bonuedi[5], Kathryn Crowley[5], Lisa Rotondo[5], Upendo J. Mwingira[2]
*[1]RTI International, Dar Es Salaam, United Republic of Tanzania, [2]Neglected Tropical Disease Control Program/MoHCDCEG, Dar Es Salaam, United Republic of Tanzania, [3]National Institute for Medical Research, Tanga, United Republic of Tanzania, [4]IMA World Health, Dar es Salaam, United Republic of Tanzania, [5]RTI International, Washington, DC, United States*

## Symposium 60

## ASTMH Committee on Global Health (ACGH) Symposium I: Building a Successful Career in Global Health - Global Health Leaders from Around the Globe Share Their Experiences

*Marriott - Atrium A*

Tuesday, November 15, 8 a.m. - 9:45 a.m.

Global health is filled with ambitious students, trainees, researchers and clinicians from across the globe. Given lack of funding and commitment to global health activities and research in some areas, early career individuals often struggle to get their careers off the ground. This can be particularly true in low- and middle-income countries. This session, organized by the ASTMH Committee on Global Health (ACGH), brings together global experts from around the world to discuss some of their pearls of wisdom on how to succeed in global health. Representatives from both academia and governmental/NGO entities will speak on their career experiences. These same experts will lead small group sessions in ACGH Symposium II where trainees and others will have the unique opportunity to interact with them and receive practical advice. ACGH Symposium I features the ACGH business meeting, and everyone is encouraged to stay, participate and get involved with ACGH.

CHAIR

Juliette Morgan
*Centers for Disease Control and Prevention, Tblisi, Georgia*

Jessica Fairley
*Emory University School of Medicine, Atlanta, GA, United States*

Christina Polyak
*U.S. Military HIV Research Program, Bethesda, MD, United States*

8 a.m.

### SKILLS AND STRATEGIES TO SUCCEED IN GLOBAL HEALTH IN LOW- AND MIDDLE-INCOME COUNTRIES

Eusebio Macete
*Centro de Investigação em saúde de Manhica, Manhica, Mozambique*

8:25 a.m.

### SKILLS AND STRATEGIES TO SUCCEED IN GLOBAL HEALTH IN THE UNITED STATES

Parminder Suchdev
*Emory University School of Medicine, Atlanta, GA, United States*

8:50 a.m.

### SKILLS AND STRATEGIES TO SUCCEED IN GLOBAL HEALTH IN LOW- AND MIDDLE-INCOME COUNTRIES

9:15 a.m.

### ACGH ANNUAL BUSINESS MEETING

Juliette Morgan
*Centers for Disease Control and Prevention South Caucasus, Tbilisi, Georgia*

9:45 a.m.

### NETWORKING AND SOCIAL TIME

## Scientific Session 61

## Clinical Tropical Medicine II

*Marriott - Atrium B*

Tuesday, November 15, 8 a.m. - 9:45 a.m.

CHAIR

John Gawoski
*Lahey Hospital and Medical Center, Burlington, MA, United States*

Patricia C. Henwood
*Brigham and Women's Hospital, Boston, MA, United States*

8 a.m.

**686**

### COMPARISON OF EPIDEMIOLOGY, TRANSMISSION DYNAMICS AND CLINICAL PRESENTATIONS OF GENITAL AND SKIN ULCERATIONS CAUSED BY *HAEMOPHILUS DUCREYI*: EXPERIENCE FROM HYPER-ENDEMIC AREAS IN AFRICA AND PACIFIC ISLANDS

**Tun Ye**, Cheng Y. Chen, Allan Pillay, Ronald C. Ballard
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:15 a.m.

**687**

### DIFFERENCES IN THE CLINICAL AND LABORATORY FEATURES OF ONCHOCERCIASIS IN ENDEMIC AND NONENDEMIC POPULATIONS REFLECT IMMUNE-MEDIATED PROCESSES

**Adrienne J. Showler**, Thomas Nutman
*National Institutes of Health, Bethesda, MD, United States*

8:30 a.m.

**688**

### DIAGNOSIS OF LOW-INTENSITY *SCHISTOSOMA* INFECTION IN A NON-ENDEMIC SETTING USING THE ULTRASENSITIVE LATERAL FLOW TEST FOR DETECTION OF SCHISTOSOME CIRCULATING ANODIC ANTIGEN (CAA)

**Lisette van Lieshout**, Rebecca Van Grootveld, Claudia De Dood, Jutte De Vries, Leo G. Visser, Darius Soonawala, Paul Corstjens, Govert J. Van Dam
*Leiden University Medical Center (LUMC), Leiden, Netherlands*

8:45 a.m.

## 689

### FIELD-TESTING OF A COST-EFFECTIVE MOBILE-PHONE BASED MICROSCOPE FOR SCREENING OF *SCHISTOSOMA HAEMATOBIUM*

**Isaac I. Bogoch**[1], Hatice Koydemir[2], Derek Tseng[2], Richard K.D. Ephraim[3], Evans Duah[3], Joseph Tee[4], Jason R. Andrews[5], Aydogan Ozcan[2]
*[1]Toronto General Hospital, Toronto, ON, Canada, [2]University of California Los Angeles, Los Angeles, CA, United States, [3]University of Cape Coast, Cape Coast, Ghana, [4]Volta River Authority, Accra, Ghana, [5]Stanford University, Palo Alto, CA, United States*

9 a.m.

## 690

### THE EMERGENCE AND EPIDEMIOLOGY OF ENDEMIC (FLEA-BORNE) TYPHUS IN TEXAS, 2003-2013

**Kristy O. Murray**[1], Nicole Evert[2], Bonny Mayes[2], Eric Fonken[2], Timothy Erickson[1], Melissa N. Garcia[1], Tom Sidwa[2]
*[1]Baylor College of Medicine and Texas Children's Hospital, Houston, TX, United States, [2]Texas Department of State Health Services, Austin, TX, United States*

9:15 a.m.

## 691

### ZIKA VIRUS DISEASE AMONG TRAVELERS RETURNING FROM THE AMERICAS BETWEEN JANUARY 2013 AND FEBRUARY 2016: A GEOSENTINEL ANALYSIS

**Davidson H. Hamer**[1], Kira Barbre[2], Susan Anderson[3], Elizabeth D. Barnett[4], Andrea Boggild[5], Emmanuel Bottieau[6], Gary Brunette[7], Eric Caumes[8], Marty Cetron[7], Lin H. Chen[9], Gilles Eperon[10], Philippe Gautret[11], Abraham Goorhuis[12], Martin P. Grobusch[12], Stefan Hagmann[13], Noreen Hynes[14], Phyllis Kozarsky[15], Sanne Jespersen[16], Michael Libman[17], Rogelio Lopez-Velez[18], Denis Malvy[19], Frank Mockenhaupt[20], Israel Molina[21], Cecilia Perret[22], Camilla Rothe[23], Patricia Schlagenhauff[24], Eli Schwartz[25], Perry Van Genderen[26], Annelies Wilder-Smith[27], Doug Esposito[7]
*[1]Center for Global Health and Development, Boston University, Boston, MA, United States, [2]Task Force for Global Health, Decatur, GA, United States, [3]Travel Medicine and Emergency/Urgent Care - Palo Alto Medical Foundation, Palo Alto, CA, United States, [4]Maxwell Finland Laboratory for Infectious Diseases - Boston Medical Center, Boston, MA, United States, [5]Centre for Travel and Tropical Medicine - Toronto General Hospital, Toronto, ON, Canada, [6]Institute of Tropical Medicine, Antwerp, Belgium, [7]Centers for Disease Control and Prevention, Atlanta, GA, United States, [8]Service des Maladies Infectieuses et Tropicales - Hôpital Pitié-Salpêtrière, Paris, France, [9]Travel Medicine Center - Mt. Auburn Hospital, Cambridge, MD, United States, [10]Travel and Tropical Medicine - Division of Tropical and Humanitarian Medicine - Geneva University Hospitals, Geneva, Switzerland, [11]Infectious and Tropical Diseases Unit - Hôpital Nord, Marseille, France, [12]Center for Tropical and Travel Medicine - University of Amsterdam, Amsterdam, Netherlands, [13]Division of Pediatric Infectious Diseases - Bronx-Lebanon Hospital Center, Bronx, NY, United States, [14]Johns Hopkins University School of Medicine - Geographic Medicine Center - Division of Infectious Diseases, Baltimore, MD, United States, [15]TravelWell, Atlanta, GA, United States, [16]Department of Infectious Disease - Aarhus University Hostpital, Arrhus, Denmark, [17]McGill University Centre for Tropical Diseases - Montreal General Hospital, Montreal, QC, Canada, [18]Unidad de Medicina Tropical - Servicio de Enfermedades Infecciosas - Hospital Ramon y Cajal, Madrid, Spain, [19]Santé-Voyages et Médecine tropicale - Niveau -1, Hôpital Saint-André, Bordeaux, France, [20]Institute of Tropical Medicine and International Health - Charité - Universitätsmedizin Berlin, Berlin, Germany, [21]Anexos 6ª Planta. Hospital General Vall d'Hebron, Barcel*

9:30 a.m.

## 692

### OUTCOMES OF PREGNANT PATIENTS PRESENTING TO EBOLA TREATMENT UNITS IN SIERRA LEONE AND LIBERIA: A RETROSPECTIVE COHORT STUDY

**Patricia Henwood**[1], Lisa Babell[1], Reshma Roshania[2], Michaela Mallow[2], Adam Levine[3]
*[1]Brigham and Women's Hospital/Harvard Medical School, Boston, MA, United States, [2]International Medical Corps, Los Angeles, CA, United States, [3]Warren Alpert Medical School of Brown University, Providence, RI, United States*

## Symposium 62

## American Committee of Medical Entomology (ACME) Symposium I: Annual Business Meeting, Awards and Hoogstraal Medal Presentations and Networking Reception

*Marriott - Room A601*
Tuesday, November 15, 8 a.m. - 9:45 a.m.

This symposium provides a forum for exchange of information among people interested in research on arthropod vectors of disease. This session features a short ACME business meeting followed by presentation of and by the Hoogstraal medal recipient. The objective of both ACME symposia is to highlight the next generation of medical entomologists. Related to this theme, the session will include the 2016 SC Johnson (SCJ) Innovation Award. The session will also feature a plenary talk on the state of the art in urban mosquito control to contain Zika virus and conclude with an informal reception to foster conversations between trainees and professionals in academia, industry, government and military.

CHAIR

Gonzalo M. Vazquez Prokopec
*Emory University, Atlanta, GA, United States*

Lyric Bartholomay
*University of Wisconsin Madison, Madison, WI, United States*

8 a.m.
**ACME ANNUAL BUSINESS MEETING AND AWARDS PRESENTATION**
Lyric C. Bartholomay
*University of Wisconsin Madison, Madison, WI, United States*

8:15 a.m.
**STATE OF THE ART IN URBAN *AE. AEGYPTI* CONTROL FOR ZIKA EMERGENCY RESPONSE**
Scott Ritchie
*James Cook University, Cairns, Australia*

8:45 a.m.
**NETWORKING AND SOCIAL TIME**

## Symposium 63

## Schistosomiasis Control with a View Toward Elimination

*Marriott - Room A602*
Tuesday, November 15, 8 a.m. - 9:45 a.m.

This symposium reports the results of several broad-based operational research projects initiated by SCORE, the Schistosomiasis Consortium for Operational Research and Evaluation. Speakers will relate their new findings on: i) the final outcomes of five-year long randomized trials of school- and community-based mass drug administration for *S. mansoni* in Kenya; ii) the performance of point-of-care antigen detection diagnostics for rapid community screening in follow up of mass treatment campaigns in Burundi; iii) the influential performance factors in a *S. haematobium* elimination trial in Zanzibar; and iv) the detection and evaluation of 'hot spot' villages that have persistently high prevalence of *Schistosoma* infection despite

their reaching target coverage levels during MDA campaigns, along with an assessment of the likely impact of hot spots on chances for regional elimination.

CHAIR

Charles H. King
*Case Western Reserve University, Cleveland, OH, United States*

Daniel G. Colley
*University of Georgia, Athens, GA, United States*

8 a.m.
**OUTCOMES OF FIVE-YEAR LONG RANDOMIZED TRIALS OF SCHOOL- AND COMMUNITY-BASED MASS DRUG ADMINISTRATION FOR *S. MANSONI* IN KENYA**

Susan P. Montgomery
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:25 a.m.
**THE PERFORMANCE OF POINT-OF-CARE ANTIGEN DETECTION DIAGNOSTICS FOR RAPID COMMUNITY SCREENING IN FOLLOW-UP OF MASS TREATMENT CAMPAIGNS IN BURUNDI**

Michelle N. Clements
*Schistosomiasis Control Initiative, Imperial College, London, United Kingdom*

8:50 a.m.
**UROGENITAL SCHISTOSOMIASIS ELIMINATION IN ZANZIBAR: PROGRESS AND CHALLENGES OF AN INTEGRATED MULTIDISCIPLINARY PROGRAM**

Stefanie Knopp
*Swiss Tropical and Public Health Institute, Basel, Switzerland*

9:15 a.m.
**DETECTION AND EVALUATION OF 'HOT SPOT' VILLAGES DURING MDA AND WHAT THEY MAY MEAN FOR ELIMINATION STRATEGIES**

Charles H. King
*Case Western Reserve University, Cleveland, OH, United States*

## Symposium 64

## Where Will the Next Malaria Medicines Come From?

*Marriott - Room A703/A704*
Tuesday, November 15, 8 a.m. - 9:45 a.m.

Despite substantial scientific progress over the past decade, new, affordable and safe malaria medicines are urgently required to overcome increasing resistance against artemisinin based combination treatments, treat vulnerable populations, interrupt the parasite life cycle by blocking transmission to the vectors, prevent infection and target malaria species that transiently remain dormant in the liver. Based on an estimate of the probability of success it has been calculated that, on average, 18 candidate molecules will be needed for every new blood-stage antimalarial launched. The existing preclinical, Phase I and Phase II portfolio contains less than 15 new molecules targeting blood-stage malaria. In addition, there are no non 8-aminoquinoline anti-relapse scaffolds in the pipeline and molecules with potential use as transmission blocking or chemopreventative medicines still need to be confirmed in human clinical studies. These and other factors including drug resistance and safety profiles sufficiently robust for use in vulnerable patient populations such as children and pregnant women underline the need for continual replenishment of the pipeline. This symposium will critically evaluate the potential of the existing drug discovery paradigms, successfully used to build the current discovery/translational portfolio, to continue to fill the pipeline of new medicines. Lessons can be learned from previous screening campaigns and the knowledge should be used to increase the likelihood of discovering new chemical series with potent antimalarial activity. Furthermore, the identification of new high quality, drug-like, chemical series is dependent on the quality of the compounds tested. Malaria drug discovery projects cannot afford the luxury of testing compounds with inherent developmental challenges based on either a lack of structural novelty or chemical groups associated with poor pharmacokinetics or safety. With this in mind, researchers have developed exacting compound selection criteria that they can share with the wider community for improving the diversity and property profile of screening libraries. Finally, following over five years successful phenotypic screening, a renaissance in target based screening is creating new and exciting opportunities in antimalarial drugs discovery. This is especially important given that an enrichment of phenotypic screening hits that tend to target relatively few mechanisms of action has been observed. The symposium aims to have a broad appeal to both the academic and industrial communities.

CHAIR

James Duffy
*Medicines for Malaria Venture, Geneva, Switzerland*

Elizabeth Winzeler
*University of California San Diego, San Diego, CA, United States*

8 a.m.
**THE PIPELINE FOR NEW MALARIA MEDICINES: THE GOOD AND THE BAD NEWS**

James Duffy
*Medicines for Malaria Venture, Geneva, Switzerland*

8:20 a.m.
**WHAT CAN BE LEARNED FROM THE PHENOTYPIC SCREENING OF OVER 6 MILLION COMPOUNDS?**

Jim Brown
*GlaxoSmithKline, Collegeville, PA, United States*

8:40 a.m.
**SCREENING NEW COMPOUNDS: WHAT AND WHY?**

Paul Wyatt
*University of Dundee, Dundee, United Kingdom*

9 a.m.
**TARGET-BASED SCREENING FOR MALARIA**

Aled Edwards
*Structural Genomics Consortium (SGC), Toronto, ON, Canada*

**Symposium 65**

## If You Neglect It, It Will Grow: Addressing Fungal Infections in Advanced HIV Care

*Marriott - Room A706/A707*
Tuesday, November 15, 8 a.m. - 9:45 a.m.

Despite marked increases in ART availability and HIV testing, a significant proportion of individuals continue to present to care with advanced HIV. These patients often require complicated clinical management and are at a much higher risk for life-threatening opportunistic infections (OIs). Of these OIs, invasive fungal infections are responsible for up to 50% of all AIDS-related deaths. Although recent technological advances have made the detection and treatment of these AIDS-related mycoses easier, these diseases largely remain underemphasized in HIV programs worldwide, resulting in inadequate health systems planning and missed opportunities to save lives. This session seeks to inform HIV providers, researchers and policymakers on the current state of AIDS-related mycoses, exploring new tools available for preventing fungal deaths and highlighting areas where further research is needed.

CHAIR

Tom Chiller
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

David Boulware
*University of Minnesota, Minneapolis, MN, United States*

8 a.m.
**CRYPTO SCREENING AND TREATMENT: TAKING THE HEADACHE OUT OF HIV CARE**
Greg Greene
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:20 a.m.
**CURRENT DIAGNOSTIC PRACTICES FOR HISTOPLASMOSIS IN THE AMERICAS AND CARIBBEAN**
Diego H. Caceres
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:40 a.m.
**TALAROMYCOSIS (FORMERLY PENICILLIOSIS) - A NEGLECTED MYCOSIS IN TROPICAL ASIA**
Thuy Le
*Oxford University, Ho Chi Minh City, Vietnam*

9 a.m.
**HIV-ASSOCIATED PCP AND EMMONSIOSIS: RARE BUT STILL THERE**
Nelesh Govender
*National Institute for Communicable Diseases, Johannesburg, South Africa*

## Exhibit Hall Open

*Marriott - International Hall*
Tuesday, November 15, 9:30 a.m. - 10:30 a.m.

## Coffee Break

*Marriott - International Hall*
Tuesday, November 15, 9:45 a.m. - 10:15 a.m.

***Sponsored by Sanofi Pasteur*** CONTRIBUTOR

## Poster Session B Set-Up

*Hilton - Grand Ballroom and Grand Salon*
Tuesday, November 15, 9:45 a.m. - 10:15 a.m.

## TropStop Office Hours

*Marriott - Atrium Loft*
Tuesday, November 15, 10 a.m. - 11 a.m.

Meet up-and-coming professionals in the fields of tropical medicine, global health, science and industry who will share their personal career paths and answer questions you may have.

PRESENTERS

Philip J. Rosenthal, *Editor-in-Chief, AJTMH*
*University of California San Francisco, San Francisco, CA, United States*

Cathi Siegel, *Managing Editor, AJTMH*
*AJTMH, Cleveland, OH, United States*

## Poster Session B Viewing

*Hilton - Grand Ballroom and Grand Salon*
Tuesday, November 15, 10:15 a.m. - Noon

**Symposium 66**

## Strategies to Control Hepatitis E Virus, an Emerging Global Pathogen

*Marriott - Imperial A*
Tuesday, November 15, 10:15 a.m. - Noon

Globally, Hepatitis E Virus (HEV) is a leading cause of acute, hepatitis in adults. However, since its discovery in the 1980s, this virus has largely been neglected by the scientific community despite estimates of over 20 million infections and at least 70,000 deaths globally each year. As a result, many basic questions regarding the pathogenesis, immunology and epidemiology of HEV infection remain unanswered. Recently, increased recognition of autochthonous Hepatitis E (HE) in the United States and Europe, and the development of a highly efficacious vaccine have focused greater attention on this otherwise neglected pathogen. Despite a paucity of cases in developed countries, antibodies to HEV were recently found in at least 21% of the general U.S. population. In addition to cases associated with travel to highly-endemic low-income countries, reports of autochthonous HE in industrialized countries have steadily increased during the last decade, including persistent HEV infections in transplant recipients and other immune-compromised individuals. In developing countries, HEV is usually transmitted fecal-orally, often through a contaminated water supply. Many large epidemics have been attributed to HEV throughout Asia and Africa, starting with a 29,000-case-epidemic in New Delhi, India in 1955. Since then, over 30 epidemics of HEV have been reported from India alone with similar outbreaks throughout Asia. The hallmark of HE in these areas is a greater

disease severity in pregnant women. While the case fatality rate in men and non-pregnant women is 1-2%, that among pregnant women is about 30%. Children show low rates of infection and disease, despite likely environmental exposure. A variety of methods have been proposed to prevent HEV transmission, including water treatment, improved hygiene and sanitation, increased food safety, and vaccination. In 2010, a recombinant, subunit HEV vaccine from China reported 100.0% (95% CI, 72.1 to 100.0) efficacy against disease. Although the vaccine has not been tested specifically in pregnant women, pregnant women who were inadvertently vaccinated in the above trial showed no adverse effects. A large trail of the HEV vaccine is underway in women of childbearing age in Bangladesh, to determine the efficacy of the vaccine in preventing hepatitis E during pregnancy. However, the vaccine is not available for use outside of China and has not yet been prequalified by the WHO. Therefore, the people who need the vaccine the most cannot access it.

CHAIR

Alain B. Labrique
*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

Brittany Kmush
*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

10:15 a.m.
**FOOD-BORNE AND BLOOD TRANSFUSION TRANSMISSION OF HEV AND CHRONIC AND EXTRA-HEPATIC HEV**

Kenrad Nelson
*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

10:35 a.m.
**HEPATITIS E: EPIDEMIOLOGY AND CLINICAL FEATURES OF WATER BORNE-OUTBREAKS IN ASIA AND AFRICA**

Rakesh Aggarwal
*Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India*

10:55 a.m.
**HEPATITIS E VACCINE STUDIES IN BANGLADESH**

K. Zaman
*International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh*

11:15 a.m.
**HEPATITIS E VACCINES: CURRENT STATUS AND POSSIBLE PATH FORWARD**

Laura Digilio
*International Vaccine Institute, Seoul, Republic of Korea*

## Symposium 67

## Perspectives on the Global Burden of Diarrhea and Refined Strategies for Quantification

*Marriott - Imperial B*
Tuesday, November 15, 10:15 a.m. - Noon

Diarrhea remains the second leading infectious cause of death among children under-five despite dramatic reductions over the last decade. Improved understanding of the pathogen-specific burden of severe episodes is warranted to inform strategic allocation of limited resources to research, development and delivery of the interventions with the highest probability of impact on residual diarrheal mortality. In recent years, novel quantitative molecular diagnostics have transformed our understanding of the etiologic fraction of diarrhea attributable to various enteropathogens among young children in high burden settings. In addition, questions remain on the regional and country-level impact of rotavirus vaccination introduction on the pathogen-specific burden of diarrheal disease. It is thus important to reflect upon the implications of emerging data on the shifting etiology of childhood diarrhea globally. As mortality declines, it is also essential that research and policy highlight enteric and diarrheal diseases as a significant cause of morbidity among both children and adults. Repeated bouts of diarrhea and the underlying condition of environmental enteric dysfunction lead to poor growth, cognitive deficits and reduced immune response to childhood vaccines. These effects are more pronounced when chronic infections occur early in life, especially during the critical period between birth and 24 months of age. The pathways by which enteric infections lead to ill health and development are complex and incompletely understood. Efforts should therefore be made to quantify these long-term sequelae in order to better inform estimation of the disability associated with diarrhea among young children. This symposium will present holistic perspectives on the burden of diarrhea in terms of shifting etiology by various quantification techniques and the associated long-term sequelae.

CHAIR

Laura Lamberti
*Bill & Melinda Gates Foundation, Seattle, WA, United States*

Ibrahim Khalil
*Institute for Health Metrics and Evaluation, Seattle, WA, United States*

10:15 a.m.
**METHODOLOGY AND ESTIMATION FOR DIARRHEAL DISEASES IN THE GLOBAL BURDEN OF DISEASE STUDY**

Chris Troeger
*Institute for Health Metrics and Evaluation, Seattle, WA, United States*

10:40 a.m.
**LONG-TERM HEALTH CONSEQUENCES OF CHILDHOOD DIARRHEA: THE DAMAGING EFFECT ON MALNUTRITION, PHYSICAL GROWTH AND COGNITIVE DEVELOPMENT**

Ibrahim Khalil
*Institute for Health Metrics and Evaluation, Seattle, WA, United States*

11 a.m.
**UPDATING GLOBAL DIARRHEA BURDEN ESTIMATES USING MOLECULAR DIAGNOSTICS: WHAT WE HAVE LEARNED THUS FAR**

James Platts-Mills
*University of Virginia, Charlottesville, VA, United States*

11:25 a.m.
**STRATEGIES AND PERSPECTIVES ON QUANTIFYING THE GLOBAL BURDEN OF DIARRHEA**

Laura Lamberti
*Bill & Melinda Gates Foundation, Seattle, WA, United States*

## Symposium 68

## Moving Toward a PfSPZ Malaria Vaccine for Protecting Travelers and Use in Elimination Campaigns

*Marriott - Marquis A*
Tuesday, November 15, 10:15 a.m. - Noon

The International *Plasmodium falciparum* (Pf) sporozoite (SPZ) vaccine consortium (I-PfSPZ-C), which includes more than 150 members from 35 organizations in 18 countries is moving forward to conduct studies that will lead to licensure of PfSPZ-based vaccines for prevention of Pf malaria in travelers, including military, and for use in mass vaccine administration (MVA) campaigns to halt transmission of Pf in endemic areas. Stage 2 clinical trials have begun or will soon begin in the United States, Germany, Tanzania, Kenya, Mali, Burkina Faso, Ghana, and Equatorial Guinea. The goal is to finalize immunization regimens that can be used in phase 3 clinical trials to support licensure for both indications. Based on data acquired in stage 1 clinical trials in the U.S., Germany, Mali, Tanzania, and Equatorial Guinea, it is likely that immunization regimens will be different for the two indications. However, all the current trials are focused on establishing tolerability safety, immunogenicity and durable protective efficacy against heterologous/heterogeneous Pf parasites in all age groups, using the least number of PfSPZ administered in the shortest period of time. PfSPZ Vaccine (radiation attenuated PfSPZ) and PfSPZ-CVac (infectious PfSPZ with an antimalarial) are being advanced in parallel, the latter requires less than 10% of the PfSPZ to induce comparable protection. In this symposium data will be presented on the safety, tolerability, and immunogenicity from trials in 6-12 month old infants, young and older children, adolescents, and adults in Tanzania, Mali, U.S. and Germany. Data will also be presented on the protective efficacy against controlled human malaria infection (CHMI) from studies of PfSPZ Vaccine and PfSPZ-CVac in adults in Tanzania, Mali, Germany and the United States. These studies include data on sustained protection against homologous CHMI at 14 months after the last dose of vaccine and against heterologous CHMI at 9 months after the last dose of vaccine. They also include 10- and 28-day immunization regimens, and use of novel anti-malarials in PfSPZ-CVac that kill all the parasites by the late liver stage, thereby preventing any risk of blood stage infection. The plans and timelines for transition to phase 3 clinical trials and product launch will be discussed.

CHAIR

Judith E. Epstein
*Naval Medical Research Center, Silver Spring, MD, United States*

Peter G. Kremsner
*Institute of Tropical Medicine, Universitätsklinikum Tübingen, Tübingen, Germany*

10:15 a.m.
**PROTECTIVE EFFICACY OF TEN TO TWENTY EIGHT DAY IMMUNIZATION REGIMENS FOR PFSPZ VACCINE AND PFSPZ-CVAC**

Benjamin Mordmueller
*Institute of Tropical Medicine, Universitätsklinikum Tübingen, Tübingen, Germany*

10:40 a.m.
**NINE MONTH PROTECTION AGAINST HETEROLOGOUS CHMI BY A 3-DOSE REGIMEN OF PFSPZ VACCINE**

Kirsten E. Lyke
*University of Maryland at Baltimore, Baltimore, MD, United States*

11:05 a.m.
**ASSESSMENT OF PFSPZ VACCINE AGAINST CHMI IN ADULT MALIANS**

Mahamadou Sissoko
*University of Bamako, Bamako, Mali*

11:30 a.m.
**SAFETY AND IMMUNOGENICITY OF PFSPZ VACCINE IN TANZANIAN INFANTS, YOUNG CHILDREN, ADOLESCENTS AND ADULTS, AND EFFICACY AGAINST CHMI IN ADULTS**

Said Jongo
*Ifakara Health Institute, Dar es salaam, United Republic of Tanzania*

## Symposium 69

## Ivermectin to Reduce Malaria Parasite Transmission: Clinical Trials, Models and Regulatory Pathways to Accelerate Implementation

*Marriott - Marquis B*
Tuesday, November 15, 10:15 a.m. - Noon

Novel vector control tools are urgently needed to aid malaria elimination efforts worldwide. Although insecticide treated bednets and indoor residual spraying have dramatically reduced malaria transmission burden, it has become clear that these measures alone cannot thwart all transmission due to vectors that feed outside the home or outside the period of time that persons are protected by bed nets. Ivermectin, an anthelminthic drug widely taken in malaria endemic regions, has been shown to reduce the survivorship of *Anopheles* vectors taking bloodmeals containing the drug. Ivermectin mass drug administrations (MDAs) in West Africa reduced wild *Anopheles gambiae* survivorship and the proportion of vectors with *Plasmodium falciparum*. Ivermectin MDA is a promising new tool as it targets vectors at the point of blood feeding, regardless of *Anopheles* temporal or spatial blood feeding behaviors. Thus, ivermectin MDA has the potential to work in a diverse range of ecological settings and should be evaluated in multiple malaria transmission settings throughout the world. Here we present results from three clinical trials being conducted in Burkina Faso, Kenya and Thailand to assess the potential effectiveness of ivermectin for malaria parasite transmission suppression. Each trial assesses different drug regimens and critical *Anopheles* vectors found worldwide. The field MDA trial in Burkina Faso is the first to assess the impact of repeated ivermectin (200 µg/kg) MDAs on both mosquito and human *Plasmodium* transmission outcomes. The clinical trial in Kenya is the first to assess the safety, tolerability, pharmacokinetic interaction and mosquito-lethal efficacy of three daily doses of ivermectin (300 or 600 µg/kg/day) in conjunction with dihydroartemisinin-piperaquine against *An. gambiae*. The clinical trial in Thailand is the first to assess the safety, tolerability, pharmacokinetic interaction and mosquito-lethal efficacy of single-dose ivermectin (400 µg/kg) in conjunction with dihydroartemisinin-piperaquine and primaquine

against *An.dirus* and *An. minimus*. As the use of antimalarial MDA has been increasing, it is important to evaluate the safety of ivermectin with these antimalarial drugs as their simultaneous deployment could have dramatic impact on malaria incidence. Some of these trial results have been incorporated into robust malaria transmission models to better understand the most appropriate use of ivermectin MDA in a malaria elimination context. Finally, the symposium will discuss some of the regulatory and policy issues surrounding the use of ivermectin MDA for malaria parasite transmission control.

CHAIR

Kevin C. Kobylinski
*Armed Forces Institute of Medical Sciences, Bangkok, Thailand*

Carlos Chaccour
*IS Global, Barcelona, Spain*

10:15 a.m.
**RESULTS FROM RIMDAMAL, A PILOT RANDOMIZED CLUSTER-DESIGN TRIAL IN BURKINA FASO, DESIGNED TO ASSESS THE SAFETY AND EFFICACY OF REPEAT IVERMECTIN MASS DRUG ADMINISTRATIONS TO CONTROL MALARIA AND NTDS**

Brian D. Foy
*Colorado State University, Fort Collins, CO, United States*

10:35 a.m.
**EFFICACY AND SAFETY OF HIGH-DOSE IVERMECTIN FOR REDUCING MALARIA TRANSMISSION: A DOSE FINDING STUDY (IVERMAL STUDY, KENYA)**

Menno Smit
*Liverpool School of Tropical Medicine, based at KEMRI/Centers for Disease Control and Prevention, Kisumu, Kenya*

10:55 a.m.
**SAFETY AND MOSQUITO-LETHAL EFFICACY OF IVERMECTIN, DIHYDROARTEMISININ-PIPERAQUINE AND PRIMAQUINE: IVERMECTIN FOR MALARIA IN SOUTHEAST ASIA (IMSEA STUDY, THAILAND)**

Podjanee Jittamala
*Mahidol University, Bangkok, Thailand*

Kevin C. Kobyliniski
*Armed Forces Research, Institute of Medical Sciences, Bangkok, Thailand*

11:35 a.m.
**MODELLING THE IMPACT OF IVERMECTIN ON MALARIA TRANSMISSION**

Hannah Slater
*Imperial College London, London, United Kingdom*

## Symposium 70

## Building Clinical Research Capacity in Resource-Limited Countries: Lessons from Sub-Saharan Africa and South Asia

*Marriott - Marquis C*
Tuesday, November 15, 10:15 a.m. - Noon

This symposium will begin with an introduction explaining why clinical research and the training of host-country investigators are essential health priorities, followed by presentations related to accessing and leveraging data from NIAID-supported clinical trials in the areas of HIV, parasitic diseases and TB; the implementation and value of adaptive clinical trial designs and examples of clinical trials in sub-Saharan Africa which require long-term treatment and follow-up for HIV and TB.

CHAIR

Donald J. Krogstad
*Tulane University, New Orleans, LA, United States*

Tina Mendelson
*Deloitte Consulting LLC, Arlington, VA, United States*

10:15 a.m.
**ACCESSING DATA FROM NIAID-SUPPORTED CLINICAL TRIALS USING TRANSSMART**

Sheikh Usman
*Deloitte Consulting LLP, Arlington, VA, United States*

10:35 a.m.
**ADAPTIVE CLINICAL TRIAL DESIGNS**

Joseph Sgherza
*Clinical Research Management, Inc., Hinckley, OH, United States*

10:55 a.m.
**USE OF ADAPTIVE CLINICAL TRIAL DESIGNS TO DEVELOP CURATIVE TREATMENT STRATEGIES FOR HIV IN MALI**

Robert L. Murphy
*Northwestern University, Chicago, IL, United States*

11:15 a.m.
**IMPROVING THE DIAGNOSIS OF TB: LED MICROSCOPY AND PCR IN RWANDA AND LIQUID-BASED CULTURE IN MALI**

Yanis Ben Amor
*Earth Institute, Columbia University, New York, NY, United States*

## Symposium 71

## Key Elements for Improving Management of Pneumonia in Children in Resource-Poor Settings

*Marriott - Marquis D*
Tuesday, November 15, 10:15 a.m. - Noon

Pneumonia still remains the number one killer of children in the world and therefore addressing pneumonia is a key component in achieving the target for Sustainable Development Goal 3.2 is 'by 2030, end preventable deaths of newborns and children under 5 years of age'. The objective of this symposium is to share learning and enhance global understanding of how to improve pneumonia case management in resource-poor settings from a number of innovative studies recently conducted. Malaria Consortium has recently conducted a large-scale evaluation of new pneumonia diagnostic tools in sub-Saharan Africa and Southeast Asia that

could improve the responsiveness of the health system in detecting pneumonia at community level. UNICEF Supply Division is running a project called ARIDA – focused on supporting the development and introduction at scale of improved diagnostic devices for pneumonia. The Bill & Melinda Gates Foundation is supporting a number of initiatives to improve the management of pneumonia in resource-poor settings and one is with the Federal Ministry of Health in Ethiopia. The symposium will outline the experiences from these organizations and provide learnings gained through their activities. Firstly, a short overview will be given on the broader environmental and structural implications driving the need for improvements in the management of pneumonia in these settings. The significant research findings from the Malaria Consortium pneumonia diagnostics project will be presented. UNICEF will highlight their work done on modelling the financial impact of better diagnostic tools. The public health and programmatic implications for the improved management of pneumonia in a specific setting, Ethiopia, will then be discussed. The session will end with a moderated discussion which will facilitate a structured interaction between the presenters and the audience.

CHAIR

Kevin N. Baker
*Malaria Consortium, London, United Kingdom*

10:15 a.m.
**PROGRESS TOWARDS UNIVERSAL ACCESS TO PNEUMONIA TREATMENT**

Ebenezer Sheshi Baba
*Malaria Consortium, Kampala, Uganda*

10:25 a.m.
**FINDINGS FROM THE EVALUATION OF ACCURACY AND ACCEPTABILITY OF PNEUMONIA DIAGNOSTIC TOOLS FOR COMMUNITY HEALTH WORKERS IN LOW- AND MIDDLE-INCOME COUNTRIES**

Kevin Baker
*Malaria Consortium, London, United Kingdom*

10:45 a.m.
**ARIDA PROJECT – RESULTS OF THE FINANCIAL MODELLING DETAILING THE BENEFITS OF THE INTRODUCTION OF IMPROVED PNEUMONIA DIAGNOSTICS TOOLS**

Kristoffer Gandrup-Marino
*UNICEF, Copenhagen, Denmark*

11:05 a.m.
**HEALTH SYSTEMS STRENGTHENING FOR BETTER PNEUMONIA CASE MANAGEMENT – AN ETHIOPIA CASE STUDY**

Hillena Kebede
*Federal Ministry of Health, Ethiopia, Addis Ababa, Ethiopia*

11:30 a.m.
**MODERATED DISCUSSION**

Madeleine Marasciulo
*Malaria Consortium, Raleigh, NC, United States*

**Scientific Session 72**

## American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Malaria and Protozoal Diseases - Biology and Pathogenesis

*Marriott - Room M103/M104/M105*
Tuesday, November 15, 10:15 a.m. - Noon
***Supported with funding from the Burroughs Wellcome Fund***

CHAIR

Charlie Jennison
*Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia*

Gabriel W. Rangel
*Harvard University, Boston, MA, United States*

10:15 a.m.
**1931**

**INVITED SPEAKER FROM THE WOODS HOLE MOLECULAR PARASITOLOGY MEETING HELD IN SEPTEMBER 2016. SEE THE PROGRAM UPDATE FOR SPEAKER INFORMATION.**

10:30 a.m.
**1932**

**INVITED SPEAKER FROM THE WOODS HOLE MOLECULAR PARASITOLOGY MEETING HELD IN SEPTEMBER 2016. SEE THE PROGRAM UPDATE FOR SPEAKER INFORMATION.**

10:45 a.m.
**693**

**DECIPHERING THE BIOLOGY OF THE DORMANT MALARIA PARASITE, *PLASMODIUM VIVAX*, VIA AN *IN VITRO* PLATFORM**

**Nil Gural**
*Massachusetts Institute of Technology, Cambridge, MA, United States*

11 a.m.
**694**

**CELL TRAVERSAL BY MALARIA PARASITES: *PLASMODIUM* CELTOS BINDS AND DISRUPTS PLASMA MEMBRANES FROM THE CYTOPLASMIC FACE TO ENABLE THE EXIT OF PARASITES FROM CELLS DURING HOST AND VECTOR CELL TRAVERSAL**

**John R. Jimah**, Nichole D. Salinas, Monica Sala-Rabanal, Nathaniel G. Jones, L. David Sibley, Colin Nichols, Paul Schlesinger, Niraj H. Tolia
*Washington University School of Medicine, St. Louis, MO, United States*

**(ACMCIP Abstract)**

11:15 a.m.
**695**

**MECHANISM OF FETAL GROWTH RESTRICTION IN PLACENTA MALARIA**

**Kris Genelyn Dimasuay**[1], Fredrick Rosario[2], Jocelyn Glazier[3], James Beeson[4], Stephen Rogerson[1], Thomas Jansson[2], Philippe Boeuf[4]
*[1]University of Melbourne at the Peter Doherty Institute for Infection and Immunity, Melbourne, Australia, [2]University of Colorado Anschutz Medical Campus, Denver, CO, United States, [3]University of Manchester, St. Mary's Hospital, Manchester, United Kingdom, [4]Burnet Institute, Melbourne, Australia*

**(ACMCIP Abstract)**

11:30 a.m.

**696**

### THROMBOSPONDIN RELATED SPOROZOITE PROTEIN IS IMPORTANT FOR THE ESTABLISHMENT OF *P. FALCIPARUM* LIVER STAGE INFECTION

**Charlie Jennison**[1], Matthew T. O'Neill[1], Jennifer S. Armistead[1], Annie S. Yang[1], Sash Lopaticki[1], Norman M. Kneteman[2], Justin A. Boddey[1]
*[1]Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia, [2]University of Alberta, Edmonton, AB, Canada*

**(ACMCIP Abstract)**

11:45 a.m.

**697**

### A SYSTEMATIC APPROACH TO THE OPTIMIZATION OF *PLASMODIUM VIVAX IN VITRO* CULTURE

**Gabriel Rangel**[1], Martha A. Clark[1], Kathryn Shaw-Saliba[1], Usheer Kanjee[1], Caeul Lim[1], Marcelo U. Ferreira[2], Anjali Mascarenhas[3], Laura Chery[3], Edwin Gomes[4], Pradipsinh K. Rathod[3], Manoj T. Duraisingh[1]
*[1]Harvard University, Boston, MA, United States, [2]University of São Paulo, São Paulo, Brazil, [3]University of Washington, Seattle, WA, United States, [4]Goa Medical College, Goa, India*

## Symposium 73

## ASTMH Committee on Global Health (ACGH) Symposium II: Building a Successful Career in Global Health - An Interactive Session with Global Health Experts

*Marriott - Atrium A*
Tuesday, November 15, 10:15 a.m. - Noon

Finding one's niche, collaborating with others, finding a job and promoting one's skills are all areas that can pose obstacles at the beginning and throughout one's global health career. How does one translate the skills learned in the classroom into a fulfilling vocation? This symposium, sponsored by the ASTMH Committee on Global Health (ACGH), aims to address some of these challenges by delivering participants practical tools and skills essential to global health career development. This symposium will follow the ACGH Symposium I where international global health experts share their experience. In this exciting interactive session, those same experts, as well as others, will meet with attendees in small groups to share practical experience and skills. Topics will include mentorship, scientific writing and other career building skills. Over the past two years, the small discussion group format featured in this session has drawn significant attendance. The small group, interactive environment has made this an innovative environment for attendees to begin developing important career-building skills. Participants will have a unique opportunity to focus on individual skills in interactive small-group sessions led by global health experts from the U.S. and overseas. By giving early career individuals the tools to develop their careers, the ACGH aims to foster the growth of the global health field. By imparting practical wisdom in this unique setting, ACGH continues to foster the enthusiasm and drive that brought them to global health in the first place.

CHAIR

Jessica K. Fairley
*Emory University School of Medicine, Atlanta, GA, United States*

Ramin Asgary
*New York University School of Medicine, New York, NY, United States*

Jonathan Ripp
*Mount Sinai Global Health Center, New York, NY, United States*

10:15 a.m.
**INTRODUCTION**

Jessica K. Fairley
*Emory University School of Medicine, Atlanta, GA, United States*

10:25 a.m.
**FIRST SMALL GROUP DISCUSSION SESSION (SEE LIST OF SMALL GROUP DISCUSSIONS BELOW)**

11:05 a.m.
**SECOND SMALL GROUP DISCUSSION SESSION (SEE LIST OF SMALL GROUP DISCUSSIONS BELOW)**

11:45 a.m.
**WRAP-UP**

Jessica K. Fairley
*Emory University School of Medicine, Atlanta, GA, United States*

**SMALL GROUP DISCUSSIONS**
*(Attendees will have two opportunities to meet with discussion leaders)*

**SKILLS AND STRATEGIES TO SUCCEED IN WRITING, PRESENTING AND PUBLISHING GLOBAL HEALTH-RELATED RESEARCH AT SCIENTIFIC FORUMS AND IN MEDICAL/ PUBLIC HEALTH JOURNALS**

Ramin Asgary
*New York University School of Medicine, New York, NY, United States*

**STRATEGIES TO SUCCEED IN GLOBAL HEALTH: PERSPECTIVES FROM MALI**

Ousmane Koita
*University of Bamako, Bamako, Mali*

**STRATEGIES TO SUCCEED IN GLOBAL HEALTH: PERSPECTIVES FROM MOZAMBIQUE**

Eusbeio Macete
*Centro de Investigação em Saúde de Manhiça (CISM), Maputo, Mozambique*

**SKILLS AND STRATEGIES TO SUCCEED IN GLOBAL HEALTH IN THE UNITED STATES**

Jonathan Ripp
*Mount Sinai School of Medicine, New York, NY, United States*

## Symposium 74

## Recent Advances in the Development of New Treatments for Chronic Chagas Disease

*Marriott - Atrium B*
Tuesday, November 15, 10:15 a.m. - Noon

Chagas disease ranks among the world's most neglected diseases. After decades of limited progress, the last few years have witnessed a significant change in the landscape of research and drug development in Chagas disease. New information is available on the two registered compounds for Chagas disease, benznidazole and nifurtimox. New developments have arisen in the field of biological markers for Chagas disease. This symposium will provide an overview of new clinical studies on benznidazole and nifurtimox, including the assessment of these compounds in new treatment regimens and new populations; present new data on biological markers of therapeutic response, as well as review the status of review the pipeline of new drug candidates and new population pharmacokinetics and pharmacodynamics data from key experts in the field. The first presentation will provide an overview of the preclinical landscape and results of experimental studies on new compounds for Chagas disease. The second presentation will review new data on biological markers of therapeutic response, taking into consideration data from studies with long-term follow-up. The third presentation will provide information on recent clinical trials on pharmacokinetics of nifurtimox for Chagas disease and review the status of the new Phase III study on pediatric Chagas disease. The fourth and last presentation will review new data on benznidazole and review the status of clinical trials on new treatment regimens.

CHAIR

Isabela Ribeiro
*Drugs for Neglected Diseases initiative, Geneva, Switzerland*

Sergio Sosa Estani
*Instituto Nacional de Parasitología "Dr. Mario Fatala Chaben", Buenos Aires, Argentina*

10:15 a.m.
**REVIEW OF RECENT PRECLINICAL INFORMATION AND PHARMACOKINETIC-PHARMACODYNAMIC DATA IN CHAGAS DISEASE**
Isabela Ribeiro
*Drugs for Neglected Diseases initiative, Geneva, Switzerland*

10:35 a.m.
**BIOLOGICAL MARKERS OF THERAPEUTIC RESPONSE IN CHAGAS DISEASE - NEW DEVELOPMENTS**
Igor Almeida
*University of Texas El Paso, El Paso, United States*

10:55 a.m.
**NEW TREATMENT REGIMENS OF BENZNIDAZOLE - PRECLINICAL RESULTS AND OVERVIEW OF PLANNED STUDIES**
Joaquim Gascon
*IS Global Barcelona Institute for Global Health, Barcelona, Spain*

11:15 a.m.
**NIFURTIMOX FOR CHAGAS DISEASE – RECENT CLINICAL STUDIES AND PERSPECTIVES**
Jaime Altcheh
*Hospital de Niños Ricardo Gutierrez, Buenos Aires, Argentina*

## Symposium 75

## American Committee of Medical Entomology (ACME) Symposium II: Applied Medical Entomology: Bridging Field and Laboratory Studies

*Marriott - Room A601*
Tuesday, November 15, 10:15 a.m. - Noon

This symposium will showcase recent findings from senior ACME members and trainees (graduate students and postdocs) who are working in the laboratories of members of the American Committee of Medical Entomology, or are themselves ACME members. The main emphasis of this year's symposium is in applied medical entomology. Symposium participants will be invited based on a targeted approach to represent a diversity of *taxa* of medically relevant arthropods (to include ticks, fleas, mosquitoes, sand flies, black flies, lice, kissing bugs and bedbugs), of research approaches (to include applied and basic research, and emphasize burgeoning approaches/technologies), geographical regions and institutions, and of demographics (to balance representation of age, gender, race, ethnicity and training levels).

CHAIR

Gonzalo Vazquez-Prokopec
*Emory University, Atlanta, GA, United States*

Lyric Bartholomay
*University of Wisconsin Madison, Madison, WI, United States*

10:15 a.m.
**CASE STUDY PERSPECTIVES ON THE BIODIVERSITY OF THE MOSQUITO FAUNA OF BRAZIL**
Vinicios Ferreira-de-freitas
*University of Wisconsin Madison, Madison, WI, United States*

10:30 a.m.
**BACTERIAL COMPOSITION OF LARVAL BREEDING SITES OF AFRICAN *AEDES AEGYPTI* AND ITS EFFECT ON VECTORIAL CAPACITY**
Laura Dickson
*Pasteur Institute, Paris, France*

10:45 a.m.
**SPATIAL HETEROGENEITY IN INSECTICIDE RESISTANCE PATTERNS IN *AE. AEGYPTI***
Marissa Grossman
*Emory University, Atlanta, United States*

11 a.m.
**INTERROGATING INDOOR AND OUTDOOR MOSQUITO POPULATIONS AND TRANSMISSION OF EMERGING ARBOVIRUSES ALONG THE TEXAS-MEXICO BORDER**
Gabriel Hamer
*Texas A&M University, College Station, United States*

## Symposium 76

## How Can We Use the Tools of Genomics and Evolution to Study and Control Malaria?

*Marriott - Room A602*
Tuesday, November 15, 10:15 a.m. - Noon

This symposium presents four experts, from a diverse set of national and international backgrounds, to discuss how the tools of genomics and evolution can be used to study and control malaria. A common misconception is that sequencing *Plasmodium* or *Anopheles* genomes is a purely academic exercise that has little application to the field. In fact, malaria research can leverage ongoing advances in genomics and computational biology in order to link the parasite's extensive genetic diversity with highly relevant phenotypes. The significant amount of malaria genomics data now being produced can be mined and translated into information that can support elimination efforts. In particular, genomic approaches allow us to better understand the evolution of phenotypes such as resistance to antimalarial drugs in the parasite, or insecticide resistance in the vector. Furthermore, population genomics facilitates the identification of proteins that potentially could be targeted by vaccines, or developed as novel diagnostic tools. Finally, genomics also allow for marker discovery that can be used in the context of epidemiological surveillance systems. As a key component, this symposium will highlight the importance of making genomic data available, and in a manner that is linked to properly curated metadata. The session organizers conclude that evolutionary genomics can propel innovation in the malaria research community by facilitating linkage of the parasite's and vector's genetic and phenotypic diversities.

CHAIR

Jane Carlton
*New York University, New York, NY, United States*

Ananias Escalante
*Temple University, Philadelphia, PA, United States*

10:15 a.m.
**POPULATION GENOMICS REVEALS SIGNATURES OF GLOBAL DISPERSAL AND DRUG RESISTANCE IN *PLASMODIUM VIVAX***

Jane Carlton
*New York University, New York, NY, United States*

10:40 a.m.
**EVOLUTIONARY GENETICS OF *PLASMODIUM VIVAX* IN SOUTH AMERICA**

Ananias Escalante
*Temple University, Philadelphia, PA, United States*

11:05 a.m.
***PLASMODIUM FALCIPARUM* GENOMICS FOR THE IDENTIFICATION OF DRUG RESISTANCE MARKERS IN SOUTHEAST ASIA**

Liwang Cui
*The Pennsylvania State University, State College, PA, United States*

11:30 a.m.
**THE *ANOPHELES GAMBIAE* 1000 GENOMES PROJECT: REVOLUTIONIZING OUR UNDERSTANDING OF INSECTICIDE RESISTANCE**

Martin Donelly
*Liverpool School of Tropical Medicine, Liverpool, United Kingdom*

## Scientific Session 77

## Intestinal and Tissue Helminths: Soil-Transmitted Helminths – Epidemiology and Control

*Marriott - Room A703/A704*
Tuesday, November 15, 10:15 a.m. - Noon

CHAIR

Elise Michelle O'Connell
*National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States*

Francesca Tamarozzi
*University of Pavia, Pavia, Italy*

10:15 a.m.
**698**

**MOLECULAR TECHNIQUES IDENTIFY *ANCYLOSTOMA CEYLANICUM* AND *NECATOR AMERICANUS* AS THE MAJOR HOOKWORM PATHOGENS AMONG MYANMAR REFUGEES PRE-RESETTLEMENT AND DEFINE THEIR DIFFERENTIAL RESPONSE TO ANTHELMINTIC THERAPY**

**Elise M. OConnell**[1], Tarissa Mitchell[2], Georgiette Oduro-Boateng[1], Marina Papaiakovou[3], Nils Pilotte[3], Deborah Lee[2], Steven Williams[3], Michelle Weinberg[2], William Stauffer[4], Thomas B. Nutman[1]
*[1]National Institutes of Health, National Institute of Allergy and Infectious Diseases, Bethesda, MD, United States, [2]Immigrant, Refugee and Migrant Health Branch, Centers for Disease Control and Prevention, Atlanta, GA, United States, [3]Department of Biological Sciences, Smith College, Northampton, MA, United States, [4]Department of Infectious Diseases, University of Minnesota, Minneapolis, MN, United States*

**(ACMCIP Abstract)**

10:30 a.m.
**699**

**MULTI-PARALLEL QUANTITATIVE REAL-TIME PCR BASED DIAGNOSTICS AS THE NEW GOLD STANDARD FOR SOIL TRANSMITTED HELMINTHS**

**Marina Papaiakovou**[1], Nils Pilotte[2], Steven A. Williams[1], Paola Vargas[3], Reynaldo Nicolás Caro[3], Rubén Cimino[3], Alejandro Krolewiecki[4], Rojelio Mejia[5]
*[1]Smith College, Northampton, MA, United States, [2]University of Massachusetts, Amherst, MA, United States, [3]Instituto de Investigaciones en Enfermedades Tropicales, Universidad Nacional de Salta, Orán, Argentina, [4]Instituto de Patología Experimental/CONICET, Salta, Argentina, [5]Laboratory of Clinical Parasitology and Diagnostics, National School of Tropical Medicine Baylor College of Medicine, Houston, TX, United States*

10:45 a.m.
**700**

**DIAGNOSIS OF *STRONGYLOIDES STERCORALIS* FROM FILTERED URINE RESIDUE BY DETECTING CELL-FREE DNA**

**Nilanjan Lodh**[1], Reynaldo Caro[2], Shterna Sofer[3], Alan Scott[3], Alejandro Krolewiecki[2], Clive Shiff[3]
*[1]Marquette University, Milwaukee, WI, United States, [2]Universidad Nacional de Salta, Oran, Argentina, [3]Johns Hopkins University, Baltimore, MD, United States*

11 a.m.

## 701

### MATERNAL POSTPARTUM DEWORMING AS A MEANS OF IMPROVING INFANT GROWTH AND MORBIDITY IN AREAS ENDEMIC FOR SOIL-TRANSMITTED HELMINTHIASIS

**Layla S. Mofid**[1], Martín Casapía[2], Eder Aguilar[3], Hermánn Silva[3], Antonio Montresor[4], Elham Rahme[5], William D. Fraser[6], Grace S. Marquis[7], Jozef Vercruysse[8], Lindsay Allen[9], Brittany Blouin[1], Hugo Razuri[5], Lidsky Pezo[2], Theresa W. Gyorkos[1]

*[1]Department of Epidemiology, Biostatistics and Occupational Health, McGill University, Montreal, QC, Canada, [2]Asociación Civil Selva Amazónica, Iquitos, Peru, [3]Hospital Iquitos "César Garayar García", Iquitos, Peru, [4]Department of Control of Neglected Tropical Diseases, World Health Organization, Geneva, Switzerland, [5]Research Institute of the McGill University Health Centre, Division of Clinical Epidemiology, Montreal, QC, Canada, [6]Centre de recherche et Département d'obstétrique et de gynécologie, Université de Sherbrooke, Sherbrooke, QC, Canada, [7]McGill University, School of Dietetics and Human Nutrition, Ste. Anne-de-Bellevue, QC, Canada, [8]Department of Virology, Parasitology and Immunology, Faculty of Veterinary Medicine, Ghent University, Merelbeke, Belgium, [9]United States Department of Agriculture, ARS Western Human Nutrition Research Center, University of California Davis, Davis, CA, United States*

11:15 a.m.

## 702

### STH CONTROL, ELIMINATION, AND DEVELOPMENT OF DRUG RESISTANCE: REPERCUSSIONS OF SYSTEMATIC NON-PARTICIPATION TO PREVENTIVE CHEMOTHERAPY

**Luc E. Coffeng**, Wilma A. Stolk, Roel Bakker, Sake J. de Vlas

*Erasmus MC, University Medical Center, Rotterdam, Netherlands*

11:30 a.m.

## 703

### DIFFERENTIAL IMPACT OF MASS AND TARGETED DEWORMING CAMPAIGNS FOR SOIL-TRANSMITTED HELMINTH CONTROL IN CHILDREN: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Susana Vaz Nery**, Archie C. Clements, Suhail A. Doi, Dongxu Wang, Suzy J. Campbell, Darren Gray, Naomi E. E. Clarke

*Australian National University, Canberra, Australia*

11:45 a.m.

## 704

### RESULTS OF A COMBINED PUBLIC HEALTH INTERVENTION AGAINST *S. STERCORALIS* IN AN ARGENTINIAN ENDEMIC REGION MONITORED THROUGH NIE-ELISA

**Paola Vargas**[1], Adriana Echazú[1], Marisa Juarez[1], Pamela Cajal[1], Nicolas Caro[1], Julio Nasser[2], Alejandro Krolewiecki[3], Rubén Cimino[1]

*[1]Instituto de Investigaciones en Enfermedades Tropicales-Universidad Nacional de Salta, Salta, Argentina, [2]Cátedra de Química Biológica-Universidad Nacional de Salta, Salta, Argentina, [3]Consejo Nacional de Investigaciones Científicas y Técnicas, Buenos Aires, Argentina*

**Symposium 78**

## Update on Research and Control of Viral Diseases in Cuba

*Marriott - Room A706/A707*

Tuesday, November 15, 10:15 a.m. - Noon

The recent progressive normalization of relations between Cuba and the United States holds the promise of renewing the once-strong scientific collaborations between these two countries. At last year's annual meeting, ASTMH furthered this aim by bringing Cuban and American experts together in a ground-breaking symposium to discuss the many scientific advances coming from Cuba and what the future might bring if the two countries can rekindle their history of cooperation in science and global health. This year, ASTMH renews and deepens the scientific exchange by presenting a symposium focused on advances in tropical virology, a field in which Cuba has and continues to be a historic "hotspot" and Cuban scientists leaders in research and control.

CHAIR

Maria G. Guzman

*Center for Research, Diagnostic and Surveillance (CIDR), Instituto de Medicina Tropical "Pedro Kouri", Havana, Cuba*

Daniel G. Bausch

*World Health Organization, Geneva, Switzerland*

10:15 a.m.

### UPDATE ON RESEARCH AND CONTROL OF DENGUE AND OTHER ARTHROPOD-BORNE VIRAL DISEASES IN CUBA

Maria G. Guzman

*Center for Research, Diagnostic and Surveillance (CIDR), Instituto de Medicina Tropical "Pedro Kouri", Havana, Cuba*

10:40 a.m.

### HIV-1 VIRAL VARIANTS CIRCULATING IN CUBA: IMPLICATIONS FOR DISEASE PROGRESSION

Vivian Kouri

*Center for Research, Diagnostic and Surveillance (CIDR), Instituto de Medicina Tropical "Pedro Kouri", Havana, Cuba*

11:05 a.m.

### CUBA´S POLIO VACCINE INVESTIGATIONS

Sonia Resik

*Center for Research, Diagnostic and Surveillance (CIDR), Instituto de Medicina Tropical "Pedro Kouri", Havana, Cuba*

11:30 a.m.

### UPDATE ON INFLUENZA AND OTHER RESPIRATORY VIRUSES IN CUBA

Betsy Acosta

*Center for Research, Diagnostic and Surveillance (CIDR), Instituto de Medicina Tropical "Pedro Kouri", Havana, Cuba*

## Exhibit Hall Open and Light Lunch

*Marriott - International Hall*

Tuesday, November 15, Noon - 1:45 p.m.

**Poster Session 79**

## Poster Session B: Presentations and Light Lunch

*Hilton - Grand Ballroom and Grand Salon*
Tuesday, November 15, Noon - 1:45 p.m.

## Poster Session B Directory



## Alphaviruses (Includes Chikungunya)

### 705

#### COMPARISON OF ALPHAVIRUS AND FLAVIVIRUS PREVALENCE IN WESTERN KENYA


**Elysse N. Grossi-Soyster**[1], Elizabeth A. Cooke[2], Eric M. Fèvre[3], A. Desiree LaBeaud[1]
*[1]Stanford University School of Medicine, Stanford, CA, United States, [2]International Livestock Research Institute, Nairobi, Kenya, [3]Institute of Infection and Global Health, University of Liverpool, Neston, United Kingdom*


### 706

#### SEROPREVALENCE OF FLAVIVIRUSES AND ALPHAVIRUSES IN CHILDREN IN COASTAL KENYA: A 2015 SNAPSHOT


**Elysse Noel Grossi-Soyster**[1], Francis Mutuku[2], Saidi Lipi[3], Charles Ng'ang'a[3], A. Desiree LaBeaud[1]
*[1]Stanford University School of Medicine, Stanford, CA, United States, [2]Department of Environment and Health Sciences, Technical University of Mombasa, Mombasa, Kenya, [3]Vector Borne Disease Control Unit, Msambweni, Kenya*


### 707

#### CHIKUNGUNYA VIRUS INFECTION IS CAUSING ACUTE FEBRILE ILLNESS AMONG CHILDREN IN KENYA


**Jimmy Hortion**[1], David M. Vu[2], Elysse N. Grossi-Soyster[2], Victoria Okuta[3], Zainab Jembe[4], Priscillah Maina[4], Philip Chebii[4], Winnie A. Onyango[3], Charles H. King[5], Bryson A. Ndenga[3], Francis M. Mutuku[6], A. Desiree LaBeaud[2]
*[1]Ecole Normale Supérieure de Lyon, Lyon, France, [2]Stanford University Department of Pediatrics, Stanford, CA, United States, [3]Kenya Medical Research Institute, Kisumu, Kenya, [4]Ministry of Health-Kenya, Msambweni, Kenya, [5]Case Western Reserve University, Cleveland, OH, United States, [6]Technical University of Mombasa, Mombasa, Kenya*


### 708

#### IDENTIFICATION OF FACTORS ASSOCIATED WITH CHRONIC CHIKUNGUNYA DISEASE IN PATIENTS IN GRENADA, WEST INDIES


**Claire J. Heath**[1], Jason Lowther[2], Trevor P. Noël[2], Idis Mark-George[2], Derek B. Boothroyd[1], Calum N. MacPherson[2], A. Desiree LaBeaud[1]
*[1]Stanford University, San Francisco, CA, United States, [2]WINDREF, St. George's University, St. George's, Grenada*


### 709

#### SIMULATING CHIKUNGUNYA OUTBREAKS IN COLOMBIA USING AN AGENT-BASED MODEL


**Guido F. España**[1], John Grefenstette[2], Hernando Diaz[3], Fernando delahoz-Restrepo[3], Donald Burke[2], Willem van Panhuis[2]
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#### VACCINES AGAINST EMERGING ALPHAVIRUSES


**A. B. Silva**, M. P. López-Deber, P. Reis, S. Thapa, S. Ghimire, S. Nallet, A. Michalec, A. Serra, D. T. Hickman, M. Pihlgren, J. G. Wettstein, A. Pfeifer, A. Muhs
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#### IMMUNE PROFILING AND NETWORK MODELING OF CHIKUNGUNYA INFECTION IN A HOSPITAL-BASED STUDY IN NICARAGUA


**Daniela Michlmayr**[1], Adeeb Rahman[2], Lionel Gresh[3], Seunghee Kim-Schulze[2], Guajira P. Thomas[4], Theodore Pak[5], Federico Narvaez[6], Andrew Kasarskis[5], Steven M. Wolinsky[4], Angel Balmaseda[7], Miriam Merad[8], Eva Harris[1]
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### ATYPICAL CHIKUNGUNYA PRESENTATION DURING THE 2014 EPIDEMIC IN VENEZUELA

**Adriana Tami**[1], Fe M. Salazar[2], Erley F. Lizarazo[1], Beatriz Monroy[2], Derika Lopez[3], Alcira Torres[4], Sarah Bethencourt[5], Jelte Elsinga[1], Masja Schmidt[1], Joran Slager[1], Dorien Beeres[1], María F. Vincenti-González[1], Daniela Jou-Valencia[1], Robert Tovar[5], Haydee Ochoa[6], Luis Scribani[7]
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### PREDICTORS OF PLASMA LEAKAGE IN ADULT DENGUE PATIENTS

**Ananda D. Wijewickrama**[1], Gaveshika Abeyrathna[1], Chalaka D. Chandima[1], Sunethra Gunasena[2], Damayanthi Idampitiya[1]
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### EARLY SEASON INCIDENCE, SUSCEPTIBILITY, AND WEATHER PREDICTS ANNUAL DENGUE HEMORRHAGIC FEVER INCIDENCE IN THAILAND

**Stephen A. Lauer**[1], Krzysztof Sakrejda[1], Evan L. Ray[1], Hannah Clapham[2], Suthanun Suthachana[3], Paphanij Suangtho[3], Soawapak Hinjoy[3], Sopon Iamsirithaworn[4], Derek A. Cummings[5], Justin Lessler[2], Nicholas G. Reich[1]
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### SOCIAL CONNECTIONS AND CONTEXT IN DENGUE TRANSMISSION

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### ZIKA VIRUS INFECTION IN A COHORT STUDY TO ASSESS THE INCIDENCE OF DENGUE, STATE OF SÃO PAULO, BRAZIL, 2015, 2016

**Gerusa M. Figueiredo**[1], Expedito J. Luna[1], Maria Regina Cardoso[2], José E. Levi[1], Alvina C. Felix[1], Nathalia C C. Souza[1], Ana C. Souza[1], Sérgio R. Campos R. Campos[1], Walter M. Figueiredo[1], Angela A. Costa[1], Claudio S. Pannuti[1]
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### INAPPARENT DENGUE VIRUS INFECTION INCIDENCE, SAO PAULO, BRAZIL, 2014-2015

**Expedito J. Luna**, Gerusa M. Figueiredo, Sergio R. Campos, Jose E. Levi, Walter M. Figueiredo, Angela A. Costa, Alvina C. Felix, Ana C. Souza, Nathalia C. Souza, Maria R. Cardoso, Claudio S. Pannuti
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### DENGUE VIRAL INFECTION INDUCED CD95 EXPRESSIONS IN DIFFERENT B CELL SUBSETS

**Nattawat Onlamoon**, Ampaiwan Chuansumrit, Kulkanya Chokephaibulkit, Kanchana Tangnararatchakit, Chonnamet Techasaensiri, Nopporn Apiwattanakul, Siyu Wang, Premrutai Thitilertdecha, Kovit Pattanapanyasat
*Mahidol University, Bangkok, Thailand*

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### DENGUE DIVERSITY ACROSS SPATIAL AND TEMPORAL SCALES: LOCAL STRUCTURE AND THE IMPACT OF HOST POPULATION SIZE

**Henrik Salje**[1], Justin Lessler[1], Irina Maljkovic Berry[2], Melanie Melendrez[2], Siripen Kalanaooj[3], Atchareeya A-Nuegoonpipat[4], Sumalee Chanama[4], Somchai Sangkijporn[4], Ananda Nisalak[5], Robert Gibbons[5], Sopon Iamsirithaworn[4], Louis Macareo[5], In-Kyu Yoon[6], Areerat Sangasang[4], Richard Jarman[2], Derek Cummings[7]
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### *AEDES ALBOPICTUS* MIDGUT CELL LINE: A PRISTINE CELL LINE FOR *IN VITRO* STUDY OF ARBOVIRAL PATHOGENESIS

**Enakshi Roy**[1], Moonmoon Sinha[1], Satadal Das[1], Debabrata Sarkar[1], Debadatta Nayak[2], Anil Khurana[2], Rajkumar Manchanda[2], Rajkumar Manchanda[2]
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### A FULLY-HUMAN HYPERIMMUNE POLYCLONAL ANTIBODY PRODUCT FROM TRANSCHROMOSOMIC BOVINES TO TREAT DENGUE INFECTIONS

**Thomas C. Luke**[1], Eddie Sullivan[2], Hua Wu[2], Jin-an Jiao[2], Kanakatte Raviprakash[3]
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### CHARACTERIZATION OF CYD DENGUE VACCINE VIRUSES WITH HUMAN MONOCLONAL ANTIBODIES TARGETING KEY CONFORMATIONAL EPITOPES

**Valérie Lecouturier**[1], Catherine Berry[1], Aure Saulnier[1], Sophie Naville[1], Catherine Manin[1], Gopal Sapparapu[2], James E. Crowe[2], Florence Boudet[1], Bruno Guy[1]
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### PERIODICITY (LONG-TERM AND SHORT-TERM CYCLES) OF DENGUE IN VENEZUELA

**Maria F. Vincenti-Gonzalez**[1], Maria E. Grillet[2], Erley Lizarazo[3], Francisco Laguna[2], Adriana Tami[3]
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### USE OF THE DENGUE HUMAN CHALLENGE MODEL TO CHARACTERIZE THE ROLE OF HETEROTYPIC ANTIBODY IN PROTECTION AGAINST DENGUE INFECTION

**Anna P. Durbin**[1], Beth D. Kirkpatrick[2], Kristen K. Pierce[2], Gina Meza Hults[1], Eve Ostrowski[1], Cecilia M. Tibery[1], Palmtama L. Grier[1], Beulah P. Sabundayo[1], Cathy J. Larsson[2], Yolanda Eby[1], Helen He[1], Sean A. Diehl[2], Cassandra Ventrone[2], Marya P. Carmolli[2], Aravinda de Silva[3], Stephen S. Whitehead[4]
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### LONGITUDINAL ANALYSIS OF B CELL RESPONSE TO INFECTION WITH A DENGUE-2 CHALLENGE VIRUS

**Huy Tu**[1], Usha K. Nivarthi[2], Daniel Emerling[3], Douglas G. Widman[4], Ralph Baric[4], Kristen Pierce[5], Stephen S. Whitehead[6], Beth D. Kirkpatrick[5], Anna P. Durbin[7], Aravinda M. de Silva[2], Sean A. Diehl[1]
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### DENV PREEXISTING IMMUNITY EFFECT ON ZIKV INFECTION AND THE RELIABILITY OF DIAGNOSIS IN AN AREA WITH CO-CIRCULATION OF SEVERAL ARBOVIRUSES

**Berlin L. Londono-Renteria**[1], Andrea Troupin[1], Jenny C. Cardenas[2], Miguel A. Sanabria[2], Elsi Entrena[3], Tonya M. Colpitts[1]
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### VECTOR GENOTYPE INFLUENCES DENGUE VIRUS INTRA-HOST GENETIC DIVERSITY IN MOSQUITOES

Sebastian Lequime, Albin Fontaine, Meriadeg Ar Gouilh, Isabelle Moltini-Conclois, **Louis Lambrechts**
*Institut Pasteur, Paris, France*

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### A CLOSER LOOK AT ADE AND OAS IN THE SECONDARY DENGUE PLASMABLAST RESPONSE

**Lalita Priyamvada**[1], Alice Cho[1], Nattawat Onlamoon Onlamoon[2], Kulkanya Chokephaibulkit[2], Kovit Pattanapanyasat[2], Rafi Ahmed[1], Patrick Wilson[3], Jens Wrammert[1]
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### DISPLAY OF QUATERNARY EPITOPES RECOGNIZED BY DENGUE VIRUS NEUTRALIZING ANTIBODIES

**Stefan Metz**, Michael Miley, Jason Coffman, Shaomin Tian, Chris Luft, Joe DeSimone, Aravinda de Silva
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### RAPID ACTIVE SEROPREVALENCE SURVEYS AS A TOOL TO MEASURE DENGUE VIRUS DISEASE BURDEN IN RESOURCE-LIMITED SETTINGS

**Daniel Olson**[1], Molly M. Lamb[2], Alma Zacarias[3], Maria Renee Lopez[4], Maria Alejandra Paniagua[5], Gabriela Samayoa-Reyes[6], Ricardo Zambrano[7], Sergio Rodriguez[7], Celia Cordon-Rosales[4], Edwin J. Asturias[1]
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### NATURAL AND LABORATORY-DERIVED GENETIC VARIATION IN DENGUE VIRUS TYPE 2 AT ENVELOPE PROTEIN POSITIONS 202 AND 203 MODULATES ANTIGENIC AND IMMUNOGENIC PROPERTIES

**Leah Katzelnick**[1], Chunling Wang[1], Theodore C. Pierson[2], Derek J. Smith[3], Stephen S. Whitehead[2], Eva Harris[1]
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### CO-INFECTION OF DENGUE VIRUS BY SEROTYPES 1 AND 2 IN A PATIENT FROM STUNG TRENG PROVINCE, CAMBODIA

**Jamal Dejli**[1], Catherine Berjohn[1], Vireak Heang[1], Agus Rachmat[1], Pichit Pin[1], Sophal Ouk[1], Chonthida Supaprom[1], Rithea Leang[2], Rekol Huy[2], Andrew Vaughn[1]
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### MAPPING HUMAN NEUTRALIZING ANTIBODY RESPONSES TO DENGUE VIRUS SEROTYPE 4

**Usha Nivarthi**[1], Nurgun Kose[2], Gopal Sapparapu[2], Benjamin Doranz[3], Daniela Weiskopf[4], Alessandro Sette[4], Anna Durbin[5], Stephen S. Whitehead[6], Emily Gallichotte[1], Douglas Widman[1], Ralph Baric[1], James Crowe[2], Aravinda de Silva[1]
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### DETERMINING THE EFFICACY OF LARVIVOROUS FISH, COMMUNITY ENGAGEMENT, AND A NOVEL SLOW RELEASE PYRIPROXYFEN FORMULATION SUMILARV® 2MR ON DENGUE VECTORS (*AEDES AEGYPTI* AND *AEDES ALBOPICTUS*) IN CAMBODIA: A CLUSTER RANDOMIZED TRIAL

**John Hustedt**[1], Dyna Doum[1], Vanney Keo[1], Ly Sokha[2], BunLeng Sam[2], Vibol Chan[3], Neal Alexander[4], John Bradley[4], Didot B. Prasetyo[5], Agus Rachmat[5], Sergio Lopes[1], Muhammad Shafique[6], Rithea Leang[2], Jeffrey Hii[6]
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### DENGUE OUTBREAK IN EAST DELHI, DELHI STATE, INDIA, 2015

**Dundaiah Somashekar**, Venkatesh B. Govindappa
*East Delhi Municipal Corporation, Delhi, India*

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### CORRELATION OF CLINICAL DIAGNOSIS AND DENGUE ASSAYS IN CAMBODIA OVER SIX YEARS

**Catherine M. Berjohn**[1], Agus Rachmat[1], Chenda Yi[1], Vireak Heang[1], Chonthida Supaprom[1], Bolin Chum[1], Sim Kheng[2], Sokhal Buth[3], Andrew F. Vaughn[1]
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### REGULATION OF PROTEIN TRANSLATION IN MOSQUITO CELLS INFECTED BY DENGUE 2 VIRUS

**Wei-June Chen**, Jion-Nan Hou, Tien-Huang Chen, Ching-Yun Perng
*Chang Gung University, Tao-Yuan, Taiwan*

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### RECENT SCIENTIFIC AND CLINICAL ADVANCES IN SANOFI PASTEUR'S DENGUE VACCINE PROGRAM

**Nicholas Jackson**[1], Janice Moser[2], Antony Byers[2], Valerie Lecouturier[3], Ernesto Luna[2], Laurent Chambonneau[3], Bruno Guy[1], Fernando Noriega[4]
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### IMMUNITY TO ZIKV, DENV AND CHIKV IN A NON-ENDEMIC HUMAN IMMUNE COHORT IN PORTLAND, OREGON

**William Messer**, Adam Brady, Sarah Gabriel, Brian Booty, Claire Dorfman, Jules Weinstein
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### SPATIOTEMPORAL ANALYSES OF DENGUE HOSPITALIZATIONS CODED IN BRAZIL

Juliane Wunderlich[1], **Wladimir J. Alonso**[2]
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### HYPOXIA ENHANCES ANTIBODY-DEPENDENT DENGUE

**Esther S. Gan**[1], Wei Fun Cheong[2], Kuan Rong Chan[1], Eugenia Ong[3], Xiaoran Chai[1], Hwee Cheng Tan[1], Sujoy Ghosh[1], Markus R. Wenk[2], Eng Eong Ooi[1]
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### VIREMIA AT PRESENTATION IS ASSOCIATED WITH LONG-LIVED ANTIBODY RESPONSES TO DENGUE VIRUS

**Jesse J. Waggoner**[1], Lionel Gresh[2], Alisha Mohamed-Hadley[1], Angel Balmaseda[3], K. James Soda[4], Janaki Abeynayake[1], Malaya K. Sahoo[1], Yuanyuan Liu[1], Guillermina Kuan[5], Eva Harris[6], Benjamin A. Pinsky[1]
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### CHARACTERIZATION OF THE OVERWINTERING PROCESS OF JAPANESE ENCEPHALITIS VIRUS IN *CULEX* SPECIES MOSQUITOES

**Yan-Jang S. Huang**[1], Susan M. Hettenbach[2], So Lee Park[1], Stephen Higgs[2], Alan D. Barrett[3], Lee W. Cohnstaedt[4], Dana L. Vanlandingham[1]
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### PROPOSED GUIDELINES FOR ADMINISTERING LIVE YELLOW FEVER VACCINE TO TRAVELERS

**Stephen J. Seligman**
*The Rockefeller University, New York, NY, United States*

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### COMPREHENSIVE MUTAGENESIS OF HCV E1/E2 ENVELOPE TO EPITOPE MAP ANTI-ENV ANTIBODIES AND FUNCTIONAL RESIDUES CRITICAL FOR HCV INFECTIVITY

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### ANALYZING THE IMMUNE RESPONSE TO ZIKA VIRUS: A REPORTER VIRUS PARTICLE (RVP) SYSTEM FOR SERUM AND ANTIBODY NEUTRALIZATION ASSAYS, AND A COMPREHENSIVE ALA-SCAN MUTATION LIBRARY OF ZIKV PRM/E TO EPITOPE MAP ANTI-ZIKV ANTIBODIES

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### EVALUATION OF SELECTED REAL-TIME RT-PCR PROTOCOLS AIMING AT THE BEST POSSIBLE MOLECULAR DIAGNOSIS OF ZIKA VIRUS INFECTIONS

Flávia M. Moraes, Danillo L. Esposito, Taline M. Klein, **Benedito A. Fonseca**
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### WHOLE GENOME SEQUENCING AND PHYLOGENETIC ANALYSIS OF ZIKA VIRUS ISOLATED IN INDONESIA

**Amin Soebandrio**[1], Frilasita Yudhaputri[1], Aditya Perkasa[1], Benediktus Yohan[1], Sotianingsih Haryanto[2], Ageng Wiyatno[1], Ungke Antonjaya[3], Hidayat Trimarsanto[1], Jeremy P. Ledermann[4], Ronald Rosenburg[4], Ann M. Powers[4], R. Tedjo Sasmono[1], Khin Saw Aye Myint[1]
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### CLINICAL CHARACTERIZATION OF ACUTE ZIKA PATIENTS IN BRAZIL, VENEZUELA, AND EL SALVADOR IN 2015/16

Patricia Brasil[1], Ernesto T. Marques[2], Adriana Tami[3], Ernesto Pleitess Sandoval[4], Andrea Caprara[5], Tereza Magalhaes[2], Guilherme Calvet[1], Sarah Bethencourt[6], Maria G. Guzman[7], Cameron P. Simmons[8], Ana Bispo[1], Marli Tenorio Cordeiro[2], Bridget Wills[8], Kerstin Rosenberger[9], **Thomas Jaenisch**[9]
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### DETECTION AND DIFFERENTIATION OF IGM RESPONSE TO RECENT EXPOSURE TO ZIKA AND OTHER VECTOR BORNE VIRUSES USING A MULTIPLEXED, BEAD BASED SEROLOGY ASSAY

**Christy Weiss**, Michele M. Bush, Arturo Cowes, Diamela Nunez, Félix W. Santiago, Amy Altman
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### MAPPING THE GLOBAL DISTRIBUTION OF YELLOW FEVER

**Freya Shearer**
*University of Oxford, Oxford, United Kingdom*

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### ACUTE ENCEPHALITIS SYNDROME IN ASSAM, INDIA: IMPORTANCE OF JAPANESE ENCEPHALITIS IN THE ADULT POPULATION, 2014-2015

Ravi Vasanthapuram[1], Lahari Saikia[2], Sanjeeb Kakati[2], Aditi Baruah[2], Pritikar Bowerah[2], BC Bhagabati[3], Reeta Mani[1], Shafeeq Hameed[1], Vijayalakshmi Reddy[1], Anita Desai[1], Vijaykiran Reddy[1], Leena Inamdar[4], Sharon Daves[4], Kayla Laserson[4], **Padmini Srikantiah**[4]
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### HOSPITALIZATIONS BY HEPATITIS C BETWEEN 1998 AND 2013 IN BRAZIL: AN INTRIGUING AMAZONIAN TALE

**Elisavet Serti**[1], Wladimir J. Alonso[2]
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**Oliver J. Brady**[1], Moritz U. Kraemer[2], Isaac I. Bogoch[3], Matthew German[3], Alexander Watts[3], Simon I. Hay[4], Kamran Khan[3]
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**Guodong CF Niu**

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**Kazunori Ohashi**[1], Yousif E. Himeidan[2], Minoru Takano[1], Issaku Nakatani[3], Toshimasa Nishiyama[3], John F. Invest[4], John R. Lucas[4], Yoshinori Shono[5]
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**Mercy Opiyo**[1], Gabriel L. Hamer[2], Dickson W. Lwetoijera[1], Silas Majambere[3], Fredros O. Okumu[1]
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**Francis Wat'senga**[1], Emile Manzambi[1], Oscar Lodi[2], Tania Mampangulu[1], Richard Oxborough[3], Djenam Jacob[4], Joris Likwela[5], Filiberto Hernandez[6], Seth Irish[6]
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**Alex J. Limwagu**, Emmanuel Kaindoa, Nancy S. Matowo, Salum Mapua, Arnold Mmbando, Halfan Ngowo, Lina Finda, Fredros O. Okumu
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**Joseph R. McMillan**[1], Rebekah A. Blakney[1], Daniel Mead[2], Sarah Witter[1], Lyndsey Grey[1], William Koval[1], Gonzalo Vazquez Prokopec[1]
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**Muhammad Shariful Islam**
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**Tonny Kyagulanyi**[1], Ronald Sserufusa[2], Robert Mugerwa[1], Elizabeth Streat[3]
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**Angelia Sanders**[1], Zeinab Abdalla[2], Balgesa Elshafie[3], Nabil Mikhail[2], E. Kelly Callahan[1]
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**Ricardo Andrade-Pacheco**[1], David J. Savory[1], Alemayehu Midekisa[1], Peter W. Gething[2], Hugh J. Sturrock[1], Adam Bennett[1]
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**Regina Joice**[1], Rabin Tirouvanziam[1], Juan B. Gutierrez[2], Alberto Moreno[1], Jessica C. Kissinger[2], Mary R. Galinski[1], MaHPIC Consortium
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**Sung-Jae Cha**, Marcelo Jacobs-Lorena
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May M. Paing, Nichole D. Salinas, **Niraj H. Tolia**
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**Nicholas F. Brazeau**[1], Stephanie M. Doctor[2], Amy Whitesell[2], Christian M. Parobek[1], Sandra Mendoza Guerrero[3], Jonathan J. Juliano[3], Steven R. Meshnick[2]
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**Dibyadyuti Datta**[1], Robert O. Opoka[2], Gregory S. Park[3], Paul Bangirana[4], Chandy C. John[1]
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**A NOVEL FACS TECHNIQUE TO MEASURE AUTOPHAGY IN *PLASMODIUM FALCIPARUM***

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**(ACMCIP Abstract)**

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**Elamaran Meibalan**[1], Nicanor Obaldia III[2], Juliana Sa[3], Siyuan Ma[1], Pedro Mejia[1], Roberto Moraes Barros[3], William Otero[2], Manoj T. Duraisingh[1], Danny Milner[1], Curtis Huttenhower[1], Dyann F. Wirth[1], Tom Wellems[3], Matthias Marti[1]
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**Tomoyo Sakata-Kato**, Dyann F. Wirth
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**Allison Demas**[1], Selina Bopp[1], Erik Allman[2], Sarah K. Volkman[1], Manuel Llinás[2], Dyann F. Wirth[1]
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**Jagrati Jain**[1], Narayan D. Chaurasiya[1], Bharathi Avula[1], N. P. Nanayakkara[1], James D. McChesney[2], Larry A. Walker[1], Babu L. Tekwani[1]
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**PHOSPHORYLATION OF *PLASMODIUM* EUKARYOTIC INITIATION FACTOR 2α IN RESPONSE TO ARTEMISININ THERAPY**

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**Jean Bosco Ouedraogo**[1], Issaka Zongo[1], R. Serge Yerbanga[1], Fabrice A. Somé[1], Paul Snell[2], Matthew Cairns[2], Yacouba Savadogo[3], Eleonore Fosso[4], Harriet Kivumbi[5], Diego Moroso[5], Paul J. Milligan[2]
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Esmee Ruizendaal[1], Petra F. Mens[2], **Henk D. Schallig**[1]
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### ON THE ADEQUACY OF A 28 DAY FOLLOW-UP PERIOD FOR ARTEMETHER LUMEFANTRINE AGAINST UNCOMPLICATED *P. FALCIPARUM* MALARIA

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### *PLASMODIUM FALCIPARUM* PARASITE CLEARANCE IN THE PERUVIAN AMAZON AS PART OF A DOD HARMONIZED CLINICAL TRIAL

**Edward S. Smith**[1], Salomon Durand[2], Laura L. Tapia[1], Cesar Cabezas[3], Paul E. Pachas[3], Moises Sihuincha[4], Kimberly A. Edgel[5], Geral C. Baldeviano[1], Andres G. Lescano[6], Sarah B. Ballard[1]
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Richard Kajubi[1], Liusheng Huang[2], Moses M. Were[1], Sylvia Kiconco[1], Joshua Ssebuliba[1], Myaing Nyunt[3], Norah Mwebaza[1], Francesca T. Aweeka[2], **Sunil Parikh**[4]
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### DEFINING THE DESIRED ATTRIBUTES OF NEXT GENERATION SMC DRUG

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### TARGETING ADENYLATE CYCLASE AS A NOVEL AVENUE FOR ANTIPARASITIC DRUG DESIGN

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**(ACMCIP Abstract)**

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### KELCH PROTEIN GENE (K13) MUTATIONS IN *PLASMODIUM FALCIPARUM* POPULATIONS IN THREE MALARIA HOT SPOTS OF VIETNAM

**Thuy-Nhien Nguyen**[1], Tuyen Kim Nguyen[1], Tong Thanh Nguyen[1], Thanh Viet Ngo[1], Quang Hong Huynh[2], Maciej Boni[1], Olivo Miotto[3], Christiane Dolecek[3], Guy Thwaites[1], Nicholas White[4], Hien Tinh Tran[1]
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**(ACMCIP Abstract)**

## 861

### INTERMITTENT PREVENTIVE TREATMENT CONTINUES TO PROVIDE BENEFIT TO MALAWIAN PREGNANT WOMEN

**Julie Gutman**[1], Dyson Mwandama[2], Jomo Banda[2], Peter Troell[3], Andy Balueni[2], Zhiyong Zhou[1], Austin Gumbo[4], Misheck Luhanga[4], Doreen Ali[4], Don P. Mathanga[2]
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### UNCOMPLICATED MALARIA TREATMENT FAILURES AFTER ARTESUNATE-AMODIAQUINE COMBINATION THERAPY IN TWO ECOLOGICAL ZONES IN GHANA

**Benjamin Abuaku**[1], Benedicta Mensah[1], James Hansen[1], Abigail Derkyi-Kwarteng[2], Moses Dokurugu[3], Kwadwo Koram[1], Michael Ofori[1], Anita Ghansah[1]
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### DOSE-RESPONSE EFFECT OF SULFADOXINE-PYRIMETHAMINE ADMINISTERED AS INTERMITTENT PREVENTIVE TREATMENT OF MALARIA IN PREGNANCY REDUCES ADVERSE BIRTH OUTCOMES RELATED TO SEXUALLY TRANSMITTED AND REPRODUCTIVE TRACT INFECTIONS

**R. Matthew Chico**, Enesia Banda Chaponda, Cono Ariti, Daniel Chandramohan
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### POPULATION GENETICS OF THE CHLOROQUINE-RESISTANT GENE PFCRT IN CAMEROONIAN FIELD *PLASMODIUM FALCIPARUM* ISOLATES

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## 865

### THE PROTECT STUDY: MATERNAL AND CHILD MALARIA CHEMOPREVENTION TO ENHANCE CHILD DEVELOPMENT

**Paul Bangirana**[1], Robert O. Opoka[1], Andrea L. Conroy[2], Margaret Semrud-Clikeman[3], Maria Kroupina[3], Michael Georgieff[3], Abel Kakuru[4], Patricia Awori[4], Grant M. Dorsey[5], Moses R. Kamya[1], Diane Havlir[5], Chandy C. John[2]
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## 866

### THE EFFECT OF ARTEMISININ-BASED COMBINATION THERAPY (ACT) OPTIONS ON HEMATOLOGICAL RESPONSE IN *PLASMODIUM FALCIPARUM* MALARIA: A SYSTEMATIC REVIEW AND POOLED ANALYSIS OF INDIVIDUAL PATIENT DATA

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### ANTIMALARIAL DRUG-RESISTANCE; WHAT DO HIV AND IMMUNITY HAVE TO DO WITH IT?

**Silvie Huijben**[1], Eusebio Macete[2], Ghyslain Mombo-Ngoma[3], Michael Ramharter[4], Ya Ping Shi[5], Meghna Desai[5], Grace Mwangoka[6], Achille Massougbodji[7], Michel Cot[8], Nicaise Tuikue Ndam[8], John Aponte[1], Raquel González[1], Clara Ménéndez[1], Alfredo Mayor[1]
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### EFFICACY OF ARTEMETHER-LUMEFANTRINE FOR TREATMENT OF UNCOMPLICATED *PLASMODIUM FALCIPARUM* MALARIA IN CRUZEIRO DO SUL, ACRE, BRAZIL

**Megumi Itoh**[1], Suiane Negreiros do Valle[2], Samela Farias[2], Thayna Maria Holanda de Souza[2], Giselle R. Viana[3], Stella Chenet[1], Naomi W. Lucchi[1], Paola Marchesini[4], Marinete Póvoa[4], Ana Carolina Faria e Silva Santelli[4], Alexandre Macedo de Oliveira[1]
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## 869

### SHOULD WE STILL USE QUININE IV FOR SEVERE MALARIA?

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## 870

### SAFETY AND TOLERABILITY OF DIHYDROARTEMISININ-PIPERAQUINE AS INTERMITTENT PREVENTIVE TREATMENT FOR MALARIA IN A REFUGEE CAMP, ADJUMANI, UGANDA

**Matthew E. Coldiron**[1], Estrella Lasry[2], Malika Bouhenia[1], Debashish Das[1], Richard Mathela[3], Leon Salumu[2], Rebecca F. Grais[1]
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### FALSE SECURITY FROM OBSOLETE MALARIA DRUG-RESISTANCE MARKERS

John White, III[1], Anjali Mascarenhas[2], Rimi Chakrabarti[2], Devaraja G. Mudeppa[1], Ambika Sharma[2], Riaz Basha[2], Ligia Pereira[2], Rashmi Dash[2], Jennifer N. Maki[1], Jennifer Guler[3], Edwin Gomes[2], Laura Chery[1], **Pradipsinh Rathod**[1]
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# Malaria - Diagnosis

## 872

### ASSESSMENT OF THE USE OF MALARIA RAPID DIAGNOSTIC TESTS IN HEALTH FACILITIES IN GHANA

**Andrew Paanii Quao**, Solomon Atinbire, Felicia Amoo-Sakyi, Peter Segbor, Raphael Ntumy
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## 873

### STRUCTURAL AND FUNCTIONAL EFFECTS OF HEME BINDING TO RCPFHRP2: IMPLICATIONS FOR MALARIA DIAGNOSIS

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## 874

### IMPROVING QUALITY OF MALARIA RAPID DIAGNOSTIC TESTING AND TEST ADHERENCE THROUGH QUALITY ASSURANCE

**Goodluck Elias Tesha**[1], Sarah Burnett[2], Frank Chacky[3], Troy Martin[4], Jackson Mugyabuso[1], Gerald Mng'ong'o[5], Sigsbert Mkude[3], Zahra Mkomwa[1], Lynn A. Paxton[6], Chonge Kitojo[7]
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## 875

### ALL-IN-ONE, MULTIPLEXED ON-BEAD ELISA FOR MALARIAL BIOMARKERS PLDH AND PFHRPII

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## 876

### MALARIA MICROSCOPY COMPETENCY IN LIBERIA POST EBOLA DISEASE OUTBREAK

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## 877

### FIELD EVALUATION OF A REAL TIME LOOP-MEDIATED ISOTHERMAL AMPLIFICATION ASSAY (REALAMP) FOR MALARIA DIAGNOSIS IN CRUZEIRO DO SUL, ACRE, BRAZIL

**Giselle Maria Viana**[1], Luciana Silva-Flannery[2], Danielle Regina Barbosa[1], Naomi Lucchi[2], Suiane Costa do Valle[3], Samela Farias[3], Paola Marchesini[4], Juliana Chedid Rossi[4], Venkatachalam Udhayakumar[5], Marinete Marins Póvoa[1], Alexandre Macedo de Oliveira[2]
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### CAN PHARMACY PROVIDERS PROVIDE QUALITY MALARIA DIAGNOSTIC IN KENYA: RESULTS FROM EXIT INTERVIEW AND MYSTERY CLIENT STUDIES FROM THE KENYAN COAST

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### PFHRP2 DETECTING MALARIA RDTS: ALARMING FALSE NEGATIVE RESULTS IN ERITREA

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## 880

### DIRECT, HIGH-THROUGHPUT QUANTIFICATION OF PARASITIC DNA IN MULTIPLE SAMPLE TYPES WITHOUT DNA EXTRACTION

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## 881

### HIGH-THROUGHPUT, MULTIPLEX GENOTYPING DIRECTLY FROM SALIVA AND BUCCAL SWABS WITHOUT DNA PURIFICATION

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### UPTAKE OF MALARIA DIAGNOSTIC TESTS AND ADHERENCE TO NEGATIVE TEST RESULTS AMONG FEVER CARE SEEKERS AT INFORMAL DRUG SHOPS IN UGANDA

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### A MINIATURIZED FLOW CYTOMETRY PLATFORM FOR MALARIA DIAGNOSTICS

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### EVALUATION OF THE PARASIGHT PLATFORM FOR RAPID AND HIGHLY ACCURATE MALARIA DIAGNOSIS

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## 885

### NO MORE HIDING: PICOGRAM DETECTION OF HISTIDINE-RICH PROTEIN 2 FROM *PLASMODIUM FALCIPARUM*

**Eric Rogier**[1], Mateusz Plucinski[1], Kimberly Mace[1], Michelle Chang[1], Jean F. Lemoine[2], Baltazar Candrinho[3], James Colborn[4], Rafael Dimbu[5], Filomeno Fortes[5], Venkatachalam Udhayakumar[1], John W. Barnwell[1]
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## 886

### APTAMER-BASED LOW RESOURCE DIAGNOSTICS FOR DETECTION OF MALARIAL BIOMARKER *PLASMODIUM* LACTATE DEHYDROGENASE

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## 887

### GUIDING THE DEVELOPMENT OF IMPROVED DIAGNOSTICS FOR MALARIA: LIMIT-OF-DETECTION OF CURRENT RAPID DIAGNOSTIC TESTS

**Xavier C. Ding**[1], Roxanne R. Rees-Channer[2], Alfons Jimenez[3], Laura Puyol[3], Alfredo Mayor[3], Peter C. Chiodini[2], Iveth J. González[1]
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### LAMP VERSUS MICROSCOPY AND RDT TO DETECT MALARIA IN PREGNANT WOMEN: A CROSS SECTIONAL STUDY IN NW ETHIOPIA

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# Malaria – Elimination

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### MALARIA STRATIFICATION FOR ELIMINATION ACTIVITIES

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### INCREASED PREVALENCE OF ASYMPTOMATIC *PLASMODIUM FALCIPARUM* INFECTION IN DIENGA, SOUTHEASTERN GABON

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### MOLECULAR EVIDENCE OF HIGH RATES OF ASYMPTOMATIC *P. VIVAX* INFECTION AND VERY LOW *P. FALCIPARUM* MALARIA IN BOTSWANA

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### USE OF ACTIVE AND PASSIVE SURVEILLANCE TO DETERMINE THE RISK FACTORS FOR MALARIA INFECTION IN ACEH BESAR, INDONESIA, A LOW-ENDEMIC, MULTI-SPECIES SETTING (*PLASMODIUM KNOWLESI, P.VIVAX,* AND *P. FALCIPARUM* INFECTION) AIMING FOR MALARIA ELIMINATION

**Herdiana Herdiana**[1], Chris Cotter[2], Farah Coutrier[3], Yusrifar K. Tirta[3], Iska Zarlinda[3], Brittany W. Zelman[2], Roly D. Gosling[2], Peter Baker[1], Maxine Whittaker[1], Michelle S. Hsiang[4]
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## 893

### USE OF 'EASY ACCESS GROUPS' TO GUIDE MALARIA ELIMINATION INTERVENTIONS IN HAITI - SURVEYS AMONG PRIMARY SCHOOL, HEALTH FACILITY AND CHURCH ATTENDEES TO REFINE TRANSMISSION RISK AREAS AND TARGET INTERVENTIONS

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### PRIMAQUINE SAFETY IN G6PD-DEFICIENT MILITARY COHORT IN CAMBODIA USING THE LOWER-DOSE, EXTENDED COURSE REGIMEN AS PART OF MASS DRUG ADMINISTRATION FOR MALARIA ELIMINATION

**Mariusz Wojnarski**[1], Chanthap Lon[1], Somethy Sok[2], Bun Rathvicheth[1], Soklyda Chann[1], Michele Spring[3], David Saunders[4], Panita Gosi[1], Sovanveasna Kin[2], Nillawan Buathong[1], Mali Ittiverakul[1], Sabaithip Sriwichai[1], Worachet Kuntawunginn[1], Huy Rekol[5], Muth Sinoun[5], Khengheng Thay[5], Mary So[2], Jessica Lin[6], Satharath Prom[2], Philip Smith[1], Mark Fukuda[1]
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### COMPARATIVE ACCURACIES OF THREE MODELS OF HOTSPOT PREDICTION IN THE PRE-ELIMINATION SETTING OF ZAMBEZI REGION, NAMIBIA

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### ENTOMOLOGICAL MONITORING ACTIVITIES DURING A MALARIA ELIMINATION PILOT PROJECT IN SOUTHERN MOZAMBIQUE

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### TIMED AND TARGETED MALARIA TESTING DURING LOW SEASONAL MALARIA TRANSMISSION IN LUAPULA PROVINCE AS A POTENTIAL STRATEGY TOWARDS ACHIEVING MALARIA ELIMINATION IN ZAMBIA

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### ASSESSING ASSOCIATIONS BETWEEN RECENT TRAVEL AND MALARIA PARASITE PREVALENCE DURING A MASS DRUG ADMINISTRATION CAMPAIGN IN SOUTHERN ZAMBIA

**Travis Porter**[1], Timothy Finn[1], Kafula Silumbe[2], Victor Chalwe[3], Busiku Hamainza[4], Emmanuel Kooma[5], Hawela Moonga[4], Adam Bennett[6], Richard W. Steketee[7], John M. Miller[8], Thomas P. Eisele[1]

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### DEMOGRAPHICS AND MALARIA PREVENTION IN MOBILE AND MIGRANT POPULATIONS IN SOUTHERN LAO PDR

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## 900

### AN INVESTMENT CASE FOR MALARIA ELIMINATION IN THE PHILIPPINES

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### REACTIVE CASE DETECTION FOR MALARIA ELIMINATION

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## 902

### MALARIA ELIMINATION IN INDIA: LARVIVOROUS FISH PLAY AN IMPORTANT ROLE UNDER LARVAL SOURCE MANAGEMENT STRATEGY

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### EVALUATING STRATIFIED MALARIA CONTROL INTERVENTIONS IN BIOKO ISLAND: DIFFERENT APPROACHES TO FOCALIZED INTENSIFIED MALARIA CONTROL INTERVENTIONS THROUGH SPATIAL CLUSTERING AND RISK MAPS

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### THE USE OF SCHOOL RECORDS TO MEASURE THE IMPACT OF A MALARIA CONTROL INTERVENTION ON ATTENDANCE IN RURAL WESTERN KENYA

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### TREATMENT ADHERENCE TO DIHYDROARTEMISININ-PIPERAQUINE DURING MASS DRUG ADMINISTRATION FOR MALARIA IN SOUTHERN PROVINCE, ZAMBIA

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### ACCELERATING THE REDUCTION OF MALARIA TRANSMISSION IN KANEL, RANÉROU AND LINGUÈRE DISTRICTS (SENEGAL): CASE INVESTIGATION WITH FOCAL DRUG ADMINISTRATION

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### HETEROGENEOUS PREVALENCE OF SUBCLINICAL MALARIA MEASURED BY ULTRASENSITIVE PCR IN MYANMAR

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### REACTIVE CASE INVESTIGATION WITH REACTIVE FOCAL TESTING AND TREATMENT FOR MALARIA IN TARGETED REGIONS IN ETHIOPIA AND SENEGAL: OPERATIONAL LEARNINGS

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## 909

### DO DASHBOARDS MATTER TO DISTRICT HEALTH MANAGERS? DOCUMENTED EXPERIENCE FROM THE DEVELOPMENT AND TESTING OF VISUALIZATIONS, DASHBOARDS AND ALERTS FOR MALARIA ELIMINATION IN SOUTHERN PROVINCE, ZAMBIA

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# Malaria - Epidemiology

## 910

### AUDIT OF MALARIA DEATHS REPORTED IN THE ROUTINE MALARIA INFORMATION SYSTEM (RMIS) IN 4 REGIONAL DEPARTMENTS, BENIN, 2015

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### EVALUATING THE COVERAGE AND IMPACT OF A UNIVERSAL COVERAGE BED NET CAMPAIGN IN TWO DISTRICTS IN NAMPULA PROVINCE, MOZAMBIQUE: A SERIES OF CROSS-SECTIONAL HOUSEHOLD SURVEYS

**Baltazar Candrinho**[1], João Muchanga[2], Geraldo Chambe[2], Olinda Muguande[1], Graça Matsinhe[1], Timothy Doyle[3], Rose Zulliger[4], James Colborn[5], Abu Saifodine[6], Mateusz Plucinski[7]
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### HIGH LEVEL OF SUBMICROSCOPIC INFECTIONS OF FOUR *PLASMODIUM* SPECIES DURING PRE-ELIMINATION PHASE IN NORTH SUMATERA, INDONESIA

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**(ACMCIP Abstract)**

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### AN UPDATE ON EVIDENCE OF STRATEGIES TO PREVENT MALARIA IN PREGNANCY

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## 914

### THE EPIDEMIOLOGY OF GENDER DIFFERENCES IN MALARIA UNRELATED TO PREGNANCY

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### ASSOCIATIONS BETWEEN MEASURE OF MALARIA DURING PREGNANCY AND ADVERSE BIRTH OUTCOMES

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### RECENT TRENDS IN MALARIA INCIDENCE AND SURVEILLANCE IN CAMBODIA

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### PREVALENCE OF MALARIA FROM BLOOD SMEARS EXAMINATION: A TWENTY YEAR RETROSPECTIVE STUDY FROM NATIONAL MALARIA REFERENCE LABORATORY, OUAGADOUGOU, BURKINA FASO

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### CHARACTERIZING THE IMPACT OF DYNAMIC VECTOR ABUNDANCE ON INDIVIDUAL MALARIA PREVALENCE IN A HIGH TRANSMISSION AREA OF NORTHERN ZAMBIA

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### SPATIAL CHANGE IN THE RISKS OF *PLASMODIUM VIVAX* AND *PLASMODIUM FALCIPARUM* MALARIA IN CHINA, 2005-2014

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### EVALUATING A REACTIVE TEST-AND-TREAT PROGRAM FOR SUB-PATENT MALARIA IN MACHA, ZAMBIA: OPTIMAL STRATEGIES TO ACHIEVE ELIMINATION

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### PREVALENCE OF ASYMPTOMATIC MALARIA INFECTIONS AND ASSOCIATED RISK FACTORS IN A HIGH TRANSMISSION REGION IN WESTERN KENYA

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### GEOGRAPHIC DISTRIBUTION AND SPATIAL CLUSTERING OF SUBMICROSCOPIC MALARIA IN KAYIN STATE, MYANMAR

**Daniel M. Parker**[1], Jordi Landier[1], Aung Myint Thu[1], Ladda Kajeechiwa[1], May Myo Twin[1], Taw Nay Soh[1], Stephane Proux[1], Saw Win Tun[1], Myo Chit Min[1], Ku Ler Moo[1], Khin Maung Lwin[1], Saw Diamond Khin[2], Ed Marta[3], Gilles Delmas[1], Francois Nosten[1]

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### MALARIA PREVALENCE IN THE URBAN AREAS OF MANGALURU IN SOUTH INDIA

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### MALARIA SURVEILLANCE DURING THE TRANSIT FROM CONTROL TO PRE-ELIMINATION

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### THE RELATIONSHIP BETWEEN ANEMIA AND MALARIA INFECTION AMONG CHILDREN UNDER FIVE YEARS IN MALAWI

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### ASSOCIATION BETWEEN CARRIAGE OF ASYMPTOMATIC INFECTIONS AND TIME TO CLINICAL MALARIA IN MALAWI: DATA FROM A LONGITUDINAL COHORT STUDY

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### COST ANALYSIS OF AN LLIN KEEP-UP CHANNEL IN TANZANIA: THE SCHOOL NET PROGRAM

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### DO MALARIA HOTSPOTS REALLY FUEL TRANSMISSION?

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### HEALTH WORKER ADHERENCE TO MALARIA CASE MANAGEMENT GUIDELINES AT PUBLICLY FUNDED OUTPATIENT HEALTH FACILITIES — SOUTHERN MALAWI, 2015

**Ruth Namuyinga**[1], Dyson Mwandama[2], Dubulao Moyo[3], Austin Gumbo[3], Peter Troell[4], Miwako Kobayashi[1], Monica Shah[1], Andrew Bauleni[5], Don Mathanga[5], Laura Steinhardt[1], Alex Rowe[1]

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### THE CHANGING BURDEN OF MALARIA IN PREGNANCY AND CURRENT EFFECTIVENESS OF INTERVENTIONS

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### PREVALENCE OF ASYMPTOMATIC MALARIA AND ANAEMIA AMONG SCHOOL AGE CHILDREN IN TWO ECOLOGICAL ZONES IN GHANA

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## 932

### FAILURE OF AVAILABLE MALARIA CONTROL INTERVENTIONS IN DANGASSA, MALI: CONTINUOUSLY HIGH PREVALENCE OF *P. FALCIPARUM* INFECTION IN A COHORT OF 1,400 INDIVIDUALS FROM 2012 TO 2015

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### TREATMENT SEEKING BEHAVIOR, DIAGNOSIS AND TREATMENT PRACTICES IN TANZANIA: COMPARISON BETWEEN COMMUNITY SURVEYS CONDUCTED SOON AFTER THE IMPLEMENTATION OF THE AFFORDABLE MEDICINES FACILITY - MALARIA AND THE MRDTS ROLL OUT, AND THREE YEARS LATER

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# Malaria - Genetics/Genomics

## 934

### ACCESSING VIVAX MALARIA WITH OVERLOOKED GENES: THE DIVERSITY OF VIR GENES IN *PLASMODIUM VIVAX* FROM NORTHERN REPUBLIC OF KOREA

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### PACBIO TECHNOLOGIES FACILITATE GENERATION OF A HIGH-QUALITY *PLASMODIUM COATNEYI* GENOME SEQUENCE AND ASSEMBLY

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**(ACMCIP Abstract)**

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### GENETIC POPULATION STRUCTURE IN HOTSPOTS OF *P. VIVAX* INFECTIONS IN THE PERUVIAN AMAZON: CLOSING THE GAP BETWEEN GENETICS AND EPIDEMIOLOGY

**Gabriel Carrasco-Escobar**[1], Paulo Manrique[2], Oscar Nolasco[2], Marta Moreno[3], Jan Conn[4], Alejandro Llanos-Cuentas[1], Dionicia Gamboa[2], Joseph Vinetz[3]
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### TEMPORAL DYNAMICS OF GENOME-WIDE TRANSCRIPTION IN MALARIAL CHILDREN IN BURKINA FASO

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## 938

### GENOMIC SIGNALS OF CHANGING MALARIA TRANSMISSION

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## 939

### DEVELOPMENT OF A MULTIPLEX QPCR ASSAY FOR THE QUANTITATION OF *P. FALCIPARUM* GAMETOCYTOGENESIS IN A COHORT OF ASYMPTOMATICALLY INFECTED ADULTS IN WESTERN KENYA

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## 940

### TURNING BACK THE CLOCK: A HISTORY OF APICOMPLEXAN SPECIES DIVERGENCE

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### DETERMINATION OF THE *PLASMODIUM VIVAX* RECURRENCE PATTERN IN INDIVIDUALS OF THE COMMUNITIES OF CAHUIDE AND LUPUNA OF THE PERUVIAN AMAZON

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## 942

### A PARASITE GENETICS APPROACH TO EVALUATE MALARIA TRANSMISSION DYNAMICS IN ZAMBIA

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## 943

### ORIGIN AND SPREAD OF *PLASMODIUM VIVAX* AND *PLASMODIUM FALCIPARUM* IN THE AMERICAS

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## 944

### EVOLUTION OF THE TRANSMISSION-BLOCKING VACCINE CANDIDATES PVS28 AND PVS25 IN *PLASMODIUM VIVAX*: GEOGRAPHIC DIFFERENTIATION AND EVIDENCE OF POSITIVE SELECTION

**M. Andreina Pacheco**[1], Ricardo A. Chaurio[2], Omar E. Cornejo[3], Ester Durrego[4], Craig E. Stanley[1], Andreina I. Castillo[5], Socrates Herrera[6], Ananias A. Escalante[1]

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## 945

### ASSOCIATION BETWEEN THE ALPHA *THALASSEMIA* TRAIT AND *PLASMODIUM FALCIPARUM GAMETOCYTEMIA* IN A MALARIA ENDEMIC AREA IN GHANA

**Helena Lamptey**[1], Michael F. Ofori[1], Eunice Owusu-Yeboa[1], Kwadwo Asamoah Kusi[1], Bright Adu[1], Andrea T. Arku[1], Michael Alifrangis[2], Isabella Quakyi[3]

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## 946

### *PLASMODIUM VIVAX* ISOPRENOIDS BIOSYNTHESIS PATHWAY ENZYMES AS PROBABLE DRUG TARGETS

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## 947

### NOVEL CLUSTERING ALGORITHM IMPROVES HAPLOTYPE DETERMINATION FROM PACBIO TARGETED AMPLICON SEQUENCING DATA

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## 948

### EVIDENCE OF SELECTION AND GENE COPY NUMBER VARIATIONS IN VIRULENCE FACTORS AND RESISTANCE GENES IN *PLASMODIUM FALCIPARUM* FROM LORETO - PERU

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# Malaria - Immunology

## 949

### INFLUENCE OF SEASONAL MALARIA CHEMOPREVENTION ON MARKERS OF T CELL EXHAUSTION AND IMMUNOREGULATION

**Oumar Attaher**[1], Zaidi Irfan[2], Kadidia Baba Cisse[1], Mamoudou B Samassekou[1], Djibrilla Issiaka[1], Barou Coulibaly[3], Sekouba Keita[1], Sibiri Sissoko[1], Tiengoua Traore[1], Kalifa Diarra[1], Bacary S Diarra[1], Adama Dembele[1], Moussa B Kanoute[1], Almahamoudou Mahamar[1], Amadou Barry[1], Alassane Dicko[1], Patrick Duffy[2], Michal Fried[2]

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### SEASONAL MALARIA CHEMOPREVENTION IS ASSOCIATED WITH A REDUCTION IN SEROPOSITIVITY TO BLOOD-STAGE ANTIGENS

**Almahamoudou Mahamar**[1], Kadidia B. Cisse[1], Kalifa Diarra[1], Harouna Soumare[1], Djibrilla Issiaka[1], Tiangoua Traore[1], Adama Dembele[1], Moussa B. Kanoute[1], Bacary S. Diarra[1], Oumar Attaher[1], Amadou Barry[1], Alassane Dicko[1], Patrick E. Duffy[2], Michal Fried[2]

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## 951

### IDENTIFICATION OF IMMUNE SIGNATURES UNDERLYING CLINICAL IMMUNITY TO *P. FALCIPARUM* MALARIA

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*University of Exeter, Penryn, United Kingdom*

## 952

### EFFECT OF ALLELIC POLYMORPHISM ON MALARIA PARASITE SPECIFIC *EX VIVO* IFN-GAMMA (IFN-γ) RESPONSES TO APICAL MEMBRANE ANTIGEN 1 (AMA1) IN A MALARIA EXPOSED POPULATION

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**(ACMCIP Abstract)**

## 953

### CONTRIBUTION OF PARASITE AND HOST DIVERSITY TO MALARIA TRANSMISSION IN GHANA

**Aminata C. Lo**, Linda E. Amoah, Kwadwo E. Mensah, Ben Gyan
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**(ACMCIP Abstract)**

## 954

### PURIFICATION OF *PLASMODIUM* SPOROZOITES ENHANCES PARASITE-SPECIFIC CD8+ T CELL RESPONSES

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## 955

### T-CELL DYNAMICS REVEAL A POTENTIAL ROLE FOR CD8+ T-CELLS DURING BLOOD-STAGE *P. CYNOMOLGI* INFECTION OF RHESUS MACAQUES

**Chet Joyner**[1], Cristiana F. Brito[2], Yan Tang[1], Swetha Garimalla[3], Chris C. Ibegbu[1], Monica Cabrera-Mora[1], the MaHPIC Consortium, Tracey J. Lamb[4], Mary R. Galinski[5]
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## 956

### DECREASED MALARIA TRANSMISSION IN KENYA LED TO DELAYED ACQUISITION OF ANTI-MALARIAL ANTIBODIES IN CHILDREN AND ADULTS

**Grace E. Weber**[1], Peter Odada Sumba[2], John Vulule[2], Elisabeth Baum[3], Huw Davies[3], Joseph Smith[4], James W. Kazura[1], Arlene E. Dent[1]
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## 957

### ANTIBODY RESPONSES IN MALARIA-NAÏVE ADULTS AFTER IMMUNIZATION VIA MOSQUITO BITE WITH RADIATION-ATTENUATED *PLASMODIUM FALCIPARUM* SPOROZOITES (IMRAS)

**Joanne Lumsden**[1], Nimfa Teneza-Mora[2], Bradley Hickey[2], Selma Akan[3], Danielle Jateng[3], Sharina Reyes[1], Jo Glenna Banania[1], Charlotte Fedders[1], Ivelese Padilla[1], Alicia Simmons[1], Harini Ganeshan[1], Megan Dowler[3], Lindsey Garver[3], Silas Davidson[3], Martha Sedegah[2], James Moon[3], Eileen Villasante[2], Judith Epstein[2]
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## 958

### IDENTIFICATION OF PFEMP1 EPITOPES USING A DIVERSITY-COVERING ULTRADENSE PEPTIDE MICROARRAY

**Mark A. Travassos**[1], Andrea A. Berry[1], Andrew Pike[1], Jason A. Bailey[1], Emily M. Stucke[1], Antoine Dara[1], Sonia Agrawal[1], Amed Ouattara[1], Drissa Coulibaly[2], Kirsten E. Lyke[1], Matthew B. Laurens[1], Matthew Adams[1], Shannon Takala-Harrison[1], Amadou Niangaly[2], Bourema Kouriba[2], Abdoulaye K. Kone[2], J. Alexandra Rowe[3], Ogobara K. Doumbo[2], Mahamadou A. Thera[2], Myaing M. Nyunt[1], Philip L. Felgner[4], Jigar J. Patel[5], John C. Tan[5], Christopher V. Plowe[1]
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## 959

### AN ULTRA-DENSE PEPTIDE ARRAY FOR IDENTIFYING HUMAN ANTIBODY BINDING SITES ON MALARIA PARASITE ANTIGENS

**Andrea A. Berry**[1], Andrew Pike[1], Jason A. Bailey[1], Mark A. Travassos[1], Amed Ouattara[1], Sonia Agrawal[1], Antoine Dara[1], Lauren M. Cohee[1], Drissa Coulibaly[2], Kirsten E. Lyke[1], Matthew B. Laurens[1], Matthew Adams[1], Shannon Takala-Harrison[1], Amadou Niangaly[2], Issa Diarra[2], Modibo Daou[2], Bourema Kouriba[2], Abdoulaye K. Kone[2], Ogobara K. Doumbo[2], Mahamadou A. Thera[2], Tracking Resistance to Artemisinin Collaboration, Myaing M. Nyunt[1], Philip L. Felgner[3], Jigar J. Patel[4], John C. Tan[4], Christopher V. Plowe[1]
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## 960

### THE TRANSCRIPTION FACTOR T-BET COMPROMISES HUMORAL IMMUNITY TO BLOOD-STAGE MALARIA BY INHIBITING THE EFFICIENT DEVELOPMENT OF GERMINAL CENTRE RESPONSES

**Diana S. Hansen**, Ann Ly, Lisa J. Ioannidis, Axel Kallies
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## 961

### REDUCED *PLASMODIUM* BURDEN IN HUMANS ASSOCIATES WITH CD38+ CD4+ T CELLS DISPLAYING CYTOLYTIC POTENTIAL

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## 962

### HOST IMMUNITY TO MALARIA INFECTION, ANAEMIA AND SOCIO-ECONOMIC IMPACT AMONG CHILDREN LESS THAN 10 YEARS IN NORTHERN CAMEROON

**Nobelle I. Sakwe**
*University of Yaounde I, Yaounde, Cameroon*

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### PROFILES OF PFEMP1-SPECIFIC IGG ANTIBODIES FROM BIRTH TO 12 MONTHS OF AGE IN BENINESE INFANTS

Azizath Moussiliou[1], Gilles Cottrell[1], Louise Turner[2], Thomas Lavstsen[2], Nadine Fievet[1], Achille Massougbodji[3], Thor Theander[2], Philippe Deloron[1], **Nicaise Ndam**[4]
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## 964

### *P. FALCIPARUM* EPIDEMIOLOGY IS GOVERNED BY MULTI-SCALE IMMUNE SELECTION AND A DIVERSITY-TRANSMISSION FEEDBACK

**Thomas Holding**, Mario Recker
*University of Exeter, Falmouth, United Kingdom*

## 965

### A PROSPECTIVE STUDY OF B CELL DYNAMICS IN PATIENTS WITH MALARIA USING MASS CYTOMETRY

**Caroline Rönnberg**[1], Caroline Rönnberg[2], Victor Yman[3], Klara Sonden[3], Adnane Achour[3], Adnane Achour[4], Adnane Achour[5], Lakshmikanth Tadepally[4], Jaromir Mikes[4], Yang Chen[4], Kristina Persson[6], Petter Brodin[3], Petter Brodin[4], Petter Brodin[7], Anna Färnert[3], Anna Färnert[5]
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## 966

### LONGITUDINAL ASSESSMENT OF PFSPZ-SPECIFIC T CELL RESPONSES IN MALARIA-NAÏVE ADULTS VACCINATED WITH PFSPZ VACCINE

**Andrew S. Ishizuka**[1], Kirsten E. Lyke[2], Sumana Chakravarty[3], Andrea A. Berry[2], Adam DeZure[1], Eric R. James[3], Thomas L. Richie[3], Adam J. Ruben[3], Tao Li[3], B Kim Lee Sim[3], Julie E. Ledgerwood[1], Stephen L. Hoffman[3], Robert A. Seder[1]
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# Malaria - Modeling

## 967

### ASSESSING THE IMPACT OF NON-ADHERENCE TO ANTIMALARIALS USING WITHIN-HOST MODELING OF FALCIPARUM MALARIA

**Joseph D. Challenger**, Lucy C. Okell, Azra C. Ghani
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## 968

### FORECASTING MALARIA ADMISSIONS AT A RURAL DISTRICT HOSPITAL IN WESTERN KENYA USING REMOTE SENSING DATA

**Maquins O. Sewe**[1], Yesim Tozan[2], Joacim Rocklöv[3], Clas Ahlm[4]
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## 969

### A QUANTITATIVE ANALYSIS OF THE IMPROBABILITY OF FERTILIZATION AT LOW GAMETOCYTEMIAS IN THE ABSENCE OF TRANSMISSION-ENHANCING MECHANISMS

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## 970

### A SIMULATION STUDY OF WHEN MALARIA CONTROL AND ELIMINATION PROGRAMS CAN SAFELY REDUCE VECTOR CONTROL EFFORTS

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## 971

### EPIDEMIA: AN ONLINE PLATFORM FOR DATA ACQUISITION, INTEGRATION, AND ANALYSIS TO SUPPORT ECOLOGICAL FORECASTING OF MALARIA OUTBREAKS

**Christopher L. Merkord**[1], Michael C. Wimberly[1], Yi Liu[1], Michael DeVos[1], Adam Dosch[1], Abere Mihretie[2], Alemayehu M. Lemma[3], Teklehaymanot Gebrehiwot[4], Mastewal W. Lake[4], Estifanos Bayabil[2]
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## 972

### MATHEMATICAL MODELLING OF TAFENOQUINE FOR *P. FALCIPARUM* MALARIA ELIMINATION

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## 973

### IDENTIFYING MALARIA RISK FACTORS IN A HYPERENDEMIC SETTING USING BAYESIAN MODEL SELECTION

**Justin Millar**[1], Punam Amratia[1], Paul Psychas[2], Benjamin Abuaku[3], Collins Ahorlu[3], Kwadwo Koram[3], Samuel Oppong[4], Denis Valle[1]
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## 974

### ATTACKING THE MOSQUITO ON MULTIPLE FRONTS: INSIGHTS ON OPTIMAL COMBINATIONS OF VECTOR CONTROL INTERVENTIONS FOR MALARIA ELIMINATION FROM A MATHEMATICAL MODEL

**Samson S. Kiware**[1], Allison Tatarsky[2], Sean Wu[3], Héctor M. Sánchez[4], Nakul Chitnis[5], John Marshall[3]
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## 975

### IMPACT OF SEASONAL MALARIA CHEMOPROPHYLAXIS IN A HIGH AND SEASONAL MALARIA TRANSMISSION SETTING IN BURKINA FASO

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## 976

### SPRAYING OF MALE MATING SWARMS AS A NOVEL VECTOR CONTROL INTERVENTION: INSIGHTS FROM A MATHEMATICAL MODEL

**Sean L. Wu**[1], John M. Marshall[1], Sawadogo P. Simon[2], Bilgo Etienne[2], Abdoulaye Diabaté[2]
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## 977

### DEVELOPING AN EARLY WARNING SYSTEM FOR MALARIA IN THE AMAZON: PROGRESS IN PERU

**William Pan**[1], Ben Zaitchik[2], Francesco Pizzitutti[1], Beth Feingold[3], Carlos Mena[4], Cristina Recalde[2], Gabriela Salmon-Mulanovich[1], Elisa Vidal[5], Edward Smith[5], Sarah Ballard[5]
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## 978

### REQUIREMENTS FOR EFFECTIVE CRISPR-CAS9-BASED GENE DRIVE FOR THE CONTROL OF MALARIA AND OTHER VECTOR-BORNE DISEASES

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## 979

### MODELING THE USE OF A 20-HYDROXYECDYSONE STEROID AGONIST FOR MALARIA CONTROL

**Francisco Y. Cai**[1], Lauren M. Childs[1], Evdoxia G. Kakani[1], Sara N. Mitchell[1], Doug Paton[2], Paolo Gabrieli[2], Flaminia Catteruccia[1], Caroline O. Buckee[1]
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## 980

### WITHIN-HOST MATHEMATICAL MODELS OF MALARIA BUILT FROM MULTI-OMIC DATASETS

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**(ACMCIP Abstract)**

# Malaria – Other

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### ORDE WINGATE'S SUICIDE ATTEMPT, CAIRO, 1942: A CASE STUDY IN ACUTE ATABRINE PSYCHOSIS

**David P. Adams**[1], Femi Taiwo[2], Sarah Jillson[2], Chidinma Okafor[2]
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## 982

### JOINT EFFORTS, A KEY TO SUCCESS FOR THE MALARIA IN PREGNANCY PROGRAM IN LUANDA, ANGOLA

**Jhony Juarez**[1], Adolfo Sampaio[1], William Brieger[2], Domingos F. Gueve[3]
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## 983

### STUDY ON PATIENT ADHERENCE TO CHLOROQUINE AND PRIMAQUINE TREATMENT FOR *PLASMODIUM VIVAX* MALARIA IN MANAUS, STATE OF AMAZONAS

**Paola B. Marchesini**
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## 984

### PRE-SERVICE TRAINING INSTITUTIONS: AN IMPORTANT CONTRIBUTOR TO SCALE UP OF HIGH QUALITY MALARIA CASE MANAGEMENT SERVICES IN MALAWI

**McPherson Gondwe**[1], Augustine Chikoko[1], Petros Chirambo[2], Fozo Alombah[3], Holly Greb[3], Jamie Eliades[3]
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## 985

### IMPROVING QUALITY OF MALARIA CASE MANAGEMENT IN MALAWI THROUGH TARGETED CLINICAL MENTORING

**Fozo Alombah**[1], McPherson Gondwe[2], Augustine Chikoko[2], Petros Chirambo[3], Holly Greb[1], Jamie Eliades[1], Don Mathanga[4], Doreen Ali[5], Dubulao Moyo[5]
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## 986

### CLINICAL, DEMOGRAPHIC AND LABORATORY DATA AND METADATA COLLECTION FOR HUMAN MALARIA BLOOD SAMPLES COLLECTED FROM INDIVIDUALS LIVING IN DIVERSE EPIDEMIOLOGICAL SETTINGS

**Suman B. Pakala**[1], Regina Joice[2], Mustafa Nural[1], Jay Humphrey[1], MaHPIC Consortium, Mary R. Galinski[2], Jessica C. Kissinger[1]
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## 987

### USING OUTREACH TRAINING AND SUPPORTIVE SUPERVISION (OTSS) RESULTS TO MONITOR ADHERENCE TO REVISED MALARIA TREATMENT GUIDELINES IN THE EASTERN REGION OF GHANA

**Felicia Amoo-Sakyi**, Andrew Quao, Solomon Atinbire, Peter Segbor, Raphael Ntumy
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### LESSONS LEARNED: MALARIA CASE MANAGEMENT TRAINING IN MADAGASCAR

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### ASSESSING THE PERFORMANCE OF AN INTEGRATED DISEASE SURVEILLANCE AND RESPONSE SYSTEM IN THE CONTEXT OF VARYING MALARIA TRANSMISSION: A CASE STUDY FROM MADAGASCAR

**Jean-Marie NGbichi**[1], Moussa Ly[2], Julio Rakotonirina[3], Jean-Claude Andrianirinarison[3], Lantonirina Ravaorisoa[3], Julie Harisoa[4], Arsene Ratsimbasoa[5], Mayeri Ratsitorahina[6], Theo Lippeveld[2], Ye Yazoume[1]
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### MONITORING AND EVALUATION WORKSHOPS: AN APPROACH TO IMPROVE MALARIA INFORMATION SYSTEMS AND DATA USE TO BETTER INFORM PROGRAM IMPLEMENTATION

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### MAPPING MALARIA RESEARCH FOCUS, CAPACITY AND INTERNATIONAL COLLABORATION IN NIGERIA

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### THE INCUBATION PERIOD OF MALARIA AMONGST TRAVELERS RETURNING TO THE UK

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### THE USE OF RESPONDENT-DRIVEN SAMPLING TO ASSESS MALARIA KNOWLEDGE, TREATMENT-SEEKING BEHAVIORS AND PREVENTIVE PRACTICES AMONG MOBILE AND MIGRANT POPULATIONS IN AN ARTEMISININ RESISTANCE SETTING IN WESTERN CAMBODIA

**Sara E. Canavati**[1], Po Ly[2], Julie Thwing[3], Colleen McGinn[4], Narann Top-Samphor[4], Najibullah Habib[4], Jack S. Richards[5], Seshu Babu Vinjamuri[2], Chea Nguon[2]
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### LACK OF MORTALITY IN CHILDREN WITH SICKLE CELL DISEASE AND SEVERE MALARIAL ANEMIA WHO RECEIVE TIMELY BLOOD TRANSFUSION

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### AGE- AND PREVALENCE-RELATED MALARIA INFECTION RISK AND TREATMENT BEHAVIOR: EVIDENCE FROM A HOUSEHOLD SURVEY IN UGANDA

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### RELATIONSHIP BETWEEN THE PREVALENCE OF PARASITEMIA IN PREGNANT WOMEN AND CHILDREN: BIOKO ISLAND MALARIA INDICATOR SURVEY 2008-2015

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# Malaria - Vaccines

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### ONE YEAR STABILITY ANALYSES OF PFS25-EPA AND PFS230-EPA CONJUGATES ADJUVANTED WITH ALHYDROGEL®

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### LONG TERM IMMUNE RESPONSES INDUCED AGAINST *P. VIVAX* CSP AND MSP-1 CHIMERIC VACCINE CANDIDATES DELIVERED BY NOVEL ADENOVIRAL VECTORS

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### A HYBRID *P. VIVAX* BLOOD STAGE-TRANSMISSION BLOCKING VACCINE CANDIDATE ELICITS ROBUST CELLULAR IMMUNE RESPONSES AND LONG-LIVED FUNCTIONAL ANTIBODIES

**Jairo A. Fonseca**[1], Balwan Singh[1], Caitlin Bohannon[1], Monica Cabrera-Mora[1], Joshy Jacob[1], Myriam Arevalo-Herrera[2], Alberto Moreno[1]
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### SAFETY AND IMMUNOGENICITY OF THE NOVEL *PLASMODIUM FALCIPARUM* BLOOD-STAGE VACCINE CHAD63-MVA RH5 IN A PHASE IA CLINICAL TRIAL

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## 1001

### ENHANCED PROTECTIVE EFFICACY OF A *P. FALCIPARUM* MALARIA VACCINE USING A HETEROLOGOUS PRIME-BOOST IMMUNIZATION WITH A BACULOVIRAL VACCINE AND CHAD63 EXPRESSING PFCSP AGAINST CHALLENGE WITH A TRANSGENIC *P. BERGHEI* SPOROZOITES

**Kunitaka Yoshida**[1], Ahmed M. Salman[2], Pawan Dulal[2], Shahid M. Khan[3], Chris J. Janse[3], Sumi Biswas[2], Masaharu Tokoro[1], Mitsuhiro Iyori[4], Shigeto Yoshida[4], Adrian V. S. Hill[2]

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## 1002

### CRYOPRESERVATION RELATED LOSS OF ANTIGEN SPECIFIC IFNγ PRODUCING CD4+ T-CELLS: LESSONS FROM A MALARIA VACCINE TRIAL SUBSTUDY

**Tom P. Ford**[1], Claire Wenden[1], Alison Mbekeani[1], Len Dally[2], Josephine H. Cox[3], Nicola Winstone[1], Jill W. Gilmour[3], Adrian V. Hill[4], Katie J. Ewer[4]

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## 1003

### RTS,S MALARIA VACCINE EFFICACY DOES NOT VARY WITH SEASONAL PRECIPITATION: RESULTS FROM LILONGWE, MALAWI

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### ANALYSIS OF THE CELLULAR IMMUNE RESPONSE IN C57BL/6 MICE TO FMP014 - A SELF-ASSEMBLING PROTEIN NANOPARTICLE BASED MALARIA VACCINE - DELIVERED IN ALF ADJUVANTS

**Casey K. Storme**[1], Stephen A. Kaba[1], Labdhi Seth[1], Gary Matyas[2], Zoltan Beck[1], Carl Alving[2], Peter Burkhard[3], David Lanar[2]

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## 1005

### ANTIBODY RESPONSES TO VACCINATION WITH *PLASMODIUM FALCIPARUM* APICAL MEMBRANE ANTIGEN 1 ARE BIASED TOWARD THREE CONSERVED IMMUNODOMINANT EPITOPES AND DO NOT MIMIC THOSE TO NATURAL INFECTION

**Jason A. Bailey**[1], Andrew Pike[1], Mark A. Travassos[1], Amed Ouattara[1], Shannon Takala-Harrison[1], John Tan[2], Jigar J. Patel[2], Matt B. Laurens[1], Drissa Coulibaly[3], Amadou Niangaly[3], Bourema Kouriba[3], Issa Diarra[3], Modibo Daou[3], Philip L. Felgner[4], Ogobara K. Doumbo[3], Mahamadou A. Thera[3], Andrea A. Berry[1], Christopher V. Plowe[1]

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## 1006

### LESSONS LEARNED FROM THE MANAGEMENT OF THE INVESTIGATIONAL PRODUCT DURING PHASES 1B AND 2B MALARIA VACCINES TRIAL IN BURKINA FASO

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### BIVALENT CONJUGATE VACCINE TO BLOCK MALARIA TRANSMISSION AND TYPHOID FEVER

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### IMPACT OF THE ADDITION OF A SIGNAL SEQUENCE ON THE IMMUNOGENICITY OF A MULTI-STAGE VACCINE AGAINST *PLASMODIUM VIVAX* DELIVERED BY A NOVEL RECOMBINANT SIMIAN ADENOVIRUS VECTOR

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### ANTIBODY RESPONSES TO HEPATITIS B SURFACE ANTIGEN FOLLOWING ADMINISTRATION OF RTS,S/ASO1E TO HIV-INFECTED AFRICAN INFANTS AND CHILDREN

**Valentine C. Sing'oei**[1], Lucas Otieno[1], Martina Oneko[2], Walter Otieno[1], Joseph Abuodha[2], Chris Odero[2], Yolanda Mendoza[3], Ben Andagalu[1], Nobert Owino[2], Karen Ivinson[4], Nekoye Otsyula[1], Maria Oziemkowska[2], Allan Otieno[1], Kephas Otieno[2], Jessica Cowden[1], Simon Kariuki[2], Janet Oyieko[1], Laurence Slutsker[5], Marc Lievens[3], Bernhards Ogutu[1], Mary J. Hamel[2]

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### A CLINICAL TRIAL TO EVALUATE THE SAFETY AND INFECTIVITY OF DIRECT VENOUS INOCULATION OF ASEPTIC, PURIFIED, CRYOPRESERVED *PLASMODIUM FALCIPARUM* (7G8 AND NF54) SPOROZOITES IN MALARIA-NAÏVE ADULTS IN BALTIMORE, USA

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### EVALUATION OF THE SAFETY AND IMMUNOGENICITY OF NANOPARTICLE FORMULATIONS WITH RECOMBINANT *PLASMODIUM FALCIPARUM* TRANSMISSION-BLOCKING ANTIGEN PFS25

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### EVALUATING THE POTENTIAL TO TRANSMIT MALARIA FROM HUMANS TO MOSQUITOES DURING CONTROLLED HUMAN MALARIA INFECTION WITH *P. FALCIPARUM* AND *P. VIVAX*

**Katharine A. Collins**[1], Matthew Adams[1], Hayley Mitchell[1], Romal Stewart[1], Claire Wang[2], Caroline Dobbin[1], Teun Bousema[3], Robert Sauerwein[3], Stephan Chalon[4], Joerg Moehrle[4], James McCarthy[1]
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### CLINICAL DEVELOPMENT OF A VAR2CSA-BASED PLACENTAL MALARIA VACCINE PLACMALVAC: DECRYPTION OF THE ANTIBODY ACQUISITION AGAINST THE VACCINE CANDIDATE ID1-ID2

**Guillaume Escriou**[1], Firmine Viwami[2], Atikatou Mama[2], Saadou Issifou[2], Yannelle Dossou[2], Achille Massougbodji[2], Adrian Luty[1], Jean-Philippe Chippaux[1], Morten Agertoug Nielsen[3], Ali Salanti[3], Philippe Deloron[1], Nicaise Tuikue Ndam[1]
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### ANTIBODIES TO PLANT-PRODUCED *P. FALCIPARUM* SEXUAL STAGE PROTEINS EXHIBIT TRANSMISSION BLOCKING ACTIVITY

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# Malaria/Mosquitoes - Field Prevention

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### QUANTIFICATION OF BED-NET LOSS AND LEAKAGE FOLLOWING A MASS-DISTRIBUTION CAMPAIGN ON BIOKO ISLAND USING THE CAMPAIGN INFORMATION MANAGEMENT SYSTEM (CIMS)

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### DYNAMICS OF ENTOMOLOGICAL INOCULATION RATES FOLLOWING INDOOR RESIDUAL SPRAYING IN MALI

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### USE AND USER CHARACTERISTICS OF INTACT OR "TOO TORN" INSECTICIDE-TREATED MOSQUITO NETS IN TANZANIA

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### ENTOMOLOGICAL INDICATORS OF MALARIA TRANSMISSION AFTER IRS WAS DISCONTINUED: FINDINGS FROM SAVELUGU NANTON DISTRICT AND ITS IMPLICATIONS FOR MALARIA CONTROL IN GHANA

**Sylvester Coleman**[1], Samuel Dadzie[2], Aklilu Seyoum[1], Yemane Yihdego[1], Ernest A. Fletcher[1], Dereje Dengela[3], Kristen George[4], Maxwell Appawu[2], Daniel Boakye[2]
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### A COMPARISON OF THE EFFECTIVENESS OF BEHAVIOR CHANGE COMMUNICATION (BCC) PLUS REPAIR KITS AND BCC ALONE IN PROMOTING REPAIR OF LONG-LASTING INSECTICIDAL NETS IN BENIN

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### DRY SEASON MALARIA TRANSMISSION REDUCES THE IMPACT OF SEASONAL INDOOR RESIDUAL SPRAYING IN BENIN

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### EFFECT OF IVERMECTIN ON *PLASMODIUM VIVAX* IN ITS INTERACTION WITH *ANOPHELES AQUASALIS*

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### DETECTION OF *PLASMODIUM FALCIPARUM* INFECTION IN *ANOPHELES SQUAMOSUS* IN AN AREA TARGETED FOR MALARIA ELIMINATION, SOUTHERN ZAMBIA

**Jennifer C. Stevenson**[1], Limonty Simubali[2], Saidon Mbambara[2], Michael Musonda[2], Sydney Mweetwa[2], Twig Mudenda[2], Julia C. Pringle[1], Christine M. Jones[1], Douglas E. Norris[1], Southern Africa ICEMR
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### FIELD TESTING OF A PYRETHROID QUANTIFICATION KIT (PQK) IN TANZANIA - AN EASY-TO-USE TOOL FOR MONITORING THE QUALITY OF INDOOR RESIDUAL SPRAY CAMPAIGNS

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### A COMPREHENSIVE ACCESS METRIC FOR ESTIMATING THE GAP IN INSECTICIDE TREATED NET USE CONDITIONAL ON ACCESS

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### MALARIA UPSURGE FOLLOWING WITHDRAWAL OF INDOOR RESIDUAL SPRAYING IN NORTHERN UGANDA

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### COVERING HOUSE EAVE GAPS AND CEILINGS WITH OLYSET® NET REDUCES RISK OF *PLASMODIUM FALCIPARUM* PARASITE INFECTION AMONG CHILDREN: A CLUSTER RANDOMIZED CONTROLLED TRIAL

**Noboru Minakawa**[1], James O. Kongere[2], George O. Sonye[3], Beatrice Awuor[4], Jinping Hu[1], Peter A. Lutiali[5], Mercy Mwania[2], Hitoshi Kawada[1], Kyoko Futami[1], Sammy M. Njenga[6]
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### REPELLENCY OF THREE ESSENTIAL OIL AND MAJOR CONSTITUENTS TO WILD ADULT *ANOPHELES KLEINI*

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# Bacteriology - Enteric Infections

## 1028

### PREVALENCE OF SOME ENTEROPATHOGENS AMONG DIARRHOEIC AND APPARENTLY HEALTHY CHILDREN IN EKET AND IBENO, AKWA IBOM STATE, NIGERIA

**Inyang Asuquo Atting**, Ofonime Alfred Akpan
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## 1029

### DEFINING THE BURDEN AND EPIDEMIOLOGY OF SHIGELLOSIS IN RURAL ASEMBO, WESTERN KENYA, 2007-2014

**Richard Omore**[1], Allan Audi[1], Billy Ogwel[1], Joshua Auko[1], Jon B. Ochieng[1], George Aol[1], Jane Juma[1], Godfrey Bigogo[1], Marc-Alain Widdowson[2], Jennifer R. Verani[2]
*[1]Center for Global Health Research, Kenya Medical Research Institute, Kisumu, Kenya, [2]Division of Global Health Protection, Centers for Disease Control and Prevention, Nairobi, Kenya*

## 1030

### RISK FACTORS ASSOCIATED WITH TYPICAL ENTEROPATHOGENIC *ESCHERICHIA COLI* INFECTION AMONG CHILDREN <5 YEARS OLD WITH MODERATE-TO-SEVERE DIARRHEA IN RURAL WESTERN KENYA, 2008-2012

**Kirsten Fagerli**[1], Richard Omore[2], Sunkyung Kim[3], John B. Ochieng[2], Tracy Ayers[3], Tamer H. Farag[4], Dilruba Nasrin[4], Sandra Panchalingam[4], Roy M. Robins-Browne[5], James P. Nataro[4], Karen L. Kotloff[4], Myron M. Levine[4], Joseph Oundo[2], Michele B. Parsons[3], Kayla Laserson[6], Eric D. Mintz[3], Robert F. Breiman[7], Ciara E. O'Reilly[3]

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## 1031

### CAUSES AND CONSEQUENCES OF *GIARDIA* INFECTION IN THE FIRST TWO YEARS OF LIFE IN THE MAL-ED BIRTH COHORT

**Elizabeth T. Rogawski**[1], Luther Bartelt[2], James A. Platts-Mills[1], Jessica C. Seidman[3], Aldo A. Lima[4], Richard L. Guerrant[1], Pascal O. Bessong[5], and the MAL-ED Network Investigators

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## 1032

### DETERMINANTS OF HEALTH AND PREVALENCE OF INFECTIOUS GASTROINTESTINAL DISEASE IN CHILDREN LIVING IN THE PERUVIAN AMAZON RIVER BASIN

**Rolfy Perez-Holguin**[1], Darya Nesterova[1], Wilbert Beachy[1], Anne Huyler[1], Olivia Munizza[1], Ivana Marji[1], Henry Montilla-Guedez[1], Loan Nguyen[1], Andrew Rogers[1], Mona Lotfipour[1], Rosa Burga[2], Ricardo Abadie[2], Claudio Rocha[2], H. Tilley[2], David Craft[1]

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## 1033

### THE SHIFTING PATTERN OF *V. CHOLERAE* O1 SEROTYPES OVER A PERIOD FROM 1996 TO 2016 IN 2016 IN BANGLADESH

**Fahima Chowdhury**, Muhammod Ikhtear Uddin, Firdausi Qadri

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## 1034

### EFFECT OF A BIVALENT, KILLED, WHOLE CELL ORAL CHOLERA VACCINE ON PREGNANCY OUTCOME IN BANGLADESH

**Ashraful I. Khan**[1], Mohammad Ali[2], Alamgir Kabir[1], Fahima Chowdhury[1], Amit Saha[1], Iqbal A. Khan[1], Md. Arifuzzaman Khan[1], Afroza Akter[1], Muhammad Asaduzzaman[1], Md. Taufiqul Islam[1], Nirod C. Saha[1], John D. Clemens[1], Firdausi Qadri[1]

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## 1035

### ENHANCING DISTRICT-LEVEL CAPACITY TO INVESTIGATE AND RESPOND TO ACUTE DIARRHEAL DISEASE OUTBREAKS - TAMIL NADU, INDIA, 2013-2015

**K. Kolandaswamy**[1], Raju Sivadas[1], Lata Kapoor[2], G. Durairaj[2], P. Kumar[1], Mayank Dwivedi[3], K. Manoharan[1], K.R Jawaharlal[1], K. Krishnaraj[1], Ekta Saroha[3], M. Mikoleit[4], Heena Joshi[5], Ian Williams[5], Padmini Srikantiah[3]

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## 1036

### INCREASING ANTI-ADHESIN IMMUNE RESPONSES BY MODIFYING FIMBRIAL GENE STEM-LOOP STRUCTURE IN LIVE ATTENUATED SHIGELLA/ETEC VACCINES

**Kurt Hanevik**[1], Christen Grassel[2], Eileen Barry[2]

*[1]University of Bergen, Bergen, Norway, [2]CVD, University of Maryland, Baltimore, MD, United States*

## 1037

### DIARRHEAGENIC *ESCHERICHIA* COLI: PREVALENCE AND PATHOTYPE DISTRIBUTION IN CHILDREN FROM PERUVIAN RURAL COMMUNITIES

**Gonzalo J. Acosta**[1], Natalia I. Vigo[1], David Durand[1], Maribel Riveros[1], Sara Arango[1], Mara Zambruni[2], Theresa J. Ochoa[1]

*[1]Instituto de Medicina Tropical Alexander Von Humboldt, Lima, Peru, [2]University of Texas Medical Branch, Galveston, TX, United States*

## 1038

### BURDEN OF CHOLERA IN THE WHO EASTERN MEDITERRANEAN REGION (EMR): A MAPPING EXERCISE

**Heather McKay**[1], Sean Moore[1], Abdinasir Abubakar[2], Malik Mamunur[2], Dominique Legros[2], Andrew Azman[1], Justin Lessler[1]

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## 1039

### UNDERSTANDING HOW THE FEEDBACK BETWEEN DIARRHEAL DISEASE AND MALNUTRITION IMPACTS THE DYNAMICS OF ENTERIC PATHOGEN TRANSMISSION: A MATHEMATICAL MODELING APPROACH

**Velma Lopez**, Marisa Eisenberg, Joseph Eisenberg

*University of Michigan, Ann Arbor, MI, United States*

## 1040

### EXPLORING HUMAN GUT MICROBIOTA DIVERSITY ACROSS A RURAL TO URBAN GRADIENT IN ECUADOR AND THEIR RESPONSE TO DIARRHEAL INFECTIONS

**Maria J. Soto-Giron**[1], Angela Peña-Gonzalez[1], Janet K. Hatt[1], Gabriel Trueba[2], William Cevallos[3], James Trostle[4], Joseph Eisenberg[5], Konstantinos T. Konstantinidis[1], Karen Levy[6]

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## 1041

### THE USE OF ZINC FOR TREATMENT OF CHILDHOOD DIARRHEA IN RURAL WESTERN KENYA, 2010-2014

**George A. Otieno**[1], Marc-Alain Widdowson[2], Allan Audi[1], Joshua Auko[1], Godfrey Bigogo[1], Jennifer R. Verani[2]
*[1]Center for Global Health Research, Kenya Medical Research Institute, Kisumu, Kenya, [2]Division of Global Health Protection, Centers for Disease Control and Prevention, Nairobi, Kenya*

# Bacteriology - Other Bacterial Infections

## 1042

### DECREASED VIRULENCE ASSOCIATED WITH INCREASE EARLY PRO-INFLAMMATORY CYTOKINE INDUCTION BY MYCOBACTERIUM AFRICANUM INFECTED IN MATURE HUMAN MONOCYTE-DERIVED MACROPHAGES

**John K. Tetteh**[1], Ben Gyan[1], Damien Portevin[2], Adowa Asante-Poku[1], Mercy J. Newman[3], Frank Bonsu[4], Kwadwo Koram[1], Sebastein Gagneux[2], Dorothy Yeboah-Manu[1]
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## 1043

### ANTIBIOTIC RESISTANCE PATTERNS OF COMMON GRAM-NEGATIVE UROPATHOGENS IN ST. PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE

**Yeshwondm Gebresilasie Mamuye**
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## 1044

### FIVE-YEAR SURVEILLANCE OF DIPHTHERIA OUTBREAK IN INDONESIA

**Dominicus Husada**[1], Dwiyanti Puspitasari[1], Leny Kartina[1], Ismoedijanto Moedjito[1], Parwati S. Basuki[1], Bambang W. Kartiko[2]
*[1]School of Medicine. Airlangga University, Surabaya, Indonesia, [2]East Java Provincial Health Office, Surabaya, Indonesia*

## 1045

### TRENDS OF SEVERITY AND OUTCOMES OF PATIENTS WITH PNEUMOCOCCAL PNEUMONIA IN RELATION TO SEASONALITY IN NORTHERN AND SOUTHERN HEMISPHERES

**Ahmed Babiker**[1], Siddartha Bhandary[1], Jennifer Fuh[2], Jose Bordon[1], Community Acquired Pneumonia Organisation (CAPO)
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## 1046

### MOLECULAR-BASED ASSAYS REVEAL *STREPTOCOCCUS PNEUMONIAE* AS THE LEAD ETIOLOGICAL AGENT IN THE ONGOING MENINGITIS EPIDEMIC IN GHANA

**Alexander Kwarteng**
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## 1047

### THE MOLECULAR EPIDEMIOLOGY OF *STAPHYLOCOCCUS AUREUS* SKIN AND SOFT TISSUE INFECTIONS IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC

**Alicia D. Yeap**[1], Kate Woods[2], David Dance[2], Bruno Pichon[1], Sayaphet Rattanavong[2], Viengmon Davong[2], Paul N. Newton[2], Nandini Shetty[1], Angela M. Kearns[1]
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## 1048

### DISTINCT ARRANGEMENTS OF VIRULENCE GENE EXPRESSION IN UROPATHOGENIC *ESCHERICHIA COLI* STRAINS

**Gloria Luz Paniagua Contreras**, Eric Monroy Pérez, Tania Hernández Jaimes, Ma. Patricia Sánchez Yáñez, Susana Esther González Almazán, Sergio Vaca
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## 1049

### METHICILLIN-SENSITIVE AND METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS* (MRSA) CARRIAGE AT A UGANDAN REGIONAL REFERRAL HOSPITAL

**Lisa M. Bebell**[1], Arnold Ayebare[2], Yap Boum II[3], Mark J. Siedner[1], Joel Bazira[2], Steven J. Schiff[4], Joshua P. Metlay[1], David R. Bangsberg[1], Stephen Ttendo[2], Paul G. Firth[1]
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## 1050

### DEFINING THE MECHANISMS OF PROTECTIVE IMMUNITY ELICITED BY TWO VACCINE CANDIDATES AGAINST *ORIENTIA TSUTSUGAMUSHI* INFECTION

**Chien-Chung Chao**[1], Wei-Mei Ching[1], Lindsey Ledbetter[2], Laura Schoenlaub[2], Guoquan Zhang[2]
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## 1051

### SCRUB TYPHUS: A LONG NEGLECTED PUBLIC HEALTH THREAT IN THE ASIA-PACIFIC AREA AND WORLDWIDE

**Guang Xu**, Christine M. Arcari, Daniel Jupiter, Peter C. Melby, David H. Walker
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## 1052

### PERSISTENCE OF ST217 CLONAL COMPLEX LINEAGE B OF SEROTYPE 1 PNEUMOCOCCAL MENINGITIS IN NORTHERN GHANA - THE PROSPECT OF PNEUMOCOCCAL VACCINES IN AFRICAN MENINGITIS BELT

**Eyako K. Wurapa**
*Walter Reed Army Institute of Research, Silver Spring, MD, United States*

## 1053

### PREVALENCE OF MATERNAL CARRIAGE OF GROUP B STREPTOCOCCUS AND *ESCHERICHIA COLI* IN SOUTHERN MOZAMBIQUE

**Lola Madrid**[1], Sonia Maculuve[2], Alba Vilajeliu[3], Emma Sáez-López[1], Sergio Massora[2], Anelsio Cossa[2], Sara Soto[1], Betuel Sigaúque[2], Clara Menéndez[1], Quique Bassat[1]
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## 1054

### QUANTIFYING THE INDIRECT EFFECTS OF *HAEMOPHILUS INFLUENZAE* TYPE B VACCINATION IN CHILDREN UNDER AGE 5 YEARS

**Anwesha Majumder**, Brian Wahl, Maria D. Knoll, Katherine L. O'Brien
*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

## 1055

### BACTERIAL VAGINOSIS IN DAKAR (SENEGAL) IN 2015

**Awa Ba Diallo**[1], Abdou Salam Mbengue[2], Makhtar Camara[1], Halimatou Diop Ndiaye[1], Farba Karam[2], Habsa Diagne Samb[2], Safietou Ngom Cisse[2], Coumba Toure Kane[1], Souleymane Mboup[1], Aissatou Gaye Diallo[1]
*[1]Cheikh Anta Diop University, Dakar, Senegal, [2]Bacteriology Virology Laboratory at Dantec Hospital, Dakar, Senegal*

## 1056

### CHANGE IN NASAL COLONIZATION WITH *STAPHYLOCOCCUS AUREUS* IN ACTIVE PERUVIAN MILITARY POPULATION AFTER 1-YEAR FOLLOW-UP

**Joan M. Neyra**[1], David L. Blazes[2], Claudio Rocha[1], Moises Apolaya[3], Juan Silvera[3], Giselle Soto[1], Michael Ellis[4]
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## 1057

### BLOCKADE OF CTLA-4 IMPAIRS ANTIBACTERIAL IMMUNITY BY REDUCING ACTIVATION OF CD8+ T CELLS AND INCREASING PRODUCTION OF IL-10 BY T CELLS IN MURINE *ORIENTIA TSUTSUGAMUSHI* INFECTION

**Christian Keller**[1], Stefanie Lilla[2], Matthias Hauptmann[2], Thomas Jacobs[2], Bernhard Fleischer[2]
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**(ACMCIP Abstract)**

## 1058

### ANTIBIOTIC RESISTANCE PATTERNS IN BACTEREMIC CHILDREN FROM HOLOENDEMIC *P. FALCIPARUM* MALARIA REGION OF WESTERN KENYA

**Vincent O. Otieno**[1], Qiuying Cheng[2], Elly O. Munde[2], Angela O. Achieng[2], Lily E. Kisia[2], Zachery S. Karim[2], Evans O. Raballah[3], Nicholas K. Otieno[1], Prakasha Kempaiah[2], John M. Ong'echa[1], Douglas J. Perkins[2]
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## 1059

### RESISTANCE OF *NEISSERIA GONORRHOEAE* IN REMOTE PERUVIAN JUNGLE SETTINGS

**Silvia Montano**[1], Rosa Burga[1], Claudio Rocha[1], Esther Macedo[2], Norberto Tangoa[3], Robert Cueva[4], Cesar Ramal[5], Melita Pizango[1], Nilda Gadea[1], Cristina Hidalgo[4], Jose Luis Sanchez[6], Mark P. Simons[1]
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# Clinical Tropical Medicine

## 1060

### PRINCIPLES, PRACTICES, AND KNOWLEDGE OF PROVIDERS EVALUATING CHILDREN PRESENTING WITH FEVER IN KENYA

**Anneka M. Hooft**[1], Kelsey Ripp[2], Bryson Ndenga[3], Francis Mutuku[4], David Vu[5], Kimberly Baltzell[6], A. Desiree LaBeaud[5]
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## 1061

### HIGH PREVALENCE OF PARASITIC INFECTIONS AMONG RECENT IMMIGRANTS IN CHICAGO

**Monica Nordstrom**[1], Miguel Rodriguez[1], Patrick Maloney[1], E. Scott Elder[2], Patricia Wilkins[2], Ronald Hershow[1], Jesica Herrick[1]
*[1]University of Illinois at Chicago, Chicago, IL, United States, [2]Centers for Disease Control and Prevention, Division of Parasitic Diseases and Malaria, Atlanta, GA, United States*

## 1062

### THE MHC CLASS I CHAIN-RELATED MOLECULE A (MICA) 129 METHIONINE/VALINE DIMORPHISM ASSOCIATED WITH CHAGASIC MEGACOLON IN BOLIVIA

**Clara Vasquez Velasquez**[1], Florencia del Puerto[1], Juan Eiki Nishizawa[2], Yelin Roca[3], Roberto Jimmy Revollo[3], Cinthia Avilas[3], Alberto Gianella[3], Javier Lora[3], Freddy Udalrico Gutierrez Velarde[4], Mihoko Kikuchi[1], Kenji Hirayama[1]
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## 1063

### INCIDENCE AND SPECTRUM OF HEALTH PROBLEMS AMONG TRAVELERS TO MYANMAR

Watcharapong Piyaphanee[1], **Jutarmas Olanwijitwong**[2], Saranath Lawpoolsri[3], Chatporn Kittitrakul[1], Thitiya Ponam[2], Prechapol Puengpholpool[4], Chollasap Sharma[2], Monjira Thamangraksat[4], Lapakorn Chatapat[2], Vichan Pawan[4]
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## 1064

### EVALUATION OF A BOOSTER DOSE OF ROTAVIRUS VACCINE GIVEN CONCOMITANTLY WITH MEASLES AND YELLOW FEVER VACCINES IN MALIAN INFANTS

**Fadima C. Haidara**[1], Samba O. Sow[1], Milagritos Tapia[2], Moussa Doumbia[1], Flanon Coulibaly[1], Fatoumata Diallo[1], Awa Traoré[1], Mamoudou Kodio[1], Karen Kotloff[2], John C. Victor[3], Kathleen Neuzil[2]
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## 1065

### AN OPTIMIZED AGE BASED DOSING REGIMEN FOR SINGLE LOW DOSE PRIMAQUINE FOR TRANSMISSION BLOCKING IN CAMBODIA

**Walter Taylor**[1], Rithea Leang[2], Htee Khu Naw[1], Mark Debackere[3], Rupam Tripura[1], Ty Soy[4], Say Chy[4], Neeraj Kak[5], Philippe Buchy[6], Arnaud Tarantola[6], Didier Menard[6], Arantxa Roca-Felterer[7], Richard Fairhurst[8], Sim Kheng[2], Sinoun Muth[2], Song Ngak[9], Arjen Dondorp[1], Nicholas White[10], Mavuto Mukaka[1]
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## 1066

### COMMUNITY HEALTH WORKER'S SOCIO-DEMOGRAPHIC CHARACTERISTICS AND ICCM PERFORMANCE IN RWANDA

**Jean Pierre Habimana**[1], Corine Karema[1], Aline Uwimana[2], Alphonse Rukundo[3], Kaendi Munguti[4]
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## 1067

### PATIENT PERCEPTIONS OF TRACHOMATOUS TRICHIASIS SURGERY IN THE FAR NORTH REGION OF CAMEROON

**Julie Akame**[1], Assumpta Lucienne Bella[2], Georges Nko'ayissi[2], Godefroy Koki[3], Emilienne Epee[2], Rebecca Djao[2], Henri Moungui[1], Yannick Nkoumou[1], Ibrahim Mallam Salli[4], Yaobi Zhang[5], Awa Dieng[5], Whitney Goldman[6]
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## 1068

### MEASURING THE EFFECT OF SOIL-TRANSMITTED HELMINTH (STH) INFECTIONS ON COGNITIVE FUNCTION IN CHILDREN: SYSTEMATIC REVIEW AND CRITICAL APPRAISAL OF EVIDENCE

**Kei Owada**[1], Mark Nielsen[2], Colleen Lau[3], Archie Clements[3], Laith Yakob[4], Ricardo J. Soares Magalhães[5]
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## 1069

### VARICELLA ON SHIPS: IS THERE A RISK TO TRAVELERS?

**Marion Rice**, Joanna Regan
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## 1070

### SPLENOMEGALY IN CONGOLESE REFUGEES APPLYING FOR RESETTLEMENT FROM UGANDA TO THE UNITED STATES

**Matthew Goers**[1], Maurice Ope[2], Natalia Gitu[3], Aaron Samuels[4], Saul Akandwanaho[3], Gladys Nabwami[3], Raymond Nyoka[2], Warren Dalal[4], Paul Cantey[5], Andrea Conroy[6], Chandy John[6], Marty Cetron[2], Marwan Naoum[3], Michelle Weinberg[2], Nina Marano[2], William Stauffer[1]
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## 1071

### IMPROVING THE QUALITY OF CARE FOR COMMON CHILDHOOD ILLNESSES AMONG PATENT AND PROPRIETARY MEDICINE VENDORS IN EBONYI STATE, NIGERIA

**Sarah Burnett**[1], Tiffany Clark[1], Onyekachi Amajor[1], Jolene Wun[1], Jamie Eliades[1], Wapada Balami[2], Jennifer Anyanti[3], Beth Brennan[1]
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## 1072

### HIGH PROTEIN DIETARY SUPPLEMENT IMPROVES NUTRITIONAL STATUS AND RECOVERY IN CHILDREN WITH BURKITT'S LYMPHOMA: A NON-RANDOMIZED CONTROLLED STUDY

**Charles Apprey**
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## 1073

### DENGUE AND LEPTOSPIROSIS CO-INFECTION IN THE PERUVIAN AMAZON, 2013-2014

**Crystyan Siles**[1], Manuel Cespedes[2], Stalin Vilcarromero[1], Carolina Guevara[3], Robert Hontz[1], Hermann Silva[4], Amy C. Morrison[5], Christopher Mores[3], Alberto Laguna[6], Julia Sonia Ampuero[3]
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## 1074

### A PROSPECTIVE ASSESSMENT OF ANTIBIOTIC PRE-TREATMENT, USING A URINE ANTIBIOTIC BIOASSAY, AMONG PATIENTS ATTENDING AN INFECTIOUS DISEASE HOSPITAL IN MANILA AND THE RELATIONSHIP BETWEEN ANTIBIOTIC USE AND SOCIOECONOMIC STATUS

**Nobuo Saito**[1], Noriko Takamura[1], Grace Retuerma[2], Carina Frayco[2], Rontgene Solante[2], Winston Go[2], Motoi Suzuki[1], Koya Ariyoshi[1], Christopher M. Parry[1]
*[1]Nagasaki University, Nagasaki, Japan, [2]San Lazaro Hospital, Manila, Philippines*

## 1075

### DIGITAL GANGRENE DUE TO RICKETTSIAL VASCULITIS - UNCOMMON MANIFESTATION OF AN UNDERAPPRECIATED DISEASE

**Husain Poonawala**[1], Soumya Umesh[2], Thenmozhi N[2], David J. Riedel[1]
*[1]University of Maryland, Baltimore, MD, United States, [2]St John's Medical College, Bangalore, India*

## 1076

### ADVERSE EVENTS FOLLOWING PURIFIED CHICK EMBRYO CELL (PCEC, RABAVERT®) VACCINE IN THE VACCINE ADVERSE EVENT REPORTING SYSTEM, 2006 - 2015

**Pedro L. Moro**, Paige Lewis, Maria Cano
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## 1077

### TRICHOSTRONGYLUS INFECTION IN ITALY: REPORT OF FOUR AUTOCHTHONOUS OUTBREAKS DIAGNOSED IN A SINGLE CENTER

**Federico Giovanni Gobbi**, Dora Buonfrate, Andrea Angheben, Manuela Mistretta, Monica Degani, Zeno Bisoffi
*Sacro Cuore Don Calabria Hospital, Negrar, Italy*

## 1078

### CLINICAL CHARACTERISTICS OF EBOLA SURVIVORS 40 YEARS POST INFECTION IN THE DEMOCRATIC REPUBLIC OF CONGO

**Alexis Kabongo Mwanza**[1], Daniel Mukadi[1], Patrick Mukadi[1], Nicole A Hoff[1], Reena H Doshi[1], Joseph Wasiswa[1], Vivian H Alfonso[2]
*[1]University California Los Angeles/Democratic Republic of Congo, Kinshasa, Democratic Republic of the Congo, [2]University of California Los Angeles, Kinshasa, CA, United States*

## 1079

### EOSINOPHILIA IN PATIENTS PRESENTING TO A LARGE TRAVEL CLINIC: SPECTRUM OF DISEASE AND IMPLICATIONS FOR A SYSTEMATIC DIAGNOSTIC WORK-UP

**Thierry Rolling**[1], Helmut J. Salzer[2], Marylyn M. Addo[1], Stefan Schmiedel[1], Christof D. Vinnemeier[1], Jakob P. Cramer[1]
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## 1080

### MALARIA AND LASSA FEVER VIRUS CO-INFECTION IN SOUTHERN MALI

**Nafomon Sogoba**[1], Sory Ibrahim Diawara[1], Ousmane Maiga[1], Sekou Fantamady Traore[1], David Safronetz[2], Heinz Feldmann[2], Seydou Doumbia[1]
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## 1081

### PROGNOSIS PREDICTION FOR PATIENTS WITH CONFIRMED EBOLA VIRUS DISEASE IN SIERRA LEONE AND LIBERIA: CLINICAL IMPLICATIONS AND FUTURE APPLICATIONS

**Andres Colubri**[1], Adam Levine[2], Pardis Sabeti[1]
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## 1082

### COMMON FINDINGS AND EXCLUSIONS DURING ENROLLMENT OF ADULT MALIAN VOLUNTEERS FOR MALARIA VACCINE STUDIES

**Assadou H. Mahamadoun**[1], Issaka Sagara[1], Mamady Kone[1], Kourane Sissoko[1], Bourama Kamate[1], Yacouba Samake[1], Merepen Agnes Guindo[1], Sintry Sanogo[1], M'Bouye Doucoure[1], Amadou Konate[1], Boucary Ouologuem[1], Souleymane Traore[1], Sara Anne Healy[2], Erin Gabriel[3], Patrick E. Duffy[2], Ogobara K. Doumbo[1]
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## 1083

### THE SNAKEBITE ATLAS: A GROUND-BREAKING, OPEN-ACCESS PORTAL FOR SHARING AND GATHERING GLOBAL, COUNTRY-SPECIFIC INFORMATION ON SNAKEBITE DEATHS, ANTIVENOM AVAILABILITY AND VENOMOUS SNAKES

Stephen Lacey[1], **Robert A. Harrison**[2], Alice Hawash[1], Nicholas Casewell[2]
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## 1084

### RESPONSE TO FEVER AND UTILIZATION OF STANDBY EMERGENCY TREATMENT (SBET) FOR MALARIA IN TRAVELERS TO SOUTHEAST ASIA: A SURVEY-BASED COHORT STUDY

**Christof D. Vinnemeier**[1], Camilla Rothe[2], Marylyn M. Addo[2], Jakob P. Cramer[1], Thierry Rolling[1]
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## 1085

### MORTALITY AMONG EXTREMELY LOW BIRTH WEIGHT INFANTS IN PERU

**Theresa J. Ochoa**[1], Jorge Gonzales[2], Aasith Villavicencio[2], Maria S. Rueda[2], Christie G. Turin[2], Alonso Zea-Vera[2], Sicilia Bellomo[2], Jaime Zegarra[3], Anne Castañeda[4], Luis Cam[5]
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## 1086

### MANAGING THE FEBRILE CHILD IN THE ERA OF SPREADING ANTIBIOTIC RESISTANCE: DEVELOPMENT OF E-POCT, AN ELECTRONIC ALGORITHM THAT USES HOST BIOMARKER POINT-OF-CARE-TESTS

**Kristina Keitel**[1], Clotilde Rambaud-Althaus[2], Alain Gervaix[3], Blaise Genton[4], Valérie D'Acremont[5]
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# Helminths - Nematodes - Filariasis (Epidemiology)

## 1087

### INCREASING PREVALENCE OF HUMAN DIROFILARIASIS IN THE UNITED STATES AND EUROPE

**James H. Diaz**
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## 1088

### DETERMINATION OF BREAK IN TRANSMISSION IN VECTORS OF LYMPHATIC FILARIASIS GHANA

**Irene Offei Owusu**[1], Francis Anto[1], Moses Bockarie[2], John Gyapong[1]
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## 1089

### EVALUATION OF ONCHOCERCIASIS TRANSMISSION IN TANZANIA: RESULTS FROM THE TUKUYU FOCUS, 2015

**Heather N. Paulin**[1], Paul T. Cantey[1], Andreas Nshala[2], Akili Kalinga[3], Oscar Kaitaba[2], Upendo Mwingira[4], Ryan Wiegand[1], Danaya Bethea[5], Katie Miller[5], Jessica Prince-Guerra[6], Guilherme M. Ogawa[7], Vitaliano Cama[1]
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## 1090

### NEW METHODS TO MEASURE CHANGES IN INFECTIOUS DISEASE TRANSMISSION FROM QUANTITATIVE ANTIBODY MEASUREMENTS: EXAMPLES USING *WUCHERERIA BANCROFTI, PLASMODIUM FALCIPARUM* AND ENTERIC PATHOGENS

**Benjamin F. Arnold**[1], Mark J. van der Laan[1], Alan E. Hubbard[1], Cathy Steel[2], Joseph Kubofcik[2], Katy L. Hamlin[3], Delynn M. Moss[3], Thomas B. Nutman[2], Jeffrey W. Priest[3], Patrick J. Lammie[3]
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## 1091

### THE FIRST SUCCESSFUL CONFIRMED ELIMINATION OF AN ONCHOCERCIASIS FOCUS IN AFRICA: ABU HAMED, SUDAN

Isam Zarroug[1], Kamal Hashim[1], Wigdan A. ElMubark[1], Zainab A. Shumo[1], Kawthar A. Salih[1], Nuha A. ElNojomi[1], Huda Awad[1], Nabil Aziz[2], Moses Katabarwa[3], Hassan K. Hassan[4], Thomas R. Unnasch[4], Charles D. Mackenzie[5], Frank Richards[3], **Tarig B. Higazi**[6]
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## 1092

### USABILITY, ACCEPTABILITY, AND IMPLICATIONS OF UTILIZING THE SD BIOLINE ONCHOCERCIASIS IGG4 RAPID TEST IN ONCHOCERCIASIS SURVEILLANCE IN SENEGAL

Yakou Dieye[1], **Helen Storey**[2], Kelsey Barrett[2], Laura Di Giorgio[2], Allison Golden[2], Marie Khemesse Ngom Ndiaye[3], Ngayo Sy[3], Malang Mané[3], Babacar Faye[4], Mamadou Sarr[5], Elhadji Mamadou Dioukhane[5], Roger Peck[2], Philippe Guinot[1], Tala de los Santos[2]
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## 1093

### THE FEASIBILITY OF A 'RE-MAPPING' PROTOCOL FOR LYMPHATIC FILARIASIS IN AREAS WHERE TRANSMISSION IS UNCERTAIN IN ETHIOPIA

**Heven Sime Firew**[1], Sindew Mekasha Feleke[1], Ashenafi Assefa Bahita[1], Sonia Pelletreau[2], Adugna Woyessa Gemeda[1], Yibeltal Assefa Alemu[1], Amha Kebede Hailemikael[1], Maria Rebollo Pollo[3]
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## 1094

### LONGITUDINAL EVALUATION OF ONCHOCERCIASIS 2012-2015 IN THE MID NORTH FOCUS IN UGANDA

**Vitaliano A. Cama**[1], Thomson Lakwo[2], Nicholas Ayebazibwe[3], Danaya Bethea[4], Katie Miller[4], Jessica Prince-Guerra[5], Guilherme Maerschner-Ogawa[6], Michael T. White[7], Paul Cantey[1]
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## 1095

### DETECTION AND EVALUATION OF ANTI-OV-16 ANTIBODIES FOR ONCHOCERCIASIS SURVEILLANCE IN THE CENTRAL ENDEMIC ZONE OF GUATEMALA

**Vitaliano A. Cama**[1], Oscar de Leon[2], Michael T. White[3], Ana Judith Morales[2], Elizabeth Thiele[4], Renata Mendizabal de Cabrera[5], Paul Cantey[1]
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## 1096

### A DELPHI CONSULTATION TO ASSESS INDICATORS OF READINESS TO PROVIDE QUALITY HEALTH FACILITY-BASED LYMPHEDEMA MANAGEMENT SERVICES

**Victoria Walsh**[1], Caitlin M. Worrell[1], Molly Brady[2], LeAnne Fox[1], Jonathan King[3]
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## 1097

### REEXAMINATION OF AREAS WITH PERSISTENT LYMPHATIC FILARIASIS 9 YEARS AFTER CESSATION OF MASS DRUG ADMINISTRATION IN SRI LANKA

**Ramakrishna U. Rao**[1], Kumara C. Nagodavithana[2], Sandhya D. Samarasekera[2], Manjula W. Punchihewa[3], Udaya S. Ranasinghe[2], Devika Mendis[2], Gary J. Weil[1]
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## 1098

### DEFINING AND DETECTING SUBOPTIMAL RESPONSES TO IVERMECTIN IN PATIENTS WITH ONCHOCERCIASIS

**Martin Walker**[1], Julia B. Halder[1], Kwablah Awadzi[2], Nicolas O. Opoku[2], Simon K. Attah[3], Annette C. Kuesel[4], Maria-Gloria Basáñez[1]
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## 1099

### THE EFFICACY OF PREVENTATIVE CHEMOTHERAPY DRUGS FOR THE TREATMENT OF LYMPHATIC FILARIASIS: A SYSTEMATIC REVIEW AND MODEL-BASED META-ANALYSIS

Isabelle Pearson, **Julia B. Halder**, Maria-Gloria Basáñez, Martin Walker
*Imperial College London, London, United Kingdom*

## 1100

### IMPACT OF IVERMECTIN MASS TREATMENT ON THE BURDEN OF ONCHOCERCAL SKIN AND EYE DISEASE: DETAILED MODEL PREDICTIONS UP TO 2025

**Natalie V. S. Vinkeles Melchers**[1], Luc E. Coffeng[1], Michele E. Murdoch[2], Belén Pedrique[3], Roel Bakker[1], Gladys A. Ozoh[4], Sake J. de Vlas[1], Wilma A. Stolk[1]
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## 1101

### APPLYING A MOBILE SURVEY TOOL FOR ASSESSING LYMPHATIC FILARIASIS MORBIDITY IN MTWARA MUNICIPAL COUNCIL OF TANZANIA

Upendo J. Mwingira[1], Philip Downs[2], Matthieu Sauvage-Mar[3], **Maria Chikawe**[1], Cecilia , Uisso[1], Kathryn Crowley[2], Jeremiah M. Ngondi[4]
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## 1102

### STEPS TOWARDS ELIMINATION: RE-EVALUATION OF LYMPHATIC FILARIASIS PREVALENCE IN TANZANIA

**Maria Chikawe**[1], Andreas Nshala[1], Maria Rebollo[2], Celia Uisso[1], Paul Kazyoba[3], Kathryn Crowley[4], Mwele Malecela[3], Upendo Mwingira[1]
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## 1103

### MOSQUITO BITE HETEROGENEITY INFLUENCES LYMPHATIC FILARIASIS PREVALENCE, INTENSITY AND OPPORTUNITIES FOR CONTROL

**Michael A. Irvine**[1], James W. Kazura[2], Deirdre Hollingsworth[1], Lisa Reimer[3]
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## 1104

### ONGOING TRANSMISSION OF ONCHOCERCIASIS IN THREE COMMUNITIES IN MASSANGAM DISTRICT IN WEST CAMERON AFTER 18 YEARS OF MDA OF IVERMECTIN

**Didier K. Bakajika**[1], Laura Senyonjo[2], Peter Enyong[3], Daniel Boakye[4], Serge Akongo[5], Didier Biholong[6], Joseph Oye[5]
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## 1105

### IMPLEMENTATION OF A FACILITY-BASED INSPECTION TOOL TO ASSESS QUALITY OF LYMPHEDEMA MANAGEMENT SERVICES IN VIETNAM

Vu T. Binh[1], **Caitlin M. Worrell**[2], Do T. Dung[1], Molly Brady[3], Victoria Walsh[2], Aya Yajima[4], Zeina Sifri[5], LeAnne Fox[2], Tran T. Duong[1]
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## 1106

### ASSESSING AN IMPORTANT BARRIER TO ONCHOCERCIASIS ELIMINATION: DETERMINANTS AND CHARACTERISTICS OF *LOA LOA* INFECTION AND INTENSITY IN CAMEROON AND GABON

**Kira A. Barbre**[1], Joseph Kamgno[2], Julienne Atsame[3], Benjamin D. Biholong[4], Maria P. Rebollo[1], Honorat Zoure[5]
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## 1107

### LOSS OF CROSS-REACTIVE FILARIAL ANTIGENEMIA IN PERSONS WITH LOIASIS IN CENTRAL CAMEROON

**Philip J. Budge**[1], Hugues C. Nana-Djeunga[2], Jean Bopda[2], Stève Mbickmen-Tchana[2], Joseph Kamgno[2], Gary Weil[1]
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## 1108

### PREVALENCE OF ANTIBODIES TO WB123 SIX YEARS AFTER ELIMINATION OF LYMPHATIC FILARIASIS AS PUBLIC HEALTH PROBLEM IN TOGO

**Ameyo M. Dorkenoo**[1], Kossi Yakpa[1], Kossi Komlan[2], Adjaho Koba[2], Yao M. Agbo[3], Mawèké Tchalim[1], Koffi S. Sognikin[1], Gbati Datagni[4], Abiba Banla[2], Anders Seim[5], Rachel N. Bronzan[6]
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# Helminths - Nematodes - Filariasis (Other)

## 1109

### A BIOINFORMATICS APPROACH TO ASSESS PARASITE KINASES AS DRUG TARGETS USING ANTI-CANCER DRUGS

**Claudia Machicado**[1], Luis Marcos[2]
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## 1110

### DEVELOPMENT OF IMMUNOCOMPETENT ANIMAL MODELS FOR SIMULTANEOUS AND SEPARATE TESTING OF DRUGS ON *ONCHOCERCA* AND *LOA LOA* MICROFILARIAE, AND *ONCHOCERCA* ADULT WORMS

**Fidelis Cho Ngwa**[1], Rene Ayiseh[1], Glory E. Mbah[1], Emmanuel Ndi[1], Elvis Monya[1], Irene Memeh[1], Judy Sakanari[2], Sara Lustigman[3]
*[1]University of Buea, Buea, Cameroon, [2]University of California San Francisco, San Francisco, CA, United States, [3]New York Blood Center, New York, NY, United States*

## 1111

### DESIGN, SYNTHESIS AND BIOLOGICAL EVALUATION OF NOVEL 7-AMINO PYRAZOLOPYRIMIDINE COMPOUNDS POSSESSING POTENT ANTI-*WOLBACHIA* ACTIVITY FOR THE TREATMENT OF ONCHOCERCIASIS AND LYMPHATIC FILARIASIS

**Paul McGillan**[1], Neil G. Berry[1], David W. Hong[1], Andy Cassidy[2], Rachel Clare[2], Darren Cook[2], Kelly Johnston[2], Stephen Ward[2], Paul M. O'Neill[1], Mark Taylor[2]
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## 1112

### ECONOMIC COSTS AND BENEFITS OF SCALING UP DISABILITY PREVENTION FOR LYMPHATIC FILARIASIS ACROSS INDIA

**Eileen Stillwaggon**[1], Larry Sawers[2]
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## 1113

### APPLICATION OF ULTRASONOGRAPHY TO DETECT PERITONEAL FILARIAL DANCE SIGN IN PRECLINICAL RODENT *BRUGIA MALAYI* MACROFILARICIDAL DRUG SCREENING MODELS

**Amy E. Marriott**, Hanna Sjoberg, Darren Cook, Andrew Steven, Mark J. Taylor, Joseph D. Turner
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## 1114

### INVESTIGATING EARLY INFECTION STATUS OF THE FILARIAL PARASITE *BRUGIA MALAYI* IN THE CAT, THE LABORATORY MODEL FOR LYMPHATIC FILARIASIS

**Erica J. Burkman**, Katherine E. Hogan, Molly D. Savadelis, Michael T. Dzimianski, Andrew R. Moorhead
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**(ACMCIP Abstract)**

## 1115

### CELLSCOPE-*LOA*: DISTRICT-WIDE DEPLOYMENT OF A POINT OF CARE TOOL FOR THE PREVENTION OF POST IVERMECTIN SERIOUS ADVERSE EVENTS IN *LOA LOA* ENDEMIC AREAS

**Sebastien Pion**[1], Joseph Kamgno[2], Matthew Bakalar[3], Jean Bopda[2], Cédric Chesnais[1], Mike D'Ambrosio[3], Raceline Gonoue Kamkumo[2], Charles D. Mackenzie[4], Steve Mbickmen Tchana[2], Hugues Clotaire Nana Djeunga[2], Narcisse Ngandjui[5], Guy Roger Njitchouang[2], Philippe Nwane[2], Jules Brice Tchatchueng Mbouga[2], Samuel Wanji[5], Amy Klion[6], Michel Boussinesq[1], Daniel Fletcher[3], Thomas B. Nutman[6]
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## 1116

### SYNERGY OF ALBENDAZOLE AND RIFAMPICIN COMBINATION THERAPY IN A MURINE INFECTION MODEL OF HUMAN LYMPHATIC FILARIASIS

**Raman Sharma**, Joseph D. Turner, Ghaith Al Jayoussi, Hayley E. Tyrer, Joanne Gamble, Laura Hayward, Richard Priestly, Jill Davies, David Waterhouse, Darren A. Cook, Andrew Steven, Kelly L. Johnston, Louise Ford, Stephen A. Ward, Mark J. Taylor
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## 1117

### FACTORS PREDICTING TRANSMISSION ASSESSMENT SURVEY OUTCOMES FOR LYMPHATIC FILARIASIS

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## 1118

### THREE-DIMENSIONAL VISUALIZATION OF THE INTERNAL ARRANGEMENT OF ONCHOCERCAL (*ONCHOCERCA VOLVULUS*) NODULES USING HIGH-RESOLUTION MAGNETIC RESONANCE IMAGING

Maïda Cardoso[1], **Cédric B. Chesnais**[2], Sébastien D. Pion[2], Michel Boussinesq[2], Frédéric Ben Naïm[3], Christophe Goze-Bac[1], Michel Zanca[4]
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## 1119

### IDENTIFICATION OF NEW MACROFILARICIDAL COMPOUNDS FOR TREATMENT OF ONCHOCERCIASIS

Marc P. Hübner[1], Achim Hoerauf[1], Simon Townson[2], Suzanne Gokool[2], Coralie Martin[3], Agnieszka Chojnowski[4], Tamara Kreiss[4], Monika Prorok[4], John Siekierka[4], Jerome Zeldis[5], Stacie Canan[6], Vikram Khetani[5], Ivan Scandal[7], **Natalie A. Hawryluk**[6]
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## 1120

### COMPARISON OF THE ONCHOCERCIASIS OV16 IGG4 RAPID TEST AND OV16 ELISA AMONG CHILDREN IN TOGO: EXPERIENCES WITH A NEW SURVEILLANCE TOOL

**Rachel Bronzan**[1], Adjaho Koba[2], Kossi Komlan[3], Kossi Yakpa[2], Allison Golden[4], Koffi Padjoudoum[2], Potchoziou Karabou[2], Efoe Sossou[2], Koffi S. Sognikin[2], Ameyo Dorkenoo[5]
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# Helminths - Nematodes - Intestinal Nematodes

## 1121

### DESIGN AND EVALUATION OF A HEALTH EDUCATIONAL BOARD GAME FOR THE CONTROL OF SOIL-TRANSMITTED HELMINTHIASIS AMONG PRIMARY SCHOOL CHILDREN IN ABEOKUTA, NIGERIA

**Uwemedimo F. Ekpo**, Dorcas B. Olabinke, Bolanle Akeredolu-Ale, Gabriel A. Dedeke
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## 1122

### RISK FACTORS ASSOCIATED WITH PREDISPOSITION TO SOIL-TRANSMITTED HELMINTH INFECTION IN SOUTHERN MYANMAR

**Julia C. Dunn**[1], Alison A. Bettis[1], Nay Yee Wyine[2], Aye Moe Moe Lwin[3], Nay Soe Maung[3], Roy M. Anderson[1]
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## 1123

### IMPLEMENTATION AND EVALUATION OF A QUALITY AND SAFETY TOOL FOR AMBULATORY STRONGYLOIDIASIS PATIENTS AT HIGH RISK OF ADVERSE OUTCOME

**Sabrina Yeung**[1], Omar Mourad[1], Michael Klowak[2], Adrienne Showler[3], Stefanie Klowak[4], Andrea K. Boggild[1]
*[1]University of Toronto, Toronto, ON, Canada, [2]McMaster University, Hamilton, ON, Canada, [3]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, [4]Tropical Disease Unit, Toronto General Hospital, Toronto, ON, Canada*

## 1124

### STRONGYLOIDIASIS IN ONTARIO: INFORMING THE DIAGNOSTIC EVALUATION BY ESTABLISHING THE NUMBER NEEDED TO EXAMINE (NNE)

**Michelle Dao Dong**[1], Michael Klowak[2], Nessikha Karsenti[3], Omar Mourad[3], Rachel Lau[4], Filip Ralevski[4], Karamjit Cheema[4], Andrea K. Boggild[3]
*[1]University of Western Ontario, London, ON, Canada, [2]McMaster University, Hamilton, ON, Canada, [3]University of Toronto, Toronto, ON, Canada, [4]Public Health Ontario Laboratories, Toronto, ON, Canada*

## 1125

### EOSINOPHILIA, ANEMIA AND INTESTINAL PARASITES IN CHILDREN FROM RURAL COMMUNITIES OF VENEZUELA

**Gladymar Perez**
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## 1126

### PREVALENCE OF STH AT A COASTAL AREA IN INDIA - ROLE OF STUDENTS' HYGIENE PRACTICES, SCHOOL AND HOME SANITATION FACILITIES

**Vinay K. Garg**
*National Centre for Disease Control, New Delhi, India*

## 1127

### HIGH PREVALENCE RATES OF SOIL-TRANSMITTED HELMINTHS IN CHILDREN WHO RECEIVE MASSIVE DRUG ADMINISTRATION IN A REMOTE AMAZONIAN COMMUNITY IN PERU

**Renato A. Errea**[1], George Vasquez-Rios[1], Kevin R. Duque[2], Diego Siu[1], Maria L. Calderon[3], Luciana H. Juarez[4], Celene Uriol[4], Claudia R. Rondon[3], Rodrigo Gallegos[3], Katia P. Baca[3], Rosario J. Fabian[3], Angelica Terashima[1], Jorge D. Machicado[5], Frine Samalvides[6], Luis A. Marcos[7]
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## 1128

### AN AUTOCHTHONOUS CASE OF GNATHOSTOMIASIS ACQUIRED IN QUEENSLAND, AUSTRALIA

**Yi dan Lin,** Nicholas Anstey
*Royal Darwin Hospital, Darwin, Australia*

## 1129

### MODELING COGNITIVE DEFICITS IN SOIL-TRANSMITTED HELMINTHIC INFECTION USING GOLDEN SYRIAN HAMSTER

**Samuel Chi-yu Pan**[1], Thanh Nguyen[2], Yan Hu[2], Raffi Aroian[2], Robert Clark[1]
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## 1130

### SOIL TRANSMITTED HELMINTHS IN BENIN: EVIDENCE OF COUNTRYWIDE HOOKWORM PREDOMINANCE

Moudachirou Ibikounle[1], Wilfrid Batcho[2], **Jean Jacques Tougoue**[3], Aboudou Dare[4], Achille Kabore[3]
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## 1131

### REPEATED ROUNDS OF MASS DEWORMING ADMINISTRATION STILL LEAVE HOUSEHOLD CLUSTERING OF SOIL-TRANSMITTED HELMINTH INFECTIONS

**Rita G. Oliveira**[1], Alice V. Easton[1], Jimmy H. Kihara[2], Cassian Mwatele[2], Sammy M. Njenga[2], Charles S. Mwandawiro[2], Poppy H. Lamberton[3], Simon J. Brooker[4], Roy M. Anderson[1]
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## 1132

### UNDERSTANDING THE EPIDEMIOLOGY OF HOOKWORM INFECTION IN A LOW-TRANSMISSION SETTING IN SOUTHERN INDIA: ANALYSIS OF DATA FROM A CLUSTER-RANDOMIZED MASS DEWORMING TRIAL

**Rajiv Sarkar**[1], James E. Truscott[2], Vasanthakumar Veluswamy[1], Sheela Roy[1], Anuradha Rose[1], Rajan Srinivasan[1], Venkata R. Mohan[1], Vinohar Balraj[1], Jayaprakash Muliyil[1], Gagandeep Kang[1], Roy M. Anderson[2]
*[1]Christian Medical College, Vellore, India, [2]Imperial College London, London, United Kingdom*

## 1133

### MODELLING THE EFFECT OF PATTERNS OF ADHERENCE AND NON-ADHERENCE TO TREATMENT IN PURSUIT OF HELMINTH ELIMINATION BY MASS DRUG ADMINISTRATION

**Sam H. Farrell**
*Imperial College London, London, United Kingdom*

## 1134

### TO WHAT EXTENT IS PREVENTIVE CHEMOTHERAPY FOR SOIL-TRANSMITTED HELMINTHIASIS 'PRO-POOR'? EVIDENCE FROM THE 2013 DEMOGRAPHIC AND HEALTH SURVEY, NIGERIA

**Cameron Seider**[1], Katherine Gass[2], Jedidiah Snyder[3], Nathan C. Lo[4], David G. Addiss[3]
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## 1135

### THE SECOND GLOBAL NGO DEWORMING INVENTORY: ASSESSING SOIL-TRANSMITTED HELMINTHIASES TREATMENT REPORTING

**Jedidiah S. Snyder**[1], Alexei Mikhailov[2], Alexander Jones[1], Pamela Mbabazi[2], David Addiss[1]
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## 1136

### GUIDANCE IN DESIGNING SURVEYS FOR MONITORING SURVEYS FOR MONITORING THE PROGRESS OF SCHOOL-BASED DEWORMING PROGRAMS TO CONTROL SOIL-TRANSMITTED HELMINTHIASIS

**Bruno Levecke**[1], Aklilu H. Ghebretinsae[1], Roy M. Anderson[2], Dirk Berkvens[3], Johnny Vlaminck[1], Brecht Devleesschauwer[4], Niko Speybroeck[5], Jozef Vercruysse[1], Stefan Van Aelst[6]
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## 1137

### IMPACT OF HELMINTH INFECTIONS DURING PREGNANCY ON HUMORAL VACCINE IMMUNOGENICITY IN INFANTS

**Meral Esen**[1], Josiane Honkpehedji[2], Sina Brückner[3], Vera Kühne[3], Esther Askani[3], Wiebke Lessmann[3], Johanna Hass[3], Marguerite Massinga Loembe[4], Sonja Killinger[3], Mohammed Duali[2], Benjamin Mordmüller[1], Bertrand Lell[1], Peter G. Kremsner[1], Akim Ayola Adegnika[1]

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# HIV and Tropical Co-Infection

## 1138

### INTESTINAL PARASITIC INFECTIONS IN HIV INFECTED AND NON-INFECTED PATIENTS IN A HIGH HIV PREVALENCE REGION, ADAMAOUA-CAMEROON

**Celine N. Nkenfou**[1], Sandrine M. Tchameni[2], Carine N. Nguefeu[3], Gabriel Kengne[2], William Estrin[4]

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## 1139

### OLDER AND FORGOTTEN; SEXUAL BEHAVIOR AND PERCEIVED HEALTH STATUS AMONG HIV POSITIVE AND NEGATIVE MENOPAUSAL WOMEN IN NIGERIA

**Olubukola C. Omobowale**[1], Olubukola Adeponle Adesina[2]

*[1]University College Hospital, Ibadan, Nigeria, [2]University of Ibadan, Ibadan, Nigeria*

## 1140

### PREVALENCE OF PREECLAMPSIA AMONG HIV-POSITIVE PREGNANT WOMEN AS COMPARED TO HIV-NEGATIVE WOMEN IN IBADAN

**Richard O. Olayide,** Timothy A. Oluwasola, Olubukola A. Adesina

*University College Hospital, Ibadan, Nigeria*

## 1141

### HTLV AND HIV CO-INFECTION AMONG KEY POPULATIONS, DOMINICAN REPUBLIC

**Robert Paulino-Ramirez**[1], Rebecca Charow[2], Xelenia DePeña[3], Luis Rosario[3], Jorge Rosa[3], Rosana Rosa[3]

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## 1142

### FACTORS ASSOCIATED WITH DEFAULTING FROM CARE AMONG ADULTS ON ANTI-RETROVIRAL TREATMENT PROGRAM IN ONDO STATE, NIGERIA, 2015

**Olayinka S. Ilesanmi**[1], Olufunmilayo Fawole[1], Patrick M. Nguku[2]

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## 1143

### MOLECULAR AND CLINICAL IMMUNE STATUS OF HIV EXPOSED BUT UNINFECTED (HIV EU) INFANTS COMPARED TO CONTROL HIV UNEXPOSED (HIV UU) INFANTS; A COHORT STUDY IN KISUMU DISTRICT, KENYA

**Jessica E. Ray**[1], Maxwel Omenda[2], Peter Sumba[2], John Vulule[2], Rosemary Rochford[3], Arlene Dent[1]

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## 1144

### HIV EPIDEMIOLOGY AND COVERAGE OF HIV HEALTH SERVICES IN GEM COUNTY, SIAYA COUNTY, WESTERN KENYA, 2013-2014

**Barbara K. Burmen**, Kennedy Mutai

*Kenya Medical Research Institute Center for Global Health Research, Kisumu, Kenya*

## 1145

### USING THE LIVERPOOL HIV ICHART TO PREDICT THE SPECTRUM OF DRUG-DRUG INTERACTIONS IN A COHORT OF HAART- EXPOSED PERSONS LIVING WITH HIV (PLHIV) IN A TREATMENT CENTER IN SOUTH-SOUTH NIGERIA

Fubara Adienbonye[1], **Omosivie Maduka**[1], Igbiks Tamuno[2]

*[1]University of Port Harcourt, Port Harcourt, Nigeria, [2]University of Liverpool, Liverpool, United Kingdom*

## 1146

### DIAGNOSIS OF TOXOPLASMOSIS REACTIVATION IN HIV PATIENTS IN URINE USING NANOPARTICLE TECHNOLOGY

**Hannah Steinberg**[1], Maritza Calderon[2], Natalie M. Bowman[3], Francesca Schiaffino[1], Ruben Magni[4], Deanna Zhu[1], Edwardo Ticona[5], Lance Liotta[4], Robert Gilman[1], Alessandra Luchini[4], uana Cayetano Heredia The Toxoplasmosis Working Group at Universidad Per

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## 1147

### COULD ACCELERATION TOWARDS GLOBAL 90:90:90 HIV TARGET ALONE END TB BURDEN AMONG UNDIAGNOSED PEOPLE LIVING WITH HIV? A FOUR YEAR PRE- AND POST-ISONIAZID PREVENTIVE THERAPY IMPLEMENTATION COMPARATIVE DATA FROM COMPREHENSIVE HOSPITAL IN NORTHWESTERN NIGERIA

**Abiola V. Adepoju**[1], Isaac O. Ogbaji[2], Emmanuel I. Okpetu[3], Slyvester A. Akande[4], Peace S. Igene[5]

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# Kinetoplastida - Epidemiology (Including *Leishmania* and Trypanosomes)

## 1148

### THE GENETIC VARIATION WITHIN SUB-SAHARAN POPULATIONS ENDEMIC TO HUMAN AFRICAN TRYPANOSOMIASIS

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## 1149

### EVIDENCE OF AUTOCHTHONOUS CHAGAS DISEASE TRANSMISSION IN SOUTH TEXAS

**Sarah M. Gunter**[1], Kristy O. Murray[2], Rodion Gorchakov[2], Eric L. Brown[1], Melissa N. Garcia[2]
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## 1150

### PAN-AMERICAN MIGRATION PROMOTES THE SPREAD OF PATHOGENIC *TRYPANOSOMA CRUZI* HYBRID STRAINS

**Louisa A. Messenger**[1], Juan-David Ramirez[2], Martin S. Llewellyn[1], Felipe Guhl[3], Michael A. Miles[1]
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**(ACMCIP Abstract)**

## 1151

### EVIDENCE AND IMPORTANCE OF GENETIC EXCHANGE AMONG FIELD POPULATIONS OF *TRYPANOSOMA CRUZI*

**Louisa A. Messenger**
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**(ACMCIP Abstract)**

## 1152

### CHAGAS DISEASE IN PREGNANT WOMEN AND SCREENING BY PCR IN NEWBORNS FROM GUANAJUATO, MÉXICO

**Lucio Galaviz-Silva**, Zinnia J. Molina-Garza, Laura M. Montes-Rincon
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## 1153

### *TRYPANOSOMA CRUZI* PREVALENCE AND SEROPREVALANCE IN A COHORT OF U.S. SERVICE MEMBERS IN SOUTH TEXAS

**Bryant Webber**[1], Mary Pawlak[1], Sandra Valtier[1], Candelaria Daniels[2], Audra Blasi[1], Thomas Cropper[1], Sallie Hall[1], Charla Tully[3]
*[1]59th Medical Wing, San Antonio, TX, United States, [2]Public Health Command-Central (Provisional), San Antonio, TX, United States, [3]Defense Institute for Medical Operations, San Antonio, TX, United States*

## 1154

### TRANSMISSION DYNAMICS OF VISCERAL LEISHMANIASIS IN THE INDIAN SUBCONTINENT - A SYSTEMATIC LITERATURE REVIEW OF THE ROLE OF ASYMPTOMATIC LEISHMANIAL INFECTION, POST-KALA-AZAR DERMAL LEISHMANIASIS AND RELAPSE RATES

**Siddhivinayak Hirve**
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## 1155

### MOLECULAR DETECTION OF *LEISHMANIA* (*VIANNIA*) PANAMENSIS IN ANTHROPOPHILIC AND ZOOPHILIC SANDFLIES FROM AN ENDEMIC FOCUS OF CUTANEOUS LEISHMANIASIS IN PANAMA

**Chystrie A. Rigg**[1], Kadir González[1], Anayansi Valderrama[1], Milixa Perea[1], Aracelis Miranda[1], Luis F. Chaves[2], Nicole Gottdenker[3], José E. Calzada[1], Azael Saldaña[1]
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## 1156

### EFFECT OF GEOGRAPHICAL DIFFERENCES, *T. CRUZI* INFECTION AND BLOOD MEAL ON MICROBIOME OF *TRIATOMA INFESTANS*

**Sandra Mendoza Guerrero**[1], Katty Borrini Mayori[2], Renzo S. Salazar Sanchez[2], Sujata Balasubramanian[1], Carlos Condori Pino[2], Alexandra C. Willcox[1], Jonathan J. Juliano[1], Steven R. Meshnick[1], Robert H. Gilman[3], Michael Z. Levy[4], Natalie M. Bowman[1]
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## 1157

### OUTCOMES OF A COMMUNITY INTERVENTIONAL-EVALUATIVE MODEL FOR NEGLECTED DISEASES IN EAST POKOT, KENYA

**Grace Grifferty**, Richard Wamai
*Northeastern University, Boston, MA, United States*

## 1158

### PREDICTORS OF CHAGAS INFECTION AMONG INDIGENOUS COMMUNITIES IN THE SIERRA NEVADA DE SANTA MARTA IN COLOMBIA

Gabriel Parra-Henao[1], Kathryn Colborn[2], **Andrés F. Henao-Martínez**[2]
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## 1159

### LONGITUDINAL CHANGES IN VECTOR BORNE DISEASE PREVALENCE IN A UNITED STATES DOG POPULATION

**Angela J. Toepp**[1], Mandy Larson[1], Tara Grinnage-Pulley[1], Carolyne Bennett[1], Michael Anderson[1], Hailie Fowler[1], Jill Saucier[2], Jesse Buch[2], Ramaswamy Chandrashekar[2], Christine Petersen[1]
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**(ACMCIP Abstract)**

## 1160

### SERIAL EVALUATIONS OF THE PARASITE LOAD OF *LEISHMANIA* (VIANNIA) SPECIES BY QPCR (QUANTITATIVE POLYMERASE CHAIN REACTION) OF NATURAL INFECTED WILD AND SYNANTHROPIC RODENTS FROM AN ENDEMIC AREA OF SOUTH FOREST ZONE OF PERNAMBUCO, BRAZIL

J. F. Marinho-Junior[1], J. F. Lima[1], L. P. Brito[1], A. W. Carvalho[1], F. G. Carvalho[1], M. P. Cavalcanti[1], **J. J. Shaw**[2], O. Courtenay[3], S. Brandão-Filho[1]
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## 1161

### ESTIMATING THE COSTS AND COST-EFFECTIVENESS OF EARLY DIAGNOSIS AND TREATMENT OF CHAGAS DISEASE IN COLOMBIA

**Zulma M. Cucunubá**[1], Elisa Sicuri[1], Diana Díaz[2], Maria-Gloria Basáñez[1], Pierre Nouvellet[1], Lesong Conteh[1]
*[1]Imperial College London, London, United Kingdom, [2]Red Chagas Colombia, Bogotá, Colombia*

## 1162

### UNDERSTANDING LONG-TERM CYCLES OF VISCERAL LEISHMANIASIS IN BIHAR

**Rinki M. Deb**, Michelle C. Stanton, Geraldine M. Foster, Michael C. Coleman
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## 1163

### CHAGAS DISEASE PREVALENCE AND RISK FACTORS IN WORKING DOGS ALONG THE TEXAS-MEXICO BORDER

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## 1164

### EPIDEMIOLOGICAL EVIDENCE OF CANINE VISCERAL LEISHMANIASIS IN IÑAPARI-PUERTO MALDONADO, PERU, BORDER WITH BRAZIL AND BOLIVIA

**Gloria Sonia Minaya - Gomez**[1], André Reynaldo Santos Périssé[2], Fabiano Borges Figueiredo[3], Nyshon M. Rojas Palomino[1]
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# Pneumonia, Respiratory Infections and Tuberculosis

## 1165

### THE IMPACT OF TEN-VALENT PNEUMOCOCCAL CONJUGATE VACCINE (PCV10) ON *STREPTOCOCCUS PNEUMONIAE* NASOPHARYNGEAL CARRIAGE RATE: PHENOTYPIC AND GENETIC DIVERSITY OF ISOLATES FROM VACCINATED CHILDREN IN ADDIS ABABA, ETHIOPIA

**Wondewosen Tsegaye Sime**[1], Abraham Aseffa[2], Sara Browall[3], Eva Morfeldt[4], Yimtubezenash Woldeamanel[5], Birgitta Henriques-Normark Henriques-Normark[3]
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## 1166

### ASSESSING THE BURDEN OF STIGMA AMONG TUBERCULOSIS PATIENTS IN A PASTORALIST COMMUNITY IN KENYA

**Grace W. Mbuthia**[1], Charles Olungah[2], Tom Ondicho[2], Henry Nyamogoba[1]
*[1]Moi University, Eldoret, Kenya, [2]University of Nairobi, Nairobi, Kenya*

## 1167

### PREVALENCE OF PNEUMOCOCCAL CARRIAGE AND ANTIMICROBIAL SUSCEPTIBILITY AMONG CHILDREN TARGETED BY VACCINATIONS PROGRAM IN BURKINA FASO

**Ouangraoua Soumeya**[1], Issaka Zongo[2], Yves Daniel Compaore[2], Halidou Tinto[2], Daniel Chandramohan[3], Jean-Bosco Ouedraogo[2], Brian Greenwood[3]
*[1]Centre Muraz, Bobo Dioulasso, Burkina Faso, [2]Institut of Research in Health Sciences (IRSS), Bobo Dioulasso, Burkina Faso, [3]London School of Hygiene & Tropical Medicine, London, United Kingdom*

## 1168

### EFFECT OF OVEREXPRESSION OF *M. TUBERCULOSIS* RPSA PROTEIN IN MOLECULAR MECHANISM OF RESISTANCE TO PYRAZINAMIDE IN *M. SMEGMATIS*

**Ricardo Antiparra,** Patricia Sheen, Mirko Zimic
*Universidad Peruana Cayetano Heredia, Lima, Peru*

(ACMCIP Abstract)

## 1169

### TB OR NOT TB? A MODEL FOR INTEGRATING PARAGONIMIASIS SURVEILLANCE AND CONTROL WITH TUBERCULOSIS CONTROL PROGRAM

Vicente Belizario[1], Manuel Jorge[1], Janice V. Ng[1], Myra Mistica[1], Hilton Lam[1], Lenny Joy Rivera[2], Maria Reiza Anino[2], **John Paul Caesar R. delos Trinos**[1]
*[1]University of the Philippines Manila, Manila, Philippines, [2]Department of Health Regional Office IX, Zamboanga City, Philippines*

## 1171

### TUBERCULOSIS OUTBREAK INVESTIGATION IN A COLONY OF AOTUS MONKEYS: DIAGNOSIS, EPIDEMIOLOGY AND CROSS-SECTIONAL RANDOMIZED SCREENING USING ANTIBODY AND WHOLE-BLOOD *IN VITRO* INTERFERON-GAMMA RELEASE TESTING

**Nicanor Iii Obaldia**[1], Marlon Nuñez[2], Santiago Montilla[2], Camilo Marin[2]
*[1]ICGES/Harvard T.H. Chan School of Public Health, Boston, MA, United States, [2]Instituto Conmemorativo Gorgas de Estudios de la Salud (ICGES), Panama, Panama*

## 1172

### DETERMINATION OF PLASMA LEVELS OF LEVOFLOXACIN BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY FOR USE AT A MULTIDRUG-RESISTANT TUBERCULOSIS HOSPITAL IN TANZANIA

**Andrew Ebers**
*University of Virginia Department of Infectious Disease, Charlottesville, VA, United States*

## 1173

### MOLECULAR CHARACTERIZATION OF CIRCULATING STRAINS OF INFLUENZA A BETWEEN 2014-2015 IN EGYPT

**Ehab A. Ayoub**[1], Mustafa Abd AlAziz[1], Nirvana N. Yassa[1], Samir El-Refaay[2], Mohamed Genedy[2], Amr Kandil[2], Gabriel Defang[1]
*[1]U.S Naval Medical Research Unit - 3, Cairo, Egypt, [2]Ministry of Health and Population, Cairo, Egypt*

## 1174

### UNDERSTANDING THE IMMUNE RESPONSE TO *S. PNEUMONIAE* FROM VACCINATION AND CARRIAGE ON A PROTEOME SCALE

**Joseph J. Campo**[1], Nicholas J. Croucher[2], Paul Turner[3], Andrea Tate[4], Tim Le[1], Jozelyn Pablo[1], Chris Hung[1], Andy Teng[1], William P. Hanage[5], Marc Lipsitch[5], David Goldblatt[6], Mark Alderson[4], Xiaowu Liang[1]
*[1]Antigen Discovery, Inc., Irvine, CA, United States, [2]Department of Infectious Disease Epidemiology, Imperial College London, London, United Kingdom, [3]Centre for Tropical Medicine and Global Health, Nuffield Department of Medicine, University of Oxford, Oxford, United Kingdom, [4]PATH, Seattle, WA, United States, [5]Center for Communicable Disease Dynamics, Department of Epidemiology, Harvard T.H. Chan School of Public Health, Boston, MA, United States, [6]Immunobiology Unit, Institute of Child Health, University College London, London, United Kingdom*

## 1175

### EXPANSION AND EVALUATION OF TUBERCULOSIS MICROSCOPIC-OBSERVATION DRUG-SUSCEPTIBILITY ASSAY (TB-MODS) IN EGYPT, 2014-2015

**Hoda Mansour**[1], A. Hegazy[2], Mostafa Maroof[1], Erik J. Reaves[3]
*[1]U.S. Naval Medical Research Unit - 3, Cairo, Egypt, [2]Ministry of Health and Population, Cairo, Egypt, [3]Centers for Disease Control and Prevention, Cairo, Egypt*

# Trematodes - Schistosomiasis - Epidemiology, Diagnosis and Treatment

## 1176

### THE SPATIAL-TEMPORAL DISTRIBUTION OF *ONCOMELANIA HUPENSIS* ALONG YANGTZE RIVER AFTER IMPLEMENTATION OF AN INTEGRATED CONTROL STRATEGY IN JIANGSU, P.R. CHINA

**Jian He**, Wei Li, Jian feng Zhang, Liang Shi, Feng Wu, Kun Yang
*Jiangsu Institute of Parasitic Disease, WuXi, China*

## 1177

### THE SEROLOGICAL DIAGNOSIS METHODS OF SCHISTOSOMIASIS AT DIFFERENT PREVALENCE: A META-ANALYSIS

**Yao Xin Wang**
*Jiangsu Institute of Parasitic Diseases, Wuxi, China*

## 1178

### A PILOT STUDY ON HUMAN SCHISTOSOMIASIS IN A RURAL COMMUNITY OF FIANGA, REPUBLIC OF CHAD

**Romuald Isaka Kamwa Ngassam**
*University of Maroua, Maroua, Cameroon*

## 1179

### EFFICACY AND DRUG ACTION MECHANISM OF ARTESUNATE AND A SYNTHETIC ENDOPEROXIDE COMPOUND N-89, AGAINST ADULT STAGE *SCHISTOSOMA MANSONI*

**Emmanuel A. Blay**[1], Masafumi Yamabe[1], Reiko Shimogawara[1], Akina Hino[1], Hye-Sook Kim[2], Irene Ayi[3], Takashi Kumagai[1], Nobuo Ohta[1]
*[1]Tokyo Medical and Dental University, Tokyo, Japan, [2]Okayama University, Okayama, Japan, [3]Noguchi Memorial Institute for Medical Research, Accra, Ghana*

**(ACMCIP Abstract)**

## 1180

### DRUG DISCOVERY: *IN VITRO* EVALUATION OF EXTRACTS FROM MEDICINAL PLANT *BALANITES AEGYPTIACA* (LINN) DEL FOR ANTI-*SCHISTOSOMA* CERCARIAL PROPERTIES

Dzidzo Yirenya-Tawiah[1], **Daniel Boamah**[2], Daniel Nukpezah[1], Kwabena M. Bosompem[3], Christian Gordon[1], William K. Anyan[1], Mark Ofosuhene[3], Mabel D. Tetteh[3], Francis Glah[4], Anim Amposah[1]
*[1]Institute for Environment and Sanitation Studies. University of Ghana, Legon, Accra, Ghana, [2]Center for Plants Medicine Research, Mampong, Ghana, Mampong, Ghana, [3]Noguchi Memorial Institute for Medical Research. University of Ghana, Legon, Accra, Ghana, [4]Department of Science Laboratory Technology. Accra Polytechnic, Accra, Ghana*

## 1181

### OUTBREAK OF URINARY SCHISTOSOMIASIS IN A SCHOOL FOR MIGRANT CHILDREN, GYALLESU WARD, ZARIA, KADUNA STATE, NIGERIA. JANUARY 1ST-MAY 15TH, 2015

**Aishatu Mamie Sadiq**[1], Anthony Suleiman[1], Aisha Abubakar[2], Patrick Nguku[1]
*[1]Nigeria Field Epidemiology and Laboratory Training Programme, Abuja, Nigeria, [2]Department of Community Medicine, Ahmadu Bello University, Zaria, Kaduna State, Kaduna, Nigeria*

## 1182

### ASSESSMENT OF THREE SCHISTOSOMIASIS ENDEMIC AREAS USING KATO-KATZ TECHNIQUE AND ENZYME-LINKED IMMUNOSORBENT ASSAY (ELISA) ANTIGEN AND ANTIBODY TESTS

**Chiqui de Veyra**[1], Vicente Belizario Jr.[2], Alice Alma Bungay[3], Glenn Sia Su[4], Jana Denise Lacuna[1]
*[1]Neglected Tropical Diseases Study Group, National Institutes of Health, University of the Philippines Manila, Manila, Philippines, [2]Department of Parasitology, College of Public Health, University of the Philippines Manila, Manila, Philippines, [3]Department of Medical Microbiology, College of Public Health, University of the Philippines Manila, Manila, Philippines, [4]Department of Biology, College of Arts and Sciences, University of the Philippines Manila, Manila, Philippines*

## 1183

### DETERMINING THE IMPACT OF *SCHISTOSOMA MANSONI* INFECTION ON PUBLIC HEALTH IN A HIGH PREVALENCE REGION IN REMOTE MADAGASCAR

**Stephen Spencer**[1], James Penney[2], Cortland Linder[2], Hannah Russell[2], Anthony Howe[2], Andriamahitsisambatra Rakotomampianina[3], Anjara Nandimbiniaina[3], Alain Rahetilahy[4]
*[1]East Lancashire Hospitals NHS Trust, Blackburn, United Kingdom, [2]The University of Manchester, Manchester, United Kingdom, [3]The University of Antananarivo, Antananarivo, Madagascar, [4]Ministère de la Santé Publique, Madagascar, Antananarivo, Madagascar*

## 1184

### EVOLUTION OF IMMUNOLOGICAL MARKERS OF INFECTION WITH *SCHISTOSOMA MANSONI* IN PATIENTS TREATED WITH PRAZIQUANTEL IN THE KOU VALLEY (BURKINA FASO)

**Nina Gouba**, Jean Bosco Ouedraogo, Sorgho Hermann
*Institut de recherche en science de la santé DRO- Bobo-Dioulasso, Bobo-Dioulasso, Burkina Faso*

**(ACMCIP Abstract)**

## 1185

### RELIABILITY OF COMMUNITY HEALTH WORKER REPORTED TREATMENT COVERAGE FOR SCHISTOSOMIASIS IN WESTERN KENYA-THE SCHISTOSOMIASIS CONSORTIUM FOR OPERATIONAL RESEARCH AND EVALUATION PROJECT

**Rosemary Musuva**
*Kenya Medical Research Institute, Kisumu, Kenya*

## 1186

### MODELING THE WITHIN-HOST DYNAMICS OF *SCHISTOSOMA MANSONI*: THE CONSEQUENCES OF INCONSISTENT TREATMENT EFFICACY FOR DISEASE CONTROL

**Larissa Anderson**
*University of New Mexico, Albuquerque, NM, United States*

## 1187

### SYSTEMATIC REVIEW OF ANTISCHISTOSOMAL TREATMENT EFFICACY STUDIES AND THE SIGNIFICANCE OF INDIVIDUAL-LEVEL PARTICIPANT DATA FOR META-ANALYSES

**Amélie M. Julé**[1], Julia B. Halder[2], Michel Vaillant[3], Maria-Gloria Basáñez[2], Trudie A. Lang[1], Martin Walker[2], Piero L. Olliaro[4]
*[1]Centre for Tropical Medicine and Global Health, Nuffield Department of Medicine, University of Oxford, Oxford, United Kingdom, [2]Department of Infectious Disease Epidemiology and London Centre for Neglected Tropical Disease Research, Imperial College, London, United Kingdom, [3]Competence Center in Methodology and Statistics, Luxembourg Institute of Health, Luxembourg, Luxembourg, [4]UNICEF/UNDP/World Bank/World Health Organization Special Programme on Research and Training in Tropical Diseases (TDR), World Health Organization, Geneva, Switzerland*

# Water, Sanitation, Hygiene and Environmental Health

## 1188

### OUTBREAK OF GASTROENTERITIS ASSOCIATED WITH BORE WELL WATER - GANESHPUR VILLAGE, BIDAR DISTRICT, KARNATAKA STATE, INDIA, 2015

**Sree Kalpana Mohan Kumar**[1], Bhavani Gopinath[2], Samir V. Sodha[1], Manoj Murrhekar[2], Prakash Kumar[3], Doddamallappa Ramanna[3], Jabbar M.A.[4], Ninganagouda N. Biradar[4], Pallavi Fattepurkur[5], Sathish S.[5], Aakash Shrivastava[1], Agarwal C.S.[1], Srinivas Venkatesh[1]

*[1]National Center for Disease Control, Delhi, India, [2]National Institute of Epidemiology, Chennai, India, [3]Integrated Disease Surveillance Project, Bangalore, India, [4]District Surveillance Unit, Bidar, India, [5]Bidar Institute of Medical Sciences, Bidar, India*

## 1189

### QUANTITATIVE ASSESSMENT OF EXPOSURE TO FECAL CONTAMINATION FOR YOUNG CHILDREN IN A CROWDED, LOW-INCOME URBAN ENVIRONMENT IN THE SANIPATH STUDY OF ACCRA, GHANA

**Yuke Wang**[1], Christine L. Moe[1], Clair Null[2], Suraja J. Raj[1], Kelly K. Baker[3], Katharine A. Robb[1], Habib Yakubu[1], Joseph A. Ampofo[4], Nii Wellington[5], Matthew Freeman[1], George Armah[6], Heather E. Reese[1], Dorothy Peprah[7], Peter FM Teunis[8]

*[1]Emory Univeristy, Atlanta, GA, United States, [2]Mathematica Policy Research, Washington, DC, United States, [3]The University of Iowa, Iowa City, IA, United States, [4]Water Research Institute (WRI), Council for Scientific and Industrial Research (CSIR), Accra, Ghana, [5]Training Research and Networking for Development (TREND Group), Accra, Ghana, [6]University of Ghana - Legon, Accra, Ghana, [7]London School of Hygiene & Tropical Medicine, London, United Kingdom, [8]Centre for Infectious Disease Control (RIVM), Utrecht, Netherlands*

## 1190

### OBSERVATIONAL AND LABORATORY HYGIENIC ANALYSIS OF RESTAURANTS IN IQUITOS, PERU

**Olivia Munizza**[1], Ivana Marji[1], Colin Andrews[1], Mona Lotfipour[1], Andrew Rogers[1], Ricardo Abadie[2], Rosa Burga[2], Claudio Rocha[2], Hamilton Tilley[2], David Craft[1]

*[1]Pennsylvania State University College of Medicine, Hershey, PA, United States, [2]U.S. Naval Medical Research Unit - 6, Lima, Peru*

## 1191

### LATRINE LEARNING: USING CONDITIONAL INFERENCE TREES TO EXPLORE HOW LATRINE CONDITIONS CAN PREDICT LATRINE USE IN RURAL BANGLADESH

**Andrew Nute**[1], Maryann G. Delea[2], Katherine Gass[3], Corey Nagel[4], Thomas Clasen[1]

*[1]Rollins School of Public Health at Emory University, Atlanta, GA, United States, [2]London School of Hygiene & Tropical Medicine, London, United Kingdom, [3]The Task Force for Global Health, Atlanta, GA, United States, [4]Oregon Health & Science University, Portland, OR, United States*

## 1192

### WOMEN AND WATER USE IN THE EASTERN REGION OF GHANA: A QUALITATIVE APPROACH

**Liliana Schmitt**

*Tufts University, Medford, MA, United States*

## 1193

### IDENTIFICATION OF CAUSAL PATHWAYS DETERMINING THE RELATIONSHIP BETWEEN PATHOGEN-SPECIFIC INFECTION AND IMPAIRED GROWTH AMONG CHILDREN < 59 MONTHS IN MIRZAPUR, BANGLADESH

**Kurt Z. Long**[1], Abu. Faruque[2], Sumon Kumar Das[2], Shahnawaz Ahmed[2], James P. Nataro[3], Dilruba Nasrin[4], Karen Kotloff[5], Myron M. Levine[5]

*[1]Swiss Tropical and Public Health Institute, Basel, Switzerland, [2]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, [3]School of Medicine, University of Virginia, Charlottesville, VA, United States, [4]Pediatrics, Center for Vaccine Development, University of Maryland School of Medicine, Baltimore, MD, United States, [5]Departments of Medicine and Pediatrics, Center for Vaccine Development, University of Maryland School of Medicine, Baltimore, MD, United States*

## 1194

### HIGH PREVALENCE OF BLASTOCYTIS SP IN POPULATION LIVING IN URBAN AREAS OF GABON

**Denise Patricia Mawili Mboumba**, Noé Patrick M'Bondoukwe, Fernande Manga, Marielle Karine Bouyou Akotet

*Faculty of Medicine, Libreville, Gabon*

## 1195

### FORMATIVE RESEARCH TO INFORM DESIGN OF A BEHAVIOR CHANGE INTERVENTION FOR THE "F" AND "E" COMPONENTS OF THE SAFE STRATEGY FOR TRACHOMA CONTROL IN OROMIA, ETHIOPIA

**Katie Greenland**[1], Sian White[1], Nazif Jemal[2], Matthew Burton[1], Wondu Alemayehu Gebremichael[3]

*[1]London School of Hygiene & Tropical Medicine, London, United Kingdom, [2]Fred Hollows Foundation Ethiopia, Addis Ababa, Ethiopia, [3]Berhan Public Health and Eye Care Consultancy, Addis Ababa, Ethiopia*

## 1196

### INCORPORATING WASH INDICATORS INTO NATIONAL CONTROL PROGRAM SURVEYS FOR SCHISTOSOMIASIS AND STH IN MADAGASCAR

**Clara F. Rasoamanamihaja**[1], Neerav A. Dhanani[2], Alain M. Rahetilahy[1], Bruno Ranjatoarivony[3], Luciano Andriamaro[4], Samuel H. Andrianarisoa[5], Peter M. Jourdan[6]

*[1]Ministry of Public Health, Antananarivo, Madagascar, [2]Schistosomiasis Control Initiative, London, United Kingdom, [3]Ministry of National Education, Antananarivo, Madagascar, [4]Réseau International Schistosomose Environnement Aménagement et Lutte, Antananarivo, Madagascar, [5]World Health Organization, Antananarivo, Madagascar, [6]Natural History Museum, London, United Kingdom*

## 1197

### ESTIMATING THE GLOBAL RISK OF DIARRHEAL DISEASE ATTRIBUTABLE TO INTERMITTENT WATER SUPPLIES

**Aaron W. Bivins**, Trent Sumner, Joseph Brown

*Georgia Institute of Technology, Atlanta, GA, United States*

## 1198

### IMPACT OF COMMUNITY HEALTH CLUBS ON DIARRHEA, ANTHROPOMETRY AND WATER QUALITY IN WESTERN RWANDA

**Sheela S. Sinharoy**[1], Ronald Wendt[2], Leodomir Mfura[3], Wolf-Peter Schmidt[4], James Habyarimana[5], Thomas F. Clasen[1]

*[1]Emory University, Atlanta, GA, United States, [2]Innovations for Poverty Action, New Haven, CT, United States, [3]Innovations for Poverty Action, Kigali, Rwanda, [4]London School of Hygiene & Tropical Medicine, London, United Kingdom, [5]Georgetown University, Washington, DC, United States*

## 1199

### THE ROLE OF PUBLIC-PRIVATE PARTNERSHIPS FOR NEGLECTED TROPICAL DISEASES (NTDS) PREVENTION AND CONTROL: THE SUPER SCHOOL OF FIVE TRACHOMA PROGRAM

**Beatrice Wasunna**[1], Sarah Maiywa[1], Peter Otinda[1], Stacie June[2], Myriam Sidibe[3], Elizabeth Owuor-Oyugi[1], Geordie Woods[4]

*[1]Sightsavers, Nairobi, Kenya, [2]Unilever, London, United Kingdom, [3]Unilever, Nairobi, Kenya, [4]Sightsavers, New Orleans, LA, United States*

## 1200

**RELATIONSHIP OF INFANT DIET TO CHILDHOOD HEALTH: ROUTES OF PARASITIC INFECTIONS FROM CONTAMINATED WEANING FOODS**

**James R. Palmieri**, Susan L. Meacham, Jenna Warehime, Sarah Stokes
*Virginia College of Osteopathic Medicine, Blacksburg, VA, United States*

### Late Breaker Abstract Session 80

## Late Breakers in Basic Science/Molecular Biology

*Marriott - Imperial A*
Tuesday, November 15, 12:15 p.m. - 1:30 p.m.

This session is specifically designed for brief presentations of new data obtained after the closing date for abstract submission. See the Late Breaker Abstract Presentation Schedule booklet in your registration packet for the presentation schedule.

CHAIR

Gregory D. Ebel
*Colorado State University, Fort Collins, CO, United States*

Naomi Forrester
*University of Texas Medical Branch, Galveston, TX, United States*

### Meet the Professors 81

## Meet the Professors B: Enigmatic and Teaching Cases

*Marriott - Room M103/M104/M105*
Tuesday, November 15, 12:15 p.m. - 1:30 p.m.

Students and trainees are especially encouraged to attend these interactive sessions, which are open to all meeting attendees. The speakers will present a clinical case of a tropical disease specific to a particular region that they have found a challenge to manage or diagnose.

CHAIR

David R. Boulware
*University of Minnesota, Minneapolis, MN, United States*

PRESENTER

Tom Chiller
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

## CTropMed® Exam Executive Committee Meeting

*Marriott - Room M108*
Tuesday, November 15, 12:15 p.m. - 1:30 p.m.

## Poster Session B Viewing

*Hilton - Grand Ballroom and Grand Salon*
Tuesday, November 15, 1:45 p.m. - 7 p.m.

### Symposium 82

## Congenital Vector-Borne Diseases and Early Child Neurodevelopmental Outcomes

*Marriott - Imperial A*
Tuesday, November 15, 1:45 p.m. - 3:30 p.m.

The early part of the 21st century has seen an unparalleled burden of emerging infectious disease outbreaks: West Nile virus across North America, severe acute respiratory syndrome and avian influenza in Southeast Asia, chikungunya virus in Europe and the Americas, Middle East Respiratory syndrome coronavirus, and Ebola virus in western Africa. The latest in this series of epidemic events is Zika virus (ZIKV), a flavivirus spreading across the Americas. Among these viruses, some have demonstrated a neurotropic potential for causing lifelong developmental consequences. The paradigm is that the earlier a neurovirulent pathogen has an impact on the developmental brain, the more severe the consequences and the related disabilities; however, this paradigm is currently being challenged with new evidence from Zika virus cases. Beyond the perinatal period of transmission, the outcome is related to the clinical form of neuroinvasive disease irrespective of the infectious pathogen, encephalitis causing more harm on neurocognitive functioning, meningitis more sensorineural impairments. Impacts during all stages of brain development can have harmful consequences for the child. This symposium will focus on the consequences of pregnancy-associated malaria and the challenges posed by the transplacental passage of two emerging neurovirulent arboviruses in early infancy, CHIKV and ZIKV. These two viruses will be used as case studies to describe the two common situations of viral vertical transmission, namely perinatal and intrapartum maternal-fetal transmission. The session will begin with an overview of the natural history of normal child neurodevelopment and aberrations during congenital infection, followed by a presentation on the neurodevelopmental evaluation scales and review of the challenges of performing neuropsychological assessment in children of varying ages and stages. The session will discuss new studies that aim to define the extent of neurodevelopmental impairment in children born to mothers with pregnancy-associated malaria, and to delineate the pathways that may lead to neurodevelopmental impairment. The symposium will describe the neurodevelopmental consequences of perinatal chikungunya infection, including two-year and school-age neurocognitive outcome evaluations. The final presenter will share experience in caring for babies with congenital Zika virus infection in Brazil and provide the first data on the early neurodevelopmental consequences of ZIKV-related microcephaly.

CHAIR

A. Desiree LaBeaud
*Stanford University, Stanford, CA, United States*

Patrick Gerardin
*CHU Réunion, La ReUnion, French Southern Territories*

1:45 p.m.
**A FIVE-MINUTE PRIMER ON NORMAL CHILD NEURODEVELOPMENT AND CONGENITAL INFECTION EFFECTS**

A. Desiree LaBeaud
*Stanford University, Stanford, CA, United States*

1:55 p.m.
**THE NEURODEVELOPMENTAL EVALUATIONS AND OUTCOMES OF CHILDREN WITH CONGENITAL INFECTIONS IN LMICS**

Paul Bangirana
*Makerere University, Kampala, Uganda*

2:15 p.m.
**VERTICAL TRANSMISSION OF CHIKUNGUNYA VIRUS AND NEURODEVELOMENTAL OUTCOMES OF PERINATAL CHIKUNGUNYA**

Patrick Gerardin
*CHU Reunion, Saint Pierre, French Southern Territories*

2:35 p.m.
**CARE EXPERIENCE AND EARLY NEURODEVELOPMENTAL CONSEQUENCES OF CONGENITAL ZIKV INFECTIONS AND ZIKV RELATED-MICROCEPHALY**

Regina C. Ramos
*Hospital Universitario Oswaldo Cruz, Pernambuco, Brazil*

2:55 p.m.
**PREGNANCY-ASSOCIATED MALARIA AND CHILD NEURODEVELOPMENT: WHAT WE KNOW, WHAT WE DON'T KNOW**

Chandy C. John
*Indiana University, Indianapolis, IN, United States*

## Scientific Session 83

## Bacteriology: Diarrhea - Determinants and Prevention

*Marriott - Imperial B*
Tuesday, November 15, 1:45 p.m. - 3:30 p.m.

CHAIR

Jason R. Andrews
*Stanford University School of Medicine, Stanford, CA, United States*

Anna Bowen
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

1:45 p.m.
### 1201

**DETERMINANTS OF LIFE-THREATENING DIARRHEAL DISEASE AT HOSPITAL PRESENTATION: EVIDENCE FROM 22 YEARS OF ADMISSIONS IN BANGLADESH**

Jason R. Andrews[1], Daniel T. Leung[2], Shahnawaz Ahmed[2], M. a. Malek[2], Dilruba Ahmed[2], Yasmin Begum[2], Firdausi Qadri[2], Tahmeed Ahmed[2], A.S.G. Faruque[2], **Eric J. Nelson**[1]
*[1]Stanford University School of Medicine, Stanford, CA, United States, [2]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh*

2 p.m.
### 1202

**BISMUTH SUBSALICYLATE REDUCES ANTIMICROBIAL USE AMONG ADULT DIARRHEA PATIENTS IN PAKISTAN: A RANDOMIZED, PLACEBO-CONTROLLED, TRIPLE-MASKED CLINICAL TRIAL**

**Anna Bowen**[1], Mubina Agboatwalla[2], Adam Pitz[3], Jose Brum[3], Brian D. Plikaytis[4]
*[1]Centers for Disease Control and Prevention, Atlanta, GA, United States, [2]HOPE, Karachi, Pakistan, [3]Procter & Gamble, Mason, OH, United States, [4]BioStats Consulting, Jasper, GA, United States*

2:15 p.m.
### 1203

**CONTINUED FEEDING DURING DIARRHEA MANAGEMENT AT HOME AND GROWTH FALTERING: SECONDARY DATA ANALYSIS OF THE KENYA GLOBAL ENTERIC MULTICENTER STUDY (GEMS) OF DIARRHEAL DISEASE IN INFANTS AND YOUNG CHILDREN IN DEVELOPING COUNTRIES**

**Kerris I. Sease**[1], Kelly B. Kamm[1], Ciara O'Reilly[2], Wit Wichaidit[1], Richard Omore[3], Dilruba Nasrin[4], Karen Kotloff[4], Tamer H. Farag[4], Myron M. Levine[4], Kayla Laserson[2], Robert F. Breiman[5], Anna Bowen[2], Eric D. Mintz[2], Amy E. Millen[1], Pavani K. Ram[1]
*[1]The State University of New York at Buffalo, Buffalo, NY, United States, [2]Centers for Disease Control and Prevention, Atlanta, GA, United States, [3]Kenya Medical Research Institute-Center for Global Health Research, Kisumu, Kenya, [4]University of Maryland, College Park, MD, United States, [5]Emory University, Atlanta, GA, United States*

2:30 p.m.
### 1204

**DISRUPTIONS OF THE HUMAN GUT MICROBIOME DURING DIARRHEA INFECTIONS CAUSED BY ROTAVIRUS AND ENTERO-PATHOTYPES OF *ESCHERICHIA COLI***

**Angela V. Pena Gonzalez**[1], Maria J. Soto-Giron[1], Janet K. Hatt[2], Gabriel Trueba[3], William Cevallos[4], Karen Levy[5], Konstantinos T. Konstantinidis[2]
*[1]School of Biology, Georgia Institute of Technology, Atlanta, GA, United States, [2]School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA, United States, [3]Instituto de Microbiologia, Universidad San Francisco de Quito, Quito, Ecuador, [4]Centro de Biomedicina, Universidad Central de Ecuador, Quito, Ecuador, [5]Rollins School of Public Health, Emory University, Atlanta, GA, United States*

2:45 p.m.
### 1205

**THE FECAL MICROBIOME ASSOCIATED WITH SMALL INTESTINE BACTERIAL OVERGROWTH IN BANGLADESHI CHILDREN**

**Jeffrey Donowitz**[1], Masud Alam[2], Rashidul Haque[2], Beth D. Kirkpatrick[3], Mami Taniuchi[4], Shahria Hafiz Kakon[2], Bushra Zarin Islam[2], Sajia Afreen[2], E. Ross Colgate[3], Marya P. Carmolli[3], Hardik I. Parikh[5], Steven Bradley[5], Nihar U. Sheth[6], Carol A. Gilchrist[4], William A. Petri[4]
*[1]Division of Pediatric Infectious Diseases, Virginia Commonwealth University, Richmond, VA, United States, [2]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, [3]Department of Medicine and Vaccine Testing Center, The University of Vermont College of Medicine, Burlington, VT, United States, [4]Division of Infectious Diseases and International Health, University of Virginia, Charlottesville, VA, United States, [5]Department of Microbiology and Immunology, Virginia Commonwealth University, Richmond, VA, United States, [6]Center for the Study of Biological Complexity, Virginia Commonwealth University, Richmond, VA, United States*

3 p.m.

## 1206

### EVALUATION OF THE TEST-NEGATIVE CASE-CONTROL DESIGN TO ESTIMATE ROTAVIRUS VACCINE EFFECTIVENESS IN LOW-INCOME SETTINGS

**Lauren M. Schwartz**[1], M. Elizabeth Halloran[1], Ali Rowhani-Rahbar[1], Kathleen M. Neuzil[2], J. Chris Victor[3]
*[1]University of Washington, Seattle, WA, United States, [2]University of Maryland, Center for Vaccine Development, Baltimore, MD, United States, [3]Center for Vaccine Innovation and Access, PATH, Seattle, WA, United States*

3:15 p.m.

## 1207

### A PHASE 1 OPEN-LABEL, DOSE ESCALATING STUDY OF ARTIFICIAL *SHIGELLA FLEXNERI* 2A INVAPLEX ADMINISTERED INTRANASALLY TO HEALTHY, ADULT VOLUNTEERS

**Christopher A. Duplessis**[1], K. Ross Turbyfill[2], Chad Porter[1], Ramiro Gutierrez[1], Mark Riddle[1], Tidq Lee[1], Kristen Clarkson[2], H.E. Peterson[2], C.R. Stelez[2], S.C. Sumlin[2], Amanda Lynen[1], Ed Oaks[2], Kris Paolino[3], Wayne Fornillos[3], Robert Kaminski[2]
*[1]Naval Medical Research Center, Silver Spring, MD, United States, [2]Walter Reed Army Institute of Research, Silver Spring, MD, United States, [3]CTC Walter Reed Army Institute of Research, Silver Spring, MD, United States*

## Symposium 84

## Human Babesiosis: A Neglected Tick-Borne Parasitic Disease

*Marriott - Marquis A*
Tuesday, November 15, 1:45 p.m. - 3:30 p.m.

Babesiosis is a tick-borne disease caused by intraerythrozoic protozoa that is found in temperate zones throughout the world. It is transmitted by hard bodied *(Ixodid)* ticks but also through blood transfusion and perinatally. The highest prevalence of both tick and transfusion-transmitted infection occurs in the United States where *Babesia* microti infection is endemic in the Northeast and upper Midwest. Clinical manifestations range from asymptomatic infection to fulminant disease. The mortality rate is around 20% in the elderly and immunocompromised and in those acquiring the infection through blood transfusion. In most cases, *B. microti* infection causes a febrile, viral-like infection that resolves in a week but is often followed by asymptomatic parasitemia for months, even after treatment. About a quarter of healthy adults experience asymptomatic infection. Blood collected from these apparently healthy but *Babesia*-infected individuals may result in transmission through blood transfusion. There is no FDA-licensed vaccine to ameliorate parasite burden and clinical disease and no laboratory test for diagnosis of acute infection or for screening of blood donors. In spite of the recent availability of the full genome sequence of *B. microti*, there is a scarcity of well-defined, immunodominant *B. microti* antigens for development of diagnostic assays for blood donor screening or for vaccine efficacy studies. There is strong evidence to suggest that global public health burden posed by *B. microti* is increasing and that inadequate attention has been paid to this disease, which is prevalent in both industrialized and developing countries. The primary objective of this symposium is to highlight the public health importance of this neglected infection in the United States and globally. Scientific discussion will focus on advances in *Babesia* biology, ecology, epidemiology, molecular immunology and pathogenesis, antigen discovery for vaccination and development of diagnostic assays.

CHAIR

Sanjai Kumar
*Food and Drug Administration, Silver Spring, MD*

Peter J. Krause
*Yale School of Public Health and Yale School of Medicine, New Haven, CT, United States*

1:45 p.m.
### HUMAN BABESIOSIS: AN EMERGING TICK-BORNE INFECTION

Peter J. Krause
*Yale School of Public Health and Yale School of Medicine, New Haven, CT, United States*

2:10 p.m.
### RECENT CHANGES IN THE ECOLOGY OF HUMAN BABESIOSIS: A RESULT OF TRENDS IN THE DEMOGRAPHY OF THE TICK VECTOR OR THE PARASITE

Sam R. Telford
*Tuffs University, North Grafton, MA, United States*

2:35 p.m.
### THE RATIONALE FOR AN ANTIBODY-BASED THERAPY IN SEVERE BABESIOSIS

Edouard Vannier
*Tufts Medical Center and Tufts University School of Medicine, Boston, MA, United States*

3:05 p.m.
### ANTIGEN DISCOVERY, DETECTION ASSAYS AND VACCINE STUDIES FOR *BABESIA MICROTI*

Sanjai Kumar
*Food and Drug Administration, Silver Spring, MD, United States*

## Symposium 85

## Using Remote Sensing Technology and Models from NASA Satellite in Predicting and Mitigating Outbreaks of Infectious Disease

*Marriott - Marquis B*
Tuesday, November 15, 1:45 p.m. - 3:30 p.m.

The symposium is designed to review progress in the effort to predict and mitigate infectious disease using remote sensing parameters. The speakers will discuss models developed by NASA and their partners for application of the research results for improved prevention and prediction of outbreaks. This session will assist health providers/researchers who need environmental data to study and understand the geographic, environmental and meteorological differences in disease. The session will focus on using satellite remote sensing to fill the gaps of environmental, spatial and temporal data for tracking disease. Satellite earth observations provide a wealth of health applications for the imaginative investigator. The session is directly related to Global Environmental Health Surveillance and will present research results of the remote sensing environmental observations of earth and health applications which can contribute to the tropical medical research in the areas of West Nile Virus, Malaria, Zika, Dengue and Chikungunya virus.

CHAIR

Sue M. Estes
*NASA/UAH, Huntsville, AL, United States*

Chris Barker
*University of California Davis, Davis, CA, United States*

1:45 p.m.
**AN INTRODUCTION OF NASA PUBLIC HEALTH APPLICATIONS AS RELATED TO INFECTIOUS DISEASES USING REMOTE SENSING DATA**

John A. Haynes
*NASA, Washington, DC, United States*

2:05 p.m.
**CHALLENGES FOR A MALARIA EARLY WARNING SYSTEM IN THE AMAZON**

William Pan
*Duke University, Durham, NC, United States*

2:25 p.m.
**ENHANCING VECTOR-BORNE DISEASE (WNV AND MALARIA) SURVEILLANCE WITH SATELLITE-BASED EARTH OBSERVATIONS**

Michael Wimberly
*South Dakota State University, Brookings, SD, United States*

2:45 p.m.
**GEOGRAPHIC AND SEASONAL LIMITS FOR ZIKA VIRUS OUTBREAK RISK IN NORTH AMERICA**

Chris M. Barker
*University of California Davis, Davis, CA, United States*

## Symposium 86

## American Committee on Arthropod-Borne Viruses (ACAV) Symposium I: Annual Business Meeting, Awards and Research Presentations by Previous Awardees

*Marriott - Marquis C*
Tuesday, November 15, 1:45 p.m. - 3:30 p.m.

The American Committee on Arthropod-Borne Viruses (ACAV) provides a forum for exchange of information among people interested in arbovirus research. This session will include the ACAV business meeting, award presentations and research presentations by ACAV award recipients. These presenters will describe their research on arbovirology and emerging diseases. The session will end with an informal reception designed to encourage new members of our community to interact with fellow arbovirologists and become involved in the ACAV subgroup.

CHAIR

Kathryn A. Hanley
*New Mexico State University, Las Cruces, NM*

Nikos Vasilakis
*University of Texas Medical Branch, Galveston, TX, United States*

1:45 p.m.
**ACAV ANNUAL BUSINESS MEETING - UPDATE ON ACAV BUSINESS**

Kathryn Hanley
*New Mexico State University, Las Cruces, NM, United States*

1:55 p.m.
**PRESENTATION OF RICHARD M. TAYLOR AWARD**

Presented by
Laura D. Kramer
*Wadsworth Center, New York State Department of Health, Slingerlands, NY, United States*

Presented by
Thomas P. Monath
*BioProtection Systems/NewLink Genetics Corp., Deven, MA, United States*

2:10 p.m.
**TRAVEL AWARD LIGHTNING TALKS**

2:30 p.m.
**PRESENTATION OF THE DALRYMPLE/YOUNG AWARD**

2:40 p.m.
**CHARACTERIZATION OF IMMUNE FACTORS OF CHRONIC CHIKUNGUNYA DISEASE**

Claire Jane Heath
*Stanford University, San Francisco, CA, United States*

2:50 p.m.
**STUDIES OF MARBURG VIRUS TRANSMISSION IN BATS**

Amy J. Schuh
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

3:10 p.m.
**NETWORKING AND SOCIAL TIME**

## Symposium 87

## Global Call to Action to Increase Coverage of Intermittent Preventive Treatment in Pregnancy: Progress and Lessons Learned

*Marriott - Marquis D*
Tuesday, November 15, 1:45 p.m. - 3:30 p.m.

The aim of the symposium is to review country progress in sub-Saharan Africa (SSA) in increasing intermittent preventative treatment in pregnancy (IPTp) with sulfadoxine-pyrimethamine (SP). The symposium will expand the knowledge base among Ministries of Health and donors and partners who are working to increase IPTp-SP coverage to address malaria in pregnancy (MiP). Following the release of the World Health Organization's (WHO) 2012 updated policy on IPTp-SP, a number of global stakeholders came together through the Roll Back Malaria-Malaria in Pregnancy Working Group, to elaborate the Global Call to Action: To Increase National Coverage with IPTp of MiP for Immediate Impact. The Call to Action calls upon countries and partners to immediately scale up IPTp-SP to improve health outcomes for mothers and their newborns. Scaling up IPTp-SP across most countries in sub-Saharan Africa remains a critical weapon to prevent the devastating consequences of MiP. However, the low proportion of eligible pregnant women receiving at least one dose of IPTp-SP (52%) and IPTp3-SP (17%) in 2014 is unacceptable. Despite growing parasite resistance to SP in some areas, IPTp-SP remains

a highly cost-effective, life-saving strategy to prevent the adverse effects of MiP in the vast majority of SSA. Completion of the recommended three or more doses of IPTp-SP decreases the incidence of low birthweight (LBW) by 27%, severe maternal anemia by 40% and neonatal mortality by 38%. This symposium will feature presentaions from WHO and the President's Malaria Initiative on how they are prioritizing support to scale up MiP interventions including IPTp-SP across SSA. Burkina Faso, Malawi and Tanzania will present and discuss how they were able to dramatically scale up IPTp-SP through a health systems approach that addresses MiP from community to district to national level. In Burkina Faso, IPTp2-SP increased from 54.8% in 2013 to 82.3% nationally in 2015 and IPTp3-SP increased from 13.5% in 2014 to 41.2% nationally in 2015. In Malawi, in targeted project sites across 15 districts, IPTp1 uptake increased from 44% in 2012 to 87% in 2015, while IPT2 increased from 16% to 61% over the same time period. In Tanzania, IPTp2-SP increased from 34% in 2014 to 57% in 2015 and IPTp4-SP was reported at 22% in 225 facilities across 16 districts, in 2015.

CHAIR

Aimee Dickerson
*Jhpiego, Baltimore, MD, United States*

Elaine Roman
*Jhpiego, Baltimore, MD, United States*

1:45 p.m.
**SUPPORT AND STRATEGIES FOR IPTP SCALE-UP**

Julie Gutman
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

2:05 p.m.
**DRAMATIC IPTP COVERAGE INCREASE AS A RESULT OF POLICY CHANGE IN TANZANIA: EXPERIENCE FROM MARA AND KAGERA REGIONS**

Frank Chacky
*National Malaria Control Program, Dar es Salaam, United Republic of Tanzania*

2:25 p.m.
**BUILDING CAPACITY THROUGH EDUCATION AND PRACTICE – A STRONG FOUNDATION TO INCREASE IPTP UPTAKE IN BURKINA FASO**

Yacouba Savadogo
*National Malaria Control Program, Ouagadougou, Burkina Faso*

2:45 p.m.
**WHAT DID IT TAKE TO EXPAND COVERAGE OF IPTP2 AND 3: EARLY SUCCESSES FROM MALAWI**

Doreen Ali
*National Malaria Control Program, Lilongwe, Malawi*

## Scientific Session 88

## Integrated Control Measures for Neglected Tropical Diseases

*Marriott - Atrium A*
Tuesday, November 15, 1:45 p.m. - 3:30 p.m.

CHAIR

Charles H. King
*Case Western Reserve University, Cleveland, OH, United States*

Arianna Means
*University of Washington, Seattle, WA, United States*

1:45 p.m.

### 1208

**ASSESSMENT OF THE NEEDS FOR THE NEGLECTED TROPICAL DISEASE (NTD), NON-COMMUNICABLE DISEASE (NCD) AND THE EYE HEALTH PROGRAMS IN LIBERIA FOLLOWING THE OUTBREAK OF EBOLA VIRAL DISEASE**

**Karsor K. Kollie**[1], Brent Thomas[2], Anna Wickenden[3], Anthony Bettee[1], Catherine Thomas[1], Marnijina Moore[1], Adoley Sonii[4], Zeela Zaizay[5], Ukam Oyene[6], Francis Kateh[1], Benjamin Koudou[2], Charles Mackenzie[2]
*[1]Ministry of Health, Government of Liberia, Monrovia, Liberia, [2]Filarial Programme Support Unit, Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [3]effect:hope, Markham, ON, Canada, [4]Sightsavers, Monrovia, Liberia, [5]Medical Assistance Programs, Monrovia, Liberia, [6]World Health Organisation Liberia, Monrovia, Liberia*

2 p.m.

### 1209

**EFFECT OF THE NATIONAL SCHISTOSOMIASIS CONTROL PROGRAM ON *TAENIA SOLIUM* TAENIOSIS AND PORCINE CYSTICERCOSIS IN RURAL COMMUNITIES OF TANZANIA**

**Uffe C. Braae**[1], Pascal Magnussen[2], Wendy Harrison[3], Benedict Ndawi[4], Faustin Lekule[5], Maria V. Johansen[1]
*[1]University of Copenhagen, Frederiksberg, Denmark, [2]University of Copenhagen, Copenhagen, Denmark, [3]Imperial College London, London, United Kingdom, [4]Bora Professional Consultancy Services, Iringa, United Republic of Tanzania, [5]Sokoine University of Agriculture, Morogoro, United Republic of Tanzania*

2:15 p.m.

### 1210

**USING A DOOR-TO-DOOR MASS DRUG ADMINISTRATION CAMPAIGN TO IDENTIFY TRICHIASIS AND HYDROCELE IN TOGO**

**Monique Ameyo Dorkenoo**[1], Sossinou Awoussi[1], Edmond Sognikin[1], Koffi Ladzekpo[2], Sefofo Y. Prempe[3], Mawèkè Tchalim[4], Solime Tchalim[5], Sena A. Tchalla[3], Michel Datagni[6], Anders Seim[7], Rachel Bronzan[7], Stephanie A. Richard[7]
*[1]Togo Ministry of Health, Lomé, Togo, [2]Togo Ministry of Health, Sotoboua, Togo, [3]CHR Dapaong/Togo Ministry of Health, Dapaong, Togo, [4]PNEFL/Togo Ministry of Health, Lomé, Togo, [5]CHR Kara TOMDE, Kara, Togo, [6]Health & Development International, Lomé, Togo, [7]Health & Development International, Rockville, MD, United States*

2:30 p.m.

### 1211

**PROXY RESPONSES FOR MASS DRUG ADMINISTRATION COVERAGE SURVEYS: THE INDIVIDUALS REQUIRING THEM AND THE POTENTIAL FOR RECALL BIAS**

**Rini Jose**[1], Windtare Roland Bougma[2], Francois Drabo[2], Harriet Lwanga[3], Square Mkwanda[4], Edridah Muheki Tukahebwa[5], Katherine Gass[6]
*[1]Rollins School of Public Health, Emory University, Atlanta, GA, United States, [2]Programme National de Lutte contre l'Onchocercose, Ministère de la Santé, Ouagadougou, Burkina Faso, [3]RTI Envision Program, Kampala, Uganda, [4]Lymphatic Filariasis Elimination Program, Ministry of Health, Lilongew, Malawi, [5]Vector Control Division, Ministry of Health, Kampala, Uganda, [6]Task Force for Global Health, Decatur, GA, United States*

2:45 p.m.

## 1212

### FEASIBILITY AND SAFETY OF MASS CO-ADMINISTRATION OF AZITHROMYCIN AND IVERMECTIN MASS DRUG ADMINISTRATION: THE AIM STUDY

**Lucia Romani**[1], Oliver Sokana[2], Michael Marks[3], Titus Nasi[2], Handan Wand[1], Margot Whitfeld[4], Daniel Engelman[5], John Kaldor[1], Andrew Steer[5]
*[1]Kirby Institute, Sydney, Australia, [2]Ministry of Health, Honiara, Solomon Islands, [3]London School of Hygiene & Tropical Medicine, London, United Kingdom, [4]St. Vincent's Hospital, Sydney, Australia, [5]Murdoch Childrens Research Institute, Melbourne, Australia*

3 p.m.

## 1213

### ADDING TSETSE CONTROL TO MEDICAL ACTIVITIES ALLOWS CONTROL OF SLEEPING SICKNESS IN THE MANDOUL FOCUS (CHAD)

**Jean Baptiste Rayaisse**[1], Hissene M. Mahamat[2], Mallaye Peka[3], Mahamat A. Toko[3], Justin Darnas[3], Guihini M. Brahim[2], Ali B. Alkatib[2], Wilfrid Yoni[4], Inaki Tirados[5], Fabrice Courtin[6], Cyrus Nersy[2], Steve J. Torr[5], Mike J. Lehane[5], Idriss O. Alfaroukh[2], Philippe Solano[7]
*[1]CIRDES, Bobo - Dioulasso, Burkina Faso, [2]Institut de Recherche en Elevage pour le Développement (IRED), Ndjamena, Chad, [3]Programme National de Lutte contre la Trypanosomiase Humaine (PNLTHA), Ndjamena, Chad, [4]Centre International de Recherche Développement sur l'Elevage en zone Subhumide (CIRDES), Bobo - Dioulasso, Burkina Faso, [5]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [6]Institut de Recherche pour le Développement, Bouaké, Côte D'Ivoire, [7]Institut de Recherche pour le Développement, Montpellier, France*

3:15 p.m.

## 1214

### THE IMPACT OF MASS DRUG ADMINISTRATION ON REDUCTION OF NTD PREVALENCE IN RWANDA

**Corine K. Karema**[1], Irenee Umulisa[1], Eugene Ruberanziza[1], Jamie Tallant[2], Warren Lancaster[2], Noella Umulisa[3], Jean Baptiste Mazarati[4], Alan Fenwick[5], Agnes Binagwaho[6]
*[1]Malaria and Other Parasitic Diseases Division, Kigali, Rwanda, [2]The END FUND, London, United Kingdom, [3]Maternal and Child Survival program/JHIEPGO, Kigali, Rwanda, [4]Biomedical Services Department-RBC, Ministry of Health, Kigali, Rwanda, [5]Schistosoma Control Initiative, London, United Kingdom, [6]Department of Global Health and Social Medicine at Harvard Medical School; Ministry of Health, Kigali, Rwanda*

## Symposium 89

# Clinical Group Symposium I (American Committee on Clinical Tropical Medicine and Travelers' Health - ACCTMTH)

*Marriott - Atrium B*
Tuesday, November 15, 1:45 p.m. - 3:30 p.m.

***Supported with funding from the International Association for Medical Assistance to Travellers (IAMAT)***

This symposium will consist of updates of particular interest to clinicians caring for travelers, including updates on malaria prophylaxis recommendations, immunizations and the CDC Yellow Book, and on the GeoSentinel and Global TravEpiNet research consortia. These updates will be followed by the Marcolongo Lecture. The session will conclude with a networking period with refreshments that will last throughout the break.

CHAIR

Duane R. Hospenthal
*University of Texas Health Science Center at San Antonio, San Antonio, TX, United States*

John W. Sanders
*Wake Forest Baptist Health, Winston-Salem, NC, United States*

The Marcolongo Lecture honors Vincenzo Marcolongo (1922–1988), founder of IAMAT - International Association for Medical Assistance to Travellers. A graduate of the medical school at the University of Rome, Dr. Marcolongo did his postgraduate training at McGill University in Montreal and returned to Italy to obtain his doctorate in tropical medicine. Dr. Marcolongo made the medical needs of travelers his life's work. In an era of increasing international travel, he realized that there was a need for collaboration among medical practitioners around the world to help travelers. In 1960 he founded IAMAT, a non-profit organization, to coordinate medical services for travelers and to prepare them for their journey. Dr. Marcolongo understood that travelers need comprehensive advice about the health risks and tropical diseases they encounter on trips to increasingly remote and distant destinations. Of particular interest to him was malaria and preventing the unnecessary morbidity and mortality it causes among travelers. Through IAMAT and numerous publications, Dr. Marcolongo worked tirelessly to inform travelers of health risks and raise awareness of travelers' health among travel industry professionals and medical practitioners worldwide. His foresight, compassion and generosity continue to serve as inspiration for IAMAT's work.

1:45 p.m.
### MALARIA EPIDEMIOLOGY AND PREVENTION FOR INTERNATIONAL TRAVEL: UPDATE

Katherine R. Tan
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

2:05 p.m.
### CDC TRAVELERS' HEALTH AND YELLOW BOOK: UPDATE

Gary W. Brunette
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

2:25 p.m.
### GEOSENTINEL SURVEILLANCE: UPDATE

Davidson H. Hamer
*Boston University School of Public Health, Boston, MA, United States*

2:35 p.m.
### GLOBAL TRAVEPINET: UPDATE

Edward T. Ryan
*Massachusetts General Hospital, Boston, MA, United States*

2:45 p.m.
**VINCENZO MARCOLONGO MEMORIAL LECTURE: LEPTOSPIROSIS IN THE TROPICS: THE DIAGNOSTIC CHALLENGE**

**Suneth Buddhika Agampodi, MBBS, MSc, MD, MPH, FRSPH**
*Professor in Community Medicine*
*Department of Community Medicine*
*Faculty of Medicine and Allied Sciences*
*Rajarata University of Sri Lanka*

Professor S.B. Agampodi graduated from the Faculty of Medicine, University of Peradeniya and obtained his Master's and Doctoral degrees from the Post Graduate Institute of Medicine, University of Colombo. In addition, he obtained his Master's in Public Health from Massey University, New Zealand and is currently a fellow of the Royal Society of Public Health, United Kingdom. Professor Agampodi was the founding head of the Department of Community Medicine, Rajarata University of Sri Lanka, and the first professor of the department. He was a visiting assistant professor in the School of Medicine at University of California San Diego in 2011. In 2012 Professor Agampodi founded the Tropical Disease Research Unit and is currently its lead epidemiologist. He served as a Council member of the Sri Lanka Medical Association, Anuradhapura Clinical Society, National Research Council and Sri Lanka Society of Microbiology. He provides technical assistance to many international organizations, including the World Health Organization and International Organization for Migration, and is currently working as the Honorary Chairperson of the Haiti Cholera Research Funding Foundation in Florida. Professor Agampodi's main research interest is in infectious diseases, especially Leptospirosis. He has published over 70 research papers in peer-reviewed journals and has delivered two orations and numerous invited and keynote speeches based on his research. Professor Agampodi is the editor of *Anuradhapura Medical Journal* and associate editor o*f BMC Public Health* and *Public Health Action* journals. He is also an editorial board member of the *Journal of Infectious Diseases and Immunology Health System Research Journal*, as well as the *Sri Lankan Journal of Infectious Diseases.*

3:30 p.m. - 4 p.m.
**NETWORKING AND SOCIAL TIME**

**Symposium 90**

## The Washington, DC Primer: Advocating for R&D Funding — The Who, What, Where, Why and How

*Marriott - Room A602*
Tuesday, November 15, 1:45 p.m. - 3:30 p.m.

CHAIR
Karen A. Goraleski
*American Society of Tropical Medicine and Hygiene, Oakbrook Terrace, IL, United States*

Every day, research, program, funding and policy decisions are being made by influential international actors and at the U.S. federal level. Whether you realize it or not, you are directly or indirectly impacted by these decisions. Unfortunately, the overwhelming majorities of these decision-makers have not been exposed to scientific training or education and as a result, look at these issues through lenses very different than yours. What are the Top 10 Things you need to know about U.S. government funding for the issues that ASTMH cares so deeply about? Who are the key actors? How do you convey the value of your work to those who play a role in increasing or cutting support for the work you do every day? Talking longer or offering more data points is a surefire way to hasten the end of a meeting with policymakers and staffers. What are the Do's and Don'ts? As a whole, the research community is late in thinking and acting like constituents. Learn how to recognize the moment when you know what you are saying is connecting. Listen to the experienced perspectives from the ASTMH President, Executive Director and the ASTMH Washington, DC-based lobbyist. Pick up tips to help avoid unintentional science-speak overload with policymakers (and the media and public).

1:45 p.m.
**GLOBAL HEALTH FUNDING: WHAT A DIFFERENCE ADVOCACY MAKES**
Jodie Curtis
*The District Policy Group, Washington, DC, United States*

2:10 p.m.
**ADVOCATING FOR GLOBAL HEALTH R&D POLICIES: PRACTICAL TIPS FOR HOW TO TALK TO POLICYMAKERS**
Karen A. Goraleski
*American Society of Tropical Medicine and Hygiene, Oakbrook Terrace, IL, United States*
Jodie Curtis
*The District Policy Group, Washington, DC, United States*

2:35 p.m.
**WARNING: FAILURE TO BE AN ADVOCATE CAN BE HAZARDOUS TO YOUR RESEARCH CAREER**
Karen A. Goraleski
*American Society of Tropical Medicine and Hygiene, Oakbrook Terrace, IL, United States*

3 p.m.
**A SCIENTIST GOES TO CAPITOL HILL: WHY YOU SHOULD, TOO**
Stephen Higgs
*Biosecurity Research Institute, Kansas State University, Manhattan, KS, United States*

**Scientific Session 91**

## Malaria: Elimination Strategies and New Tools

*Marriott - Room A703/A704*
Tuesday, November 15, 1:45 p.m. - 3:30 p.m.

CHAIR
Kim Lindblade
*Centers for Disease Control and Prevention, Atlanta, GA, United States*
Julia Mwesigwa
*Medical Research Council Unit, The Gambia, Banjul, Gambia*

1:45 p.m.

## 1215

### TARGETTING MALARIA HOTSPOTS IN SENEGAL: RESULTS OF A CLUSTER-RANDOMIZED TRIAL

**Abdoulaye Diallo**[1], Badara Cisse[1], El Hadj Ba[2], Fassiatou Tairou[1], Ousmane Sy[1], Cheikh Sokhna[2], Jules-Francois Gomis[1], Ousmane Faye[1], Colin Sutherland[3], Catherine Pitt[3], Clare Flach[3], Oumar Gaye[1], Paul Milligan[3]

*[1]Universite Cheikh Anta Diop, Dakar, Senegal, [2]Institut de Recherche pour le Developpement, Dakar, Senegal, [3]London School of Hygiene & Tropical Medicine, London, United Kingdom*

2 p.m.

## 1216

### COMPARISON OF MASS DRUG ADMINISTRATION VS. MASS SCREENING AND TREATMENT HIGH-RISK, MILITARY MOBILE POPULATIONS TO SUPPORT MALARIA ELIMINATION IN CAMBODIA

Somethy Sok[1], Mariusz Wojnarski[2], Satharath Prom[1], Soklyda Chann[2], Michele Spring[3], Panita Gosi[2], Rathvicheth Bun[2], Sovanveasna Kin[1], Nillawan Buathong[2], Mali Ittiverakul[2], Sabaithip Sriwichai[2], Worachet Kuntawunginn[2], Huy Rekol[4], Muth Sinoun[4], Thay Khengheng[4], Mary So[1], Jessica Lin[5], Kong Saly[1], Jessica Manning[6], David Saunders[7], Philip Smith[2], Mark Fukuda[2], **Chanthap Lon**[2]

*[1]Ministry of National Defense, Department of Health, Phnom Penh, Cambodia, [2]U.S. Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand, [3]Walter Reed Army Institute of Research, Silver Spring, MD, United States, [4]National Center for Parasitology, Entomology and Malaria Control, Phnom Penh, Cambodia, [5]Division of Infectious Diseases, University of North Carolina School of Medicine, Chapel Hill, NC, United States, [6]National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, [7]U.S. Army Medical Materiel Development Activity, Fort Detrick, MD, United States*

2:15 p.m.

## 1217

### RELATIVE CONTRIBUTION OF GENERALIZED EARLY DIAGNOSIS AND TREATMENT AND OF TARGETED MASS TREATMENT TO ELIMINATION OF *PLASMODIUM FALCIPARUM* MALARIA IN EASTERN MYANMAR

**Jordi Landier**[1], Daniel M. Parker[1], Aung Myint Thu[1], Ladda Kajeechiwa[1], May Myo Twin[1], Stephane Proux[1], Khin Maung Lwin[1], Saw Diamond Khin[2], Ed Marta[3], Gilles Delmas[1], François Nosten[1]

*[1]Shoklo Malaria Research Unit - Mahidol Oxford Tropical Medicine Unit, Mae Sot, Thailand, [2]Karen Department of Health and Welfare, Mae Sot, Thailand, [3]Karen Department of Health and Welfare, Hpa'an, Myanmar*

2:30 p.m.

## 1218

### IMPACT OF MASS DRUG ADMINISTRATION WITH DIHYDROARTEMISININ-PIPERAQUINE ON MALARIA TRANSMISSION IN A HIGHLY SEASONAL TRANSMISSION SETTING IN THE GAMBIA

**Julia Mwesigwa**[1], Jane Achan[2], Muna Affara[2], Cessay Sainey[2], Archibald Worwui[2], Koen Peeters Grietens[3], Jean-Pierre Van Geertruyden[4], Umberto D'Alessandro[5]

*[1]Medical Research Council Unit, The Gambia and Epidemiology for Global Health Institute, University of Antwerp, Banjul, Gambia, [2]Medical Research Council Unit, The Gambia, Banjul, Gambia, [3]Institute of Tropical Medicine, Antwerp, Belgium, [4]Epidemiology for Global Health Institute, University of Antwerp, Antwerp, Belgium, [5]Medical Research Council Unit, The Gambia and London School of Hygiene and Tropical Medicine, Banjul, Gambia*

2:45 p.m.

## 1219

### FREEDOM FROM INFECTION: MEASURING THE INTERRUPTION OF MALARIA TRANSMISSION

**Gillian H. Stresman**[1], Nuno Sepulveda[1], Kimberly Fornace[1], Thomas P. Eisele[2], Justin M. Cohen[3], Chris Drakeley[1]

*[1]London School of Hygiene & Tropical Medicine, London, United Kingdom, [2]Center for Applied Malaria Research and Evaluation, Tulane School of Public Health and Tropical Medicine, New Orleans, LA, United States, [3]Clinton Health Access Initiative, Brooklyn, NY, United States*

3 p.m.

## 1220

### THE NATURAL HISTORY OF MALARIA ELIMINATION IN SOUTHERN ZAMBIA

**Kelly M. Searle**[1], Timothy M. Shields[1], Ben Katowa[2], Jailos Lubinda[2], Harry Hamapumbu[2], Tamaki Kobayashi[1], Philip E. Thuma[2], Frank Curriero[1], William J. Moss[1]

*[1]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, [2]Macha Research Trust, Macha, Zambia*

3:15 p.m.

## 1221

### GENOMIC TOOLS REVEAL TRENDS IN *PLASMODIUM FALCIPARUM* PARASITE DIVERSITY ACROSS TRANSMISSION GRADIENTS WORLDWIDE

**Rachel Fath Daniels**[1], Awa B. Deme[2], Amy K. Bei[2], Adam Bennett[3], Kafula Silumbe[4], Victor Chalwe[5], Mukalwa Kamuliwo[6], Busiku Hamainza[6], Josh Yukich[7], Elizabeth Chizema[8], Duncan Earle[4], Silvie Huijben[9], Pedro Aide[10], Beatriz Galatas[9], Amanda K. Lukens[1], Arjen M. Dondorp[11], Hsiao-Han Chang[1], Alice Eziefula[12], Fitsum G. Tadesse[13], Lynn Grignard[12], Nicholas K. Baro[1], Lindsay Morton[14], MacArthur Charles[15], Jimmy A. Vareta[16], Rushdy Ahmad[17], Terrie E. Taylor[18], Caroline Buckee[1], Teun Bousema[12], Chris Drakeley[12], Linnie Golightly[19], Thomas P. Eisele[7], Richard W. Steketee[20], John M. Miller[4], Rick M. Fairhurst[21], John Aponte[9], Pedro L. Alonso[22], Alfredo Mayor[9], Danny A. Milner[1], Venkatachalam Udhayakumar[23], Daouda Ndiaye[24], Dyann F. Wirth[1], Daniel L. Hartl[25], Sarah K. Volkman[1]

*[1]Harvard T.H. Chan School of Public Health, Boston, MA, United States, [2]LeDantec Hospital, Dakar, Senegal, [3]University of California San Francisco, San Francisco, CA, United States, [4]Malaria Control and Evaluation Partnership in Africa (PATH-MACEPA), Lusaka, Zambia, [5]Tropical Diseases Research Centre, Ndola, Zambia, [6]National Malaria Control Center, Lusaka, Zambia, [7]Tulane University, New Orleans, LA, United States, [8]Ministry of Health Headquarters, Lusaka, Zambia, [9]Barcelona Institute for Global Health (IS Global), Barcelona, Spain, [10]Manhica Health Research Center (CISM), Manhica, Mozambique, [11]Mahidol Oxford Tropical Medicine Research Unit (MORU), Bangkok, Thailand, [12]London School of Hygiene & Tropical Medicine, London, United Kingdom, [13]Radboud University Medical Centre, Nijmegen, Netherlands, [14]University of Maryland Baltimore, Baltimore, MD, United States, [15]Vanderbilt Institute for Global Health (VIGH), Nashville, TN, United States, [16]University of Malawi College of Medicine, Blantyre, Malawi, [17]The Broad Institute, Cambridge, MA, United States, [18]Michigan State University, East Lansing, MI, United States, [19]Weill Medical College of Cornell University, New York, NY, United States, [20]Malaria Control Program (PATH), Seattle, WA, United States, [21]National Institutes of Health, Rockville, MD, United States, [22]World Health Organization, Geneva, Switzerland, [23]Centers for Disease Control and Prevention, Atlanta, GA, United States, [24]Cheikh Anta Diop University, Dakar, Senegal, [25]Harvard University, Cambridge, MA, United States*



**Symposium 92**

## New Approaches to Examining Antigenic Variation in Multiple *Plasmodium* Species and in the Course of Infections in Humans, Non-Human Primates and Mosquitoes

*Marriott - Room A706/A707*

Tuesday, November 15, 1:45 p.m. - 3:30 p.m.

Antigenic variation, with the variable expression of large complex gene families and their encoded proteins during the course of infecting mosquito and primate host species, is critical to the success of malaria parasites. This has been predominantly studied in *Plasmodium falciparum*, the parasite species responsible for the highest levels of morbidity and mortality in humans, and *P. knowlesi*, a zoonotic species in Southeast Asia. In particular, *P. knowlesi* has served as a model for *in vivo* and *ex vivo* studies to investigate the regulatory mechanisms of expression and switching of variant types. This symposium will provide a strong foundation for understanding this field, from the historic discoveries on within - and between - host dynamics of

malaria antigenic variation, focusing on the *P. falciparum* var and *P. knowlesi* SICAvar gene families, to the current state-of-the-art research using multi-omic tools with emphasis on the importance of epigenomics and experimental progress from culture systems, humans, non-human primates (NHPs) and mosquito vectors. Following a brief introduction, the first presentation will address the within- and between-host dynamics of *P. falciparum*, bringing together modeling and population-based epidemiological perspectives that are relevant to eliminating malaria. The next presentation will provide a detailed analysis of *P. knowlesi* antigenic variation, and the unique importance and benefits of NHP and mosquito hosts in studying *in vivo* switch events. This will include current data on the down regulation of SICAvar gene expression in both in *vitro* cultures and splenectomized NHP hosts. The next speaker will describe the epigenetic regulation from humans to mosquitoes and the impact of mosquito transmission on the gene expression patterns and mechanisms of regulation of clonally variant gene families, and discuss the necessity of studies in NHP models to study the consequences of these findings for malaria virulence and pathogenesis. The final speaker will provide an overarching perspective including multiple dimensions of epigenetic gene regulation in malaria parasites (*P. falciparum*, *P. vivax* and *P. knowlesi*), including transcriptional regulation via histone modifications, nucleosome positioning and nuclear architecture. The presentation will demonstrate shifts in chromatin structure from stage to stage, and highlight the importance of studying these process across species and comparing *in vivo*, *ex vivo* and *in vitro* model systems. The session brings together experts in multiple *Plasmodium* species, malaria biology, immunology and genetics, with cutting-edge technologies and computational tools, pertinent to global analyses of the parasite's genetic regulation in each of its hosts and across populations.

CHAIR

Lauren M. Childs
*Harvard T. H. Chan School of Public Health, Boston, MA, United States*

Mary R. Galinski
*Emory University, Atlanta, GA, United States*

1:45 p.m.
**IMPLICATIONS OF ANTIGENIC DIVERSITY AND PHENOTYPIC VARIATION FOR MALARIA EPIDEMIOLOGY**

Caroline Buckee
*Harvard T.H. Chan School of Public Health, Boston, MA, United States*

2:05 p.m.
***PLASMODIUM KNOWLESI* VARIANT ANTIGEN GENE AND PROTEIN INVESTIGATIONS USING MACAQUE INFECTIONS TO DETERMINE THE MOLECULAR MECHANISMS THAT GOVERN SWITCHING AND EPIGENOMIC REGULATION *IN VIVO***

Stacey A. Lapp
*Emory Vaccine Research Center, Atlanta, GA, United States*

2:25 p.m.
**EPIGENETIC REGULATION OF *PLASMODIUM FALCIPARUM* CLONALLY VARIANT GENE EXPRESSION DURING ITS LIFE-CYCLE IN THE MOSQUITO**

Elena Gomez-Diaz
*Donana Biological Station, Spanish National Research Council, Sevilla, Spain*

2:45 p.m.
**MULTIPLE DIMENSIONS OF EPIGENETIC GENE REGULATION IN MALARIA PARASITES - TRANSCRIPTIONAL REGULATION VIA HISTONE MODIFICATIONS, NUCLEOSOME POSITIONING AND NUCLEAR ARCHITECTURE**

Karine Le Roch
*University of California Riverside, Riverside, CA, United States*

## Exhibit Hall Open

*Marriott - International Hall*
Tuesday, November 15, 3:15 p.m. - 4:15 p.m.

## Coffee Break

*Marriott - International Hall*
Tuesday, November 15, 3:30 p.m. - 4 p.m.

***Sponsored by Sanofi Pasteur*** CONTRIBUTOR

### Symposium 93

## Co-Administration of Drugs for NTDs: Efficacy, Efficiency and Safety in Mass Drug Administration Programs

*Marriott - Imperial A*
Tuesday, November 15, 4 p.m. - 5:45 p.m.

Mass drug administration is the WHO recommended strategy for the control or elimination of the five preventive chemotherapy (PCT) neglected tropical diseases. In countries where multiple infections are endemic, separate rounds of drug distribution are frequently utilized for perceived safety or other reasons. Co-administration of at least two medicines is common, particularly in de-worming programs or in the case of the Global Program for the Elimination of Lymphatic Filariasis. Co-administration of three medicines, often called triple drug administration (TDA), is far less frequent despite evidence of the safety, efficacy and efficiency in support of it. This symposium presents four current and upcoming multi-drug, single-dose therapy regimens targeting the NTDs and discusses the safety, benefits and challenges in operationalizing these in the field.

CHAIR

Darin Evans
*U.S. Agency for International Development, Washington, DC, United States*

Eric Ottesen
*RTI International, Washington, DC, United States*

4 p.m.
**TDA WITH PRAZIQUANTEL, IVERMECTIN, AND ALBENDAZOLE IN NIGERIA**

Abel Eigege
*The Carter Center Nigeria, Jos, Nigeria*

4:15 p.m.
**SAFETY AND EFFICACY OF A SINGLE DOES COMBINATION THERAPY OF IVERMECTIN, DIETHYLCARBAMAZINE AND ALBENDZOLE FOR TREATMENT OF LYMPHATIC FILARIASIS**

Christopher L. King
*Case Western Reserve University, Cleveland, OH, United States*

4:30 p.m.
**AZITHROMYCIN, IVERMECTIN AND ALBENDAZOLE**
Michael Marks
*London School of Hygiene & Tropical Medicine, London, United Kingdom*

4:45 p.m.
**MULTI-DRUG REGIMENS FOR SOIL-TRANSMITTED HELMINTHIASIS CONTROL**
David Addiss
*Task Force for Global Health, Children Without Worms, Decatur, GA, United States*

5 p.m.
**PHARMACOKNETIC, PHARMACODYNAMICS AND SAFETY CONSIDERATIONS FOR COMBINATION TREATMENTS IN NEGLECTED TROPICAL DISEASES**
David Wesche
*Great Lakes Drug Development, Brighton, MI, United States*

## Symposium 94

## Malaria Economics Research Priorities: Are We Supporting Program Scale Up Effectively?

*Marriott - Imperial B*
Tuesday, November 15, 4 p.m. - 5:45 p.m.

While significant progress has been made to reduce malaria mortality, there is still work to be done to lower–and ultimately eliminate–the incidence and morbidity of malaria. The push for elimination in some countries has raised the bar for researchers and implementers; this is especially true for the financing of malaria control in pre-elimination countries. Current domestic and international resources are inadequate to support control efforts and therefore, barring an increase in aid, countries must improve the mobilization and use of domestic resources to move closer to elimination. Malaria economics research (MER) provides critical information on the efficiency and multisector impact of malaria interventions and is increasingly demanded by institutions like Ministries of Finance and the President's Malaria Initiative (PMI). Still, the financial and human resources to produce MER are limited. MER typically takes one of two approaches: 1. Broad and generalizable results, e.g. multi-country meta-analyses of interventions, or 2. Local/specific results, e.g. a single country/setting study of a single malaria intervention. Whatever the approach, MER must inform users' programmatic, resource allocation, and funding decisions for malaria. Given limited resources, funders and researchers must prioritize these economic analyses, ensuring that research funds are allocated effectively to answer the most pressing questions facing policymakers and programmers. This symposium will generate a lively discussion about the utility of different types of economic research, and will begin by presenting two recent economic research studies: 1) an WHO/RBM-led multicountry cost-benefit analysis to quantify the potential returns of investing to achieve the 2030 malaria goals, and 2) a PMI-funded country-level analysis of the cost effectiveness of malaria prevention and control intervention packages in Senegal. Presentations will highlight the study's key findings, and how they address policymakers' and programmers' needs. A moderated discussion will follow focused on the questions: How do different audiences for MER react to different types of research? What types of decisions does each research type impact? How are country ownership and use impacted by type of research? How do the results of different types of research impact efficiency within malaria programs? How are research study costs affected by choice of type of MER study? Is effective resource mobilization for malaria control/elimination impacted by MER approach? The panel does not intend to conclude in favor of one type of research but rather will highlight the pros, cons, and difficult tradeoffs that have to be made when funding malaria economic research.

CHAIR
Sophie Faye
*Abt Associates, Inc., Bethesda, MD, United States*

Martin Alilio
*Presidents' Malaria Initiative/United States Agency for International Development, Washington, DC, United States*

4 p.m.
**COST EFFECTIVENESS ANALYSIS OF MALARIA INTERVENTION PACKAGES IN SENEGAL**
Alioune Badara Gueye
*Senegal National Malaria Control Program (NMCP), Dakar, Senegal*

4:30 p.m.
**MULTICOUNTRY COST BENEFIT ANALYSIS QUANTIFYING POTENTIAL RETURNS OF INVESTING TO ACHIEVE THE 2030 MALARIA GOALS**
Amadou Bah
*Swiss Tropical and Public Health Institute, Basel, Switzerland*

4:55 p.m.
**PANEL DISCUSSANT**
Ibrahima Seck
*Institute of Health and Development, Université Cheikh Anta Diop, Dakar, Senegal*

Benjamin Johns
*International Health, Abt Associates, Inc., Bethesda, MD, United States*



## Symposium 95

## Current Challenges and Opportunities for Treating and Eliminating ACT-Resistant *Plasmodium falciparum* Malaria in the Greater Mekong Subregion

*Marriott - Marquis A*
Tuesday, November 15, 4 p.m. - 5:45 p.m.

Artemisinin (ART) combination therapy (ACT) is recommended worldwide for falciparum malaria. ART resistance is characterized by much slower clearance of parasitemia, which selects for partner drug resistance and thus severely reduces the efficacy of ACTs (e.g., DHA-piperaquine) in the Greater Mekong Subregion (GMS). Three recent studies report declining efficacy of DHA–piperaquine shortly after its deployment in Cambodia. High ACT failure rates jeopardize efforts to treat and eliminate ACT-resistant malaria in the GMS; spread of multidrug-resistant falciparum malaria to Africa, where most of the world's malaria occurs, would be disastrous. Since ART resistance is approaching fixation and ACT failures are increasing in the GMS, additional treatments and control measures are needed. Here, this session will present recently published and unpublished data from studies to improve cure rates in patients, ameliorate the detrimental effects of unregulated and ineffective drugs in the private sector, and understand transmission of resistant *P. falciparum* in native

*Anopheles* vector populations. An update will be provided on the extent of ACT failures in the GMS, and describe a variety of options for confronting this problem. On behalf of the Tracking Resistance to Artemisinin Collaboration II (TRAC II), a presentation will be made on the rationale, design, and initial findings from a multi-center, open-label randomized trial to assess the efficacy, safety, and tolerability of Triple ACTs (TACTs): DHA-piperaquine + mefloquine, and artemether-lumefantrine + amodiaquine. On behalf of the ACTwatch group, The symposium will feature novel market evidence on gaps and barriers for malaria elimination in the GMS, including representative outlet survey data (30,000 outlets screened for RDTs and antimalarials, 10,000 antimalarials audited in 2015-2016) from Cambodia, Laos, Myanmar, Thailand, and Vietnam that illustrate the extent that antimalarials are available and distributed outside the regulated health system, and the availability and distribution of antimalarials that are not first-line treatments, including oral ART monotherapy. The session will describe the incredible diversity of contemporary *Anopheles* species in Cambodia. Focusing on six Cambodian sites where clusters of malaria cases occurred, the symposium will present an annual monthly survey of 20,000 anophelines that has identified 35 different *Anopheles* species, 15 of which carried *P. falciparum*. This finding suggests that eliminating ACT-resistant malaria from the GMS will be more challenging than previously thought. The four presentations will stimulate enlightened discussions about the challenges and opportunities of treating ACT failures and eliminating ACT-resistant parasites from the GMS.

CHAIR

Rick Fairhurst
*National Institute of Allergy and Infectious Diseases/National Institutes of Health, Rockville, MD, United States*

Arjen Dondorp
*University of Oxford, Bangkok, Thailand*

4 p.m.
**ARTEMISININ AND ACT PARTNER DRUG RESISTANCE IN *PLASMODIUM FALCIPARUM* MALARIA: OPTIONS FOR TREATMENT AND ELIMINATION**

Arjen Dondorp
*University of Oxford, Bangkok, Thailand*

4:25 p.m.
**A MULTI-CENTER, OPEN-LABEL RANDOMIZED TRIAL TO ASSESS THE EFFICACY, SAFETY, AND TOLERABILITY OF TRIPLE ARTEMISININ COMBINATION THERAPIES (TACTS)**

Rob van der Pluijm
U*niversity of Oxford, Bangkok, Thailand*

4:50 p.m.
**HEALTH SYSTEMS BARRIERS AND GAPS FOR MALARIA ELIMINATION IN THE GREATER MEKONG SUBREGION: FINDINGS FROM ACTWATCH OUTLET SURVEYS**

Megan Littrell
*ACTwatch, PSI, Washington, DC, United States*

5:15 p.m.
**CLINICALLY-INFORMED MOSQUITO SAMPLING: A LONGITUDINAL STUDY OF DIVERSE *ANOPHELES* VECTOR SPECIES IN THREE CAMBODIAN PROVINCES**

Brandyce St. Laurent
*National Institute of Allergy and Infectious Diseases/National Institutes of Health, Rockville, MD, United States*

## Symposium 96

## Integration of Mass Drug Administration With Vector Control Approaches: An Enhanced Malaria Elimination Package

*Marriott - Marquis B*
Tuesday, November 15, 4 p.m. - 5:45 p.m.

Achieving ambitious malaria elimination targets requires aggressive and innovative approaches to rapidly and sustainably reduce parasites in both the human and mosquito vector populations. This symposium aims to discuss key considerations for mass drug administration (MDA), a more aggressive drug-based approach, in combination with deployment of an expanded toolbox of vector control tools for malaria elimination. MDA is considered a promising and effective tool to reduce the human parasite reservoir if optimized and deployed properly. Recent WHO recommendations on MDA lay out the use scenarios for MDA and also suggest that robust vector control strategies need to be integrated with MDA. In addition to traditional vector control approaches, such as long lasting insecticide-treated nets (LLINs) and/or indoor residual spraying with insecticides (IRS), it is now clear that innovative methods of vector control are needed to address residual transmission, particularly in areas where *Anopheles* mosquitoes rest and bite humans and animals outdoors, evading LLINs and IRS. The first speaker will provide an overview of the current WHO position on MDA strategies. In what contexts does the WHO recommend that MDA be deployed, and what are major considerations that must be taken into account in all circumstances? The presenter will then describe different ways to deliver MDA, which may be highly focal to target populations, span across entire communities, or deployed in emergency situations. The second speaker will describe how MDA can be effectively rolled out, using an example of Seasonal Malaria Chemoprophylaxis in Mali, currently the most widely implemented form of MDA. The next presenter will discuss how coverage is maximized through community participation, and will describe additional gaps that must be addressed if this strategy is to be expanded across wider populations. The third speaker will define residual transmission and discuss opportunities to target residual transmission with novel and underutilized tools alongside drug-based approaches. In addition, the presenter will describe research findings from literature reviews, case studies, and modeling on innovative vector control approaches and explore practical considerations for malaria programs. The final presentation will describe a project in Southern Mozambique to eliminate malaria in one district using a combination of MDA and vector control. What was the impact and feasibility of the pilot, and what were the challenges to achieving and sustaining high coverage? What are practical considerations for rolling out combined MDA and vector control?

CHAIR

Ingrid Chen
*University of California San Francisco, San Francisco, CA, United States*

Sheila Ogoma Barasa
*U.S. Army Medical Research Directorate-Kenya, Kisumu, Kenya*

4 p.m.
**WHO POSITION ON MDA STRATEGIES FOR MALARIA CONTROL AND ELIMINATION**

Andrea Bosman
*World Health Organization, Geneva, Switzerland*

4:20 p.m.
**SEASONAL MALARIA CHEMOPROPHYLAXIS IN MALI: COMMUNITY ENGAGEMENT AND IMPLEMENTATION**

Alassane Dicko
*Malaria Research and Training Centre, Bamako, Mali*

4:40 p.m.
**NOVEL VECTOR CONTROL TOOLS AND APPROACHES TO ENHANCE MDA STRATEGIES AND TARGET RESIDUAL TRANSMISSION FOR MALARIA ELIMINATION**

Allison Tatarsky
*University of California San Francisco, San Francisco, CA, United States*

5 p.m.
**INTEGRATION OF MASS DRUG ADMINISTRATION WITH VECTOR CONTROL APPROACHES: AN ENHANCED MALARIA ELIMINATION PACKAGE**

Francisco Da Conceicao Mario Sauté
*Manhica Health Research Center, Maputo, Mozambique*

## Symposium 97

## American Committee on Arthropod-Borne Viruses (ACAV) Symposium II: Emergence, Evolution and Control of Zika Virus

*Marriott - Marquis C*
Tuesday, November 15, 4 p.m. - 5:45 p.m.

Until 2007, mosquito-borne Zika virus (ZIKV) was confined to the tropical belt of Africa and Asia, where it caused limited outbreaks of mild febrile disease in humans. In 2007, a large outbreak of Zika virus infection occurred on Yap island, followed by additional introductions into the South Pacific and, in 2015 or perhaps earlier, into Brazil. At this time an association between Zika virus and neurological disease, including congenital microcephaly and Guillain-Barre syndrome (GBS), were detected. Following the introduction to Brazil, ZIKV spread explosively through the Americas and on February 1, 2016, the World Health Organization declared the epidemic a public health emergency of international concern. This symposium will provide a panoptic view of the trajectory of ZIKV emergence from its discovery in 1947 to the most recent spread. Specifically, the symposium will cover the dynamics of ZIKV in its ancestral, enzootic cycle in non-human primates in Africa, its emergence from this cycle and evolution over the course of its global spread, and the epidemiology of Zika microcephaly and GBS in Brazil. The session will conclude with an update on efforts to develop a Zika vaccine.

CHAIR

Scott C. Weaver
*University of Texas Medical Branch, Galveston, TX, United States*

Federico Costa
*Federal University of Bahia, Salvador, Brazil*

4 p.m.
**ZIKA VIRUS: EVOLUTION AND POTENTIAL MECHANISMS OF EMERGENCE**

Scott C. Weaver
*University of Texas Medical Branch, Gavleston, TX, United States*

4:25 p.m.
**MODELING THE TRANSMISSION DYNAMICS OF ZIKA VIRUS**

Benjamin Althouse
*New Mexico State University, Las Cruces, NM, United States*

4:50 p.m.
**EMERGENCE OF CONGENITAL ZIKA SYNDROME IN BRAZIL**

Federico Costa
*Federal University of Bahia, Salvador, Brazil*

5:15 p.m.
**VACCINE APPROACHES FOR ZIKA VIRUS**

Stephen S. Whitehead
*National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States*

## Symposium 98

## Results from the Pneumonia Etiology Research for Child Health Study (PERCH)

*Marriott - Marquis D*
Tuesday, November 15, 4 p.m. - 5:45 p.m.

PERCH is a multi-country, comprehensive evaluation of the etiologic agents causing severe and very severe pneumonia among children aged 28 days to 59 months in developing countries. Between August 2011 and January 2014 PERCH enrolled 4,232 cases and 5,325 controls across nine study sites located in seven countries: Dhaka and Matlab, Bangladesh; Basse, The Gambia; Kilifi, Kenya; Bamako, Mali; Soweto, South Africa; Nakhon Phanom and Sa Kaeo, Thailand; and Lusaka, Zambia. PERCH followed a highly standardized protocol for enrollment criteria, specimen collection and laboratory testing. PERCH is the largest and most comprehensive study of childhood pneumonia etiology thus far conducted. Through innovative diagnostic techniques and analytic methods, PERCH expands our understanding of pneumonia etiology in order to improve prevention and therapy. The symposium presentations will focus on PERCH in the context of other etiology studies. Over the past century, the focus of pneumonia etiology research has shifted from studies of lung aspirates and postmortem specimens intent on identifying pneumococcal disease, to studies of multiple specimen types distant from the lung tested for multiple pathogens. This presentation explores the history of pneumonia etiology studies and introduces the PERCH study and methods. The symposium will describe cases and controls in the PERCH Study. The presenter will provide descriptive results from the PERCH study, including demographics, clinical findings, laboratory results from key specimens, case fatality and select risk factors; this set of results is necessary for the audience to interpret the integrated etiology results presented next. The symposium will discuss the PERCH Quantitative Method and the primary etiology results from the PERCH study. The PERCH Quantitative Analysis (PQA) method was developed as a probabilistic approach to incorporate data from a variety of specimens and tests from both

cases and controls to produce an etiology pie for pneumonia. The analysis integrates data from multiple types of measurements, including both case-only and case-control measurements, and accounts for varying measurement error rates to estimate the distribution of pathogens among the cases. This presentation will briefly discuss the analytic methods utilized in PERCH to estimate etiology, and will present the primary etiology results from the PERCH study and an interpretation of the PERCH results in the larger context of pneumonia etiology. The session will include a clinical and etiologic description of mortality in PERCH in order to characterize the fatal PERCH cases in terms of their clinical, risk factor and laboratory findings. The symposium will describe if mortality is associated with certain etiologies and present key predictors of prognosis.

CHAIR

Katherine L. O'Brien
*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

Abdullah Brooks
*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

4 p.m.
**PERCH IN THE CONTEXT OF OTHER ETIOLOGY STUDIES**

Abdullah Brooks
*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

4:15 p.m.
**A DESCRIPTION OF THE CASES AND CONTROLS IN THE PERCH STUDY**

Laura L. Hammitt
*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

4:30 p.m.
**THE PERCH QUANTITATIVE METHOD AND THE PRIMARY ETIOLOGY RESULTS FROM THE PERCH STUDY**

Anthony G. Scott
*London School of Hygiene & Tropical Medicine, London, United Kingdom*

5 p.m.
**A CLINICAL AND ETIOLOGIC DESCRIPTION OF MORTALITY IN PERCH**

Katherine L. O'Brien
*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

## Scientific Session 99

## Schistosomiasis: Immunology, Pathology and Diagnostics

*Marriott - Room M103/M104/M105*
Tuesday, November 15, 4 p.m. - 5:45 p.m.

CHAIR

Keke C. Fairfax
*Purdue University, West Lafayette, IN, United States*

Michael Hsieh
*Biomedical Research Institute, Rockville, MD, United States*

4 p.m.
**1222**

**HOST EXPOSURE TO EARLY LIFE STAGES OF *SCHISTOSOMA HAEMATOBIUM* DOES NOT ALTER THE BLADDER RESPONSE TO EGGS**

**Loc Le**, Michael Hsieh
*Biomedical Research Institute, Rockville, MD, United States*

**(ACMCIP Abstract)**

4:15 p.m.
**1223**

**MATERNAL *SCHISTOSOMA MANSONI* INFECTION ALTERS THE IMMUNE RESPONSE OF OFFSPRING TO TETANUS AND DIPHTERIA IMMUNIZATION**

Diana Cortes Selva, Andrew Ready, **Keke C. Fairfax**
*Purdue University, West Lafayette, IN, United States*

**(ACMCIP Abstract)**

4:30 p.m.
**1224**

**RECOMBINANT PARAMYOSIN IN MONTANIDE ISA 206 PROTECTS WATER BUFFALO FROM *SCHISTOSOMA JAPONICUM* INFECTION**

**Hannah Wu**
*Brown University, Providence, RI, United States*

4:45 p.m.
**1225**

**A MICROFILTRATION DEVICE FOR DIAGNOSIS OF UROGENITAL SCHISTOSOMIASIS**

Yuan Xiao[1], Yi Lu[1], **Michael Hsieh**[2], Joseph Liao[3], Pak K. Wong[1]
*[1]Pennsylvania State University, University Park, PA, United States, [2]Children's National Medical Center, Washington, DC, United States, [3]Stanford University School of Medicine, Stanford, CA, United States*

5 p.m.
**1226**

**AN EGG PROTEIN FROM *SCHISTOSOMA MANSONI* IS PROMISING FOR DEVELOPMENT OF HIGH-SPECIFICITY DIAGNOSTICS IN THE ERA OF INTENSIFIED CONTROL**

**Vanessa Silva-Moraes**[1], Paulo M. Coelho[1], Donald A. Harn[2], Flavia F. Couto[1], William C. Borges[3], Rafaella F. Grenfell[1], Ana Lucia T. Rabello[1], Lisa M. Shollenberger[2]
*[1]Rene Rachou Research Center - Oswaldo Cruz Foundation, Belo Horizonte, Brazil, [2]University of Georgia, Athens, GA, United States, [3]University Federal of Ouro Preto, Ouro Preto, Brazil*

**(ACMCIP Abstract)**

5:15 p.m.
**1227**

**MAPPING OF SCHISTOSOMIASIS IN RWANDA: USE OF POC-CCA VERSUS KATO-KATZ**

**Corine K. Karema**[1], Irenee Umulisa[1], Daniel G. Colley[2], Eugene Ruberanzinza[1], Jamie Tallant[3], Tharcisse Munyaneza[4], Ortu Giussepina[5], Jean Baptiste Mazarati[6], Carl H. Campbell[7], Agnes Binagwaho[8], Alan Fenwick[5]
*[1]Malaria and Other Parasitic Diseases Division, Kigali, Rwanda, [2]SCORE, University of Georgia, Athens, GA, United States, [3]The END FUND, London, United Kingdom, [4]National Reference Laboratory, Ministry of Health, Kigali, Rwanda, [5]Schistosoma Control Initiative, London, United Kingdom, [6]Biomedical Services Department-RBC, Ministry of Health, Kigali, Rwanda, [7]SCORE, University of Georgia, Athens, GA, United States, [8]Global Health and Social Medicine at Harvard Medical School, Ministry of Health, Kigali, Rwanda*

5:30 p.m.

**1228**

**A NOVEL CELL FREE DNA DETECTION ASSAY FOR THE DIAGNOSIS OF SCHISTOSOMIASIS *JAPONICA***

**Kosala G. Weerakoon**, Catherine A. Gordon, Geoffrey N. Gobert, Pengfei Cai, Donald P. McManus
*QIMR Berghofer Medical Research Institute, Brisbane, Australia*

## Symposium 100

## Quantitative Approaches to Support the Achievement of Elimination Targets for Intensified Disease Management NTDs

*Marriott - Atrium A*
Tuesday, November 15, 4 p.m. - 5:45 p.m.

The intensified disease management (IDM) neglected tropical diseases (NTDs) form a group of diseases for which mass drug administration is not available, and so alternative interventions must be employed. While they appear to have little in common, being caused by different etiological agents and spread via different mechanisms, they share key challenges related to reducing disease burden and achieving elimination. In this session, speakers from the NTD Modelling Consortium will highlight quantitative approaches directed toward reaching the World Health Organization's 2020 elimination targets for four different IDM NTDs: leprosy, trachoma, Chagas disease and human African trypanosomiasis (sleeping sickness). This symposium addresses a range of overarching themes including how elimination targets are defined, how progress towards goals can be measured, optimal intervention strategies, and prevention of disease re-emergence. Discussions in the leprosy session will focus on whether the new elimination targets are achievable within the short timeframe given the long incubation period for disease. Similarly, in the Chagas session, the related theme of control of a disease with slow dynamics will be explored. The sleeping sickness session will demonstrate how reported case data can be used to infer underlying transmission. Finally, the trachoma presentation will emphasize the benefits of using combined modelling approaches for forecasting outcomes of intervention strategies. Across the diseases the relevant intervention strategies have been quantitatively evaluated and an overview of the results will be given. The likely impact of these strategies, which include medical intervention, vector control and improvements to water sanitation and hygiene (WASH), will be presented. In the end-game for disease it is vital to assess the consequences of reducing or lifting interventions post-elimination and the speakers will explore the potential issue of recrudescence. Additionally, the speakers will discuss lessons that can be learned from the mathematical modelling of these diseases, and how modelling can strengthen predictions, highlight uncertainties and ultimately provide critical support towards achieving elimination goals.

CHAIR

Kat S. Rock
*The University of Warwick, Coventry, United Kingdom*

Jennifer K. Peterson
*Princeton University, Princeton, NJ, United States*

4 p.m.

**ELIMINATION IN LEPROSY: SENSE AND NONSENSE IN THE LEPROSY ELIMINATION DISCUSSION**

Jan Hendrik Richardus
*Erasmus Medical Center, Rotterdam, Netherlands*

4:20 p.m.

**AGE-STRUCTURED MODELS FOR THE POPULATION DYNAMICS OF CHAGAS DISEASE: INSIGHTS FOR VECTOR CONTROL AND ELIMINATION**

Andrew P. Dobson
*Princeton University, Princeton, NJ, United States*

4:40 p.m.

**HOW CAN WE ACHIEVE ELIMINATION OF SLEEPING SICKNESS IN EQUATEUR PROVINCE, DRC? ASSESSING INTERVENTION OUTCOMES USING INDEPENDENT MODELLING APPROACHES**

Kat S. Rock
*The University of Warwick, Coventry, United Kingdom*

5 p.m.

**WHAT INTERVENTIONS ARE REQUIRED IN ORDER TO ELIMINATE TRACHOMA AS A PUBLIC HEALTH PROBLEM BY 2020? INSIGHTS FROM TWO MATHEMATICAL MODELS**

Amy Pinsent
*Monash University, Melbourne, Australia*

## Symposium 101

## Clinical Group Symposium II (American Committee on Clinical Tropical Medicine and Travelers' Health - ACCTMTH)

*Marriott - Atrium B*
Tuesday, November 15, 4 p.m. - 5:45 p.m.

This session will feature clinical tropical medicine and travel medicine updates, followed by the Clinical Group (ACCTMTH) Business Meeting.

CHAIR

Duane R. Hospenthal
*University of Texas Health Science Center at San Antonio, San Antonio, TX, United States*

John W. Sanders
*Wake Forest Baptist Health, Winston-Salem, NC, United States*

4 p.m.

**MOSQUITO-BORNE VIRAL THREATS TO THE U.S. (INCLUDING ZIKA AND CHIKUNGUNYA VIRUSES)**

Susan L. Hills
*Centers for Disease Control and Prevention, Fort Collins, CO, United States*

4:20 p.m.

**ASSESSING PERSONAL AND TEAM SAFETY WHEN WORKING OVERSEAS**

Gregory J. Martin
*U.S. Department of State, Washington, DC, United States*

4:55 p.m.
**KEAN@15: LESSONS FROM THE PAST AND MOVING FORWARD WITH THE BENJAMIN KEAN TRAVEL FELLOWSHIP**

Chandy C. John
*Indiana University School of Medicine, Indianapolis, IN, United States*

Aubri Carman
*Ryan White Center for Pediatric Infectious Disease and Global Health, Indiana University, Indianapolis, IN, United States*

5:05 p.m.
**ACCTMTH ANNUAL BUSINESS MEETING**

Duane R. Hospenthal
*University of Texas Health Science Center at San Antonio, San Antonio, TX, United States*

## Symposium 102

## Approaches, Advances and Needs for the Elimination of Human African Trypanosomiasis (HAT)

*Marriott - Room A706/A707*
Tuesday, November 15, 4 p.m. - 5:45 p.m.

Sleeping sickness is a life-threatening vector-born parasitic disease primarily affecting people living in remote areas in rural Africa where the tsetse fly – the vector - is prevalent. *Trypanosoma brucei* gambiense (g-HAT) produces the chronic form of the disease and is endemic in 24 central and western African countries. The acute presentation of the disease, caused by *T.b. rhodesiense* (r-HAT), is endemic in 13 countries in eastern and southern Africa. HAT has been targeted for elimination as a public health problem by 2020, by which time there should be less than one new case per 10,000 inhabitants in at least 90% of *foci*. Over the last decade the numbers of HAT patients have dropped drastically. Only 3,679 new cases of g-HAT and 117 new cases of r-HAT were reported in 2014. Thanks to improved surveillance, active case-searching, and treatment, the elimination goal is in sight. A safe oral treatment and reliable, easy-to-use diagnostic will enable the development of adapted and cost-effective strategies to be undertaken in the remote villages where patients live. The WHO has recently drawn up implementation and access plans for new tools in the context of developing new strategies for control and surveillance as well as for the monitoring of the elimination process. The current portfolio of diagnostics will be evaluated and discussed, as there is a need for new approaches for active case detection, and adaptation to passive case detection; the problem of asymptomatic carriers also needs to be addressed and elimination carefully monitored. Fexinidazole is the most advanced orally available new chemical entity in development and a series of trials are underway or planned in adults and children with both stages of *gambiense* or *rhodesiense* HAT. A second compound, from the oxaborole class, SCYX-7158, which presented a half-life enabling a single dose oral treatment will reinforce the treatment possibilities of the disease. Other compounds are at an earlier stage in the pipeline: high throughput screening and follow-up screens of the entire Novartis archive was undertaken (2014-2015) and the hit lists analyzed with two different approaches, a chemo- and a bio-centric hit selection. These approaches, the results and outlook for the current HAT lead portfolio will be described.

CHAIR

Jose R. Franco
*World Health Organization, Geneva, Switzerland*

Crispin Lumbala
*Programme National de Lutte contre la Trypanosomiase Humaine Africaine (PNLTHA), Kinshasa, Democratic Republic of the Congo*

4 p.m.
**HOW CAN WE ACHIEVE HAT ELIMINATION BY 2020?**

Jose R. Franco
*World Health Organization, Geneva, Switzerland*

4:20 p.m.
**DIAGNOSIS OF HAT: NEW TOOLS IN A CHANGING CONTEXT**

Veerle Lejon
*Institut de Recherche pour le Developpement, Montpellier, France*

4:40 p.m.
**CLINICAL DEVELOPMENT OF NEW ORAL TREATMENTS FOR HAT**

Antoine Tarral
*Drugs for Neglected Diseases initiative, Geneva, Switzerland*

5 p.m.
**HUMAN AFRICAN TRYPANOSOMIASIS – A BIO-CENTRIC HIT TO LEAD APPROACH TO IDENTIFY NEW LEAD SERIES**

Jan Jiricek
*Novartis Institute of Tropical Diseases, Singapore, Singapore*

## Special Session 103

## Speed-Networking with the Experts

*Marriott - Room M301/M302/M303/M304*
Tuesday, November 15, 5 p.m. - 6:45 p.m.

***Please note that this session is limited to those who pre-registered for the event.***

The fourth annual Speed-Networking session is organized by each of the five ASTMH subgroups: ASTMH Committee on Global Health (ACGH), the American Committee on Clinical Tropical Medicine and Travelers' Health (ACCTMTH/Clinical Group), the American Committee of Medical Entomology (ACME), the American Committee on Arthropod-Borne Viruses (ACAV) and the American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP). The session is designed to facilitate interaction between senior scientists, physicians and trainees in an informal setting to provide an array of important information and possible career paths in tropical medicine. During this session, students and young career scientists will have an opportunity to briefly meet experts who represent each of the subgroup fields including scientists in global health, clinicians, epidemiologists, entomologists and basic research scientists. Experts will have a broad range of career experiences working in international posts, policy, federal government, and the military, among others. Experts will share information with students about their career choices, trajectories, challenges along the way, and how they see their work fitting into the larger tropical medicine arena. Students in this session will be designated to a subgroup to match their interests and current educational paths.

CHAIR

Kathryn Hanley (ACAV)
*New Mexico State University, Las Cruces, NM, United States*

Koya C. Allen (ACGH)
*U.S. European Command Headquarters, U.S. Department of Defense, Stuttgart, Germany*

Christian Parobek (Clinical Group - ACCTMTH)
*University of North Carolina, Chapel Hill, NC, United States*

Richard Davis (ACMCIP)
*University of Iowa, Iowa City, IA, United States*

Jessica Hostetler (ACMCIP)
*National Institutes of Health, Rockville, MD, United States*

Scott Huang (ACME)
*National Taiwan University, Taipei, Taiwan*

Diana Ortiz (ACME)
*Westminster College, New Wilmington, PA, United States*

## Plenary Session 104

## Plenary Session III: Commemorative Fund Lecture

*Marriott - Marquis C*
Tuesday, November 15, 6:15 p.m. - 7 p.m.

The Commemorative Fund Lecture is presented annually by an invited senior researcher resident in the tropics at the invitation of the current president of ASTMH.

CHAIR

Stephen Higgs
*Kansas State University, Biosecurity Research Institute, Manhattan, KS, United States*

### GLOBAL CHILD SURVIVAL: TRANSITION FROM THE MILLENNIUM DEVELOPMENT TO SUSTAINABLE DEVELOPMENT GOALS

**Zulfiqar Bhutta, PhD, MBBS, FRCPCH, FAAP**
*Robert Harding Inaugural Chair in Global Child Health*
*Co-Director of the SickKids Centre for Global Child Health, Hospital for Sick Children*
*Founding Director, Center of Excellence in Women and Child Health, Aga Khan University*

Dr. Zulfiqar A. Bhutta is the Robert Harding Inaugural Chair in Global Child Health at the Hospital for Sick Children, Toronto, Co-Director of the SickKids Centre for Global Child Health and the Founding Director of the Center of Excellence in Women and Child Health at the Aga Khan University, unique joint appointments. He also holds adjunct professorships at several leading universities globally, including the Schools of Public Health at Johns Hopkins University, Tufts University, Boston University School of Public Health, University of Alberta, as well as the London School of Hygiene & Tropical Medicine. Professor Bhutta was educated at the University of Peshawar (MBBS) and obtained his doctorate from the Karolinska Institute, Sweden. He is a Fellow of the Royal College of Physicians (Edinburgh and London), the Royal College of Pediatrics and Child Health (London), American Academy of Pediatrics and the Pakistan Academy of Sciences. He heads a large research team in Pakistan working on issues of maternal, newborn and child survival and nutrition globally and regionally. Dr. Bhutta's research interests include newborn and child survival, maternal and child undernutrition and micronutrient deficiencies. He leads large research groups based in Toronto, Karachi and Nairobi with a special interest in research synthesis, scaling up evidence-based interventions in community settings and implementation research in health systems research. In particular, his work with community health workers and outreach services has influenced integrated maternal and newborn outreach programs for marginalized populations all over the world. His group's work with the WHO and PMNCH in developing consensus-based essential interventions for women, children and adolescents is the dominant set of agreed interventions guiding global policy.

## Symposium 105

## The Refugee Journey to Wellbeing

*Marriott - Marquis B*
Tuesday, November 15, 7:15 p.m. - 9 p.m.

The United Nations High Commission for Refugees estimates that there are 60 million forcibly displaced persons living outside their countries of origin, 4.3 million registered Syrian refugees located outside Syria and, in late 2015, the total number of refugees entering Europe had surpassed 1 million. As the situation continues to unfold, President Obama has pledged to accept up to 10,000 Syrian refugees for U.S. resettlement in FY16. Concerns about threats to national security related to U.S. refugee resettlement have created an urgent need to educate healthcare and public health professionals about health in resettlement and to build domestic and international capacity to meet the heathcare needs of refugees. To support these efforts, CDC and ASTMH have partnered to develop a novel interactive exhibit called The Refugee Journey to Wellbeing at the Annual Meeting to highlight the public health components of the refugee experience. This symposium aligns with the exhibit, and features technical experts from the organizations involved in refugee health and resettlement who will recount the refugee experience of flight, highlight life in a refugee camp, describe the infectious diseases of concern among different refugee populations, discuss interventions such as overseas vaccination, and the commitment of U.S. agencies to receive and provide health care to newly resettled refugees.

CHAIR

Nina Marano
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

Susan Cookson
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

7:15 p.m.
**A COLLABORATIVE RESPONSE TO AN UNPREDICTABLE AND URGENT REFUGEE CRISIS**

Mary Jo Frawley
*Medecins Sans Frontieres, New York, NY, United States*

7:35 p.m.
**UNCHR PERSPECTIVE ON REFUGEE HEALTH**

Ann Burton
*UN High Commission for Refugees, Geneva, Switzerland*

7:55 p.m.
**IOM'S ROLE IN MIGRATION HEALTH**
Ambassador William Lacy Swing
*Director General, International Organization for Migration, Geneva, Switzerland*

8:15 p.m.
**CDC'S ROLE IN CONTINUUM OF CARE FOR RESETTLING REFUGEES**
Martin S. Cetron
*Division of Global Migration and Quarantine, Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:35 p.m.
**HEALTHY RESETTLEMENT IN THE U.S.**
Alawade Oladele
*County Wide Services, DeKalb County Board of Health, Decatur, GA, United States*

### Poster Session B Dismantle

*Hilton - Grand Ballroom and Grand Salon*
Tuesday, November 15, 7 p.m. - 8 p.m.

## Wednesday, November 16

### Registration

*Marriott - Marquis Foyer*
Wednesday, November 16, 7 a.m. - 5 p.m.

### Speaker Ready Room

*Marriott - International A*
Wednesday, November 16, 7 a.m. - 5 p.m.

### TropStop - Student/Trainee Lounge

*Marriott - Atrium Loft*
Wednesday, November 16, 7 a.m. - 5 p.m.

This casual setting, designed with students, trainees and residents in mind (coffee, internet), is your place for a break from the fast-pace of the meeting and relax with colleagues and friends. Check out the "Office Hours," held in the TropStop. This will be your opportunity to meet up-and-coming professionals in the fields of tropical medicine, global health, science and industry who will share their personal career paths and answer your questions about the various bumps and forks in the road.

### Internet Nook

*Marriott - Imperial Foyer*
Wednesday, November 16, 7 a.m. - 5 p.m.

***Sponsored by Takeda Pharmaceuticals International AG***

PREMIER

### Meeting Sign-Up Room

*Hilton - Rooms 206 and 207*
Wednesday, November 16, 7 a.m. - 10 p.m.

### ASTMH Past Presidents Meeting

*Marriott - Room M101*
Wednesday, November 16, 7 a.m. - 8 a.m.

### Diploma Course Certification Committee Meeting

*Marriott - Room M108*
Wednesday, November 16, 7 a.m. - 8 a.m.

### Scientific Program Committee Meeting

*Marriott - Room L401/L402/L403*
Wednesday, November 16, 7 a.m. - 8 a.m.

### Special Interactive Experience: The Refugee Journey to Wellbeing

*Marriott - Atrium Loft*
Wednesday, November 16, 7:30 a.m. - 9 p.m.

At the end of 2015, there were an estimated 65.3 million people displaced around the world, largely because of extended conflicts in the Middle East, Northern and sub-Saharan Africa, and Asia. The American Society of Tropical Medicine and Hygiene and the U.S. Centers for Disease Control and Prevention (CDC), with participation from a number of domestic and international partners, are hosting this unique interactive experience on refugee health. Through video, photos, live testimonials, hands-on activities and replicated scenes from the field, The Refugee Journey to Wellbeing highlights the clinical and public health aspects of the refugee experience from displacement to resettlement.

### Press Room

*Marriott - Room M102*
Wednesday, November 16, 8 a.m. - 5 p.m.

### Burroughs Wellcome Fund/ASTMH Fellowship Committee Meeting

*Marriott - Room M302*
Wednesday, November 16, 8 a.m. - 10 a.m.

**Symposium 106**

### Community Providers for Neglected Tropical Disease Control: The "Building Blocks" for Program Success

*Marriott - Imperial A*
Wednesday, November 16, 8 a.m. - 9:45 a.m.

Health system strengthening in sub-Saharan Africa is increasingly dependent on the scale-up of programs using community providers. This includes a broad variety of individuals that carry out functions "related to health care delivery; trained in some way in the context of the intervention, but have no formal professional or paraprofessional certificate or degree in tertiary education." Community providers, also referred to as community drug distributors, village volunteers or community-based health workers, are the primary implementers in integrated preventive

chemotherapy (IPC) programs for Neglected Tropical Disease (NTD) control. Given the considerable investment focused on scaling-up IPC and maintaining high treatment coverage and equity, community providers are essential to reach WHO targets for the elimination of several NTDs. In the context of NTD control programs, community providers are responsible for the accessible delivery and recording of effective, safe, quality IPC to those who need them, when and where needed and with minimum waste of resources. These individuals are often described as 'volunteers' for the programs and typically do not receive remuneration for their annual contribution as an outpost for the health system. In some situations, remuneration of community providers is specifically discouraged. However, evidence is growing that such a strategy may be unwise as the cost of the decreased program efficiency may be higher than the financial incentives that would be required to motivate and retain quality community providers. The goal of the symposium is to highlight experiences and evidence of how capacity, responsibilities and performance of community providers relate to service delivery in multiple settings. The introduction to the symposium will orient participants to terminology that will be used across the four presentations and the basic overview of the building blocks of health system strengthening. The first presentation will describe the role community providers have played in strengthening the health system for other health interventions, for example, TB and HIV/AIDS, factors which have increased performance and what lessons can be used for NTD control and elimination. The second presentation will review the diversity in roles and scope of community providers and the subsequent relationship with efficacy, costs, scalability, transferability, government ownership and health systems alignment. The third presentation will focus on the contribution of NTD community providers to health systems resiliency and explore supporting financing strategies. The final presentation will explore preliminary data on incentive schemes as part of NTD control programs to improve service delivery and workforce retention across multiple years.

CHAIR

Fiona M. Fleming
*Imperial College London, Schistosomiasis Control Initiative, London, United Kingdom*

Philip W. Downs
*RTI International, Washington DC, United States*

8 a.m.
**HEALTH SYSTEMS STRENGTHENING AND NTD CONTROL PROGRAMS: CLOSE-TO-COMMUNITY PROVIDERS' EXPERIENCES, OPPORTUNITIES AND CONSTRAINTS**

Sally Theobald
*Liverpool School of Tropical Medicine, Liverpool, United Kingdom*

8:20 a.m.
**WHO ARE THE NTD DRUG DISTRIBUTORS? AN ANALYSIS OF PLATFORMS USED FOR MASS DRUG ADMINISTRATION ACROSS MULTIPLE COUNTRIES**

Margaret Baker
*RTI International, Washington DC, United States*

8:40 a.m.
**CONTRIBUTION OF NTD COMMUNITY VOLUNTEERS TO HEALTH SYSTEMS RESILIENCY**

Deborah A. McFarland
*Emory University, Rollins School of Public Health, Atlanta, United States*

9 a.m.
**COMMUNITY ENGAGEMENT IN FACILITATING THE DELIVERY OF ALTERNATIVE THERAPIES DURING MDA IN AFRICA**

Mary Amuyunzu-Nyamongo
*African Institute for Health & Development, Nairobi, Kenya*

## Scientific Session 107

## Dengue: Pathogenesis/Immunology

*Marriott - Imperial B*
Wednesday, November 16, 8 a.m. - 9:45 a.m.

CHAIR

Richard J. Kuhn
*Purdue University, West Lafayette, IN, United States*

Rushika Perera
*Colorado State University, Fort Collins, CO, United States*

8 a.m.
**1229**

**MATURATION OF FLAVIVIRUSES AND ROLE IN DISEASE**

**Richard J. Kuhn**[1], Devika Sirohi[1], Zhenguo Chen[1], Victoria Hendrik[1], Andrew S. Miller[1], Valorie D. Bowman[1], Swati Mukherjee4[2], Michael G. Rossmann[1], Theodore C. Pierson[2]
*[1]Purdue University, West Lafayette, IN, United States, [2]National Institute of Allergy and Infectious Diseases, Bethesda, MD, United States*

8:15 a.m.
**1230**

**FLAVIVIRUS NS1 PROTEINS DIFFERENTIALLY INDUCE HYPERPERMEABILITY IN HUMAN ENDOTHELIAL CELL MONOLAYERS FROM DISTINCT TISSUE TYPES**

**Henry N. Puerta-Guardo**, Dustin R. Glasner, Eva Harris
*Division of Infectious Diseases and Vaccinology, School of Public Health, University of California Berkeley, Berkeley, CA, United States*

8:30 a.m.
**1231**

**DISCOVERY OF SMALL MOLECULE BIOMARKERS THAT PROVIDE METABOLIC SIGNATURES TO DIFFERENTIATE DENGUE, CHIKUNGUNYA AND ZIKA VIRUS INFECTIONS AND DENGUE DISEASE SEVERITY**

**Rushika Perera**[1], Kimberly Anderson[1], Kristofor Webb[1], Barbara G. Andre[1], Lionel Gresh[2], Angel Balmaseda[3], Barry Beaty[1], Eva Harris[4], Carol D. Blair[1]
*[1]Colorado State University, Fort Collins, CO, United States, [2]Sustainable Sciences Institute, Managua, Nicaragua, [3]Laboratorio Nacional de Virología, Centro Nacional de Diagnóstico y Referencia, Ministry of Health, Managua, Nicaragua, [4]Division of Infectious Diseases and Vaccinology, School of Public Health, University of California, Berkeley, CA, United States*

8:45 a.m.
**1232**

**HUMAN DENV2 MONOCLONAL ANTIBODIES TARGET MULTIPLE EPITOPES ON THE ENVELOPE GLYCOPROTEIN**

**Emily Gallichotte**, Doug Widman, Ralph Baric, Aravinda de Silva
*University of North Carolina at Chapel Hill, Chapel Hill, NC, United States*

9 a.m.

## 1233

### USE OF THE DENGUE HUMAN CHALLENGE MODEL TO CHARACTERIZE THE CLINICAL AND IMMUNOLOGICAL RESPONSE TO SEQUENTIAL HETEROTYPIC DENGUE INFECTION

**Anna P. Durbin**[1], Beth D. Kirkpatrick[2], Denise Adams[1], Cecilia M. Tibery[1], Palmtama L. Grier[1], Beulah P. Sabundayo[1], Helen He[1], Yolanda Eby[1], Sean A. Diehl[2], Aravinda de Silva[3], Stephen S. Whitehead[4]
*[1]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, [2]University of Vermont College of Medicine, Burlington, VT, United States, [3]University of North Carolina, Chapel Hill, NC, United States, [4]National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States*

9:15 a.m.

## 1234

### HLA DRB1 ALLELIC VARIANTS ARE ASSOCIATED WITH DIFFERENT RESPONSE MAGNITUDE OF DENV SPECIFIC CD4 T CELL RESPONSES AND DISEASE SEVERITY OUTCOMES

**Daniela Weiskopf**[1], Michael A. Angelo[1], Alba Grifoni[1], John Sidney[1], Sinu Paul[1], Aruna D. de Silva[2], Aravinda de Silva[3], Sunil Premawansa[4], Gayani Premawansa[5], Ananda Wijewickrama[6], Bjoern Peters[1], Alessandro Sette[1]
*[1]La Jolla Institute for Allergy and Immunology, La Jolla, CA, United States, [2]Genetech, Colombo, Sri Lanka, [3]University of North Carolina, Chapel Hill, NC, United States, [4]Department of Zoology, Science Faculty, University of Colombo, Colombo, Sri Lanka, [5]North Colombo Teaching Hospital, Ragama, Colombo, Sri Lanka, [6]National Institute of Infectious Diseases, Gothatuwa, Angoda, Sri Lanka*

9:30 a.m.

## 1235

### ORGAN DAMAGE AND IMMUNOPATHOLOGICAL FEATURES IN FATAL DENGUE CASES

**Jaime Gonzalez-Cardona**[1], Carlos Pardo-Villamizar[2], Diego Vargas[1], Julio Mantilla[3], Beatriz Parra[1], Anilza Bonelo[1]
*[1]Universidad del Valle, Cali, Colombia, [2]Johns Hopkins School of Medicine, Baltimore, MD, United States, [3]Universidad Industrial de Santander, Bucaramanga, Colombia*

## Scientific Session 108

## Protozoa

*Marriott - Marquis A*
Wednesday, November 16, 8 a.m. - 9:45 a.m.

CHAIR
Boris Striepen
*University of Georgia, Athens, GA, United States*

Genevieve Wojcik
*Stanford University School of Medicine, Stanford, CA, United States*

8 a.m.

## 1236

### CHRONIC MALNUTRITION DOES NOT IMPAIR THE MEMORY T CELL RESPONSE TO CRYPTOSPORIDIAL INFECTION IN INDIAN CHILDREN

**Sudhir Babji**[1], Nisha Vincy Jose[1], Deepthi Kattula[1], Honorine Ward[2], Gagandeep Kang[1]
*[1]Christian Medical College, Vellore, India, [2]Tufts Medical Center, Boston, MA, United States*

8:15 a.m.

## 1237

### GENETIC LINKS BETWEEN SYMPTOMATIC *ENTAMOEBA HISTOLYTICA* INFECTION AND INFLAMMATORY BOWEL DISEASE

**Genevieve L. Wojcik**[1], Chelsea Marie[2], Josyf C. Mychaleckyj[2], Stephen Rich[2], Patrick Concannon[3], Rashidul Haque[4], Beth Kirkpatrick[5], William A. Petri Jr.[2], Priya Duggal[6]
*[1]Stanford University School of Medicine, Stanford, CA, United States, [2]University of Virginia School of Medicine, Charlottesville, VA, United States, [3]University of Florida, Gainesville, FL, United States, [4]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, [5]University of Vermont College of Medicine, Burlington, VT, United States, [6]Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD, United States*

8:30 a.m.

## 1238

### RESPIRATORY TRACT CRYPTOSPORIDIOSIS IS COMMON IN HIV-SERONEGATIVE CHILDREN WITH INTESTINAL CRYPTOSPORIDIUM AND COUGH

Grace Ndeezi[1], Siobhan M. Mor[2], Luke R. Ascolillo[3], Josephine Tumuhamye[1], Christine Sheema[1], Jerlyn Sponseller[4], Lucy Asio[1], Peace Ahumuza[1], Hannington B. Tasimwa[1], Harriet Namiiro[1], Ritah Nakato[1], Lilian Namuli[1], Sylvia Namande[1], Naome Kilama[1], Gloria Kauda[1], Jolly Rubambarama[1], Saul R. Tzipori[4], **Jeffrey K. Griffiths**[3], James K. Tumwine[1]
*[1]Makerere University College of Medicine, Kampala, Uganda, [2]University of Sydney, Sydney, Australia, [3]Tufts University School of Medicine, Boston, MA, United States, [4]Tufts University Cummings School of Veterinary Medicine, Grafton, MA, United States*

8:45 a.m.

## 1239

### AZITHROMYCIN AND DOXYCYCLINE ATTENUATE ACANTHAMOEBA VIRULENCE IN A HUMAN CORNEAL TISSUE MODEL

**Andrew Purssell**[1], Rachel Lau[2], Andrea K. Boggild[3]
*[1]University of British Columbia, Vancouver, BC, Canada, [2]Public Health Ontario Laboratories, Toronto, ON, Canada, [3]University of Toronto, Toronto, ON, Canada*

**(ACMCIP Abstract)**

9 a.m.

## 1240

### CRYPTOSPORIDIOSIS IN A HUMANIZED MURINE INTESTINAL TRACT

Andrew Nafziger, Katelynn Atwood, Jae Shin, David Bolick, **Cirle A. Warren**
*University of Virginia, Charlottesville, VA, United States*

9:15 a.m.

## 1241

### IMPACT OF ENTERIC PARASITES ON INTESTINAL MICROBIOTA DIVERSITY AND METAGENOMIC CHANGES IN RURAL ARGENTINIAN AND ECUADORIAN CHILDREN

**Rojelio Mejia**[1], Rubén O. Cimino[2], Ashish Damania[1], Rebecca Jeun[1], Patricia E. Bryan[1], Paola Vargas[2], Marisa Juarez[2], Pamela S. Cajal[2], Philip J. Cooper[3], Julio Nasser[2], Alejandro Krolewiecki[2], Barton Slatko[4]
*[1]Baylor College of Medicine, Houston, TX, United States, [2]Universidad Nacional de Salta, Salta, Argentina, [3]Universidad Internacional De Ecuador, Quito, Ecuador, [4]New England BioLabs, Inc., Ipswich, MA, United States*

9:30 a.m.

## 1242

### THE GENOME SEQUENCE OF ANTHROPONOTIC *CRYPTOSPORIDIUM PARVUM*

**Olukemi O. Ifeonu**[1], Giovanni Widmer[2], Myron M. Levine[3], Saul Tzipori[2], Joana C. Silva[1]

*[1]Institute for Genome Sciences, University of Maryland School of Medicine, Baltimore, MD, United States, [2]Department of Infectious Disease and Global Health, Cummings School of Veterinary Medicine at Tufts University, North Grafton, MA, United States, [3]Institute for Global Health, University of Maryland School of Medicine, Baltimore, MD, United States*

## Scientific Session 109

## American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Malaria and Protozoans - Molecular Biology

*Marriott - Marquis B*

Wednesday, November 16, 8 a.m. - 9:45 a.m.

***Supported with funding from the Burroughs Wellcome Fund***

CHAIR

John H. Adams
*University of South Florida, Tampa, FL, United States*

Cristina V. Ariani
*Wellcome Trust Sanger Institute, Hinxton, United Kingdom*

8 a.m.

## 1933

### INVITED SPEAKER FROM THE WOODS HOLE MOLECULAR PARASITOLOGY MEETING HELD IN SEPTEMBER 2016. SEE THE PROGRAM UPDATE FOR SPEAKER INFORMATION.

8:15 a.m.

## 1934

### INVITED SPEAKER FROM THE WOODS HOLE MOLECULAR PARASITOLOGY MEETING HELD IN SEPTEMBER 2016. SEE THE PROGRAM UPDATE FOR SPEAKER INFORMATION.

8:30 a.m.

## 1243

### POPULATION GENOMICS OF *PLASMODIUM FALCIPARUM* TO INFORM THE DESIGN AND EFFICACY OF WHOLE ORGANISM MALARIA VACCINES

**Kara A. Moser**[1], Amed Ouattara[1], Elliott F. Drabek[1], Sergey Koren[2], Adam Phillippy[2], Matt Adams[1], Amadou Niangaly[3], Karim Traore[3], Abdoulaye K. Kone[3], Drissa Coulibaly[3], Mahamadou A. Thera[3], Ogobara K. Doumbo[3], Miriam K. Laufer[1], Matthew B. Laurens[1], Krisada Jongsakul[4], Chanthap Lon[5], David Saunders[4], Kay Thwe Han[6], Myaing M. Nyunt[1], Robert W. Sauerwein[7], B. Kim Lee Sim[8], Toa Li[8], Mark A. Travassos[1], Shannon Takala Harrison[1], Stephen L. Hoffman[8], Christopher V. Plowe[1], Joana C. Silva[1]

*[1]University of Maryland School of Medicine, Baltimore, MD, United States, [2]National Human Genome Research Institute, Bethesda, MD, United States, [3]University Science, Techniques and Technologies, Bamako, Mali, [4]Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand, [5]Armed Forces Research Institute of Medical Sciences, Phnom Penh, Cambodia, [6]Ministry of Health, Yangon, Myanmar, [7]Radboud University Medical Center, Nijmegen, Netherlands, [8]Sanaria Inc., Rockville, MD, United States*

8:45 a.m.

## 1244

### GLOBAL LANDSCAPE OF MOLECULAR NETWORKS FOR MALARIA PATHOLOGY REVEALED BY INTEGRATIVE MULTI-OMICS ANALYSIS USING NON-HUMAN PRIMATE ANIMAL MODEL

**Yan Tang**[1], the MaHPIC Consortium, Mary R. Galinski[2], Mark P. Styczynski[1]

*[1]Georgia Institute of Technology, Atlanta, GA, United States, [2]Emory University, Atlanta, GA, United States*

**(ACMCIP Abstract)**

9 a.m.

## 1245

### PIGGYBAC MUTAGENESIS SCREENING OF THOUSANDS OF *PLASMODIUM FALCIPARUM* GENES REVEALS WHAT A MALARIA PARASITE CAN'T LIVE WITHOUT

Min Zhang[1], Chengqi Wang[1], Thomas D. Otto[2], Jenna Oberstaller[1], Iraad F. Bronner[2], Suzanne Li[1], Kenneth Udenze[1], Mathew Mayho[2], Elizabeth Huckle[2], Michael A. Quail[2], Julian C. Rayner[2], Rays H. Jiang[1], **John H. Adams**[1]

*[1]University of South Florida, Tampa, FL, United States, [2]Wellcome Trust Sanger Institute, Hinxton, United Kingdom*

**(ACMCIP Abstract)**

9:15 a.m.

## 1246

### WHOLE GENOME SEQUENCING OF *PLASMODIUM FALCIPARUM* MALARIA PARASITES FROM DRIED BLOOD SPOTS: GATEWAY TO HIGH-RESOLUTION GENOMIC SURVEILLANCE

**Cristina V. Ariani**[1], William L. Hamilton[1], Samuel Oyola[1], Lucas N. Amenga-Etego[2], Mihir Kekre[1], Anita Ghansah[3], Gavin Rutledge[1], Seth Redmond[4], Magnus Manske[1], Dushyanth Jyothi[1], Thomas D. Otto[1], Kirk Rockett[5], Chris I. Newbold[6], Matthew Berriman[1], Dominic Kwiatkowski[1]

*[1]Wellcome Trust Sanger Institute, Hinxton, United Kingdom, [2]Navrongo Health Research Centre, Navrongo, Ghana, [3]Memorial Institute for Medical Research, Accra, Ghana, [4]Broad Institute, Cambridge, MA, United States, [5]Wellcome Trust Centre for Human Genetics, Oxford, United Kingdom, [6]University of Oxford, Oxford, United Kingdom*

**(ACMCIP Abstract)**

9:30 a.m.

## 1247

### CULTURE-ADAPTATION OF MALARIA PARASITES IS ASSOCIATED WITH NONSENSE MUTATIONS IN SPECIFIC GENES

**Antoine Claessens**[1], Muna Affara[2], Samuel A. Assefa[3], Dominic Kwiatkowski[4], David J. Conway[3]

*[1]MRC-Gambia, London School of Hygiene & Tropical Medicine, Gambia, [2]MRC-Gambia, Fajara, Gambia, [3]London School of Hygiene & Tropical Medicine, London, United Kingdom, [4]Wellcome Trust Sanger Institute, Hinxton, United Kingdom*

## Scientific Session 110

## Pneumonia, Respiratory Infections and Tuberculosis I

*Marriott - Marquis C*

Wednesday, November 16, 8 a.m. - 9:45 a.m.

CHAIR

Robert Breiman
*Emory University, Atlanta, GA, United States*

Miwako Kobayashi
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

8 a.m.

## 1248

### TRANSCRIPTIONAL AND PROTEOMIC CATEGORIZATION OF THE ETIOLOGY OF PNEUMONIA SYNDROME IN PEDIATRIC PATIENTS IN MALARIA ENDEMIC AREAS

**Danny A. Milner**[1], Jacob Silterra[2], Michael A. Gilette[3], Miguel Lanaspa[4], Karell G. Pelle[2], Clarissa Valim[5], Rushy Ahmad[2], Sozinho Acacio[6], Katherine D. Almendinger[2], Yan Tan[2], Lola Madrid[4], Pedro Alonso[4], Steven A. Carr[2], Roger C. Wiegand[2], Quique Bassat[4], Jill Mesirov[7], Dyann F. Wirth[5]

*[1]Brigham and Women's Hospital, Boston, MA, United States, [2]Broad Institute, Cambridge, MA, United States, [3]Massachusetts General Hospital, Boston, MA, United States, [4]ISGlobal, Barcelona, Spain, [5]Harvard Chan School of Public Health, Boston, MA, United States, [6]CISM, Maputo, Mozambique, [7]University of California San Diego, San Diego, CA, United States*

8:15 a.m.

## 1249

### RISK FACTORS FOR SECONDARY HOUSEHOLD TRANSMISSION OF INFLUENZA VIRUS AH3N2 IN THE PERUVIAN NORTHERN COAST

**Sebastian Loli**[1], Yeny Tinoco[1], Candice Romero[1], Joan Neyra[1], Giselle Soto[1], Andres G. Lescano[2], Eduardo Azziz-Baumgartner[3], Daniel G. Bausch[1]

*[1]U.S. Naval Medical Research Unit - 6 Peru, Callao, Peru, [2]Universidad Peruana Cayetano Heredia, Lima, Peru, [3]Influenza Division, Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:30 a.m.

## 1250

### DISTRICT TRENDS IN UNDER-FIVE PNEUMONIA MORTALITY IN MALAWI, 2000-2014

**Karen Finnegan**[1], Norman Lufesi[2], Mercy Chimbalanga[3], Patrick Naphini[2], Ernest Kaludzu[2], Lewis Gombwa[4], Bethred Matipwiri[5], Amos Misomali[6], Neff Walker[1], Melissa A. Marx[1]

*[1]Johns Hopkins University, Baltimore, MD, United States, [2]Ministry of Health, Lilongwe, Malawi, [3]Bwaila Hospital, Lilongwe, Malawi, [4]National Statistical Office of Malawi, Lilongwe, Malawi, [5]Salima District Health Office, Salima, Malawi, [6]Johns Hopkins University, Lilongwe, Malawi*

8:45 a.m.

## 1251

### EPIDEMIOLOGY OF INFLUENZA AMONG SEVERE ACUTE RESPIRATORY INFECTIONS — DAMANHOUR, EGYPT, 2009-2015

**Erik J. Reaves**[1], Adel Mansour[2], Hoda Mansour[2], Sahar El Alkamy[3], Mostafa Maroof[2], Sahar El Shorbagy[3], Samir Refaey[3], Mohammad Genidy[3], Salma Afifi[2], Mark Wooster[1], Amr Kandeel[3]

*[1]Centers for Disease Control and Prevention, Cairo, Egypt, [2]U.S. Naval Medical Research Unit - 3, Cairo, Egypt, [3]Ministry of Health and Population, Cairo, Egypt*

9 a.m.

## 1252

### QUALITY OF CASE MANAGEMENT OF PNEUMONIA AND DIARRHEA IN CHILDREN AGED <5 YEARS: RESULTS FROM A HEALTH FACILITY SURVEY IN SOUTHERN MALAWI IN JANUARY-MARCH 2015

**Miwako Kobayashi**[1], Dyson Mwandama[2], Humphreys Nsona[3], Ruth Namuyinga[1], Minica Shah[1], Andy Bauleni[2], Alexander Rowe[1], Don Mathanga[2], Laura Steinhardt[1]

*[1]Centers for Disease Control and Prevention, Atlanta, GA, United States, [2]Malaria Alert Centre, Blantyre, Malawi, [3]Ministry of Health, Lilongwe, Malawi*

9:15 a.m.

## 1253

### NEGLECTED TROPICAL POPULATIONS: THE BURDEN OF INFLUENZA IN THE ELDERLY, THAILAND

**Kim A. Lindblade**[1], Prabda Praphasiri[1], Malinee Chittaganpitch[2], Supakit Sirilak[2], Siriluk Jaichuang[2], Darunee Ditsungnoen[1], Fatimah Dawood[3], Kriengkrai Prasert[2]

*[1]Centers for Disease Control and Prevention-Thailand, Bangkok, Thailand, [2]Thailand Ministry of Public Health, Bangkok, Thailand, [3]Centers for Disease Control and Prevention, Atlanta, GA, United States*

9:30 a.m.

## 1254

### ROLE OF NASOPHARYNGEAL PNEUMOCOCCAL DENSITY IN THE EVOLUTION OF ACUTE RESPIRATORY ILLNESSES IN YOUNG PERUVIAN CHILDREN

Roger R. Fan[1], Leigh M. Howard[2], Marie R. Griffin[3], Kathryn M. Edwards[2], Yuwei Zhu[4], John V. Williams[5], Jorge E. Vidal[6], Keith P. Klugman[6], Ana I. Gil[7], **Claudio F. Lanata**[7], Carlos G. Grijalva[3]

*[1]School of Medicine, Vanderbilt University, Nashville, TN, United States, [2]Department of Pediatrics, School of Medicine, Vanderbilt University, Nashville, TN, United States, [3]Health Policy, Vanderbilt University, Nashville, TN, United States, [4]Biostatistics, Vanderbilt University, Nashville, TN, United States, [5]Pediatrics, University of Pittsburgh, Pittsburgh, PA, United States, [6]Rollins School of Public Health, Emory University, Atlanta, GA, United States, [7]Instituto de Investigacion Nutricional, Lima, Peru*

## Scientific Session 111

## Malaria: Diagnostics

*Marriott - Marquis D*

Wednesday, November 16, 8 a.m. - 9:45 a.m.

CHAIR

Johanna P. Daily
*Albert Einstein College of Medicine, Bronx, NY, United States*

Carolyne M. Kifude
*U.S. Army Medical Research Directorate-Kenya, Kisumu, Kenya*

8 a.m.

## 1255

### DEVELOPMENT AND CLINICAL PERFORMANCE OF A HIGH THROUGHPUT LOOP-MEDIATED ISOTHERMAL AMPLIFICATION SYSTEM FOR THE DETECTION OF MALARIA

**Rushini S. Perera**[1], Xavier C. Ding[2], Frank Tully[3], James Oliver[3], Nigel Bright[4], David Bell[5], Peter L. Chiodini[1], Iveth J. Gonzalez[2], Spencer D. Polley[1]

*[1]Department of Clinical Parasitology, Hospital for Tropical Diseases, University College London Hospitals NHS Foundation Trust, London, United Kingdom, [2]FIND, Geneva, Switzerland, [3]42 Technology Ltd., Cambridgeshire, United Kingdom, [4]Porvair Sciences Ltd., Norfolk, United Kingdom, [5]Global Health Technologies, Global Good Fund (Intellectual Ventures Lab), Bellevue, WA, United States*

8:15 a.m.

## 1256

### DEVELOPMENT OF HIGHLY ACCURATE QPCR ASSAYS FOR QUANTIFICATION OF SUB-MICROSCOPIC MALARIA PARASITES IN ASYMPTOMATIC POPULATION

**Carolyne M. Kifude**[1], Deborah M. Stiffler[2], Robin H. Miller[2], Emily Parsons[2], Claire Wortmann[2], Stephen O. Ocholla[1], John N. Waitumbi[1], Shirley Luckhart[3], Janet Oyieko[1], V. Ann Stewart[2]

*[1]U.S. Army Medical Research Directorate-Kenya, Kisumu, Kenya, [2]Uniformed Services University of Health Sciences, Bethesda, MD, United States, [3]Medical Microbiology and Immunology, School of Medicine, University of California Davis, Davis, CA, United States*

8:30 a.m.

## 1257

### VALIDATION OF ULTRASENSITIVE DETECTION OF ASYMPTOMATIC MALARIA USING DRIED BLOOD SPOTS

**Kayvan Zainabadi**[1], Matthew Adams[1], Zay Yar Han[2], Hnin Wai Lwin[2], Kay Thwe Han[2], Myaing Nyunt[1], Christopher Plowe[1]
*[1]Institute for Global Health, Division of Malaria Research, University of Maryland School of Medicine, Baltimore, MD, United States, [2]Department of Medical Research, Ministry of Health, Yangon, Myanmar*

8:45 a.m.

## 1258

### DETECTION OF *PLASMODIUM FALCIPARUM* DNA IN SALIVA SAMPLES STORED AT ROOM TEMPERATURE: POTENTIAL FOR A NON-INVASIVE SALIVA-BASED DIAGNOSIS OF MALARIA

**Obadiah Mfuh Kenji**[1], Livo Esemu[2], Samuel Tassi Yunga[1], Obase Bekindaka[2], Jessica Yonga[2], Palmer Masumbe Netongo[2], Diane W. Taylor[1], Rose G. Leke[2], Vivek R. Nerurkar[1]
*[1]University of Hawaii, Honolulu, HI, United States, [2]Biotechnology Center, University of Yaounde I, Yaounde, Cameroon*

9 a.m.

## 1259

### STIMULATING THE MARKET FOR MALARIA RDTS: NOVEL INSIGHTS FROM REAL-WORLD PROGRAMMING FOCUSED ON PRIVATE SECTOR SERVICE DELIVERY AND MARKET DEVELOPMENT

**Nikki Charman**, Andrea Cutherell, Stephen Poyer, Stephanie Dolan, Cristina Lussiana, Victor Lara
*Population Services International, Nairobi, Kenya*

9:15 a.m.

## 1260

### SINGLE CELL FUNCTIONAL ARTEMISININ RESISTANCE IN CLINICAL STRAINS OF *P. FALCIPARUM* MALARIA

**Alassane Mbengue**[1], Carolyn Shirey[2], Souvik Bhattacharjee[1], Innocent Safeukui[1], Robert Stahelin[2], Kasturi Haldar[1]
*[1]Notre Dame University, Notre Dame, IN, United States, [2]Indiana University School of Medicine, South Bend, IN, United States*

9:30 a.m.

## 1261

### DELETIONS OF PFHRP2 AND PFHRP3 IN RDT-NEGATIVE *PLASMODIUM FALCIPARUM* ISOLATES FROM UGANDA

**Sam L. Nsobya**[1], Elizabeth Namirembe[2], Andrew Walakira[2], Moses Kiggundu[2], Emma Ruhamyankaka[2], Emmanuel Arinaitwe[2], Moses Kamya[2], Doresy Grant[3], Philip J. Rosenthal[3]
*[1]Makerere University, Kampala, Uganda, [2]Infectious Diseases Research Collaboration, Kampala, Uganda, [3]Department of Medicine, University of California San Francisco, San Francisco, CA, United States*

**(ACMCIP Abstract)**

## Scientific Session 112

# Kinetoplastida: Diagnosis, Treatment and Vaccine Development

*Marriott - Room M103/M104/M105*
Wednesday, November 16, 8 a.m. - 9:45 a.m.

CHAIR

Frederick S. Buckner
*University of Washington, Seattle, WA, United States*

Edgar M. Carvalho
*Federal University of Bahia, Salvador, Brazil*

8 a.m.

## 1262

### THE DILEMMAS OF CONGENITAL CHAGAS DISEASE SCREENING IN AN ENDEMIC SETTING

**Louisa A. Messenger**[1], Gerson Galdos-Cardenas[2], Malasa Jois[3], Victoria Rendell[4], Vishal Shah[5], Edward Valencia[6], Leny Sanchez[6], Janet Acosta[6], Manuela Verastegui[6], Gerardo Sanchez[6], Remo Gonza[6], Robert Gilman[2]
*[1]London School of Hygiene & Tropical Medicine, London, United Kingdom, [2]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, [3]Brown University, Providence, RI, United States, [4]Duke University, Durham, NC, United States, [5]St. Louis University School of Medicine, St. Louis, MO, United States, [6]Universidad Peruana Cayetano Heredia, Lima, Peru*

8:15 a.m.

## 1263

### TARGETING *TRYPANOSOMA CRUZI* METHIONYL-TRNA SYNTHETASE FOR NOVEL TREATMENT OF CHAGAS DISEASE

**Frederick S. Buckner**, Ranae M. Ranade, John R. Gillespie, Zhongsheng Zhang, Ximena Barros-Alvarez, Christophe C. Verlinde, Wim G. Hol, Erkang Fan
*University of Washington, Seattle, WA, United States*

8:30 a.m.

## 1264

### NOVEL EXTRACTION PROTOCOL AND RECOMBINASE POLYMERASE AMPLIFICATION ASSAY FOR DETECTION OF *LEISHMANIA DONOVANI* IN 30 MINUTES

Dinesh Mondal[1], Prakash Ghosh[1], Md. Anik Ashfaq Khan[1], Faria Hossain[1], Susanne Böhlken-Fascher[2], Greg Matlashewski[3], Axel Kroeger[4], Piero Olliaro[5], **Ahmed Abd El Wahed**[2]
*[1]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, [2]Georg-August University, Goettingen, Germany, [3]McGill University, Montreal, QC, Canada, [4]University Medical Centre Freiburg, Freiburg, Germany, [5]UNICEF/UNDP/World Bank/World Health Organization Special Programme for Research and Training in Tropical Diseases, Geneva, Switzerland*

8:45 a.m.

## 1265

### SPECTRUM OF BACTERIAL PATHOGENS IN INFLAMMATORY CUTANEOUS ULCERS OF AMERICAN TEGUMENTARY LEISHMANIASIS

**Ruwandi Kariyawasam**[1], Rachel Lau[2], Jordan K. Mah[1], Braulio Valencia[3], Alejandro Llanos-Cuentas[3], Andrea K. Boggild[1]
*[1]University of Toronto, Toronto, ON, Canada, [2]Public Health Ontario Laboratories, Toronto, ON, Canada, [3]Instituto de Medicina Tropical "Alexander von Humboldt", Lima, Peru*

**(ACMCIP Abstract)**

9 a.m.

## 1266

### "CHAGAS DISEASE: A PROSPECTIVE THERAPEUTIC COHORT WITH 12 MONTHS FOLLOW-UP, ANALYZING ADVERSE DRUG REACTIONS, THERAPEUTIC FAILURE AND SEEKING FOR BIOMARKERS"

**Carlos H. Moreira**[1], Noemia B. Carvalho[2], Rosário Q. Ferrufino[2], Lea C. Oliveira[3], José A. Lindoso[4], Erika Manuli[5], Marcela De Souza[5], Ester C. Sabino[6]
*[1]Laboratory of Parasitology (LIM46), Tropical Medicine Institute of São Paulo, University of São Paulo; Institute of Infectology Emilio Ribas, Sao Paulo, Brazil, [2]Division of Infectious Diseases, Hospital das Clinicas de São Paulo, School of Medicine, University of São Paulo, Sao Paulo, Brazil, [3]Laboratory of Medicine Laboratorial (LIM03), Hospital das Clínicas de São Paulo, School of Medicine, University of São Paulo, Sao Paulo, Brazil, [4]Laboratory of Seroepidemiology from Institute of Tropical Medicine from São Paulo, Brazil; Institute of Infectology Emílio Ribas, Sao Paulo, Brazil, [5]Laboratory of Parasitology (LIM46), Tropical Medicine Institute of São Paulo, University of São Paulo, São Paulo, Brazil, Sao Paulo, Brazil, [6]Laboratory of Parasitology (LIM46), Tropical Medicine Institute of São Paulo, University of São Paulo; Division of Infectious Diseases, Hospital das Clinicas de São Paulo, School of Medicine, University of São Paulo, Sao Paulo, Brazil*

9:15 a.m.

## 1267

### TOWARDS SENSITIVE AND LESS INVASIVE DIAGNOSIS OF VISCERAL LEISHMANIASIS IN SUDAN USING LAMP

Maowia Mukhtar[1], Sababil S S. Ali[1], Salah M. Boshara[1], Sahar M. Bakiet[1], Audrey Albertini[2], Séverine Monnerat[2], Paul Bessell[2], Joseph Ndung'u[2], **Israel Cruz**[2]
*[1]Institute of Endemic Diseases, University of Khartoum, Khartoum, Sudan, [2]Foundation for Innovative New Diagnostics-FIND, Geneva, Switzerland*

9:30 a.m.

## 1268

### ASSESSING IN VITRO AND *IN VIVO* ACTIVITY OF MILTEFOSINE AGAINST *TRYPANOSOMA CRUZI*

**Julián E. Gulin**[1], Jaime Altcheh[1], Margarita Bisio[1], Daniela M. Rocco[1], María E. Solana[2], Facundo García-Bournissen[1]
*[1]Service of Parasitology and Chagas Disease - "Dr. Ricardo Gutiérrez" Children Hospital, Buenos Aires, Argentina, [2]Research Institute in Microbiology and Medical Parasitology (IMPaM) – Faculty of Medicine - University of Buenos Aires, Buenos Aires, Argentina*

## Scientific Session 113

## Malaria: Chemotherapy for Control and Elimination

*Marriott - Atrium A*
Wednesday, November 16, 8 a.m. - 9:45 a.m.

CHAIR
Miriam Laufer
*University of Maryland, Baltimore, MD, United States*

Catherine Maiteki
*Infectious Disease Research Collaboration, Kampala, Uganda*

8 a.m.

## 1269

### OPTIMIZING SEASONAL MALARIA CHEMOPREVENTION (SMC) IN AFRICA: ESTIMATING THE IMPACT OF INCREASING THE NUMBER OF SMC CYCLES ON THE NUMBER OF CHILDREN PROTECTED, THE MALARIA BURDEN AND COST-EFFECTIVENESS

**Matthew Cairns**[1], Patrick G. Walker[2], Jamie T. Griffin[3], Paul J. Milligan[1], Azra C. Ghani[2]
*[1]London School of Hygiene & Tropical Medicine, London, United Kingdom, [2]Imperial College London, London, United Kingdom, [3]Queen Mary University of London, London, United Kingdom*

8:15 a.m.

## 1270

### EVALUATION OF THE IMPACT OF SEASONAL MALARIA CHEMOPREVENTION ON MORTALITY AND MORTALITY IN YOUNG CHILDREN IN NORTHERN GHANA

**Patrick O. Ansah**[1], Nana Akosua Ansah[1], Keziah Malm[2], Dennis Awuni[1], Nana Yaw Peprah[2], Timothy Awine[1], Charles Manful[1], Abraham R. Oduro[1]
*[1]Navrongo Health Research Centre, Navrongo, Ghana, [2]National Malaria Control Programme, Accra, Ghana*

8:30 a.m.

## 1271

### EVALUATING THE COMMUNITY-LEVEL IMPACT OF INTERMITTENT PREVENTIVE TREATMENT OF SCHOOLCHILDREN FOR MALARIA IN JINJA, UGANDA: A CLUSTER-RANDOMIZED TRIAL

**Catherine Maiteki-Sebuguzi**[1], Andrea M. Rehman[2], Simon P. Kigozi[1], Samuel Gonahasa[1], Steve Lindsay[3], Clare I. Chandler[2], Grant Dorsey[4], Moses R. Kamya[5], Chris Drakeley[2], Sarah G. Staedke[2]
*[1]Infectious Diseases Research Collaboration, Kampala, Uganda, [2]London School of Hygiene & Tropical Medicine, London, United Kingdom, [3]Durham University, Durham, United Kingdom, [4]University of California San Francisco, San Francisco, CA, United States, [5]Makerere University, Kampala, Uganda*

8:45 a.m.

## 1272

### BASELINE FREQUENCIES OF MOLECULAR MARKERS OF DRUG RESISTANCE BEFORE SCALING-UP ACCESS TO SEASONAL MALARIA CHEMOPREVENTION IN SEVEN COUNTRIES ACROSS THE SAHEL

**Khalid Beshir**[1], Julian Muwanguzi[1], Daugla Doumagoum[2], Jean-Pierre Gami[2], Issaka Zongo[3], Jean Bosco Ouedraogo[3], Serign Ceesay[4], Kalifa Bojang[4], Ibrahim Laminou[5], Issaka Sagara[6], Alassane Dicko[6], Abdoulaye Djimde[6], Kovana M. Loua[7], Sonny Ogboi[8], Tony Eloike[8], Philippe Guerin[9], Sylvia Meek[10], Jean Louis NDiaye[11], Abdoulaye Diallo[11], Corinne Merle[12], Matthew Cairns[1], Paul J. Milligan[1], Colin J. Sutherland[1]
*[1]London School of Hygiene & Tropical Medicine, London, United Kingdom, [2]CSSI, N'Djamena, Chad, [3]IRSS, Bobo-Dioulasso, Burkina Faso, [4]MRC Laboratories, Fajara, Gambia, [5]CERMES, Niamey, Niger, [6]MRTC, Bamako, Mali, [7]Gamal Abdel Nasser University, Conakry, Guinea, [8]JEDIMA, Abuja, Nigeria, [9]WWARN, Oxford, United Kingdom, [10]Malaria Consortium, London, United Kingdom, [11]Universite Cheikh Anta Diop, Dakar, Senegal, [12]Special Programme for Research and Training in Tropical Diseases, World Health Organization, Geneva, Switzerland*

**(ACMCIP Abstract)**

9 a.m.

## 1273

### DIHYDROARTEMISIN-PIPERAQUINE FOR SEASONAL MALARIA CHEMOPREVENTION

**Issaka Zongo**[1], Paul J. Milligan[2], Joel Tarning[3], Francois Nosten[4], Jean Bosco Ouedraogo[1]
*[1]Institut de recherche en Science de la Santé, Bobo-Dioulasso, Burkina Faso, [2]London School of Hygiene & Tropical Medicine, London, United Kingdom, [3]Mahidol Oxford Tropical Medicine Research Unit, Faculty of Tropical Medicine, Bangkok, Thailand, [4]Shoklo Malaria Research Unit, Mahidol–Oxford Tropical Medicine Research Unit, Faculty of Tropical Medicine, Mahidol University, Mae Sot, Thailand*

9:15 a.m.

## 1274

### COMPARATIVE IMPACTS OF ANTENATAL MALARIA PREVENTION STRATEGIES ON *P. FALCIPARUM* SP-RESISTANCE ALLELES IN MALAWI

Brandt Levitt[1], Mwayiwawo Madanitsa[2], Feiko O. ter Kuile[3], Kyaw Thwai[4], Victor Mwapasa[2], Linda Kalilani-Phiri[2], Steven R. Meshnick[4], **Steve M. Taylor**[1]
*[1]Duke University Medical Center, Durham, NC, United States, [2]University of Malawi, Blantyre, Malawi, [3]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [4]University of North Carolina, Chapel Hill, NC, United States*

9:30 a.m.

## 1275

### EVALUATION OF TARGETED MASS TREATMENT OF MALARIA IN TANINTHARYI REGION, MYANMAR: PRELIMINARY RESULTS

Aye Aye Khaing[1], Phyo M. Maung[1], Kayvan Zainabadi[2], Matthew Adams[2], Kay Thwe Han[3], Aung Thi[4], Adam Richards[1], Christopher V. Plowe[2], Myaing M. Nyunt[2], **Si Thura**[1]
*[1]Community Partners International, Yangon, Myanmar, [2]University of Maryland School of Medicine Institute for Global Health, Baltimore, MD, United States, [3]Department of Medical Research, Ministry of Health, Yangon, Myanmar, [4]National Malaria Control Program, Department of Public Health, Ministry of Health, Yangon, Myanmar*

## Symposium 114

## Febrile Illness - Epidemiology, Diagnostics, Management

*Marriott - Atrium B*
Wednesday, November 16, 8 a.m. - 9:45 a.m.

Although fever is a common symptom, "Febrile Illness" is underappreciated as an independent syndrome compared with well-known counterparts pneumonia, diarrhea and malaria. As malaria incidence declines, it has become apparent that the majority of clinical diagnoses of malaria are incorrect, that outcomes of such patients are comparatively poor, thus the importance of identifying and managing the other etiologies of fever has become of paramount importance. Laboratory diagnosis for diverse entities is difficult, however, particularly in field settings. Therefore, this symposium will provide a modern update on the current epidemiology of febrile illness, an update on laboratory diagnostics for diverse causes of fever, an update on clinical trials to evaluate triage and management of fever, and an update on inpatient management of critically ill patients with fever.

CHAIR

Eric R. Houpt
*University of Virginia, Charlottesville, WA, United States*

John Crump
*University of Otago, Dunedin, New Zealand*

8 a.m.
**INSIGHTS ON GLOBAL EPIDEMIOLOGY OF SEVERE FEBRILE ILLNESS**

John Crump
*University of Otago, Dunedin, New Zealand*

8:20 a.m.
**MOLECULAR DIAGNOSTICS AND TAQMAN ARRAY CARD FOR THE ETIOLOGY OF FEVER**

Eric R. Houpt
*University of Virginia, Charlottesville, VA, United States*

8:40 a.m.
**CRP POINT-OF-CARE TESTS IN THE MANAGEMENT OF FEBRILE PATIENTS IN PRIMARY CARE IN SOUTHEAST ASIA**

Yoel Lubell
*Mahidol Oxford Tropical Medicine Research Unit, Bangkok, Thailand*

9 a.m.
**CLINICAL ASSESSMENT, SCORING SYSTEMS AND MANAGEMENT OF SEVERE SEPSIS IN SUB-SAHARAN AFRICA**

Chris Moore
*University of Virginia, Mbarara University of Science and Technology, Charlottesville, VA, United States*

## Symposium 115

## Understanding, Detecting, Preventing the Fertilization of *Plasmodium* Parasites

*Marriott - Room A601*
Wednesday, November 16, 8 a.m. - 9:45 a.m.

To meet the goal of malaria elimination/eradication, the highest priority should be given to targeting the entire *Plasmodium* life cycle. Despite progress in many areas, e.g. the investigation on *Plasmodium vivax* hypnozoites and *Plasmodium falciparum* mature gametocytes, the understanding of some key biological processes of the *Plasmodium* life cycle remains very limited, with few, if any, tools to diagnose and target them in natural infections. One of these processes is fertilization, an event that takes place in the mosquito gut minutes after ingestion of a gametocyte-infected blood meal. Fertilization is absolutely required for transmission to occur. Present knowledge of *Plasmodium* fertilization derives mainly from studies on the mouse parasite *Plasmodium berghei* as, unlike for *P. falciparum*, this process can be reproduced *in vitro* with a high efficiency. Although antigens recognized by transmission-blocking antibodies have been identified on the surface of *P. falciparum* and *P. vivax* gametes, no specific markers of fertilization exist to measure this process *in vitro* and to detect fertilization in natural infections. The symposium aims at stimulating discussion on the importance to understand the biology of fertilization and at emphasizing the need for the development of novel strategies to prevent fertilization and block malaria parasite transmission.

CHAIR

Pietro Alano
*Istituto Superiore di Sanità, Rome, Italy*

Marcelo Jacobs-Lorena
*Johns Hopkins School of Public Health, Baltimore, MD, United States*

8 a.m.
**TARGETING MOLECULAR INTERACTIONS ESSENTIAL FOR *PLASMODIUM* FERTILIZATION**

Marcelo Jacobs-Lorena
*Johns Hopkins School of Public Health, Baltimore, MD, United States*

8:20 a.m.
**TRANSCRIPTIONAL CONTROL IN *PLASMODIUM* SEXUAL DEVELOPMENT AND DISCOVERY OF GENES INVOLVED IN GAMETE INTERACTIONS**

Oliver Billker
*Wellcome Trust Sanger Institute, Hinxton, United Kingdom*

8:40 a.m.
**COMPARATIVE STUDIES IN *PLASMODIUM* AND THE GREEN ALGA *CHLAMYDOMONAS* ILLUMINATE ANCIENT MECHANISMS IN THE GAMETE MEMBRANE FUSION REACTION**

William J. Snell
*University of Maryland, College Park, MD, United States*

9 a.m.
**IDENTIFICATION OF MOLECULAR MARKERS FOR GAMETOCYTE ACTIVATION IN A TRANSCRIPTOMIC EFFORT**

Sanna Rijpma
*Radboud University Medical Center, Nijmegen, Netherlands*

## Scientific Session 116

## Arthropods: Other Arthropods

*Marriott - Room A703/A704*
Wednesday, November 16, 8 a.m. - 9:45 a.m.

CHAIR
Damaris K. Matoke
*International Centre of Insect Physiology and Ecology, Nairobi, Kenya*

Brooke E. Miers
*University of Notre Dame, Eck Institute for Global Health, South Bend, IN, United States*

8 a.m.

### 1276

### *AEDES ALBOPICTUS* AT ALTITUDE: WHAT COST FOR CHIKUNGUNYA AND DENGUE TRANSMISSION?

**Fadila Amraoui**[1], Aurélien Mercier[1], Enkelejda Velo[2], Ada Shukullari[2], Anna-Bella Failloux[1], Paul Reiter[1]
*[1]Institut Pasteur, Paris, France, [2]Institute of Public Health, Tirana, Albania*

8:15 a.m.

### 1277

### ASSESSING THE POTENTIAL RISK FACTORS ASSOCIATED WITH NODDING SYNDROME IN NORTHERN UGANDA

**Brooke E. Miers**[1], Jonathan Kayondo[2], Richard Echodu[3], Julius Lutwama[2], John Grieco[1], Lacey Ahern[1]
*[1]University of Notre Dame, South Bend, IN, United States, [2]Uganda Virus Research Institute, Entebbe, Uganda, [3]Gulu University, Gulu, Uganda*

8:30 a.m.

### 1278

### ACHIEVING THE VISCERAL LEISHMANIASIS ELIMINATION TARGET IN INDIA WITH EFFECTIVE VECTOR MONITORING

**Rinki M. Deb**[1], Geraldine M. Foster[1], Rudra P. Singh[2], Vijay Kumar[2], Pradeep Das[2], Michael C. Coleman[1]
*[1]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [2]Rajendra Memorial Research Institute of Medical Sciences, Patna, India*

8:45 a.m.

### 1279

### SANDFLY OCCURRENCE, DISTRIBUTION AND DIVERSITY IN *LEISHMANIA* ENDEMIC REGIONS IN KENYA

**Damaris K. Matoke-Muhia**[1], Tobias Landmann[1], Philip Ngumbi[2], Milkah Mwangi[2], Johnstone Ingonga[2], Hellen Nyakundi[3], Richard Wamai[4], Joseph Wang'ombe[3], Daniel Masiga[1]
*[1]International Centre of Insect Physiology and Ecology, Nairobi, Kenya, [2]Kenya Medical Reserch Institute, Nairobi, Kenya, [3]University of Nairobi, Nairobi, Kenya, [4]Northeastern University, Boston, MA, United States*

9 a.m.

### 1280

### EVOLUTION OF *GLOSSINA FUSCIPES S.L* IN HUMAN AFRICAN TRYPANOSOMIASIS *FOCI* - EVIDENCE FOR CRYPTIC SPECIES

**Allan Muhwezi**[1], Enock Matovu[1], Martin J. Donnelly[2], Stephen J. Torr[2]
*[1]Makerere University, Kampala, Uganda, [2]Vector Group, Liverpool School of Tropical Medicine, Liverpool, United Kingdom*

9:15 a.m.

### 1281

### SPATIO-TEMPORAL ANALYSIS AND *TRYPANOSOMA CRUZI* (AGENT OF CHAGAS DISEASE) INFECTION PREVALENCE OF CITIZEN-COLLECTED TRIATOMINE VECTORS ACROSS THE SOUTHERN USA

**Rachel Curtis-Robles**[1], Lisa D. Auckland[1], Sage Lane[1], Michael Z. Levy[2], Gabriel L. Hamer[1], Sarah A. Hamer[1]
*[1]Texas A&M University, College Station, TX, United States, [2]University of Pennsylvania, Philadelphia, PA, United States*

9:30 a.m.

### 1282

### BARCODED LIVE ARTHROPOD SCREENS FOR HIGH THROUGHPUT DISCOVERY OF NOVEL VECTOR CONTROL AGENTS

Maarten Eldering[1], Angelika Sturm[1], Martijn Vos[1], Rob Henderson[1], Sijia Li[2], Geert-Jan van Gemert[3], Robert Sauerwein[1], Matthew Tremblay[2], **Koen Dechering**[1]
*[1]TropIQ Health Sciences, Nijmegen, Netherlands, [2]California Institute for Biomedical Research, San Diego, CA, United States, [3]Radboud University Medical Center, Nijmegen, Netherlands*

## Scientific Session 117

## Malaria: Control Interventions - Operational Innovations and Challenges

*Marriott - Room A706/A707*
Wednesday, November 16, 8 a.m. - 9:45 a.m.

CHAIR
Susan Dierickx
*Vrije Universiteit Brussel, Brussels, Belgium*

Kent Kester
*Sanofi Pasteur, Swiftwater, PA, United States*

8 a.m.

### 1283

### A RANDOMIZED CONTROLLED TRIAL OF THE NEUROPSYCHOLOGICAL BENEFITS OF COMPUTERIZED COGNITIVE REHABILITATION TRAINING IN UGANDAN CHILDREN SURVIVING SEVERE MALARIA

**Michael J. Boivin**[1], Noeline Nakasujja[2], Alla Sikorskii[1], Horacio Ruisenoir-Escudero[1], Itziar Familiar-Lopez[1], Robert O. Opoka[2], Bruno Giordani[3]
*[1]Michigan State University, East Lansing, MI, United States, [2]Makerere University, Kampala, Uganda, [3]University of Michigan, Ann Arbor, MI, United States*

8:15 a.m.

### 1284

### ASSESSING THE POTENTIAL TOXICITY HAZARD TO AQUATIC LIFE FROM IMMERSION OF INSECTICIDE-TREATED MOSQUITO NETS DURING FISHING AND WASHING

**Jessica A. Lawson**, Ciaran J. Harman, Edward J. Bouwer
*Johns Hopkins University, Baltimore, MD, United States*

8:30 a.m.

## 1285

### EVALUATING THE IMPACT OF THE NATIONAL SCALE-UP OF MALARIA CONTROL INTERVENTIONS IN LIBERIA FROM 2004 TO 2013

**Samantha Herrera**[1], Victor S. Koko[2], Levi Hinneh[2], Kwabena Larbi[3], Tajrina Hai[1], Sumo Zeze[4], Forkpa Karmon[4], James Thompson[4], William Belleh[4], Christie Reed[5], Christie Hershey[6], Ramlat Jose[7], Kaa Williams[7], Gabriel Ponce-de-Leon[8], Michael Aidoo[8], Christen Fornadel[6], Yazoume Ye[1], Oliver Pratt[2]

*[1]ICF International, Rockville, MD, United States, [2]National Malaria Control Program, Monrovia, Liberia, [3]National Malaria Control Program/Management Sciences for Health, Monrovia, Liberia, [4]Subah-Belleh Associates, Monrovia, Liberia, [5]President's Malaria Initiative, U.S. Centers for Disease Control and Prevention, Monrovia, Liberia, [6]President's Malaria Initiative, U.S. Agency for International Development, Washington, DC, United States, [7]President's Malaria Initiative, U.S. Agency for International Development, Monrovia, Liberia, [8]President's Malaria Initiative, U.S. Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:45 a.m.

## 1286

### THE RELEVANCE OF OUTDOOR RESTING AND SLEEPING FOR BED NET USE IN THE GAMBIA

**Susan Dierickx**[1], Katja Siling[2], Julia Mwesigwa[3], Charlotte Gryseels[2], Fatou Jaiteh[3], René Gerrets[4], Umberto D'Alessandro[3], Koen Grietens Peeters[2]

*[1]Vrije Universiteit Brussel, Brussels, Belgium, [2]Institute of Tropical Medicine, Antwerp, Belgium, [3]Medical Research Council, The Gambia, Fajara, Gambia, [4]Amsterdam Institute of Social Science Research, Amsterdam, Netherlands*

9 a.m.

## 1287

### COST-EFFECTIVENESS OF SEASONAL MALARIA CHEMOPREVENTION IN UPPER WEST REGION OF GHANA

**Justice Nonvignon**[1], Genevieve Cecilia Aryeetey[1], Shamwill Issah[2], Moses Aikins[1]

*[1]University of Ghana/School of Public Health, Accra, Ghana, [2]UK Department for Inrternational Development, Ghana Office, Accra, Ghana*

9:15 a.m.

## 1288

### EXPANDING THE TOOLBOX: A SYSTEMATIC REVIEW LOOKING AT OLD AND NEW VECTOR CONTROL TOOLS

**Yasmin A. Williams**[1], Lucy S. Tusting[2], Sophia Hocini[1], Patricia Graves[3], Gerry Killeen[4], Allison Tatarsky[1], Roly Gosling[5]

*[1]University of California San Francisco, San Francisco, CA, United States, [2]Big Data Institute, Nuffield Department of Medicine, University of Oxford, Oxford, United Kingdom, [3]Australian Institute of Tropical Health and Medicine and College of Public Health, Medical and Veterinary Sciences, James Cook University, Cairns, Australia, [4]Environmental Health and Ecological Sciences Thematic Group, Ifakara Health Institute, Ifakara, United Republic of Tanzania, [5]University of California San Francisco, San Francisco, CA, United States*

9:30 a.m.

## 1289

### COMMUNITY HEALTH WORKERS' PERCEPTIONS OF AND SATISFACTION WITH THEIR ROLE IN IMPLEMENTING A COMMUNITY CASE MANAGEMENT FOR MALARIA PROGRAM: IMPLICATIONS FOR FEASIBILITY AND SCALE-UP

**Adriane Lesser**[1], Diana Menya[2], Laura Winn[3], Jeremiah Laktabai[2], Wendy Prudhomme O'Meara[4], Joy Noel Baumgartner[1]

*[1]Duke Global Health Institute, Durham, NC, United States, [2]Moi University (School of Public Health and School of Medicine), Eldoret, Kenya, [3]Duke University, Durham, NC, United States, [4]Duke University Medical Center, Duke Global Health Institute, Moi University School of Public Health, Academic Model Providing Access to Healthcare (AMPATH), Eldoret, Kenya*

## Exhibit Hall Open

*Marriott - International Hall*
Wednesday, November 16, 9:30 a.m. - 10:30 a.m.

## Coffee Break

*Marriott - International Hall*
Wednesday, November 16, 9:45 a.m. - 10:15 a.m.

## Poster Session C Set-Up

*Hilton - Grand Ballroom and Grand Salon*
Wednesday, November 16, 9:45 a.m. - 10:15 a.m.

## Poster Session C Viewing

*Hilton - Grand Ballroom and Grand Salon*
Wednesday, November 16, 10:15 a.m. - Noon

## TropStop Office Hours

*Marriott - Atrium Loft*
Wednesday, November 16, 10 a.m. - 11 a.m.

Meet up-and-coming professionals in the fields of tropical medicine, global health, science and industry who will share their personal career paths and answer questions you may have.

PRESENTERS

Nicole L. Achee
*University of Notre Dame, Notre Dame, IN, United States*

Peter Crompton
*National Institutes of Health, Rockville, MD, United States*

## Symposium 118

## Implications of Insecticide Resistance on Malaria Vector Control: Outcomes from a Multi-Country Evaluation

*Marriott - Imperial A*
Wednesday, November 16, 10:15 a.m. - Noon

Recent progress in reducing malaria disease burden through the substantial scale up of insecticide-based vector control could be reversed by the widespread emergence of insecticide resistance in malaria vectors. However, the actual impact of insecticide resistance on the protective effectiveness of insecticide-treated nets and indoor residual spraying has not been well characterized. In 2009, the WHO Global Malaria Programme with funding from the Bill & Melinda Gates Foundation initiated a multi-country study to ascertain the potential loss of epidemiological effectiveness of these core insecticidal interventions as a result of decreased susceptibility of malaria vectors to the insecticides used. The longitudinal study was completed in four African countries (Benin, Cameroon, Kenya and Sudan) in 2016. This symposium will review key outcomes from the study and discuss the implications for malaria control and elimination.

CHAIR

Tessa B. Knox
*World Health Organization, Geneva, Switzerland*

Immo Kleinschmidt
*London School of Hygiene & Tropical Medicine, London, United Kingdom*

10:15 a.m.
**IMPLICATIONS OF INSECTICIDE RESISTANCE: OUTCOMES FROM A LONGITUDINAL STUDY ON LLIN EFFECTIVENESS IN AREAS WITH PYRETHROID RESISTANT *AN. GAMBIAE* IN SOUTHERN BENIN**

Martin Akogbeto
*Centre de Recherché Entomologique de Cotonou, Cotonou, Benin*

10:30 a.m.
**IMPLICATIONS OF INSECTICIDE RESISTANCE: ASSESSING THE IMPACT OF PYRETHROID RESISTANCE ON MALARIA TRANSMISSION AND DISEASE BURDEN IN AN AREA OF HIGH LLIN COVERAGE IN THE NORTH OF CAMEROON**

Jude D. Bigoga
*Biotechnology Center and Department of Biochemistry, University of Yaounde I, Yaounde, Cameroon*

10:45 a.m.
**IMPLICATIONS OF INSECTICIDE RESISTANCE: ASSESSMENT OF THE ENTOMOLOGICAL AND EPIDEMIOLOGICAL IMPACT OF VECTOR CONTROL IN THE PRESENCE OF RESISTANT MALARIA VECTORS, WESTERN KENYA**

Charles M. Mbogo
*Kenya Medical Research Institute, Nairobi, Kenya*

11 a.m.
**IMPLICATIONS OF INSECTICIDE RESISTANCE: RCT OF LLINS VS LLINS+IRS IN AN AREA OF PYRETHROID RESISTANT *AN. ARABIENESIS* IN SUDAN**

Hmooda Toto Kafy
*IVM Unit, Federal Ministry of Health, Sudan, Khartoum, Sudan*

11:15 a.m.
**IMPLICATIONS OF INSECTICIDE RESISTANCE: KEY EVALUATION FINDINGS AND IMPLICATIONS FOR MALARIA VECTOR CONTROL**

Immo Kleinschmidt
*London School of Hygiene & Tropical Medicine, London, United Kingdom*

## Symposium 119

## Yellow Fever: Scientific and Logistical Challenges for a Preventable Disease

*Marriott - Imperial B*
Wednesday, November 16, 10:15 a.m. - Noon

Yellow fever is a mosquito-borne disease endemic in tropical areas of Africa and Latin America. Yellow fever virus is maintained in nature in nonhuman primates and transmitted to humans via mosquitoes, Aedes aegypti. The infection-to-disease ratio may be as high as 20:1. The clinical spectrum ranges from asymptomatic infection to severe disease with multi-organ failure and bleeding. Mortality in symptomatic patients ranges from 20-50%. Although the disease has been recognized for centuries, the virus (Flavivirus genus, Flaviviridae) was first isolated in 1927. An effective vaccine, yellow fever 17D, was developed in the early 1900s. Since then, widespread vaccination combined with mosquito control has resulted in a drastic decrease in cases, essentially eliminating large outbreaks of urban yellow fever in Latin the Americas. However, in sub-Saharan Africa, yellow fever vaccination has not been widespread, leaving large susceptible populations, sometimes leading to outbreaks. The global yellow fever vaccine supply has often been insufficient to meet demands. Consequently, in 2015 yellow fever resurged in Central Africa, with thousands of cases and hundreds of deaths in Angola and the Democratic Republic of the Congo, with imported cases to Kenya and the People's Republic of China. This symposium will discuss the scientific and logistical challenges in combatting yellow fever, reviewing the factors behind recent outbreaks and exploring future solutions for this preventable disease.

CHAIR

Sylvie C. Briand
*World Health Organization, Geneva, Switzerland*

Pedro Vasconcelos
*Instituto Evandro Chagas, MoH, Ananindeua, Brazil*

10:15 a.m.
**YELLOW FEVER RESURGENCE IN CENTRAL AFRICA: EPIDEMIC RESPONSE, CURRENT VACCINE COVERAGE AND POLICY**

Sylvie C. Briand
*World Health Organization, Geneva, Switzerland*

10:40 a.m.
**VIEW FROM THE FIELD: OUTBREAK CONTROL ACTIVITIES DURING THE 2016 YELLOW FEVER OUTBREAK IN THE DEMOCRATIC REPUBLIC OF THE CONGO**

Axelle Ronsse
*MSF Operational Center of Brussels, Brussels, Belgium*

11:05 a.m.
**DOSE-SPARING TO ADDRESS VACCINE SHORTFALLS AND FUTURE RESEARCH NEEDS**

Thomas P. Monath
*BioProtection Systems Corp./NewLink Genetics, Inc., Devens, MA, United States*

11:30 a.m.
**ADVANCES ON LABORATORY DIAGNOSIS AND IMMUNOPATHOGENESIS**

Pedro Vasconcelos
*Instituto Evandro Chagas, MoH, Ananindeua, Brazil*

## Symposium 120

## Brain-Eating *Amoebae*: Shining Light on the Most Neglected Tropical Diseases

*Marriott - Marquis A*
Wednesday, November 16, 10:15 a.m. - Noon

Small, free-living *Amoebae* (FLA) are ubiquitous in nature and are found in soil, fresh water, and marine environments. Most FLA feed on bacteria and are of no medical importance, yet several FLA are known to cause serious, usually fatal disease in humans and animals. *Naegleria fowleri* is the causative agent of primary amoebic meningoencephalitis (PAM), a disease characterized by a fulminant, rapidly fatal encephalitic disease that most often afflicts healthy young people. *Acanthamoeba spp.* cause granulomatous amoebic encephalitis (GAE), a chronic disease seen most often in immunocompromised hosts and those at risk of opportunistic infections. *Acanthamoeba spp.* also cause amoebic keratitis, skin, nasopharyngeal and disseminated infections. *Balamuthia mandrillaris* also causes GAE and is increasing in prevalence. The major problems for these diseases are high fatality rates (97% for PAM), lack of effective therapeutics, and difficulties in diagnosis. This symposium will present the latest advances in diagnosis,

treatment, prevention, target identification and drug discovery for these neglected pathogens. Presentations will include an overview of the diseases and the CDC program on FLA, the basis for the current treatment regimen for PAM, and new approaches for target identification and drug discovery for pathogenic FLA.

CHAIR

Dennis E. Kyle
*University of South Florida, Tampa, FL, United States*

Ibne K. Ali
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

10:15 a.m.
**DIAGNOSIS, TREATMENT AND PREVENTION OF DISEASES CAUSED BY PATHOGENIC FREE-LIVING *AMOEBAE***

Jennifer Cope
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

10:35 a.m.
**LESSONS LEARNED FROM SUCCESSFUL TREATMENT OF PRIMARY AMOEBIC MENINGOENCEPHALITIS**

W. Matthew Linam
*Arkansas Children's Hospital, Little Rock, AR, United States*

10:55 a.m.
**EXPLOITING 'PHARMAPHYLOGENY' AND 'OMICS' FOR DRUG TARGET IDENTIFICATION IN *ACANTHAMOEBA***

Craig W. Roberts
*University of Strathclyde, Institute of Pharmacy and Biomedical Sciences, Glasgow, United Kingdom*

11:15 a.m.
**DISCOVERY AND LEAD OPTIMIZATION OF NEW DRUGS TO TREAT CNS INFECTIONS WITH PATHOGENIC FREE-LIVING *AMOEBAE***

Dennis E. Kyle
*University of South Florida, Tampa, FL, United States*

## Scientific Session 121

## Bacteriology: Febrile Illnesses - Leptospirosis and Others

*Marriott - Marquis B*
Wednesday, November 16, 10:15 a.m. - Noon

CHAIR

Louise Dyson
*University of Warwick, Maths Institute, Leamington Spa, United Kingdom*

Katharine Owers
*Yale School of Public Health, New Haven, CT, United States*

10:15 a.m.

### 1290

**DISEASE-SPECIFIC CYTOKINE PROFILES IN PEDIATRIC PATIENTS WITH MALARIAL, HIV, AND SYSTEMIC BACTERIAL INFECTIONS**

**Benjamin H. McMahon**[1], Nicolas Hengartner[1], Harshini Mukundan[1], Sarah Voter[1], Shailja Jakhar[1], John M. Ong'echa[2], Prakasha Kempaiah[3], Zachary Karim[3], Douglas J. Perkins[3]
*[1]Los Alamos National Laboratory, Los Alamos, NM, United States, [2]KEMRI, Kisumu, Kenya, [3]University of New Mexico, Albuquerque, NM, United States*

10:30 a.m.

### 1291

**COMPARISON OF THE INCIDENCE OF ACUTE LEPTOSPIROSIS IN THE KILIMANJARO REGION OF TANZANIA BETWEEN 2007-08 AND 2012-14**

**Michael J. Maze**[1], Holly M. Biggs[2], Matthew P. Rubach[2], Renee L. Galloway[3], Shama Cash-Goldwasser[4], Kathryn J. Allan[5], Jo E. Halliday[6], Julian T. Hertz[4], Wilbrod Saganda[6], Bingileki Lwezaula[6], Sarah Cleaveland[5], Blandina T. Mmbaga[7], Venance Maro[7], John A. Crump[1]
*[1]University of Otago, Dunedin, New Zealand, [2]Duke University Medical Centre, Durham, NC, United States, [3]Centers for Disease Control and Prevention, Bacterial Special Pathogens Branch, Atlanta, GA, United States, [4]Duke Global Health Institute, Durham, NC, United States, [5]University of Glasgow, Glasgow, United Kingdom, [6]Mawenzi Regional Hospital, Moshi, United Republic of Tanzania, [7]Kilimanjaro Christian Medical Centre, Moshi, United Republic of Tanzania*

10:45 a.m.

### 1292

**FINE-SCALE GPS TRACKING TO QUANTIFY HUMAN MOVEMENT PATTERNS AND EXPOSURE TO LEPTOSPIROSIS IN THE URBAN SLUM ENVIRONMENT**

**Katharine A. Owers**[1], Juliana Odetunde[2], Rosan B. de Matos[3], Gielson Sacramento[3], Mayara Carvalho[3], Nivison N. Júnior[3], Federico Costa[4], Mitermayer G. Reis[3], Mike Begon[5], James E. Childs[1], José E. Hagan[1], Peter J. Diggle[6], Albert I. Ko[1]
*[1]Yale School of Public Health, New Haven, CT, United States, [2]University of Kentucky College of Medicine, Lexington, KY, United States, [3]Centro de Pesquisas Gonçalo Moniz, Salvador, Brazil, [4]Federal University of Bahia, Salvador, Brazil, [5]University of Liverpool, Liverpool, United Kingdom, [6]Lancaster University, Lancaster, United Kingdom*

11 a.m.

### 1293

**POSTPARTUM INFECTION AT A UGANDAN REGIONAL REFERRAL HOSPITAL: MICROBIOLOGY AND ANTIMICROBIAL RESISTANCE PATTERNS**

**Lisa M. Bebell**[1], Joseph Ngonzi[2], Joel Bazira[2], Yarine Fajardo[2], Adeline A. Boatin[1], Adeline A. Boatin[1], Yves Jacquemyn[3], Jean-Pierre van Geertruyden[3], Steven J. Schiff[4], Laura E. Riley[1], David R. Bangsberg[1], Yap Boum II[5]
*[1]Massachusetts General Hospital, Boston, MA, United States, [2]Mbarara University of Science and Technology, Mbarara, Uganda, [3]University of Antwerp, Antwerp, Belgium, [4]The Pennsylvania State University, Hershey, PA, United States, [5]Epicentre Research Base, Mbarara, Uganda*

11:15 a.m.

### 1294

**EMERGING PATHOGENIC BACTERIUM *ELIZABETHKINGIA ANOPHELIS*: DIVERSE MOBILE GENETIC ELEMENTS ARE PRESENT ACROSS STRAINS AROUND THE WORLD**

**Jiannong Xu**, Dong Pei, Yuhao Lan
*New Mexico State University, Las Cruces, NM, United States*

11:30 a.m.

## 1295

### FAILURE OF STRAIN-SPECIFIC IMMUNE INDUCTION TO GROUP A STREPTOCOCCUS MAY UNDERLIE THE EPIDEMIC OF STREPTOCOCCAL PYODERMA: OVERCOMING IMMUNE RESISTANCE THROUGH VACCINATION

**Michael F. Good**[1], Manisha Pandey[1], Victoria Ozberk[1], Ainslie Calcutt[1], Emma Langshaw[1], Jessica Powell[1], Mei-Fong Ho[1], Zachary Philips[1], Michael Batzloff[1], Tania Rivera Hernandez[2]
*[1]Institute for Glycomics, Gold Coast, Australia, [2]School of Chemistry and Molecular Biosciences, Brisbane, Australia*

11:45 a.m.

## 1296

### HOUSEHOLD MODELLING OF YAWS DATA INDICATES THAT TARGETING TREATMENT USING CASE FINDING AND CONTACT TRACING MAY BE UNSUCCESSFUL AT ERADICATING THE DISEASE

**Louise Dyson**[1], Oliver Crooks[1], Alex Bishop[1], Anthony Solomon[2], David Mabey[2], Oliver Sokana[3], Michael Marks[2], Deirdre Hollingsworth[1]
*[1]University of Warwick, Coventry, United Kingdom, [2]London School of Hygiene & Tropical Medicine, London, United Kingdom, [3]Solomon Islands Ministry of Health and Medical Services, Honiara, Solomon Islands*

## Scientific Session 122

## Ectoparasite-Borne Diseases

*Marriott - Marquis C*
Wednesday, November 16, 10:15 a.m. - Noon

CHAIR
David M. Bland
*Rocky Mountain Laboratories, Hamilton, MT, United States*
Michael E. von Fricken
*George Mason University, Fairfax, VA, United States*

10:15 a.m.

## 1297

### LONG-TERM EFFECT OF MASS DRUG ADMINISTRATION FOR SCABIES IN FIJI: EXPERIENCE FROM THE SHIFT TRIAL

**Lucia Romani**[1], Margot Whitfeld[2], Josefa Koroivueta[3], Mike Kama[3], Handan Wand[1], Lisi Tikoduadua[3], John Kaldor[1], Ross Andrews[4], Andrew Steer[5]
*[1]Kirby Institute, Sydney, Australia, [2]St Vincent's Hospital, Sydney, Australia, [3]Ministry of Health, Suva, Fiji, [4]Menzies School of Health Research, Sydney, Australia, [5]Murdoch Childrens Reseerch Institute, Melbourne, Australia*

10:30 a.m.

## 1298

### PLAGUE IN MADAGASCAR: LIMITING THE TRANSMISSION BY IMPROVING THE CONTROL OF *XENOPSYLLA CHEOPIS*, THE MAIN FLEA VECTOR OF *YERSINIA PESTIS*

**Adélaïde Miarinjara**, Dora M. Rajohnson, Soanandrasana Rahelinirina, Sébastien Boyer
*Institut Pasteur de Madagascar, Antananarivo, Madagascar*

10:45 a.m.

## 1299

### SOURCE OF HOST BLOOD AFFECTS LOCALIZATION OF THE BLOOD MEAL AND INFECTION PREVALENCE OF *YERSINIA PESTIS* IN THE FLEA VECTOR

**David M. Bland**, Christopher F. Bosio, Clayton O. Jarrett, Bernard J. Hinnebusch
*Rocky Mountain Laboratories, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Hamilton, MT, United States*

11 a.m.

## 1300

### VECTOR COMPETENCY OF TICK-BORNE RELAPSING FEVER SPIROCHETES

**Job E. Lopez**, Aparna Krishnavajhala
*Baylor College of Medicine, Houston, TX, United States*

11:15 a.m.

## 1301

### RETROTRANSPOSON-TARGETED BLOODMEAL REMNANT IDENTIFICATION IDENTIFIES MEADOW VOLES AS THE MAIN HOST FOR SUBADULT DOG TICKS

**Heidi Goethert**, Sam Telford
*Tufts University School of Veterinary Medicine, N. Grafton, MA, United States*

11:30 a.m.

## 1302

### UPREGULATION OF SPHERICAL BODY PROTEIN 2 COPY 11 IN *BABESIA BOVIS* IS A SIGNATURE OF ATTENUATION

**Gina M. Gallego López**[1], Jacob M. Laughery[1], Carlos E. Suarez[2], Donald P. Knowles[2], Audrey O. T. Lau[1]
*[1]Department of Veterinary Microbiology and Pathology, College of Veterinary Medicine, Washington State University, Pullman, WA, United States, [2]Animal Disease Research Unit, Agricultural Research Service, United States Department of Agriculture, Pullman, WA, United States*

**(ACMCIP Abstract)**

11:45 a.m.

## 1303

### LARGE-SCALE DRUG SCREENING AGAINST *BABESIA DIVERGENS* PARASITE USING A FLUORESCENCE-BASED HIGH-THROUGHPUT SCREENING ASSAY

Mohamed A. Rizk[1], Shimaa A. El-Sayed[1], Mahmoud AbouLaila[2], Bumduuren Tuvshintulga[3], Naoaki Yokoyama[3], **Ikuo Igarashi**[3]
*[1]Faculty of Veterinary Medicine, Mansoura University, Mansoura, Egypt, [2]Faculty of Veterinary Medicine, University of Sadat City, Sadat City, Egypt, [3]National Research Center for Protozoan Diseases, Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan*

## Scientific Session 123

## American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Kinetoplastida - Molecular, Cellular and Immunobiology

*Marriott - Marquis D*
Wednesday, November 16, 10:15 a.m. - Noon
***Supported with funding from the Burroughs Wellcome Fund***

CHAIR
Evan M. Craig
*University of Florida, Gainesville, FL, United States*
Stefanie Menzies
*University of St. Andrews, St. Andrews, United Kingdom*

10:15 a.m.

## 1935

### IDENTIFICATION OF BROADLY CONSERVED CROSS-SPECIES PROTECTIVE *LEISHMANIA* ANTIGEN AND ITS RESPONDING CD4+ T CELLS

**Zhirong Mou**[1], Jintao Li[2], Dong Liu[2], Forough Khadem[2], Ifeoma Okwor[2], Jude E. Uzonna[2]
*[1]Department of Immunology, College of Medicine, University of Manitoba, Winnipeg, MB, United States, [2]Department of Immunology, College of Medicine, University of Manitoba, Winnipeg, MB, Canada*

10:30 a.m.

## 1936

### A NOVEL POPULATION OF NATURAL KILLER CELLS PLAYS A CRITICAL ROLE IN THE DEPLETION OF SPLENIC B2 B CELLS DURING EXPERIMENTAL AFRICAN TRYPANOSOMIASIS

**Deborah Frenkel**[1], Samuel J. Black[2]
*[1]University of Massachusetts, Department of Veterinary and Animal Sciences, Amherst, MA, United States, [2]University of Massachusetts, Amherst, MA, United States*

10:45 a.m.

## 1304

### EVALUATION OF INHIBITORS OF *LEISHMANIA PARASITOPHOROUS* VACUOLE DEVELOPMENT

**Evan M. Craig**[1], Charles-Eugene Huyghues-Despointes[1], Samiksha Prasad[1], Jason Sello[2], Peter E. Kima[1]
*[1]University of Florida, Gainesville, FL, United States, [2]Brown University, Providence, RI, United States*

**(ACMCIP Abstract)**

11 a.m.

## 1305

### EVALUATING PKB/AKT AS THE TARGET OF MILTEFOSINE IN *LEISHMANIA* TREATMENT

**Naixin Zhang**, Charles-Eugene Huyghues-Despointes, Samiksha Prasad, Peter E. Kima
*University of Florida, Gainesville, FL, United States*

**(ACMCIP Abstract)**

11:15 a.m.

## 1306

### THE COMPOSITION OF MICROVESICLES DERIVED FROM *LEISHMANIA DONOVANI* INFECTED MACROPHAGES PROVIDES PERSPECTIVES INTO THEIR BIOGENESIS AND CONTRIBUTIONS TO PARASITE PATHOGENESIS

**Anna E. Gioseffi**, Peter E. Kima
*University of Florida, Gainesville, FL, United States*

**(ACMCIP Abstract)**

11:30 a.m.

## 1307

### CHARACTERIZATION OF THE TRYPANOSOMATID SECONDARY ALTERNATIVE OXIDASE - A NOVEL POTENTIAL DRUG TARGET

**Stefanie Kate Menzies**, Lindsay B. Tulloch, Andrew L. Fraser, Eoin R. Gould, Elizabeth F. King, Marija K. Zacharova, Gordon J. Florence, Terry K. Smith
*University of St Andrews, St Andrews, United Kingdom*

**(ACMCIP Abstract)**

11:45 a.m.

## 1308

### UNDERSTANDING THE ROLE OF *LEISHMANIA* RNA VIRUS-1 (LRV-1) IN THE PATHOGENESIS OF AMERICAN TEGUMENTARY LEISHMANIASIS USING A HUMAN MACROPHAGE MODEL

**Ruwandi Kariyawasam**[1], Jugvinder Grewal[1], Andrew Purssell[2], Rachel Lau[3], Braulio M. Valencia[4], Alejandro Llanos-Cuentas[4], Andrea K. Boggild[1]
*[1]University of Toronto, Toronto, ON, Canada, [2]University of British Columbia, Vancouver, BC, Canada, [3]Public Health Ontario Laboratories, Toronto, ON, Canada, [4]Instituto de Medicina Tropical "Alexander von Humboldt", Lima, Peru*

**(ACMCIP Abstract)**

## Symposium 124

## Evaluating Readiness and Quality of Essential Surgical Services: Evidence from Morbidity Management and Disability Prevention of Neglected Tropical Diseases

*Marriott - Room M103/M104/M105*
Wednesday, November 16, 10:15 a.m. - Noon

With an estimated one-third of global disease burden requiring surgical and or anesthetic care, there is a dire need for countries to improve surgical capacity and overcome barriers to provide surgical care, including for maternal disease, non-communicable diseases, injuries, neonatal disease and neglected tropical diseases (NTDs). Given this great demand for surgical care, a Resolution was passed at the World Health Assembly in May 2015 to make the strengthening of emergency and essential surgical care and anesthesia a component of universal health coverage. Over the last few years, increasing funding and attention has focused on addressing morbidity management and disability prevention (MMDP) associated with NTDs. Surgery to correct hydrocele and trichiasis are essential elements of the elimination programs for lymphatic filariasis and trachoma. However, in order to achieve these goals, a strong foundation of surgical capacity is needed in low-income countries. For single-disease programs, like lymphatic filariasis or trachoma, it is difficult to develop this capacity on their own. Addressing the global surgery burden, requires collaboration among organizations and partners working in different disciplines to join together to address the unmet need of global surgery. This symposium will bring together experts from the neglected tropical diseases (NTD) and the global surgery communities to highlight current tools and methodologies to assess surgical availability, readiness, and quality and to explore opportunities for future collaboration between these two areas. Topics include an overview of the current status of global surgery from a public health perspective including current tools utilized, examples of surgical capacity building for hydrocelectomy in West Africa, examples of implementation of preferred practices for trachomatous trichiasis focusing on work in Burkina Faso and Cameroon, and a discussion of how to assess surgical quality in the context of developing countries. Together, these presentations underscore the challenges and opportunities for global surgery and provide a platform for integration across disease-specific programs to improve surgical care globally.

CHAIR

Danny Haddad
*Emory University School of Medicine, Emory Eye Center, Atlanta, GA, United States*

LeAnne Fox
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

10:15 a.m.

**SETTING THE STAGE FOR SCALING UP SURGICAL SERVICES GLOBALLY**

Walter Johnson
*World Health Organization, Geneva, Switzerland*

10:35 a.m.

**THE WEST AFRICAN HYDROCELECTOMY PROGRAM: DEVELOPING TOOLS FOR SCALING UP HYDROCELE SERVICES IN LYMPHATIC FILARIASIS-ENDEMIC COUNTRIES**

Sunny D. Mante
*African Filariasis Morbidity Project/MMDP Project, Accra, Ghana*

10:55 a.m.

**IMPLEMENTING PREFERRED PRACTICES AS A NEW WAY OF DOING BUSINESS IN MANAGEMENT OF *TRACHOMATOUS TRICHIASIS*: EXPERIENCES FROM BURKINA FASO AND CAMEROON**

Awa Dieng
*Helen Keller International, Dakar, Senegal*

11:15 a.m.

**ADDRESSING SURGICAL QUALITY IN GLOBAL SURGERY: WHERE ARE WE?**

Alex Haynes
*Harvard T.H. Chan School of Public Health and the Brigham and Women's Hospital, Massachusetts General Hospital/Harvard Medical School, Boston, MA, United States*

## Scientific Session 125

## Virology: Ebola

*Marriott - Atrium A*

Wednesday, November 16, 10:15 a.m. - Noon

CHAIR

Edgar Davidson
*Integral Molecular, Inc., Philadelphia, PA, United States*

Barbara Knust
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

10:15 a.m.

### 1309

**INVESTIGATING VIRUS PERSISTENCE IN BODY FLUIDS OF EBOLA SURVIVORS IN SIERRA LEONE**

The Ebola Virus Persistence Study Group, **Barbara Knust**
*U.S. Centers for Disease Control and Prevention, Atlanta, GA, United States*

10:30 a.m.

### 1310

**MAPPING ANTIBODY EPITOPES ON THE EBOLA VIRUS ENVELOPE PROTEIN BY SHOTGUN MUTAGENESIS**

**Edgar Davidson**[1], Srikar Reddy[1], Andrew Flyak[2], Katie A. Howell[3], M. Javad Aman[3], James E. Crowe, Jr.[2], Benjamin J. Doranz[1]
*[1]Integral Molecular, Inc., Philadelphia, PA, United States, [2]Departments of Pathology, Microbiology and Immunology, Vanderbilt University, Nashville, TN, United States, [3]Integrated BioTherapeutics, Inc., Gaithersburg, MD, United States*

10:45 a.m.

### 1311

**IDENTIFICATION OF HUMAN T CELL EPITOPES IN THE EBOLAVIRUS GLYCOPROTEIN FOLLOWING VACCINATION WITH CHAD3 EBO Z GP AND MVA BN**

Danny Wright[1], Mark Giza[1], Tommy Rampling[1], Antra Zeltina[2], Georgina Bowyer[1], Jonathan Powlson[1], Navin Venkatraman[1], Egeruan Imoukhuede[1], Ruth Payne[1], Alfredo Nicosia[1], Nancy Sullivan[3], Barney Graham[3], Ariane Volkmann[4], W. Ripley Ballou[5], Sarah Gilbert[1], Adrian Hill[1], **Katie Ewer**[1]
*[1]The Jenner Institute, University of Oxford, Oxford, United Kingdom, [2]STRUBI, University of Oxford, Oxford, United Kingdom, [3]National Institutes of Health, Bethesda, MD, United States, [4]Bavarian Nordic, Martinried, Germany, [5]GlaxoSmithKline Biologicals, Rixensart, Belgium*

11 a.m.

### 1312

**THE SIERRA LEONE TRIAL TO INTRODUCE A VACCINE AGAINST EBOLA (STRIVE)**

**Mohamed Samai**[1], The STRIVE Study Team, Anne Schuchat[2], Abu Bakkar Fofanah[3]
*[1]College of Medicine and Allied Health Sciences, Freetown, Sierra Leone, [2]Centers for Disease Control and Prevention, Atlanta, GA, United States, [3]Ministry of Health and Sanitation, Freetown, Sierra Leone*

11:15 a.m.

### 1313

**SAFETY, IMMUNOGENICITY, AND EFFICACY OF THE MERCK RVSV∆G-ZEBOV-GP EBOLA VACCINE**

**Jakub Simon**[1], Rita Das[1], Frans Helmond[1], Ashley Wivel[1], Jayanthi Wolf[1], Mike Dekleva[1], Ken Liu[1], Ivan Chan[1], Gray Heppner[2], Rick Nichols[2], Brian Martin[2], Thomas Monath[2], Swati Gupta[1], Beth-Ann Coller[1]
*[1]Merck & Co, Kenilworth, NJ, United States, [2]NewLink Genetics, Ames, IA, United States*

11:30 a.m.

### 1314

**PHASE 1 EVALUATION OF A LIVE ATTENUATED HUMAN PARAINFLUENZA VIRUS TYPE 3 VECTORED VACCINE CANDIDATE EXPRESSING EBOLAVIRUS ZAIRE GLYCOPROTEIN**

**Kawsar R. Talaat**[1], Ruth A. Karron[1], Noreen A. Hynes[2], Anna P. Durbin[1], Kathryn M. Chang[1], Brittany Feijoo[1], Beulah P. Sabundayo[1], Beverly Plunkett[1], Weiyun Sun[1], Rachel Adkinson[1], Cindy L. Luongo[3], Lijuan Yang[3], Peter L. Collins[3], Alexander Bukreyev[4], Ursula J. Buchholz[3]
*[1]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, [2]Johns Hopkins University School of Medicine, Baltimore, MD, United States, [3]National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, [4]University of Texas Medical Branch, Galveston, TX, United States*

11:45 a.m.

### 1315

**SEROPREVALENCE OF FILOVIRUS INFECTION IN VILLAGES WITH NO HISTORY OF OUTBREAK IN THE DEMOCRATIC REPUBLIC OF CONGO**

**Vivian H. Alfonso**[1], Nicole A. Hoff[1], Reena H. Doshi[1], Graham Simmons[2], Kai Lau[2], Imke Steffen[2], Prime Mulembakani[3], Jean-Jacques Muyembe[3], Neville Kisalau[3], Emile Okitolonda[4], Anne W. Rimoin[1]
*[1]University of California Los Angeles, Los Angeles, CA, United States, [2]Blood Systems Research Institute, University of California San Francisco, San Francisco, CA, United States, [3]National Institute for Biomedical Research, Kinshasa, Democratic Republic of the Congo, [4]Kinshasa School of Public Health, Kinshasa, Democratic Republic of the Congo*

## Symposium 126

## State of the Art in Controlled Human Infection Models for Tropical Diseases

*Marriott - Atrium B*
Wednesday, November 16, 10:15 a.m. - Noon

Experimental controlled human infection models have been or are being developed for a number of viruses, bacteria and parasites. These aim both to study the natural history of infection and also to evaluate experimental vaccines and drugs to provide proof of efficacy. Among these, thousands of volunteers around the world have received controlled experimental malaria, influenza, enterotoxigenic *E. coli*, and Shigella infections, to name a few. Model development has included identification of the optimal dose and route of administration of an appropriate challenge strain or challenge organism, which results in safe but measurable infection, mimicking natural infection as closely as possible. Through the development and use of these models, preliminary assessment of vaccine and drug efficacy against targeted bacteria, viruses, and parasites can be obtained earlier in clinical development, for more rapid evaluation of Go/No-Go criteria, and better deployment of resources toward the most promising candidates. Recent vaccine candidates evaluated via controlled human infection models include the *Plasmodium falciparum* sporozoite malaria vaccine and the MVA-NP+M1 influenza vaccine. In addition, controlled human infection with various intestinal helminths has been deployed as potential treatments for inflammatory and autoimmune diseases such as celiac disease. This symposium will provide an update on the progress to date in developing controlled human infection models – and their applications – for four tropical infections: malaria, Dengue, hookworm and schistosomiasis.

CHAIR

David Diemert
*George Washington University, Washington, DC, United States*

Jeffrey Bethony
*George Washington University, Washington, DC, United States*

10:15 a.m.
**CONTROLLED HUMAN HOOKWORM INFECTION**

Alex Loukas
*James Cook University, Cairns, Australia*

10:35 a.m.
**CONTROLLED HUMAN *SCHISTOSOMA* INFECTION**

Meta Roestenberg
*Leiden University Medical Center, Leiden, Netherlands*

10:55 a.m.
**CONTROLLED HUMAN MALARIA INFECTION TO TEST VACCINE EFFICACY**

Kirsten E. Lyke
*Center for Vaccine Development, University of Maryland, Baltimore, MD, United States*

11:15 a.m.
**CONTROLLED HUMAN DENGUE INFECTION**

Anna P. Durbin
*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

## Symposium 127

## Elimination of *Schistosomiasis japonica* from China

*Marriott - Room A601*
Wednesday, November 16, 10:15 a.m. - Noon

Schistosomiasis in the People's Republic of China (P.R. China) goes back to antiquity but, in the last 65 years, the Chinese government has made great strides in its control so that elimination is now the final declared goal. In 2010, through the implementation of a comprehensive control strategy developed by China's Ministry of Health (MoH), Chinese Vice-Premier Li Keqiang championed the target of achieving elimination (i.e. reducing a locally acquired infection rate to zero) by the year 2020, now slated for 2025. As the deadline for elimination is now set, this symposium outlines the current status of schistosomiasis and its control in China, identifies the pitfalls to achieving elimination and how improved diagnostics will make all the difference; it will highlight new integrated intervention strategies for sustainable control and elimination; and displays the latest mathematical modelling technology for the predicted short, medium and long-term impacts of elimination interventions.

CHAIR

Darren Gray
*Australian National University, Canberra, Australia*

Juerg Utzinger
*Swiss Tropical and Public Health Institute, Basel, Switzerland*

10:15 a.m.
**CURRENT EPIDEMIOLOGICAL SITUATION IN CHINA; AND MULTI-COMPONENT INTEGRATED CONTROL FOR ITS ELIMINATION**

Yuesheng Li
*Hunan Institute of Parasitic Diseases, Yueyang, China*

10:35 a.m.
**CURRENT EPIDEMIOLOGICAL SITUATION IN CHINA; AND MULTI-COMPONENT INTEGRATED CONTROL FOR ITS ELIMINATION**

Darren J. Gray
*School of Population Health, Australian National University, Canberra, Australia*

10:55 a.m.
**CONQUERING SCHISTOSOMIASIS IN CHINA: THE LAST MILE**

Donald P. McManus
*The Queensland Institute of Medical Research, Brisbane, Australia*

11:15 a.m.
**DEVELOPMENT OF NOVEL OMICS-BASED INTERVENTION TOOLS FOR SCHISTOSOMIASIS CONTROL IN CHINA**

Wei Hu
*Fudan University, Shanghai, China*

11:35 a.m.
**MATHEMATICAL MODELLING *S. JAPONICUM* ELIMINATION IN CHINA**

Gail Williams
*University of Queensland, Brisbane, Australia*

## Scientific Session 128

## Malaria: Immunology

*Marriott - Room A602*
Wednesday, November 16, 10:15 a.m. - Noon

CHAIR

Arlene E. Dent
*Case Western Reserve University, Cleveland, OH, United States*

Alison E. Roth
*University of South Florida, Tampa, FL, United States*

10:15 a.m.

### 1316

### IMMUNOASSAYS FOR CHARACTERIZING AND EVALUATING VACCINE CANDIDATES THAT TARGET PRE-ERYTHROCYTIC STAGES OF *PLASMODIUM VIVAX* AND *P. FALCIPARUM*

**Alison E. Roth**[1], Steven P. Maher[1], Swamy Rakesh Adapa[1], Rays H. Jiang[1], Ratawan Ubalee[2], Amy Conaway[1], Nicole D. Salinas[3], John Jimah[3], Lenore Carias[4], Sebastien Dechavanne[4], Sokunthea Sreng[5], Suon Seila[5], Chanaki Amaratunga[6], Rick M. Fairhurst[6], Christopher L. King[4], Niraj Tolia[3], Friedrich Frischknecht[7], Dennis E. Kyle[1], Silas Davidson[2], John H. Adams[1]
*[1]University of South Florida, Tampa, FL, United States, [2]Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand, [3]Washington University, St. Louis, MO, United States, [4]Case Western Reserve University, Cleveland, OH, United States, [5]National Center for Parasitology, Entomology and Malaria Control, Phenom Penh, Cambodia, [6]National Institutes of Health, Rockville, MD, United States, [7]Heidelberg University, Heidelberg, Germany*

**(ACMCIP Abstract)**

10:30 a.m.

### 1317

### GAMETOCYTE-SPECIFIC IMMUNITY PROVIDES A RATIONALE FOR NOVEL TRANSMISSION BLOCKING INTERVENTIONS IN *P. FALCIPARUM*

**Kathleen Dantzler**[1], Sanna Rijpma[2], Siyuan Ma[1], Dingying Tao[3], Will Stone[2], Karl Seydel[4], Miriam Laufer[5], Huw Davies[6], Phil Felgner[6], Rhoel Dinglasan[3], Terrie Taylor[4], Curtis Huttenhower[1], Teun Bousema[2], Matthias Marti[1]
*[1]Harvard T.H. Chan School of Public Health, Boston, MA, United States, [2]Radboud University Nijmegen Medical Center, Nijmegen, Netherlands, [3]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, [4]Michigan State University, E. Lansing, MI, United States, [5]University of Maryland School of Medicine, Baltimore, MD, United States, [6]University of California Irvine, Irvine, CA, United States*

**(ACMCIP Abstract)**

10:45 a.m.

### 1318

### REPEATED MALARIA INFECTIONS ACCELERATES BIOLOGICAL AGEING IN CHILDREN IN DISEASE ENDEMIC AREA

**Muhammad Asghar**, Sara Babiker, Victor Yman, Anna Färnert
*Karolinska Institutet, Stockholm, Sweden*

11 a.m.

### 1319

### ATYPICAL ACTIVATION OF HUMAN PRIMARY DENDRITIC CELLS BY *PLASMODIUM FALCIPARUM*

**Anton Goetz**, Maureen Ty, Ana Rodriguez
*New York University School of Medicine, New York, NY, United States*

**(ACMCIP Abstract)**

11:15 a.m.

### 1320

### ATYPICAL MEMORY B CELLS AND CIRCULATING MARGINAL ZONE-LIKE B CELLS CHANGES ASSOCIATED TO MALARIA CHRONIC EXPOSURE

**Itziar V. Ubillos**[1], Pilar Requena[2], Joseph Joe Campo[3], Diana Barrios[1], Alfons Jimenez[1], Alexandra J. Umbers[4], Maria Ome[5], Leanne J. Robinson[5], Peter M. Siba[5], Ivo Mueller[6], Carlota Dobaño[1]
*[1]ISGlobal, Barcelona, Spain, [2]Universidad de Granada, Granda, Spain, [3]Antigen Discovery, Irvine, CA, United States, [4]University of Melbourne, Parkville, Victoria, Australia, [5]Papua New Guinea Institute of Medical Research, Madang, Papua New Guinea, [6]Walter and Eliza Hall Institute, Parkville, Victoria, Australia*

**(ACMCIP Abstract)**

11:30 a.m.

### 1321

### KENYAN CHILDREN AND ADULTS WITH ACUTE UNCOMPLICATED MALARIA HAVE DYSFUNCTIONAL MEMORY B CELL RECALL RESPONSES TO POLYCLONAL STIMULATION

**Grace E. Weber**[1], Anna Babakhanyan[1], Paula Embury[1], Peter Odada Sumba[2], John Vulule[2], James W. Kazura[1], Arlene E. Dent[1]
*[1]Case Western Reserve University, Cleveland, OH, United States, [2]Kenya Medical Research Institute, Kisumu, Kenya*

**(ACMCIP Abstract)**

11:45 a.m.

### 1322

### CYNOMOLGI MALARIA IN RHESUS MACAQUES INDUCES PHENOTYPIC AND FUNCTIONAL CHANGES IN NEUTROPHILS

**Chet Joyner**[1], Tracey J. Lamb[2], Chris C. Ibegbu[1], the MaHPIC Consortium, Rabindra Tirouvanziam[3], Mary R. Galinski[4]
*[1]Malaria Host–Pathogen Interaction Center, Emory Vaccine Center, Yerkes National Primate Research Center, Emory University, Atlanta, GA, United States, [2]Division of Infectious Diseases, Department of Pediatrics, Emory University School of Medicine and Emory Children's Center, Atlanta, GA, United States, [3]Emory Children's Center for CF and Airways Disease Research, Emory University School of Medicine, Emory University/MaHPIC, Atlanta, GA, United States, [4]Division of Infectious Diseases, Department of Medicine, Emory University, Atlanta, GA, United States*

**(ACMCIP Abstract)**

## Scientific Session 129

## Malaria: Modeling

*Marriott - Room A703/A704*
Wednesday, November 16, 10:15 a.m. - Noon

CHAIR

Olivier J. Briet
*Swiss Tropical and Public Health Institute, Basel, Switzerland*

Joel Tarning
*Mahidol Oxford Tropical Medicine Research Unit, Bangkok, Thailand*

10:15 a.m.

### 1323

### SPECTRUM-MALARIA: A USER-FRIENDLY PROJECTION TOOL FOR HEALTH IMPACT ASSESSMENT AND STRATEGIC PLANNING FOR MALARIA PROGRAMS IN SUB-SAHARAN AFRICA

Matthew Hamilton[1], Guy Mahiané[1], Elric Werst[1], **Olivier Briët**[2], Richard Cibulskis[3], Ewan Cameron[4], Samir Bhatt[4], Carel Pretorius[1], Eline L. Korenromp[5]
*[1]Avenir Health, Glastonbury, CT, United States, [2]Swiss Tropical and Public Health Institute, Basel, Switzerland, [3]World Health Organization, Geneva, Switzerland, [4]Oxford University, Malaria Atlas Project, Oxford, United Kingdom, [5]Avenir Health, Geneva, Switzerland*

10:30 a.m.

## 1324

### ASSESSING METHODS FOR ESTIMATING HOUSEHOLD BITING PROPENSITIES, SEASONALITY AND NOISE IN COUNTS OF MALARIA VECTORS

**Su Yun Kang**[1], Donal Bisanzio[1], Laura Cooper[2], David L. Smith[3]
*[1]University of Oxford, Oxford, United Kingdom, [2]Princeton University, Princeton, NJ, United States, [3]University of Washington, Seattle, WA, United States*

10:45 a.m.

## 1325

### SYSTEMS METABOLIC MODELING REVEALS DIFFERENTIAL NETWORKS PERTURBED AT PRIMARY INFECTION AND RELAPSE, IMPLICATING POTENTIAL BIOMARKERS FOR ACUTE AND CHRONIC MALARIA

**Yan Tang**[1], Luis Fonseca[1], the MaHPIC Consortium, Mary R. Galinski[2], Eberhard Voit[1], Mark P. Styczynski[1]
*[1]Georgia Institute of Technology, Atlanta, GA, United States, [2]Emory University, Atlanta, GA, United States*

**(ACMCIP Abstract)**

11 a.m.

## 1326

### JOINT MODELING OF *PLASMODIUM FALCIPARUM* AND *PLASMODIUM VIVAX* INFECTIONS USING A BIVARIATE POISSON LOGNORMAL MODEL

**Kathryn Colborn**[1], Ivo Mueller[2], Terence Speed[2]
*[1]University of Colorado Denver, Aurora, CO, United States, [2]Walter and Eliza Hall Institute, Melbourne, Australia*

11:15 a.m.

## 1327

### PHARMACOKINETICS AND ACCUMULATION OF PIPERAQUINE WHEN USED FOR INTERMITTENT PREVENTIVE TREATMENT IN PREGNANCY (IPTP)

**Joel Tarning**[1], Kephas Otieno[2], Julie Gutman[3], Simon Kariuki[2], Feiko O. ter Kuile[4], Fracois Nosten[5], Meghna Desai[3]
*[1]Department of Clinical Pharmacology, Mahidol-Oxford Tropical Medicine Research Unit, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand, [2]Kenya Medical Research Institute, Center for Global Health Research, Kisumu, Kenya, [3]Centers for Disease Control and Prevention, Center for Global Health, Division of Parasitic Diseases and Malaria, Malaria Branch, Atlanta, GA, United States, [4]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [5]Shoklo Malaria Research Unit, Faculty of Tropical Medicine, Mahidol University, Tak, Thailand*

11:30 a.m.

## 1328

### BROTHERS, SISTERS, AUNTS AND UNCLES: TRANSMISSION OF RELATED PARASITES IN POLYGENOMIC INFECTIONS OF *PLASMODIUM FALCIPARUM*

**Wesley Wong**[1], Edward Wenger[2], Rachel F. Daniels[3], Stephen F. Schaffner[4], Allison Griggs[4], Daouda Ndiaye[5], Fatou Ba Falle[6], Medoune Ndiope[6], Mady Ba[6], Danny A. Milner Jr[1], Sarah K. Volkman[1], Philip Eckhoff[2], Daniel E. Neafsey[4], Daniel L. Hartl[3], Dyann F. Wirth[1]
*[1]Harvard T.H. Chan School of Public Health, Boston, MA, United States, [2]Institute of Disease Modelers, Bellevue, WA, United States, [3]Harvard University, Cambridge, MA, United States, [4]Broad Institute, Cambridge, MA, United States, [5]Cheikh Anta Diop University, Dakar, Senegal, [6]Senegal National Malaria Control Program, Dakar, Senegal*

11:45 a.m.

## 1329

### VECTOR "VACCINATION": OPTIMIZATION OF NON-MENDELIAN-BASED GENE DRIVES FOR MOSQUITO POPULATION REPLACEMENT

**Milen Nikolov**[1], Andre Ouédraogo[1], Edward Wenger[1], Dave Summa[2], Philip Eckhoff[1]
*[1]Institute for Disease Modeling, Bellevue, WA, United States, [2]BMI, Mountain View, CA, United States*

## Scientific Session 130

## Mosquitoes: Biochemistry and Molecular Biology

*Marriott - Room A706/A707*
Wednesday, November 16, 10:15 a.m. - Noon

CHAIR
Eric Calvo
*National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, MD, United States*

Maurice A. Itoe
*Harvard T.H. Chan School of Public Health, Boston, MA, United States*

10:15 a.m.

## 1330

### PENTOSE PHOSPHATE PATHWAY INHIBITION ELEVATES OXIDATIVE STRESS AND IMPEDES FECUNDITY IN *ANOPHELES GAMBIAE*

**Cody J. Champion**, John Xu
*New Mexico State University, Las Cruces, NM, United States*

10:30 a.m.

## 1331

### INVESTIGATING *ANOPHELES FUNESTUS* SUSCEPTIBILITY AND IMMUNE RESPONSE TO *PLASMODIUM FALCIPARUM* INFECTION

**Cyrille Ndo**[1], Edmond Kopya[1], Benjamin Menze[2], Parfait Awono-Ambene[1], Gareth Lycett[3], Charles Wondji[3]
*[1]OCEAC, Yaoundé, Cameroon, [2]OCEAC/LSTM, Yaoundé, Cameroon, [3]Liverpool School of Tropical Medicine, Liverpool, United Kingdom*

10:45 a.m.

## 1332

### ELUCIDATING THE ROLE OF LIPOGENIC AND LIPOLYTIC PATHWAYS IN MOSQUITO REPRODUCTION AND *P. FALCIPARUM* TRANSMISSION

**Maurice A. Itoe**, Flaminia Catteruccia
*Harvard T.H. Chan School of Public Health, Boston, MA, United States*

**(ACMCIP Abstract)**

11 a.m.

## 1333

### DISRUPTING STEROID HORMONE SIGNALLING IN ADULT *ANOPHELES GAMBIAE* FEMALES BLOCKS *PLASMODIUM* DEVELOPMENT AND OFFERS ALTERNATIVE TARGETS FOR MOSQUITO CONTROL

**Douglas G. Paton**, Evdoxia Kakani, Francisco Cai, Sara Mitchell, Flaminia Catteruccia
*Harvard T.H. Chan School of Public Health, Boston, MA, United States*

**(ACMCIP Abstract)**

11:15 a.m.

## 1334

### THERE AND BACK AGAIN: A MOSQUITO SPERM'S JOURNEY FROM INSEMINATION TO FERTILIZATION

**Ethan Degner**, Laura Harrington
*Cornell University, Ithaca, NY, United States*

**(ACMCIP Abstract)**

11:30 a.m.

## 1335

### SICPIN, A MULTIFUNCTIONAL IMMUNOMODULATORY SALIVARY PROTEIN FROM THE BLACK FLY *SIMULIUM NIGRIMANUM*

Andrezza C. Chagas[1], Anderson B. Guimarães-Costa[1], Fabiano Oliveira[1], Anderson Sá-Nunes[2], Jose M. Ribeiro[1], **Eric Calvo**[1]
*[1]National Institute of Allergy and Infectious Diseases-National Institutes of Health, Rockville, MD, United States, [2]Instituto de Ciências Biomédicas, Universidade de São Paulo, Sao Paulo, Brazil*

11:45 a.m.

## 1336

### A LOOK AT TWO FACTORS THAT MODULATE *AEDES AEGYPTI* MOSQUITO VECTOR COMPETENCE FOR DENGUE VIRUS

**Celia Demby**
*Johns Hopkins University, Baltimore, MD, United States*

## Exhibit Hall Open and Light Lunch

*Marriott - International Hall*
Wednesday, November 16, Noon - 2:30 p.m.

**Poster Session 131**

## Poster Session C: Presentations and Light Lunch

*Hilton - Grand Ballroom and Grand Salon*
Wednesday, November 16, Noon - 1:45 p.m.

## Poster Session C Directory



## Alphaviruses (Includes Chikungunya)

## 1337

### CHIKUNGUNYA FEVER IN CLINICALLY DIAGNOSED PATIENTS: COMPARATIVE STUDY BETWEEN LABORATORY CONFIRMED VERSUS NEGATIVE CASES DURING THE 2015 OUTBREAK IN YUCATAN, MEXICO

**Reinhard Janssen-Aguilar**[1], Salvador Gomez-Carro[2], Victoria Novelo-Alcocer[1], Mauricio Serna-Lorenzo[1], Freddy Pacheco-Tucuch[3], Martin Inurreta-Diaz[1], Nina Mendez-Dominguez[4]
*[1]Universidad Marista de Merida, Merida, Mexico, [2]OHoran General Hospital, Merida, Mexico, [3]Universidad Autonoma de Yucatan, Merida, Mexico, [4]CINVESTAV del IPN, Merida, Mexico*

## 1338

### EVOLUTIONARY INFLUENCES ON THE REDUCTION IN ENZOOTIC CIRCULATION AND HUMAN INCIDENCE OF WESTERN EQUINE ENCEPHALITIS

**Nicholas A. Bergren**[1], Shannan L. Rossi[1], Richard A. Bowen[2], Scott C. Weaver[1]
*[1]University of Texas Medical Branch, Galveston, TX, United States, [2]Colorado State University, Fort Collins, CO, United States*

## 1339

### THE BURDEN OF CHRONIC CHIKUNGUNYA DISEASE AND QUALITY OF LIFE IN CURAÇAO

**Jelte Elsinga**[1], Symkje vd Ploeg[2], Izzy Gerstenbluth[3], Yaskara Halabi[3], Norediz T. Lourents[3], Joyce O'Neil[3], Deniz Emre[2], Johannes G. Burgerhof[4], Ajay Bailey[5], Alex Friedrich[1], Adriana Tami[1]
*[1]Department of Medical Microbiology, University of Groningen, University Medical Center Groningen, Groningen, Netherlands, [2]University of Groningen, University Medical Center Groningen, Groningen, Netherlands, [3]Medical and Health Service Curaçao, Department of Epidemiology and Research, Curaçao, Netherlands Antilles, [4]Department of Epidemiology, University of Groningen, University Medical Center Groningen, Groningen, Netherlands, [5]Population Research Center, Faculty of Spatial Sciences, University of Groningen, Groningen, Netherlands*

## 1340

### CHIKUNGUNYA EPIDEMIC IN CARABOBO STATE, VENEZUELA 2014: A STUDY ON EPIDEMIOLOGICAL DEVELOPMENT, CLINICAL MANIFESTATIONS AND RISK FACTORS

**Erley F. Lizarazo**[1], Anne M. Ross[2], Iris W. Riemersma[2], Daniela Jou-Valencia[2], María F. Vincenti-Gonzalez[1], Noheliz Ojeda[3], Oscar Diaz[3], María A. Rangel[3], Haydee Ochoa[3], Adriana Tami[1]
*[1]University Medical Center Groningen, Groningen, Netherlands, [2]University of Groningen, Groningen, Netherlands, [3]Fundación Instituto Carabobeño para la Salud (INSALUD), Carabobo, Bolivarian Republic of Venezuela*

## 1341

### SEASONAL PREVALENCE OF ALPHAVIRUSES AND FLAVIVIRUSES IN CHILDREN IN WESTERN KENYA

**Elysse Grossi-Soyster**[1], Sandra Musaki[2], Bryson Ndenga[2], Charles H. King[3], A. Desiree LaBeaud[1]
*[1]Stanford University School of Medicine, Stanford, CA, United States, [2]Kenya Medical Research Institute, Nairobi, Kenya, [3]Center for Global Health and Diseases, Case Western Reserve University, Cleveland, OH, United States*

## 1342

### RISK FACTORS FOR CHIKUNGUNYA PATIENT HOSPITALIZATION — PUERTO RICO, 2014

**Fabiola Cruz López**[1], Christopher H. Hsu[2], Janice Perez-Padilla[3], Olga Lorenzi[3], Aidsa Rivera[3], Esteban Lugo[4], Danulka Vargas[4], Jorge Munoz-Jordan[3], Elizabeth Hunsperger[3], J. Erin Staples[5], Marc Fischer[6], Harold S. Margolis[3], Brenda Rivera Garcia[7], Luisa Alvarado[1], Tyler M. Sharp[3]
*[1]Ponce Health Sciences University, Ponce, PR, United States, [2]Centers for Disease Control and Prevention Poxvirus and Rabies Branch, Atlanta, GA, United States, [3]Centers for Disease Control and Prevention Dengue Branch, San Juan, PR, United States, [4]San Lucas Episcopal Hospital, Ponce, PR, United States, [5]Centers for Disease Control and Prevention Arboviral Diseases Branch, Ft. Collins, CO, United States, [6]Centers for Disease Control and Prevention Poxvirus and Rabies Branch, Ft. Collins, CO, United States, [7]Puerto Rico Department of Health, San Juan, PR, United States*

## 1343

### PROTEIN SPECIFICITY OF ANTIBODY RESPONSES TO SOUTH AMERICAN ALPHAVIRUS INFECTIONS USING A NOVEL MULTIPLEXED ASSAY

**Jessica L. Smith**[1], Emily D. Cisney[1], Christine L. Pugh[1], Sarah L. Keasey[1], Carolina Guevara[2], Julia S. Ampuero[2], Guillermo Comach[3], Doris Gomez[4], Margarita Ochoa[4], Robert D. Hontz[2], Robert G. Ulrich[1]
*[1]United States Army Medical Research Institute of Infectious Diseases, Frederick, MD, United States, [2]U.S. Naval Medical Research Unit - 6, Lima, Peru, [3]LARDIDEV/ BIOMED-Universidad de Carabobo, Aragua, Bolivarian Republic of Venezuela, [4]Universidad de Cartagena - SUE Caribe, Cartagena, Colombia*

## 1344

### ALTERING BLOOD BRAIN BARRIER PERMEABILITY: HOW ROUTE OF INFECTION, CYTOKINE INDUCTION AND HEPARAN SULFATE BINDING CONTRIBUTE DURING ENCEPHALITIC ALPHAVIRUS INFECTIONS

**Christina L. Gardner**, Alan M. Watson, Chengqun Sun, Amy L. Hartman, Douglas S. Reed, William B. Klimstra
*University of Pittsburgh, Pittsburgh, PA, United States*

# *Flaviviridae* - Dengue

## 1345

### COMPREHENSIVE MUTAGENESIS OF DENGUE VIRUS ENVELOPE PROTEINS TO MAP ANTIBODY EPITOPES AND IDENTIFY RESIDES ESSENTIAL FOR FUNCTION

**Benjamin J. Doranz**
*Integral Molecular, Inc., Philadelphia, PA, United States*

## 1346

### THE CLINICAL OVERLAP OF SEVERE DENGUE CATEGORIES

**Thomas Jaenisch**[1], Kerstin Rosenberger[1], Neal Alexander[2], Eric Martinez[3], Lucy Lum Chai See[4], Thomas Junghanss[1], Bridget Wills[5]
*[1]Heidelberg University Hospital, Heidelberg, Germany, [2]London School of Hygiene & Tropical Medicine, London, United Kingdom, [3]Pedro Kouri Institute, Havana, Cuba, [4]University of Malaya, Kuala Lumpur, Malaysia, [5]Oxford University Clinical Research Unit, Ho Chi Minh City, Vietnam*

## 1347

### A PHASE 1 EVALUATION OF THE SAFETY AND IMMUNOGENICITY OF RDEN3Δ30 AS A DENGUE 3 HUMAN CHALLEGE STRAIN

**Kristen K. Pierce**[1], Steve S. Whitehead[2], Beth D. Kirkpatrick[1], Marya Carmolli[1], Cecilia Tibery[3], Yolanda Eby[3], Cathy Larsson[1], Palmtama Grier[3], Eve Ostrowski[3], Anna P. Durbin[3]
*[1]University of Vermont College of Medicine, Burlington, VT, United States, [2]National Institutes of Health, Bethesda, MD, United States, [3]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

## 1348

### ANALYSIS OF THE CURRENT MAJOR DENGUE OUTBREAK IN ARGENTINA IN AN AREA WITH PERMANENT CONTROL ACTIVITIES AGAINST *AEDES AEGYPTI* SINCE 2009

**Manuel O. Espinosa**, Andrea Gómez-Bravo, Marcelo C. Abril
*Fundación Mundo Sano, CABA, Argentina*

## 1349

### DISSECTING ANTIBODY RESPONSE INDUCED BY CHIMERIC YELLOW FEVER-DENGUE, LIVE-ATTENUATED, TETRAVALENT DENGUE VACCINE (CYD-TDV) TO UNDERSTAND VACCINE EFFICACY IN NAÏVE AND DENGUE EXPOSED INDIVIDUALS

**Sandra Henein**, uy, Matthew Bonaparte, Ralph Baric, Ar Jesica Swanstrom, Tony Byers, Janice Moser, BrunoG
*University of North Carolina at Chapel Hill, Chapel Hill, NC, United States*

## 1350

### SAFETY AND IMMUNOGENICITY OF AN AS03$_B$-ADJUVANTED DENGUE PURIFIED INACTIVATED VACCINE ADMINISTERED ON THREE SCHEDULES TO HEALTHY U.S. ADULTS

**Leyi Lin**[1], Kirsten E. Lyke[2], Richard G. Jarman[1], Kenneth H. Eckels[1], Edith Lepine[3], Alix Collard[4], Monica A. McArthur[2], Paul Keiser[1], Rafael De La Barrera[1], Bruce L. Innis[3], Stephen J. Thomas[1], Alexander C. Schmidt[4]
*[1]Walter Reed Army Institute of Research, Silver Spring, MD, United States, [2]Institute for Global Health, Center for Vaccine Development, University of Maryland, Baltimore, MD, United States, [3]GlaxoSmithKline Vaccines, Rockville, MD, United States, [4]GlaxoSmithKline Vaccines, Rixensart, Belgium*

## 1351

### STOCHASTIC SPREAD OF *WOLBACHIA* THROUGH *AEDES AEGYPTI* POPULATIONS IN SPATIALLY HETEROGENEOUS LANDSCAPES

**Gemma Nedjati-Gilani**, Lorenzo Cattarino, Neil M. Ferguson
*Imperial College London, London, United Kingdom*

## 1352

### EXPLORING THE ROLE OF ASTHMA IN DENGUE PATIENTS

**Johanna Vélez**[1], Nicole Rodríguez[1], Ernesto Santini[1], Mariana Tavárez[1], Vylma Velázquez[1], Luzeida Vargas[1], Janice Pérez[2], Luisa Alvarado[1]
*[1]Hospital Episcopal San Lucas/Ponce Health Sciences University School of Medicine, Ponce, Puerto Rico, [2]Dengue Branch, Division of Vector-Borne Diseases, Centers for Disease Control and Prevention, San Juan, Puerto Rico*

## 1353

### ESTIMATION OF THE MAGNITUDE OF DENGUE INCIDENCE UNDERREPORTING THROUGH A MODELLING WITH DISMOD II SOFTWARE

**Esteban Puentes-Rosas**[1], Elsa Sarti[1], Hector Gomez-Dantes[2], Leon Ochiai[3]
*[1]Sanofi Pasteur, Ciudad de México, Mexico, [2]Instituto Nacional de Salud Publica, Cuernavaca, Mexico, [3]Sanofi Pasteur, Lyon, France*

## 1354

### CHANGING CLIMATE AND TRAVEL ACTIVITY MIGHT EXACERBATE DENGUE TRANSMISSION IN TAIWAN

**Ting-Wu Chuang**, Bo-Jiang Chen, Ka-Chon Ng
*Taipei Medical University, Taipei, Taiwan*

## 1355

### SEROTYPE-SPECIFIC CHARACTERISTICS OF THE NEUTRALIZING ANTIBODY RESPONSE TO THE SANOFI PASTEUR DENGUE VACCINE IN PHASE III EFFICACY TRIALS

**Anthony M. Byers**[1], Shanti Ross[1], S. Farzana Shaik[1], Michael Peredelchuk[1], Charlotte Vernhes[1], Aymeric de Montfort[2], Robert Small[1], Matthew Bonaparte[3], Aravinda de Silva[4], Janice M. Moser[1], Bruno Guy[5]
*[1]Sanofi Pasteur, Orlando, FL, United States, [2]Sanofi Pasteur, Marcy L' Etoile, France, [3]Sanofi Pasteur, Swiftwater, PA, United States, [4]University of North Carolina, Chapel Hill, NC, United States, [5]Sanofi Pasteur, Lyon, France*

## 1356

### USE OF A BIOLAYER INTERFEROMETRY-BASED ASSAY TO DETERMINE ANTIBODY AFFINITY TO DENV FOLLOWING IMMUNIZATION WITH THE SANOFI PASTEUR DENGUE VACCINE IN PHASE II AND PHASE III CLINICAL TRIALS

**Alina Munteanu**[1], Alexander Karol[1], Aymeric de Montfort[2], Matthew Bonaparte[3], Bruno Guy[2], Janice Moser[1]
*[1]Sanofi Pasteur, VaxDesign Campus, Orlando, FL, United States, [2]Sanofi Pasteur, Lyon, France, [3]Sanofi Pasteur, Swiftwater, PA, United States*

## 1357

### ENHANCED DENGUE SENTINEL SURVEILLANCE IN METROPOLITAN SRI LANKA: 2012 TO 2015

**Hasitha Tissera**[1], Sunethra Gunasena[2], Dharshan De Silva[3], October Sessions[4], Paba Palihawadana[1], Ananda Amarasinghe[1], Jayantha Weeraman[1], Oshane Chandrasoma[1], Yee Leong[5], Wolfgang Lohr[6], Peter Byass[6], Annellies Wilder-Smith[5], Duane Gubler[4]
*[1]Epidemiology Unit Ministry of Health Sri Lanka, Colombo, Sri Lanka, [2]Medical Research Insitute Ministry of Health, Colombo, Sri Lanka, [3]Genetech Research Insitute, Colombo, Sri Lanka, [4]Duke-NUS Graduate Medical School, Singapore, Singapore, [5]Lee Kong Chian School of Medicine - Nanyang Technological University, Singapore, Singapore, [6]Umea University, Umea, Sweden*

## 1358

### GENETIC VARIABILITY OF DENGUE VIRUS TYPE 2 AND CLINICAL OUTCOME DURING THE 2009-2010 EPIDEMIC OF DENGUE IN COLOMBIA

**Margarita Gelvez**[1], Jorge Andres Castillo[2], Francisco Javier Díaz[3], Victor Mauricio Herrera[1], Luis Angel Villar[1]
*[1]Centro de Investigaciones Epidemiológicas, Universidad Industrial de Santander, Bucaramanga, Colombia-Red AEDES: Abordando el Dengue y otras Arbovirosis en áreas endémicas para disminuir su impacto en la sociedad, Bucaramanga, Colombia, [2]Grupo de Inmunovirologia, Universidad de Antioquia, Medellín, Colombia, [3]Grupo de Inmunovirologia, Universidad de Antioquia-Red AEDES: Abordando el Dengue y otras Arbovirosis en áreas endémicas para disminuir su impacto en la sociedad, Medellín, Colombia*

## 1359

### A DENGUE VIRUS TYPE 2-SPECIFIC MONOCLONAL ANTIBODY BINDS TO THE DENGUE VIRUS-COMPLEX-REACTIVE ANTIGENIC SITE ON ENVELOPE PROTEIN DOMAIN 3

**Vanessa V. Sarathy**[1], Trevor J. Pitcher[2], Gregory D. Gromowski[3], John T. Roehrig[4], Alan D. Barrett[1]
*[1]University of Texas Medical Branch, Galveston, TX, United States, [2]The Binding Site, San Diego, CA, United States, [3]Walter Reed Army Institute of Research, Silver Spring, MD, United States, [4]Centers for Disease Control and Prevention, Fort Collins, CO, United States*

## 1360

### PERFORMANCE OF A RAPID TEST FOR THE DETECTION OF DENGUE DURING THE OUTBREAK OF ZIKA VIRUS IN COLOMBIA

**Luis Angel Villar**[1], Andres Paez[2], Lizeth Pardo[2], Angélica Rico[3], Francisco Javier Díaz[4], Margarita Gélvez[1], Victor Mauricio Herrera[1]
*[1]Centro de Investigaciones Epidemiológicas, Universidad Industrial de Santander, Bucaramanga, Colombia-Red AEDES: Abordando el Dengue y otras Arbovirosis en áreas endémicas para disminuir su impacto en la sociedad, Bucaramanga, Colombia, [2]Grupo de Virología, Instituto Nacional de Salud, Bogotá, Colombia-Red AEDES: Abordando el Dengue y otras Arbovirosis en áreas endémicas para disminuir su impacto en la sociedad, Bogota, Colombia, [3]Grupo de Virología, Instituto Nacional de Salud, Bogotá, Colombia-Red AEDES: Abordando el Dengue y otras Arbovirosis en áreas endémicas para disminuir su impacto en la sociedad, Bogotá, Colombia, [4]Grupo de Inmunovirología, Facultad de Medicina, Universidad de Antioquia, Medellín, Colombia-Red AEDES: Abordando el Dengue y otras Arbovirosis en áreas endémicas para disminuir su impacto, Medellín, Colombia*

## 1361

### EARLY CLINICAL INDICATORS OF DEVELOPING SEVERE DENGUE IDENTIFIED FROM A PROSPECTIVE ACUTE FEBRILE ILLNESS STUDY IN PUERTO RICO

**Janice Perez-Padilla**[1], Brenda Torres-Velazquez[1], Tyler M. Sharp[1], Aidsa Rivera[1], Eric Gonzalez[2], Juan P. Torres[2], Esteban Lugo[2], Jose Vidal[2], Luisa Alvarado[3], Kay M. Tomashek[1]
*[1]Centers for Disease Control and Prevention, San Juan, PR, United States, [2]Saint Luke's Episcopal Hospital, Ponce, PR, United States, [3]Ponce Health Sciences University, Ponce, PR, United States*

## 1362

### DECODING THE SANOFI PASTEUR DENGUE VACCINE INFECTIVITY AND IMMUNOGENICITY USING THE HUMAN IN VITRO MIMIC® SYSTEM

**Ernesto Luna**[1], Mounir Chehtane[1], Pankaj Agrawal[1], Riyaz Mehta[1], Anthony Byers[1], Brian Schanen[1], Bruno Guy[2], Nicholas Jackson[2], William Warren[1], Janice M. Moser[1]
*[1]Sanofi Pasteur, Orlando, FL, United States, [2]Sanofi Pasteur, Lyon, France*

## 1363

### CLINICAL IMPACT OF DENGUE AND RESPIRATORY VIRUS CO-INFECTION IN A PASSIVE SURVEILLANCE, IN THE PERUVIAN AMAZON, PERU

**Stalin Vilcarromero**[1], Crystyan Siles[1], Carolina Guevara[1], Robert Hontz[1], Yohani Aguilar[2], Hermann Silva-Delgado[3], V. Alberto Laguna-Torres[4], Manuel Cespedes[5], Brett M. Forshey[6], Christopher N. Mores[1], Julia S. Ampuero[1]
*[1]U.S. Naval Medical Research Unit - 6, Lima and Iquitos, Peru, [2]Hospital Santa Gema de Yurimaguas, Yurimaguas, Loreto, Peru, [3]Direccion Regional de Salud (DIRESA Loreto), Iquitos, Peru, [4]Ministerio de Salud (Peruvian Ministry of Health), Lima, Peru, [5]Instituto Nacional de Salud, Lima, Peru, [6]Armed Forces Health Surveillance Center, Silver Spring, MD, United States*

## 1364

### ROLE OF SKIN MAST CELLS IN DENGUE VIRUS INFECTION

**Andrea J. Troupin**, Berlin Londono-Renteria, Devon Shirley, Cody McHale, Alex Hall, Jerel Lee, Gregorio Gomez, Tonya M. Colpitts
*University of South Carolina, Columbia, SC, United States*

## 1365

### DENGUE VIREMIA IN KENYAN CHILDREN WITH ACUTE FEBRILE ILLNESS

**David M. Vu**[1], Noah Mutai[2], Claire Heath[1], Bryson A. Ndenga[2], A. Desiree LaBeaud[1]
*[1]Stanford University School of Medicine, Stanford, CA, United States, [2]Centre for Global Health Research, Kenya Medical Research Institute, Kisumu, Kenya*

## 1366

### DEFINING THE CLINICAL MANIFESTATIONS OF ZIKA AND DENGUE PATIENTS ATTENDED IN RIBEIRÃO PRETO, BRAZIL

**Fernanda P. Torres**, Danillo L. Esposito, Taline M. Klein, Flávia M. Moraes, Michelli R. Persona, Benedito A. Fonseca
*University of São Paulo, Ribeirão Preto, Brazil*

## 1367

### BINDING OF HUMAN MONOCLONAL ANTIBODIES TO DENGUE VIRUS WITH DIFFERENT MATURATION STATUS: A COMPARATIVE ANALYSIS

Wen-Yang Tsai, Hui-Ling Chen, **Wei-Kung Wang**
*JABSOM, University of Hawaii at Manoa, Honolulu, HI, United States*

## 1368

### SUPERENSEMBLE FORECASTS OF DENGUE OUTBREAKS

**Teresa K. Yamana**, Jeffrey Shaman
*Columbia University, New York, NY, United States*

## 1369

### LESSONS LEARNED FROM THE LARGEST AND MOST SEVERE EPIDEMIC OF DENGUE VIRUS SEROTYPE 2 (DENV-2) IN TAIWAN, 2015

**Chwan-Chuen King**[1], Hwa-Lung Yu[2], Ta-Chien Chan[3], Yun-Cheng Chang[1], Shu-Yu Lin[1], Chi-Hang Chin[1], Hui-Ying Ko[1], Yao-Tsun Li[1], Thomas C. Tsai[4], Yung-Chen Marie Wu[4], Shu-Chuan Hsu[5], Chih-Huan Chung[5], Ishiou Hwang[1], Chia-Chi Ku[6], Sheng-Che Fred Lin[7], Chaur-Dong Chen[8], Chi-Kung Ho[8], Pei-Yun Shu[9]
*[1]Inst. of Epidemiology, College of Public Health, National Taiwan University (NTU), Taipei, Taiwan, [2]Department of Bioenvironmental Systems Engineering, NTU, Taipei, Taiwan, [3]Research Center for Humanities and Social Sciences, Academia Sinica, Taipei, Taiwan, [4]College of Med., NTU, Taipei, Taiwan, [5]Kuo General Hosp., Tainan, Taiwan, [6]Inst. of Immunology, College of Med, NTU, Taipei, Taiwan, [7]Tainan City Department of Health, Tainan, Taiwan, [8]Kaohsiung City Department of Health, Kaohsiung, Taiwan, [9]Taiwan Centers for Disease Control, Taipei, Taiwan*

## 1370

### WHAT NOW? CIRCULATION OF ZIKA, DENGUE AND CHIKUNGUNYA VIRUSES IN A CITY FROM BRAZIL

Arianne Fagotti Gusmão, Paulo Eduardo Lima Lopes-Filho, **Adriano Mondini**
*UNESP - São Paulo State University, Araraquara - São Paulo, Brazil*

## 1371

### POTENTIAL IMPACT OF DENGUE VACCINE IMPLEMENTATION ON SURVEILLANCE AND DIAGNOSIS - INSIGHTS FROM SEROLOGICAL PROFILES OF FEBRILE CASES IN PHASE III DENGVAXIA® EFFICACY TRIALS

**Eric Plennevaux**[1], Annick Moureau[2], Jose Luis Arredondo[3], Luis Angel Villar[4], Punnee Pitisuttithum[5], Tran Ngoc Huu[6], Matthew Bonaparte[7], Danaya Chansinghakul[8], Diana Leticia Coronel[9], Maïna L'Azou[10], Leon Ochiai[10], Myew-Ling Toh[10], Fernando Noriega[7], Alain Bouckenooghe[8]
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# *Flaviviridae* – Other

## 1372

### SUSCEPTIBILITY OF MEDICALLY IMPORTANT *CULEX* SPECIES MOSQUITOES TO JAPANESE ENCEPHALITIS VIRUS

**Yan-Jang S. Huang**[1], Susan M. Hettenbach[2], So Lee Park[1], Stephen Higgs[2], Alan D. Barrett[3], Lee W. Cohnstaedt[4], Dana L. Vanlandingham[1]
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## 1373

### DECREASED ZIKA VIRUS REPLICATION IN MOSQUITO CELLS CO-INFECTED WITH NHUMIRIM VIRUS

**Hannah E. Romo**[1], Silvina Goenaga[2], Joan L. Kenney[3], Gregory D. Ebel[1], Aaron C. Brault[3]
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## 1374

### AVAILABILITY OF ZIKA VIRUS INFORMATION ON OBSTETRIC PRACTICE WEBSITES AND SOCIAL MEDIA ACCOUNTS IN THE UNITED STATES

**Grace Goryoka**, Allison T. Chamberlain, Mallory K. Ellingson, Raghuraj Kasturi, Jonathan D. Lehnert, Emily Maier, Ruth L. Berkelman
*Emory University Rollins School of Public Health, Atlanta, GA, United States*

## 1375

### ZIKA AND OTHER MOSQUITO-BORNE VIRUS DETECTION AND DIFFERENTIATION USING A MULTIPLEXED, BEAD BASED RT-PCR ASSAY

**Ramin Saberi**[1], Cora Lahey[1], Jamie Hale[1], Tiffany Wang[1], Abbegail King[1], Doreen Robinson[2], R. Paul Schaudies[2], Amy Altman[1]
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## 1376

### ARBOVIRUS IMMUNOHISTOCHEMISTRY: CHARACTERIZING CROSS-REACTIVITIES OF DIFFERENT IMMUNOHISTOCHEMISTRY ASSAYS

**Luciana M. Flannery**, Roosecelis B. Martines, Brigid Bollweg, Tara Jones, Pamela Spivey, Julu Bhatnagar, Dominique Rollin, Kelly Keating, Joy Gary, Gillian Hale, Jana Ritter, Wun-Ju Shieh, Sarah Reagan-Steiner, Atis Muehlenbachs, Sherif Zaki
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**(ACMCIP Abstract)**

## 1377

### CHARACTERIZATION OF PATIENTS WITH GUILLAIN-BARRÉ SYNDROME DURING THE ZIKA EPIDEMIC IN VENEZUELA

**Adriana Tami**[1], Sandra Mendoza[2], Fe M. Salazar[3], Robert Tovar[4], Sarah Bethencourt[4], Hubert Niesters[1], Guillermo Rojas[5], Haydee Ochoa[6], Luis Scribani[7]
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## 1378

### VIREMIA AND CLINICAL PRESENTATION AMONG NICARAGUAN PATIENTS WITH ZIKA VIRUS AND DENGUE VIRUS INFECTIONS

**Jesse J. Waggoner**[1], Lionel Gresh[2], Maria Jose Vargas[3], Gabriela Ballesteros[3], Yolanda Tellez[3], Andrea Nunez[3], Angel Balmaseda[3], Eva Harris[4], Benjamin Pinsky[1]
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## 1379

### EFFECTS OF TEMPERATURE ON ZIKA, DENGUE AND CHIKUNGUNYA TRANSMISSION BY *AEDES AEGYPTI* AND *AE. ALBOPICTUS*

**Erin Mordecai**[1], Jeremy Cohen[2], Michelle Evans[3], Leah R. Johnson[4], Prithvi Gudapati[1], Kerri Miazgowicz[3], Courtney C. Murdock[3], Jason Rohr[2], Sadie J. Ryan[5], Van Savage[6], Anna Stewart Ibarra[7], Matthew B. Thomas[8], Marta Shocket[1], Daniel Weikel[9]
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## 1380

### GUILLAIN-BARRÉ SYNDROME RISK AMONG INDIVIDUALS INFECTED WITH ZIKA VIRUS

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## 1381

### RELATIVE FITNESS OF ZIKA VIRUS LINEAGES IN MOSQUITOES AND CELLS

**Gregory D. Ebel**, James Weger, Claudia Rueckert, Nathan Grubaugh, Joseph Fauver
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## 1382

### EVALUATING THE EFFECTS OF TEMPERATURE VARIATION ON ARBOVIRUSES

**Blanka Tesla**, Kerri Miazgowicz, Melinda Brindley, Courtney Murdock
*University of Georgia, Athens, GA, United States*

## 1383

### ZIKA VIRUS INFECTIONS: PAYING ATTENTION TO ATYPICAL PRESENTATIONS

Danillo L. Esposito, Flávia M. Moraes, Taline M. Klein, Michelli R. Persona, Beatriz S. Ribeiro, Vinicius C. Molla, Marco Andrey C. Frade, **Benedito A. Fonseca**
*School of Medicine of Ribeirão Preto, Ribeirão Preto, S.P., Brazil*

## 1384

### MODEL-BASED PROJECTIONS OF ZIKA VIRUS INFECTIONS IN CHILDBEARING WOMEN IN THE AMERICAS

**Alex Perkins**[1], Amir Siraj[1], Corrine Ruktanonchai[2], Moritz Kraemer[3], Andrew Tatem[2]
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## 1385

### EVALUATING STRAIN SPECIFICITY OF THE ZIKA VIRUS NEUTRALIZING ANTIBODY RESPONSE

**Kimberly A. Dowd**[1], Christina DeMaso[1], Rebecca S. Pelc[1], Leslie Goo[1], Scott Speer[1], Alex Smith[1], Michael S. Diamond[2], John R. Mascola[3], Barney S. Graham[3], Julie E. Ledgerwood[3], Theodore C. Pierson[1]
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# Viruses - Other

## 1386

### DURATION OF INTESTINAL IMMUNITY FOLLOWING ADMINISTRATION OF INACTIVATED POLIO VACCINE (IPV) IN INDIAN CHILDREN PRIMED WITH ORAL POLIO VACCINE (OPV)

**Sidhartha Giri**[1], Jacob John[1], Asha Mary Abraham[1], Miren Iturriza-Gomara[2], Nicholas C. Grassly[3], Gagandeep Kang[1]
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## 1387

### EVALUATION OF A MEASLES ROUTINE IMMUNIZATION PROGRAM IN THE DEMOCRATIC REPUBLIC OF CONGO

**Ado M. Bwaka**[1], Kaya Guylain, MD, MPH, Reena H. Doshi[2], Nicole A. Hoff[2], Patrick Mukadi[3], Sue Gerber[4], Jean-Jacques Muyembe[5], Emile Okitolonda-Wemakoy[6], Anne W. Rimoin[2]
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## 1388

### DETECTION OF HUMAN ENTEROVIRUS 71 FROM AN OUTBREAK OF HAND FOOT AND MOUTH DISEASE IN BANJARMASIN, INDONESIA

**Ageng Wiyatno**[1], Ungke A. Jaya[2], Chairin N. Ma'roef[1], Tina Kusumaningrum[1], Aghnianditya K. Dewantari[1], Dodi Safari[1], Khin S. Myint[1], David McIver[3], Edi Hartoyo[4]
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## 1389

### DYNAMIC MODEL OF ROTAVIRUS TRANSMISSION WITH IMPACT OF TEMPERATURE

**Nan Lin**, Alicia Kraay, Joseph Eisenberg
*University of Michigan, Ann Arbor, MI, United States*

## 1390

### FIRST LABORATORY CONFIRMATION OF AN OUTBREAK OF RIFT VALLEY FEVER VIRUS IN 50 YEARS IN KABALE DISTRICT, SOUTHWESTERN UGANDA

**Trevor Shoemaker**[1], Stephen Balinandi[1], Like Nyakarahuka[2], Joseph Ojwang[1], Alex Tumusiime[1], Sophia Mulei[2], Jackson Kayondo[2], Jeff Borchert[1], Julius Lutwama[2], John Klena[3], Pierre Rollin[3], Stuart Nichol[3]
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## 1391

### A RETROSPECTIVE COHORT STUDY OF SEROPREVALENCE OF EBOLA AND MARBURG VIRUSES IN HUMANS FROM TWO DIFFERENT ECOLOGICAL ZONES IN UGANDA

**Like Nyakarahuka**[1], Alex Tumusiime[2], Stephen Balinandi[2], Ilana Schafer[3], Barbara Knust[3], Jackson Kyondo[1], Sophia Mulei[1], Julius Lutwama[1], Trevor Shoemaker[2]
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## 1392

### THE POTENTIAL ECONOMIC IMPACT OF THE ZIKA VIRUS

**Dagna O. Constenla**, Jorge Martin del Campo, Alexandra Greenberg, Gatien de Broucker
*Johns Hopkins University, Baltimore, MD, United States*

## 1393

### THE EVOLUTION AND DIVERSITY OF HUMAN METAPNEUMOVIRUS IN PERU

**Simon Pollett**[1], Tany Tan[2], John-Sebastian Eden[3], Víctor Ocaña[4], Silvia Mendocilla[5], Carlos Álvarez[6], Maria E. Calixto[7], Christopher Mores[8], Julia S. Ampuero[8], Martha I. Nelson[9]
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## 1394

### EVALUATION OF THE BIOJECT NEEDLE FREE VACCINE DELIVERY DEVICE FOR VACCINATING RATS WITH RIFT VALLEY FEVER VACCINE CANDIDATES

**Pedro M. Palermo**, George Bettinger, Douglas Watts
*University of Texas at El Paso, EL Paso, TX, United States*

## 1395

### CHARACTERIZATION AND IMAGING OF THE PRIMATE MODEL FOR NIPAH VIRUS INFECTION

Margaret Lentz[1], Yu Cong[1], Chris Bartos[1], Dima Hammoud[2], Louis Huzella[1], Peter B. Jahrling[1], Krisztina Janosko[1], Abigail Lara[1], Daniel Mollura[2], Dan Ragland[1], Oscar Rojas[1], Jeffrey Solomon[1], Ziyue Xu[2], Vincent Munster[3], **Michael R. Holbrook**[1]
*[1]National Institute of Allergy and Infectious Diseases Integrated Research Facility, Frederick, MD, United States, [2]Center for Infectious Disease Imaging, Bethesda, MD, United States, [3]Rocky Mountain Laboratories, Hamilton, MT, United States*

## 1396

### SEROEPIDEMIOLOGICAL STUDIES FOR INFECTIONS BY VECTOR-BORNE AND ZOONOTIC PATHOGENS AMONG U.S. MILITARY PERSONNEL

**Brett M. Forshey**
*Armed Forces Health Surveillance Branch/Cherokee Nation Technology Solutions, Silver Spring, MD, United States*

## 1397

### DETERMINATION OF HEPATITIS B VIRUS (HBV) INFECTION IN FAMILY MEMBERS OF HBSAG CARRIERS: SEARCH STRATEGY OF CARRIERS FOR A ELIMINATION PLAN OF HBV

**Cesar Cabezas-Sanchez**[1], Johanna Balbuena Torres[2], Luis Crispin-Huamani[1], Kevin Landa-Huaman[1], Katia Rios-Rojas[1], Andrea Sucari-Idrogo[1], Andrea Anampa-Guzmán[1]
*[1]National University of San Marcos, Lima, Peru, [2]Instituto Nacional de Salud, Lima, Peru*

## 1398

### IS IT EBOLA OR IS IT A VACCINE REACTION? EVALUATION OF SUSPECTED EBOLA CASES IN A VACCINE TRIAL DURING AN EBOLA EPIDEMIC: SIERRA LEONE TRIAL TO INTRODUCE A VACCINE AGAINST EBOLA (STRIVE)

**Samuel Kargbo**[1], Abbass Conteh[2], Jane Gidudu[3], the STRIVE study team
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### DEFINING A MULTIVALENT VACCINE AGAINST HEMORRHAGIC FEVER VIRUSES BASED ON INSECT CELL EXPRESSED RECOMBINANT SUBUNITS

**Axel Lehrer**, Teri-Ann S. Wong, Madhuri Namekar, Michael M. Lieberman
*University of Hawaii, Honolulu, HI, United States*

## 1400

### DENGUE, ZIKA AND CHIKUNGUNYA CO-INFECTIONS AMONG ACUTE FEBRILE ILLNES PATIENTS IN SALVADOR, BRAZIL

**Laura B. Tauro**
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# Mosquitoes - Insecticide Resistance and Control

## 1401

### KNOCK DOWN RESISTANCE (KDR) GENE IN *ANOPHELES COLUZZII* AND *ANOPHELES GAMBIAE* THAT SURVIVED THE DIAGNOSTIC CONCENTRATION OF PYRETHROIDS AND DDT IN TWO ECO-EPIDEMIOLOGICAL ZONES (GUINEA SAVANNAH AND COASTAL MANGROVE) OF NIGERIA

Lazarus M. Samdi[1], **Petrus U. Inyama**[1], Henry Nsa[1], Nduka Iwuchukwu[1], Joseph I. Okeke[1], Samson T. Awolola[2], Greg Ike Anyanwu[3], Nnenna Ezeigwe[4], Joel D. Akilah[4], Aklilu Seyoum[5], Dereje Dengela[6], Uwem Inyang[7], Richard W. Niska[8], Jessica Kafuko[7], Pamela Dasher[6], Laura Norris[9], Christen Fornadel[9], Peter Obenauer[10]

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## 1402

### INTERCEPTOR G2: A NOVEL LN FOR MALARIA CONTROL AND BEYOND

**James William Austin**

*BASF Corporation, Research Triangle Park, NC, United States*

## 1403

### WHO SUSCEPTIBILITY TEST VS. CDC BOTTLE BIOASSAY: COMPARISON OF THE CURRENT METHODOLOGIES FOR CONDUCTING INSECTICIDE RESISTANCE MONITORING

**Laura Leite**, Dustin Miller, Pauline Schopp, Paul Howell, Ellen Dotson

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## 1404

### CAN CHICKEN FEATHERS BE USED TO PRODUCE EFFECTIVE, RE-USABLE, DURABLE AND LOW-COST MOSQUITO NETS?

**Isaac Lyatuu**[1], Walter Schmidt[2], Samson Kiware[1]

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## 1405

### TRANSCRIPTOME ANALYSIS OF GENES ASSOCIATED WITH DELTAMETHRIN RESISTANCE IN *ANOPHELES ALBIMANUS*

**Lucy Mackenzie Impoinvil**[1], Nicole Dzuris[1], Lucrecia Vizcaino[1], Gareth Weedall[2], Jacob Riveron[2], Charles Wondji[2], Audrey Lenhart[1]

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## 1406

### INSECTICIDE RESISTANCE PROFILE OF *ANOPHELES GAMBIAE SENSU LATO* IN AREAS WITH AND WITHOUT INDOOR RESIDUAL SPRAYING IN MALI, WEST AFRICA

**Moussa Keita**, Boïssé Traoré, Fousseyni Kané, Sekou Fantamady Traoré, Seydou Doumbia, Nafomon Sogoba

*International Center for Excellence in Research (ICER), Bamako, Mali*

## 1407

### EVALUATING HETEROGENEITY IN INSECTICIDE SUSCEPTIBILITY FOR IMPROVED RESISTANCE MANAGEMENT STRATEGIES TO AID MALARIA ELIMINATION

**Silvie Huijben**[1], Mara Maquina[2], Lucia Fernández[1], Pedro Aide[2], Ana Paula Abilio[3], James Colborn[4], Maria Ponja[5], Francisco Saúte[2], Krijn Paaijmans[1]

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## 1408

### INSECTICIDE RESISTANCE IN *ANOPHELES GAMBIAE* AND *ANOPHELES FUNESTUS* IN TWO RURAL SITES IN TANZANIA

**Sophie J. Weston**[1], Natacha Protopopoff[1], Bernard Batengana[2], Robert Malima[2], Wema Sudi[2], Frank Mosha[3], Mark Rowland[1]

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## 1409

### KDR MUTATIONS CONFER FITNESS COST AND COMPETITIVE DISADVANTAGE IN FIELD POPULATIONS OF *AE. AEGYPTI*

**Marissa Grossman**[1], Valentin Uc Puc[2], Adriana Flores[3], Pablo Manrique-Saide[2], Gonzalo Vazquez-Prokopec[1]

*[1]Emory University, Atlanta, GA, United States, [2]Universidad Autónoma de Yucatán, Merida, Mexico, [3]Universidad Autónoma de Nuevo León, San Nicolás de los Garza, Mexico*

## 1410

### DYNAMIC OF MALARIA VECTORS SUSCEPTIBILITY TO PYRETHROIDS AND MECHANISMS OF RESISTANCE IN SENEGAL

**Libasse Gadiaga**[1], Ousmane Faye[2], Mamadou Demba Sy[2], Elhadji Amadou Niang[2], Ellen Dotson[3], Julie Thwing[4], Iassana Koante[2], Abdoulaye Diop[5], Moussa Diagne[6]

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## 1411

### SPATIO-TEMPORAL EVOLUTION OF RESISTANCE TO DELTAMETHRIN AND KDR MUTATIONS IN *AEDES AEGYPTI* POPULATIONS IN FRENCH GUIANA: A WORRYING SITUATION FOR VECTOR CONTROL

Amandine Guidez, Johana Restrepo-Zabaleta, Mathieu Luana, Sandra Augustin, Pascal Gaborit, Romuald Carinci, Jean Issaly, Romain Girod, **Isabelle Dusfour**

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## 1412

### ONE YEAR OF COMMUNITY LED LARVICIDING: BIOKO ISLAND

**Aveika A. Akum**, Abrahan Matias, Wonder P. Phiri

*Medical Care Development International, Silver Spring, MD, United States*

## 1413

### INDOOR RESIDUAL SPRAYING FOR MALARIA CONTROL USING BENDIOCARB REDUCES *KDR* L1014S HOMOZYGOTE FREQUENCY IN *ANOPHELES GAMBIAE* S.S.

**Tarekegn A. Abeku**[1], Michelle E. Helinski[1], Irene Kyomuhangi[2], James Ssekitooleko[2], Godfrey Magumba[2], Chris Bass[3], Sylvia R. Meek[1]

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## Mosquitoes - Molecular Genetics

### 1414

**ENGINEERED *ANOPHELES GAMBIAE* IMMUNITY TO *PLASMODIUM* INFECTION**

**Maria L. Simoes**[1], Yuemei Dong[1], Andrew M. Hammond[2], Tony Nolan[2], Andrea Crisanti[2], George Dimopoulos[1]
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### 1415

**DISPERSAL AND THE SPREAD OF A DENGUE-SUPPRESSING BACTERIUM IN THE DENGUE VECTOR *AEDES* AEGYPTI**

**Tom Schmidt**, Gordana Rašič, Ary A. Hoffmann
*University of Melbourne, Parkville, Australia*

### 1416

**IDENTIFICATION OF MIDGUT ACTIVE CIS-REGULATORY SEQUENCES TO EVALUATE THE IMPACT OF NON-CODING VARIATION ON *AEDES AEGYPTI* SUSCEPTIBILITY TO DENGUE VIRUS INFECTION**

**Veronica Valverde-Garduno**[1], Manuel Castillo-Méndez[2], Graciela Gleason-Rodríguez[2]
*[1]Instituto Nacional de Salud Pública, Cuernavaca, Mexico, [2]Escuela de Salud Pública de México, Cuernavaca, Mexico*

### 1417

**MOLECULAR CHARACTERIZATION OF GLUCOSE-6-PHOSPHATE DEHYDROGENASE DEFICIENCY SPECIFIC VARIANTS IN AMHARA REGION, ETHIOPIA**

**Yeshwondm Gebresilasie Mamuye**[1], Getachew Abebe Ewunetu[2]
*[1]St. Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia, [2]Debrebirhan University, Addis Ababa, Ethiopia*

**(ACMCIP Abstract)**

### 1418

**UNIDIRECTIONAL HYBRIDIZATION AND REPRODUCTIVE BARRIERS BETWEEN TWO BIOTYPES OF *CULEX PIPIENS* COMPLEX**

**Sungshil Kim**, Cheolho Sim
*Baylor University, Waco, TX, United States*

### 1419

**SMALL INSERTION AND DELETION MUTATIONS IN *ANOPHELES COLUZZII* AND *AN. GAMBIAE***

**R. Rebecca Love**, Nora J. Besansky
*University of Notre Dame, Notre Dame, IN, United States*

### 1420

**MOLECULAR AND MORPHOLOGICAL CHARACTERIZATION OF *ANOPHELES MELAS* POPULATIONS IN ENDEMIC AND NON-ENDEMIC LYMPHATIC FILARIASIS COMMUNITIES IN COASTAL GHANA**

**Dorcas Atibilla**[1], Dziedzom Komi De Souza[2], Millicent Opoku[2], Michael David Wilson[2], Joseph Harold Osei[3], Rosina Kyerematen[4], Fred Aboagye-Antwi[5], Seth Owusu-Agyei[1]
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**R. Matthew Chico**[1], Joyce Wamoyi[2], Myles-Jay Linton[3], Catherine Bunga[2], Nnko Soori[2], John Changalucha[2], Daniel Chandramohan[1], Antonieta Medina-Lara[3]
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**R. Matthew Chico**[1], Joyce Wamoyi[2], Myles-Jay Linton[3], Catherine Bunga[2], Nnko Soori[2], John Changalucha[2], Daniel Chandramohan[1], Antonieta Medina-Lara[3]
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**Cyrus S. Sinai**[1], Kamy Musene[2], Nicole A. Hoff[1], Reena H. Doshi[1], Patrick Mukadi[3], Sue Gerber[4], Ado Bwaka[5], Emile Okitolonda[6], Jean-Jacques Muyembe[3], Anne W. Rimoin[1]

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**Shaun Truelove**, Justin Lessler

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### THE GLOBAL HEALTH EXCHANGE FELLOWSHIP, A PILOT PROGRAM

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## 1472

### FACILITATING TRAVEL READINESS IN A GLOBAL ORGANIZATION: SUCCESS OF A PILOT

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## 1473

### REDUCING HEALTH DISPARITIES IN REFUGEES FROM SUB-SAHARAN AFRICA ENTERING THEUNITED STATES FOR RESETTLEMENT: RETROSPECTIVE REVIEW

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# Malaria - Biology and Pathogenesis

## 1474

### RELAPSES VERSUS REINFECTIONS: ASSESSING THE PARASITOLOGICAL AND CLINICAL IMPLICATIONS USING *PLASMODIUM CYNOMOLGI* AS A MODEL FOR *P. VIVAX*

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## 1475

### *PLASMODIUM FALCIPARUM* FIELD ISOLATES TRIGGER APOPTOSIS PREFERENTIALLY IN HUMAN BRAIN ENDOTHELIAL CELLS COMPARED TO PULMONARY ENDOTHELIAL CELLS

Jean Claude Biteghe Bi Essone[1], Nadine N'Dilimabaka[1], Julien Ondzagha[1], Jean Bernard Lekana-Douki[1], Dieudonné Nkoghe Mba[1], Philippe Deloron[2], Dominique Mazier[3], Frédrérick Gay[4], **Fousseyni S. Toure Ndouo**[1]

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## 1476

### CHARACTERIZATION OF ANTIBODIES AGAINST *P. FALCIPARUM* INVASION PROTEIN PFMSP10

**Elizabeth M. Villasis**, Jorge Bendezu, Katherine Garro, Oscar Nolasco, Katherine Torres, Beronica Infante, Dionicia Gamboa, Joseph Vinetz

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## 1477

### CHARACTERIZATION OF A NOVEL ERYTHROCYTE BINDING PROTEIN OF *PLASMODIUM VIVAX*

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## 1478

### PATHWAY GROUP LASSO INTEGRATION OF METABOLOMICS AND TRANSCRIPTOMICS TO CHARACTERIZE MALARIA INFECTION IN RHESUS MACAQUES

**Sophia Banton**[1], Ruiyan Luo[2], Regina Joice[1], Alberto Moreno[1], Mary R. Galinski[1], MaHPIC Consortium, Dean P. Jones[1], Shuzhao Li[1]
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## 1479

### MARKERS OF ANEMIA IN KENYAN CHILDREN WITH *P. FALCIPARUM* MALARIA

**Lily E. Kisia**, Steven B. Bradfute, Zachery S. Karim, Angela O. Achieng, Elly O. Munde, John M. Ong'echa, Prakasha Kempaiah, Douglas J. Perkins
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## 1480

### CLINICAL AND LABORATORY PROFILE OF COMPLICATED MALARIA IN THE COLOMBIAN PACIFIC COAST

Myriam Arévalo-Herrera[1], **Lina M. Rengifo**[2], Juliana Henao[2], Mary Lopez-Perez[2], Johanna Trejos[2], Angélica Castellanos[2], Nora Céspedes[2], María Isabel Arce[2], Sócrates Herrera[1]
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## 1481

### PLASMA HAPTOGLOBIN AS A MARKER OF CLINICAL SEVERITY IN GAMBIAN AND MALAWIAN CHILDREN INFECTED WITH *PLASMODIUM FALCIPARUM*

**Allison K. Ikeda**[1], Carol Rowley[1], Yu Yang[1], Joseph Okebe[2], Augustine Ebonyi[2], Madi Njie[2], Simon Correa[2], Shamanthi Jayasooriya[2], Aubrey Cunnington[3], Climent Casals-Pascual[4], Michael Walther[2], Terrie Taylor[5], Karl Seydel[5], Hans Ackerman[1]
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## 1482

### CELL-SPECIFIC DELETION OF TISSUE FACTOR ALTERS THE IMPACT OF *PLASMODIUM CHABAUDI CHABAUDI* AS INFECTION ON MURINE PREGNANCY OUTCOME

**Tara C. Bracken**[1], Caitlin A. Cooper[1], Nigel Mackman[2], Julie M. Moore[1]
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## 1483

### ANTI-OXIDANT THERAPY SLIGHTLY IMPROVES PREGNANCY OUTCOME IN A MOUSE MODEL OF PLACENTAL MALARIA

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## 1484

### TEMPERATURE INDUCED CHANGES IN GLOBAL GENE EXPRESSION PROFILES OF MALARIA-CARRYING MOSQUITOES

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## 1485

### EXPERIMENTAL DESIGN OF *PLASMODIUM KNOWLESI* INFECTION IN SUSCEPTIBLE VERSUS REFRACTORY NON-HUMAN PRIMATE MODEL HOSTS

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# Malaria - Chemotherapy and Drug Resistance

## 1486

### POPULATION PHARMACOKINETICS AND PHARMACODYNAMICS OF LUMEFANTRINE IN YOUNG UGANDAN CHILDREN TREATED IN COMBINATION WITH ARTEMETHER FOR UNCOMPLICATED MALARIA

Eskouhie Tchaparian[1], Nancy Sambol[1], Emmanuel Arinaitwe[2], Shelley A. McCormack[1], Victor Bigira[2], Humphrey Wanzira[2], Mary Muhindo[2], Darren J. Creek[3], Nitin Sukumar[4], Daniel Blessborn[5], Jordan W. Tappero[6], Abel Kakuru[2], Yngve Bergqvist[7], Francesca T. Aweeka[1], **Sunil Parikh**[4]
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## 1487

### SURVEILLANCE FOR SULFADOXINE-PYRIMETHAMINE (SP) RESISTANT MALARIA PARASITES IN THE LAKE AND SOUTHERN ZONES, TANZANIA USING POOLING AND NEXT-GENERATION SEQUENCING

Jeremiah M. Ngondi[1], Deus S. Ishengoma[2], Stephanie Doctor[3], Kyaw L. Thwai[3], Sigsbert Mkude[4], Oresto M. Munishi[1], Ritha A. Willilo[1], Shabbir , Lalji[1], Naomi Kaspar[5], Chonge Kitojo[5], Lynn A. Paxton[6], Nick Hathaway[7], Jeff Bailey[7], Jonathan Juliano[3], Steven R. Meshnick[3], **Julie Gutman**[8]
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## 1488

### UPDATE ON THE ASEXUAL AND SEXUAL STAGE-EFFICACY OF ATOVAQUONE-PROGUANIL AND SINGLE LOW DOSE PRIMAQUINE WITH OR WITHOUT ARTESUNATE IN CAMBODIA

**Mariusz Wojnarski**[1], Chanthap Lon[1], Panita Gosi[1], Pattaraporn Vanachayangkul[1], Dustin Harrison[2], Catherine Berjohn[2], Jessica Lin[3], Michele Spring[4], Somethy Sok[5], Mali Ittiverakul[1], Nillawan Buathong[1], Soklyda Chann[1], Worachet Kuntawunginn[1], Vireak Heang[2], Nareth Kong[6], Bolin Chum[2], Agus Ratchmat[2], Mark Fukuda[1], Philip Smith[1], Andrew Vaughn[2], Satharath Prom[5], Dysoley Lek[6], David Saunders[7]

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## 1489

### HEMOGLOBIN E RED BLOOD CELLS DO NOT INFLUENCE THE ANTIPLASMODIAL ACTIVITY OF ARTEMISININ *IN VITRO*

**Chanaki Amaratunga**[1], Aaron T. Neal[1], Sivanna Mao[2], Seila Suon[3], Rick M. Fairhurst[1]

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## 1490

### ASSESSING THE IMPACT OF MALNUTRITION ON THE TREATMENT OUTCOME OF ARTEMISININ-BASED COMBINATION THERAPY IN UNCOMPLICATED *PLASMODIUM FALCIPARUM* MALARIA

**Kasia Stepniewska**, on behalf of the WWARN Malnutrition Study Group

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## 1491

### IMPACT OF DIFFERENT MALARIA CHEMOPREVENTION REGIMENS FOR PREGNANT UGANDAN WOMEN ON *P. FALCIPARUM* DRUG RESISTANCE-MEDIATING POLYMORPHISMS

Patrick Tumwebaze[1], Prasanna Jagannathan[2], Jennifer Legac[2], Daniel Mota[2], Stephen Tukwasibwe[1], Meghan Whalen[2], Abel Kakuru[1], Patience Nayebare[1], Erika Wallender[2], Diane V. Havlir[2], Moses R. Kamya[1], Grant Dorsey[2], **Philip J. Rosenthal**[2]

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## 1492

### DRUG RESISTANCE AND RELAPSE IN CAMBODIAN *PLASMODIUM VIVAX*

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## 1493

### BEHAVIOR OF *PLASMODIUM FALCIPARUM* AGAINST ARTEMISININ-BASED COMBINED THERAPY FOR MALARIA: EVALUATION OF *EX VIVO* SENSITIVITY AND PARASITE DORMANCY

**Rosa D. Vargas Rodriguez**[1], Andres J. Galisteo-Jr[1], Maria J. Costa-Nascimento[2], Juliana Inoue[1], Silvia M. Di Santi[3]

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## 1494

### ELUCIDATING THE MECHANISM OF PIPERAQUINE RESISTANCE IN *PLASMODIUM FALCIPARUM* MALARIA IN CAMBODIA

**Megan R. Ansbro**[1], Pharath Lim[1], Chanaki Amaratunga[1], Hendrik W. van Veen[2], Marcus C. Lee[3], Rick M. Fairhurst[1]

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## 1495

### IMPACT EVALUATION AFTER 3 YEARS OF SEASONAL MALARIA CHEMOPREVENTION IMPLEMENTATION BY MASS CAMPAIGNS IN SOUTHERN SENEGAL

**Jean Louis A. Ndiaye**[1], Isaac A. Manga[1], Medoune Ndiop[2], Youssou Ndiaye[3], Babacar Faye[1], Maguette Ndiaye[1], Daouda Ndiaye[1], Roger Tine[1], Mady Ba[2], Mamadou Diouf[2], Ibrahima Diallo[2], Paul Milligan[4], Oumar Gaye[1]

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## 1496

### ARTESUNATE TO TREAT SEVERE MALARIA IN TRAVELERS: REVIEW OF EFFICACY AND SAFETY AND PRACTICAL IMPLICATIONS

**Camille Roussel**[1], Benoit Henry[2], Nathalie Dournon[2], Marc Thellier[3], Eric Caumes[2], Pierre A. Buffet[1], Papa Alioune Ndour[4], Stéphane Jauréguiberry[2]

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## 1497

### TRENDS OF HIGH REDUCTION OF MALARIA CASES IN SEDHIOU DISTRICT FOLLOWING SEASONAL MALARIA CHEMOPREVENTION FIRST CAMPAIGN: LESSONS LEARNED

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## 1498

### MONITORING THE RESPONSES OF *P. FALCIPARUM* TO ANTIMALARIAL DRUGS USING THE DAPI *EX VIVO* TEST: HIGH FREQUENCY OF *P. FALCIPARUM* ISOLATES RESISTANT TO PYRIMETHAMINE IN DIORO, MALI

**Youssouf Diarra**[1], Lansana Sangare[1], Kotou Sangare[1], Sekou Traore[1], Trevor Thompson[2], Lassina Doumbia[1], Daouda Ndiaye[3], Baba Dieye[3], Davis Nwakanma[4], Donald Krogstad[2], Ousmane Koita[1]

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## 1499

### COMBINATORIAL GENETIC MODELING OF PFCRT-MEDIATED DRUG RESISTANCE EVOLUTION IN *PLASMODIUM FALCIPARUM*

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## 1500

### COMPARISON OF HIGH RESOLUTION MELT (HRM) ANALYSIS TO TA CLONING AND SEQUENCING FOR THE ANALYSIS OF A CLINICAL TRIAL USING AN INVESTIGATIONAL AMINOQUINOLINE, AQ-13, TO CIRCUMVENT CHLOROQUINE RESISTANCE IN SUBJECTS WITH UNCOMPLICATED *P. FALCIPARUM* MALARIA IN MALI

**Trevor A. Thompson**[1], Lansana Sangaré[2], Rachel Daniels[3], Ibrahim Traoré[2], Youssouf Diarra[2], Kotou Sangaré[2], Aliou Sissako[2], Moctar Coulibaly[2], Saharé Fongoro[2], Sarah Volkman[3], Daouda Ndiaye[4], Ousmane A. Koita[2], Donald J. Krogstad[1]

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## 1501

### ARTEMISININ-COMBINATION THERAPY VERSUS CHLOROQUINE FOR THE TREATMENT OF *PLASMODIUM MALARIAE* IN SABAH, MALAYSIA: A RANDOMIZED CONTROLLED TRIAL

**Matthew J. Grigg**[1], Timothy William[2], Bridget E. Barber[1], Giri S. Rajahram[1], Jayaram Menon[2], Christopher S. Wilkes[1], Kaajal Patel[1], Arjun Chandna[1], Tsin W. Yeo[1], Nicholas M. Anstey[1]

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## 1502

### THE BLOOD SCHIZONTICIDAL ACTIVITY OF TAFENOQUINE IS IMPORTANT FOR ITS PROPHYLACTIC EFFICACY

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## 1503

### EVALUATION OF *P. FALCIPARUM* ARTEMISININ RESISTANCE IN WESTERN THAILAND AS PART OF A DOD MULTI-CENTER TRIAL II

**Krisada Jongsakul**[1], Michele Spring[1], Ilin Chuang[2], Delia Bethell[1], Pattaraporn Vanachayangkul[1], Saw Law[3], Sabaithip Srivichai[1], Worachet Kuntawunginn[1], Saowaluk Wongarunkochakorn[1], Panita Gosi[1], Chaiyaporn Chaisatit[1], Suwanna Chaorattanakawee[1], Paula Fernandes[4], Brett Forshey[4], Alaina Halbach[4], James Cummings[4], David Saunders[5], Mark Fukuda[1]

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## 1504

### PREVENTION OF MALARIA IN PREGNANCY: QUANTIFICATION OF TARGET CONCENTRATIONS OF DIHYDROARTEMISININ - PIPERAQUINE

**Rada Savic**[1], Prasanna Jagannathan[1], Richard Kajubi[2], Abel Kakuru[2], Norah Mwebaza[3], Liusheng Huang[1], Paul Natureebe[2], Mary K. Muhindo[2], Patricia Awori[2], Teddy Ochieng[2], Patience Nayebare[2], Tamara Clark[1], Diane Havlir[1], Moses R. Kamya[3], Philip J. Rosenthal[1], Grant Dorsey[1], Francesca Aweeka[1]

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## 1505

### USING POLYPHARMACOLOGY TO IDENTIFY NOVEL DRUGS AND DRUG TARGETS AGAINST MALARIA INFECTION

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## 1506

### DOXYCYCLINE TARGETS THE BACTERIA-LIKE SMALL SUBUNIT RIBOSOMAL RNA IN THE *PLASMODIUM FALCIPARUM* MALARIA PARASITE

Amanda Wasko, Alexis Toruno, Maurice Brady, Frida Ceja, Catlyn Cavender, Kelsey DeCarlo, Lin Zao Mangis, Stephanie Rasmussen, **Roland A. Cooper**

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## 1507

### ENHANCING TRANSLATIONAL SIGNIFICANCE OF *PLASMODIUM FALCIPARUM* MOUSE MODEL

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# Malaria - Diagnosis

## 1508

### DETECTING ANTIMALARIALS IN BLOOD FROM COMMUNITY SURVEYS IN TANZANIA

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## 1509

### ACTIVE DETECTION OF ASYMPTOMATIC MALARIA BY LOOP MEDIATED ISOTHERMAL AMPLIFICATION (LAMP) IN NORTHWEST ETHIOPIA

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## 1510

### EVALUATING THE COSTS AND COST-EFFECTIVENESS OF MICROSCOPY COMPARED TO LAMP USED DURING REACTIVE CASE DETECTION IN ACEH PROVINCE, INDONESIA

**Brittany W. Zelman**[1], Ranju Baral[2], Iska Zarlinda[3], Farah N. Coutrier[3], Yusrifar K. Tirta[3], Kelly C. Sanders[4], Chris Cotter[1], Herdiana Herdiana[5], Roly D. Gosling[1], Michelle S. Hsiang[6]

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## 1511

### A FIELD-BASED POINT-OF-CARE ASSAY TO DETECT ANTIMALARIAL DRUGS FROM FINGERSTICK BLOOD SAMPLES

**Erin S. Coonahan**[1], Maarten De Vos[2], Joel Tarning[3], Rick Fairhurst[1]

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## 1512

### FIRST NATIONAL INTEGRATED COMMUNITY CASE MANAGEMENT (ICCCM) ONSITE TRAINING AND SUPPORTIVE SUPERVISION ASSESSMENT IN GHANA IN JANUARY-FEBRUARY 2015

**Naa-Korkor Allotey**[1], Constance Bart-Plange[1], Keziah Malm[1], Samuel Ayamba Ayamba[2], Raphael Ntumy[2]

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## 1513

### THE ROLE OF MOBILE DEVICES IN RAPID DIAGNOSTIC TESTING QUALITY CONTROL ON COMMUNITY HEALTH VOLUNTEERS IN WESTERN KENYA

**Daniel Aswa**[1], Jeremiah Laktabai[2], Max Schiff[3], Olympia Cheruiyot[1], Eric Nalianya[4], Diana Menya[2], Stephen Kinoti[5], Zahra Hirji[5], Lisa Wong[5], James Ndungu[3], Wendy Prudhomme O'Meara[6]

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**Torrey T. Byrd**[1], G. Christian Baldeviano[2], Vincent R. Gerbasi[2], Elisa Vidal[2], Rafael Saavedra-Langer[3], Katty M. Arista[3], Viviana Pinedo-Cancino[3], Brian T. Grimberg[1]

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**Giselle F. Lima**[1], Jose Eduardo Levi[2], Silvano Wendel[3], Maria Carmen Arroyo Sanchez[4], Naomi W. Lucchi[5], Luciana Silva-Flannery[5], Alexandre Macedo-de-Oliveira[5], Juliana Inoue[1], Maria Jesus Costa-Nascimento[6], Venkatachalam Udhayakumar[5], Silvia Di Santi[1]

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**Poe Poe Aung**[1], Zaw Win Thein[1], Kyin Hla Aye[2], Hnin Wai Lwin[2], Kay Thwe Han[2], Huang Fang[3], Christopher V. Plowe[1], Kayvan Zainabadi[1], Matthew Adams[1], Myaing Myaing Nyunt[1]

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**Devaraja G. Mudeppa**[1], Riaz Basha[2], Ligia Pereira[2], Rashmi Dash[2], Shiva Matam[2], Anjali Mascarenhas[2], Jayashri Walke[2], Pooja Gawas[2], Ambika Sharma[2], John White III[1], Jennifer N. Maki[1], Edwin Gomes[2], Laura Chery[1], Pradipsinh K. Rathod[1]

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**Taye Gari**[1], Eskindir Loha[1], Wakgari Deressa[2], Tarekegn Solomon[1], Hanibale Atsebeha[1], Meselech Assegid[2], Alemayehu Hailu[2], Bernt Lindtjorn[3]
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**Rosauro Varo**[1], Lola Madrid[1], Antonio Sitóe[2], Valerie Crowley[3], Lena Serghides[3], Kevin Kain[3], Quique Bassat[1]
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**Ousmane A. Koita**[1], Lansana Sangare[1], Haiyan Deng[2], Sahare Fongoro[1], Moctar Coulibaly[1], Aliou Sissako[1], Trevor A. Thompson[2], Youssouf Diarra[1], Mamadou Ba[1], Ababacar Maiga[1], Boubakar Diallo[1], Frances J. Mather[2], Asif Anwar[2], Donald J. Krogstad[2]
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**Sean C. Murphy**[1], Elizabeth Duke[2], Kelly Shipman[2], Ryan Jensen[2], Youyi Fong[2], Emma Fritzen[3], Tracie VonGoedert[3], Stephan Duparc[4], Stephan Chalon[4], Nicola Kerr[4], Thomas Rueckle[4], James G. Kublin[2]

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# Malaria – Elimination

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**Sara E. Canavati**[1], Saranath Lawpoolsri[2], Cesia E. Quintero[3], Po Ly[4], Chea Nguon[4], Sasithon Pukrittayakamee[5], David Sintasath[6], Pratap Singhasivanon[2], Koen Peeters Grietens[7], Maxine Anne Whittaker[8]
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**Elizabeth Chiyende**, Kafula Silumbe, Chilumba Sikombe, Elisabeth Wilhelm, Todd Jennings, John M. Miller
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**Jenna E. Coalson**[1], Lauren M. Cohee[2], Andrea G. Buchwald[2], Karl Seydel[3], Terrie E. Taylor[3], Miriam K. Laufer[2], Mark L. Wilson[1]
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**Busiku Hamainza**[1], Mutinda Mudenda[1], John Miller[2], Ruben Conner[3], Hana Bilak[4], Duncan Earle[2], Hannah Slater[5], Patrick Walker[5], Azra Ghani[5], Elizabeth Chizema Kawesha[6], Peter Mwaba[6]
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**Kafula Silumbe**[1], Tim P. Finn[2], Busiku Hamainza[3], Victor Chalwe[4], Hawela Moonga[3], Travis Porter[2], Mulakwa Kamuliwo[5], Elizabeth Chizema Kawesha[6], John Miller[1], Richard W. Steketee[7], Thom P. Eisele[2]
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**Victor Chalwe**[1], Kafula Silumbe[2], Timothy P. Finn[3], Busiku Hamainza[4], Travis Porter[3], Mulakwa Kamuliwo[4], Elizabeth Chizema Kawesha[5], John M. Miller[2], Richard W. Steketee[1], Thomas P. Eisele[3]
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### THE ROLE OF THE PRIVATE SECTOR IN SURVEILLANCE FOR MALARIA ELIMINATION IN HISPANIOLA: A CASE STUDY

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**Steffanie Sinclair-Chritz**[1], Callie Scott[1], Berhane H. Tesfay[2], Adem Agmas[2], Adem Agmas[2], Belendia Serda[2], Asnakew Yeshiwondim[2], Amadou Ba[3], Farba Faye[3], Michael Hainsworth[1], Yakou Dieye[3], Adama Tall[3], Melkamu T. Zeleke[2], Girma Guesses[2], Asmamaw L. Ayenew[2], Worku Workie[2], Fekadu Muluye[2], Elhadji Doucouré[4], Tidiane Thiam[4], Souleymane Ba[4], Erica Berlin[3], Moussa Diop[3], Belay Bezabih[5], Moustapha Cissé[6], Mady Ba[6], Duncan Earle[7], Philippe Guinot[3], Caterina Guinovart[1], Asefaw Getachew[2], Richard Steketee[1]
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**Adam Bennett**[1], Travis Porter[2], Kafula Silumbe[3], Javan Chanda[3], Josh Yukich[2], Rick Steketee[4], John Miller[3], Thomas P. Eisele[2]
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**Felix Holl**, Fitti G. Weissglas, Alemayehu Midekisa1, Jonathan Smith, Adam Bennett, Hugh J. Sturrock
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**Amber M. Dismer**[1], Mérilien Jean-Baptiste[2], Jean Frantz Lemoine[2], Kimberly E. Mace[3], Daniel E. Impoinvil[3], Jodi Vanden Eng[4], Michelle A. Chang[3]
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### EPIDEMIOLOGICAL AND OPERATIONAL LESSONS LEARNED FROM A MALARIA ELIMINATION CAMPAIGN IN ZAMBIA'S LAKE KARIBA REGION

**Caitlin A. Bever**[1], Jaline Gerardin[1], Busiku Hamainza[2], Ruben Conner[3], John Miller[3], Philip A. Eckhoff[1], Duncan Earle[4], Edward A. Wenger[1]
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**Colin Ohrt**[1], Thang Duc Ngo[2], Phuc Quang Bui[2], William Bertrand[3], Hung Quoc Pham[4], Nam Dinh Nguyen[4], Duong Thanh Tran[2], The Supporting NIMPE Team, The Provincial Preventive Medicine Teams
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### MALARIA ERADICATION: ARE REGIONAL INITIATIVES CRITICAL TO ITS SUCCESS

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**Thang Duc Ngo**[1], Duong Thanh Tran[1], Nicholas Martin[2], Phuc Hong Thi Nguyen[1], Hung Quoc Pham[3], Dung Viet Dang[1], Tuong Trinh Dinh[4], Nam Dinh Nguyen[4], Gerard Kelly[5], Colin Ohrt[1], The Supporting NIMPE Team, The Provincial Preventive Medicine Teams

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# Malaria – Epidemiology

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**Medoune Ndiop**, Alioune Badara Gueye, Mady Ba, Ibrahima Diallo, Moustapha Cisse, Mamadou Lamine Diouf

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C. Mwanziva[1], L. Temu[2], M. Chiduo[3], H. Mkali[3], S. Chiduo[2], G. Amoo[4], L. Anova[5], C. Ohrt[5], **Eyako K. Wurapa**[5], A. Kalinga[3], C. Mswanya[1], Y. Kohi[1], D. Ishengoma[3], D. Janga[1]

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**Andrea G. Buchwald**[1], Jenna E. Coalson[2], Lauren M. Cohee[1], Jenny A. Walldorf[1], Nelson Chimbiya[3], Andy Bauleni[3], Kondwani Nkanaunena[3], Andrew Ngwira[3], Atupele Kapito-Tembo[4], John D. Sorkin[1], Don Mathanga[4], Terrie E. Taylor[5], Miriam K. Laufer[1]

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### PROXIMITY TO ENVIRONMENTAL RISK FACTORS INFLUENCES SPATIAL PATTERNING OF *PLASMODIUM* INFECTION PREVALENCE IN DANGASSA, MALI

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**Peter Gething**[1], David Savory[2], Alwmayehu Midekisa[2], Ricardo Andrade-Pacheco[2], Felix Holl[2], Allison Tatarsky[2], Gerry Killeen[3], Adam Bennett[2], Hugh Sturrock[2]

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**Thierry Ndeji Mukalakata**[1], Prince Kimpanga[1], Léopold Lubula[2], Mathieu Els[3]

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### MALARIA RESURGENCE IN WESTERN KENYA HIGHLAND

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### MALARIA INDICATORS IN MALANGA, KIMPESE HEALTH ZONE IN DEMOCRATIC REPUBLIC OF THE CONGO

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**M'Bouye Diallo**[1], Mahamoudou Toure[1], Daouda Sanogo[1], Sory Diawara[1], Mahamadou Diakite[1], Nafomon Sogoba[1], Ousmane Koita[1], Ayouba Diarra[1], Donald Krogstad[2], Seydou Doumbia[1]
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**Aimee R. Taylor**[1], Gustavo C. Cerqueira[2], Standwell C. Nkhoma[3], Shalini Nair[3], Ian H. Cheeseman[3], Marina McDew-White[3], Aung P. Phyo[4], Daniel M. Parker[4], François Nosten[4], Timothy J. Anderson[3], Amy Wesolowski[1], Kenth Engø-Monsen[5], Daniel E. Neafsey[2], Caroline Buckee[1]
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### CROSS-BORDER MALARIA: THE CONTRIBUTION OF POPULATION MOVEMENT TO SUSTAINED MALARIA TRANSMISSION IN MUTASA DISTRICT, ZIMBABWE

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### DEFINING THE MICRO-EPIDEMIOLOGY OF MALARIA

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### CHARACTERIZING THE ASYMPTOMATIC AND SUBMICROSCOPIC MALARIA RESERVOIR IN SOUTHERN ZAMBIA: ASSOCIATED RISK FACTORS AND GAMETOCYTE PREVALENCE

**Tamaki Kobayashi**[1], Natasha M. Laban[2], Masiliso Phiri[3], Harry Hamapumbu[2], Kelly Searle[1], Jennifer C. Stevenson[1], Philip E. Thuma[2], William J. Moss[1]
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### RETURNING TO THE PROBLEM OF MALARIA IN CHILDREN UNDER 5 IN LIBERIA

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Ghislain Makan[1], Guy Muswil[2], Oscar Mutanda[3], Rachel Hampshie[4], Patrick Kasongo[2], Mark Kostove[5], Elana Hazghia[5], Ernest Yeung[5], Bahareh Gholamzadeh[5], Nora Zwingerman[5], **Santiago Ferro**[5]
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### EVALUATION OF SEROLOGICAL BIOMARKERS OF *PLASMODIUM VIVAX* AND *PLASMODIUM FALCIPARUM* TRANSMISSION IN THE SOLOMON ISLANDS

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# Malaria - Genetics/Genomics

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### CONSERVED SEQUENCE MOTIFS IN PLACENTAL MALARIA VACCINE CANDIDATE VAR2CSA DESPITE LARGE OVERALL SEQUENCE DIVERSITY

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## 1591

### INDEPENDENT ORIGIN AND GLOBAL DISTRIBUTION OF DISTINCT *PLASMODIUM VIVAX* DUFFY-BINDING PROTEIN GENE DUPLICATIONS

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**(ACMCIP Abstract)**

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### INTERACTIONS AND COMPETITIVE GROWTH WITHIN MIXED INFECTIONS OF *PLASMODIUM FALCIPARUM*

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### MULTIPLEX BARCODED NEXT-GENERATION SEQUENCING OF MULTICLONAL *PLASMODIUM FALCIPARUM* GENOTYPES

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## 1594

### THE DIVERSITY OF RNAS EXPRESSED IN *PLASMODIUM VIVAX*

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## 1595

### EXCEPTIONALLY LONG-RANGE HAPLOTYPES IN *PLASMODIUM FALCIPARUM* CHROMOSOME 6 MAINTAINED IN AN ENDEMIC AFRICAN POPULATION

**Alfred Amambua-Ngwa**[1], Bakary Danso[1], Sukai Ceesay[1], Davies Nwakanma[1], David Jeffries[1], Umberto D'Alessandro[1], David Conway[2]
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## 1596

### DE NOVO VARIANT CALLING TO RESOLVE TRANSMISSION DYNAMICS WITHIN CLONAL *P. FALCIPARUM* SAMPLES: A CRUCIAL TOOL FOR THE MALARIA 'ENDGAME'

**Seth N. Redmond**[1], Sarah Volkman[2], Daouda Ndiaye[3], Dyann Wirth[4], Daniel Neafsey[1]
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## 1597

### ELUCIDATION OF THE DIVERGENT APICOPLAST GENOMES OF *PLASMODIUM OVALE CURTISI* AND *PLASMODIUM OVALE WALLIKERI*

Mary C. Oguike[1], Ernest D. Benavente[1], Taane G. Clark[1], Hans-Peter Fuehrer[2], Arnab Pain[3], **Colin J. Sutherland**[1]
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## 1598

### WHOLE-GENOME PROFILING OF DIFFERENTIALLY EXPRESSED GENES IN CHILDREN WITH MALARIAL ANEMIA

**Angela O. Achieng**[1], Zachery S. Karim[1], Gavin Pickett[1], Zidong Li[1], Qiuying Cheng[1], Bernard Guyah[1], Samuel B. Anyona[2], John M. Ong'echa[1], Christophe G. Lambert[1], Douglas J. Perkins[1], Prakasha Kempaiah[1]
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## 1599

### ANALYSIS OF MULTIPLICITY OF ETHIOPIAN *PLASMODIUM VIVAX* INFECTIONS AND RELAPSE PATTERNS USING PVMSP1 AMPLICON DEEP SEQUENCING

**Daibin Zhong**[1], Xiaoming Wang[1], Delenasaw Yewhalaw[2], Eugenia Lo[1], Elizabeth Hemming-Schroeder[1], Guofa Zhou[1], Ming-Chieh Lee[1], Guiyun Yan[1]
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## 1600

### IMPROVED, HIGH-RESOLUTION SINGLE-CELL GENOMIC PROFILING OF HUMAN MALARIA PARASITES

**Simon G. Trevino**[1], Shalini Nair[1], Standwell Nkhoma[2], Benjamin J. Daniel[3], Karla Moncada[3], François Nosten[4], Ian H. Cheeseman[1]
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## 1601

### DISTINCT ARCHITECTURE OF *PLASMODIUM FALCIPARUM* POPULATIONS FROM SOUTH ASIA, WITH COUNTRY-LEVEL CLUSTERING OF GENOMIC RELATIONSHIPS

**Shiva Kumar**[1], Devaraja G. Mudeppa[1], Ambika Sharma[2], Anjali Mascarenhas[2], Rashmi Dash[2], Ligia Pereira[2], Riaz B. Shaik[2], Jennifer N. Maki[1], John White[1], Wenyun Zuo[3], Shripad Tuljapurkar[3], Manoj T. Duraisingh[4], Edwin Gomes[2], Laura Chery[1], Pradipsinh K. Rathod[1]
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## 1602

### EVALUATING THE INFORMATION VALUE OF PARASITE GENOMICS FOR MALARIA ELIMINATION

**Edward A. Wenger**
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## 1603

### ABSENCE OF *IN-VIVO* SELECTION OF K13 POLYMORPHISMS AFTER ARTEMETHER LUMEFANTRINE TREATMENT IN UGANDA

**Betty Balikagala**[1], Miki Sakurai[2], Mie Ikeda[3], Shouki Yatsushiro[4], Nobuyuki Takahashi[2], Mary Auma[5], Edward H. Ntege[1], Daisuke Ito[1], Eizo Takashima[1], Nirianne Marie Q. Palacpac[6], Joseph Okello Onen[7], Masatoshi Kataoka[4], Kimura Eisaku[6], Toshihiro Horii[6], Toshihiro Mita[3], Takafumi Tsuboi[1]
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## 1604

### EUPATHDB: A POWERFUL EUKARYOTIC PATHOGEN GENOMIC AND FUNCTIONAL GENOMIC DATA MINING RESOURCE

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# Malaria – Immunology

## 1605

### THE BIOLOGICAL FUNCTION OF ANTIBODIES INDUCED BY THE RTS,S/AS01 MALARIA VACCINE CANDIDATE IS DETERMINED BY THEIR FINE SPECIFICITY

Sidhartha Chaudhury[1], Christian F. Ockenhouse[2], Jason A. Regules[3], Sheetij Dutta[4], Anders Wallqvist[1], Erik Jongert[5], Robert Paris[4], Norman C. Waters[4], Franck Lemiale[2], **Elke S. Bergmann-Leitner**[4]
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## 1606

### PLACENTAL MALARIA IS ASSOCIATED WITH ALTERED FETAL CYTOKINE PROFILES

**Sarah Boudova**[1], Titus Divala[2], Randy Mungwira[2], Patricia Mawindo[2], Tamiwe Tamoka[3], Marcelo B. Sztein[4], Kirsten E. Lyke[1], Cristiana Cairo[5], Miriam K. Laufer[1]
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## 1607

### *PLASMODIUM FALCIPARUM* INFECTION AND VACCINE RESPONSES: SHOULD WE TREAT PRESUMPTIVELY?

**Sara Anne Healy**[1], Irfan Zaidi[1], Charles Anderson[1], Issaka Sagara[2], Mahamadou S. Sissoko[2], Erin Gabriel[3], Mamadou Coulibaly[2], Jen C.C. Hume[1], Karamoko Niare[2], Fanta Koita[2], Sumana Chakravarty[4], B. Kim Lee Sim[4], Thomas L. Richie[4], Stephen L. Hoffman[4], Ogobara Doumbo[2], Patrick E. Duffy[1]
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## 1608

### PATTERNS OF ANTIBODY RESPONSES TO *PLASMODIUM FALCIPARUM* INVASION LIGANDS ACROSS DIFFERENT ENDEMIC POPULATIONS IN WEST AFRICA

**Henrietta E. Mensah-Brown**[1], Harvey Aspeling-Jones[2], Lindsay B. Stewart[2], Rupert K. Delimini[3], Francis Atuguba[4], Kwaku Asante Poku[3], Bismarck Dinko[5], Gavin J. Wright[6], James G. Beeson[7], David J. Conway[2], Gordon A. Awandare[1]
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## 1609

### ISOLATION AND CHARACTERIZATION OF HUMAN MONOCLONAL ANTIBODIES TO *PLASMODIUM VIVAX* DUFFY BINDING PROTEIN FROM MALARIA EXPOSED INDIVIDUALS FROM BRAZILIAN

**Vanessa C. Nicolete**[1], Lenore Carias[1], Sebastien Dechavanne[1], Marcelo U. Ferreira[2], Christopher L. King[1]
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## 1610

### INVESTIGATING A POTENTIAL ROLE FOR TH1-POLARIZED TFH CELLS IN DRIVING ATYPICAL MEMORY B CELL EXPANSION IN MALARIA

**Nyamekye Obeng-Adjei**, Peter Crompton
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## 1611

### HUMAN ANTIBODIES IN MALARIA: STRUCTURE, FUNCTION, MECHANISM AND NEUTRALIZATION

Darya Urusova[1], Abhishek Sethi[1], Lenore Carias[2], Nichole D. Salinas[1], Edwin Chen[1], Samanth J. Barnes[3], Sokunthea Sreng[4], Suon Seila[4], Chanaki Amaratunga[4], Rick M. Fairhurst[5], John H. Adams[3], Christopher L. King[2], **Niraj H. Tolia**[1]
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## 1612

### ELUCIDATING NATURAL KILLER CELL-MEDIATED ANTIBODY-DEPENDENT CELLULAR CYTOTOXICITY TOWARDS RED BLOOD CELLS INFECTED BY *PLASMODIUM FALCIPARUM*

**Gunjan Arora**, Geoffrey T. Hart, Sanjay A. Desai, Eric O. Long
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## 1613

### TRANSPLACENTAL TRANSFER OF MATERNAL MALARIA-SPECIFIC IGG3 IS ALTERED BY A POLYMORPHISM IN THE BINDING DOMAIN TO FCRN

**Celia Dechavanne**[1], Fernanda Alvarado[1], Magalie Dambrun[2], Jean-Michel Dugoujeon[3], Evelyne Guitard[3], Indu Malhorta[1], Andre Garcia[2], Florence Migot-Nabias[2], Christopher L. King[1]
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## 1614

### EVALUATING THE ANTIMALARIAL ANTIBODY RESPONSE TO SEVERE *P. FALCIPARUM* MALARIA IN UGANDAN CHILDREN: A CASE-CONTROL STUDY

**Victoria Nakimbugwe**[1], Robert Opoka[2], Joseph Smith[3], Chandy John[4], Arlene Dent[5]
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## 1615

### TESTING ANTIGEN INTERFERENCE ON A MULTIPLEX PLATFORM FOR MALARIA VACCINE RESEARCH

**Tanmaya Atre**, Kingsley Jarrett, Sheetij Dutta, Nancy Richie, Norman Waters, James Moon, Christian Darko
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**(ACMCIP Abstract)**

## 1616

### DEFINING MOLECULAR ADJUVANT EFFECTS ON HUMAN B CELL SUBSETS

**Jourdan K. Posner**, William L. Gosnell, Sandra P. Chang
*University of Hawai'i at Mānoa, Honolulu, HI, United States*

**(ACMCIP Abstract)**

## 1617

### IDENTIFICATION OF PROTECTIVE B-CELL EPITOPES WITHIN PFSEA-1, A NOVEL VACCINE CANDIDATE FOR *P. FALCIPARUM* MALARIA

**Christina E. Nixon**[1], Sangshin Park[1], Sunthorn Pond-Tor[1], Jennifer F. Friedman[1], Michal Fried[2], Patrick E. Duffy[2], Johnathan D. Kurtis[1]
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## 1618

### DISTINCT EXPRESSION PATTERN OF INHIBITORY MOLECULES ON CD4+ T CELLS IS ASSOCIATED WITH UNCOMPLICATED VERSUS COMPLICATED MALARIA

**Maria S. Mackroth**[1], Annemieke Abel[2], Christiane Steeg[2], Denis Yar[3], Otchere Addai-Mensah[4], Ellis Owusu Dabo[3], Thomas Jacobs[2]
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## 1619

### USING DEEP POPULATION SEQUENCING TO INVESTIGATE IMMUNE-BASED SELECTION ON ANTIGENIC *LOCI* IN *PLASMODIUM FALCIPARUM*

**Angela M. Early**[1], Peter B. Gilbert[2], Marc Lievens[3], Bronwyn MacInnis[1], Christian F. Ockenhouse[4], Sarah K. Volkman[5], the RTS,S Clinical Trials Partnership, Dyann F. Wirth[5], Daniel E. Neafsey[1]
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## 1620

### ANTIGENICITY AND TRANSMISSION-BLOCKING EFFICACY OF *PLASMODIUM VIVAX* PVS48/45 PROTEIN

**Angélica María Castellanos**[1], Myriam Arevalo-Herrera[1], Carolina Blanco[2], Xiomara Gaitan[1], Andres Amado[1], Manuela Herrera[1], Nora Céspedes[1], Carlos Echeverry[1], Andres Vallejo[3], María Isabel Arce[2], Sócrates Herrera[2]
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## 1621

### HUMAN CORD BLOOD CXCR5+ CD4 T CELLS: ASSOCIATION WITH *IN UTERO* EXPOSURE AND ANTIBODY RESPONSES TO *PLASMODIUM FALCIPARUM*

**Samuel Tassi Yunga**[1], Lionel Ambe[2], Joseph Siewe[2], Matthew Nelson[1], Obadia M. Kenji[1], Jourdan Posner[1], Sandra Chang[1], Rose G. Leke[2]
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## 1622

### *PLASMODIUM FALCIPARUM* WHOLE PROTEOME ANTIBODY PROFILES OF EUROPEAN VOLUNTEERS IMMUNIZED WITH SPOROZOITES UNDER CHLOROQUINE CHEMOPROPHYLAXIS

**Joshua M. Obiero**[1], Joseph J. Campo[2], Benjamin Mordmülle[3], Anja Scholzen[4], Else M. Bijker[4], Sumana Chakravarty[5], Andy Teng[2], Jozelyn Pablo[2], Chris Hung[2], Meral Esen[3], David H. Davies[1], Peter G. Kremsner[3], Stephen L. Hoffman[5], Robert W. Sauerwein[4], Philip L. Felgner[1]
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# Malaria – Other

## 1623

### RAPID ASSESSMENT OF A NATIONWIDE LONG LASTING INSECTICIDAL (MOSQUITO) NETS DISTRIBUTION CAMPAIGN IN BENIN

**Filemon Tokponnon**[1], Bella Hounkpe Do-Santos[1], Peter Thomas[2], Miriam Oke[1]
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## 1624

### DATA QUALITY ASSURANCE AND DATA MANAGEMENT IN A LARGE SYSTEMS BIOLOGY PROJECT: MAHPIC

**Suman B. Pakala**, Mustafa Nural, Jay Humphrey, MaHPIC Consortium, Jessica C. Kissinger
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## 1625

### FLUORESCENT LABELLING OF WILD TYPE *PLASMODIUM* SPECIES WITHIN THE MOSQUITO HOST: A NOVEL METHOD TO TARGET SPOROZOITES

**Béatrice M. Winkel**[1], Anton Bunschoten[2], Mick M. Welling[1], Leon P. Munting[1], Marijke C. Langenberg[1], Blandine Franke-Fayard[1], Séverine C. Chevalley[1], Maria Yazdanbakhsh[1], Koen Dechering[3], Fijs W. van Leeuwen[1], Meta Roestenberg[1]
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## 1626

### THE IMPACT OF REVISED HEALTH MANAGEMENT INFORMATION SYSTEM (HMIS) REPORTING FORMS ON THE QUALITY OF MALARIA SURVEILLANCE DATA IN UGANDA: AN INTERRUPTED TIME SERIES ANALYSIS

**Nelli Westercamp**[1], Sarah Staedke[2], Grant Dorsey[3], Simon P. Kigozi[4], Alex Ndyabakira[4], B.K. Kapella[1], Steven Yoon[1], Mary J. Hamel[1], Alexander Rowe[1]
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## 1627

### IMPACT OF THE APPLICATION OF THE NEW GUIDELINES OF MALARIA CASE MANAGEMENT IN SENEGAL

**Alioune B. Gueye**, Seynabou Gaye, Fatou Ba, Medoune Ndiop, Ibrahima Diallo, Moustapha Cisse, Mady Ba
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## 1628

### THE "DYNAMIC EPIDEMIOLOGY" OF MALARIA ELIMINATION IN EL SALVADOR: THE ROLE OF PROGRAM DECENTRALIZATION, STRATIFICATION AND TIMELY TREATMENT IN THE RAPID AND DURABLE DECLINE IN MALARIA INCIDENCE SINCE THE EARLY 1980S

**Robert Burton**[1], José Eduardo Chévez[2], Mauricio Sauerbrey[3], Angela Hartley[1], Kammerle Schneider[1], Caterina Guinovart[1], Matthew Boslego[1], Geoffrey Kirkwood[1], Jamie Enrique Escobar[2], Marta Alicia Ramírez[2], Mirna Elizabeth Gavidia[2], Richard Steketee[1], Carlos C. Campbell[1]
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## 1629

### MOVING TOWARD IMPROVED MEASUREMENT OF MALARIA MORTALITY AT THE POPULATION LEVEL

**Samantha Herrera**[1], Yeetey Enuameh[2], George Adiei[2], Kenneth Ae-Ngibise[2], Kwaku Poku Asante[2], Osman Sankoh[3], Seth Owusu-Agyei[2], Yazoume Ye[1]
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## 1630

### MEASURING THE IMPACT OF MALARIA ON HEALTH-RELATED QUALITY OF LIFE OF CHILDREN IN RURAL WESTERN KENYA

**Elizabeth L. Glaser**[1], Jane A. Odhiambo[1], Job Osewe[1], Bonface Leo[2], George Olang[3], M. Nabie Bayoh[3], Allyala Krishna Nandakumar[1], John E. Gimnig[4], Donald S. Shepard[1], Mary J. Hamel[4], Jennifer N. Perloff[1]
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## 1631

### THE CATASTROPHIC IMPACT OF MALARIA ON HOUSEHOLDS IN RURAL WESTERN KENYA

**Elizabeth L. Glaser**[1], Jane A. Odhiambo[1], Job Osewe[1], Bonface Leo[2], George Olang[3], M. Nabie Bayoh[3], Allyala Krishna Nandakumar[1], John E. Gimnig[4], Donald S. Shepard[1], Mary J. Hamel[4], Jennifer N. Perloff[1]
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## 1632

### IMPROVING PRIVATE SECTOR MALARIA CASE SURVEILLANCE AND QUALITY ASSURANCE USING DHIS2: LESSONS LEARNED

**Andrea Cutherell**, Cristina Lussiana, Stephen Poyer, Vicor Lara, Stephanie Dolan, Nikki Charman
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## 1633

### METHOD FOR THE SIMULTANEOUS MEASURE OF THE LEVEL OF NINE ANTIMALARIAL DRUGS IN DRIED BLOOD SPOT SAMPLES USING LC-TANDEM MASS SPECTROMETRY AND RELATIONSHIP OF LUMEFANTRINE CONCENTRATIONS IN DRIED BLOOD SPOT SAMPLES AND IN PLASMA

**Joanna Gallay**[1], Emilie Pothin[2], Sylvain Prod'hom[3], Thomas Mercier[3], Thierry Buclin[3], Blaise Genton[4], Laurent Arthur Decosterd[3]
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## 1634

### MALARIA AND HELMINTH COINFECTION-INDUCED OXIDATIVE STRESS AND CHANGES IN ANTIOXIDANT STATUS AMONG AFEBRILE SCHOOL CHILDREN IN IBADAN, SOUTHWEST NIGERIA

**George O. Ademowo**, Ayokulehin M. Kosoko, Olawunmi R. Rabiu, Hannah O. Dada-Adegbola, Olatubosun G. Arinola, Catherine O. Falade
*University of Ibadan, Ibadan, Nigeria*

## 1635

### HIGH THROUGHPUT IDENTIFICATION OF *ANOPHELES GAMBIAE* MIDGUT GENES INVOLVED THE INVASION OF *PLASMODIUM FALCIPARUM*

**Yingjun Cui**, Genwei Zhang, Guodong Niu, Xiaohong Wang, Jun Li
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# Malaria - Vaccines

## 1636

### RELATIONSHIPS BETWEEN TRAVEL AND RTS,S MALARIA VACCINE EFFICACY IN LILONGWE, MALAWI

**Corinna Y. Keeler**[1], Michael Emch[1], Larry Han[1], Jonathan Juliano[1], Francis Martinson[2], Portia Kamthunzi[2], Gerald Tegha[2], Irving Hoffman[1]
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## 1637

### ASSESSMENT OF A TRANSGENIC *PLASMODIUM BERGHEI* PARASITE EXPRESSING *PLASMODIUM FALCIPARUM* CELL-TRAVERSAL PROTEIN FOR OOKINETES AND SPOROZOITES (PFCELTOS) FOR USE AS A HOMOLOGOUS RODENT CHALLENGE MODEL TO TEST VACCINE EFFICACY

Elizabeth H. Duncan[1], Kathryne D. Walker[1], **Katherine L. Mallory**[1], Tatyana Savransky[1], Ahmed M. Salman[2], Chris J. Janse[2], Shahid M. Khan[2], Evelina Angov[1]
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## 1638

### LACK OF GEOGRAPHIC SIGNAL IN THE PATTERN OF ALLELE AND EPITOPE FREQUENCIES IN FOUR MALARIA LIVER STAGE CANDIDATE VACCINE ANTIGENS

**Amed Ouattara**[1], Moser Kara[1], Mahamadou Thera[2], Elliott F. Drábek[1], Drissa Coulibaly[2], Sonia Agrawal[1], Mark A. Travassos[1], Matthew Adams[1], Amadou Niangaly[2], Youssouf Tolo[2], David Saunders[3], Chanthap Lon[3], Kay Thwe Han[4], Shannon Takala-Harrison[1], Myaing M. Nyunt[1], Ogobara K. Doumbo[2], Christopher V. Plowe[1], Joana C. Silva[1]
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## 1639

### A CONSENSUS PROTEOME OF *PLASMODIUM VIVAX* SPOROZOITES

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## 1640

### *PLASMODIUM FALCIPARUM* CIRCUMSPOROZOITE PROTEIN ADJUVANTED WITH LIPOSOMAL ADJUVANT INDUCES HIGHLY PROTECTIVE RESPONSES IN C57BL/6 MICE AGAINST TRANSGENIC PARASITE CHALLENGE

**Christopher J. Genito**, Zoltan Beck, Timothy W. Phares, Fanta Kalle, Gary R. Matyas, Carl R. Alving, Norman C. Waters, Sheetij Dutta
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## 1640

### *PLASMODIUM FALCIPARUM* CIRCUMSPOROZOITE PROTEIN ADJUVANTED WITH LIPOSOMAL ADJUVANT INDUCES HIGHLY PROTECTIVE RESPONSES IN C57BL/6 MICE AGAINST TRANSGENIC PARASITE CHALLENGE

**Christopher J. Genito**, Zoltan Beck, Timothy W. Phares, Fanta Kalle, Gary R. Matyas, Carl R. Alving, Norman C. Waters, Sheetij Dutta
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## 1641

### MASS DIRECT SKIN FEEDS OF *ANOPHELES COLUZZII* IN THE CONTEXT OF MALARIA TRANSMISSION BLOCKING VACCINE TRIALS IN BANCOUMANA, MALI

**Daman Sylla**[1], Adam Sacko[1], Jen C.C. Hume[2], Boubacar Coulibaly[1], Chata Doumbia[1], Lakamy Sylla[1], Youssouf Sinaba[1], Mahamadou A. Maiga[1], Issaka Sagara[1], Sara A. Healy[2], Ogobara Doumbo[1], Sekou F. Traore[1], Patrick E. Duffy[2], Mamadou Coulibaly[1]
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## 1642

### DESIGN, EXPRESSION AND SCALABLE CGMP PRODUCTION OF FMP014 - A SELF-ASSEMBLING PROTEIN NANOPARTICLE AS THE BASIS OF A VACCINE AGAINST *PLASMODIUM FALCIPARUM* MALARIA

**Labdhi Seth**[1], Casey K. Storme[1], Stephen A. Kaba[1], Gary R. Matyas[2], Zoltan Beck[3], Carl R. Alving[2], Peter Burkhard[4], David E. Lanar[5]
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## 1643

### OVERCOMING DIVERSITY OF AMA1: EVIDENCE OF POLYMORPHISM DILUTION MEDIATED REFOCUSING OF RESPONSES TOWARDS CONSERVED EPITOPES IN RHESUS MONKEYS VACCINATED WITH QUADVAX+AS01

**Sheetij Dutta**[1], Lisa Dlugosz[1], Kazutoyo Miura[2], Carol Long[2], Nathan Hoyt[1], David Franco[3], Yannick Vanloubbeeck[4], Norman C. Waters[1], Adrian Batchelor[1]
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## 1644

### T CELL IMMUNOGENICITY AND CORRELATES OF PROTECTION FROM A DOSE-ESCALATION SAFETY AND EFFICACY STUDY OF PFSPZ WITH CHLOROQUINE IN MALARIA-NAÏVE ADULTS

**Andrew S. Ishizuka**[1], Benjamin Mordmueller[2], Barbara Flynn[1], Adam J. Ruben[3], Tao Li[3], B Kim Lee Sim[3], Stephen L. Hoffman[3], Peter Kremsner[2], Robert A. Seder[1]
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## 1645

### EQUATORIAL GUINEA'S FIRST EVER CLINICAL TRIAL: TOLERABILITY, SAFETY AND IMMUNOGENICITY OF PFSPZ VACCINE IN YOUNG EQUATOGUINEAN ADULTS

**Ally Olotu**[1], Vicente Urbano[2], Ali Hamad[1], Mwajuma Chemba[1], Elizabeth Nyakarungu[1], Martin Eka[2], Esther Eburi[3], Dianna Hergott[4], Carl D. Maas[5], Mitoha Ondo'o Ayekaba[5], Diosdado Nsue Milang[2], Matilde Riloha Rivas[2], Hassan Abuleil[6], Oscar Embon[6], Chris Schwabe[7], Luis Segura[3], Claudia Daubenberger[8], Marcel Tanner[8], Thomas Richie[9], Peter F. Billingsley[9], B. Kim Lee Sim[9], Salim Abdulla[1], Stephen L. Hoffman[9]
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## 1646

### PLACENTAL MALARIA VACCINES: COMPARING GLYCOSYLATED AND NON-GLYCOSYLATED N-TERMINAL DOMAINS OF *PLASMODIUM FALCIPARUM* VAR2CSA PROTEIN PREPARED AS RECOMBINANT PROTEIN OR DNA VACCINES

**Shaji Daniel**, Holly Torano, Joan Aebig, Lynn Lambert, Sarah Brockley, Emma K. Barnafo, Kelly Rausch, Michal Fried, Patrick E. Duffy
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## 1647

### CHANGING THE PARADIGM OF VACCINE DEVELOPMENT: FROM A WESTERN-LED TO AN INTERNATIONAL, MULTI-PARTNER, PARTIAL AFRICAN-FUNDED CONSORTIUM APPROACH

**Peter F. Billingsley**, on Behalf of the International PfSPZ Consortium
*Sanaria Inc, Rockville, MD, United States*

## 1648

### ADVANCING PARASITOLOGY, ENTOMOLOGY AND VACCINOLOGY BY MANUFACTURING WHOLE PARASITE (EUKARYOTIC CELL) ASEPTIC, PURIFIED VACCINES PRODUCED IN ARTHROPODS: CHALLENGES, SUCCESSES AND TRAJECTORY FOR PFSPZ VACCINES

**Kim Lee B. Sim**, on behalf of the Sanaria Manufacturing Team
*Sanaria, Rockville, MD, United States*

## 1649

### DISTRIBUTION LOGISTICS TO SUPPLY CRYOPRESERVED PFSPZ VACCINE TO TRAVEL CLINICS AND MALARIA MASS IMMUNIZATION PROGRAMS

**Eric R. James**, Adam J. Ruben, Peter F. Billingsley, Thomas L. Richie, Anusha Gunasekera, Anita Manoj, B Kim Lee Sim, Stephen L. Hoffman
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## 1650

### EVALUATION OF RPFMSP2-BASED VACCINES FOR INCLUSION IN A MULTI-COMPONENT MALARIA VACCINE FORMULATION

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**(ACMCIP Abstract)**

## 1651

### USE OF A *PLASMODIUM*-SPECIFIC CARRIER PROTEIN TO ENHANCE PRODUCTION OF RECOMBINANT PFS25, A LEADING TRANSMISSION-BLOCKING VACCINE CANDIDATE

**Elizabeth Parzych**[1], Kazutoyo Miura[2], Carole A. Long[2], James M. Burns[1]
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## 1652

### ANTIBODY PROFILES TO WHEAT GERM CELL-FREE SYSTEM SYNTHESIZED *P. FALCIPARUM* PROTEINS CORRELATE WITH PROTECTION FROM SYMPTOMATIC MALARIA IN UGANDA

**Bernard N. Kanoi**[1], Eizo Takashima[1], Masayuki Morita[1], Edward H. Ntege[1], Betty Balikagala[1], Nirianne M. Q. Palacpac[2], Adoke Yeka[3], Thomas G. Egwang[4], Toshihiro Horii[2], Takafumi Tsuboi[1]
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## 1653

### IDENTIFICATION OF PFRIPR, AN RH5-INTERACTING PROTEIN, AS A HIGHLY CONSERVED BLOOD-STAGE MALARIA VACCINE CANDIDATE AGAINST *PLASMODIUM FALCIPARUM*

**Edward H. Ntege**[1], Nobuko Arisue[2], Daisuke Ito[1], Tomoyuki Hasegawa[1], Nirianne M. Q. Palacpac[2], Thomas G. Egwang[3], Toshihiro Horii[2], Eizo Takashima[1], Takafumi Tsuboi[1]
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## Malaria/Mosquitoes - Field Prevention

### 1654

#### MULTIPLE INSECTICIDE RESISTANCE IN AN HIGHLY INFECTED POPULATION OF THE MALARIA VECTOR *ANOPHELES FUNESTUS* IN BENIN

**Rousseau Djouaka**
*IITA - Cotonou, Benin, West Africa, Cotonou, Benin*

### 1655

#### COVERAGE OF SEASONAL MALARIA CHEMOPREVENTION DELIVERED BY MOBILE TEAMS AT FIXED POINTS IN 14 DISTRICTS IN MALI, THROUGH ACCESS-SMC

**Issaka Sagara**[1], Hamma Maiga[1], Fatou Diawara[1], Mahamadou Kaya[1], Seydou Traore[1], Alassane Dembele[1], Sanga Goro[1], Moussa Traore[1], Paul Snell[2], Diakalia Kone[3], Patrice Coulibaly[4], Eric Hubbard[4], Lantonirina Razafindralambo[5], Ogobara Doumbo[1], Matthew Cairns[2], Paul J. Milligan[2], Alassane Dicko[1]
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### 1656

#### DESIGN, MONITORING, AND IMPLEMENTATION OF THE THIRD AND FOURTH ROUNDS OF SCHOOL NET DISTRIBUTION TO MAINTAIN UNIVERSAL ACCESS TO LONG-LASTING INSECTICIDAL NETS IN SOUTHERN TANZANIA

**Waziri Nyoni**[1], David Dadi[1], Noella Kisoka[1], Peace Nyankojo[2], Dismas Mwalimu[2], Renata Mandike[3], Ally Mohammed[3], George Greer[4], Naomi Kaspar[4], Karen Kramer[3], Gabrielle Hunter[5], Hannah Koenker[5], Matthew Lynch[5]
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### 1657

#### PLANT-MEDIATED EFFECTS ON MOSQUITO CAPACITY TO TRANSMIT HUMAN MALARIA

François Hien[1], Roch K. Dabiré[1], Benjamin Roche[2], Abdoulaye Diabaté[1], Serge R. Yerbanga[1], Anna Cohuet[2], Bienvenue K. Yameogo[1], Louis-Clément Gouagna[3], Richard Hopkins[4], Georges Ouedraogo[5], Frédéric Simard[2], Jean-Bosco Ouedraogo[1], Rickard Ignell[6], **Thierry Lefevre**[7]
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### 1658

#### PROCESS EVALUATION OF CONTINUOUS ITN DISTRIBUTION IN ZANZIBAR

**April Monroe**[1], Mwinyi Khamis[2], Waziri Nyoni[3], Kanuth Dimoso[3], Abdullah S. Ali[2], George Greer[4], Naomi Kaspar[4], Joshua Yukich[5], Hannah Koenker[1]
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### 1659

#### ASSESSMENT OF MALARIA TRANSMISSION FROM HUMAN TO MOSQUITOES IN SEASONAL MALARIA CHEMOPREVENTION IN THE WESTERN REGION OF BURKINA FASO

**Rakiswendé Serge Yerbanga**[1], Bienvenue K. Yaméogo[1], Franck A. Yao[1], Seydou Y. Ouattara[1], Thierry Lefèvre[2], Dari Da[1], Issaka Zongo[1], Frederic Nikièma[1], Yves-Daniel Compaoré[1], Roch K. Dabiré[1], Paul Milligan[3], Irene Kuepfer[3], Daniel Chandramohan[3], Brian Greenwood[3], Anna Cohuet[2], Jean Bosco Ouédraogo[1]
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### 1660

#### COMMUNITY ENGAGEMENT AROUND THE IMPLEMENTATION OF TRIAL OF INSECTICIDE-TREATED WALL LINING FOR MALARIA CONTROL IN RURAL TANZANIA

**Peter E. Mangesho**[1], Donald S. Shephard[2], Yara A. Halasa[2], Aggrey R. Kihombo[2], Joseph P. Mugasa[1], George Mtove[1], Louisa Messenger[3], Mohamed Seif[1], Ruth Mnzava[1], Robert Kihomo[2], William N. Kisinza[1]
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### 1661

#### SMALL SOLAR POWERED 'BƆKƆ' FANS IMPROVE COMFORT INSIDE MOSQUITO NETS IN SOUTHERN GHANA

**Olivier J. Briet**[1], Collins K. Ahorlu[2], Joshua O. Yukich[3], Constanze Pfeiffer[1], William Miller[4], Mulako S. Jaeger[1], Nitin Khanna[1], Samuel Oppong[5], Peter Nardini[4], Joseph A. Keating[3]
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### 1662

#### DIHYDROARTEMISININ-PIPERAQUINE AS INTERMITTENT PREVENTIVE TREATMENT FOR MALARIA IN A REFUGEE CAMP, ADJUMANI, UGANDA

**Matthew E. Coldiron**[1], Estrella Lasry[2], Céline Langendorf[1], Daniel Nyehangane[3], Juliet Mwanga[3], Malika Bouhenia[1], Debashish Das[1], Richard Mathela[4], Leon Salumu[2], Greg Elder[2], Rebecca F. Grais[1]
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### 1663

#### LLINS ASSESSMENT OF HOUSEHOLD COVERAGE IN DEMOCRATIC REPUBLIC OF CONGO BETWEEN 2004 AND 2014

**Solange E. Umesumbu**[1], Thierry L. Bobanga[2], Adam Wolkom[3], William Hawley[3], Celestin Manianga[2], Celestin N. Nsibu[2]
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### 1664

#### *ANOPHELES SUBPICTUS,* A NEW DOMINANT MALARIA VECTOR IN AN URBAN AREA OF WESTERN INDIA

Ashwani Kumar[1], Praveen Balabaskaran Nina[1], Ajeet Mohanty[1], Rajeshwari Hosmani[1], Shivaji Jadhav[1], Satyajit Kale[1], Anjali Mascarenhas[2], Edwin Gomes[2], Neena Valecha[3], Laura Chery[4], **Pradipsinh Rathod**[4]
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### 1665

#### COST-EFFECTIVENESS OF INSECTICIDE-TREATED WALL LINER AND INDOOR RESIDUAL SPRAYING TO PREVENT MALARIA IN KENYA AND TANZANIA

**Donald S. Shepard**[1], Yara A. Halasa[1], Aggrey Kihombo[1], Robert Mpagala Kihomo[1], Peter Mangesho[2], Louisa Messenger[3], Ruth Mnzava[2], George Mtove[2], Joseph Mugasa[2], Mohamed Seif[2], William Kisinza[2]
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*Research, Muheza, United Republic of Tanzania, [3]London School of Hygiene and Tropical Medicine, London, United Kingdom*

## 1666

### LAND COVER DETERMINANTS OF *PLASMODIUM FALCIPARUM* PREVALENCE IN URBAN AND PERI-URBAN AREAS OF NORTHERN BIOKO ISLAND

**Jordan M. Smith**, Dianna E.B. Hergott, Christopher Schwabe, Wonder P. Phiri, Akum Aveika, Jose Luis Segura
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# Bacteriology - Enteric Infections

## 1667

### ENTERIC PATHOGEN SURVEILLANCE IN CHILDREN AND ADULTS IN A CASE-CONTROL STUDY OF ACUTE DIARRHEA IN BATTAMBANG, CAMBODIA

**Ladaporn Bodhidatta**[1], Lon Chanthap[1], Chiek Sivhour[2], Woradee Lurchachaiwong[1], Sok Vannara[3], Koy Lenin[2], Brett Swierczewski[4]
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## 1668

### VIRULENCE PROFILE OF ENTEROTOXIGENIC *ESCHERICHIA COLI* (ETEC) STRAINS ISOLATED FROM PERUVIAN CHILDREN

**Fulton P. Rivera**[1], Anicia M. Medina[1], María J. Pons[2], Maribel Riveros[1], Ryan C. Maves[3], Joaquím Ruiz[4], Theresa J. Ochoa[1]
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## 1669

### VACCINATION FOR THE CONTROL OF TYPHOID FEVER: ESTIMATING THE POPULATION-LEVEL EFFECTS OF HISTORICAL TY21A FIELD TRIALS IN SANTIAGO, CHILE

**Jillian S. Gauld**, Dennis L. Chao, Hao Hu
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## 1670

### *ESCHERICHIA COLI* PATHOTYPES FROM ECUADOR: ASSOCIATION WITH DIARRHEA AND ANTIBIOTIC RESISTANCE

**Lorena Patricia Montero**[1], William Cevallos[2], Xavier Sánchez[2], Edison Puebla[2], Pablo Endara[1], Gabriel Trueba[1], Karen Levy[3]
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## 1671

### QUALITATIVE MOLECULAR DIAGNOSTICS MAY IMPROVE MEDICAL MANAGEMENT OF HOSPITALIZED SEVERELY MALNOURISHED CHILDREN WITH DIARRHEA: PRELIMINARY ANALYSIS FROM HÔPITAL DE L'AMITIÉ IN N'DJAMENA, CHAD

Bruno Akpakpo, **Ali Ouattara**, Richard Kojan, Susan Shepherd
*The Alliance for International Medical Action (ALIMA), Dakar, Senegal*

## 1672

### DRIED BLOOD SPOTS: AN ALTERNATE TOOL FOR THE ASSESSMENT OF IMMUNE RESPONSE TO CHOLERA INFECTION AND VACCINE

**Anita S. Iyer**[1], Francisco J. Luquero[2], Malika Bouhenia[3], Randon J. Gruninger[1], Edward T. Ryan[4], David A. Sack[2], Andrew S. Azman[5], Daniel T. Leung[1]
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## 1673

### THE STUNTING SYNDROME DEVELOPS IN CHILDREN WITH INCREASED MICROBIAL TRANSLOCATION AND ATTENUATED EVOLUTION OF THE GUT MICROBIOME

**Mara Zambruni**[1], Natalia I. Vigo[2], Gonzalo J. Acosta[2], Maribel Riveros[2], Maitreyee Nigalye[1], Anoma Somasunderam[1], Nadim J. Ajami[3], Miguel M. Cabada[1], Theresa J. Ochoa[2], Netanya S. Utay[1]
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## 1674

### ANTIMICROBIAL RESISTANCE PROFILE IN *ENTEROBACTER*IAE ISOLATED FROM CHILDREN UNDER-2-YEARS-OLD IN PERI-URBAN COMMUNITIES IN LIMA, PERU

David Durand[1], Erik Mercado[1], Victor Torres[1], **Theresa J. Ochoa**[2]
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## 1675

### ENTEROAGGREGATIVE *ESCHERICHIA COLI* IS SYNERGISTIC WITH OTHER ENTERIC PATHOGENS TO IMPAIR GUT ABSORPTION, CAUSE INFLAMMATION AND IMPAIR GROWTH

**Aldo A. Lima**[1], Alberto M. Soares[1], José Q. Filho[1], Alexande Havt[1], Ila F. Lima[1], Noélia L. Lima[1], Pedro H. Quintela[1], Rosa M. Mota[1], Richard L. Guerrant[2], The Mal-Ed network
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## 1676

### DOUBLE JEOPARDY: CHOLERA OUTBREAKS IN PRISONS IN THE 21ST CENTURY

**Nandini Sreenivasan**, Eric Mintz
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## 1677

### DISTRIBUTION OF *E. COLI* PATHOTYPES ALONG AN URBAN RURAL GRADIENT IN ECUADOR

**Karen Levy**[1], William Cevallos[2], Lorena Montero[3], Maritza Paez[3], Estefania Ortega[3], Xavier Sanchez[2], Edison Puebla[2], Pablo Endara[3], Gabriel Trueba[3]
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## 1678

### EPIDEMIOLOGY AND RISK FACTORS FOR CRYPTOSPORIDIOSIS IN CHILDREN IN THE MAL-ED STUDY

**Poonum Korpe**[1], Cristian Valencia[1], William A. Petri, Jr.[2], A.S.G. Faruque[3], Rashidul Haque[3], Tahmeed Ahmed[3], Priya Duggal[1]
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## Bacteriology - Systemic Infections

### 1679

#### THE SPECTRUM OF *CHROMOBACTERIUM VIOLACEUM* INFECTIONS FROM A SINGLE GEOGRAPHIC LOCATION

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### 1680

#### TARGET PRODUCT PROFILE FOR A DIAGNOSTIC ASSAY TO DIFFERENTIATE BETWEEN BACTERIAL AND NON-BACTERIAL INFECTIONS TO GUIDE ANTIMICROBIALS USE IN RESOURCE-LIMITED SETTINGS: AN EXPERT CONSENSUS

**Sabine Dittrich**[1], Birkneh T. Tadesse[1], Francis Moussy[2], Arlene Chua[3], Anna Zorzet[4], Thomas Tängdén[4], David L. Dolinger[1], Anne-Laure Page[5], John A. Crump[6], D'Acremont Valerie[7], Quique Bassat[8], Yoel Lubell[9], Norbert Heinrich[10], Paul N. Newton[11], Tim Rodwell[1], Iveth J. González[1]
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### 1681

#### INVASIVE NON-TYPHOIDAL *SALMONELLA* INFECTIONS IN ASIA: CLINICAL OBSERVATIONS, DISEASE OUTCOME AND DOMINANT SEROVARS FROM A TERTIARY REFERRAL HOSPITAL IN HO CHI MINH CITY, VIETNAM

**Lan H. Nguyen-Phu**
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### 1682

#### *COXIELLA BURNETII* ANTIBODIES ARE PREDOMINANT AMONG PATIENTS WITH UNDIFFERENTIATED FEVER IN AFGHANISTAN

**Salwa F. Ahmed**[1], Momtaz O. Wasfy[1], B. Abdel-Rahman[1], Ms Motawea[1], Nasir Stanikzai[2], R. Alami[2], Bashir Noormal[2]
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### 1683

#### DETECTION OF *SALMONELLA* BACTEREMIA IN RURAL KENYA USING FIELDABLE DIAGNOSTICS

**Aneesa Noormohamed**[1], Loreen Stromberg[2], Zachary Karim[2], Priya Dighe[1], Melinda Wren[1], Jason Gans[1], Douglas Perkins[2], Benjamin McMahon[1], Norman Doggett[1], Harshini Mukundan[1]
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### 1684

#### LEPTOSPIRAL DNA IN FEBRILE PATIENTS FROM SEMI-RURAL COMMUNITIES IN MANABÍ-ECUADOR

**Ana Maria Salinas**, Jorge Ignacio Chiriboga, Gabriel Trueba
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## Bacteriology - Trachoma

### 1685

#### PROGRESS AND CHALLENGES OF TRACHOMA ELIMINATION IN THE FAR NORTH REGION OF CAMEROON

Assumpta Lucienne Bella[1], Armelle Ngomba[2], Georges Nko'o Ayissi[1], Emilienne Epée[1], **Julie Akame**[3], Patrick Mbia[3], Henri Moungui[3], Yaobi Zhang[4], Steven D. Reid[5]
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### 1686

#### THE BURDEN OF TRACHOMA IN EASTERN EQUATORIA STATE, REPUBLIC OF SOUTH SUDAN

**Angelia Sanders**[1], Joy Chebbet[2], Aisha E. Stewart[1], Samuel Makoy[3], Peter Magok[2], Carla Blauvelt[2], Aja Kuol[3], E. Kelly Callahan[1], Scott D. Nash[1]
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### 1687

#### IMPACT OF MASS TREATMENT WITH AZITHROMYCIN FOR TRACHOMA ON SEXUALLY TRANSMITTED INFECTIONS AND ANTIMICROBIAL RESISTANCE AMONGST WOMEN IN THE SOLOMON ISLANDS

**Michael Marks**[1], James Hadfield[2], Christian Bottomley[1], Hendrick Tome[3], Richard Pitakaka[3], Robert Butcher[1], Oliver Sokana[3], Henry Kako[3], Anthony W. Solomon[1], Nicholas Thomson[2], David C. Mabey[1]
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### 1688

#### QUALITY ASSESSMENT OF THE IMPLEMENTATION OF THE TRACHOMATOUS TRICHIASIS SURGERY IN POLI HEALTH DISTRICT, CAMEROON USING SWPO METHOD (SUCCESS - WEAKNESSES - POTENTIALS - OBSTACLES)

**Yannick Nkoumou**[1], Assumpta Lucienne Bella[2], Georges Nko'ayissi[2], Godefroy Koki[3], Emilienne Epee[2], Souleymanou Yaya[2], Julie Akame[1], Henri Moungui[1], Yaobi Zhang[4], Awa Dieng[4], Whitney Goldman[5]
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### 1689

#### FACTORS PREDICTING TRACHOMA IMPACT SURVEY OUTCOMES

**Katie Zoerhoff**[1], Jeremiah M. Ngondi[2], Lisa Rotondo[1], Maureen Kelly[1], Kalpana Bhandari[1], Hannah Frawley[1], Angela Weaver[3]
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### 1690

#### CAN WE ELIMINATE TRACHOMA AS A PUBLIC HEALTH PROBLEM BY 2020?

**Amy Pinsent**, Manoj Gambhir
*Monash University, Melbourne, Australia*

## 1691

### TRAINING OF MASS DRUG ADMINISTRATION (MDA) DISTRIBUTORS, COMMUNITY MOBILIZATION AND COMMUNITY KNOWLEDGE OF MDA: A QUALITATIVE POST-MDA ASSESSMENT AMHARA, ETHIOPIA

**Eshetu Sata**[1], Aisha E. Stewart[2], Nicole Devereaux[2], Mulat Zerihun[1], Demelash Gessesse[1], Melsew Chanyalew[3], Berhan Gaudie[3], Zerihun Tadessee[1], E. Kelly Callahan[2], Scott D. Nash[2]
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# Clinical Tropical Medicine

## 1692

### MORTALITY FOLLOWING DISCHARGE IN CHILDREN ADMITTED TO A RURAL MOZAMBICAN HOSPITAL: DEVELOPMENT OF A PREDICTION MODEL TO IDENTIFY CHILDREN AT RISK OF DEATH

**Lola Madrid**[1], Antonio Sitoe[2], Marta Aldea[3], Rosauro Varo[1], Charfudin Sacoor[2], Helio Mucavele[2], Pedro Aide[2], Sozinho Acacio[2], Inacio Mandomando[2], Clara Menéndez[1], Betuel Sigauque[2], Quique Bassat[1]
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## 1693

### LYMPHATIC FILARIASIS TRANSMISSION INTENSITY ASSESSMENT IN THE URBAN AREA OF BAMAKO, MALI

**Yaya I. Coulibaly**[1], Abdallah A. Diallo[1], Siaka Y. Coulibaly[1], Housseini Dolo[1], Salif S. Doumbia[1], Lamine Soumaoro[1], Michel E. Coulibaly[1], Ilo Dicko[1], Moussa B. Sangare[1], Modibo Sangare[1], Massitan Dembele[2], Sekou F. Traore[1], Amy D. Klion[3], Thomas B. Nutman[3], Louise Kelly-Hope[4], Moses Bockarie[4]
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## 1694

### SCRUB TYPHUS AS A MAJOR CAUSE OF ILLNESS FOR PATIENTS WITH UNKNOWN FEVER ORIGIN IN GALLE, SRI LANKA

**Chien-Chung Chao**[1], Zhiwen Zhang[1], Tatyana Belinskaya[1], Chris Wood[2], Bradly P. Nicholson[2], L Gayani Tilekeratne[2], October M. Session[3], Jeremy Hsiang[2], Michael Lewis[1], Megan Reller[4], Champica K. Bodinayake[5], Ajith Nagahawatte[5], Vasantha Devasiri[5], Wasantha Kodikara-Arachichi[5], Aruna Dharshan de Silva[6], Ruvini Kurukulasooriya[5], Truls Ostbye[2], Duane J. Gubler[3], Wei-Mei Ching[1]
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## 1695

### LEPTOSPIROSIS IS ONE OF THE MAJOR DISEASES FOR PATIENTS WITH UNKNOWN FEVER ORIGIN IN GALLE, SRI LANKA

**Wei-Mei Ching**[1], Chris Woods[2], Bradly P. Nicholson[2], October M. Session[3], Champica K. Bordinayake[4], Aruna Dharshan de Silva[5], Duane J. Gubler[3]
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## 1696

### ANTIVENOM INDUCED ANAPHYLAXIS FOR TREATING NEUROTOXIC SNAKE ENVENOMATION IN NEPAL

Sanjib Sharma[1], Emilie Alirol[2], Anup Ghimire[1], Basant Sharma[3], Bishal Gautam[4], Pooja Thapa[3], Deekshya Shrestha[4], Rupesh Jha[4], Surya Shrestha[4], Surya Parajuli[5], Sitaram Parajuli[5], David Warrell[6], Francois Chappuis[2], **Walter Taylor**[7]
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## 1697

### LUNG NODULES IN CHRONIC SCHISTOSOMIASIS: A RARE CONDITION?

**Federico Giovanni Gobbi**[1], Dora Buonfrate[1], Andrea Angheben[1], Anna Beltrame[1], Matteo Bassetti[2], Luca Bertolaccini[1], Giuseppe Bogina[1], Simone Caia[1], Silvia Duranti[2], Maria Gobbo[1], Valentina Marchese[1], Stefania Marocco[1], Maria Merelli[2], Geraldo Monteiro[1], Alberto Terzi[1], Zeno Bisoffi[1]
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## 1698

### WEIGHT-FOR-AGE GROWTH-RATE FAILURE IN INFANTS IS ASSOCIATED WITH AN ALTERED BLOOD GENE EXPRESSION PROFILE INDICATING REDUCED IMMUNE RESPONSIVENESS

**Sean A. Diehl**[1], Julie A. Dragon[2], Nelson Vila-Santana[3], Jessica Hoffman[3], Timothy Hunter[3], Dorothy M. Dickson[1], Barry A. Finette[4], E. Ross Colgate[1], Uma Nayak[5], Rashidul Haque[6], William A. Petri, Jr.[5], Beth D. Kirkpatrick[1]
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## 1699

### MATERNAL IRON DEFICIENCY ANEMIA, MALARIA AND SOIL TRANSMITTED HELMINTHS ARE A MAJOR RISK FACTOR FOR ANEMIA IN EARLY CHILDHOOD

**Indu Malhotra**[1], Mary A. Uyoga[2], Daniel J. Tisch[1], Arlene E. Dent[1], Penny A. Holding[3], Christopher L. King[1]
*[1]Case Western Reserve University, Cleveland, OH, United States, [2]International Center for Behavior Studies, Mombasa, Kenya, [3]Aga Khan University Hospital, Nairobi, Kenya*

## 1700

### MAPPING AND MANAGEMENT OF A LARGE SCALE DROUGHT-ASSOCIATED SCABIES OUTBREAK IN ETHIOPIA

**Wendemageegn E. Yeshaneh**[1], Ashenafie Ayalew[2]
*[1]Bahirdar University, Bahirdar, Ethiopia, [2]Amhara Regional Health Bureau, Bahirdar, Ethiopia*

## 1701

### PROGNOSTIC CLINICAL INDICATORS FOR FATAL DENGUE IN TWO ENDEMIC AREAS OF COLOMBIA: A HOSPITAL-BASED CASE CONTROL STUDY

**Elsa Marina Rojas**[1], Luis Angel Villar[1], Victor Mauricio Herrera[1], Maria Consuelo Miranda[1], Diana Patricia Rojas[2], Adriana Margarita Gomez[1], Cristian Pallares[3], Sara Maria Cobos[3], Lizeth Pardo[4], Margarita Gélvez[1], Luz Aida Rey[1], Francisco Javier Díaz[5], Andres Paez[4], Julio Cesar Mantilla[6], Edgar Parra[7]
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## 1702

### AN EVALUATION OF MOLECULAR DIAGNOSTIC TOOLS FOR TRAVELERS' DIARRHEA: THE HOSPITAL FOR TROPICAL DISEASES EXPERIENCE

**Anna Last**[1], Claire Jenkins[2], Julie Watson[3], David Allen[4], Gauri Godbole[4]
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## 1703

### RAPID, AUTOMATED EXTRACTION AND PURIFICATION OF NUCLEIC ACIDS FROM PATHOGENS DIRECTLY FROM WHOLE BLOOD SAMPLES

**Cheryl Baird**, Elizabeth Ott, Ashley Hillman, Heather McGirk, Stephanie Thatcher
*Biofire Diagnostics, Salt Lake City, UT, United States*

## 1704

### PREVENTING MYCOBACTERIUM *LEPRAE* - ASSOCIATED DISABILITY: IDENTIFYING SOCIAL AND CLINICAL FACTORS ASSOCIATED WITH NERVE DAMAGE IN AN ENDEMIC AREA OF BRAZIL

**Juan D. Cisneros**[1], Jose A. Ferreira[2], Thelma de Filippis[2], Ana Laura Grossi de Oliveira[3], Maria Aparecida de Faria Grossi[2], Laura Pinheiro Chaves[2], Paola Souza dos Santos[2], Luiza Navarro Caldeira[2], Rafaella Rodrigues Costa[2], Maria Cavallieri Diniz[2], Carolina Suares Duarte[2], Sandra Lyon[2], Jessica K. Fairley[4]
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## 1705

### NODDING SYNDROME/EPILEPSY IN THE SANAGA RIVER BASIN (CAMEROON): AN UNNOTICED EPIDEMIC?

Julia Irani[1], Maya Ronse[1], Alfred K. Njamnshi[2], Adam Hendy[1], Michel Boussinesq[3], Joseph Kamgno[4], Bob Colebunders[5], Katja Siling[1], Tine Verdonck[1], Koen Peeters Grietens[1], **Sarah O'Neill**[1]
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## 1706

### HELMINTHS AND UNDERNUTRITION: FACILITATORS OF MYCOBACTERIUM *LEPRAE* MORBIDITY OR INNOCENT BYSTANDERS?

**Jessica K. Fairley**[1], Jose A. Ferreira[2], Thelma de Filippis[2], Ana Laura Grossi de Oliveira[3], Maria Aparecida de Faria Grossi[2], Laura Pinheiro Chaves[2], Paola Souza dos Santos[2], Luiza Navarro Caldeira[2], Rafaella Rodrigues Costa[2], Maria Cavallieri Diniz[2], Carolina Suares Duarte[2], Parminder S. Suchdev[1], Uriel Kitron[4], Sandra Lyon[2]
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## 1707

### CHITOSAN MICROPARTICLES TO DNA DETECTION IN URINE SAMPLES

**Martha Helena Jahuira Arias**
*Peruana Cayetano Heredia University, Lima, Peru*

## 1708

### ASSESSING POSSIBLE EXPOSURE TO ZIKA VIRUS IN A HOSPITAL POPULATION THROUGH A TRAVEL SCREENING QUESTION

**Aftab Iqbal**[1], Barbra Blair[1], Robin Colgrove[1], Andrew Gardner[1], Vito Iacoviello[1], Helen Jenkins[2], Mary Wilson[3], Lin Chen[1]
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## 1709

### PODOCONIOSIS: GENETIC PREDISPOSITION NORTHERN PROVINCE, RWANDA, AFRICA

**Jean Paul Bikorimana**
*Imidido Project, Musanze, Rwanda*

## 1710

### SYMPTOMS AND CLINICAL CORRELATES AS A PREDICTIVE MARKER FOR THE OUTCOMES IN TROPICAL FEVER: A TWO YEAR RETROSPECTIVE STUDY FROM CENTRAL INDIA

**Deepak Jeswani**[1], Monika Mandal[1], Dilip Kshirsagar[1], Rupali Bhanare[1], Chitra Thakare[1], Navneet Wadhwa[2], SCOUT
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## 1711

### COMPREHENSIVE CARE OF CHAGAS DISEASE IN A NON-ENDEMIC COUNTRY: THE EXAMPLE OF SPAIN

**Miriam Navarro**[1], Jordi Gómez i Prat[2], Begoña Monge-Maillo[3], José Manuel Ramos[4], Magdalena García[5], Rogelio López-Vélez[3], Isabel Claveria Guiu[2], Diego Torrús[4], Briggitte Jordan[1], Estefa Choque[6], Cristina Parada[7], Bartolomé Carrilero[8], Juan José Santos[1]
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## 1712

### IMPACT OF MICRONUTRIENT SUPPLEMENTATION COMBINED WITH MALARIA CHEMOPREVENTION ON MALARIA, ANAEMIA AND COGNITIVE DEVELOPMENT IN EARLY CHILDHOOD: FINDINGS FROM A CLUSTER RANDOMIZED STUDY IN SOUTHERN MALI

**Sian E. Clarke**[1], Natalie Roschnik[2], Moussa Sacko[3], Niele Hawa Diarra[4], Philippe Thera[4], Seybou Diarra[4], Yahia Dicko[4], Renion Saye[3], Hans Verhoef[1], Kalifa Sidibe[4], Modibo Bamadio[4], Sham Lal[1], Rebecca Jones[5], Yvonne Griffiths[6], Lauren Pisani[7], Michael Boivin[8], Fatoumata Dougnon[9], Mouctar Coulibaly[9], Bore Saran Diakite[9], Bonaventure Maiga[10]

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## 1713

### A COHORT STUDY TO ESTIMATE THE RISK MERS-COV POSES TO TRAVELERS TO THE MIDDLE EAST

**Brian L. Pike**[1], Li-Yen Chang[2], Norhayati Rusli[3], Jefree Johari[2], Chee-Sieng Khor[2], Siti-Sarah Nor'e[2], Jose A. Garcia-Rivera[4], Lokman-Hakim Sulaiman[3], Sazaly Abubakar[2]

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## 1714

### ROTAVIRUS AMONG MEDICALLY-ATTENDED CHILDREN YOUNGER THAN FIVE YEARS OF AGE WITH AND WITHOUT DIARRHEA IN LIMA, PERU FOLLOWING UNIVERSAL ROTAVIRUS VACCINE IMPLEMENTATION

**Giuliana Oyola Lozada**[1], Sarah-Blythe Ballard[2], Mayra Ochoa-Porras[1], Gerardo Sanchez-Garcia[1], Fabiola Colquechagua-Aliaga[3], Roxana Zamudio-Zeaa[1], Caryn Bern[4], Mayuko Saito[5], Dante Figueroa-Quintanilla[3], Robert Gilman[6], Holger Mayta[1]

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## 1715

### PREVALENCE AND ASSOCIATED RISK FACTORS OF DIABETES, CHRONIC KIDNEY DISEASE, HYPERTENSION AND OBESITY IN THE PERUVIAN AMAZON: THE AMARAKAERI RESERVE COHORT STUDY

Anthony Saxton[1], John Stanifer[1], Jaime Miranda[2], Ernesto Ortiz[1], **William Pan**[1]

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## 1716

### DEVELOPMENT AND PRELIMINARY CLINICAL EVALUATION OF A MOBILE TECHNOLOGY FOR DIARRHEAL DISEASE OUTBREAK MANAGEMENT

**Eric J. Nelson**[1], Farhana Haque[2], Robyn Ball[1], Stacey Maples[1], Selina Khatun[2], Mujadeed Ahmed[2], M.Waliur Rahman[2], Saraswati Kache[1], Md. Jobayer Chisti[3], Shafiqul Alam Sarker[3], Gary Schoolnik[1], Mahmudur Rahman[2]

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## 1717

### DIFFERENTIAL CLINICAL AND LABORATORY CHARACTERISTICS AMONG ADULT DENGUE PATIENTS WITH DIABETES

**Junxiong Vincent Pang**, Yee Sin Leo, David C Lye, Tsin Wen Yeo

*Tan Tock Seng Hospital, Singapore, Singapore*

# Helminths - Nematodes - Intestinal Nematodes

## 1718

### ANTHELMINTHIC SCREENING FOR PARASITIC NEMATODES

**Mostafa A. Elfawal**[1], Dan Lawler[2], Dirk Albrecht[2], Raffi Aroian[1]

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## 1719

### WHAT'S IN A NATIONAL PLAN OF ACTION? EVALUATING PROGRESS TOWARD GLOBAL CONTROL OF SOIL-TRANSMITTED HELMINTHIASES

**Lauren Abrams**, Jedidiah Snyder, Alexander Jones, David Addiss

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## 1720

### PREVALENCE OF MALARIA, GEOHELMINTHS AND ANAEMIA AMONG SCHOOL CHILDREN IN MUHEZA DISTRICT

**Billy Ngasala**[1], Lwitakubi F. Matata[1], Ahmed M. Abade[2], Patrick Tungu[2]

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## 1721

### CRYSTAL PROTEIN CRY5B AS A NOVEL AND POWERFUL ANTHELMINTIC

**Yan Hu**, David Koch, Zeynep Mirza, Thanh-thanh Thanh, Gary Ostroff, Raffi Aroian

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**(ACMCIP Abstract)**

## 1722

### PLANT DERIVED COMPOUNDS AS 'RESISTANCE-BUSTING" ANTHELMINTIC DRUG

**Zeynep Mirza**, Yan Hu, David Koch, Thanh-thanh Nguyen, Raffi Aroian, Gary Ostroff

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## 1723

### INVESTIGATING THE DIFFERENTIAL IMPACT OF SCHOOL AND COMMUNITY-BASED INTEGRATED CONTROL PROGRAMS FOR SOIL-TRANSMITTED HELMINTHS IN TIMOR-LESTE: THE (S)WASH FOR WORMS PILOT STUDY

**Naomi E. Clarke**[1], Archie C. Clements[1], Rebecca Traub[2], James McCarthy[3], Darren Gray[1], Susana V. Nery[1]

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## 1724

### IS THERE EVIDENCE THAT THE SEASONAL TIMING OF MASS DE-WORMING FOR ASCARIS IS IMPORTANT?

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## 1725

### SPONTANEOUS SEDIMENTATION IN TUBE TECHNIQUE IS AS SENSITIVE AS KATO-KATZ FOR THE DIAGNOSIS OF SOIL-TRANSMITTED HELMINTHS AND SUPERIOR FOR THE DETECTION OF *STRONGYLOIDES STERCORALIS*: A COMMUNITY-BASED STUDY IN THE AMAZON BASIN OF PERU

**George Vasquez- Rios**[1], Renato A. Errea[1], Diego Siu[1], Rodrigo Gallegos[2], Rossana Rondon[2], Kevin Duque[2], María L. Calderón[2], Katia Baca[2], Josefina Fabian[2], Luciana H. Juárez[3], Celene Uriol[3], Marco Canales[1], Angelica Terashima[1], Jorge D. Machicado[4], Luis A. Marcos[5], Frine Samalvides[1]
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## 1726

### POTENTIAL IMMUNOLOGICAL MARKERS FOR DIAGNOSIS OF HUMAN STRONGYLOIDIASIS USING HETEROLOGOUS ANTIGENS

**Ronaldo Gryschek**[1], Marcelo Corral[1], Fabiana Paula[2], Dirce Meisel[2], Vera Castilho[2], Elenice Goncalves[2], Debora Levy[2], Sergio Bydlowski[1], Pedro Paulo Chieffi[3], William Castro-Borges[4]
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## 1727

### THE EFFECT OF MATERNAL POSTPARTUM DEWORMING ON INFECTION STATUS, ANEMIA AND FATIGUE

**Layla S. Mofid**[1], Martín Casapía[2], Antonio Montresor[3], Elham Rahme[4], Brittany Blouin[1], Hugo Razuri[4], Lidsky Pezo[2], Theresa W. Gyorkos[1]
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## 1728

### SYSTEMATIC REVIEW AND META-ANALYSIS OF SOIL-TRANSMITTED HELMINTH TREATMENT EFFICACY STUDIES AND THE CASE FOR SHARING INDIVIDUAL PATIENT DATA

**Julia B. Halder**[1], Amélie M. Julé[2], Michel Vaillant[3], Maria-Gloria Basáñez[1], Piero L. Olliaro[4], Martin Walker[1]
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## 1729

### USING TRANSMISSION MODELS IN STUDY DESIGN: DETECTING ELIMINATION AND THE IMPACT OF PRE-EXISTING TREATMENT PROGRAMS

**James Truscott**, Sam Farrell, Roy Anderson
*Imperial College London, London, United Kingdom*

## 1730

### COMPARISON OF KATO-KATZ, MINI-FLOTAC AND MULTI-PARALLEL REAL-TIME POLYMERASE CHAIN REACTION TECHNIQUES FOR DETECTION OF SOIL-TRANSMITTED HELMINTHS IN FEIRA DE SANTANA, BRAZIL

**Ryan H. Avery**[1], Simone S. Oliveira[2], Aristeu V. da Silva[2], Rojelio Mejia[3], Marta M. Silva[4], Rebecca C. Christofferson[1], Laura Rinaldi[5], John B. Malone[1]
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## 1731

### ANTIPARASITIC METABOLITES OF *DALEA SPP* (*PLANTAE, FABACEAE*)

**Blaise Dondji**[1], Kaitlin L. Deardorff[1], Kiah N. Jones[1], Brianda Cardenas-Garcia[1], Lindsey Engels[1], Shannon Fulkerson[1], Cassie Ripley[1], Haley Wolhart[2], Nicholas Hansen[2], Gil Belofsky[2]
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## 1732

### A COMPARATIVE ANALYSIS OF STOOL PRESERVATION TECHNIQUES FOR THE MOLECULAR DETECTION OF SOIL TRANSMITTED HELMINTHS

**Nils Pilotte**[1], Marina Papaiakovou[1], Jessica R. Grant[1], Yan Hu[2], David Koch[2], Alastair Matheson[3], Kristjana Asbjornsdottir[3], Raffi V. Aroian[2], Judd L. Walson[3], Steven A. Williams[1]
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## 1733

### COST ASSESSMENT OF FIVE PARASITOLOGICAL TECHNIQUES FOR THE DIAGNOSIS OF *STRONGYLOIDES STERCORALIS*: EVALUATION IN A HIGHLY ENDEMIC REGION

**Renato A. Errea**[1], George Vasquez-Rios[2], Marco Canales[2], Luciana H. Juarez[3], Maria L. Calderon[4], Claudia R. Rondon[4], Katia P. Baca[4], Celene Uriol[3], Rosario J. Fabian[4], Rodrigo Gallegos[4], Diego Siu[2], Kevin R. Duque[5], Angelica Terashima[2], Jorge D. Machicado[6], Luis A. Marcos[7], Frine Samalvides[8]
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### PREDICTING INFECTION DISTRIBUTION AND BURDEN OF DISEASE USING SPATIOTEMPORAL MODELS FOLLOWING A SEVEN YEAR MASS DRUG ADMINISTRATION PROGRAM AND LONGITUDINAL STUDY IN BURUNDI: 2008 - 2014

**Mohamad Assoum**[1], Ricardo S. Magalhaes[1], Giuseppina Ortu[2], Colleen Lau[1], Archie Clements[3], Maria-Gloria Basanez[4], Kate Halton[5]
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## HIV and Tropical Co-Infection

### 1735

#### PSYCHOSOCIAL ADJUSTMENT IN PERINATALLY HUMAN IMMUNODEFICIENCY VIRUS INFECTED OR EXPOSED CHILDREN

**Amara E. Ezeamama**[1], Florence N. Kizza[1], Sarah K. Zalwango[2], Allan K. Nkwata[1], Juliet N. Sekandi[1], Robert KaKaire[1], Noah Kiwanukah[3], Christopher C. Whalen[1]
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### 1736

#### PERCEPTION OFHUMAN IMMUNODEFICIENCY VIRUS SCREENING AMONG PASSERSBY ALONG A STREET CONNECTING THE EAST AND WEST GATES OF THE ADVENTIST UNIVERSITY AT CARREFOUR, HAITI, AUGUST 2ND 5TH, 2015

**Miracle Destine Apollon**
*FETP, Port au Prince, Haiti*

### 1737

#### PREVALENCE OF CERVICAL CANCER (CC) SCREENING AND THE ROLE OF KNOWLEDGE OF CC RISK AND SCREENING GUIDELINES FOR WOMEN LIVING WITH HIV IN LIMA, PERU

**Jeanne R. Delgado**[1], Luis Menacho[2], Eddy Segura[3], Fernando Roman[2], Robinson Cabello[2]
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### 1738

#### HIV/NCD INTEGRATED CARE: A LITERATURE REVIEW

**Jessica Wilkinson**, Michael Smalky, Benjamin Kasdan
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### 1739

#### HIV CO-INFECTION WITH *PLASMODIUM VIVAX* MALARIA AND OTHER TROPICAL INFECTIOUS DISEASES IN THE PERUVIAN AMAZON

**Deanna R. Zhu**[1], Viviana V. Pinedo-Cancino[2], Katty M. Arista-Flores[2], Maria E. Vásquez-Ch[2], Rafael J. Saavedra-Langer[2], Stephanie Montero[1], Lastenia Ruíz-Mesía[3], Martin Casapia[4], Cesar Ramal-Asayag[5], Andres G. Lescano[1]
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### 1740

#### PRESENTATION, ETIOLOGY, AND OUTCOME OF FEBRILE INDIAN PATIENTS DIFFERS BY HIV STATUS

Dileep Kadam[1], **Matthew L. Robinson**[2], Ivan Marbaniang[3], Anju Kagal[1], Renu Bharadwaj[1], Priyanka Raichur[3], Savita Kanade[3], Jonathan Sachs[4], Nikhil Gupte[3], Amita Gupta[2], Vidya Mave[3]
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### 1741

#### CONDOMLESS INSERTIVE ANAL SEX AND GENDER IDENTITY AMONG MEN WHO HAVE SEX WITH MEN IN TOGO

**Horacio Ruisenor**[1], Ashley Grosso[2], Sosthenes Ketende[2], Anato Simplice[3], Vincent Pitche[4], Jules Tchalla[5], Dometo Sodji[6], Stefan Baral[2]
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### 1742

#### COMPARISON OF ASYMPTOMATIC AND CLINICAL MALARIA FREQUENCIES BETWEEN HIV POSITIVE AND HIV NEGATIVE INDIVIDUALS LIVING IN GABON

**Marielle K. Bouyou-Akotet**[1], Jeanne V. Koumba Lengongo[1], Denise P. Mawili Mboumba[1], Magloire Ondounda[2], Eric Kendjo[1], Madeleine Okome Nkoumou[1]
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### 1743

#### LEVERING HIV DIAGNOSTIC AND CARE INFRASTRUCTURE IN RWANDA TO ACCELERATE THE ROLL-OUT OF NEW PEDIATRIC TB TREATMENT FORMULATIONS

Jamie I. Forrest[1], Aranka Anema[2], Alejandro Cravioto[3], Warren Stevens[3], **Edward J. Mills**[1]
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### 1744

#### SEXUALLY TRANSMISSIBLE INFECTIONS (STI'S) AMONG HIV CLIENTS ATTENDING AN URBAN UGANDAN HIV CLINIC

**Peterson Stephen Kyebambe**, Christine Namala
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## Kinetoplastida - Cellular and Molecular Biology (Including *Leishmania* and Trypanosomes)

### 1745

#### *TRYPANOSOMA CRUZI* INHIBITION OF SIRT1/PGC1 ACTIVITY CONTRIBUTES TO ANTIOXIDANT/OXIDANT IMBALANCE BUT NOT TO MITOCHONDRIAL BIOGENIC DEFECTS: BENEFITS OF SIRT1-TARGETED THERAPY IN CHAGAS DISEASE

**Xianxiu Wan**, Jian-jun Wen, Sue-Jie Koo
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### 1746

#### THE *LEISHMANIA* METAPHYLOME: A COMPREHENSIVE SURVEY OF *LEISHMANIA* PROTEIN PHYLOGENETIC RELATIONSHIPS

**Hugo Oswaldo Valdivia**[1], Larissa L. Scholte[2], Guilherme Oliveira[2], Toni Gabaldón[3], Daniella C. Bartholomeu[1]
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**(ACMCIP Abstract)**

## 1747

### POLYMORPHISMS IN CASPASE-1 ARE ASSOCIATED WITH CHAGAS CARDIOMYOPATHY IN SANTA CRUZ, BOLIVIA

**Katherine Fu**[1], Roxana Zamudio[2], Jo Henderson-Frost[3], Alex Almuedo[4], Hannah Steinberg[5], Stephen Clipman[5], Gustavo Duran[6], Rachel Marcus[7], Thomas Crawford[8], Daniel Alyeshmerni[8], Rony Colanzi[9], Jorge Flores[6], Robert Gilman[5], Caryn Bern[10], Chagas Disease Working Group in Bolivia and Peru
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## 1748

### ARTEMISININ DIMERS AS PROMISING NEW DRUG LEADS FOR VISCERAL LEISHMANIASIS

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## 1749

### IDENTIFICATION AND CHARACTERIZATION OF "YINP", A NOVEL GENE INVOLVED IN *LEISHMANIA* PATHOGENESIS. A POTENTIAL NEW TARGET FOR DRUG DISCOVERY

Miriam Algarabel Olona[1], Celia Fernandez-Rubio[1], Andres Vacas Oleas[1], Esther Larrea[2], Carmen Sanmartin[3], Socorro Espuelas[4], **Paul Nguewa**[1]
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## 1750

### PROTEOMIC ANALYSIS OF PLASMA-DERIVED EXTRACELLULAR VESICLES IN NATURAL INFECTIONS OF *PLASMODIUM VIVAX, TRYPANOSOMA CRUZI* AND *FASCIOLA HEPATICA*

**Joan Segui Barber**[1], Alicia Galiano[2], Isabel Diaz[3], Emanuella Fajardo[4], Antonio Marcilla[5], Igor C. Almeida[4], Antonio Osuna[3], Hernando A. del Portillo[6]
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## 1751

### IDENTIFICATION OF NOVEL INHIBITORS OF *LEISHMANIA* INITIATION FACTOR 4A AND ASSESSMENT OF THEIR BIOLOGICAL EFFECTS ON PARASITE GROWTH

**Emna Harigua-Souiai**[1], Yosser Zina Abdelkrim[1], Imen Bassouùi[1], Ons Zakraoui[1], Khadija Essafi-Benkhadir[1], Michael Nilges[2], Arnaud Blondel[2], Ikram Guizani[1]
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## 1752

### GENOTYPING OF PANAMANIAN *TRYPANOSOMA CRUZI* STOCKS USING A MAXICIRCLE MULTILOCUS SEQUENCE TYPING APPROACH

**Jose E. Calzada**[1], Azael Saldaña[1], Prasad Padmanabhan[2], Corina de Juncá[3], Franklyn Samudio[1], Barbara A. Burleigh[2]
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## 1753

### EVALUATION OF RHOB GENE SILENCING MEDIATED BY SHRNA ON INFECTION PHENOTYPE OF U937 CELL DERIVED MACROPHAGES INFECTED WITH *LEISHMANIA* (*VIANNIA*) *BRAZILIENSIS*

**Clemencia Ovalle**, Diana Londoño-Barbosa, Carlos Franco-Muñoz
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**(ACMCIP Abstract)**

## 1754

### TRANSCRIPTIONAL PROFILE OF HUMAN WHOLE BLOOD CELLS STIMULATED WITH SOLUBLE *LEISHMANIA* ANTIGENS

**Leonardo C. Ferreira**, João F. Neto, Selma M. Jeronimo
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## 1755

### BACTERIAL CO-INFECTION IN MURINE CUTANEOUS LEISHMANIASIS

**Tiffany Borbón**[1], Gwendolyn Clay[1], Fayyaz Sutterwala[2], Mary Wilson[1]
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## 1756

### PHYLOGENETIC ANALYSIS OF RNA OF CRIMEAN-CONGO HEMORRHAGIC FEVER AND WEST NILE FEVER SELECTED IN KAZAKHSTAN

**Yerlan Sansyzbayev**[1], P. N. Deryabin[1], T. I. Nurmakhanov[1], V. E. Berezin[2], A. Shevtsov[1], A. N. Vilkova[1], B. B. Atshabar[1], O. U. Yeskhodzhaev[1], R. Sailaubekuly[1], T. Z. Ayazbayev[1], M. V. Kulyomin[1], A. V. Andryuschenko[1], F. G. Bidashko[1], V. A. Tanitovskiy[1], A. V. Parfenov[1], L. B. Belonozhkina[1], L. M. Atovulaeva[1]
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# Kinetoplastida - Immunology (Including *Leishmania* and Trypanosomes)

## 1757

### ANTI-*LEISHMANIA DONOVANI* ANTIBODIES ENHANCE PROMASTIGOTES INTERNALIZATION INTO HOST MACROPHAGE

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## 1758

### THE ROLE OF IL-10 AND IFN-γ IN VIRULENCE OF DERMOTROPIC *LEISHMANIA DONOVANI* IN SRI LANKA

**Udeshika L. Kariyawasam**[1], Yamuna D. Siriwardena[1], Anuradha Dube[2], Hira L. Nakhasi[3], Nadira D. Karunaweera[1]
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## 1759

### CUTANEOUS LEISHMANIASIS DUE TO *LEISHMANIA DONOVANI*: ROLE OF IL-4 AND IFN-GAMMA IN LESION HEALING

**Nuwani H. Manamperi**[1], Steve Oghumu[2], Nishantha Pathirana[3], Deepani Munidasa[4], Vijani Somaratne[5], Vipula C. de Silva[6], Arunasalam Pathmeswaran[1], Wimaladharma Abeyewickreme[1], Abhay R. Satoskar[2], Nadira D. Karunaweera[6]
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## 1760

### OXYGEN METABOLISM REGULATES MACROPHAGE SUSCEPTIBILITY TO *TRYPANOSOMA CRUZI*

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**(ACMCIP Abstract)**

## 1761

### MACROPHAGE CELLULAR IMMUNE RESPONSES IN CUTANEOUS LEISHMANIASIS AGAINST *LEISHMANIA DONOVANI*

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**(ACMCIP Abstract)**

## 1762

### IDENTIFICATION OF MICRORNA-21 AS A BIOMARKER IN LIVE ATTENUATED *LEISHMANIA* VACCINE INDUCED PROTECTIVE IMMUNITY

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**(ACMCIP Abstract)**

## 1763

### CTLA-4 AND ICOS COSTIMULATORS: POSSIBLE ROLE DURING ACTIVE VISCERAL LEISHMANIASIS

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**(ACMCIP Abstract)**

## 1764

### BIOMARKERS OF PROTECTIVE IMMUNITY INDUCED BY LIVE ATTENUATED *LEISHMANIA DONOVANI* PARASITES IN PRESENCE OF ASYMPTOMATIC INFECTION

**Nevien Ismail**, Amit Kaul, Parna Bhattacharya, Sreenivas Gannavaram, Hira Nakhasi
*U.S. Food and Drug Administration, Silver Spring, MD, United States*

**(ACMCIP Abstract)**

## 1765

### B-CELL ACTIVATING FACTOR (BAFF) IS INVOLVED IN DEVELOPMENT OF SPLENOMEGALY DURING EXPERIMENTAL VISCERAL LEISHMANIASIS

**Satoko Omachi**, Wataru Fujii, Chizu Sanjoba, Yoshitsugu Matsumoto, Yasuyuki Goto
*The University of Tokyo, Tokyo, Japan*

## 1766

### DETECTION OF A FLAGELLAR ANTIGEN OF *TRYPANOSOMA CRUZI* IN URINE OF PATIENTS WITH HIV/CHAGAS CO-INFECTION USING NANOPARTICLES

**Elizabeth Sofia Astupina Figueroa**[1], Holger Mayta[1], Remo Gonza[1], Alessandra Romero[1], Yagahira Castro[2], Robert Gilman[2], Alessandra Luchini[3], Lance Liotta[3], Working Group on Chagas Disease Bolivia and Peru
*[1]Cayetano Heredia University, Lima, Peru, [2]Department of International Health, Johns Hopkins University, Baltimore, MD, United States, [3]Center for Applied Proteomics and Molecular Medicine, George Mason University, Manassas, VA, United States*

**(ACMCIP Abstract)**

# Pneumonia, Respiratory Infections and Tuberculosis

## 1767

### IMPROVING ACCESS TO ESSENTIAL OXYGEN THERAPY AND PULSE OXIMETRY FOR CHILDREN

**Gwen Ambler**[1], Jaclyn Delarosa[1], Grace Wu[2], Michael Ruffo[1], Lisa Smith[1], Bonnie Keith[1], Darin Zehrung[1]
*[1]PATH, Seattle, WA, United States, [2]Boston University, Boston, MA, United States*

## 1768

### DRUG RESISTANCE AND MOLECULAR CHARACTERIZATION OF *M. TUBERCULOSIS* ISOLATED FROM PULMONARY TUBERCULOSIS SUDANESE PATIENTS

**Mohamed S. Karamalla**
*National University - Sudan, Khartoum, Sudan*

## 1769

### THE USEFULNESS OF OXIMETRY IN TRIAGING FEBRILE CHILDREN AT OUTPATIENT LEVEL: EXPERIENCE FROM A CLINICAL TRIAL IN DAR ES SALAAM, TANZANIA

**Kristina Keitel**[1], Frank Kagoro[2], John Masimba[2], Josephine Samaka[2], Zamzam Said[2], Hosiana Temba[2], Willy Sangu[2], Blaise Genton[3], Valérie D'Acremont[4]
*[1]Swiss Tropical and Public Health Institute/Boston Children's Hospital, Basel, Switzerland, [2]Ifakara Health Institute, Dar es Salaam, United Republic of Tanzania, [3]Swiss Tropical and Public Health Institute/University Hospital Lausanne, Basel, Switzerland, [4]Swiss Tropical and Public Health Institute/Policlinique Universitaire Médicale Lausanne, Basel, Switzerland*

## 1770

### EARLY TREATMENT OUTCOMES FOR THE FIRST COHORT OF PATIENTS INITIATED ON PULMONARY MULTI-DRUG RESISTANT TUBERCULOSIS TREATMENT AT PUBLIC REGIONAL REFERRAL HOSPITALS IN UGANDA

**Martin Mbonye**[1], Augustin Muhwezi[1], John-Paul Otuba[1], Christopher Wandera[1], Hilary Alima[1], Gladys Tugume[1], Beth Turesson[2], Tisna Veldhuijzen Van Zanten[2]
*[1]University Research Co., LLC, Kampala, Uganda, [2]University Research Co., LLC, Washington, DC, United States*

## 1771

### EVALUATION OF VITAMIN D LEVELS AND PREVALENT TB AMONG HIV INFECTED IN ZAMBIA

**German Henostroza**[1], Amanda L. Willig[1], Muyunda Siyambango[2], Jorge M. Rodriguez[1], Stewart Reid[1], Douglas C. Heimburger[3], Jose R. fernandez[1]
*[1]University of Alabama at Birmingham, Birmingham, AL, United States, [2]Centre for Infectious Disease Research in Zambia, Lusaka, Zambia, [3]Vanderbilt University, Vanderbilt, TN, United States*

## 1772

### IGG ANTIBODY SECRETION IN LYMPHOCYTE SUPERNATANT AMONG PAKISTANI CHILDREN WITH CONFIRMED TUBERCULOSIS

**Najeeha Talat**[1], Farah Qamar[1], Kumail Ahmed[1], Shazia Sultana[1], Farzeen Hirani[1], Aisha Mehnaz[2], Fehmina Arif[2], Tania Thomas[3]
*[1]Aga Khan University, Karachi, Pakistan, [2]Civil Hospital Karachi, Karachi, Pakistan, [3]University of Virginia, Charlottesville, VA, United States*

## 1773

### CHARACTERIZATION OF AN ALGORITHM FOR LOCAL SEASONAL INFECTIOUS DISEASE OUTBREAK DETECTION USING A SIMULATION STUDY

**Alexandria C. Brown**, Stephen A. Lauer, Nicholas G. Reich
*University of Massachusetts Amherst, Amherst, MA, United States*

## 1774

### A GLOBAL FRAMEWORK FOR STRATEGIC TUBERCULOSIS PREVENTION AND CONTROL IN THE WORKPLACE

**Mary C. Simmons**[1], Amanda Brown Marusiak[2], Nancy C. Wojcik[3], Susan Ngunjiri[4], Malick Diara[1]
*[1]Exxon Mobil Corporation, Spring, TX, United States, [2]Airswift, Houston, TX, United States, [3]ExxonMobil Biomedical Sciences, Inc., Annadale, NJ, United States, [4]Fircroft, Houston, TX, United States*

## 1775

### DECIPHERING LONG TERM DYNAMICS AND ASSESSING IMMUNIZATION CAMPAIGNS OF MEASLES IN CHINA

**Sheng Li**[1], Chao Ma[2], Lizin Hao[3], Lisa Cairns[4], Huiming Luo[5], Ning Wang[5], Qiru Su[6], Zhijie An[6], Fubao Ma[7], Shuyuan Xie[8], Aiming Xu[9], Zhengrong Ding[10], Hui Li[11], Hauling Wang[5], Li Li[6], Matthew Ferrari[12]
*[1]City University of New York School of Public Health, New York, NY, United States, [2]National Immunization Program, China CDC, Beijing, China, [3]National Immunization Program, China Centers for Disease Control and Prevention, Beijing, China, [4]Global Immunization Division, Centers for Disease Control and Prevention, Atlanta, GA, United States, [5]China National CDC, Beijing, China, [6]National CDC, China, Beijing, China, [7]Jiangsu Provincial CDC, China, Nanjing, China, [8]Zhejiang Provincial CDC, China, Hangzhou, China, [9]Shandong Provincial CDC, Jinan, China, [10]Yunnan Provincial CDC, Kunming, China, [11]Gansu Provincial CDC, Lanzhou, China, [12]Pennsylvania State University, College Park, PA, United States*

## 1776

### RESPIRATORY OUTBREAKS DURING AN OUTBREAK INVESTIGATION COURSE

**Jean-Paul Carrera**[1], Cesar V. Munayco[2], Marco A. Acuña[3], Gabriela Salmón-Mulanovish[4], Stephanie Montero-Trujillo[5], Mónica Chiu[6], Mauricio Cerpa[6], Susana Altamirano[7], Aida Soto[8], Guillermo Gonzalvez[8], Jenny Ojeda[9], Roberto Montoya[10], María Almirón[6], Andrés G. Lescano[5]
*[1]Gorgas Memorial Institute, Panama, Panama, [2]Uniformed Services University of the Health Sciences, Bethesda, MD, United States, [3]Ministerio de Salud de Chile, Aysén, Chile, [4]Duke University, Durham, NC, United States, [5]Universidad Peruana Cayetano Heredia, Lima, Peru, [6]Pan American Health Organization, Washington, DC, United States, [7]Ministerio de salud Publica de Nicaragua, Managua, Nicaragua, [8]Pan American Health Organization, Managua, Nicaragua, [9]Ministerio de salud Pública del Ecuador, Quito, Ecuador, [10]Pan American Health Organization, Quito, Ecuador*

## 1777

### IMPLICATION OF SOUND RECORDING SYSTEM ON TREATMENT SUCCESS FOR TB PATIENTS IN PORT HARCOURT NIGERIA

**Anastasia I. Isodje**[1], Omosivie Maduka[2], Charles Tobin-West[2]
*[1]University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria, [2]University of Port Harcourt, Port Harcourt, Nigeria*

## 1778

### ANTIMYCOBACTERIAL AND PHYTOCHEMICAL ANALYSIS OF METHYL TERT-BUTYL ETHER EXTRACTS FROM THE FRUIT SKIN AND LEAVES OF *ANNONA MURICATA* LINN

**Wisdom Iyanda-Joel**, Michael Nshiogu, Emeka E. Iweala, Shalom Chinedu
*Covenant University, Ota, Nigeria*

# Trematodes - Schistosomiasis - Epidemiology, Diagnosis and Treatment

## 1779

### A LECTIN-BASED ASSAY FOR DETECTION OF SCHISTOSOMIASIS

**Anthony Luyai**[1], W. Evan Secor[2]
*[1]IHRC, Inc, Atlanta, GA, United States, [2]Centers for Disease Control and Prevention, Atlanta, GA, United States*

## 1780

### THE PERSISTENT PARASITE: WHY DO *SCHISTOSOMA MANSONI* INFECTION LEVELS REMAIN HIGH IN THE RURAL UGANDAN VILLAGE OF WAKAWAKA EVEN AFTER OVER A DECADE OF TREATMENT?

**Elizabeth Hollenberg**[1], Fiona Fleming[1], Edridah Tukahebwa[2], Jane Whitton[1], Yolisa Nalule[1], Alan Fenwick[1], Arminder Deol[1]
*[1]Schistosomiasis Control Initiative, London, United Kingdom, [2]Ministry of Health Uganda, Kampala, Uganda*

## 1781

### COMMUNITY-WIDE PATTERNS OF INFECTION AFTER MORE THAN TEN YEARS OF PREVENTIVE CHEMOTHERAPY FOR SCHISTOSOMIASIS AND SOIL-TRANSMITTED HELMINTH INFECTION IN UGANDA: ARE WE READY TO MOVE BEYOND MORBIDITY CONTROL?

**Arminder K. Deol**[1], Michael D. French[1], Martin Walker[2], Edridah Tukahebwa[3], Judy Fernandez[1], Fiona Fleming[1], Yolisa Nalule[1], Joanne P. Webster[4], Maria-Gloria Basáñez[2]
*[1]Schistosomiasis Control Initiative, London, United Kingdom, [2]Imperial College London, London, United Kingdom, [3]Ministry of Health Uganda, Kampala, Uganda, [4]Royal Veterinary College, London, United Kingdom*

## 1782

### MODELLING THE EFFECT OF A POTENTIAL VACCINE APPLICATION ON THE SCHISTOSOME PARASITE DYNAMICS

**Andria Stylianou**[1], Afzal A. Siddiqui[2], Roy M. Anderson[1]
*[1]Imperial College London, London, United Kingdom, [2]Texas Tech University, Lubbock, TX, United States*

## 1783

### UROGENITAL SCHISTOSOMIASIS: WHAT DO SCHOOLCHILDREN IN THE EASTERN REGION OF GHANA KNOW ABOUT THE DISEASE?

**Rachel Martel**, Alexandra Kulinkina, David M. Gute, Elena N. Naumova, David Tybor, Karen Kosinski
*Tufts University, Medford, MA, United States*

## 1784

### SPATIOTEMPORAL MODELING OF SCHISTOSOMIASIS IN GHANA: LINKING REMOTE SENSING DATA TO INFECTIOUS DISEASE

**Madeline R. Wrable**[1], Alexander Liss[1], Alexandra Kulinkina[1], Magaly Koch[2], Nana-Kwadwo Biritwum[3], Karen Kosinski[4], David M. Gute[1], Elena Naumova[1]
*[1]Tufts University, Boston, MA, United States, [2]Boston University, Boston, MA, United States, [3]Neglected Tropical Disease Division of Ghana Health Services, Accra, Ghana, [4]Department of Community Health, Tufts University, Boston, MA, United States*

## 1785

### EPIDEMIOLOGICAL MAPPING OF SCHISTOSOMIASIS AND SOIL TRANSMITTED HELMINTHIASIS IN 19 STATES AND THE FEDERAL CAPITAL TERRITORY (FCT), NIGERIA

**Obiageli J. Nebe**[1], Ifeoma N. Anagbogu[1], Evelyn N. Ngige[1], Sunday Isiyaku[2], William E. Adamani[2], Aliyu Mohammed[3], Francisca Olamiju[4], Amy Mayberry[5], Florence Nduka[6], Christopher S. Ogoshi[7], Benjamin C. Nwobi[8]
*[1]Federal Ministry of Health, Abuja, Nigeria, [2]Sightsavers, Nigeria, Kaduna, Nigeria, [3]Helen Keller International, Abuja, Nigeria, [4]Mission To Save The Helpless (MITOSATH), Jos, Nigeria, [5]Children Investment Fund Foundation UK, London, United Kingdom, [6]University of Portharcourt Nigeria, Portharcourt, Nigeria, [7]Health and Development Support Programme, Jos, Nigeria, [8]Research Triangle International/ ENVISION Project, Abuja, Nigeria*

## 1786

### EVALUATION OF A URINE POOLING STRATEGY FOR THE RAPID AND COST-EFFICIENT PREVALENCE CLASSIFICATION OF SCHISTOSOMIASIS

**Nathan C. Lo**[1], Jean T. Coulibaly[2], Eran Bendavid[1], Eliézer K. N'Goran[3], Jürg Utzinger[4], Jennifer Keiser[4], Isaac I. Bogoch[5], Jason R. Andrews[1]
*[1]Stanford University School of Medicine, Stanford, CA, United States, [2]Université Félix Houphouët-Boigny, Centre Suisse de Recherches Scientifiques en Côte d'Ivoire, Swiss Tropical and Public Health Institute, University of Basel, Abidjan, Côte D'Ivoire, [3]Université Félix Houphouët-Boigny, Centre Suisse de Recherches Scientifiques en Côte d'Ivoire, Abidjan, Côte D'Ivoire, [4]Swiss Tropical and Public Health Institute and University of Basel, Basel, Switzerland, [5]University of Toronto, University Health Network, Toronto, ON, Canada*

## 1787

### SIZE MATTERS: CHANGING POPULATION STRUCTURE MEANS CHANGING SAMPLING REQUIREMENTS FOR SCHISTOSOME POPULATIONS

**Lúcio M. Barbosa**[1], Luciano K. Silva[2], Moreno Rodrigues[2], Walter A. Blank[3], Mitermayer G. Reis[2], Ronald E. Blanton[3]
*[1]Bahiana School of Medicine and Public Health, Salvador, Brazil, [2]Oswaldo Cruz Foundation, Bahia, Salvador, Brazil, [3]Case Western Reserve School of Medicine, Cleveland, OH, United States*

## 1788

### SCHISTOSOMIASIS DIAGNOSIS AND CLINICAL MANAGEMENT: USE OF IMMUNODIGNOSIS, DNA BASED ASSY AND DETECTION OF CIRCULATING CATHODIC ANTIGEN (POC-CCA) PRE AND POST-PRAZIQUANTEL IN NON ENDEMIC AREAS

**Marta G. Cavalcanti**, Aline Fernandes Cunha, José Mauro Peralta
*Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil*

## 1789

### SCHISTOSOMIASIS IN SUB-SAHARAN AFRICA: SUCCESSES AND BARRIERS TO COMPLETE ERADICATION

**Omotola M. Iranloye**
*Dej & K Field School, Agbara, Ogun State, Nigeria*

# Trematodes - Schistosomiasis - Immunology

## 1790

### THE ASSOCIATION OF RESISTANCE TO *SCHISTOSOMA MANSONI* REINFECTION AND HOST IMMUNITY IN MBITA KENYA COHORT

**Bao Lam**, Dang My Nhi, Risa Nakamura, Daisuke Kimura, Sammy M. Njenga, Yoshio Ichinose, Katsuyuki Yui, Kenji Hirayama, Shinjiro Hamano
*Nagasaki University, Nagasaki, Japan*

**(ACMCIP Abstract)**

# Water, Sanitation, Hygiene and Environmental Health

## 1791

### DEMOGRAPHIC COVARIATES OF CHOLERA RISK IN CAMEROON

**Tyler Brady**[1], Arabi Mouhaman[2], Joseph Tien[1]
*[1]The Ohio State University, Columbus, OH, United States, [2]University of Maroua, Maroua, Cameroon*

## 1792

### SHARED SANITATION FACILITIES AND TWO PATHWAYS OF DIARRHEAL DISEASE TRANSMISSION: A MODELING STUDY

Matthew R. Just[1], Sheng Li[2], Kelly K. Baker[3], Manoj Gambhir[4], **Isaac Chun-Hai Fung**[1]
*[1]Georgia Southern University, Statesboro, GA, United States, [2]City University of New York, New York City, NY, United States, [3]University of Iowa, Iowa City, IA, United States, [4]Monash University, Melbourne, Australia*

## 1793

### NOT IN MY BACKYARD: AN INDIVIDUAL-LEVEL META-ANALYSIS OF THE ASSOCIATION BETWEEN COMMUNITY OPEN DEFECATION AND STUNTING

**David A. Larsen**, Thomas Gershom, Erik Slawsky, Lutchmie Narine
*Syracuse University, Syracuse, NY, United States*

## 1794

### COMMUNITY BASED METHODS FOR SCHISTOSOMIASIS PREDICTION AND SUSTAINABLE CONTROL

**Alexandra V. Kulinkina**[1], Yvonne Walz[2], Karen C. Kosinski[1], Nana K. Biritwum[3], Elena N. Naumova[4]
*[1]Tufts University, Medford, MA, United States, [2]United Nations University, Bonn, Germany, [3]Ghana Health Service, Accra, Ghana, [4]Tufts University, Boston, MA, United States*

## 1795

### THE ROLE OF ENVIRONMENTAL PROCESSES IN INFECTIOUS DISEASE DYNAMICS

**Andrew F. Brouwer**, Joseph N. Eisenberg
*University of Michigan, Ann Arbor, MI, United States*

## 1796

### INTEGRATING WATER SANITATION AND HYGIENE PRACTICES AND NEGLECTED TROPICAL DISEASE INTERVENTIONS: EXPERIENCE FROM SOUTHERN TANZANIA

**Alistidia Simon**
*Sightsavers-NTD Programme Tanzania, Dar es Salaam, United Republic of Tanzania*

## 1797

### CHOLERA AND ENVIRONMENTAL DYNAMICS IN AN ECUADOREAN ESTUARINE SYSTEM

**Sadie J. Ryan**[1], Anna M. Stewart-Ibarra[2], Eunice Ordonez[3], Winnie Chu[4], Julia L. Finkelstein[4], Christine A. King[2], Luis E. Escobar[2], Christina Lupone[2], Froilan Heras[5], Carlos Enriquez[5], Erica Tauzer[6], Egan Waggoner[7], Tyler G. James[1], Washington Cardenas[8], Mark Polhemus[2]
*[1]University of Florida, Gainesville, FL, United States, [2]SUNY Upstate Medical University, Syracuse, NY, United States, [3]ESPOL, Guyaquil, Ecuador, [4]Cornell University, Ithaca, NY, United States, [5]Machala, Ecuador, [6]SUNY ESF, Syracuse, Ecuador, [7]SUNY ESF, Syracuse, NY, United States, [8]ESPOL, Guyaquil, NY, United States*

## 1798

### GLOBAL TRACHOMA MAPPING PROJECT: SANITATION COVERAGE THRESHOLD LEVELS AND PROTECTION AGAINST TRACHOMA

**Joshua V. Garn**, Matthew C. Freeman, GTMP Consortium
*Emory University, Atlanta, GA, United States*

## 1799

### USE OF MULTI-PARALLEL QUANTITATIVE REAL-TIME PCR FOR GASTROINTESTINAL PARASITES IN RURAL MOZAMBIQUE: CORRELATION OF INFECTION INTENSITY TO WATER ACCESS, SANITATION AND HYGIENE (WASH)

**Juliana Da Silva**[1], Berta Grau-Pujol[2], Inocencia Cuamba[3], Carlota Dobaño[2], Alejandro Krolewiecki[4], Jose Muñoz[2], Rojelio Mejia[1], Augusto Nhabomba[3]
*[1]Baylor College of Medicine, Houston, TX, United States, [2]Universitat de Barcelona, Barcelona, Spain, [3]Centro de Investigação em Saúde de Manhiça, Manhiça, Mozambique, [4]Universidad Nacional de Salta, Salta, Argentina*

## 1800

### EFFECT OF A COMBINED HARDWARE AND BEHAVIOR CHANGE INTERVENTION ON HANDWASHING BEHAVIORS IN PRIMARY SCHOOL CHILDREN: THE POVU POA SCHOOL PILOT STUDY

**Wit Wichaidit**
*University at Buffalo, Buffalo, NY, United States*

## 1801

### EVALUATING THE IMPACT OF SCHOOL WATER, SANITATION AND HYGIENE IMPROVEMENTS USING THE PRESENCE OF SERUM ANTIBODIES FOR ENTERIC AND NEGLECTED TROPICAL DISEASES AMONG SCHOOL CHILDREN IN MALI

**Anna N. Chard**[1], Victoria Trinies[1], Delynn M. Moss[2], Howard H. Chang[1], Matthew C. Freeman[1]
*[1]Emory University, Atlanta, GA, United States, [2]Centers for Disease Control and Prevention, Atlanta, GA, United States*

## 1802

### PREVALENCE OF ANTIBIOTIC-RESISTANT BACTERIA AND THEIR RESISTANCE GENES IN SURFACE WATERS IN A RURAL COMMUNITY OF BRAZIL

**Vanessa T. Moretto**[1], Patricia S. Bartley[2], Cleiton S. Santos[3], Viviane M. Ferreira[1], Rafael T. Ponce[4], Mitermayer G. Reis[3], Ronald E. Blanton[2], Lúcio M. Barbosa[1]
*[1]Bahiana School of Medicine and Public Health, Salvador, Brazil, [2]Case Western Reserve School of Medicine, Cleveland, OH, United States, [3]Oswaldo Cruz Foundation, Bahia, Salvador, Brazil, [4]Mercer Universitiy School of Medicine, Macon, GA, United States*

## 1803

### FECAL FINGERPRINTS: THE LANDSCAPE OF ENTERIC PATHOGEN CONTAMINATION IN LOW-INCOME, URBAN NEIGHBORHOODS OF KISUMU, KENYA

**Kelly K. Baker**[1], Ananya Sen Gupta[2], Jane Mumma[3], Oliver Cumming[4], Reid Senesac[1]
*[1]University of Iowa College of Public Health, Iowa City, IA, United States, [2]University of Iowa College of Engineering, Iowa City, IA, United States, [3]Great Lakes University of Kisumu, Kisumu, Kenya, [4]London School of Hygiene & Tropical Medicine, London, United Kingdom*

## 1804

### MULTI-PARALLEL QUANTITATIVE REAL-TIME PCR FOR GASTROINTESTINAL PARASITES AND INFECTION BURDEN IN DISTINCT COLOMBIAN COMMUNITIES

**Patricia E. Bryan**[1], Alejandro Restrepo[1], Giovanny Torres Lindarte[2], Marcela Romero[2], Wilber Gómez[2], Marcos Restrepo[2], Rojelio Mejia[1]
*[1]Baylor College of Medicine, Houston, TX, United States, [2]Instituto Colombiano de Medicina Tropical, Medellín, Colombia*

## 1805

### ANTIBIOTIC STEWARDSHIP AND SANITATION: A MISSING PARTNERSHIP

**Cleiton S. Santos**[1], Patricia S. Bartley[2], Viviane T. Moretto[1], Viviane M. Ferreira[3]
*[1]Oswaldo Cruz Foundation, Bahia, Salvador, Brazil, [2]Case Western Reserve School of Medicine, Cleveland, OH, United States, [3]Bahiana School of Medicine and Public Health, Salvador, Brazil*

## 1806

### WHO INFLUENCES YOU? THE ROLE OF WOMEN IN INFORMATION DIFFUSION OF SANITATION AND WATER PRACTICES IN COASTAL ECUADOR

**Sonia T. Hegde**[1], James Trostle[2], Joseph Eisenberg[1]
*[1]University of Michigan, Ann Arbor, MI, United States, [2]Trinity College, Hartford, CT, United States*

## Late Breaker Abstract Session 132

## Late Breakers in Malaria

*Marriott - Imperial A*
Wednesday, November 16, 12:15 p.m. - 1:30 p.m.

This session is specifically designed for brief presentations of new data obtained after the closing date for abstract submission. See the Late Breaker Abstract Presentation Schedule booklet in your registration packet for the presentation schedule.

CHAIR

Stefan Kappe
*Center for Infectious Disease Research, Seattle, WA, United States*

**Meet the Professors 133**

## Meet the Professors C: Enigmatic and Teaching Cases

*Marriott - Room M103/M104/M105*
Wednesday, November 16, 12:15 p.m. - 1:30 p.m.

Students and trainees are especially encouraged to attend these interactive sessions, which are open to all meeting attendees. The speakers will present a clinical case of a tropical disease specific to a particular region that they have found a challenge to manage or diagnose.

CHAIR
David R. Boulware
*University of Minnesota, Minneapolis, MN, United States*

PRESENTER
Daniel G. Bausch
*World Health Organization, Geneva, Switzerland*

## CTropMed® Exam Committee Meeting

*Marriott - Room M301*
Wednesday, November 16, 12:15 p.m. - 1:30 p.m.

## Membership Committee Meeting

*Marriott - Room M108*
Wednesday, November 16, 12:15 p.m. - 1:30 p.m.

## Poster Session C Viewing

*Hilton - Grand Ballroom and Grand Salon*
Wednesday, November 16, 1:45 p.m. - 7 p.m.

**Symposium 134**

## Global Antibiotic Resistance Partnership and ResistanceMap

*Marriott - Imperial A*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

The Global Antibiotic Resistance Partnership (GARP), which will include 15 countries in Africa and Asia by the end of 2016, is a proven approach to preparing for national action plans to address antibiotic access and resistance, consistent with the 2015 WHO resolution. Since the project was launched in 2008 by the Center for Disease Dynamics, Economics & Policy (CDDEP), GARP working groups have developed situation analyses independent of, but in collaboration with, government, that have provided the grounding for policy development. The working groups, including local expertise across the One Health spectrum, have become national "brain trusts" and, in many cases, advisors to government and the private sector on aspects such as infection prevention and control, antibiotic stewardship, surveillance (although surveillance in these countries is often absent and laboratory capacity severely limited), antibiotic use in food animals and environmental needs. At a time when the need for national action on antibiotic resistance is great, but relatively few low- and middle-income countries (LMICs) have developed plans, the GARP model can be replicated or adapted to fill an urgent need. Key members of GARP teams in three countries will discuss their experience. ResistanceMap, another CDDEP project, is the largest global repository of antibiotic resistance and use data. It is continually updated with current data from countries that have been represented for more than five years, and data from countries not previously included. LMIC data are initially coming mainly from private laboratories, as public laboratories are being upgraded, eventually to produce and contribute high-quality data. The graphic interface guides the user to produce a range of custom maps and graphics to display a wide range of antibiotics, pathogens and countries. Global trends in both antibiotic resistance and antibiotic consumption can be tracked and countries can benchmark their own numbers against others in the region or the world. One of the developers of ResistanceMap will demonstrate the program and discuss its uses.

CHAIR
Hellen Gelband
*Center for Disease Dynamics, Economics & Policy, Washington, DC, United States*
Eili Klein
*Center for Disease Dynamics, Economics & Policy, Washington, DC, United States*

1:45 p.m.
**THE GLOBAL ANTIBIOTIC RESISTANCE PARTNERSHIP: 8 YEARS OF PROGRESS**
Hellen Gelband
*Center for Disease Dynamics, Economics & Policy, Washington, DC, United States*

2 p.m.
**GARP-KENYA: THE ROAD TO A NATIONAL ACTION PLAN**
Evelyn Wesangula
*Ministry of Health/GARP, Nairobi, Kenya*

2:15 p.m.
**GARP-MOZAMBIQUE**
Esperanca Sevene
*Eduardo Mondlane University, Maputo, Mozambique*

2:30 p.m.
**RESISTANCEMAP**
Eili Klein
*Johns Hopkins University, Baltimore, MD, United States*

**Symposium 135**

## malERA Refresh: Updating the Malaria Eradication Research Agenda

*Marriott - Imperial B*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

"I really do believe that malaria will be eradicated in my lifetime"- Bill Gates, ASTMH 2014. Building on the moral argument that we should strive to eradicate malaria, the Malaria Eradication Research Agenda (malERA) was launched in 2008 culminating in a series of scientific papers, entitled 'the Malaria Eradication Research Agenda (malERA)' which were published in PLOS Medicine in 2011. With the development and progress made in both scientific research and malaria programs over the past years, it is now time to examine and update the malaria eradication research agenda. In collaboration with more than 180 experts around the world, the Malaria Eradication Scientific Alliance (MESA) has led a consultative process to review and update malERA, entitled 'malERA Refresh'. This consultative

process started in June 2015 and it has been organized around six different thematic panels: basic science and enabling technologies, insecticide and drug resistance, characterizing the reservoir and measuring transmission, tools for elimination, combination interventions and modeling, health systems and policy research. This work will culminate in an open access publication at the end of 2016. This symposium is uniquely poised to share the main findings from the malERA Refresh process.

CHAIR

Regina Rabinovich
*Harvard T.H. Chan School of Public Health/ISGlobal, Boston/Barcelona, MA, United States*

Pedro Alonso
*World Health Organization, Geneva, Switzerland*

1:45 p.m.
**BASIC RESEARCH AND DISRUPTIVE TECHNOLOGIES**

Elizabeth Winzeler
*University of California San Diego, San Diego, United States*

2:05 p.m.
**MITIGATING ANTIMALARIAL DRUG RESISTANCE**

Abdoulaye Djimdé
*Malaria Research and Training Center in Bamako, Bamako, Mali*

2:25 p.m.
**TOOLS FOR MALARIA ELIMINATION**

Fredros Okumu
*Ifakara Health Institute, Ifakara, United Republic of Tanzania*

2:45 p.m.
**INNOVATIONS IN SURVEILLANCE AND HEALTH SYSTEMS**

Marcel Tanner
*Swiss Tropical and Public Health Institute, Basel, Switzerland*

## Scientific Session 136

## Global Health: mHealth, Vaccines and Strategies

*Marriott - Marquis A*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

CHAIR

Mary Hayden
*National Center for Atmospheric Research, Boulder, CO, United States*

Luisa Rubiano
*CIDEIM, Cali, Colombia*

1:45 p.m.

### 1807

**CLINICAL PREDICTION RULE OPERATED BY MOBILE PHONES FOR EARLY DETECTION AND REFERRAL OF CUTANEOUS LEISHMANIASIS IN RURAL AREAS OF COLOMBIA**

**Luisa C. Rubiano**[1], Alvaro Martinez[1], Ruth M. Castillo[1], Lina R. Hurtado[1], Leonardo Vargas[2], Juan D. Arango[2], James Cuenca[2], Carlos Rojas[3], Helena del Corral[3], Andres Navarro[2], Nancy G. Saravia[1]
*[1]Centro Internacional de Entrenamiento e Investigaciones Médicas, Cali, Colombia, [2]ICESI, Cali, Colombia, [3]Universidad de Antioquia, Medellin, Colombia*

2 p.m.

### 1808

**THE EFFECT OF TEXT MESSAGE REMINDERS TO HEALTH WORKERS ON QUALITY OF CARE FOR MALARIA, PNEUMONIA, AND DIARRHEA IN MALAWI: A RANDOMIZED CONTROLLED TRIAL**

**Laura C. Steinhardt**[1], Don Mathanga[2], Dyson Mwandama[2], Humphreys Nsona[3], Dubulao Moyo[3], Austin Gumbo[3], Miwako Kobayashi[1], Ruth Namuyinga[1], Monica Shah[1], Andy Bauleni[2], Peter Troell[4], Dejan Zurovac[5], Alexander K. Rowe[1]
*[1]Centers for Disease Control and Prevention, Atlanta, GA, United States, [2]Malaria Alert Centre, Blantyre, Malawi, [3]Ministry of Health, Lilongwe, Malawi, [4]U.S. President's Malaria Initiative, Centers for Disease Control and Prevention, Lilongwe, Malawi, [5]KEMRI-Wellcome Trust, Nairobi, Kenya*

2:15 p.m.

### 1809

**MULTIMEDIA TOOL FOR OBTAINING INFORMED CONSENT IN THE GAMBIA: A MIXED METHOD STUDY**

**Muhammed O. Afolabi**[1], Nuala McGrath[2], Umberto D'Alessandro[1], Beate Kampmann[1], Egeruan Imoukhuede[3], Raffaella Ravinetto[4], Neal Alexander[5], Heidi J. Larson[5], Daniel Chandramohan[5], Kalifa Bojang[1]
*[1]Medical Research Council, Banjul, Gambia, [2]University of Southampton, Southampton, United Kingdom, [3]University of Oxford, Oxford, United Kingdom, [4]Institute of Tropical Medicine, Antwerp, Belgium, [5]London School of Hygiene & Tropical Medicine, London, United Kingdom*

2:30 p.m.

### 1810

**FIRST ORAL CHOLERA VACCINATION CAMPAIGN IN IRAQ DURING AN OUTBREAK AND HUMANITARIAN CRISIS: FINDINGS FROM THE COVERAGE SURVEY, 2015**

**Eugene Lam**[1], Wasan Al-Tamimi[2], Steven P. Russell[1], Muhammad Obaid-ul Islam Butt[2], Curtis Blanton[1], Altaf Sadrudin Musani[3], Kashmira Date[1]
*[1]Centers for Disease Control and Prevention, Atlanta, GA, United States, [2]World Health Organization, Office of the WHO Representative in Iraq, Baghdad, Iraq, [3]World Health Organization, Office of the WHO Representative in Iraq, Atlanta, GA, United States*

2:45 p.m.

### 1811

**TIMELINESS OF VACCINATION IN AN URBAN SLUM IN NAIROBI, KENYA**

**Jonathan S. Schultz**[1], Shadrack Muema[2], Alice Ouma[2], Leonard Cosmas[3], Geofrey Masyongo[2], Godfrey Bigogo[2], Marc-Alain Widdowson[3], Jennifer R. Verani[3]
*[1]Hubert Global Health Fellowship Program, Centers for Disease Control and Prevention, and University of Colorado, Aurora, CO, United States, [2]Center for Global Health Research, Kenya Medical Research Institute, Nairobi, Kenya, [3]Division of Global Health Protection, Centers for Disease Control and Prevention, Nairobi, Kenya*

3 p.m.

### 1812

**COST-EFFECTIVENESS OF DENGUE VACCINATION IN FIVE LATIN AMERICAN COUNTRIES**

**Donald S. Shepard**[1], Yara A. Halasa[1], Wu Zeng[1], Nicolas Baurin[2], Laurent Coudeville[2]
*[1]Brandeis University, Waltham, MA, United States, [2]Sanofi Pasteur, Lyon, France*

3:15 p.m.

### 1813

**SNAKEBITE: STRATEGIES TO REVERSE THE PUBLIC HEALTH NEGLECT OF TROPICAL SNAKEBITE VICTIMS**

**Robert A. Harrison**[1], Jose-Maria Gutierrez[2]
*[1]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [2]Instituto Clodomiro Picado, San Jose, Costa Rica*

## Symposium 137

## Rebuilding Health Systems for Ebola Survivors

*Marriott - Marquis B*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

Ebola Survivors face unique health problems as a result of having contracted EVD, including vision complications, hearing loss, chronic pain, fatigue, emotional or psychological distress, as well as isolated cases of more acute complications that the medical community is only beginning to understand. Survivors also face challenges with stigma, community reintegration, and unique socioeconomic vulnerabilities due to their illness and time in treatment and recovery. Partners In Health, along with other key players, has been highly engaged in delivering what are now the core components of the Government of Sierra Leone's Comprehensive Program for Ebola Survivors (CPES) since October 2014, prioritizing accelerated delivery of some of the most urgently needed services. These services address the need for systematic, early clinical follow up for Ebola Survivors and the need for partnership with the public sector to provide sustainable, long-term care.

CHAIR

Jennifer Garland
*Partners In Health, Boston, MA, United States*

Daniel G. Bausch
*World Health Organization, Geneva, Switzerland*

1:45 p.m.
**STRENGTHENING VULNERABLE HEALTH SYSTEMS THROUGH A BROAD BASED POLICY APPROACH**
Elizabeth Glaser
*Brandeis University, Boston, MA, United States*

2:05 p.m.
**INTEGRATION AND HEALTH SYSTEM SCALE UP OF EVD SURVIVOR HEALTHCARE IN SIERRA LEONE**
Joyce Chang
*Partners In Health, Freetown, Sierra Leone*

2:25 p.m.
**CLINICAL SERVICE DELIVERY AND RISK MITIGATION FOR EVD SURVIVORS**
Jennifer Garland
*Partners In Health, Port Loko, Sierra Leone*

2:45 p.m.
**TRANSITIONING FROM EBOLA RESPONSE TO SYSTEMS RECOVERY THOUGH LEVERAGING SOCIAL NETWORKS**
Andrew Sesay
*Partners In Health, Kono, Sierra Leone*

## Symposium 138

## Confronting the Burden of Shigellosis through Vaccine Development

*Marriott - Marquis C*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

New molecular diagnostics have identified *Shigella* as a far more significant cause of diarrhea in developing nations than previously recognized. This observation is likely to influence policymakers in those countries to re-orient diarrhea control strategies to target shigellosis. Vaccines, when available, are expected to have an important role in reducing disease incidence along with access to sanitation and potable water. This symposium will present data on the burden of *Shigellosis* in pediatric populations of developing nations and detail approaches to producing a safe, effective and inexpensive Shigella vaccine.

CHAIR

Thomas F. Wierzba
*PATH, Washington, DC, United States*

Richard Walker
*PATH, Washington, DC, United States*

1:45 p.m.
**REVISED BURDENS OF SHIGELLOSIS IN CHILDREN IN DEVELOPING COUNTRIES USING QUANTITATIVE MOLECULAR DIAGNOSTICS**
Jie Liu
*University of Virginia, Charlottesville, VA, United States*

2:10 p.m.
**SAFETY AND IMMUNOGENICITY OF A CANDIDATE BIOCONJUGATE VACCINE AGAINST *SHIGELLA FLEXNERI* 2A ADMINISTERED TO HEALTHY ADULTS: A SINGLE BLIND, RANDOMIZED PHASE I STUDY**
Mark Riddle
*Naval Medical Research Center, Silver Spring, MD, United States*

2:25 p.m.
**A PHASE 1 OPEN-LABEL, DOSE ESCALATING STUDY OF ARTIFICIAL *SHIGELLA FLEXNERI* 2A INVAPLEX ADMINISTERED INTRANASALLY TO HEALTHY, ADULT VOLUNTEERS**
Christopher Duplessis
*Naval Medical Research Center, Silver Spring, MD, United States*

2:45 p.m.
**RECENT CLINICAL EXPERIENCE WITH *SHIGELLA* VACCINES AND HUMAN CHALLENGE MODELS**
Karen Kotloff
*University of Maryland School of Medicine, Baltimore, MD, United States*



## Symposium 139

## Unleashing the Potential of Malaria Parasite Genetics Research in Africa: An Update on the *Plasmodium* Diversity Network Africa (PDNA)

*Marriott - Marquis D*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

A concerted effort at surveying *Plasmodium* genetic diversity is required for effective control and elimination of malaria in sub-Saharan Africa. The *Plasmodium* diversity network Africa (PDNA) is an African-led initiative bringing together researchers from malaria endemic sub-Saharan African countries to address these challenges. PDNA includes scientists from biomedical research institutions in 15 sub-Saharan African countries i.e. Angola, Cameroon, Cape Verde, Côte d'Ivoire, Democratic Republic of Congo (DRC), Ethiopia, Gabon, The Gambia, Ghana, Kenya, Madagascar, Mali, Mozambique, Tanzania and South Africa. The mission of PDNA is to determine the diversity of malaria parasites in sub-Saharan Africa and use this data to inform malaria control

policy. Developing capacity in genetics and bioinformatics is the second focus of our Network. Since its launch a couple of years ago, PDNA is making progress both on generating data on parasite genetic diversity and training in big data handling and analysis in sub-Saharan Africa. PDNA published one of the first comprehensive map of *Plasmodium falciparum* Kelch 13 polymorphism in sub-Saharan Africa. In collaboration with the Wellcome Trust Sanger Institute, PDNA has sequenced and is analyzing malaria parasite samples from across its network. The PDNA training program termed Developing Excellence in Leadership and Genetic Training for Malaria Elimination in Sub-Saharan Africa (DELGEME) is one of the seven applications recently funded as part of the Wellcome Trust's Developing Excellence and Leadership Training is Science (DELTAS) Africa initiative. In that context over the next five years, ninety young African scientists ranging from graduate interns, MSc, PhDs, post-doctoral fellows to aspiring leaders will be trained primarily in Africa in genetics and bio-informatics. An update on PDNA's progress both on the genetics and training activities will be presented by four PDNA members. In addition, underlying scientific, ethical and practical challenges of genetics training and genetic studies in sub-Saharan Africa will be discussed.

CHAIR

Abdoulaye Djimde
*University of Bamako, Bamako, Mali*

Thomas M. Kariuki
*Alliance for Accelerating Excellence in Science in Africa, Nairobi, Kenya*

1:45 p.m.
**HETEROGENEITY OF MALARIA EPIDEMIOLOGY ACROSS PDNA SITES**

Marielle Bouyou-Akotet ep Loembe
*Université des Sciences de la Santé, Libreville, Gabon*

2:05 p.m.
**TWO-TIME POINT ANALYSIS OF *PLASMODIUM FALCIPARUM* GENETIC VARIATION OVER FIVE YEARS FOR GAMBIA, GHANA AND MALI**

Alfred Amambua-Ngwa
*MRC Gambia Unit, Banjul, Gambia*

2:25 p.m.
**A TRANS-AFRICAN *PLASMODIUM FALCIPARUM* GENETIC DIVERSITY ANALYSIS**

Lucas Amenga-Etego
*Navrongo Health Research Centre, Navrongo, Ghana*

2:45 p.m.
**A NEW TRAINING PROGRAM IN GENETICS IN AFRICA: DEVELOPING EXCELLENCE IN LEADERSHIP AND GENETIC TRAINING FOR MALARIA ELIMINATION IN SUB-SAHARAN AFRICA**

Abdoulaye A. Djimde
*University of Bamako, Mali, Bamako, Mali*

## Scientific Session 140

## Schistosomiasis and Other Trematodes: Transmission and Treatment

*Marriott - Room M103/M104/M105*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

CHAIR

Donald Harn
*University of Georgia, Athens, GA, United States*

Lisa McEwen
*University of Georgia, Athens, GA, United States*

David Smith
*Queen's University Belfast, Holywood, United Kingdom*

1:45 p.m.

### 1814

**A NOVEL FAMILY OF KUNITZ-TYPE INHIBITORS FROM *FASCIOLA HEPATICA* - POTENT INHIBITION OF VIRULENCE-ASSOCIATED CYSTEINE PROTEASES**

**David Smith**, Irina Tikhonova, Orla C. Drysdale, Jan Dvorak, Mark W. Robinson, Krystyna Cwiklinski, John P. Dalton
*Queen's University Belfast, Belfast, United Kingdom*

**(ACMCIP Abstract)**

2 p.m.

### 1815

**DRAFT GENOMES OF FOUR SPECIES OF THE LUNG FLUKE PARAGONIMUS**

**Bruce A. Rosa**[1], Samantha N. McNulty[1], Peter U. Fischer[2], Takeshi Agatsuma[3], Hiromu Sugiyama[4], Wanchai Maleewong[5], Pham Ngoc Doanh[6], Thanh Hoa Le[7], David Blair[8], Paul J. Brindley[9], Makedonka Mitreva[1]
*[1]The McDonnell Genome Institute at Washington University, St. Louis, MO, United States, [2]Washington University School of Medicine, St. Louis, MO, United States, [3]Kochi University Medical School, Nankoku City, Japan, [4]National Institute of Infectious Diseases, Tokyo, Japan, [5]Khon Kaen University, Khon Kaen, Thailand, [6]Vietnam Academy of Science and Technology, Hanoi, Vietnam, [7]Institute of Biotechnology, Hanoi, Vietnam, [8]James Cook University, Townsville, Australia, [9]George Washington University, Washington, DC, United States*

**(ACMCIP Abstract)**

2:15 p.m.

### 1816

**COMPLEMENTATION OF CELLULAR PROLIFERATION DRIVEN BY GRANULIN BY LIVER FLUKE GRANULIN IN A CHOLANGIOCYTE LINE AFTER GENOME EDITING TO MUTATE HGRN**

**Wannaporn Ittiprasert**[1], Christina Cochran[1], Chutima Kumkhaek[2], Victoria Mann[1], Alex Loukas[3], Michael Smout[3], Apisit Chaidee[4], Paul Brindly[1]
*[1]George Washington University, Washington, DC, United States, [2]National Institutes of Health, Bethesda, MD, United States, [3]James Cook University, Queensland, Australia, [4]Khon Kaen University, Khon Kaen, Thailand*

2:30 p.m.

### 1817

**TISSUE SPECIFIC LOCALIZATION OF *NEORICKETTSIA* ENDOSYMBIONTS IN THE INTESTINAL TREMATODE *PLAGIORCHIS ELEGANS* AND THE LIVER FLUKE *FASCIOLA HEPATICA* SHOW SIMILAR DISTRIBUTION PATTERNS**

**Kerstin Fischer**[1], Vasyl Tkach[2], Jose F. Tort[3], Gabriel Rinaldi[4], Paul J. Brindley[4], Makedonka Mitreva[1], Peter U. Fischer[1]
*[1]Washington University School of Medicine, St. Louis, MO, United States, [2]University of North Dakota, Grant Forks, ND, United States, [3]Universidad de la Republica, Montevideo, Uruguay, [4]George Washington University, Washington, DC, United States*

**(ACMCIP Abstract)**

2:45 p.m.

## 1818

### MATHEMATICAL MODELING OF THE TRANSMISSION DYNAMICS OF *OPISTHORCHIS VIVERRINI* IN LAO PDR

Christine Bürli[1], Helmut Harbrecht[2], Peter Odermatt[1], Somphou Sayasone[3], **Nakul Chitnis**[1]
*[1]Swiss Tropical and Public Health Institute, Basel, Switzerland, [2]Universität Basel, Basel, Switzerland, [3]National Institute of Public Health, Vientiane, Lao People's Democratic Republic*

3 p.m.

## 1819

### OUTCOME OF TWO PHASE I RELATIVE BIOAVAILABILITY STUDIES IN HEALTHY VOLUNTEERS AFTER ADMINISTRATION OF THE NEW PEDIATRIC ODT FORMULATIONS OF RACEMATE PRAZIQUANTEL (RAC-PZQ) AND OF THE ACTIVE ENANTIOMER OF PRAZIQUANTEL (L-PZQ)

**Wilhelmina M. Bagchus**[1], Deon Bezuidenhout[2], Eleanor Harrison[3], Peter Wolna[3], Oezkan Yalkinoglu[3], Elly Kourany-Lefoll[4], Peter L. Bonate[5]
*[1]EMD Serono R&D Institute, Billerica, MA, United States, [2]Merck (Pty) Ltd [an affiliate of Merck KGaA, Darmstadt, Germany], Pretoria, South Africa, [3]Merck KGaA, Darmstadt, Germany, [4]MerckSerono S.A. [an affiliate of Merck KGaA, Darmstadt, Germany], Coinsins, Switzerland, [5]Astellas, Northbrook, IL, United States*

3:15 p.m.

## 1820

### COMPARATIVE EFFICIENCY OF *BIOMPHALARIA PFEIFFERI* AND *B. SUDANICA* AS INTERMEDIATE HOST SNAILS FOR *SCHISTOSOMA MANSONI* AND ITS IMPLICATIONS FOR TRANSMISSION OF SCHISTOSOMIASIS IN KENYA

**Martin W. Mutuku**
*Kenya Medical Research Institute, Nairobi, Kenya*

## Scientific Session 141

## Zika

*Marriott - Atrium A*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

CHAIR

Jesica Swanstrom
*University of North Carolina at Chapel Hill, Chapel Hil, NC, United States*

Stephen S. Whitehead
*National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States*

1:45 p.m.

## 1821

### DEVELOPMENT OF A NONHUMAN PRIMATE MODEL OF ZIKA VIRUS INFECTION IN PREGNANT AND NON-PREGNANT RHESUS MACAQUES

**Emma L. Mohr**[1], Dawn M. Dudley[1], Matthew T. Aliota[1], Andrea Weiler[1], Gabrielle Lehrer-Brey[1], Kim L. Weisgrau[1], Mariel S. Mohns[1], Meghan E. Breitbach[1], Mustafa N. Rasheed[1], Dane D. Gellerup[1], Louise H. Moncla[1], Jennifer Post[1], Nancy Schultz-Darken[1], Michele L. Schotkzo[1], Jennifer M. Hayes[1], Josh A. Eudailey[2], M. Anthony Moody[2], Sallie R. Permar[2], Shelby L. O'Connor[1], Eva G. Rakasz[1], Heather A. Simmons[1], Saverio Capuano III[1], Thaddeus G. Golos[1], Jorge E. Osorio[1], Thomas C. Friedrich[1], David H. O'Connor[1]
*[1]University of Wisconsin Madison, Madison, WI, United States, [2]Duke University, Durham, NC, United States*

2 p.m.

## 1822

### ZIKA VIRUS INFECTION OF HUMAN PLACENTAL CELLS AND EXPLANTS: THE ROLE OF ZIKV RECEPTORS AND ANTI-FLAVIVIRUS ANTIBODIES

**Henry Puerta-Guardo**[1], Takako Tabata[2], Matthew Petitt[2], Daniela Michlmayr[1], Martina Beltramello[3], Davide Corti[3], Federica Sallusto[4], Antonio Lanzavecchia[4], Lenore Pereira[2], Eva Harris[1]
*[1]Division of Infectious Diseases and Vaccinology, School of Public Health, University of California Berkeley, Berkeley, CA, United States, [2]Department of Cell and Tissue Biology, School of Dentistry, University of California San Francisco, San Francisco, CA, United States, [3]Humabs BioMed SA, Bellinzona, Switzerland, [4]Institute for Research in Biomedicine, Università della Svizzera Italiana, Bellinzona, Switzerland*

2:15 p.m.

## 1823

### THE CRYO-EM STRUCTURE OF ZIKA VIRUS

**Devika Sirohi**[1], Zhenguo Chen[1], Lei Sun[1], Thomas Klose[1], Theodore C. Pierson[2], Michael G. Rossmann[1], Richard J. Kuhn[1]
*[1]Purdue University, West Lafayette, IN, United States, [2]National Institute of Allergy and Infectious Diseases, Bethesda, MD, United States*

2:30 p.m.

## 1824

### BOOSTING ALTERS THE CROSS-NEUTRALIZING CAPACITY OF ANTIBODY-RESPONSE FOLLOWING ZIKA EXPOSURE IN C57BL/6 MICE

**Anna B. Kawiecki**, Anu Susan Charles, Rebecca C. Christofferson
*Louisiana State University, Baton Rouge, LA, United States*

2:45 p.m.

## 1825

### VECTOR COMPETENCE OF AMERICAN MOSQUITOES FOR MULTIPLE STRAINS OF ZIKV REPRESENTING EACH GENETIC CLADE

**James D. Weger-Lucarelli**
*Colorado State University, Fort Collins, CO, United States*

3 p.m.

## 1826

### MAPPING ZIKA VIRUS CROSS-NEUTRALIZING EPITOPES

**Jesica Swanstrom**, Jessica Plante, Ken Plante, Ellen Young, Mark Heise, Aravinda de Silva, Ralph Baric
*University of North Carolina at Chapel Hill, Chapel Hill, NC, United States*

3:15 p.m.

## 1827

### DEVELOPMENT AND CHARACTERIZATION OF LIVE ATTENUATED VACCINE CANDIDATES FOR ZIKA VIRUS

**Stephen S. Whitehead**[1], Sara E. Woodson[1], Caiyen Firestone[1], Emerito Amaro-Carambot[1], Anna P. Durbin[2]
*[1]National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, [2]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States*

## Symposium 142

## Bridging the Gap between Patients and Access to Chagas Treatment: Lessons Learned from Scaling-up Models in Latin America and the USA

*Marriott - Atrium B*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

Chagas Disease silently kills tens of thousands each year. Approximately six million people, most of whom are poor, live with the parasite worldwide (300,000 in the USA). It is the leading parasitic killer of the Americas and causes the highest disease burden of any parasitic disease in the Western hemisphere. Chagas Disease is one of the world's 17 neglected tropical diseases, a major public health problem in Latin America, with increasing patient numbers in other regions of the world, such as Europe and Asia, due to migration of infected individuals from endemic areas. Major gaps still remain between the estimates of the number of people living with Chagas disease and those actually diagnosed and receiving treatment: more than 99% of those affected do not have access to treatment. Even with a significant decrease in the incidence of the disease, mostly due to successful vector and blood control programs in endemic countries, the burden of Chagas-associated complications is expected to continue, as about one-third of infected individuals, if not treated, will progress with the disease, presenting long-term specific complications of the infection. Recent studies have shown that—while it is of paramount importance that new and improved tools are developed for Chagas — it is possible to treat and manage patients with currently available tools. As troubling figures demonstrate that less than 1% of patients receive treatment, we cannot afford to lose track of what is at stake here: The urgent need to scale up access to diagnosis and medicine in all affected countries. The Chagas Global Coalition has come together to mobilize efforts to scale-up access to currently available diagnosis and treatment, as well as to stimulate the definition of improved context-specific delivery care models, research and development for new drugs and diagnostic tools. The concern is how to bridge the gap between those infected and diagnosis and treatment available.

CHAIR

Peter J. Hotez
*Sabin Vaccine Institute Product Development Partnership and Baylor College of Medicine, Houston, TX, United States*

1:45 p.m.
**TREATMENT RECOMMENDATIONS FOR PATIENTS WITH *T. CRUZI* INFECTION**

Maria Jesús Pinazo
*Barcelona Institute for Global Health, Barcelona, Spain*

2:05 p.m.
**CHAGAS DISEASE A GLOBAL HEALTH PROBLEM ALSO IN USA: GAPS AND CHALLENGES**

Sheba Meymandi
*University of California Los Angeles Medical Center, Sylmar, CA, United States*

2:15 p.m.
**SCALING UP ACCESS TO TREATMENT: LESSONS LEARNED IN ENDEMIC AND NON-ENDEMIC COUNTRIES**

Carolina Batista
*Drugs for Neglected Diseases initiative, Rio de Janeiro, Brazil*

2:35 p.m.
**NEW STRATEGIES FOR R&D AND DRUG DEVELOPMENT**

María Elena Botazzi
*Sabin Vaccine Institute Product Development Partnership and Baylor College of Medicine, Houston, TX, United States*

## Symposium 143

## Integrated Community Case Management (iCCM) and the Continuum of Care: Strategy to Improve Quality of Care and Rational Drug Use

*Marriott - Room A601*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

The majority of countries in Africa now have programs in place to improve access to treatment services for malaria, pneumonia and diarrhea at the community level – 'integrated community case management (iCCM)'. ICCM has multiple benefits, including increasing early care seeking for illness, provision of prompt access to appropriate treatment for children, and reduction of morbidity and mortality among young children. However for iCCM programs to be effective, they require strong links with health facilities and the formal health system as part of a continuum of care for integrated management of childhood illness (IMCI). An effective IMCI/iCCM continuum of care provides a strategy for increasing rational use of drugs – both antibiotics and antimalarials. This symposium will present some of the latest evidence and explore innovative strategies for improving quality of care and rational drug use, including new research on the role of the private sector, and efforts to link HIV/TB along the IMCI/iCCM continuum of care.

CHAIR

Davidson H. Hamer
*Boston University School of Public Health, Center for Global Health and Development, Boston, MA, United States*

Mark Young
*UNICEF, New York, NY, United States*

1:45 p.m.
**REVIEW OF THE LATEST EVIDENCE ON THE ROLE OF ICCM IN PROMOTING QUALITY OF CARE AND RATIONAL DRUG USE AS A STRATEGY FOR ANTIMICROBIAL RESISTANCE (AMR)**

Emily White Johannson
*Uppsala University, Uppsala, Sweden*

2:05 p.m.
**USE OF M-HEALTH TO IMPROVE SUPPLY CHAINS AND QUALITY OF CARE FOR ICCM IN ZAMBIA**

Godfrey Biemba
*Zambia Centre for Applied Health Research and Development, Lusaka, Zambia*

2:25 p.m.
**INTEGRATING AND IMPROVING QUALITY OF CARE FOR CHILDREN AT DRUG SHOPS: THE ROLE OF ICCM**

Phyllis Awor
*Makerere University School of Public Health, Kampala, Uganda*

2:45 p.m.
**USE OF THE ICCM PLATFORM IN UGANDA TO IDENTIFY CHILDREN AT RISK FOR HIV AND TB, AND LINKS TO CARE AND SUPPORT**

Jesca N. Sabiiti
*Ministry of Health, Kampala, Uganda*

## Scientific Session 144

## Mosquitoes: Molecular Genetics and Genomics

*Marriott - Room A602*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

CHAIR

Elizabeth Hemming
*University of California Irvine, Irvine, CA, United States*

Alvaro Molina-Cruz
*National Institutes of Health, Rockville, MD, United States*

1:45 p.m.
**1828**

**THE ROLE OF ECDYSONE RECEPTOR IN *ANOPHELES GAMBIAE* MOSQUITO POST-MATING BIOLOGY**

**Kristine Werling**, Evdoxia Kakani, Sara Mitchell, Maurice Itoe, Flaminia Catteruccia
*Harvard T.H. Chan School of Public Health, Boston, MA, United States*

2 p.m.
**1829**

***PLASMODIUM FALCIPARUM* PFS47 GENETIC DIVERSITY IN FIELD COLLECTED *ANOPHELES GAMBIAE* AND *ANOPHELES COLUZZII* FROM MALI, AFRICA**

**Alvaro Molina-Cruz**[1], Emma Taylor-Salmon[1], Moussa Keita[2], Nafomon Sogoba[2], Carolina Barillas-Mury[1]
*[1]National Institutes of Health, Rockville, MD, United States, [2]MRTC, University of Bamako, Bamako, Mali*

2:15 p.m.
**1830**

**HYBRID ALLELIC IMBALANCE AND GENE EXPRESSION EVOLUTION IN THE *ANOPHELES GAMBIAE* SPECIES COMPLEX**

**Kevin C. Deitz**[1], Willem Takken[2], Michel A. Slotman[1]
*[1]Texas A&M University, College Station, TX, United States, [2]Wageningen University, Wageningen, Netherlands*

2:30 p.m.
**1831**

**HEMOCYTE-SPECIFIC MANIPULATION OF THE IMD PATHWAY AFFECTS *PLASMODIUM* INFECTION IN *ANOPHELES STEPHENSI***

**Frank Criscione**, David O'Brochta
*University of Maryland, Rockville, MD, United States*

2:45 p.m.
**1832**

**LANDSCAPE GENETICS OF PYRETHROID RESISTANCE IN *ANOPHELES ARABIENSIS* IN KENYA**

**Elizabeth Hemming-Schroeder**, Eugenia Lo, Daibin Zhong, Guiyun Yan
*University of California Irvine, Irvine, CA, United States*

3 p.m.
**1833**

**GENOMIC ANALYSIS OF THE *ANOPHELES GAMBIAE* BAMAKO ECOTYPE**

**R. Rebecca Love**[1], Aaron M. Steele[1], Mamadou B. Coulibaly[2], Sékou F. Traore[2], Scott J. Emrich[1], Michael C. Fontaine[3], Nora J. Besansky[1]
*[1]University of Notre Dame, Notre Dame, IN, United States, [2]University of Sciences, Techniques and Technologies of Bamako, Bamako, Mali, [3]University of Groningen, Groningen, Netherlands*

3:15 p.m.
**1834**

**ASSESSMENT OF THE POST-ZYGOTIC REPRODUCTIVE BARRIERS BETWEEN *AN. GAMBIAE* ET AN. *COLUZZII***

**Abdoulaye Niang**[1], Charles Nignan[1], Simon P. Sawadogo[1], Hamidou Maïga[1], Lassan Konaté[2], Ousmane Faye[2], Roch K. Dabiré[1], Frederic Tripet[3], Abdoulaye Diabaté[1]
*[1]Institut de Recherche en Sciences de la Santé, Bobo-Dioulasso, Burkina Faso, [2]Laboratoire d'Ecologie Vectorielle et Parasitaire, UCAD, Dakar, Senegal, [3]Centre for Applied Entomology and Parasitology, School of Life Sciences, Keele Universit, Staffordshire, United Kingdom*

## Symposium 145

## Novel Biomarkers and Predictors of Cerebral Malaria Severity and Targets for Intervention

*Marriott - Room A703/A704*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

*Plasmodium falciparum* can cause a diffuse encephalopathy known as cerebral malaria (CM), a major contributor to malaria associated mortality. Despite treatment, mortality due to CM can be as high as 30% while 10% of survivors of the disease may experience short- and long-term neurological complications. The pathogenesis of CM and other forms of severe malaria is multi-factorial involving various host responses including cytokine and chemokine homeostasis, hematopoiesis, inflammation and vascular injury/repair processes. Identification of prognostic markers that can predict CM severity is urgently needed to enable development of better intervention. This symposium will provide insights and updates on recent findings that identify factors mediating CM that may have utility in accurately predicting risk and management of CM.

CHAIR

Jonathan K. Stiles
*Morehouse School of Medicine, Atlanta, GA, United States*

Linnie M. Golightly
*Weill Cornell Medicine, New York, NY, United States*

1:45 p.m.
**WHAT LEADS TO LONG-TERM NEURODEVELOPMENTAL IMPAIRMENT IN CEREBRAL MALARIA?**

Chandy John
*Indiana University School of Medicine, Indianapolis, IN, United States*

2:05 p.m.
**VASOMODULATORY MEDIATORS AND THEIR EFFECTS ON COGNITIVE FUNCTION AND SURVIVAL IN EXPERIMENTAL CEREBRAL MALARIA**

Mahalia Desruisseaux
*Albert Einstein College of Medicine, Bronx, NY, United States*

2:25 p.m.
**MICROVASCULAR REPAIR AND THE RESOLUTION OF CEREBRAL MALARIA**

Linnie M. Golightly
*Weill Cornell Medicine, New York, NY, United States*

2:45 p.m.
**PROTECTIVE ROLE OF NEUREGULIN AGAINST CEREBRAL MALARIA PATHOGENESIS**

Jonathan K. Stiles
*Morehouse School of Medicine, Atlanta, GA, United States*

**Symposium 146**

## Malaria Pre-Elimination: Ensuring Correct Care of Reproductive Age Women

*Marriott - Room A706/A707*
Wednesday, November 16, 1:45 p.m. - 3:30 p.m.

As malaria control interventions are scaled up and sustained and malaria transmission levels decline and prevalence falls, an increasing number of countries are starting to see elimination on the horizon. For pregnant women, the antimalarial antibodies that have provided some level of protection in moderate to high malaria transmission settings are reduced as malaria transmission declines. Current evidence shows that as transmission levels decline, the consequences from *P. falciparum* malaria are even greater for pregnant women. As countries enter pre-elimination stage and move towards eventual elimination, it will be important to address the needs of pregnant women given their increased vulnerability. To help achieve elimination, countries are exploring strategies involving widespread distribution of anti-malarials, primarily artemisinin-combination therapies (ACTs), to asymptomatic individuals, including both mass drug administration (MDA) and mass screen and treat (MSaT). Given the limited human data, ACTs are currently contraindicated in first trimester, except in documented cases of clinical malaria illness where quinine is unavailable. This poses a challenge in mass campaigns, as it requires the identification of women in early pregnancy who are not yet obviously pregnant, and may not wish to reveal their pregnancy status. While only about 5% of the population is pregnant at any given time, and only 1/3 of those are in the first trimester, approximately 20% of the population is comprised of women of reproductive age who may be pregnant. Thus, the number of women who need to be screened for pregnancy is substantial across countries. This symposium will present experiences from three countries: Mozambique, Sierra Leone, and Brazil; specifically, looking at how these countries have addressed pregnant women in their malaria pre-elimination strategies. Further, the symposium will discuss the important ethical considerations that should be reviewed as countries contemplate standard diagnosis, notification and treatment vs. MDA. The lessons learned can be disseminated to guide other countries where these strategies are being considered.

CHAIR

Clara Menéndez
*IS Global, Barcelona Institute for Global Health, Barcelona, Spain*

Larry Slutsker
*PATH, Seattle, WA, United States*

1:45 p.m.
**MASS DRUG ADMINISTRATION WITH DHAPPQ AND PREGNANCY - THE MOZAMBICAN EXPERIENCE**

Francisco Saúte
*Mozambican Alliance Towards the Elimination of Malaria, Maputo, Mozambique*

2 p.m.
**USING MASS DRUG ADMINISTRATION WITH ACT FOR PREGNANT WOMEN IN RESPONSE TO THE EBOLA EPIDEMIC: SIERRA LEONE EXPERIENCE**

Samuel J. Smith
*National Malaria Control Programme, Ministry of Health and Sanitation, Freetown, Sierra Leone*

2:15 p.m.
**ENSURING CORRECT CARE OF REPRODUCTIVE AGE WOMEN**

Ana Carolina Santelli
*National Malaria Control Programme, Ministry of Health, Brasilia, Brazil*

2:30 p.m.
**PRESENTATION WRAP-UP, INCLUDING DISCUSSION ON ETHICS, FOLLOWED BY Q&A**

## Break

Wednesday, November 16, 3:30 p.m. - 4 p.m.

**Scientific Session 147**

## Global Health: Febrile Illness and Malaria

*Marriott - Imperial A*
Wednesday, November 16, 4 p.m. - 5:45 p.m.

CHAIR

Erin Eckert
*United States Agency for International Development, Arlington, VA, United States*

Jeremiah Laktabai
*Moi University, Eldoret, Kenya*

4 p.m.
**1835**

**INTEGRATED PEDIATRIC FEVER MANAGEMENT AND ANTIBIOTIC OVER-TREATMENT IN MALAWI HEALTH FACILITIES: DATA MINING A NATIONAL FACILITY CENSUS**

**Emily White Johansson**[1], Katarina Ekholm Selling[1], Humphreys Nsona[2], Bonnie Mappin[3], Peter W. Gething[3], Max Petzold[4], Stefan Swartling Peterson[1], Helena Hildenwall[5]
*[1]Uppsala University, Uppsala, Sweden, [2]Malawi Ministry of Health, Lilongwe, Malawi, [3]University of Oxford, Oxford, United Kingdom, [4]University of Gothenburg, Gothenburg, Sweden, [5]Karolinska Institutet, Stockholm, Sweden*

4:15 p.m.

## 1836

### VALIDATION OF MATERNAL RECALL OF CARE-SEEKING EVENTS FOR CHILDHOOD ILLNESS IN SOUTHERN PROVINCE, ZAMBIA

**Emily Carter**[1], Micky Ndhlovu[2], Emmy Nkhama[2], Melinda Munos[1], Joanne Katz[3], Thomas P. Eisele[4]
*[1]Institute for International Programs, Johns Hopkins School of Public Health, Baltimore, MD, United States, [2]Chainama College of Health Sciences, Lusaka, Zambia, [3]Johns Hopkins School of Public Health, Baltimore, MD, United States, [4]Center for Applied Malaria Research and Evaluation, Tulane School of Public Health and Tropical Medicine, New Orleans, LA, United States*

4:30 p.m.

## 1837

### POLYPHARMACY, TREATMENT SEEKING, AND DIAGNOSTIC TESTING IN A POPULATION-BASED SURVEY OF FEBRILE ILLNESS IN WESTERN KENYA

**Jeremiah Laktabai**[1], Diana Menya[1], Wendy Prudhomme O'Meara[2]
*[1]Moi University, Eldoret, Kenya, [2]Duke University, Durham, NC, United States*

4:45 p.m.

## 1838

### QUALITY IMPROVEMENT STRATEGIES TO MONITOR CHVS MRDT PERFORMANCE: A CASE OF MALARIA TESTING IN WESTERN KENYA

**Joseph Kirui**[1], Diana Menya[2], Jeremiah Laktabai[2], Betty Lelei[1], Adriane Lesser[3], Wendy Prudhomme O'Meara[3]
*[1]Academic Model Providing Access to Healthcare, Eldoret, Kenya, [2]Moi University, Eldoret, Kenya, [3]Duke University, Durham, NC, United States*

5 p.m.

## 1839

### MISSED OPPORTUNITIES FOR INTERMITTENT PREVENTIVE TREATMENT IN PREGNANCY FOR MALARIA: EVIDENCE FROM THE KENYA DEMOGRAPHIC AND HEALTH SURVEY, 2014

**Irene Obago**[1], Vincent Were[2], Christopher Nyagol[3], Ann M. Buff[4]
*[1]University of Kabianga, Kericho, Kenya, [2]Center for Global Health Research, Kenya Medical Research Institute, Kisumu, Kenya, [3]National Malaria Control Programme, Ministry of Health, Kisumu, Kenya, [4]Division of Parasitic Diseases and Malaria, Center for Global Health, U.S. Centers for Disease Control and Prevention, Atlanta, GA, United States*

5:15 p.m.

## 1840

### IMPLEMENTATION OF SEASONAL MALARIA CHEMOPREVENTION IN THE GAMBIA

**Serign Ceesay**[1], Eric Hubbard[2], Kalifa Bojang[1], Balla Kandeh[3], Olimatou Kolley[3], Huja Jah[4], Jane Achan[1], Suzanne van Hulle[5], Lantonirina Razafindralambo[6], Matthew Cairns[7], Paul Snell[7], Paul Milligan[7]
*[1]MRC Laboratories, Fajara, Gambia, [2]CRS, Bamako, Mali, [3]National Malaria Control Programme, Banjul, Gambia, [4]CRS, Banjul, Gambia, [5]Catholic Relief Services, Baltimore, MD, United States, [6]Catholic Relief Services, Dakar, Senegal, [7]London School of Hygiene & Tropical Medicine, London, United Kingdom*

5:30 p.m.

## 1841

### A CLUSTER RANDOMIZED TRIAL OF TARGETED BEHAVIOR CHANGE COMMUNICATION USING A MOBILE HEALTH PLATFORM TO INCREASE UPTAKE OF LLINS AMONG PREGNANT WOMEN IN TANZANIA: THE HATI-SALAMA PROJECT

**Karen Yeates**[1], Jessica Sleeth[1], Eleonora Kinnicutt[2], Michael Sarco[3], Kenneth Nchimbi[4], Thom Dixon[5]
*[1]Queen's University, Kingston, ON, Canada, [2]Pamoja Tunaweza Women's Centre, Moshi, United Republic of Tanzania, [3]Mennonite Economic Development Associates, Bethesda, MD, United States, [4]Mennonite Economic Development Associates, Dar es Salaam, United Republic of Tanzania, [5]Mennonite Economic Development Associates, Waterloo, ON, Canada*

**Symposium 148**

## Novel Phenotypic and Genotypic Markers of Piperaquine Resistance and Dihydroartemisinin-Piperaquine Treatment Failure in Cambodia

*Marriott - Imperial B*
Wednesday, November 16, 4 p.m. - 5:45 p.m.

Artemisinin combination therapy (ACT) is recommended worldwide for the treatment of *Plasmodium falciparum* malaria. Dihydroartemisinin-piperaquine (DHA-PPQ), a current frontline ACT in multiple Southeast Asian countries, is now failing in Cambodian provinces where artemisinin resistance has emerged. In Cambodia, recent increases in DHA-PPQ failures and decreases in PPQ susceptibility *in vitro* suggest that PPQ resistance has emerged and is spreading rapidly in the Greater Mekong Subregion (GMS). These findings, and the discovery that PPQ-resistant parasites are sensitive to the former ACT partner drug mefloquine (MQ), have led Cambodia's national malaria control program and the World Health Organization to recommend artesunate-mefloquine (AS-MQ) as the first-line ACT in 10 Cambodian provinces. Molecular markers are urgently needed for use in large-scale surveillance programs to predict DHA-PPQ failures in the GMS, and to investigate the molecular mechanism of PPQ resistance. This symposium will present recently published and unpublished data that define the problem and extent of DHA-PPQ failures; identify new molecular markers that can be readily used to survey the GMS for PPQ resistance; and elucidate the molecular mechanism of PPQ resistance. The first presentation will discuss clinical studies of DHA-PPQ treatment failures and AS-MQ treatment successes, and define the need for a molecular marker of PPQ resistance to guide treatment policies. The next speaker will present a new molecular marker of PPQ resistance, a plasmepsin II-III gene amplification on chromosome 14, which associates with increased parasite survival rates in vitro and increased risk of DHA-PPQ failures. The next speaker will present an independent study that identifies this same marker as being associated with elevated PPQ IC50 values *in vitro* and increased risk of DHA-PPQ treatment failure, and will discuss the origin and spread of PPQ resistance in the GMS. The final speaker will present data showing that a variant isoform of the pfcrt gene can confer *in vitro* resistance to PPQ, and ongoing studies to assess the role of other genetic variants, including plasmepsin II amplification. This symposium will provide the audience with up-to-date information on frontline ACT failure in the GMS, and collaborative efforts to monitor and circumvent this problem.

CHAIR

Rick Fairhurst
*National Institutes of Health, National Institute of Allergy and Infectious Diseases, Bethesda, MD, United States*

Didier Menard
*Institut Pasteur du Cambodge, Phnom Penh, Cambodia*

4 p.m.
**ACT FAILURES IN *PLASMODIUM FALCIPARUM* MALARIA: OPTIONS FOR IMPROVING TREATMENT IN THE GREATER MEKONG SUBREGION**

Rick Fairhurst
*National Institutes of Health, National Institute of Allergy and Infectious Diseases, Bethesda, MD, United States*

4:25 p.m.
**A MOLECULAR MARKER OF PIPERAQUINE-RESISTANT *PLASMODIUM FALCIPARUM* MALARIA**

Benoit Witkowski
*Institut Pasteur du Cambodge, Phnom Penh, Cambodia*

4:50 p.m.
**GENETIC MARKERS ASSOCIATED WITH DIHYDROARTEMISININ-PIPERAQUINE FAILURE IN *PLASMODIUM FALCIPARUM* MALARIA**

Roberto Amato
*Wellcome Trust Sanger Institute, Cambrdge, United Kingdom*

5:15 p.m.
**DISSECTING THE MOLECULAR MECHANISMS OF PIPERAQUINE RESISTANCE**

David A. Fidock
*Columbia University, New York, NY, United States*

## Symposium 149

## Prospects for Development of Standalone and Combination Vaccines against ETEC

*Marriott - Marquis B*
Wednesday, November 16, 4 p.m. - 5:45 p.m.

The results of the recent Global Enteric Multicenter Study (GEMS) indicated that ETEC remains an important cause of potentially life-threating diarrheal illness among infants and young children in developing countries and also contributes to poor physical and cognitive development among children living in endemic areas. Combined with clean water, improved sanitation and expanding rotavirus vaccine coverage, vaccination against a wider array of enteric pathogens represents a key component in ongoing efforts to further reduce the health threat of diarrheal diseases. This symposium will focus on current models of vaccine impact and detail recent progress towards achieving safe, effective and affordable vaccines against ETEC; and finally highlight approaches which may facilitate the development of combination vaccines with better prospects for widespread uptake.

CHAIR

Richard I. Walker
*PATH, Washington, DC, United States*

Duncan Steele
*Bill & Melinda Gates Foundation, Seattle, WA, United States*

4 p.m.
**BROADER HEALTH AND ECONOMIC IMPACTS OF ETEC AND *SHIGELLA*: IMPLICATIONS FOR A PRO-EQUITY AND PRO-DEVELOPMENT VACCINE**

Richard Rheingans
*University of Florida, Gainesville, FL, United States*

4:20 p.m.
**IMMUNOLOGICAL FACTORS CONTRIBUTING TO ENHANCED PROTECTIVE EFFICACY IN VOLUNTEERS IMMUNIZED WITH DMLT ADJUVANTED ACE 527 ETEC VACCINE**

Subhra Chakraborty
*Johns Hopkins University, Baltimore, MD, United States*

4:40 p.m.
**MEFA, MULTIEPITOPE FUSION ANTIGEN, A NOVEL APPROACH TO DEVELOP BROADLY PROTECTIVE VACCINES AGAINST ETEC DIARRHEA**

Weiping Zhang
*Kansas State University College of Veterinary Medicine, Manhattan, KS, United States*

5:20 p.m.
**PRE-CLINICAL EVALUATION OF COMBINED *SHIGELLA*-ETEC VACCINES**

Eileen M. Barry
*University of Maryland, Baltimore, MD, United States*

## Symposium 150

## Towards Better Surveillance: Assessing and Building on Routine Systems to Develop Specialized Surveillance Platforms for Elimination

*Marriott - Marquis C*
Wednesday, November 16, 4 p.m. - 5:45 p.m.

The surveillance system is the backbone of a malaria elimination program, providing information on where parasites can be found in people, where transmission is occurring, how interventions should be targeted, and how regions are progressing towards goals. Many countries are currently transitioning from surveillance systems reporting aggregated case data towards systems that facilitate rapid confirmation, reporting, and investigation of individual cases and enhanced analytic methods to guide decision-making related to anti-malaria interventions. That transition requires navigating a myriad of technological challenges to facilitate accurate collection and analysis of epidemiological intelligence. Data collected or reported through different and fragmented channels must be linked together into unified intelligence systems. Finally, data must be routinely analyzed for programmatic decision-making and appropriate response. This symposium will provide an overview of the technical challenges faced by countries as they are transitioning to an elimination-focused surveillance system, including the development of regional platforms for data collection, and to harmonizing multiple national systems into one cohesive approach. Specific surveillance challenges encountered in elimination countries across southern Africa and southeast Asia will be presented. Presentations from individual countries will cover innovative solutions to issues such as cross-border surveillance of migrants, combining entomological and epidemiological surveillance in one system, and harmonization of multiple legacy surveillance

systems into one comprehensive platform. The symposium will conclude with a Q&A panel discussion with presenters to discuss best practices and novel approaches to developing effective surveillance systems for elimination.

CHAIR

Erin Eckert
*President's Malaria Initiative, United States Agency for International Development, Washington, DC, United States*

Richard Cibulskis
*World Health Organization, Geneva, Switzerland*

4 p.m.
**TECHNOLOGICAL CHALLENGES PREVENTING MALARIA SURVEILLANCE SYSTEMS FROM EFFECTIVELY SUPPORTING MALARIA ELIMINATION**

Arnaud Le Menach
*Clinton Health Access Initiative, New York, NY, United States*

4:20 p.m.
**DEVELOPING CROSS-BORDER SURVEILLANCE WITH A FOCUS ON MOBILE AND MIGRANT POPULATIONS IN THE GREATER MEKONG SUB-REGION**

Arantxa Roca-Feltrer
*Malaria Consortium, Phnom Penh, Cambodia*

4:40 p.m.
**IMPROVING THE QUALITY AND TIMELINESS OF MALARIA EPIDEMIOLOGICAL AND ENTOMOLOGICAL DATA COLLECTION AND REPORTING IN THE FIELD: EXPERIENCE FROM A DHIS2 ANDROID APP IN ZIMBABWE**

Joseph Mberikunashe
*Malaria Control Programme, Ministry of Health and Child Care, Harare, Zimbabwe*

5 p.m.
**HARMONIZATION OF MULTIPLE INFORMATION SYSTEMS INTO A COMPREHENSIVE SURVEILLANCE PLATFORM IN MADAGASCAR**

Yazoume Ye
*ICF International, Rockville, MD, United States*

## Symposium 151

## A Shift in Biting Behavior: Outdoor Host-Seeking Behavior of Malaria Vectors and the Potential Impact on Malaria Control

*Marriott - Marquis D*
Wednesday, November 16, 4 p.m. - 5:45 p.m.

Increased vector control efforts during the last 15 years have drastically reduced malaria infections and deaths. Most malaria vector control programs rely on long-lasting insecticide treated bed nets (LLINs) and/or indoor residual spraying (IRS) of insecticides to protect people and reduce mosquito populations. These vector control tools are largely predicated on the endophagic and endophilic host seeking behavior of malaria vectors. However, the use of these methods has sometimes led to an increase in outdoor host seeking behavior of malaria mosquitoes. It is widely thought that such a behavioral shift may threaten the efficacy of these control methods in the future. Subsequently, it has been suggested that additional tools that specifically target outdoor biting mosquitoes are needed to continue overall reductions in malaria transmission worldwide, as well as in regions nearing malaria elimination. This symposium will address outdoor host-seeking behavior in *Anopheles* mosquitoes and the risk it poses to malaria control. This session will feature recent examples of increased *Anopheles* outdoor host seeking behavior in the field and explore its genetic basis. It will also discuss the potential effects of outdoor biting on malaria transmission and control, as well as novel vector control strategies that target outdoor host seeking mosquitoes.

CHAIR

Jacob I. Meyers
*Texas A&M University, College Station, TX, United States*

Michel A. Slotman
*Texas A&M University, College Station, TX, United States*

4 p.m.
**GLOBAL INCREASE IN EXOPHAGY OF *ANOPHELES* MALARIA VECTORS: HYPOTHESIS AND EVIDENCE**

Jan E. Conn
*Wadsworth Center, New York State Department of Health, Albany, NY, United States*

4:20 p.m.
**GENETIC BASIS OF OUTDOOR HOST SEEKING IN *ANOPHELES COLUZZII* FROM BIOKO ISLAND**

Jacob I. Meyers
*Texas A&M University, College Station, TX, United States*

4:40 p.m.
**IMPACT OF OUTDOOR BITING ON INFECTION IN HUMANS ON BIOKO ISLAND**

Immo Kleinschmidt
*London School of Hygiene & Tropical Medicine, London, United Kingdom*

5 p.m.
**MODELING THE IMPACT OF OUTDOOR FEEDING ON MALARIA TRANSMISSION AND ITS CONTROL THROUGH NEW TOOLS**

Nakul Chitnis
*Swiss Tropical and Public Health Institute, Basel, Switzerland*

## Symposium 152

## Careers in Refugee Health: Case-Based Perspectives and Descriptions

*Marriott - Atrium A*
Wednesday, November 16, 4 p.m. - 5:45 p.m.

The increasing number of refugees across the globe and the increasing amount of media coverage has raised awareness and piqued interest of potential careers working in refugee health among medical students, residents, fellows and young professionals. With this rising awareness comes many questions: What does working with refugees actually entail? What are the career opportunities? What are the specific areas one can work within the field? Many trainees are not certain about options for careers in international or domestic refugee health. They struggle with being able to identify how to find fulfilling work in global health, particularly if they are based in their country of birth and not able to work internationally.

CHAIR

John Daniel Ballew
*University of Rochester Medical Center, Rochester, NY, United States*

William Stauffer
*University of Minnesota, Minneapolis, MN, United States*

4 p.m.
**EMERGENCY RESPONSE/RELIEF**

Susan Cookson
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

4:15 p.m.
**ORGANIZED REFUGEE RESETTLEMENT**

William Stauffer
*University of Minnesota, Minneapolis, MN, United States*

4:30 p.m.
**U.S./DOMESTIC REFUGEE HEALTH**

Emily Jentes
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

Alison Spitz
*International Rescue Committee, Atlanta, GA, United States*

Ann Settgast
*Health Partners Center for International Health, University of Minnesota, St. Paul, MN, United States*

## Symposium 153

## An Integrated Approach to Tropical Dermatology

*Marriott - Atrium B*
Wednesday, November 16, 4 p.m. - 5:45 p.m.

Neglected tropical diseases (NTDs) represent a diverse group of conditions many of which have manifestations in the skin. With the current appetite to address NTDs in a more integrated way, this symposium will focus on enhancing dermatological diagnostic expertise for the tropical clinician and outline simple cutaneous interventions designed to benefit more than one disease.

CHAIR

Claire Fuller
*International Foundation for Dermatology, London, United Kingdom*

Gail Davey
*Brighton and Sussex Medical School, Brighton, United Kingdom*

4 p.m.
**CAN A SIMPLE DERMATOLOGICAL ALGORITHM FOR ITCHY NEGLECTED TROPICAL DISEASES SUCH AS SCABIES, SCHISTOSOMIASIS AND ONCHOCERCIASIS GUIDE THE FIELDWORKER TO THE CORRECT INTERVENTION? CAN MDAS IMPROVE MORE THAN ONE DISEASE**

Margot Whitfeld
*St. Vincents Hospital, Sydney, Australia*

4:20 p.m.
**A REVIEW OF ULCERS IN THE TROPICS INCLUDING BURULI, YAWS, TROPICAL ULCER AND LEISHMANIASIS AND EXPLORATION OF AN INTEGRATED APPROACH TO INTERVENTION: THE BENEFITS OF GOOD WOUND CARE AFTER APPROPRIATE DISEASE SPECIFIC APPROACH**

Rie R. Yotsu
*National Centre for Global Health and Medicine, Tokyo, Japan*

4:40 p.m.
**TRAINING COMMUNITY HEALTH CARE WORKERS: CAN YOU TEACH DERMATOLOGY IN A DAY? EXPERIENCE FROM MEXICO**

Roberto Estrada Castanon
*Centro de Investigación de Enfermedades Tropicales, Acapulco, Mexico*

5 p.m.
**POLICY CHANGE TO THE INTEGRATED CONTROL OF SKIN NTDS: A NEW APPROACH TO ADDRESSING BURULI, LEPROSY, LEISHMANIASIS, TROPICAL LYMPHEDEMA, MYCETOMA, SCABIES AND YAWS**

Kingsley Asiedu
*World Health Organization, Geneva, Switzerland*

## Symposium 154

## The WASH Benefits Study: Cluster-Randomized Trials in Bangladesh and Kenya to Measure the Effects of Individual and Combined Water Quality, Sanitation, Handwashing and Nutrition Interventions on Child Growth and Diarrhea

*Marriott - Room A601*
Wednesday, November 16, 4 p.m. - 5:45 p.m.

Infection and inadequate diet are proximate risk factors for undernutrition and early life growth faltering; the two processes likely act reciprocally in a vicious cycle that perpetuates physiologic and metabolic deficits, increases the mortality risk, and potentially delays cognitive development. There is limited evidence to determine whether water quality, sanitation, and handwashing (WASH) interventions can improve child growth during the first two years of life and whether nutritional interventions could be enhanced if provided concurrently with WASH interventions. There is also limited evidence about whether combined WASH interventions reduce diarrhea among young children more than single water, sanitation, or handwashing interventions. To help fill this evidence gap, the WASH Benefits study delivered interventions designed to reduce infection and improve nutrition in two cluster-randomized controlled trials in rural Bangladesh and Kenya between 2012 and 2016 (funding: Bill & Melinda Gates Foundation). In each country, geographically matched clusters were randomized to one of six intervention arms: 1) water quality, 2) sanitation, 3) handwashing, 4) nutrition, 5) combined water+sanitation+handwashing 6) nutrition+combined water+sanitation+handwashing; or a double-sized control arm. The interventions included the following hardware and behavior change promotion: Water - chlorine water treatment supplies in both countries and a safe storage vessel in Bangladesh; Sanitation - child potties, sani-scoops to remove feces from household environments, latrine upgrades; Handwashing - handwashing stations, soapy water bottles located at handwashing locations, detergent soap to supply soapy water bottles; Nutrition - Lipid-based Nutrient Supplement (LNS) for children aged 6-24 months and promotion of the exclusive breastfeeding and complementary feeding. Combined arms received hardware for each single arm plus promotion. The trials enrolled pregnant mothers during their second or third trimester and their newborn children (N=5,551 in Bangladesh and N=8,246 in Kenya) and measured outcomes one and two years

after intervention delivery. Primary outcomes included length-for-age Z-scores in children measured at the two-year follow-up and caregiver-reported diarrhea among children <36 months at enrollment. Secondary outcomes included prevalence of stunting, markers of environmental enteropathy, enteric parasite infection, and child development scores (verbal, motor and personal/social). The symposium will include primary outcome results from Bangladesh and preliminary findings from Kenya. These presentations will provide insights into the separate and integrated roles of WASH and nutrition interventions in promoting health and growth in early life.

CHAIR

Jack Colford
*University of California Berkeley, Berkeley, CA, United States*

4 p.m.
**OPENING REMARKS AND OVERVIEW OF DESIGN AND GOALS**

Jack Colford
*University of California Berkeley, Berkeley, CA, United States*

4:15 p.m.
**WASH BENEFITS BANGLADESH**

Stephen Luby
*Stanford University, Stanford, CA, United States*

4:35 p.m.
**WASH BENEFITS KENYA**

Clair Null
*Mathematica Policy Research and Innovations for Poverty Action, Washington, DC, United States*

4:55 p.m.
**INTERVENTION IMPACTS ON ANEMIA IN BANGLADESH AND KENYA**

Christine Stewart
*University of California Davis, Davis, CA, United States*

**Symposium 155**

## Fifteen Years of Nipah Virus in Bangladesh: The Latest Findings on Viral Genetics, Transmission in Humans and the Reservoir Host, and Prospects for a Human Vaccine

*Marriott - Room A602*
Wednesday, November 16, 4 p.m. - 5:45 p.m.

Nipah virus was recently named by the World Health Organization as one of the top ten most dangerous diseases in the world, both because of the high case fatality (>70% in Bangladesh) and its capacity for person-to-person spread. Five countries have previously reported outbreaks of human Nipah virus infection, but Bangladesh is the only country in the world where outbreaks recur each year, posing the risk for emergence of a more highly transmissible strain that could lead to a public health emergency. Scientists from Bangladesh and the international public health community have been working collaboratively for the past 15 years to understand the dynamics of transmission in pteropid bats; the pathways for transmission from bats to people and from person-to-person; and design of interventions to prevent transmission. This symposium will commemorate the 15-year anniversary of the Nipah story in Bangladesh by presenting the latest research on Nipah virus and closing with a discussion moderated by a leading public health official from Bangladesh on the epidemic potential of Nipah and opportunities for control, including development and use of human vaccines.

CHAIR

Emily S. Gurley
*International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh*

Stephen Luby
*Stanford University, Stanford, CA, United States*

4 p.m.
**NIPAH VIRUS SERODYNAMICS AND HOST ECOLOGY OF *PTEROPUS MEDIUS,* BANGLADESH**

Jonathan Epstein
*EcoHealth Alliance, New York, NY, United States*

4:20 p.m.
**COMPARING THE GENETICS OF NIPAH VIRUSES FROM BATS AND HUMANS IN BANGLADESH**

Ziaur Rahman
*International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh*

4:40 p.m.
**NIPAH VIRUS HUMAN TRANSMISSION CHAINS: RISK FACTORS AND OPPORTUNITIES FOR CONTROL**

Birgit Nikolay
*Institut Pasteur, Paris, France*

5 p.m.
**RVSV NIPAH VACCINE IN HAMSTER AND NONHUMAN PRIMATES**

Emmie de Wit
*National Institute of Allergy and Infectious Disease, Hamilton, MT, United States*

5:20 p.m.
**DISCUSSION**

Mahmudur Rahman
*Institute for Epidemiology, Disease Control and Research (IEDCR), Ministry of Health and Family Welfare, Government of Bangladesh, Dhaka, Bangladesh*

**Scientific Session 156**

## Malaria: Parasite, Vector and Host Genomics

*Marriott - Room A703/A704*
Wednesday, November 16, 4 p.m. - 5:45 p.m.

CHAIR

Justin Gibbons
*Morsani College of Medicine, University of South Florida, Tampa, FL, United States*

Shannon Takala Harrison
*University of Maryland School of Medicine, Baltimore, MD, United States*

4 p.m.

## 1842

### CONCURRENTLY ESTIMATING THE COMPLEXITY OF INFECTION AND SNP ALLELE FREQUENCY FOR MALARIA PARASITES

**Hsiao-Han Chang**[1], Colin J. Worby[1], Adoke Yeka[2], Joaniter Nankabirwa[3], Moses R. Kamya[3], Sarah G. Staedke[4], Grant Dorsey[5], Anna E. Jeffreys[6], Christina Hubbart[6], Kirk A. Rockett[6], Roberto Amato[6], Dominic P. Kwiatkowski[6], Caroline Buckee[1], Bryan Greenhouse[5]

*[1]Harvard T.H. Chan School of Public Health, Boston, MA, United States, [2]Makerere University School of Public Health, College of Health Sciences, Kampala, Uganda, [3]Department of Medicine, Makerere University College of Health Sciences, Kampala, Uganda, [4]London School of Hygiene & Tropical Medicine, London, United Kingdom, [5]Department of Medicine, University of California San Francisco, San Francisco, CA, United States, [6]Wellcome Trust Centre for Human Genetics, University of Oxford, Oxford, United Kingdom*

4:15 p.m.

## 1843

### USE OF SHARED HAPLOTYPES THAT ARE IDENTICAL-BY-DESCENT TO INFER POPULATION STRUCTURE AND PARASITE MIGRATION WITHIN SOUTHEAST ASIA

**Shannon Takala Harrison**[1], Amol C. Shetty[1], Christopher G. Jacob[2], Alexa Machikas[1], Sonia Agrawal[1], Fang Huang[1], David Saunders[3], Chanthap Lon[4], Pascal Ringwald[5], Kay Thwe Han[6], Tin Maung Hlaing[7], Myaing M. Nyunt[1], Tracking Resistance to Artemisinin Collaboration, on (ARC3) Artemisinin Resistance Confirmation Characterizati, (ARCE) Artemisinin Resistance Containment and Elimination, MalariaGEN *Plasmodium falciparum* Community Project, Joana C. Silva[1], Timothy D. O'Connor[1], Christopher V. Plowe[1]

*[1]University of Maryland School of Medicine, Baltimore, MD, United States, [2]Wellcome Trust Sanger Institute, Hinxton, United Kingdom, [3]Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand, [4]Armed Forces Research Institute of Medical Sciences, Phnom Penh, Cambodia, [5]World Health Organization, Geneva, Switzerland, [6]Department of Malaria Research, Ministry of Health, Yangon, Myanmar, [7]Defence Services Medical Research Centre, Naypyitaw, Myanmar*

4:30 p.m.

## 1844

### WHOLE GENOME SEQUENCING USED TO DISTINGUISH *PLASMODIUM VIVAX* RELAPSE FROM REINFECTION AND PRIMAQUINE RESISTANCE IN PERU

**Annie Cowell**[1], Hugo Valdivia[2], Sesh Sundararaman[3], Elizabeth Loy[3], Andres G. Lescano[4], Christian Baldeviano[5], Salomon Durand[5], Vince Gerbasi[5], Beatrice Hahn[3], Elizabeth Winzeler[1]

*[1]University of California San Diego, La Jolla, CA, United States, [2]Universidade Federal de Minas Gerais, Belo Horizone, Brazil, [3]University of Pennsylvania, Philadelphia, PA, United States, [4]Universidad Peruana Cayetano Heredia, Lima, Peru, [5]U.S. Naval Medical Research Unit - 6, Lima, Peru*

4:45 p.m.

## 1845

### A GENOME-WIDE ANALYSIS OF RECENT SELECTION IN AFRICAN MALARIA VECTOR POPULATIONS

**Nicholas Harding**[1], Krzysztof Kozak[2], Mara Lawniczak[2], ag1000G consortium

*[1]University of Oxford, Oxford, United Kingdom, [2]WTSI, Cambridge, United Kingdom*

5 p.m.

## 1846

### GENOME-WIDE ASSOCIATION STUDY OF SUSCEPTIBILITY TO SEVERE MALARIA IN 17,500 INDIVIDUALS FROM AFRICA, ASIA AND OCEANIA

**Gavin Band**, MalariaGEN Genomic Epidemiology Network

*University of Oxford, Oxford, United Kingdom*

5:15 p.m.

## 1847

### COMPARATIVE TRANSCRIPTOME ANALYSIS OF THE HOST RESPONSE IN BLOOD AND SPLEEN DURING THE COURSE OF A *P. CHABAUDI CHABAUDI* INFECTION

**John Joseph Valletta**[1], Jingwen Lin[2], Mario Recker[1], Jean Langhorne[2]

*[1]University of Exeter, Penryn, United Kingdom, [2]The Francis Crick Institute, London, United Kingdom*

5:30 p.m.

## 1848

### MELDING CHEMOGENOMICS AND CHEMOINFORMATICS TO DEFINE MALARIA'S DRUGGABLE GENOME

**Justin A. Gibbons**[1], Kenneth Udenze[2], Chenqi Wang[2], Swamy R. Adapa[2], Min Zhang[2], Christophe Bodenreiser[3], Pablo Bifani[3], Tierry Diagana[3], John H. Adams[2], Rays H. Jiang[2]

*[1]Morsani College of Medicine, University of South Florida, Tampa, FL, United States, [2]Department of Global Health, College of Public Health, University of South Florida, Tampa, FL, United States, [3]Novartis Institute for Tropical Diseases Pte. Ltd, Chromos, Singapore*

## Symposium 157

## Poor Quality Medicines - The Third Man Threat (with apologies to Graham Greene)

*Marriott - Room A706/A707*

Wednesday, November 16, 4 p.m. - 5:45 p.m.

One of literature's most notorious, albeit fictional, criminals was Harry Lime (played by Orson Welles) in the film "The Third Man." After a career trading in fake penicillin, he is killed while escaping in the sewers of Vienna in the late 1940s. Written by Graham Greene, this play is based on the real and vast trade in fake penicillin in chaotic, post-war Europe. Falsified medicines are also a significant problem in today's world – harming patients and negating many of the benefits of modern medical care. Substandard medicines, resulting from unintentional but negligent errors in pharmaceutical manufacture, are also a major issue and may be especially important in engendering anti-microbial and parasitic drug resistance. This symposium will be a vital update for attendees on this neglected but critical and fast moving field. ASTMH is the only international global health meeting that has symposia on this topic and audiences desiring to learn about it have grown substantially. Four novel aspects of medicine quality will be discussed: 1) the wide availability of non-quality assured antimalarials in malarious Africa that risk poor patient outcome and artemisinin resistance (ACT Watch), 2) the challenges and opportunities confronting surveillance of medicines quality in select African countries (USP), 3) the problem of poor quality maternal health medicines, such as oxytocin, that risk poor mother and baby outcomes (WWARN/IDDO), 4) and the latest data on the extent and forensic chemistry of falsified artemisinin combination therapy drugs in sub-Saharan Africa and what is being done to improve antimalarial quality for vulnerable patients (GA Tech and GFATM).

CHAIR

Jim Herrington

*University of North Carolina at Chapel Hill, Gillings School of Global Public Health, Chapel Hill, NC, United States*

Paul Newton

*University of Oxford and LOMWRU, Mahosot Hospital, WWARN/IDDO, Vientiane, Lao People's Democratic Republic*

4 p.m.
**NON-QUALITY-ASSURED ACT AVAILABILITY AND DISTRIBUTION IN 8 AFRICAN COUNTRIES: 2009-2016**

Megan Littrel
*ACTWatch, Population Services International, Washington, DC, United States*

4:20 p.m.
**SURVEILLANCE OF MEDICINES QUALITY IN SELECT AFRICAN COUNTRIES: CHALLENGES AND OPPORTUNITIES**

Mustapha Hajjou
*United States Pharmacopeial Convention, Rockville, MD, United States*

4:40 p.m.
**INEQUALITY OF MATERNAL AND SEXUAL HEALTH MEDICINES**

Celine Caillet
*University of Oxford and LOMWRU, Mahosot Hospital, WWARN/IDDO, Vientiane, Lao People's Democratic Republic*

5 p.m.
**FORENSIC CHEMISTRY OF FALSIFIED ARTEMISININ COMBINATION THERAPY DRUGS IN SUB-SAHARAN AFRICA**

Facundo Fernández
*Georgia Institute of Technology, Atlanta, GA, United States*

**Plenary Session 158**

## Plenary Session IV: President's Address and Annual Business Meeting

*Marriott - Marquis B*
Wednesday, November 16, 6:15 p.m. - 7:45 p.m.

CHAIR

David R. Hill
*Quinnipiac University, Hamden, CT, United States*

Karen A. Goraleski
*American Society of Tropical Medicine and Hygiene, Oakbrook Terrace, IL, United States*

6:15 p.m.
**INTRODUCTION**

Brad Schneider
*Metabiota, San Francisco, CA, United States*

6:30 p.m.
**ASTMH: GLOBAL HEALTH IMPACTS FROM ONE CENTURY TO THE NEXT**

**Stephen Higgs, PhD, FRES, FASTMH**
*Associate Vice President for Research*
*Director, Biosecurity Research Institute*
*Peine Professor of Biosecurity*
*University Distinguished Professor, Diagnostic Medicine and Pathobiology*
*Kansas State University*
*Editor-in-Chief,* Vector-Borne & Zoonotic Diseases

Stephen Higgs, an infectious disease expert with international research experience, became the director of Kansas State's Biosecurity Research Institute in July 2011. He is responsible for oversight, coordination and expansion of the institute's multidisciplinary bio-secure research and education programs for studies on diseases that impact the global food supply, including those affecting humans, livestock and plants. Dr. Higgs serves as associate vice president for research, holds the Virginia and Perry Peine biosecurity chair and is a university distinguished professor in diagnostic medicine and pathobiology at K-State's College of Veterinary Medicine. He has held positions at the University of Texas Medical Branch, Colorado State University, and Oxford and London in the United Kingdom. Dr. Higgs is an expert in vector biology, arthropod-borne infectious diseases, immune modulation and vaccine evaluation. He is experienced in developing collaborative, multidisciplinary research and education, and has received funding through numerous competitive grants from federal and private organizations, including the Bill & Melinda Gates Foundation. Dr. Higgs has published more than 155 peer-reviewed papers, 16 book chapters and is active with past and ongoing membership on national and international research program review panels. He is a Fellow and current president of the American Society of Tropical Medicine and Hygiene and a fellow of the Royal Entomological Society. He is editor-in-chief of the international journal *Vector-Borne and Zoonotic Diseases*, and an editorial board member of *Biosecurity and Bioterrorism: Biodefense Strategy, Practice and Science*. Dr. Higgs earned a doctorate in parasitology from Reading University in the United Kingdom and a bachelor's of science with honors in zoology from King's College in London.

7 p.m.
**ANNUAL BUSINESS MEETING**

David R. Hill
*Quinnipiac University, Hamden, CT, United States*

Karen A. Goraleski
*American Society of Tropical Medicine and Hygiene, Oakbrook Terrace, IL, United States*

## Poster Session C Dismantle

*Hilton - Grand Ballroom and Grand Salon*
Wednesday, November 16, 7 p.m. - 8 p.m.

# Thursday, November 17

## Registration

*Marriott - Marquis Foyer*
Thursday, November 17, 7 a.m. - 10:30 a.m.

## Speaker Ready Room

*Marriott - International A*
Thursday, November 17, 7 a.m. - 10:30 a.m.

## Special Interactive Experience: The Refugee Journey to Wellbeing

*Marriott - Atrium Foyer*
Thursday, November 17, 7:30 a.m. - 11 a.m.

At the end of 2015, there were an estimated 65.3 million people displaced around the world, largely because of extended conflicts in the Middle East, Northern and sub-Saharan Africa, and Asia. The American Society of Tropical Medicine and Hygiene and the U.S. Centers for Disease Control and Prevention (CDC), with participation from a number of domestic and international partners, are hosting this unique interactive experience on refugee health. Through video, photos, live testimonials, hands-on activities and replicated scenes from the field, The Refugee Journey to Wellbeing highlights the clinical and public health aspects of the refugee experience from displacement to resettlement.

## Internet Nook

*Marriott - Imperial Foyer*
Thursday, November 17, 7 a.m. - 10:30 a.m.

***Sponsored by Takeda Pharmaceuticals International AG***

PREMIER

## ASTMH Council Meeting

*Marriott - Room A708*
Thursday, November 17, 7:30 a.m. - 9:30 a.m.

### Symposium 159

## New Tools and New Rules for River Blindness Elimination: Where Do We Go from Here?

*Marriott - Imperial A*
Thursday, November 17, 8 a.m. - 9:45 a.m.

With the publication of new World Health Organization guidelines for stopping mass drug administration (MDA) and for verifying elimination of transmission of onchocerciasis, and following up from the closing of the African Program for Onchocerciasis Control (APOC), a general shift from control programs to elimination programs is being made in the Africa region. These new guidelines utilize newer, more sensitive diagnostics requiring greater scrutiny of existing control programs. New tools have been developed, new ways of thinking have emerged, and the need for local ownership of programs has become critical. Speakers will review the new 2016 WHO guidelines, the performance of currently available diagnostics for assessing program impact and determining whether it is safe to stop mass drug administration, complementary and alternate strategies for eliminating river blindness, and the development of national river blindness elimination committees.

CHAIR

Adrian D. Hopkins
*Mectizan Donation Program, Decatur, GA, United States*

Darin A. Evans
*United States Agency for International Development, Washington, DC, United States*

8 a.m.
**INTRODUCTION TO THE NEW WHO GUIDELINES AND GAPS IN THE GUIDANCE**
Paul T. Cantey
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:15 a.m.
**PERFORMANCE AND SELECTION OF AVAILABLE DIAGNOSTIC TESTS FOR ASSESSING PROGRAMS**
Thomas R. Unnasch
*Chair, Department of Global Health, University of South Florida, Tampa, FL, United States*

8:35 a.m.
**COMPLEMENTARY AND ALTERNATIVE TREATMENT STRATEGIES (VECTOR CONTROL)**
Moses N. Katabarwa
*The Carter Center, Emory University, Atlanta, GA, United States*

8:55 a.m.
**EMERGENCE AND FUNCTION OF NATIONAL RIVER BLINDNESS ELIMINATION COMMITTEES**
Oumer Shafi
*Emory University, Rollins School of Public Health, Atlanta, GA, United States*

### Symposium 160

## Zika Virus in Salvador, Brazil and in Puerto Rico

*Marriott - Imperial B*
Thursday, November 17, 8 a.m. - 9:45 a.m.

Zika virus (ZIKAV) appeared for the first time in the Western Hemisphere in 2015 in Brazil and has since spread to over 30 countries. The Brazil ZIKAV outbreak was temporally associated with a striking rise in microcephalic infant births. Brazil and other Latin American countries with confirmed ZIKAV have also reported a concurrent increased incidence of Guillain Barré Syndrome (GBS). The first case of ZIKAV in Puerto Rico was detected in December 2015, and as of June 23, 2016 there were over 2,100 ZIKV cases including 299 pregnant women. Perspectives on the ZIKAV epidemic will be presented from Salvador, Brazil and from Puerto Rico. Salvador is an epicenter of ZIKAV transmission in Brazil. Brazilian researchers and public health officials from Salvador have collaborated on research which integrates population and individual level epidemiologic data. The first presentation will highlight the temporal distribution and cross correlation of the three outbreaks in Salvador. The impact of these findings on the current understanding of Zika as a determinant factor for the surge in GBS and microcephaly in Brazil will be discussed. The second presentation will highlight Salvador findings regarding risk factors for developing these

complications. Discussion on how this information supports current explanations for both syndromes will follow. The Puerto Rico Department of Health and the Centers for Disease Control and Prevention have partnered to mount a public health response to the ZIKAV outbreak in order to protect to the extent possible pregnant women from ZIKAV infection, and to better understand the effect of ZIKAV infection on birth outcomes, the association with GBS, and the overall burden of morbidity and mortality from ZIKAV. Active monitoring of pregnant women with ZIKAV infection and their infants is being conducted to identify adverse outcomes during pregnancy, the scope of health risks posed by ZIKAV, and to build capacity in Puerto Rico to monitor infant and childhood outcomes. Multi-faceted surveillance systems are being utilized to characterize fully the epidemiology and public health burden of ZIKAV in Puerto Rico. The final presentations will address the epidemiology of ZIKAV in Puerto Rico and the Puerto Rico Zika Active Pregnancy Surveillance System. This symposium aims to encourage discussion on Zika and its complications, the contrast between local and global perspectives, and the challenges in developing sustainable partnerships for long-term research.

CHAIR

Uriel Kitron
*Emory University, Atlanta, GA, United States*

Stephen Waterman
*Centers for Disease Control and Prevention Department, San Juan, PR, United States*

8 a.m.
**EPIDEMIOLOGICAL TIME SERIES OF ZIKA VIRUS, GUILLAIN-BARRÉ SYNDROME AND MICROCEPHALY**

Igor A. Paploski
*Institute of Collective Health, Federal University of Bahia, Salvador, Brazil*

8:15 a.m.
**EPIDEMIOLOGY OF ZIKAV IN PUERTO RICO**

Tyler M. Sharp
*Centers for Disease Control and Prevention, San Juan, PR, United States*

8:35 a.m.
**ZIKA CONGENITAL AND GUILLAIN-BARRÉ SYNDROMES ASSOCIATED WITH ZIKA VIRUS EPIDEMICS: RESULTS FROM CASE-CONTROL STUDIES**

Mariana Kikuti
*Institute of Collective Health, Federal University of Bahia, Salvador, Brazil*

8:50 a.m.
**PUERTO RICO ZIKA ACTIVE PREGNANCY SURVEILLANCE SYSTEM**

Brenda Rivera-Garcia
*Puerto Rico Department of Health, San Juan, PR, United States*

## Scientific Session 161

## Mosquitoes: Insecticide Resistance and Control

*Marriott - Marquis A*
Thursday, November 17, 8 a.m. - 9:45 a.m.

CHAIR

Elizabeth A. McGraw
*Monash University, Melbourne, Australia*

Alistair Miles
*University of Oxford, Oxford, United Kingdom*

8 a.m.
**1849**

**HOW PYRETHROIDS RESISTANCE IN *AEDES AEGYPTI* POPULATIONS FROM BRAZIL AFFECTS *WOLBACHIA* INVASION? EVIDENCES FROM SIMULATIONS AND FIELD RELEASES**

**Gabriela A. Garcia**[1], Rafael M. de Freitas[1], Martha T. Petersen[1], Michael Turelli[2], Daniel A. Villela[1]
*[1]IOC/Oswaldo Cruz Foundation, Rio de Janeiro, Brazil, [2]University of California Davis, Davis, CA, United States*

8:15 a.m.
**1850**

***WOLBACHIA* INFECTION DOES NOT AFFECT THE DIVERSITY OF CO-INFECTING NATIVE FLAVIVIRUSES IN ADULT *AEDES AEGYPTI* IN THE FIELD**

Hilaria E. Amuzu[1], Cassandra Koh[2], Rosemarie I. Herbert[2], **Elizabeth A. McGraw**[2]
*[1]Monash University, Clayton, Victoria, Australia, [2]Monash University, Melbourne, Victoria, Australia*

8:30 a.m.
**1851**

**LIGHT MANIPULATION OF MOSQUITO BEHAVIOR: ACUTE AND SUSTAINED PHOTIC SUPPRESSION OF BITING IN THE *ANOPHELES GAMBIAE* MALARIA MOSQUITO**

**Giles E. Duffield**, Aaron D. Sheppard, Samuel S. Rund, Gary F. George, Erin Clark, Dominic Acri
*University of Notre Dame, Notre Dame, IN, United States*

8:45 a.m.
**1852**

**ESTIMATION OF ALLELE-SPECIFIC ACE-1 DUPLICATION IN INSECTICIDE-RESISTANT *ANOPHELES* MOSQUITOES FROM WEST AFRICA**

**Luc S. Djogbénou**[1], Benoît Assogba[2], John Essandoh[3], A.V. Constant Edi[3], Martin Akogbeto[4], Martin Donnelly[5], David Weetman[3]
*[1]Institut Régional de Santé Publique/Liverpool School of Tropical Medicine, Cotonou, Benin, [2]Institut Régional de Santé Publique, Cotonou, Benin, [3]Department of Vector Biology, Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [4]Centre de Recherche Entomologique de Cotonou, Cotonou, Benin, [5]Liverpool School of Tropical Medicine/Malaria Programme, Wellcome Trust Sanger Institute, Liverpool, United Kingdom*

9 a.m.
**1853**

**INSECTICIDE RESISTANCE AND THE FUTURE OF MALARIA CONTROL**

**Melinda P. Hadi**[1], Duncan K. Athinya[1], Helen Pates Jamet[2]
*[1]Vestergaard, Nairobi, Kenya, [2]Vestergaard, Washington, DC, United States*

9:15 a.m.
**1854**

**THE EMERGENCE AND SPREAD OF INSECTICIDE RESISTANCE MUTATIONS IN *ANOPHELES GAMBIAE* AND *ANOPHELES COLUZZII*: INSIGHTS FROM DEEP WHOLE-GENOME SEQUENCING OF NATURAL POPULATIONS**

**Alistair Miles**[1], Chris Clarkson[2], Martin Donnelly[3], Dominic Kwiatkowski[2], The *Anopheles gambiae* 1000 genomes project[4]
*[1]University of Oxford, Oxford, United Kingdom, [2]Wellcome Trust Sanger Institute, Hinxton, United Kingdom, [3]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [4]Consortium, Multiple, United Kingdom*

9:30 a.m.

**1855**

### HOUSEHOLD INTERVENTIONS, EXPENDITURES AND BARRIERS TO *AEDES AEGYPTI* CONTROL IN MACHALA, ECUADOR

**Naveed Heydari**[1], Anna M. Stewart Ibarra[2], David A. Larsen[3], Marco V. Neira[4]
*[1]Colorado School of Public Health, University of Colorado-Denver, Aurora, CO, United States, [2]Center for Global Health and Translational Science and Department of Medicine, State University of New York Upstate Medical University, Syracuse, NY, United States, [3]Department of Public Health, Food Studies and Nutrition, Syracuse*

## Symposium 162

## Towards Regional Eradication of Malaria in Mesoamerica

*Marriott - Marquis C*
Thursday, November 17, 8 a.m. - 9:45 a.m.

Eliminating malaria is more feasible in the Americas than anywhere else in the world. In the last decade, malaria incidence in Mesoamerica has decreased by an impressive 85% and countries in the region have recently committed to malaria elimination by 2020. Elimination of malaria from Mesoamerica has the potential to create a stable regional zone within which vertical malaria programs can be integrated into vector-borne disease programs without risk of resurgence. However, despite recent progress and high-level commitment, significant political and operational hurdles jeopardize achievement of this fully obtainable goal. As malaria incidence decreases and other diseases such as dengue or Zika are prioritized, vertical national malaria programs are at risk of being disbanded, with responsibilities spread across several departments. Inadequate surveillance systems reporting aggregated case numbers with sometimes significant delays jeopardize further progress by obscuring where transmission is truly occurring. Interventions are not always sufficiently targeted to the populations most affected, especially in remote areas with predominately indigenous populations. Achieving and sustaining elimination regionally in the short-term will require improved resource efficiency, strengthened surveillance systems, and intensified, highly targeted attack measures in *foci* of transmission. This symposium will provide an overview from country malaria programs and their non-profit and international partners on the progress towards malaria elimination in Mesoamerica and the main remaining challenges. Specific emphasis will be given to how interventions are being targeted to the remaining *foci* of malaria transmission and how strong surveillance systems supporting achievement and maintenance of elimination can be built despite competing priorities. Examples from various countries in the Americas, especially Costa Rica and Honduras, will be presented.

### CHAIR

Arnaud Le Menach
*Clinton Health Access Initiative, Boston, MA, United States*

Roberto Montoya
*Pan American Health Organization, Washington, DC, United States*

8 a.m.

### PROGRESS TOWARDS MALARIA ELIMINATION IN MESOAMERICA AND REGIONAL GUIDE FOR REORIENTING MALARIA CONTROL PROGRAMS TOWARD ELIMINATION

Roberto Montoya
*Pan American Health Organization, Washington, DC, United States*

8:20 a.m.

### TARGETING MALARIA INTERVENTIONS TO THE LAST REMAINING *FOCI* OF TRANSMISSION IN MESOMERICA AND HISPANIOLA BY ADDRESSING TECHNICAL, OPERATIONAL AND POLITICAL CHALLENGES TO ELIMINATION

Arnaud Le Menach
*Clinton Health Access Initiative, Boston, MA, United States*

8:40 a.m.

### STRENGTHENING THE PERFORMANCE AND EFFICIENCY OF SURVEILLANCE TO ACCELERATE TOWARDS MALARIA ELIMINATION THROUGH SYSTEMATIC CASE-BASED REPORTING IN HONDURAS

Denis Gustavo Escobar
*Vigilancia Entomológica, Unidad de Vigilancia de la Salud, Secretaria de Salud, Tegucigalpa, Honduras*

9 a.m.

### ACHIEVING ZERO LOCAL CASES OF MALARIA AND PREVENTING DISEASE RE-INTRODUCTION: EXPERIENCE FROM THE COSTA RICA MALARIA PROGRAM

Liliana Jimenez
*Programa de Vectores, Dirección de la Vigilancia de la Salud, Ministerio de Salud, San Jose, Costa Rica*

## Scientific Session 163

## Water, Sanitation, Hygiene and Environmental Health II

*Marriott - Marquis D*
Thursday, November 17, 8 a.m. - 9:45 a.m.

CHAIR

Bethany Caruso
*Emory University, Atlanta, GA, United States*

Repon C. Paul
*International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh*

8 a.m.

**1856**

### RISK FACTORS FOR PEDIATRIC ENTERIC INFECTION IN A LOW-INCOME URBAN NEIGHBORHOOD: EXAMINING THE CONTRIBUTIONS OF THE HOUSEHOLD ENVIRONMENT, NEIGHBORHOOD GEOGRAPHY AND EXPOSURE BEHAVIORS IN VELLORE, INDIA

**David Berendes**[1], Juan Leon[1], Amy Kirby[1], Julie Clennon[1], Suraja Raj[1], Habib Yakubu[1], Katharine Robb[1], Arun Kartikeyan[2], Priya Hemavathy[2], Annai Gunasekaran[2], Ben C. Ghale[2], J. Senthil Kumar[2], Venkata R. Mohan[2], Gagandeep Kang[2], Christine Moe[1]
*[1]Emory University, Atlanta, GA, United States, [2]Christian Medical College, Vellore, India*

8:15 a.m.

**1857**

### ASSESSING SEROCONVERSION AGAINST ENTERIC PATHOGENS RELATIVE TO REPORTED DIARRHEA AND THE RECEIPT OF A POINT-OF-USE WATER FILTER IN WESTERN PROVINCE, RWANDA

**Laura D. Zambrano**[1], Miles Kirby[2], Ghislaine Rosa[2], Corey Nagel[3], Thomas F. Clasen[1]
*[1]Emory University, Atlanta, GA, United States, [2]London School of Hygiene & Tropical Medicine, London, United Kingdom, [3]Oregon Health and Science University, Portland, OR, United States*

8:30 a.m.

**1858**

### ASSESSING USE, EXPOSURE AND HEALTH IMPACTS OF AN ADVANCED WATER FILTER AND ADVANCED COOKSTOVE DISTRIBUTION PROGRAM IN RURAL RWANDA

**Miles A. Kirby**[1], Corey Nagel[2], Ghislaine Abadie Rosa[1], Evan A. Thomas[3], Thomas F. Clasen[4]
*[1]London School of Hygiene & Tropical Medicine, London, United Kingdom, [2]Oregon Health & Science University, Portland, OR, United States, [3]Portland State University, Portland, OR, United States, [4]Emory Rollins School of Public Health, Atlanta, GA, United States*

8:45 a.m.

**1859**

### ENVIRONMENTAL EXPOSURE OF RURAL BANGLADESHI CHILDREN 3-18 MONTHS OLD FROM HAND- AND OBJECT-MOUTHING

**Laura H. Kwong**[1], Ayse Ercumen[2], Amy J. Pickering[1], Leanne Unicomb[3], Jennifer Davis[1], Stephen P. Luby[1]
*[1]Stanford University, Stanford, CA, United States, [2]University of California Berkeley, Berkeley, CA, United States, [3]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh*

9 a.m.

**1860**

### INCIDENCE OF ADULT DEATHS ASSOCIATED WITH HEPATITIS E VIRUS IN BANGLADESH

**Repon C. Paul**[1], Arifa Nazneen[2], Kajal Chandra Banik[2], Shariful Amin Sumon[2], Kishor Kumar Paul[2], Hossain M S. Sazzad[2], Manjur Hossain Khan Jony[3], M. Salim Uzzaman[3], Mahmudur Rahman[3], Stephen P. Luby[4], Heather Gidding[1], Andrew Hayen[1], Emily S. Gurley[2]
*[1]UNSW, Sydney, Australia, [2]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, [3]IEDCR, Dhaka, Bangladesh, [4]Stanford University, Stanford, CA, United States*

9:15 a.m.

**1861**

### WOMEN'S SANITATION EXPERIENCES ARE ASSOCIATED WITH MENTAL HEALTH IN RURAL, ODISHA INDIA

**Bethany A. Caruso**, Hannah L. Cooper, Regine Haardoerfer, Craig Hadley, Kathryn Yount, Thomas Clasen
*Emory University, Atlanta, GA, United States*

9:30 a.m.

**1862**

### THE IMPACT OF SANITATION INTERVENTIONS ON LATRINE COVERAGE AND USE: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Joshua V. Garn**, Matthew C. Freeman, Gloria D. Sclar, Patrick Brooks, Thomas Clasen
*Emory University, Atlanta, GA, United States*

## Scientific Session 164

## Intestinal and Tissue Helminths: Soil-Transmitted Helminths – Biology and Immunology

*Marriott - Room M103/M104/M105*
Thursday, November 17, 8 a.m. - 9:45 a.m.

CHAIR

James B. Lok
*University of Pennsylvania, Philadelphia, PA, United States*

Andrew Williams
*University of Copenhagen, Frederiksberg C, Denmark*

8 a.m.

**1863**

### DISCOVERING AND OPTIMIZING BROAD-BASED ANTHELMINTICS USING PAN-PHYLUM ANALYSIS OF METABOLIC CHOKEPOINTS

**Rahul Tyagi**[1], Ryan Chugani[2], Mostafa Elfawal[3], Chelsea Bidlow[4], Bruce A. Rosa[1], Scott Wildman[5], Raffi Aroian[3], Paul Brindley[6], Judy Sakanari[4], James W. Janetka[2], Makedonka Mitreva[1]
*[1]McDonnell Genome Institute, Washington University in St. Louis, St. Louis, MO, United States, [2]Department of Biochemistry and Molecular Biophysics, Washington University in St. Louis, St. Louis, MO, United States, [3]University of Massachusetts Medical School, Worcester, MA, United States, [4]Department of Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA, United States, [5]University of Wisconsin Carbone Cancer Center, Madison, WI, United States, [6]School of Medicine and Health Sciences, George Washington University, Washington, DC, United States*

8:15 a.m.

**1864**

### TRANSGENESIS IN *STRONGYLOIDES*: FREE-LIVING MALE WORMS AS TARGETS FOR GENE TRANSFER AND TRANSGENE PROPAGATION

**James B. Lok**, Hongguang Shao, Xinshe Li
*University of Pennsylvania, Philadelphia, PA, United States*

**(ACMCIP Abstract)**

8:30 a.m.

**1865**

### MODULATION OF HUMAN DENDRITIC CELL ACTIVITY BY THE HELMINTH PARASITE *ASCARIS SUUM*

**Andrew R. Williams**, Helene L. Midttun, Sara Almeida, Peter Nejsum
*University of Copenhagen, Frederiksberg C, Denmark*

**(ACMCIP Abstract)**

8:45 a.m.

**1866**

### GUT MICROBIOME CHANGES INDUCED BY EXPERIMENTAL *T. MURIS* INFECTION ARE ASSOCIATED WITH DECREASED COGNITIVE FUNCTION IN MICE

**Ricardo J. Soares Magalhães**[1], Paul Giacomin[2], Zoltan Sarnyay[3], Ann Kraeuter[3], Tim Urich[4], Mia Bengtsson[4], Shuting Jin[5], Eduardo A. Albornoz[6], Richard Gordon[6], Trent Woodruff[6]
*[1]UQ Child Health Research Centre, The University of Queensland, South Brisbane, Australia, [2]Australian Institute of Tropical Health and Medicine, James Cook University, Cairns Campus, Smithfield, Australia, [3]Laboratory of Psychiatric Neuroscience, Australian Institute of Tropical Health and Medicine, James Cook University, Townsville Campus, Townsville, Australia, [4]Institute of Microbiology, University of Greifswald, Greifswald, Germany, [5]UQ School of Veterinary Science, The University of Queensland, Gatton, Australia, [6]School of Biomedical Sciences, The University of Queensland, St. Lucia, Australia*

**(ACMCIP Abstract)**

9 a.m.

## 1867

### ASSESSING THE IMPACT OF MASS DEWORMING ON CO-INFECTIONS WITH OTHER PARASITES AND COMMENSALS USING MOLECULAR TECHNIQUES

**Alice V. Easton**[1], Conrad Shyu[1], Charles S. Mwandawiro[2], Sammy M. Njenga[2], Jimmy H. Kihara[2], Cassian Mwatele[2], Mariam Quinones[1], Jacquice Davis[1], Yasmine Belkaid[1], Rita G. Oliveira[3], Poppy H. Lamberton[3], Roy M. Anderson[3], Thomas B. Nutman[1]

*[1]National Institutes of Health, Bethesda, MD, United States, [2]Eastern and Southern Africa Centre of International Parasite Control, KEMRI, Nairobi, Kenya, [3]Imperial College London, London, United Kingdom*

9:15 a.m.

## 1868

### CONTROLLED HUMAN HOOKWORM INFECTION MODEL FOR TESTING THE EFFICACY OF EXPERIMENTAL HOOKWORM VACCINES

**David Diemert**[1], Maria Zumer[1], Doreen Campbell[1], Caitlyn Leasure[1], Landria Sheffey[1], Melissa Keany[1], Jill Brelsford[1], Anna Yakovleva[1], Rojelio Mejia[2], David Pritchard[3], John Hawdon[1], Jeffrey Bethony[1]

*[1]George Washington University, Washington, DC, United States, [2]Baylor College of Medicine, Houston, TX, United States, [3]University of Nottingham, Nottingham, United Kingdom*

9:30 a.m.

## 1869

### PHASE 1 TESTING OF THE NA-APR-1/ALHYDROGEL HOOKWORM VACCINE IN HEALTHY, HOOKWORM-NAIVE ADULTS

**David Diemert**[1], Maria Zumer[1], Aimee Desrosiers[1], Doreen Campbell[1], Shannon Grahek[1], Jill Brelsford[1], Anna Yakovleva[1], Maria Elena Bottazzi[2], Peter Hotez[2], Jeffrey Bethony[1]

*[1]George Washington University, Washington, DC, United States, [2]Baylor College of Medicine, Houston, TX, United States*

## Symposium 165

## Clinical Update - What's New in Literature?

*Marriott - Atrium B*

Thursday, November 17, 8 a.m. - 9:45 a.m.

Clinicians in tropical medicine and travelers' health base their decisions on the knowledge of disease epidemiology, clinical course, diagnostic tools, resistance patterns, and vaccine safety data. This symposium will highlight recent studies on these aspects of dengue, leishmaniasis, chikungunya and malaria.

CHAIR

Lin H. Chen
*Travel Medicine Center, Mount Auburn Hospital, Cambridge, MA, United States*

Davidson H. Hamer
*Boston University, Center for International Health and Development, Boston, MA, United States*

8 a.m.
**DENGUE**

Mary E. Wilson
*Harvard T.H. Chan School of Public Health, University of California San Francisco, San Francisco, CA, United States*

8:25 a.m.
**LEISHMANIASIS**

Andrea K. Boggild
*Toronto General Hospital, University of Toronto, Toronto, ON, Canada*

8:50 a.m.
**ZIKA**

Susan Hills
*Centers for Disease Control and Prevention, Fort Collins, CO, United States*

9:15 a.m.
**MALARIA**

Johanna P. Daily
*Albert Einstein College of Medicine, Bronx, NY, United States*

## Scientific Session 166

## American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Helminths - Immunology

*Marriott - Room A601*

Thursday, November 17, 8 a.m. - 9:45 a.m.

***Supported with funding from the Burroughs Wellcome Fund***

CHAIR

Britt Andersen
*Washington University School of Medicine, St. Louis, MO, United States*

Mario A. Jiz
*Research Institute for Tropical Medicine, Muntinlupa City, Philippines*

8 a.m.

## 1937

### ENDOGENOUS PHOSPHOLIPASE A2 GROUP 1B (PLA2G1B) HAS DIRECT ANTI-HELMINTH PROPERTIES AND IS ESSENTIAL FOR IMMUNITY TO *HELIGMOSOMOIDES POLYGYRUS*

**Lewis Entwistle**[1], Victoria S. Pelly[1], Stephanie M. Coomes[1], Yashaswini Kannan[1], Jimena Perez-Lloret[1], Nikolay Nikolov[1], Helena Helmby[2], David Hui[3], Mark S. Wilson[1]

*[1]The Francis Crick Institute, Mill Hill Laboratory, London, United Kingdom, [2]Immunology and Infection Department, London School of Hygiene and Tropical Health, London, United Kingdom, [3]Department of Pathology, Metabolic Diseases Institute, University of Cincinnati College of Medicine, Cincinnati, OH, United States*

8:15 a.m.

## 1870

### IMPAIRED NEUTROPHIL RECRUITMENT TO INVADING *LITOMOSOIDES SIGMODONTIS* L3 LARVAE LEADS TO AN INCREASED WORM BURDEN IN NOD2 RECEPTOR AND IL-6 DEFICIENT MICE

Jesuthas Ajendra, Sabine Specht, Sebastian Ziewer, Muhsin Muhsin, Kenneth Pfarr, Andrea Schiefer, Katrin Gentil, Achim Hoerauf, **Marc P. Hübner**

*University Hospital of Bonn, Bonn, Germany*

**(ACMCIP Abstract)**

8:30 a.m.

## 1871

### MICROFILARIAE OF *BRUGIA MALAYI* INDUCES AUTOPHAGY THROUGH THE INDUCTION OF INDOLEAMINE 2,3-DIOXYGENASE (IDO) AND INTERFERON-γ (IFN-γ)

**Prakash Babu Narasimhan**, Leor Akabas, Thomas B Nutman, Roshanak Tolouei Semnani

*National Institute of Allergy and Infectious Diseases, Bethesda, MD, United States*

8:45 a.m.

**1872**

### IMPACT OF MATERNAL PRAZIQUANTEL TREATMENT DURING PREGNANCY ON OFFSPRING IMMUNE RESPONSES TO SCHISTOSOME ANTIGENS AT SIX YEARS OF AGE IN LEYTE, PHILIPPINES: RESULTS FROM A RANDOMIZED CONTROLLED TRIAL

**Mario A. Jiz**[1], Luz P. Acosta[1], Palmera Baltazar[1], Blanca Jarilla[1], Veronica Tallo[1], Marianne Sagliba[1], Amabelle Moreno[1], Maripaz Urbina[1], Archie Pablo[1], Remigio Olveda[1], Hannah Wu[2], Jonathan Kurtis[2], Jennifer Friedman[2]
*[1]Research Institute for Tropical Medicine, Muntinlupa City, Philippines, [2]Center for International Health Research, Rhode Island Hospital, Providence, RI, United States*

**(ACMCIP Abstract)**

9 a.m.

**1873**

### EFFECT OF PRENATAL EXPOSURE TO SCHISTOSOMIASIS AND CO-INFECTIONS WITH SCHISTOSOMIASIS ON FETAL IMMUNE RESPONSES

**Ruth K. Nyakundi**[1], Ronald K. Ottichilo[2], Francis Mutuku[2], Desiree LaBeaud[3], Charles H. King[4], Indu Malhotra[4]
*[1]Institute of Primate Research, Nairobi, Kenya, [2]Division of Vector Borne and Neglected Tropical Diseases, Ministry of Public Health and Sanitation, Nairobi, Kenya, [3]Stanford School of Medicine, Stanford, CA, United States, [4]Case Western Reserve University, Centre for Global Health and Diseases, Cleveland, OH, United States*

**(ACMCIP Abstract)**

9:15 a.m.

**1874**

### LYMPHATIC FILARIASIS: HOST AND PARASITE FACTORS AND THE PATHOGENESIS OF SYSTEMIC ADVERSE EVENTS FOLLOWING TREATMENT

**Britt Andersen**[1], Jessica Kumar[2], Christopher L. King[2], Peter Uwe Fischer[1], Gary J. Weil[1]
*[1]Washington University School of Medicine, St. Louis, MO, United States, [2]Case Western Reserve University, Cleveland, OH, United States*

9:30 a.m.

**1875**

### *ONCHOCERCA VOLVULUS* ANTIGEN PEPTIDE IMMUNOREACTIVITY DISTINGUISHES PARASITE POPULATIONS IN THE AMERICAS, WEST AFRICA, CENTRAL AFRICA AND EAST AFRICA

**Carmelle T. Norice-Tra**[1], JosečRibeiro[1], Sasi Bennuru[1], Rahul Tyagi[2], Makedonka Mitreva[2], Thomas B. Nutman[1]
*[1]National Institutes of Health, Bethesda, MD, United States, [2]Washington University School of Medicine, St. Louis, MO, United States*

**(ACMCIP Abstract)**

## Symposium 167

## Ending Preventable Maternal and Child Deaths Due to Tuberculosis

*Marriott - Room A602*
Thursday, November 17, 8 a.m. - 9:45 a.m.

Tuberculosis (TB), in 2014, has surpassed HIV as the main infectious cause of death and remains the leading cause of death among people living with HIV. An estimated one million of the almost ten million new cases of TB each year are children; at least 136,000 of these children die, with the majority undiagnosed or mis-diagnosed as other common childhood condition such as pneumonia or malnutrition. TB is also a major contributor to morbidity and mortality among pregnant women, especially HIV-infected pregnant women, who are more likely to transmit HIV (as well as TB) to their infants than HIV-infected women without TB disease. Addressing TB in key programs targeting women, children and adolescents, especially at the community and primary care level, will strengthen integrated service delivery, bring mutual benefits and, most of all, improve outcomes for patients and their families. The symposium will provide key data and evidence around maternal and childhood TB and TB/HIV, including the contribution to overall morbidity and mortality for women and children. It will provide examples of how specific high TB-burden countries are developing integrated TB, HIV and MNCH services, and share a global action plan on TB integration.

CHAIR

Anne K. Detjen
*UNICEF, New York, NY, United States*

Surbhi Modi
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

8 a.m.
**ENDING PREVENTABLE MATERNAL AND CHILD DEATHS – LET'S NOT FORGET ABOUT TB**

Surbhi Modi
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

8:20 a.m.
**PROMISING PRACTICES FOR TB AND TB/HIV CASE FINDING IN PRIMARY CARE SERVICES**

Jesca Nsungwa Sabiiti
*Child Health Division, Ministry of Health, Kampala, Uganda*

8:40 a.m.
**IT'S ALL ABOUT SYSTEMS: INTEGRATED COMMUNITY AND PRIMARY CARE FOR FAMILIES AFFECTED BY TB**

Anne K. Detjen
*UNICEF, New York, NY, United States*

9 a.m.
**DEVELOPING TOOLS TO SUPPORT FOR INTEGRATION: EXPERIENCE FROM PILOT STUDY IN ETHIOPIA**

Avinash Kanchar
*Global TB Programme, World Health Organization, Geneva, Switzerland*

## Scientific Session 168

## American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Malaria - Biology and Pathogenesis

*Marriott - Room A703/A704*
Thursday, November 17, 8 a.m. - 9:45 a.m.
***Supported with funding from the Burroughs Wellcome Fund***

CHAIR

Daniel Y. Bargieri
*University of Sao Paulo, Sao Paulo, Brazil*

Matthew Dixon
*University of Melbourne, Melbourne, Australia*

8 a.m.

## 1938

### INVITED SPEAKER FROM THE WOODS HOLE MOLECULAR PARASITOLOGY MEETING HELD IN SEPTEMBER 2016. SEE THE PROGRAM UPDATE FOR SPEAKER INFORMATION.

8:15 a.m.

## 1939

### INVITED SPEAKER FROM THE WOODS HOLE MOLECULAR PARASITOLOGY MEETING HELD IN SEPTEMBER 2016. SEE THE PROGRAM UPDATE FOR SPEAKER INFORMATION.

8:30 a.m.

## 1876

### HAPLOTYPES WITHIN NFKBIA PROMOTER ARE ASSOCIATED WITH SEVERE MALARIAL ANEMIA AND CIRCULATING IL-10 AND IP-10 LEVELS IN CHILDREN WITH *P. FALCIPARUM* MALARIA

**Elly O. Munde**[1], Angela O. Achieng[1], Lily E. Kisia[1], Zachery S. Karim[1], Evans O. Raballah[2], Prakasha Kempaiah[1], John M. Ong'echa[1], Collins Ouma[3], Douglas J. Perkins[1]

*[1]University of New Mexico School of Medicine, Albuquerque, NM, United States, [2]Department of Medical Laboratory Sciences, Kakamega, Kenya, [3]Department of Biomedical Sciences and Technology, Maseno, Kenya*

8:45 a.m.

## 1877

### *PLASMODIUM* MTRAP IS ESSENTIAL FOR GAMETE EGRESS AND PARASITE TRANSMISSION TO MOSQUITOES

**Daniel Y. Bargieri**[1], Sabine Thiberge[2], Chwen Tay[3], Alison F. Carey[2], Ursula Straschil[3], Alice Rantz[2], Audrey Lorthois[4], Florian Hischen[5], Takafumi Tsuboi[6], Tony Triglia[7], Pietro Alano[8], Alan Cowman[7], Jake Baum[3], Gabriele Pradel[5], Catherine Lavazec[4], Robert Ménard[2]

*[1]University of Sao Paulo, Sao Paulo, Brazil, [2]Institut Pasteur, Paris, France, [3]Imperial College, London, United Kingdom, [4]Institut Cochin, Paris, France, [5]Aachen University, Aachen, Germany, [6]Ehime University, Ehime, Japan, [7]Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia, [8]Istituto Superiore di Sanità, Rome, Italy*

9 a.m.

## 1878

### PROFILING GENE EXPRESSION IN A PHASE II *PLASMODIUM VIVAX* IRRADIATED SPOROZOITE VACCINE TRIAL

**Monica L. Rojas-Peña**[1], Dalia Arafat[1], Myriam Arévalo-Herrera[2], Sócrates Herrera[3], Juan M. Vásquez[3], Greg Gibson[1]

*[1]Center for Integrative Genomics, School of Biology, Georgia Institute of Technology, Atlanta, GA, United States, [2]School of Health, Universidad del Valle, Cali, Colombia, [3]Caucaseco Scientific Research Center (CSRC), Cali, Colombia*

9:15 a.m.

## 1879

### HIGH-THROUGHPUT GENOMIC SURVEILLANCE OF *PLASMODIUM* INFECTIONS IN INDIA

**Pavitra N. Rao**[1], Swapna Uplekar[1], Prashant K. Mallick[2], Nabamita Bandyopadhyay[2], Sonal Kale[2], Nicholas J. Hathaway[3], Alex Eapen[4], Ranvir Singh[5], Khageswar Pradhan[6], Jeffrey A. Bailey[3], Om P. Singh[7], Jane M. Carlton[1]

*[1]New York University, New York, NY, United States, [2]National Institute of Malaria Research, New Delhi, India, [3]University of Massachusetts, Worcester, MA, United States, [4]National Institute of Malaria Research, Chennai, India, [5]National Institute of Malaria Research, Nadiad, India, [6]National Institute of Malaria Research, Raurkela, India, [7]National Institute of Malaria Research, Delhi, India*

9:30 a.m.

## 1880

### REVERSIBLE HOST CELL REMODELING UNDERPINS DEFORMABILITY CHANGES IN MALARIA PARASITE SEXUAL BLOOD STAGES

Megan Dearnley[1], Chu Trang[2], Yao Zhang[3], Oliver Looker[1], Changjin Huang[3], Nectarios Klonis[1], Jeff Yeoman[4], Mohit Arora[2], James Osborne[5], Rajesh Chandramohanadas[2], Sulin Zhang[3], Leann Tilley[1], **Matthew Dixon**[1]

*[1]Department of Biochemistry and Molecular Biology, Bio21 Institute, The University of Melbourne, Melbourne, Australia, [2]Pillar of Engineering Product Development, Singapore University of Technology & Design, Singapore, Singapore, [3]Department of Engineering Science and Mechanics, The Pennsylvania State University, University Park, PA, United States, [4]Department of Biochemistry, La Trobe University, Melbourne, Australia, [5]School of Mathematics and Statistics, The University of Melbourne, Melbourne, Australia*

**Scientific Session 169**

# Malaria: Control Interventions - Assessment of Quality and Effectiveness

*Marriott - Room A706/A707*

Thursday, November 17, 8 a.m. - 9:45 a.m.

CHAIR

Stefan Kappe
*Center for Infectious Disease Research, Seattle, WA, United States*

Jean-Yves Mukamba
*PATH, Kinshasa/Gombe, Democratic Republic of the Congo*

8 a.m.

## 1881

### SPATIAL HETEROGENEITY CAN UNDERMINE THE EFFECTIVENESS OF COUNTRY-LEVEL TEST AND TREAT POLICY FOR MALARIA: A CASE STUDY FROM BURKINA FASO USING RDT AND HEMOGLOBIN

**Denis Valle**, Justin Millar, Punam Amratia
*University of Florida, Gainesville, FL, United States*

8:15 a.m.

## 1882

### IMPROVING THE QUALITY OF MALARIA CASE MANAGEMENT IN PUBLIC HEALTH FACILITIES - THE MALARIACARE EXPERIENCE IN WESTERN KENYA

**Beatrice Onyando**[1], Samwell Onditi[1], Rodgers Mwinga[1], Tiffany Clark[2], Illah Evance[1], Sarah Burnett[2], Troy Martin[2]

*[1]PATH, Kisumu, Kenya, [2]PATH, Washington, DC, United States*

8:30 a.m.

## 1883

### FINDINGS FROM THE FIRST MALARIA MOLECULAR EQA SCHEME LAUNCHED BY UK NEQAS (UNITED KINGDOM NATIONAL EXTERNAL QUALITY ASSESSMENT SERVICE) PARASITOLOGY

**Jaya Shrivastava**[1], Agatha C. Saez[1], Monika Manser[1], Debbie Nolder[2], Spencer Polley[3], Peter L. Chiodini[3]

*[1]Public Health England, London, United Kingdom, [2]London School of Hygiene & Tropical Medicine, London, United Kingdom, [3]Hospital for Topical Diseases, London, United Kingdom*

8:45 a.m.

**1884**

### BUILDING A SYSTEM OF QUALITY ASSURED MALARIA CASE MANAGEMENT IN THE DEMOCRATIC REPUBLIC OF THE CONGO

**Jean-Yves Mukamba**[1], André Bope Bope[2], Annie Ndaya B[3], Eric Swedberg[4], Troy Martin[5]
*[1]PATH, Kinshasa/Gombe, Democratic Republic of the Congo, [2]PSI, Kinshasa/Gombe, Democratic Republic of the Congo, [3]National Program on Diarrhea Prevention, Kinshasa/Gombe, Democratic Republic of the Congo, [4]Save the Children, Fairfield, CT, United States, [5]PATH, Seattle, WA, United States*

9 a.m.

**1885**

### SHIFTING THE PARADIGM: WHAT CAN BE DONE TO PROTECT COMMUNITIES AGAINST THE THREAT OF SUBSTANDARD AND FALSIFIED MALARIA MEDICINES?

**Nan Lewicky**, Corinne M. Fordham, Cheryl Lettenmaier
*Johns Hopkins University, Baltimore, MD, United States*

9:15 a.m.

**1886**

### ANALYSIS OF ULTRA LOW COST NEAR-INFRARED SPECTROMETERS FOR DRUG AND BED NET QUALITY MONITORING

**Benjamin K. Wilson**[1], Anthony Lozama[1], Celina Schocken[2], Elizabeth L. Allen[3], David Bell[2], Harparkash Kaur[3]
*[1]Intellectual Ventures Laboratory, Bellevue, WA, United States, [2]Global Good, Bellevue, WA, United States, [3]London School of Hygiene & Tropical Medicine, London, United Kingdom*

9:30 a.m.

**1887**

### MALARIA INTERVENTION ASSESSMENT IN FOUR STATES OF NIGERIA: AN INNOVATIVE, COMPREHENSIVE, MIXED-METHODS EVALUATION

**Ana Claudia Franca-Koh**[1], Uwem Inyang[2], Festus Okoh[3], Taiwo Orimogunje[3], Lanre Adesoye[1], Balarabe Ibrahim[1], Abimbola Olayemi[1], Mariam Wahab[1], Tajrina Hai[1], Nnenna Ezeigwe[3], Perpetua Uhomoibhi[3], Timothy Obot[3], Olufemi Ajumobi[3], Jessica Margaret Kafuko[2], Richard W. Niska[2], Abidemi Okechukwu[2], Yazoume Ye[1]
*[1]MEASURE Evaluation/ICF International, Rockville, MD, United States, [2]U.S. President's Malaria Initiative/Nigeria, Abuja, Nigeria, [3]National Malaria Elimination Programme, Abuja, Nigeria*

## Coffee Break

*Marriott – Marquis Foyer*
Thursday, November 17, 9:45 a.m. - 10:15 a.m.

**Symposium 170**

## Making Money Matter: Cost-Effectiveness and NTD Interventions

*Marriott - Imperial A*
Thursday, November 17, 10:15 a.m. - Noon

Global progress towards the control and elimination of neglected tropical diseases (NTDs) will be measured under the new Sustainable Development Goal 3 which aims to "Ensure healthy lives and promote well-being for all at all ages" by 2030. As infection with NTDs is an indicator for poverty, reaching universal coverage for these diseases by 2030 will be a measure of the success of universal health coverage in reaching the poorest of the poor. Achieving these goals requires significant investment and an increase in domestic investment from within endemic countries. To enable all investors, including endemic country governments, to understand the size of investment required and how to most appropriately allocate resources, requires robust data which can be benchmarked across countries. These data include unit costs and cost drivers for current preventive chemotherapy (PC) and vector control interventions, estimates of benefits in terms of disability-adjusted life years (DALYs) to enable comparisons across the health sector and projections of what is required to control and eliminate the NTDs. The goal of the symposium is to present evidence on the costs and benefits of implementation strategies for NTDs. The first presentation will explore the domestic resource mobilization efforts for NTD programs and the trend of domestic investments in the past ten years. It will also examine the challenges and ways to mitigate obstacles to mobilizing resources in endemic countries. The second presentation will present work using a transmission model to further investigate the impact and potential cost-effectiveness of expanding the target population for treatment of SCH in a range of different settings. The implications on achievement of the WHO 2020 control and elimination targets for SCH will be addressed. The third presentation will focus on the added value of PC using praziquantel against SCH, on *Taenia solium* taeniosis/cysticercosis, the leading cause of preventable epilepsy globally. The cost-effectiveness of PC with praziquantel in areas co-endemic for both SCH and *T. solium* will be elucidated both in terms of taeniosis and porcine cysticercosis and different MDA schemes will be compared using incremental cost-effectiveness ratio. The final presentation will explore the significant cost savings of integrating PC for NTDs and report on the economic cost per case and DALYs averted. The presentation will conclude by taking into consideration the conclusions from the previous speakers and the implications on reaching 2020 and 2030 goals.

CHAIR

Wendy E. Harrison
*Schistosomiasis Control Initiative, Imperial College London, London, United Kingdom*

Christopher Fitzpatrick
*World Health Organization, Geneva, Switzerland*

10:15 a.m.
### EXPANDING THE NTD FISCAL SPACE TO DOMESTIC RESOURCES

Uzoma Nwankwo
*Federal Ministry of Health, Abuja, Nigeria*

10:35 a.m.
### EVALUATING THE IMPACT AND COST-EFFECTIVENESS OF COMMUNITY-WIDE TREATMENT FOR SCHISTOSOMIASIS – NO SIMPLE ANSWER

Hugo Turner
*Imperial College, London, United Kingdom*

10:55 a.m.
### COST-EFFECTIVENESS OF AN INTEGRATED INTERVENTION STRATEGY ON *TAENIA SOLIUM* IN TANZANIA

Uffe Christian Braae
*University of Copenhagen, Copenhagen, Denmark*

11:15 a.m.

**MORE HEALTH FOR LESS MONEY: INTEGRATED PREVENTIVE CHEMOTHERAPY FOR NTD CONTROL**

Fiona Fleming
*Imperial College, London, United Kingdom*

## Scientific Session 171

## Virology: Other Viruses

*Marriott - Imperial B*
Thursday, November 17, 10:15 a.m. - Noon

CHAIR

Daniel Olson
*University of Colorado School of Medicine, Aurora, CO, United States*

Kate Zinszer
*Boston Children's Hospital, Boston, MA, United States*

10:15 a.m.

### 1888

**RAPID ACTIVE SEROPREVALENCE SURVEYS AS A TOOL TO MEASURE NOROVIRUS DISEASE BURDEN IN RESOURCE-LIMITED SETTINGS**

**Daniel Olson**[1], Molly M. Lamb[2], Alma Zacarias[3], Maria Renee Lopez[4], Maria Alejandra Paniagua[5], Gabriela Samayoa-Reyes[6], Ricardo Zambrano[7], Sergio Rodriguez[7], Celia Cordon-Rosales[4], Edwin Asturias[1]
*[1]University of Colorado School of Medicine and Public Health, Aurora, CO, United States, [2]University of Colorado School of Public Health, Aurora, CO, United States, [3]Fundacion para la Salud Integral de los Guatemaltecos, La Blanca, Guatemala, [4]Universidad del Valle de Guatemala, Guatemala City, Guatemala, [5]University of Pennsylvania Perelman School of Medicine, Philadelphia, PA, United States, [6]University of Colorado School of Medicine, Aurora, CO, United States, [7]Integra IT, Bogota, Colombia*

10:30 a.m.

### 1889

**HIGH HEPATITIS E SEROPREVALENCE AMONG DISPLACED PERSONS IN SOUTH SUDAN: EVIDENCE OF UNDETECTED TRANSMISSION AND IMPLICATIONS FOR VACCINATION**

**Andrew S. Azman**[1], Malika Bouhenia[2], Anita S. Iyer[3], John Rumunu[4], Lul L. Deng[4], Joseph F. Wamala[5], Etienne Gignoux[6], Francisco J. Luquero[7], Daniel T. Leung[3], Emily S. Gurley[8], Iza Ciglenecki[9]
*[1]Johns Hopkins School of Public Health, Baltimore, MD, United States, [2]World Health Organization, Geneva, Switzerland, [3]Department of Internal Medicine, Division of Infectious Diseases, University of Utah School of Medicine, Salt Lake City, UT, United States, [4]South Sudan Ministry of Health, Juba, South Sudan, [5]World Health Organization, Juba, South Sudan, [6]Epicentre, Geneva, Switzerland, [7]Epicentre, Paris, France, [8]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, [9]Médecins Sans Frontières, Geneva, Switzerland*

10:45 a.m.

### 1890

**POSSIBLE HIGH EXPOSURE TO EBOLA AMONG NON FORMAL HEALTH CARE PROVIDERS IN A PREVIOUS OUTBREAK SITE, BOENDE, DEMOCRATIC REPUBLIC OF CONGO**

**Nicole A. Hoff**[1], Alexis Mwanza[2], Reena H. Doshi[1], Patrick Mukadi[3], Daniel Mukadi[4], Joseph Wasiswa[5], Vivian Alfonso[1], Jose Ngamboli[3], Nathalie Kavira[3], Rachel Mutombe[3], Benoît Kebela Ilunga[6], Emile Okitolonda[7], Jean-Jacques Muyembe[3], Anne W. Rimoin[1]
*[1]University of California Los Angeles Fielding School of Public Health, Los Angeles, CA, United States, [2]University of California Los Angeles-DRC Research Program, Kinshasa, Democratic Republic of the Congo, [3]INRB, Kinshasa, Democratic Republic of the Congo, [4]Faculty of Medicine, University of Kinshasa, Kinshasa, Democratic Republic of the Congo, [5]University of Kinshasa School of Public Health, Kinshasa, Democratic Republic of the Congo, [6]Ministry of Health, Kinshasa, Democratic Republic of the Congo, [7]Kinshasa School of Public Health, Kinshasa, Democratic Republic of the Congo*

11 a.m.

### 1891

**SIERRA LEONE TRIAL TO INTRODUCE A VACCINE AGAINST EBOLA (STRIVE): IMPLEMENTATION CHALLENGES, SUCCESSES AND LESSONS LEARNED**

**Ayesha Idriss**[1], Rosalind Carter Wertheim[2], Brima Kargbo[3], The STRIVE Study Team
*[1]College of Medicine and Alllied Health Sciences, Freetown, Sierra Leone, [2]Centers for Disease Control and Prevention, Atlanta, GA, United States, [3]Ministry of Health and Sanitation, Freetown, Sierra Leone*

11:15 a.m.

### 1892

**ASSESSING THE HETEROGENEITIES IN VIRAL HEMORRHAGIC FEVER OUTBREAK POTENTIAL ACROSS AFRICA**

**David M. Pigott**
*Institute for Health Metrics and Evaluation, Seattle, WA, United States*

11:30 a.m.

### 1893

**SPATIAL DETERMINANTS OF EBOLA VIRUS DISEASE RISK FOR THE WEST AFRICAN EPIDEMIC**

**Kate Zinszer**[1], Kathryn Zinszer[2], Aman Verma[2], John Brownstein[1]
*[1]Boston Children's Hospital, Boston, MA, United States, [2]McGill University, Montreal, QC, Canada*

11:45 a.m.

### 1894

**RE-CURRENT EPIZOOTICS OF HIGHLY PATHOGENIC AVIAN INFLUENZA IN NIGERIA AND STATUS OF VACCINATION AS ALTERNATE CONTROL**

**Jeremiah O. Ijomanta**, C. Chinyere, K. Olawuyi, O. Bankole, C. Meseko
*National Veterinary Research Institute, Vom, Plateau State, Nigeria, Jos, Nigeria*

## Symposium 172

## Key Knowledge Gaps Concerning the Impact of Interventions on Malaria Transmission

*Marriott - Marquis A*
Thursday, November 17, 10:15 a.m. - Noon

Our current toolkit to reduce malaria transmission has three key interventions – insecticides for vector control, drugs for treatment and prevention and most recently the potential availability of a malaria vaccine. As these interventions are deployed, there is selection upon the target population that ultimately reduces the effectiveness of the intervention. Furthermore, this selection changes the remaining target population, for example by selecting insecticide or drug resistant organisms, which impacts the effectiveness of the intervention. Use of insecticides and antimalarial drugs has led to the emergence of insecticide resistant mosquitoes and drug resistant parasites; and, vaccines may have differential effectiveness based upon how closely the vaccine target matches the parasite population. This symposium will address the key knowledge gaps concerning the impact of critical interventions—insecticides, vaccines, drugs—on malaria transmission and the ability to reduce or interrupt that transmission. Furthermore, it will discuss the consequences of evolution that changes both host (vector and human), and parasite responses or populations upon which the interventions are directed, creating an evolving challenge to which transmission reduction strategies can be used and when. Detection and

surveillance of these dynamic changes in transmission is critical for continued gains toward malaria control and elimination, and challenges and opportunities around the role of surveillance in this dynamic landscape of changing malaria transmission will be discussed. Finally, use of modeling to integrate and predict the consequences of a deployed intervention and its effectiveness on transmission to inform best practices will be presented.

CHAIR

Dyann F. Wirth
*Harvard T.H. Chan School of Public Health, Boston, MA, United States*

Deirdre A. Joy
*National Institutes of Allergies and Infectious Diseases, National Institutes of Health, Rockville, MD, United States*

10:15 a.m.
**IMPACT OF INSECTICIDE RESISTANCE ON MALARIA TRANSMISSION**

Hilary Ranson
*Liverpool School of Tropical Medicine, Liverpool, United Kingdom*

10:30 a.m.
**CONSEQUENCES OF VACCINE DEPLOYMENT ON MALARIA TRANSMISSION**

Christian Ockenhouse
*PATH Malaria Vaccine Initiative, Washington, DC, United States*

10:45 a.m.
**IMPACT OF ANTIMALARIAL DRUG RESISTANCE ON MALARIA TRANSMISSION**

Sarah K. Volkman
*Harvard T.H. Chan School of Public Health, Boston, MA, United States*

11 a.m.
**ROLE OF SURVEILLANCE IN DETECTING TRANSMISSION DYNAMICS IN THE CONTEXT OF COMPROMISED INTERVENTIONS**

Kumar Udhayakumar
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

11:15 a.m.
**INTEGRATION AND INTERPRETATION OF PARTIALLY-EFFECTIVE INTERVENTIONS ON MALARIA TRANSMISSION TO INFORM BEST PRACTICES AND POLICIES FOR MALARIA CONTROL AND ELIMINATION**

Philip A. Eckhoff
*Institute for Disease Modeling, Bellevue, WA, United States*

11:30 a.m.
**PANEL DISCUSSION**

## Scientific Session 173

## Pneumonia, Respiratory Infections and Tuberculosis II

*Marriott - Marquis B*
Thursday, November 17, 10:15 a.m. - Noon

CHAIR

Samba O. Sow
*Center for Vaccine Development-Mali, Bamako, Mali*

Kristina Keitel
*Swiss Tropical and Public Health Institute/Boston Children's Hospital, Basel, Switzerland*

10:15 a.m.
**Presentation by Burroughs Wellcome Fund–ASTMH Fellowship Recipient**

**1895**

### USE OF A QUANTIFIABLE STOOL RT-PCR ASSAY INCREASES DIAGNOSTIC YIELD IN CHILDHOOD TB

**Andrew R. DiNardo**[1], Nadine Harris[1], Thobile Simelane[2], Celia Fung[2], Godwin Mtetwa[2], Gugu Maphalala[3], Edward Graviss[4], Anna M. Mandalakas[1], Rojelio A. Mejia[1]
*[1]Baylor College of Medicine, Houston, TX, United States, [2]Baylor-Swaziland Children's Foundation, Mbabane, Swaziland, [3]Ministry of Health, Mbabane, Swaziland, [4]Houston Methodist Hospital Research Institute, Houston, TX, United States*

10:30 a.m.

**1896**

### IS IT TINDZHAKA OR TUBERCULOSIS?: A STUDY OF TRADITIONAL DIAGNOSIS AND TREATMENT AMONG HEALERS IN BUSHBUCKRIDGE, SOUTH AFRICA

**Carolyn M. Audet**[1], Sizzy Ngobeni[2], Ryan G. Wagner[2]
*[1]Vanderbilt University, Nashville, TN, United States, [2]University of the Witwatersrand, Johannesburg, South Africa*

10:45 a.m.

**1897**

### FOLLOW-UP EVALUATION IN THE UNITED STATES OF NEWLY ARRIVED IMMIGRANTS AND REFUGEES AT HIGH RISK FOR TUBERCULOSIS, 2009-2015

**Yecai Liu**, Drew L. Posey, Susan A. Maloney, Kevin P. Cain, Michelle S. Weinberg, Nina Marano, Martin S. Cetron, Christina R. Phares
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

11 a.m.

**1898**

### USING POINT-OF-CARE C-REACTIVE PROTEIN TEST RESULTS TO TARGET ANTIBIOTIC PRESCRIPTION FOR RESPIRATORY ILLNESSES IN UNDER-FIVES: EXPERIENCE FROM A CLINICAL TRIAL IN DAR ES SALAAM, TANZANIA

**Kristina Keitel**[1], Frank Kagoro[2], John Masimba[2], Zamzam Said[2], Josephine Samaka[2], Hosiana Temba[2], Willy Sangu[2], Alain Gervaix[3], Blaise Genton[4], Valérie D'Acremont[5]
*[1]Swiss Tropical and Public Health Institute/Boston Children's Hospital, Basel, Switzerland, [2]Ifakara Health Institute, Dar es Salaam, United Republic of Tanzania, [3]University Children's Hospital Geneva, Geneva, Switzerland, [4]Swiss Tropical and Public Health Institute/University Hospital Lausanne, Basel, Switzerland, [5]Swiss Tropical and Public Health Institute/Policlinique Universitaire Médicale Lausanne, Basel, Switzerland*

11:15 a.m.

**1899**

### WHAT DROVE THE DECLINE IN PNEUMONIA-SPECIFIC UNDER-FIVE DEATH IN MALAWI FROM 2000-2014?

**Norman Lufesi**[1], Karen Finnegan[2], Mercy Chimbalanga[1], Patrick Naphini[1], Ernest Kaludzu[1], Lewis Gombwa[3], Bethred Matipwiri[4], Amos Misomali[5], Neff Walker[2], Melissa Marx[2]
*[1]Malawi Ministry of Health, Lilongwe, Malawi, [2]Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD, United States, [3]National Statistical Office of Malawi, Zomba, Malawi, [4]Malawi Ministry of Health, Salima, Malawi, [5]Bloomberg School of Public Health, Johns Hopkins University, Lilongwe, Malawi*

11:30 a.m.

**1900**

### EPIDEMIOLOGY OF HUMAN METAPNEUMOVIRUS IN CHILDREN UNDER AGE FIVE — DAMANHOUR DISTRICT, EGYPT, 2009-2015

**Adel Mansour**[1], Hoda Mansour[1], Sahar El Alkamy[2], Mostafa Maarouf[2], Sahar El Shorbagy[2], Mohammed Genidy[2], Erik J. Reaves[3], Mark Wooster[3], Samir Refaey[2], Amr Kandeel[2]

*[1]U.S. Naval Medical Research Unit - 3, Cairo, Egypt, [2]Ministry of Health and Population, Cairo, Egypt, [3]Centers for Disease Control and Prevention, Cairo, Egypt*

11:45 a.m.

**1901**

### ETIOLOGY OF ACUTE LOWER RESPIRATORY INFECTIONS IN INPATIENT CHILDREN IN GHANA - A CASE-CONTROL STUDY

**Benno Kreuels**[1], Benedikt Hogan[2], Kolja Nolte[2], Isabella Eckerle[3], Charity Wiafe[4], Kennedy Gyau-Boahen[4], Tabea Binger[3], Daniel Eibach[2], Ralf Krumkamp[2], Nimako Sarpong[4], Yaw Adu-Sarkodie[5], Christian Drosten[3], Ellis Owusu-Dabo[4], Jürgen May[2]

*[1]University Medical Center Hamburg-Eppendorf, Hamburg, Germany, [2]Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany, [3]University of Bonn, Bonn, Germany, [4]Kumasi Centre for Collaborative Research in Tropical Medicine, Kumasi, Ghana, [5]Kwame Nkrumah University for Science and Technology, Kumasi, Ghana*

## Symposium 175

## Non-Typhoidal *Salmonella* Invasive Infections in Africa: Epidemiology, Vaccine Development and Genomics

*Marriott - Marquis D*

Thursday, November 17, 10:15 a.m. - Noon

During the past 15 years, population-based systematic blood culture surveillance and hospital-based surveillance has been ongoing in multiple centers in sub-Saharan Africa to detect invasive bacterial pathogens among infants and young children seen in health care facilities. Such surveillance was initially undertaken to quantify the burden of invasive *Haemophilus influenzae* type b and *Streptococcus pneumoniae* infections, in anticipation of the introduction of vaccines against those infections. Surprisingly, a high frequency of isolation of non-typhoidal *Salmonella* (NTS) was revealed. In Kenya, Malawi, Gambia, Mozambique and Mali the incidence of invasive NTS disease rivaled that of pneumococcal disease and case fatality rates of 8-25% were recorded. *Serovars Salmonella Typhimurium* (including monophasic variants) and *S. Enteritidis* account for 80-95% of isolates and antibiotic resistance is common. Some challenges being faced include: Has progress been made in identifying the reservoir of infection and the modes of transmission? Can safe and effective vaccines be developed to control this public health problem in Africa? Are the clones of *S. Enteritidis* and *S. Typhimurium* (including monophasic variants) circulating in Africa distinct from clones observed in industrialized countries where these serovars are in the food chain and cause gastroenteritis? This symposium will provide an overview of invasive NTS disease in Africa, focusing on epidemiology, vaccine development and the genomics of novel African clones. At least one bivalent NTS vaccine will be entering Phase 1 clinical trials in the near future.

CHAIR

Samba O. Sow
*Center for Vaccine Development, Mali (CVD-Mali), Bamako, Mali*

Myron M. Levine
*University of Maryland School of Medicine, Baltimore, MD, United States*

10:15 a.m.

### NON-TYPHOIDAL *SALMONELLA* INVASIVE INFECTIONS IN SUB-SAHARAN AFRICA: DISEASE BURDEN, RESERVOIRS AND MODES OF TRANSMISSION

Melita A. Gordon
*Institute of Translational Medicine, University of Liverpool, Liverpool, United Kingdom*

10:40 a.m.

### ENGINEERED RECOMBINANT LIVE ORAL NTS VACCINES AND VACCINE "REAGENT STRAINS"

Sharon M. Tennant
*University of Maryland School of Medicine, Center for Vaccine Development, Baltimore, MD, United States*

11:05 a.m.

### A BIVALENT *SALMONELLA ENTERITIDIS/S. TYPHIMURIUM* CONJUGATE VACCINE MOVES TOWARDS EARLY PHASE CLINICAL TRIALS

Raphael Simon
*University of Maryland School of Medicine, Center for Vaccine Development, Baltimore, MD, United States*

11:30 a.m.

### CHARACTERIZATION OF NOVEL *S. ENTERITIDIS* STRAINS FROM SUB-SAHARAN AFRICA

Nicholas A. Feasey
*Institute of Translational Medicine, University of Liverpool, Liverpool, United Kingdom*

## Scientific Session 176

## Kinetoplastida: Molecular Biology and Immunology

*Marriott - Room M103/M104/M105*

Thursday, November 17, 10:15 a.m. - 12:15 p.m.

CHAIR

Hira L. Nakhasi
*Food and Drug Administration, Bethesda, MD, United States*

Smriti Sharma
*Banaras Hindu University, Varanasi, India*

10:15 a.m.

**1902**

### COMPARISON OF THE HUMORAL RESPONSE INDUCED BY DIFFERENT LINEAGES OF *TRYPANOSOMA CRUZI* IN A MURINE MODEL

**Miryam Romano**[1], Julio Rubén Nasser[1], Patricio Diosque[2], Rubén Oscar Cimino[1], Marcela Portelli[3], Alejandro Javier Krolewiecki[1], Paula Gabriela Ragone[4]

*[1]Instituto de Investigaciones en Enfermedades Tropicales, Universidad Nacional de Salta, Oran, Salta, Argentina, [2]Unidad de Instituto de Patología Experimental, Universidad Nacional de Salta, Salta, Argentina, [3]Cuerpo de Investigaciones Fiscales, Salta, Argentina, [4]Unidad de Epidemiología Molecular, Instituto de Patología Experimental, Salta, Argentina*

**(ACMCIP Abstract)**

10:30 a.m.

## 1903

### PHENOTYPIC AND FUNCTIONAL CHARACTERISTICS OF HLA-DR+ NEUTROPHILS IDENTIFIED IN CIRCULATION OF BRAZILIAN CUTANEOUS LEISHMANIASIS PATIENTS

**Richard E. Davis**[1], Smriti Sharma[2], Jacilara Conceicao[3], Pedro P. Carneiro[3], Shyam Sundar[2], Olivia Bacellar[3], Edgar M. Carvalho[3], Mary E. Wilson[1]
*[1]University of Iowa, Iowa City, IA, United States, [2]Banaras Hindu University, Varanasi, India, [3]Universidade Federal da Bahia, Salvador, Brazil*

**(ACMCIP Abstract)**

10:45 a.m.

## 1904

### HLA DR EXPRESSING LOW DENSITY NEUTROPHIL SUBSETS EXPAND DURING HUMAN VISCERAL LEISHMANIASIS AND CAN CONTRIBUTE TO T CELL PROLIFERATION

**Smriti Sharma**[1], Richard Davis[2], Susanne Nylen[3], David L. Sacks[4], Shyam Sundar[1], Mary E. Wilson[2]
*[1]Institute of Medical Sciences, Banaras Hindu University, Varanasi, India, [2]University of Iowa, Iowa City, IA, United States, [3]Karolinska Institutet, Stockholm, Sweden, [4]National Institutes of Health, Bethesda, MD, United States*

**(ACMCIP Abstract)**

11 a.m.

## 1905

### ACTIVATION OF HUMAN KERATINOCYTES BY *LEISHMANIA SPP.:* DIVERGENT EFFECTS OF *LEISHMANIA INFANTUM* VERSUS *LEISHMANIA MAJOR*

**Breanna Scorza**, Mark Wacker, Kelly Messingham, Janet Fairley, Mary Wilson
*University of Iowa, Iowa City, IA, United States*

**(ACMCIP Abstract)**

11:15 a.m.

## 1906

### HEMOPHAGOCYTOSIS IN EXPERIMENTAL VISCERAL LEISHMANIASIS BY *LEISHMANIA DONOVANI*

**Ayako Morimoto**, Satoko Omachi, James K. Chambers, Kazuyuki Uchida, Chizu Sanjoba, Yoshitsugu Matsumoto, Yasuyuki Goto
*Tokyo University, Tokyo, Japan*

11:30 a.m.

## 1907

### INVOLVEMENT OF NUCLEOTIDE-BINDING DOMAIN LEUCINE-RICH REPEAT PROTEIN 12 (NLRP12) IN VISCERAL LEISHMANIASIS (VL)

**Diogo Valadares**, Gwendolyn Clay, Richard E. Davis, Bayan Sudan, Yani Chen, Breanna Scorza, Fayyaz Sutterwala, Mary E. Wilson
*University of Iowa, Iowa City, IA, United States*

**(ACMCIP Abstract)**

11:45 a.m.

## 1908

### EVALUATION OF THE USE OF *LEISHMANIA DONOVANI* DOUBLE KNOCK-OUT PARASITES (LDCEN-/-MIF-/-) AS PROTECTIVE VACCINE AGAINST VISCERAL LEISHMANIASIS

**Jacqueline Araújo Fiuza**[1], Sreenivas Gannaravaram[2], Soraya Torres Gaze Jangola[1], Érica Alessandra Rocha Alves[1], Andrea Teixeira de Carvalho[3], Hira Nakhasi[2], Rodrigo Correa-Oliveira[1]
*[1]Laboratory of Cellular and Molecular Immunology-René Rachou Institute/FIOCRUZ, Belo Horizonte, Brazil, [2]Laboratory of Emerging Pathogens, Division of Emerging and Transfusion Transmitted Diseases, Office of Blood Research and Review, Center for Biologics Research and Review, Food and Drug Administration, Silver Spring, MD, United States, [3]Laboratory of Biomarkers for Diagnosis and Monitoring, René Rachou Research Center/FIOCRUZ, Belo Horizonte, Brazil*

**(ACMCIP Abstract)**

Noon

## 1762

### IDENTIFICATION OF MICRORNA-21 AS A BIOMARKER IN LIVE ATTENUATED *LEISHMANIA* VACCINE INDUCED PROTECTIVE IMMUNITY

**Parna Bhattacharya**, Nevien Ismail, Amit Kaul, Sreenivas Gannavaram, Hira L. Nakhasi
*Food and Drug Administration, Silver Spring, MD, United States*

**Symposium 177**

## Advancing Global Health Security through Social, Behavioral and Communications Science: Lessons from the West Africa Ebola Outbreak

*Marriott - Atrium A*
Thursday, November 17, 10:15 a.m. - Noon

This symposium will present findings and public health implications of social, behavioral and communications science work conducted during the Ebola Virus Disease (EVD) response in West Africa. Lessons learned can guide future responses and global health security efforts. Multi-disciplinary work supported and informed Ebola response, prevention and recovery strategies by 1) Utilizing emergency risk communication science and principles to deliver timely and actionable information; 2) Conducting a series of four national Knowledge, Attitudes, and Practices (KAP) surveys in a rapidly evolving outbreak setting; and 3) Assessing the national impact of the Ebola outbreak on the population's mental health status. Implementing rapid qualitative research on acceptability of Ebola prevention efforts, including those focused on contact tracing, prevention of sexual transmission, and use of the health care system. The West Africa Ebola outbreak brought the world's attention to the complexities surrounding outbreak containment of a highly fatal disease in a very resource-limited setting. The need for rapid behavior change demonstrated the integral role of social, behavioral and communication science in outbreak response strategy. Understanding and responding to cultural and knowledge barriers that inhibited EVD transmission prevention efforts was paramount to containment efforts. Four national cross-sectional KAP surveys were conducted in Sierra Leone beginning in August 2014. These surveys informed the development of a national social mobilization and risk communication strategies that targeted high risk transmission environments, behaviors and knowledge gaps at different stages of the epidemic. Similarly, rapid behavioral assessments using qualitative methodologies were conducted to gain more in-depth understanding of barriers to prevention and treatment. The findings were used to inform targeted, tailored and culturally appropriate interventions to get to zero cases, including contact tracing, quarantine and sexual transmission prevention interventions. As EVD case counts decreased, the focus of the July 2015 national survey shifted to topics related to recovery, including assessment of public confidence in the health care system and the mental health impact of the Ebola epidemic. Containing the largest Ebola outbreak in history required response strategies and tactics be grounded in social, behavioral and communication science. This symposium will include presentation of key empirical findings, as well as lessons learned from response efforts in the field that can be used to inform preparedness and global health security efforts.

CHAIR

Rebecca Bunnell
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

Wenshu Li
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

10:15 a.m.
**COMMUNICATING HEALTH AND SAFETY INFORMATION WHEN EVERY MOMENT COUNTS: RISK COMMUNICATION IN AN EBOLA EPIDEMIC**

Nicole Hawk
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

10:35 a.m.
**MENTAL HEALTH IN SIERRA LEONE: NATIONAL IMPACT OF EBOLA EPIDEMIC**

Wenshu Li
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

10:50 a.m.
**UTILIZING KNOWLEDGE, ATTITUDES AND PRACTICES (KAP) SURVEYS TO INFORM BEHAVIOR INTERVENTION STRATEGIES IN AN EBOLA EPIDEMIC**

Mohamed F. Jalloh
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

11:10 a.m.
**THE ROLE OF BEHAVIORAL SCIENCE IN THE WEST AFRICA EBOLA RESPONSE: BUILDING PUBLIC HEALTH CAPACITY**

Neetu Abad
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

## Scientific Session 178

## Filariasis: Clinical

*Marriott - Atrium B*
Thursday, November 17, 10:15 a.m. - Noon

CHAIR

LeAnne M. Fox
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

Catherine M. Bjerum
*Case Western Reserve University, Cleveland, OH, United States*

10:15 a.m.

### 1909

**TEST AND NOT TREAT (TNT): A SAFE STRATEGY TO PROVIDE COMMUNITY-BASED TREATMENT WITH IVERMECTIN IN *LOA LOA* ENDEMIC AREAS**

Joseph Kamgno[1], **Sébastien Pion**[2], Matthew Bakalar[3], Cédric Chesnais[2], Mike D'Ambrosio[3], Raceline Gonoue Kamkumo[1], Charles D. Mackenzie[4], Muriel Sonia Mehly Ngninzeko[1], Narcisse Ngandjui[5], Guy Roger Njitchouang[1], Philippe Nwane[1], Jules Tchatchueng Mbouga[1], Armel Fabrice Tchinde Toussi[1], Samuel Wanji[5], Daniel Fletcher[3], Thomas B. Nutman[6], Amy Klion[6], Michel Boussinesq[2]
*[1]Centre for Research on Filariasis and other Tropical Diseases, Yaounde, Cameroon, [2]Institut de Recherche pour le Développement, Montpellier, France, [3]University of California, Berkeley, CA, United States, [4]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [5]Research Foundation for Tropical Diseases and the Environment, Buea, Cameroon, [6]National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States*

10:30 a.m.

### 1910

**THE MACROFILARICIDAL ACTIVITY OF A SINGLE DOSE OF IVERMECTIN, ALBENDAZOLE AND DIETHYLCARBAMAZINE AGAINST *WUCHERERIA BANCROFTI* IN CÔTE D'IVOIRE**

**Catherine M. Bjerum**[1], Allassane Ouattara[2], Benjamin G. Koudou[3], Abdoulaye Meite[4], James W. Kazura[5], Gary Weil[6], Christopher L. King[5]
*[1]Case Western Reserve University, Cleveland, OH, United States, [2]Centre Suisse de Recherche en Cote d'Ivoire, Abidjan, Côte D'Ivoire, [3]Liverpool School of Tropical Medicine, Pembroke Place, Liverpool, United Kingdom, [4]Programme National de Lutte Contre la Schistosomiase, les Geohelminthiases et la Filariose Lymphatique, Abidjan, Côte D'Ivoire, [5]Center for Global Health and Diseases, Case Western Reserve University, Cleveland, OH, United States, [6]Infectious Diseases Division, Department of Internal Medicine, Washington University School of Medicine, St. Louis, MO, United States*

10:45 a.m.

### 1911

**NEXT GENERATION IMMUNOASSAYS PROVIDE ONE-STEP SPECIES-SPECIFICITY FOR THE DIAGNOSIS OF FILARIAL INFECTIONS AND *STRONGYLOIDES STERCORALIS* IN TRAVELERS AND IMMIGRANTS**

**Joseph Kubofcik**, Thomas B. Nutman
*National Institutes of Health, Bethesda, MD, United States*

11 a.m.

### 1912

**HIGH EFFICACY OF SINGLE DOSE OF CO-ADMINISTERED IVERMECTIN, DIETHYLCARBAMAZINE AND ALBENDAZOLE IN TREATMENT OF LYMPHATIC FILARIASIS IN CÔTE D'IVOIRE**

**Allassane F. Ouattara**[1], Olivier Kouadio[1], Catherine Bjerum[2], Benjamin G. K11oudou[3], Abdoulaye Meité[4], James W. Kazura[5], Gary Weil[6], Christopher L. King[2]
*[1]Centre suisse de recherches scientifiques en Côte d'Ivoire, Abidjan, Côte D'Ivoire, [2]Center for Global Health and Diseases, Case Western Reserve University School of Medicine, Cleveland, OH, United States, [3]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [4]Programme national de la lutte contre la schistosomiase, les geohelminthiases et la filariose lymphatique, Abidjan, Côte D'Ivoire, [5]Center for Global Health and Diseases, Case Western Reserve University School of Medicine, Abidjan, OH, United States, [6]Infectious Diseases Division, Department of Internal Medicine, Washington University School of Medicine, St. Louis, MO, United States*

11:15 a.m.

### 1913

**EFFECTIVENESS AND SAFETY OF ALBENDAZOLE FOR THE TREATMENT OF HYPERMICROFILAREMIC LOIASIS IN GABON**

**Marielle K. Bouyou-Akotet**, Noe P. Mbondoukwe, Christian Nziengui, Eric Kendjo, Marie Noelle Mossavou Boussougou, Mathieu Owono Medang, Denise P. Mawili Mboumba, Maryvonne Kombila
*Université des Sciences de la Santé, Libreville, Gabon*

11:30 a.m.

### 1914

**DEVELOPMENT OF MURINE MODELS OF LOIASIS TO ASSESS MICROFILARICIDAL ACTIVITY OF PRE-CLINICAL CANDIDATE ANTI-FILARIAL DRUGS**

**Hanna Sjoberg**[1], Nicolas Pionnier[1], Haelly Metugene[2], Abdel Njouendou[2], Fanny Fombad[2], Patrick Ndongmo[2], Dizzle Tayong[2], Bertrand Ndzeshang[2], Andrew Steven[1], Darren Cook[1], Ghaith Alyaoussi[1], Steve Ward[1], Mark Taylor[1], Samuel Wanji[2], Joseph Turner[1]
*[1]Liverpool School of Tropical Medicine, Liverpool, United Kingdom, [2]University of Buea, Buea, Cameroon*

**(ACMCIP Abstract)**

11:45 a.m.

**1915**

### PET/CT LYMPHOSCINTIGRAPHY DEMONSTRATES EARLY CHANGES IN LYMPHATIC FUNCTION IN THE *BRUGIA MALAYI*/FERRET MODEL OF LYMPHATIC FILARIASIS

**Belinda M. Jackson**, So Young Kim, Shalini Jaiswal, Jessica Scott, Colin M. Wilson, Scott Jones, Bernard J. Dardzinski, Edward Mitre
*Uniformed Services University, Burtonsville, MD, United States*

## Symposium 179

## Gene Drives on the Horizon: Advancing Science, Navigating Uncertainty and Aligning Research with Public Values

*Marriott - Room A601*
Thursday, November 17, 10:15 a.m. - Noon

The continuing threat of malaria, dengue and the emergence of the Zika virus have created more pressure than ever to consider the use of new and advanced technologies such as gene drives to intentionally introduce genetically engineered traits into wild populations of disease vectors. Already, scientists are developing in the lab gene drives that would render certain mosquito populations unable to transmit infectious diseases such as malaria or even suppress to control these populations in the wild. However, several important questions about the readiness to deploy gene drives need to be answered, including questions about potential ecological impacts, governance, and social and ethical questions. This session is based on a report from the National Academies of Sciences, Engineering, and Medicine (released June 8, 2016) that reviews the state of gene drive research that relies on CRISPR/Cas9 and other endonucleases, as well as other genetic modification approaches. A major focus is identifying key scientific techniques needed to reduce ecological and other risks that should be considered prior to field releases of organisms carrying gene drives. Presenters will discuss potential environmental and other hazards to target and non-target organisms and the possible mitigation strategies that could be used during the different phases of the research. Case studies based on likely applications of gene drive technologies will be used to describe the adequacy of oversight mechanisms, guidelines, and regulations to identify immediate and long-term potential environmental and public health implications. Existing gaps identified by the report's authoring committee well be presented. The discussion of oversight will extend to the need to safeguard against accidental or intended misuse of gene drives. Presenters will discuss the state of the science and value based-concerns, including relevant legal, social or ethical considerations in selecting sites for field releases and engaging those living in or near potential release sites. Finally, presenters will share a set of general principles proposed to guide responsible practices in gene drive research for the laboratory setting through to field releases for use by investigators, their institutions, the research funders and regulators.

CHAIR

Audrey Thevenon
*National Academy of Sciences, Washington, DC, United States*

Stephen Higgs
*University of Texas Medical Branch, Galveston, TX, United States*

10:15 a.m.

### GENE DRIVES - WHAT ARE THEY, HOW DO THEY WORK, WHY ARE THEY IMPORTANT IN TROPICAL MEDICINE?

James Collins
*Arizona State University, School of Life Sciences, Tempe, AZ, United States*

10:30 a.m.

### VALUE-BASED CONCERNS ABOUT GENE DRIVES AND RESPONSIBLE PRACTICES TO ADDRESS THEM

Elizabeth Heitman
*Vanderbilt University Medical Center, Center for Biomedical Ethics and Society, Nashville, TN, United States*

10:45 a.m.

### TAKING A PRECAUTIONARY APPROACH TO DEVELOP GENE DRIVES THROUGH A PHASED TESTING PATHWAY

Nicole L. Achee
*University of Notre Dame, Notre Dame, IN, United States*

11 a.m.

### INCORPORATING PUBLIC ENGAGEMENT THROUGHOUT PHASED TESTING

Jason Delborne
*North Carolina State University, Raleigh, NC, United States*

11:15 a.m.

### REGULATORY CONSIDERATIONS IN A GLOBAL ARENA

Joyce Tait
*University of Edinburgh, Innogen Centre, Edinburgh, United Kingdom*

## Scientific Session 180

## Global Health: Maternal and Child Health

*Marriott - Room A602*
Thursday, November 17, 10:15 a.m. - Noon

CHAIR

Carter Cowden
*The Children's Hospital of Philadelphia, Philadelphia, PA, United States*

Davidson H. Hamer
*Boston University, Center for Global Health and Development, Boston, MA, United States*

10:15 a.m.

**1916**

### MICROBIOLOGY AND OUTCOMES IN HOSPITALIZED NEONATES WITH SEPSIS: A ZAMBIAN COHORT STUDY

**Carter L. Cowden**[1], Lawrence Mwananyanda[2], Cassandra Pierre[3], James C. Mwansa[4], Chilese Lukwesa[4], Angela Nyondo[2], Monica Kapasa[4], Sylvia Machona[4], Nellisiwe Chizuni[2], Moses C. Malama[2], Gertrude Munanjala[2], Matthew Bates[5], Russell Localio[6], Davidson H. Hamer[7], Susan E. Coffin[8]
*[1]The Children's Hospital of Philadelphia, Philadelphia, PA, United States, [2]Zambia Centre for Applied Health Research and Development, Lusaka, Zambia, [3]Boston University School of Medicine, Boston, MA, United States, [4]University Teaching Hospital, Lusaka, Zambia, [5]University Teaching Hospital, Harvard Medical School, Lusaka, Zambia, [6]Department of Biostatistics and Epidemiology,The University of Pennsylvania, Philadelphia, PA, United States, [7]Zambia Centre for Applied Health Research and Development; Center for Global Health and Development, Boston University School of Public Health, Boston, MA, United States, [8]Division of Infectious Diseases, The Children's Hospital of Philadelphia; The University of Pennsylvania School of Medicine, Philadelphia, PA, United States*

10:30 a.m.

**1917**

### HIGH SERUM ZINC LEVELS PROTECT AGAINST ROTAVIRUS INFECTION BUT NOT OTHER DIARRHEA-ASSOCIATED PATHOGENS IN A BIRTH COHORT IN BANGLADESH

**E. Ross Colgate**[1], Dorothy M. Dickson[1], Rashidul Haque[2], Mami Taniuchi[3], James A. Platts-Mills[3], Josyf C. Mychaleckyj[3], Uma Nayak[3], Marya P. Carmolli[1], William A. Petri[3], Beth D. Kirkpatrick[1]
*[1]University of Vermont College of Medicine, Burlington, VT, United States, [2]International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, [3]University of Virginia, Charlottesville, VA, United States*

10:45 a.m.

**1918**

### DECLINING CHILD MORTALITY DUE TO INFECTIOUS DISEASES IN AN URBAN SLUM IN NAIROBI KENYA

**Jennifer R. Verani**[1], Leonard Cosmas[1], Shadrack Muema[2], Alice Ouma[2], Geofrey Masyongo[2], Marc-Alain Widdowson[1], Godfrey Bigogo[2]
*[1]Division of Global Health Protection, Centers for Disease Control and Prevention, Nairobi, Kenya, [2]Center for Global Health Research, Kenya Medical Research Institute, Nairobi, Kenya*

11 a.m.

**1919**

### A SYSTEMATIC REVIEW ON THE EFFECTIVENESS OF STRATEGIES TO IMPROVE HEALTH WORKER PERFORMANCE IN LOW- AND MIDDLE-INCOME COUNTRIES: PRELIMINARY RESULTS ON UTILIZATION OF HEALTH SERVICES

**Alexander K. Rowe**[1], Samantha Y. Rowe[1], David H. Peters[2], Kathleen A. Holloway[3], John Chalker[4], Dennis Ross-Degnan[5]
*[1]Centers for Disease Control and Prevention, Atlanta, GA, United States, [2]Johns Hopkins University, Baltimore, MD, United States, [3]World Health Organization, New Delhi, India, [4]Management Sciences for Health, Arlington, VA, United States, [5]Harvard Medical School, Boston, MA, United States*

11:15 a.m.

**1920**

### THE IMPACT OF ANEMIA DURING PREGNANCY AND ITS RISK FACTORS ON THE COGNITIVE DEVELOPMENT OF ONE-YEAR-OLD CHILDREN

**Michael O. Mireku**[1], Michel Cot[2], Florence Bodeau-Livinec[3]
*[1]Imperial College London, London, United Kingdom, [2]Institut de recherche pour le développement (IRD), Paris, France, [3]INSERM U1153, Paris, France*

11:30 a.m.

**1921**

### MATERNAL AND INFANT FACTORS MEDIATING COGNITIVE DEVELOPMENT AT 12 MONTHS AMONG FILIPINO INFANTS

**Sangshin Park**[1], David Bellinger[2], Meredith Adamo[1], Brady Bennett[3], Namkyong Choi[2], Palmera Baltazar[4], Edna B. Ayaso[4], Donna Bella S. Monterde[4], Veronica Tallo[5], Remigio M. Olveda[5], Luz P. Acosta[5], Jennifer F. Friedman[1]
*[1]Alpert Medical School of Brown University, Providence, RI, United States, [2]Harvard Medical School, Boston, MA, United States, [3]Health Council of South Florida, Miami, FL, United States, [4]Remedios Trinidad Romualdez Hospital, Tacloban City, Philippines, [5]Research Institute for Tropical Medicine, Manila, Philippines*

11:45 a.m.

**1922**

### MOTHERS SCREENING FOR MALNUTRITION BY MUAC IS NON-INFERIOR TO COMMUNITY HEALTH WORKERS: RESULTS FROM A LARGE-SCALE PRAGMATIC TRIAL IN RURAL NIGER

Franck Alé[1], Kevin Phelan[1], Hassan Issa[1], Isabelle Defourny[2], Guillaume Le Duc[1], Géza Harzci[3], Kader Issaley[1], Sani Sayadi[4], Nassirou Ousmane[4], Issoufou Yahaya[5], Mark Myatt[6], André Briend[7], Thierry Allafort-Duverger[1], **Susan Shepherd**[1], Nikki Blackwell[1]
*[1]The Alliance for International Medical Action (ALIMA), Dakar, Senegal, [2]Médecins Sans Frontières, Paris, France, [3]Médecins Sans Frontières, Dakar, Senegal, [4]Bien Être de la Femme et de l'Enfant (BEFEN), Niamey, Niger, [5]Ministry of Public Health, Niamey, Niger, [6]Brixton Health, London, United Kingdom, [7]University of Copenhagen, Copenhagen, Denmark*

## Symposium 181

## Enhancement of Syndromic Surveillance, Outbreak-Response and Disease Elimination through Innovative Laboratory Diagnostics

*Marriott - Room A703/A704*
Thursday, November 17, 10:15 a.m. - Noon

This symposium will highlight the importance of epidemiological and laboratory innovations to enhance prompt detection and controlling the outbreak-prone emerging and re-emerging infectious diseases globally. Speakers will present the opportunities and practical challenges in monitoring and respond to outbreak-prone diseases with pandemic potential in resource-constraint settings and share their field experiences in application of syndromic surveillance and response, through utilizing innovative multiplex laboratory diagnostics. The session will include an interactive discussion session and recommendations on effective implementation of new, innovative and integrated laboratory technologies in support of global surveillance and response activities. The symposium will benefit public health and laboratory scientists who are involved in laboratory research and innovations, infectious disease surveillance and outbreak responses.

CHAIR

Kevin Karem
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

Ron Rosenberg
*Centers for Disease Control and Prevention, Fort Collins, CO, United States*

10:15 a.m.

### EBOLA-EXAMPLES OF SYNDROMIC MANAGEMENT WITHOUT DIAGNOSTIC SUPPORT

Joel M. Montgomery
*Centers for Disease Control and Prevention, Altanta, GA, United States*

10:30 a.m.

### NEW LABORATORY DIAGNOSTICS FOR USE IN RESOURCE-LIMITED ENVIRONMENTS

Barry Fields
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

10:45 a.m.

### DEVELOPMENT AND CHALLENGES OF TRANSLATING VIRAL HEMORRHAGIC FEVER RESEARCH TO ACTIONABLE DIAGNOSTIC APPLICATIONS

Tim D. Minogue
*U.S. Army Medical Research Institute for Infectious Diseases, Bethesda, MD, United States*

11 a.m.

### ZIKA VIRUS IN BRAZIL: CHALLENGES TO DETECTION FOR SYNDROMIC MANAGEMENT

Claudia Nunes Duarte dos Santos
*Instituto Carlos Chagas, Curitiba, Brazil*

## Scientific Session 182

## HIV and Tropical Co-Infections

*Marriott - Room A706/A707*
Thursday, November 17, 10:15 a.m. - Noon

CHAIR

Charlotte V. Hobbs
*University of Mississippi Medical Center, Jackson, MS, United States*

Paul B. Natureeba
*Infectious Diseases Research Collaboration, Kampala, Uganda*

10:15 a.m.

### 1923

### INTERMITTENT PREVENTIVE TREATMENT OF MALARIA IN HIV-INFECTED PREGNANT WOMEN WITH DIHYDROARTEMISININ-PIPERAQUINE: A DOUBLE BLINDED RANDOMIZED CONTROLLED TRIAL

**Paul B. Natureeba**
*Infectious Diseases Research Collaboration, Kampala, Uganda*

10:30 a.m.

### 1924

### IMPACT OF EFAVIRENZ AND PREGNANCY ON PIPERAQUINE EXPOSURE IN UGANDAN PREGNANT WOMEN

**Richard Kajubi**[1], Nona Chamankhah[2], Liusheng Huang[2], Norah Mwebaza[3], Abel Kakuru[1], Prasanna Jagannathan[2], Philip J. Rosenthal[2], Moses R. Kamya[3], Grant Dorsey[2], Diane Havlir[2], Francesca Aweeka[2]
*[1]Infectious Disease Research Collaboration, Kampala, Uganda, [2]University of California San Francisco, San Francisco, CA, United States, [3]Makerere University, Kampala, Uganda*

10:45 a.m.

### 1925

### MALARIA IN HIV-INFECTED CHILDREN RECEIVING HIV PROTEASE-INHIBITOR-COMPARED WITH NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR-BASED ANTIRETROVIRAL THERAPY

**Charlotte V. Hobbs**[1], Erin Gabriel[2], Portia Kamthunzi[3], Gerald Tegha[3], Elizabeth Wills Petzold[4], Linda Barlow-Mosha[5], Benjamin H. Chi[6], Yonghua Li[7], Tiina Ilmet[7], Brian Kirmse[1], Jillian Neal[8], Sunil Parikh[9], Nagamah Deygoo[7], Patrick Jean-Philippe[10], Lynne Mofenson[11], William Prescott[12], Philippa Musoke[5], Paul Palumbo[13], Patrick E. Duffy[8], William Borkowsky[7]
*[1]University of Mississippi Medical Center, Jackson, MS, United States, [2]Biostatistics Research Branch, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, MD, United States, [3]Kamuzu Central Hospital, University of North Carolina at Chapel Hill Lilongwe Project, Lilongwe, Malawi, [4]Duke University, Durham, NC, United States, [5]Makerere University-Johns Hopkins University Project, Kampala, Uganda, [6]University of Mississippi Medical Center, University of North Carolina at Chapel Hill, NC, United States, [7]New York University School of Medicine, Department of Pediatrics, Division of Infectious Disease and Immunology, New York, NY, United States, [8]Laboratory of Malaria Immunology and Vaccinology, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, MD, United States, [9]Yale University, New Haven, CT, United States, [10]Maternal Adolescent Pediatric Research Branch, Prevention Science Program, Division of AIDS, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, MD, United States, [11]Elizabeth Glaser Pediatric AIDS Foundation, Washington, DC, United States, [12]HYDAS World Health, Inc, Hershey, PA, United States, [13]Division of Infectious Diseases and International Health, Geisel School of Medicine at Dartmouth, Dartmouth, NH, United States*

11 a.m.

### 1926

### EFFECT OF DAILY TRIMETHOPRIM SULFAMETHOXAZOLE PROPHYLAXIS ON THE LONG-TERM CLINICAL IMPACT OF MALARIA INFECTION AMONG HIV INFECTED ADULTS ON SUCCESSFUL ART IN BLANTYRE, MALAWI

**Felix A. Mkandawire**[1], Randy G. Mungwira[1], Titus H. Divala[1], Osward M. Nyirenda[1], Maxwell Kanjala[1], Lufina Tsirizani[1], Francis Muwalo[1], Nicaise Ndembi[2], Terrie E. Taylor[3], Jane Mallewa[4], Joep J. van Oosterhout[5], Matthew B. Laurens[6], Miriam K. Laufer[6]
*[1]Blantyre Malaria Project, University of Malawi College of Medicine, Blantyre, Malawi, [2]Institute of Human Virology, Lagos, Nigeria, [3]Institute of Global Health, University of Maryland School of Medicine, Baltimore, MD, United States, [4]University of Malawi College of Medicine, Blantyre, Malawi, [5]Dignitas International, Zomba, Malawi, [6]Division of Malaria Research, Center for Global Health, University of Malaria School of Medicine, Baltimore, MD, United States*

11:15 a.m.

### 1927

### PERSISTENCE OF LOWER ANTIBODY LEVELS TO VAR2CSA IN HIV-POSITIVE KENYAN PREGNANT WOMEN DESPITE HAART

**Anna Babakhanyan**[1], Lee Ndeda[2], Emmily Koech[2], Fredrick Opinya[2], Peter Odada[2], Rosemary Rochford[3], Arlene Dent[1]
*[1]Case Western Reserve University, Cleveland, OH, United States, [2]Kenya Medical Research Institute, Kisumu, Kenya, [3]SUNY Upstate Medical University, New York, NY, United States*

11:30 a.m.

### 1928

### ASSESSING IMPACT OF COMMUNITY-BASED ANTIRETROVIRAL THERAPY AND ITS SCALE UP: PERSPECTIVES FROM FOUR PRIORITY LOCAL GOVERNMENT AREAS IN LAGOS, NIGERIA

**Chinedu O. Oraka**[1], Babatunde Odusolu[1], Adegbenga Olarinoye[1], Chinedu Agbakwuru[2], Titi Badru[2], Ifeyinwa Ndubuisi[1], Mariam Adeyemi[1], Ebere Iwerumoh[1], Adedoyin Ogunyemi[1]
*[1]FHI 360, Lagos, Nigeria, [2]FHI 360, Abuja, Nigeria*

11:45 a.m.

### 1929

### DEVELOPMENT OF A MUCOSAL VACCINE AGAINST HIV BASED ON GENETICALLY-ENGINEERED *SACCHAROMYCES CEREVISIAE* PROBIOTIC STRAINS

Mariana L. Palma[1], Flaviano S. Martins[2], Ernesto T. Marques Jr[3], **Bruno Douradinha**[4]
*[1]Department of Infectious Diseases and Microbiology, University of Pittsburgh, Pittsburgh, PA, United States, [2]Instituto de Ciências Biológicas, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, [3]University of Pittsburgh Center for Vaccine Research, Pittsburgh, PA, United States, [4]Fondazione Ri.MED, Palermo, Italy*



# Thursday, November 17, Noon

## ASTMH 65th Annual Meeting Adjourns

See you next year at the Baltimore Convention Center in Baltimore, Maryland!

# Presenter Index I: Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions (Speakers and Session Chairs)

The number(s) following each individual's name indicates the session number.

**See page 331 for the list of abstract authors of abstracts presented during Scientific Sessions and Poster Sessions**

# Presenter Index I:
# Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions (Speakers and Session Chairs)

The number(s) following each individual's name indicates the session number.

**See page 331 for the list of abstract authors of abstracts presented during Scientific Sessions and Poster Sessions**

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

The number(s) following the author name indicates the abstract number.

**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**

## A

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

The number(s) following the author name indicates the abstract number.

**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## B

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**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**

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**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## C

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**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

The number(s) following the author name indicates the abstract number.

**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## D

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

The number(s) following the author name indicates the abstract number.

**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## E

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

The number(s) following the author name indicates the abstract number.

**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## F

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

The number(s) following the author name indicates the abstract number.

**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## G

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

The number(s) following the author name indicates the abstract number.

**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## H

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

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**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**

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**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## I



## J

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

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**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## K

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

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**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**

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The number(s) following the author name indicates the abstract number.

**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**

## L

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

The number(s) following the author name indicates the abstract number.

**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## M

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

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**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**

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## N

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

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**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## O

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

The number(s) following the author name indicates the abstract number.

**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## P

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

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## Q



## R

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

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**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**



## S

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

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**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**

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## T

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## U



## V



## W

# Presenter Index II : Abstract Authors (Scientific Sessions and Poster Sessions)

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**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**

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## X



## Y



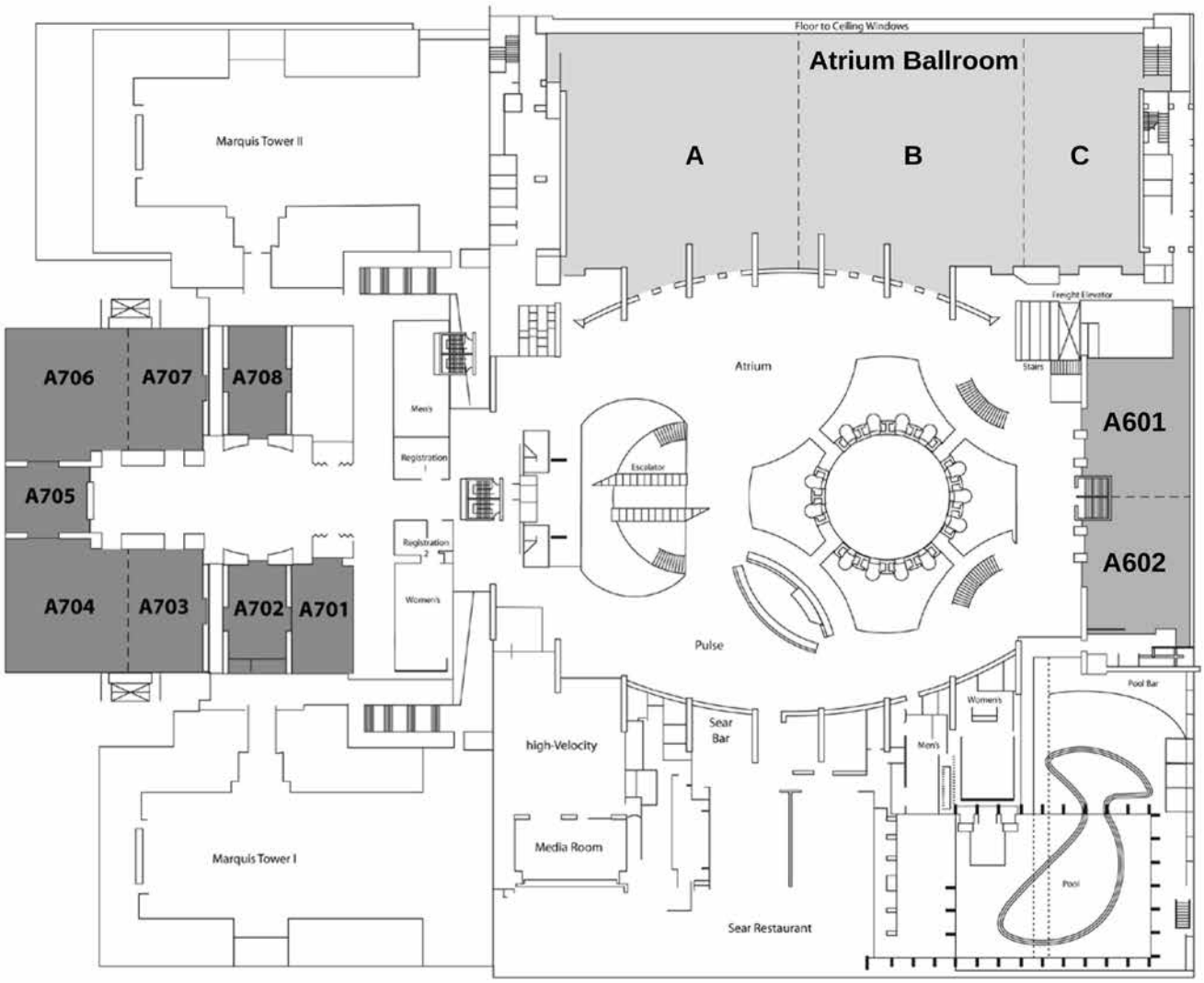
## Z

# Presenter Index II :
# Abstract Authors (Scientific Sessions and Poster Sessions)

The number(s) following the author name indicates the abstract number.

**See page 329 for the list of speakers and session chairs in Plenary, Symposium, Meet the Professors, Mid-Day and Special Sessions.**

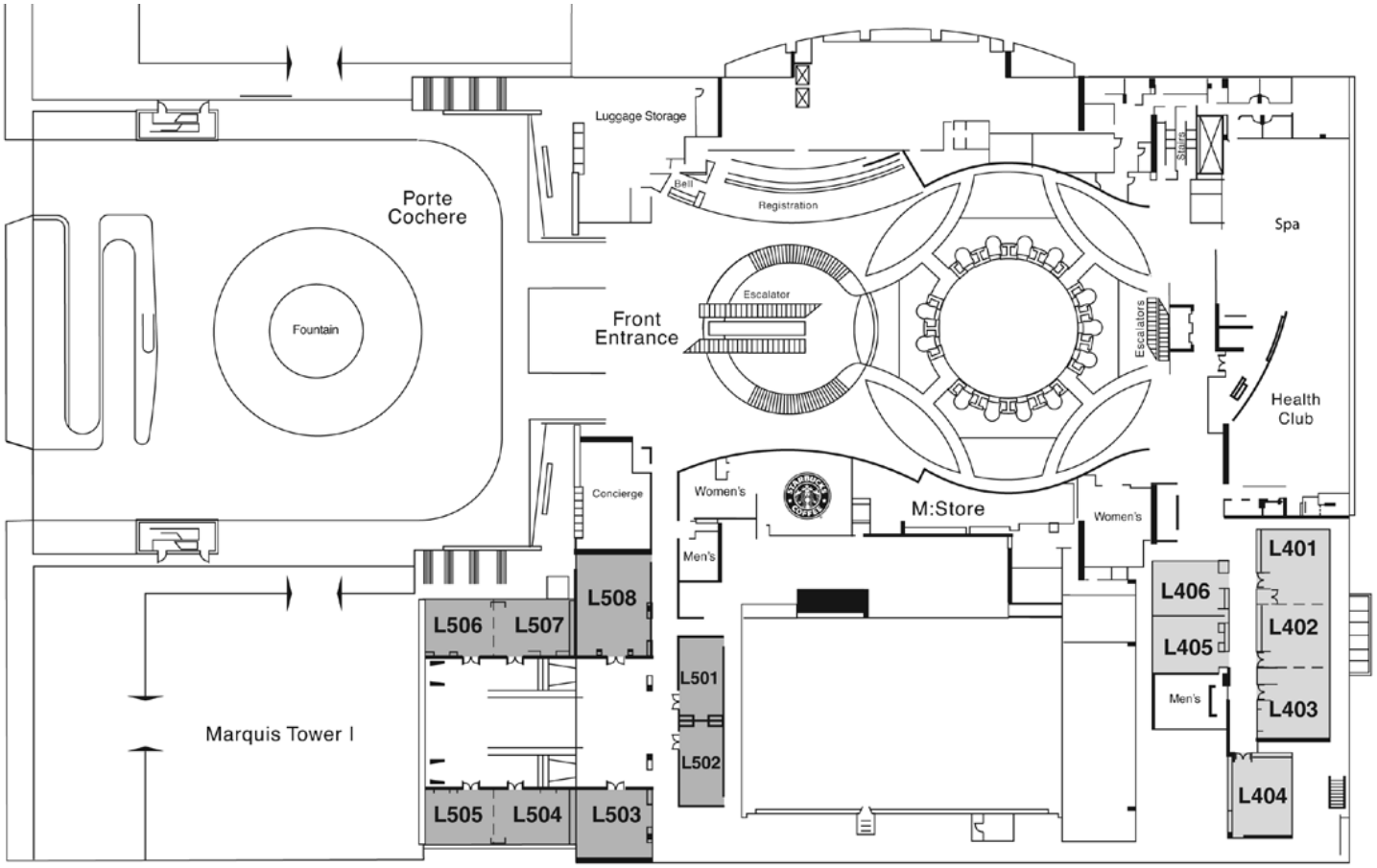
## Atrium Level




**Meeting Rooms**

Atrium A
Atrium B
Atrium Foyer (Special Interactive Experience:
The Refugee Journey to Wellbeing)
Atrium Loft (TropStop-Student/Trainee Lounge)
Room A601
Room A602
Room A701
Room A702
Room A703
Room A704
Room A705
Room A706
Room A707
Room A708

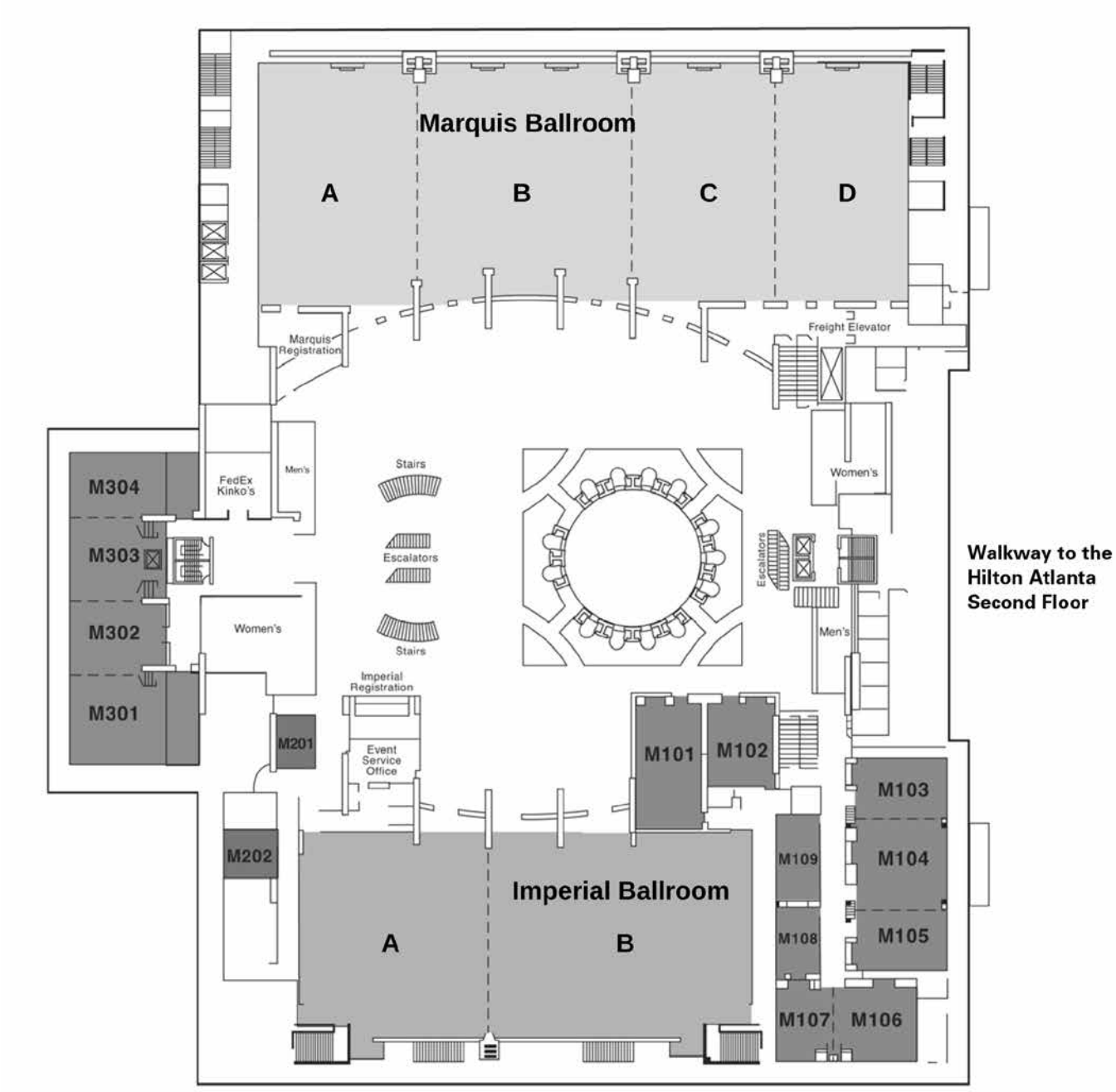
## Lobby Level




**Meeting Rooms**

| | |
|---|---|
| Room L401 | Room L502 |
| Room L402 | Room L503 |
| Room L403 | Room L504 |
| Room L404 | Room L505 |
| Room L405 | Room L506 |
| Room L406 | Room L507 |
| Room L501 | Room L508 |

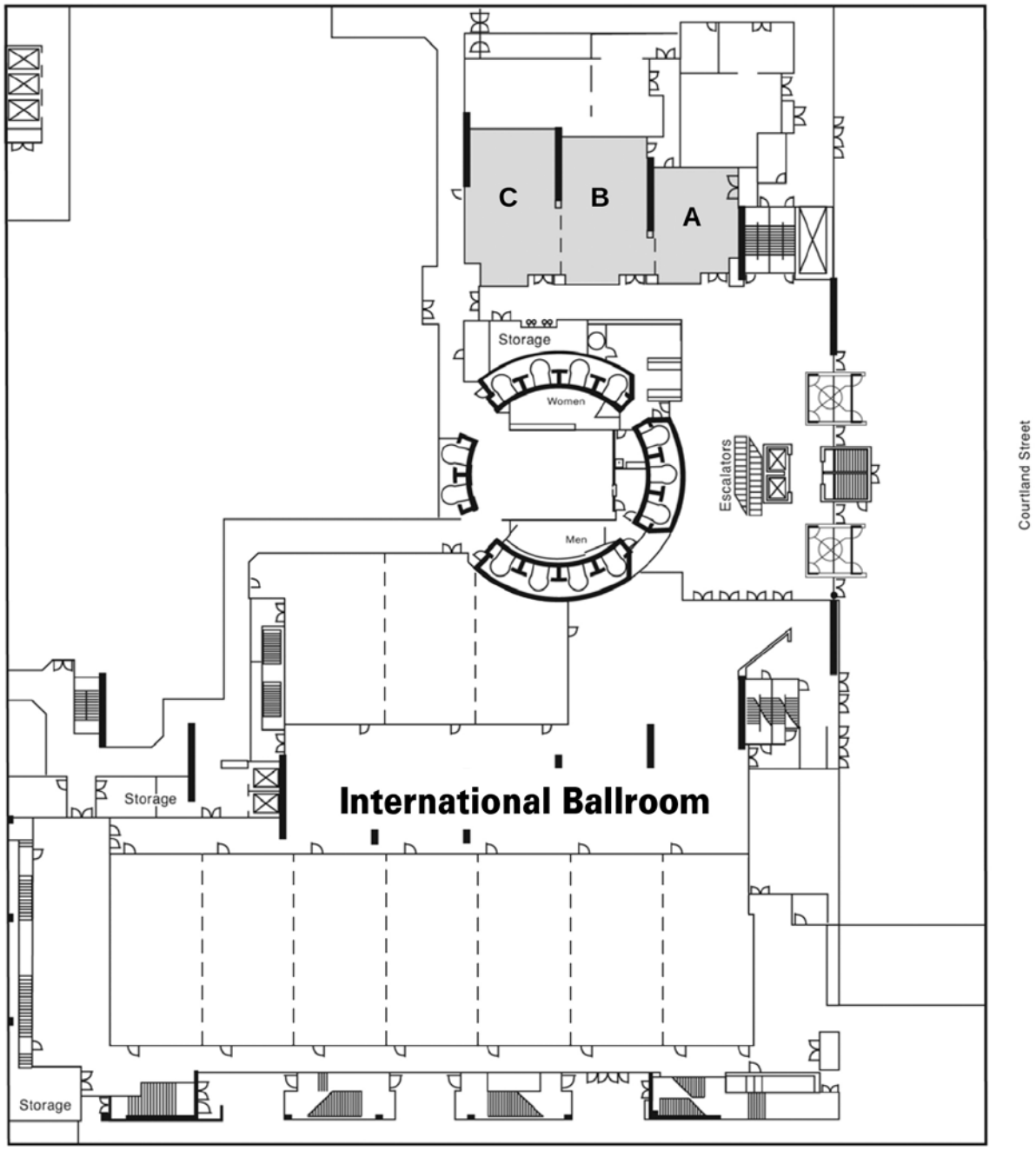
## Marquis Level




**Meeting Rooms**

Walkway to Hilton
Imperial A
Imperial B
Imperial Foyer (Internet Nook)
Marquis A
Marquis B
Marquis C
Marquis D
Marquis Foyer (Registration)
Room M101
Room M102 (Press Room)
Room M103
Room M104
Room M105
Room M106
Room M107
Room M108
Room M109
Room M201
Room M202
Room M301
Room M302
Room M303
Room M304

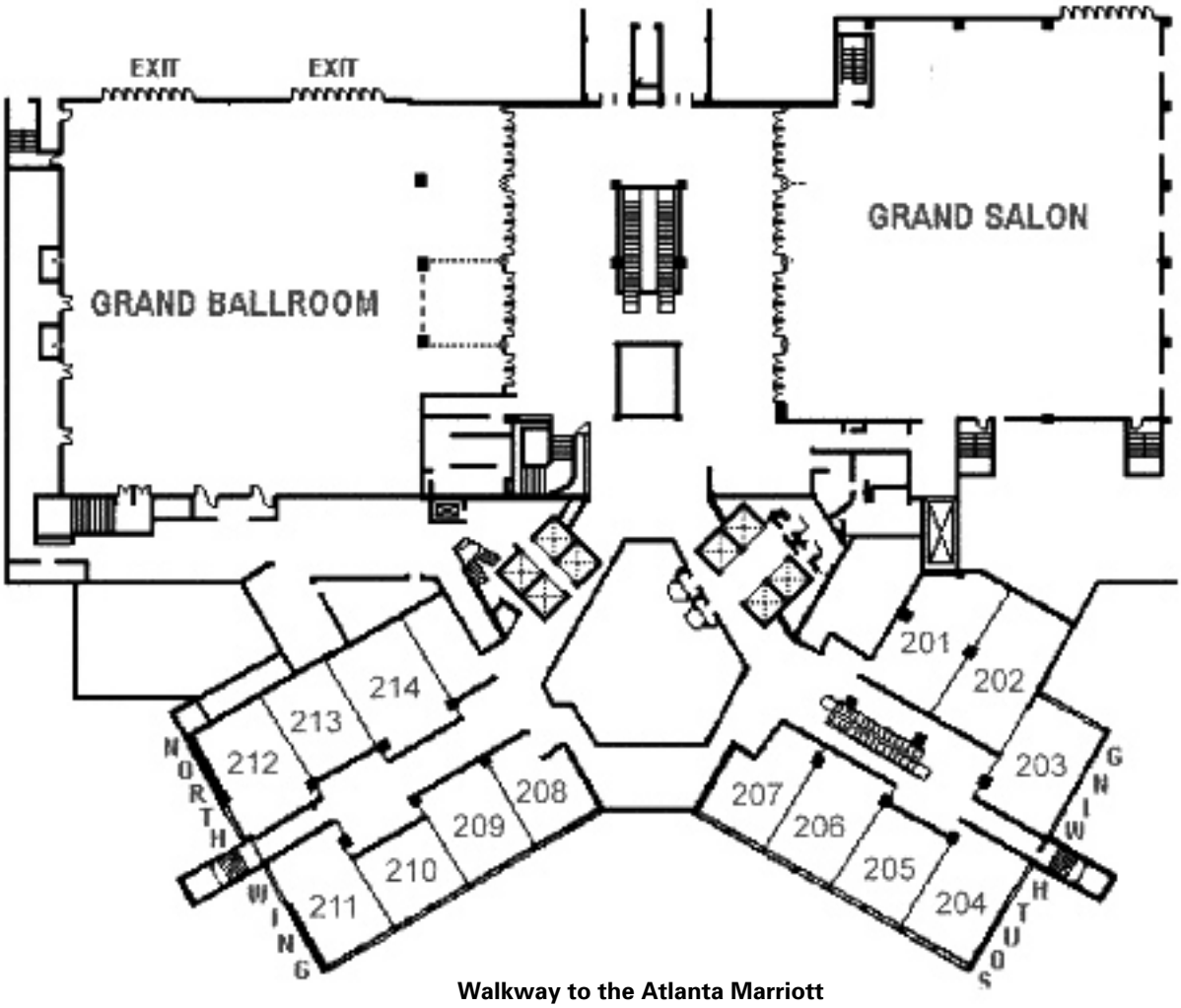
## International Level




**Meeting Rooms**

International A (Speaker Ready Room)
International Ballroom (Exhibit Hall)

## Second Floor

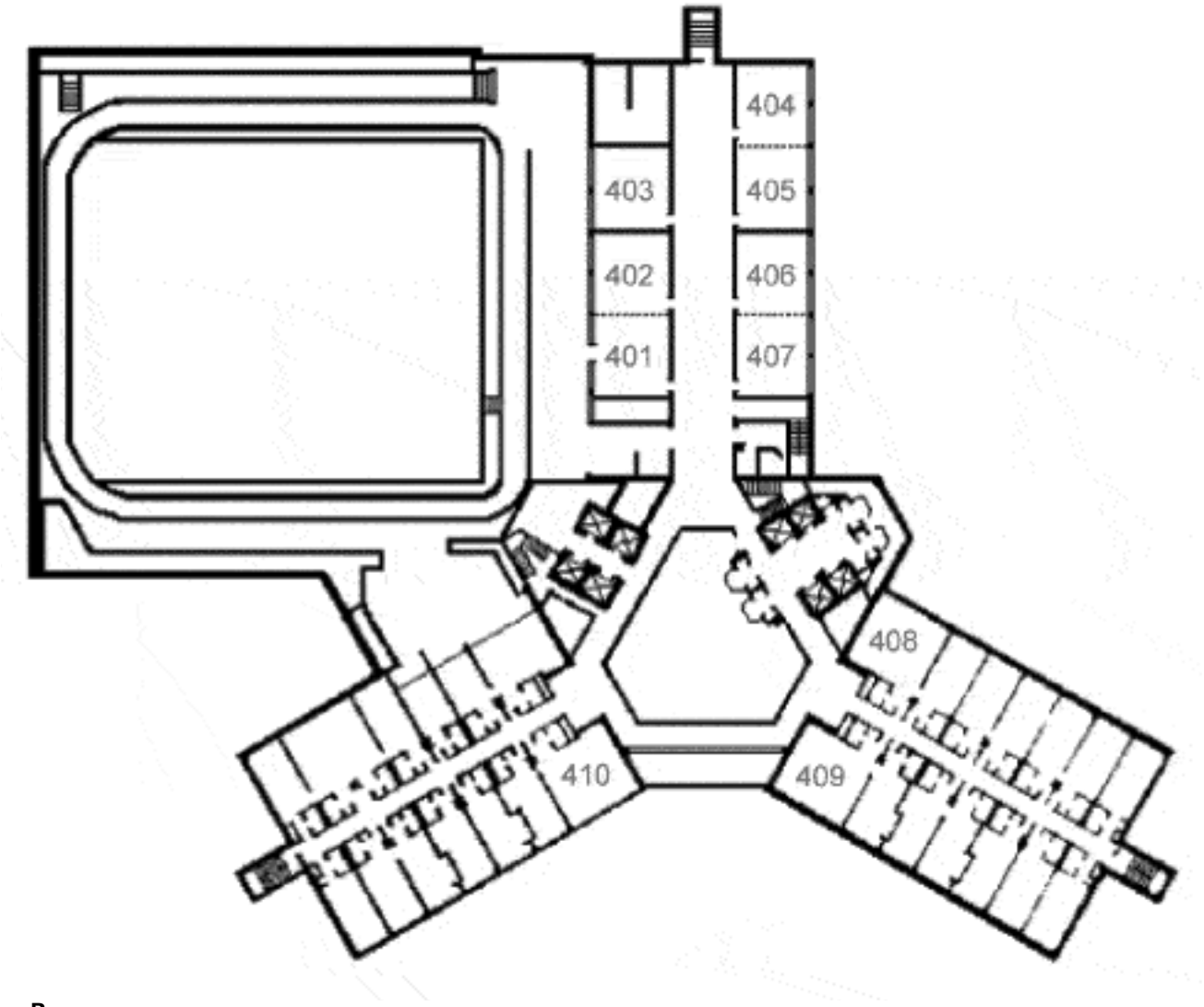



**Walkway to the Atlanta Marriott Marquis - Marquis Level**

**Meeting Rooms**

Grand Ballroom (Poster Hall)
Grand Salon (Poster Hall)
Room 201
Room 202
Room 203
Room 204
Room 205
Room 206 (Impromptu Meeting Sign-Up Room)
Room 207 (Impromptu Meeting Sign-Up Room)
Room 208
Room 209
Room 210
Room 211
Room 212
Room 213
Room 214
Walkway to Marriott

## Fourth Floor




**Meeting Rooms**

Room 401
Room 402
Room 403
Room 404
Room 405
Room 406
Room 407
Room 408
Room 409
Room 410

# ASTMH

AMERICAN SOCIETY OF TROPICAL MEDICINE & HYGIENE

ADVANCING GLOBAL HEALTH SINCE 1903

# MARK YOUR CALENDAR!

**66th Annual Meeting**
**November 5–9, 2017 (Sunday through Thursday)**
*The Baltimore Convention Center*
*Baltimore, Maryland USA*

**67th Annual Meeting**
**October 28 – November 1, 2018 (Sunday through Thursday)**
*Sheraton New Orleans and New Orleans Marriott*
*New Orleans, Louisiana USA*

**68th Annual Meeting**
**November 20–24, 2019 (Wednesday through Sunday)**
*Gaylord National Resort and Convention Center*
*National Harbor, Maryland USA (adjacent to Washington, DC)*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