ASTMH Inclusion/Respect Statement

At the Saturday, October 27, 2018, Board meeting of the ASTMH, under the leadership of then-President Regina Rabinovich, MD, FASTMH, the following statement was adopted:

The ASTMH is an international society committed to equity and global impact through the treatment and prevention of tropical infectious diseases. Our diverse membership comes from more than 115 countries and engages with an enormous array of infectious diseases, cultures, ethnicities, and countries. We come from academia, research institutes, implementation programs, industry, multilateral organizations, foundations, and governments, gathering annually to exchange data, share learning, and honor contributions from the field and the lab.

As a Society, we are committed to the open exchange of ideas, freedom of thought and expression, and productive scientific debate that are central to our mission. These require an open and diverse environment that is built on dignity and mutual respect for all members, participants, and staff, free of discrimination based on personal attributes including but not limited to ethnicity, color, national origin, age, religion, socioeconomic status, disability, sexual orientation, gender, and gender identity or expression. We affirm the key principles of inclusion, diversity, and respect for all people. In a world of rich diversity, the advancement of science depends on the intellectual breadth and depth of a diverse ASTMH, one that informs and enriches the shape and content of scientific discourse. These principles guide the actions of ASTMH’s leaders, members, and staff in advancing the goals of the Society.
Welcome to #TropMed20, your (online) access to all that is new, evolving, challenging and successful in tropical medicine and global health.

Despite these challenging times, we are excited to bring you ASTMH’s very first virtual Annual Meeting. It’s never been more important for ASTMH colleagues to get together to share the latest scientific findings and global health advances. This year, content is being presented through a combination of livestream and pre-recorded sessions, offering an unprecedented opportunity to join us from wherever you are.

Kicking off the meeting is Christiana Figueres, who helped deliver the historic Paris Agreement on climate change while Executive Secretary of the United Nations Framework Convention on Climate Change. Her appearance is part of a broader focus at the meeting on how climate change could intensify the spread of disease and increase health disparities between rich and poor.

Other highlighted speakers include Dr. Elizabeth Winzeler delivering the Charles Franklin Craig Lecture, Dr. John Nkengasong delivering the Commemorative Fund Lecture, and Soumya Swaminathan delivering the Vincenzo Marcolongo Memorial Lecture.

We also organized special sessions on COVID-19 and on race and social justice in tropical medicine. On Monday, we will livestream a session on COVID-19 featuring Dr. Anthony Fauci, Dr. John Nkengasong, Dr. Richard Hatchett and Dr. Heidi Larson. Helen Branswell from Stat News will moderate.

Two symposia will explore issues of race, equity and colonialism that still pose challenges for global health research. Dr. Linnie Golightly will explore the colonial and racist history of the field of tropical medicine, followed by a panel discussion chaired by ASTMH Board member Dr. Jonathan Stiles and including Dr. Amadou Sall, Dr. Mishal Khan and Dr. Thomas LaVeist.

This year also marks the 40-year anniversary of the eradication of smallpox. We will be taking a look at that historic effort with two of its veterans, ASTMH President Dr. Joel Breman and Dr. David Heymann, exploring how the lessons from that achievement can be adapted to future challenges for monkeypox and other viruses.

All of this plus the usual cutting-edge content on malaria, helminths, Ebola and all the rest that you have come to expect every year.

Please be sure to visit our exhibitors and sponsors. They will be available on the virtual platform and they help make all of this possible.

We look forward to seeing you (online) for another great ASTMH Annual Meeting.
Bienvenido a #TropMed20, su acceso (en línea) a todo lo nuevo, evolutivo, desafiante y exitoso en medicina tropical y salud global.

A pesar de estos tiempos difíciles, nos complace presentarles la primera reunión anual virtual de ASTMH. Nunca ha sido más importante que los colegas de ASTMH se reúnan para compartir los últimos descubrimientos científicos y avances en salud global. Este año, el contenido se presenta a través de una combinación de transmisión en vivo y sesiones pregrabadas, lo que ofrece una oportunidad sin precedentes de participar con nosotros desde donde se encuentre.

Inicia la reunión Christiana Figueres, quien ayudó a cumplir el histórico Acuerdo de París sobre el cambio climático mientras era Secretaria Ejecutiva de la Convención Marco de las Naciones Unidas sobre el Cambio Climático. Su aparición es parte de un enfoque más amplio en la reunión sobre cómo el cambio climático podría intensificar la propagación de enfermedades y aumentar las disparidades de salud entre ricos y pobres.

Otros oradores destacados incluyen a la Dra. Elizabeth Winzeler, que dará la Conferencia Charles Franklin Craig, el Dr. John Nkengasong, a cargo de la Conferencia del Fondo Conmemorativo y Soumya Swaminathan, a cargo de la Conferencia Conmemorativa Vincenzo Marcolongo.

También organizamos sesiones especiales sobre la COVID-19, y sobre raza y justicia social en la medicina tropical. El lunes, transmitiremos en vivo una sesión sobre la COVID-19 con el Dr. Anthony Fauci, el Dr. John Nkengasong, el Dr. Richard Hatchett y la Dra. Heidi Larson. Helen Branswell de Stat News será moderadora.

Dos simposios explorarán cuestiones de raza, equidad y colonialismo que aún plantean desafíos para la investigación en salud global. La Dra. Linnie Golightly explorará la historia colonial y racista del campo de la medicina tropical, seguida de una mesa redonda presidida por el Dr. Jonathan Stiles, miembro de la Junta de ASTMH, que incluirá al Dr. Amadou Sall, al Dr. Mishal Khan y al Dr. Thomas LaVeist.

Este año también marca el 40 aniversario de la erradicación de la viruela. Analizaremos ese esfuerzo histórico con dos de sus veteranos, el presidente de ASTMH, el Dr. Joel Breman y el Dr. David Heymann, quien explorará cómo las lecciones de ese logro se pueden adaptar a los desafíos futuros de la viruela del simio y otros virus.

Todo esto más el contenido de vanguardia habitual sobre malaria, helmintos, ébola y todo lo demás que se espera cada año.

Asegúrese de visitar a nuestros expositores y patrocinadores. Estarán disponibles en la plataforma virtual y ayudarán a que todo esto sea posible.

Esperamos verlo (en línea) para otra gran reunión anual de ASTMH.
Bienvenue au #TropMed20 qui vous donnera accès (en ligne) à toutes les nouveautés et évolutions et à tous les défis et succès en médecine tropicale et santé mondiale.

En ces temps difficiles, nous nous réjouissons d’amener à vous la toute première Assemblée annuelle virtuelle de l’ASTMH. Il n’a jamais été aussi important pour les collègues de l’ASTMH de se réunir afin d’échanger sur les dernières données scientifiques et avancées en matière de santé mondiale. Cette année, le contenu de l’Assemblée sera présenté en plusieurs formats, alternant interventions en direct et séances préenregistrées, et vous offrant l’occasion sans précédent de vous joindre à nous où que vous vous trouviez dans le monde.

Le discours d’ouverture sera prononcé par Christiana Figueres, qui, en tant que Secrétaire exécutive de la Convention-cadre des Nations Unies sur les changements climatiques a contribué à la conclusion de l’Accord historique de Paris sur le changement climatique. Son allocution s’inscrit dans le cadre de la thématique plus large de cette assemblée visant à mettre en lumière comment le changement climatique pourrait intensifier la propagation des maladies et creuser encore les disparités en matière de santé entre riches et pauvres.

Parmi les autres intervenants de haut niveau figurent la Dre Elizabeth Winzeler, le Dr John Nkengasong et Soumya Swaminathan qui prendront la parole pour les conférences Charles Franklin Craig, du Commemorative Fund et du Vincenzo Marcolongo Memorial, respectivement.


Deux symposiums seront consacrés aux problématiques liées à la question raciale, à l’équité et au colonialisme qui posent toujours des difficultés pour la recherche en santé mondiale. La Dre Linnie Golightly étudiera l’histoire coloniale et raciste dans le domaine de la médecine tropicale ; s’ensuivra un groupe de discussion présidé par le Dr Jonathan Stiles, membre du conseil d’administration de l’ASTMH, et qui réunira le Dr Amadou Sall, le Dr Mishal Khan, et le Dr Thomas LaVeist.

En outre, cette année marque le 40e anniversaire de l’éradication de la variole. Nous reviendrons sur cet effort historique avec deux vétérans de la lutte contre cette maladie, le Dr Joel Breman, Président de l’ASTMH, et le Dr David Heymann, qui examineront comment adapter les enseignements tirés de cette réussite pour relever d’autres défis tels que la variole du singe et d’autres virus.

Outre ces questions, nous passerons en revue, comme d’habitude, les données les plus récentes sur le paludisme, les helminthes, Ebola et nombre d’autres thématiques que vous attendez chaque année.

N’oubliez pas de visiter les pages consacrées à nos exposants et sponsors. Ils seront présents sur la plateforme virtuelle. Tout ceci n’aurait pas été possible sans eux.

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

Joel G. Breman, MD, DTPH, FIDSA, FASTMH
President

Karen A. Goraleski
CEO
Our approach to global health focuses on our science

We are a science-led global healthcare company with a special purpose: to help people do more, feel better, live longer.

We help address the biggest health challenges affecting children and young people in the developing world – TB, malaria and HIV and other infectious diseases.

We are also making an impact on global health beyond our science. Through global and local partnerships, we are working to improve disease prevention, awareness and access to healthcare services.
Vaccines prevent 2–3 million deaths per year and have greatly reduced the burden of infectious diseases worldwide.¹

Building on two centuries of healthcare heritage, Takeda’s world-class vaccines team is working to address unmet needs for global health problems, with substantial investments in vaccines R&D.

With our breadth of expertise and our collective experience, Takeda will always be committed to addressing challenging and pressing public health issues.

¹. WHO Immunization Coverage Fact Sheet http://www.who.int/mediacentre/factsheets/fs378/en/

Material exclusively intended for professionals authorized to prescribe or dispense medicines. General distribution is forbidden.

Better Health, Brighter Future

MESA Track

"What is MESA Track?" describes the MESA Track online platform, an open and living database of malaria research. This user-friendly and open-access tool informs the malaria community about which questions are being addressed, which innovative strategies are being tested, and aids collaboration and information-sharing. The platform has been used by stakeholders such as the Global Malaria Programme at the World Health Organization to support their policy-development processes, as well as by the malERA Consultative Process to picture the current status of malaria research, among others. Know more and join the database of researchers, funders and institutions working to combat malaria. MESA is hosted by ISGlobal and is supported by a grant from the Bill & Melinda Gates Foundation.

Check out MESA Track here.
Many thanks to the Ronald McDonald House Charities (RMHC) for their funding. A special thank you to Past President Peter Hotez, MD, PhD, FASTMH, FAAP, recipient of the 2019 RMHC Awards of Excellence, for sharing his grant award with ASTMH.
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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.

Registered attendees have access to the virtual content until November 1, 2021.
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
► NEW! Access to GOTropMED, the ASTMH Global Online Tropical Medical Education website

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 Board, subgroup and committee participation

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

Membership Dues
Student (Undergraduate, Graduate, Pre-Doctoral): $15
Trainee (Post-Doctoral, Resident, Fellow): $25
Early-Career: $100
Regular Member: $250
Regular Member: Low/Lower-Middle Income Countries: $25
Fellow of ASTMH (FASTMH): $50 voluntary contribution
Lifetime: $4,600

Welcome to our 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. Members must be permanent residents in their country of citizenship. Visiting researchers or others on short-term assignments do not qualify.
## Sunday, November 15, 2020

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**Online Meeting Program**

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

**Online Abstract Book**

The Annual Meeting Abstract Book is accessible at asthm.org/annual-meeting. View the full text of the abstracts presented.
| Time          | Venue | 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 – 10:45 a.m. | 10:45 – 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. | 3 – 3:30 p.m. | 3:30 – 4 p.m. | 4 – 4:30 p.m. | 4:30 – 4:45 p.m. | 4:45 – 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 – 9:30 p.m. |
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| 3:30 – 4 p.m. |       |              |              |              |               |                 |                     |                 |                 |                 |                 |              |             |               |              |              |              |              |              |              |              |              |              |              |              |              |               |
| 4 – 4:30 p.m. |       |              |              |              |               |                 |                     |                 |                 |                 |                 |              |             |               |              |              |              |              |              |              |              |              |              |              |              |              |               |
| 4:30 – 4:45 p.m. |       |              |              |              |               |                 |                     |                 |                 |                 |                 |              |             |               |              |              |              |              |              |              |              |              |              |              |              |              |               |
| 4:45 – 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 – 9:30 p.m. |       |              |              |              |               |                 |                     |                 |                 |                 |                 |              |             |               |              |              |              |              |              |              |              |              |              |              |              |              |               |
### Monday, November 16, 2020

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**Miss a Session?**
Registered attendees have access to the virtual content until November 1, 2021.

INCLUDED WITH YOUR REGISTRATION FEE!
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<td>68 Symposium Triple Artemisinin Combination Therapies P. 180</td>
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<td>69 Symposium Sampling strategies, technical tools and analytic methods for malaria surveillance P. 180</td>
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<td>70 Late-breakers in malaria P. 181</td>
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<td>72 Symposium: Plasmodium genetics and genomics</td>
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<td>73 Symposium: Clinical Conundrums in Tropical Medicine</td>
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<td>74 Symposium: Antimicrobial resistant bacteria as a cause of stillbirths and child death in LMICs</td>
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<td>75 Symposium: Mosquitoes: Vector Biology - Epidemiology I</td>
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<td>118 Symposium Persistence and transmissibility of malaria infections P.240</td>
<td>119 Symposium Cross-disciplinary sciences to understand malaria vaccine immunity P.241</td>
<td>120 Symposium Translation of research into policy and practice for malaria elimination P.242</td>
<td>121 Symposium Comprehensive surveillance in a historically high transmission area of Uganda P.242</td>
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<td>141 Scientific Session Kinetoplastida: Diagnosis and Treatment P. 255</td>
<td>142 Scientific Session AICMP: Parasite Biology and Drug Targets P. 256</td>
<td>143 Scientific Session Mosquitoes: Insecticide Resistance and Control II P. 256</td>
<td>144 Symposium Ahead of the Curve: Challenges and Opportunities for Outbreak Science P. 257</td>
<td>145 Symposium The dynamic global distribution of Angiostrongylus cantonensis P. 257</td>
<td>146 Symposium Pathogen genomics approaches for disease control and public health in LMICs P. 258</td>
<td>147 Scientific Session Schistosomiasis - Trematodes: Immunology, Celluar, Molecular P. 259</td>
<td>148 Scientific Session WaSH-E Transmission and Exposure P. 259</td>
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<td>1:30 – 2 p.m.</td>
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<td>3 – 3:30 p.m.</td>
<td>156 Symposium Low and middle-income countries: The struggle for global health equity P. 264</td>
<td>156 Scientific Session Malaria Elimination P. 264</td>
<td>157 Scientific Session Mosquitoes: Biochemistry and Molecular Biology P. 265</td>
<td>158 Symposium Of Dogs and Dragons: Guinea Worm Eradication Program P. 265</td>
<td>159 Symposium Identifying optimal ways to support countries achieve the last mile in NTD elimination P. 266</td>
<td>160 Scientific Session Malaria P. 266</td>
<td>161 Scientific Session Schistosomiasis and Other Trematodes: Diagnosis and Treatment P. 267</td>
<td>162 Scientific Session WaSH-E: Water Access, Quality and Treatment P. 268</td>
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<td>3:30 – 4 p.m.</td>
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Quick Tips to Navigating the Virtual Meeting

When you reach the virtual meeting website, you will enter the Lobby and see the following areas designated for ASTMH sessions and events.

- Grand Ballroom
- Meeting Rooms
- Poster Hall
- Exhibit Hall
- Information Desk
- TropMed Central

Grand Ballroom
Plenary sessions will take place in the Grand Ballroom.

Meeting Rooms
Scientific sessions, symposia and Late-Breaker Abstract sessions will take place in the Meeting Rooms 1-17.

Check out the Poster Hall
A link to the e-Poster website is available in the Poster Hall. Posters will be available for viewing until February 28, 2021.

Visit the Virtual Exhibit Hall
Visit the Exhibit Hall to meet experts in the field with products and services that support the work of tropical medicine and global health professionals. Each exhibitor has set their own hours, which will be listed when you click on the booth.

Sponsor and Subgroup Hall
Visit the Sponsor Hall to connect with organizations contributing to tropical medicine and global health. Each sponsor has set their own hours, which will be listed when you click on the booth.

Visit the ASTMH Subgroups to learn about their activities: ACAV (Arbovirology), ACCTMTH (Clinical Group), ACGH (Global Health), ACMCIP (Parasitology) and ACME (Medical Entomology).

Need More Information?
Our staff will be available at the Information Desk to assist with any questions you may have.

Visit TropMed Central
Visit the TropMed Central to connect with colleagues, collaborators and friends.

How Do I Connect with Other Attendees?
In the TropMed Central, you can join a live chat or Zoom with other attendees, message friends and colleagues, connect with strategic partners and check out ASTMH’s social media. Click on the “Find and Chat with Colleagues” area, which will bring up a list of all attendees. Type a name in the search bar, click search and their profile will appear. Click on the orange profile tab, then click on the blue button to initiate a private chat.

How Do I Access Sessions?
Click on the Sessions tab in the top navigation bar. This is where you can see an overview of all the live and on-demand sessions that are offered during the meeting. You can search sessions by session name, speaker name or session code. You can add sessions to your personal schedule by simply clicking on the dark blue schedule button. Live sessions are indicated by a red arrow box, and on-demand sessions have an orange box. Just click and you are in the session!

How Do I Access the Posters?
Visit the Poster Hall to access the ePosters. The ePosters will be available for viewing through February 28, 2021.

How do I access the ePosters in the Poster Hall?
- Visit the Poster Hall and click the link to access the ePosters.
- In the blue bar across the top of the page, click Poster Hall
- You will see thumbnail views of the posters displayed on the screen
- To view a poster in full screen, click “Presentation Details” at the bottom of the poster thumbnail view.

How to Chat with a Poster Presenter
- When viewing a poster in full screen, click the “Chat” button in the top right corner of the screen.
- A Chat Box will open. Click “Join Chat.”
- Type into the Chat Box to pose a question to a presenter. Please note that time zones might prevent a poster presenter from attendance at a poster session.

Miss a Session?
- Registered attendees have access to the virtual content until November 1, 2021.

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

Online Abstract Book
The Annual Meeting Abstract Book is accessible at astmh.org/annual-meeting. View the full text of the abstracts presented.
ASTMH Values and Promotes Diversity

ASTMH Inclusion/Respect Statement
At the Saturday, October 27, 2018, Board meeting of the ASTMH, under the leadership of then-President Regina Rabinovich, MD, FASTMH, the following statement was adopted: The ASTMH is an international society committed to equity and global impact through the treatment and prevention of tropical infectious diseases. Our diverse membership comes from more than 115 countries and engages with an enormous array of infectious diseases, cultures, ethnicities, and countries. We come from academia, research institutes, implementation programs, industry, multilateral organizations, foundations, and governments, gathering annually to exchange data, share learning, and honor contributions from the field and the lab.

As a Society, we are committed to the open exchange of ideas, freedom of thought and expression, and productive scientific debate that are central to our mission. These require an open and diverse environment that is built on dignity and mutual respect for all members, participants, and staff, free of discrimination based on personal attributes including but not limited to ethnicity, color, national origin, age, religion, socioeconomic status, disability, sexual orientation, gender, and gender identity or expression. We affirm the key principles of inclusion, diversity, and respect for all people. In a world of rich diversity, the advancement of science depends on the intellectual breadth and depth of a diverse ASTMH, one that informs and enriches the shape and content of scientific discourse. These principles guide the actions of ASTMH’s leaders, members, and staff in advancing the goals of the Society.

ASTMH takes pride in its diverse membership, represented through the Society’s leadership, Annual Meeting presenters and attendees. Symposium Organizers were encouraged to consider diversity with respect to gender, institutional background and country of origin when developing symposium submissions. All symposia were required to have at least one male and one female participant.

2019 Annual Meeting Attendance
- 51% Female
- 49% Male

2020 Board of Directors/Executive Committee
- 50% Female
- 50% Male

2020 Symposium and Abstract Presenters
- 49% Female
- 49% Male
- 2% Gender Neutral/Prefer Not to Answer
ASTMH Board, Subgroup Leadership and Fellows of ASTMH (FASTMH)

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

Executive Committee

*Indicates voting member

**President**
Joel G. Breman
National Institutes of Health, Fogarty International Center, United States

**President-Elect**
Julie Jacobson
Bridges to Development, United States

**Immediate Past President**
Chandy C. John
Indiana University, United States

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

**Scientific Program Committee Chair**
Daniel G. Bausch
UK Public Health Rapid Support Team, United Kingdom

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

**CEO**
Karen A. Goralesski
ASTMH, United States

Board

Abdoulaye Djimde* (2016-2020)
University of Science, Techniques and Technologies of Bamako, Mali

Hanna Ehrlich* (2020-2021)
Yale School of Public Health, United States

David Hamer* (2018-2021)
Boston University, United States

Albert Icksang Ko* (2019-2022)
Yale School of Public Health, United States

Miriam Laufer* (2019-2022)
University of Maryland, United States

A. Desiree LaBeaud* (2020-2023)
Stanford University, United States

Jetsumon Sattabongkot Prachumsri* (2018-2021)
Mahidol University, Thailand

Jonathan K. Stiles* (2020)
Morehouse School of Medicine, United States

Katherine Taylor * (2020-2023)
University of Notre Dame, United States

Anna Uehara* (2019-2020)
Centers for Disease Control and Prevention, United States

Board Advisor
Patricia F. Walker
HealthPartners Institute, United States

Subgroup Leadership

**American Committee of Medical Entomology (ACME)**
Chair: Ellen Dotson
Centers for Disease Control and Prevention, United States

**American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP)**
President: Michael Ferdig
University of Notre Dame, United States

**American Committee on Arthropod-Borne Viruses (ACAV)**
Chair: David Morens
National Institute of Allergy and Infectious Diseases

**American Committee on Clinical Tropical Medicine and Travelers’ Health (ACCTMTH – Clinical Group)**
President: Latha Rajan
Tulane University, Department of Tropical Medicine, United States

**ASTMH Committee on Global Health (ACGH)**
President: Robert Newman
The Aspen Institute, United States

ASTMH Organizational Chart
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.
2020 Fellows will be announced and recognized during the Annual Meeting.

2019 Fellows
Carter Diggs
United States Agency for International Development
Amy Klion
National Institute of Allergy and Infectious Diseases
Albert Icksang Ko
Yale School of Public Health
Daniel Leung
University School of Public Health
Siddhartha Mahanty
The Peter Doherty Institute for Infection and Immunity
Julie Pavlin
National Academies of Sciences, Engineering and Medicine
Anne Rimoin
UCLA School of Public Health
Mary Wilson
University of Iowa College of Medicine

ASTMH Staff
Karen A. Goraleski, CEO
Stephen M. Croll, Chief Operating Officer
Lyn Maddox, VP, Meetings
Judy DeAcetis, Administrative Manager, Scientific Program
Doug Dusik, Senior Manager, Communications
Buffy Finn, Manager, Membership
Rebecca Hamel, Manager, Development
Kyle Harwood, Operations Coordinator
Brenda Howe, Meetings and Partnerships Manager
Alison Jaeb, Editorial Assistant, American Journal of Tropical Medicine and Hygiene
Miranda Rogliano, Project Manager
Rhonda Schultz, Manager, Board and Fellowships
Cathi Siegel, Managing Editor, American Journal of Tropical Medicine and Hygiene

Additional Annual Meeting Support
Anna Chen, Burness
Matthew Davis, Burness
Bridget DeSimone, Burness
Gideon Hertz, Burness
Brian McGowan, Brian McGowan Designs
Saad Saroufim, Burness
Preeti Singh, Burness

Looking for the App?
This year, stay organized by logging on to the Annual Meeting platform.
ASTMH Subgroups and Committees

ASTMH membership reflects a wide range of expertise in tropical medicine. For this reason, Society subgroups provide unique forums for members to engage in core scientific, educational, advocacy and policy issues related to a specific expertise with fellow stakeholders of similar interests. Benefits of becoming a subgroup member include receiving information on networking, pre-meeting course and symposia activities planned for Annual Meetings to enhance career development.

Each subgroup is governed by leaders who are elected annually by its members. This ensures ownership of Subgroup initiatives by those interested and invested in current topics of the field. Subgroup leaders are also active participants in discussions with the ASTMH Board. This governance structure ensures Subgroup interests are represented in Society goals and activities intended to serve the ASTMH mission.

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.

- Ellen Dotson, Chair and Councilor
- Gabriel Hamer, Chair-Elect and Councilor; Matthew Thomas, Past Chair, Councilor and Hoogstraal Medal Coordinator; Molly Duman Scheel, Secretary-Treasurer and Councilor; Laura Harrington, Councilor and Awards Coordinator; Diana Ortiz, Councilor; Christopher Barker, Councilor; Audrey Lenhart, Councilor; Douglas Norris, Councilor; Marco Neira, Councilor; Eleanor Sternberg, Councilor; Jennifer Stevenson, Councilor; Olivia Winokur, Student Representative

**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.

- Michael Ferdig, President
- Mahalia Desruisseaux, President-Elect; Christine Petersen, Past President; Amanda Lukens, Secretary-Treasurer; Keke Fairfax, Councilor (Annual Meeting Symposia); Jeffrey Dvorin, Councilor (Awards and Pre-Meeting Course); Robin Stephens, Councilor for Communications; Amy Bei, Councilor for Communications-Elect; Carolyn Kifude, International Councilor; Lola Fagbami, Councilor for Trainees

**American Committee on Arthropod-Borne Viruses (ACAV)**
ACAV provides a forum for exchange of information among people interested in arbovirus research.

- David Morens, Chair and Councilor
- Patricia Aguilar, Chair-Elect and Councilor; Lark Coffey, Past Chair and Councilor; Shannon Bennett, Secretary and Councilor; Rebecca Christoffersen, Treasurer and Councilor; Laura Kramer, Councilor; Desiree LaBeaud, Councilor; Thomas Ksiazek, Councilor; Louis Lambrechts, Councilor; Nathan Grubaugh, Councilor; Amy Krystosik, Councilor; Nikos Vasilakis, Ex-Officio 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.

- Latha Rajan, President
- Germán Henostroza, President-Elect; M. Patricia Joyce, Past President; Kristina Krohn, Secretary-Treasurer; Natasha Hochberg, Councilor; Daniel Kaminstein, Councilor; Daniel Leung, Councilor; Austin Jones, Student Representative

**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.

- Robert Newman, President
- Miguel Reina Ortiz, President-Elect; Julie Pavlin, Past President; Eri Togami, Secretary-Treasurer; Ilin Chuang, Councilor; Joel Montgomery, Councilor; Kathryn Anderson, Councilor; David Gittelman, Councilor; Joanne Gbenjo, Councilor for Trainees

Administration

**Audit/Finance**

- David Hill, Chair
- Joel Breman, Julie Jacobson, Chandy John, Regina Rabinovich

**Clinical Standards and Treatment Guidelines**

- Philip Coyne, Chair
- Josh Berman, Johanna Daily; David Freedman; Robert Gasser; Hector Gorbea; David Hill; Eric Houpit; Chandy John; Kevin Kain; James Maguire; Jean Nachega; Joseph Vinetz

**Development Committee**

- Patricia F. Walker, Chair
- Nicole L. Achee; Serap Aksoy; Daniel G. Bausch; Max Gasteen; David R.Hill; Julie Jacobson; A. Desiree LaBeaud; Jean Lang; Jetsumon Sattabongkot Prachumsri; Regina Rabinovich; Julian C. Rayner

**Editorial Board, American Journal of Tropical Medicine and Hygiene**

- Editorial Staff: Philip Rosenthal, Chair (Editor-in-Chief)
- Joseph Vinetz (Associate Editor); Cathi Siegel (Managing Editor); Alison Jaeb (Editorial Assistant); Daniel Tisch (Biostatistical Editor)

**Section Editors:** Nicole Achee; Bradley Blitvich; Aaron Brault; Claudia Ida Brodskyn; J. Stephen Durnier; David Hamer; Duane Hospenthal; James Kazura; Kristina Krohn; Anna Mandalakas; John Sanders; Christina Stauber; Maxine Whittaker
ASTMH Subgroups and Committees (cont.)

Editorial Board: Jonathan Berman; Dwight Bowman; Brett Forshey; Hector Garcia; Steven Graves; Eric Halsey; Desiree LaBeaud; Patrick Lammie; Thomas Nutman; Tyler Sharp; Terrie Taylor; David Walker; A. Clinton White

Inclusion/Respect Task Force
Julie Jacobson and Jonathan K. Stiles, Co-Chairs
Pedro Aide; Koya Allen; Daniel G. Bausch; Christine Petersen; Regina Rabinovich; Amanda Ruiz; Micaela Sandoval; Anna Uehara

Nominations
Regina Rabinovich, Chair
Nicole Achée; Ripley Ballou; Peter Billingsley; Andrea Boggild; Christina Coyle; David Fidock; Chandy John; Laura Kramer; Christine Petersen; Ann Powers

Annual Meeting

Commemorative Lecture
Joel Breman, Chair

Innovations Pitch Competition
May Chu and Molly Lamb, Co-Chairs
Tristan Ford, Margaret Glancey, Chang Hee Kim, Jaya Shrivastava, Matthias Strobl, Carmenza Spadafora, Sumi Paranjape, Minmin Yen

Charles F. Craig Lecture
Robert Tesh, Chair
Donald Burke; David Freedman
Peter Hotez; William Petri

Scientific Program
Daniel G. Bausch, Chair
Stephanie Yanow, Associate Chair

See full committee roster on page 29.

Travel Awards
Tracey Lamb, Chair
Muhammed Aflolabi; Subhash Babu; Nsa Dada; Carole Eboumbou; Keke Fairfax; Brian Foy; S. Patrick Kachur; Kent Kester; Payal Maharaj; Mormar Ndao; Francis Ndungu; Elizabeth Rogawski McQuade; Alexandra Rowe; Sharon Tennant

Young Investigator Award
Ed Mitre, Chair
Lyric Bartholomay; Saisiekkhar Bennuru; Fernando Bruno; Vitaliano Cama; Peter Crompton; Stephen Davies; Greg Deye; David Diemert; Sara Healy; Nick Komar; Tahniyiat Lalani; Tracey Lamb; Matthew Laurens; Naomi Lucchi; Ann Moormann; Courtney Murdock; Elise O’Connell; Nathan Schmidt; Prakash Srinivasan; Ann Stewart; Mostafa Zamanian

Awards and Professional Recognition

Medals
Patricia F. Walker, Chair
Regina Rabinovich; Chandy John

Communications Award
Patricia F. Walker and Karen Goraleski, Co-Chairs
Julia Belluz; Amanda Izzo; Joseph Wagman; Laila Woc-Colburn

Certificate Examination

CTropMed® Examination
Patrick Hickey, Chair
Robert DeFraites; Jessica Fairley; Yasuyuki Kato; Amy Klion; Alexia Knapp; Gregory Martin; Obinna Nnedu; Jakrapun Pupaibool; Latha Rajan; Kristina St. Clair; Jill Weatherhead

Diploma Course Certification Committee
Susan McLellan, Chair
Amy Klion; Anne McCarthy

Clinical Tropical and Travel Medicine Education Program Committee
John Sanders, Chair
Christina Coyle; Michael Libman; Susan McLellan; Lin Chen; Patrick Hickey; Latha Rajan

Courses

Update Course in Clinical Tropical Medicine and Travelers’ Health
Siddhartha Mahanty and Latha Rajan, Co-Chairs
Subgroups and Committees (cont.)

Education/Fellowships/Grant Awards

**Alan J. Magill Fellowship**
Kent Kester, Chair
Janine Babcock; Mark Fukuda; Andres Lescano; Bruno Moonen (Ex-Officio); Rick Steketee; Mahamadou Ali Thera; Sarah Volkman; Karen A. Goraleski (Ex-Officio)

**Benjamin H. Kean Travel Fellowship in Tropical Medicine**
A. Desiree LaBeaud, Chair
Arlene Dent; Miriam Laufer; Paul Okojie; Juan Perez Velazques; Christina Polyak; Paul Robben; Michael Sikorski; Indi Trehan; Paige Waterman

**Burroughs Wellcome Fund-ASTMH Fellowship**
Molly Hughes, Chair
Subash Babu; Peter Billingsley; Arlene Dent; Thomas Eisele; Michael Kron; Anuja Mathew; Victoria McGovern (Ex-Officio); Joseph Tucker

**Centennial Travel Award**
Joseph Vinetz, Chair
David Fidock; Douglas Perkins; Sarah Volkman

**Digital Education**
Kristina Krohn, Chair
Nicole Achee; Daniel Bausch; Ellen Dotson; Michael Ferdig; Joel Montgomery; David Morens; Bobbi Pritt; Latha Rajan; John Sanders; Anna Uehara; Patricia Walker; Stephanie Yanow

**Robert E. Shope International Fellowship**
Ann Powers, Chair
Charles Calisher; Lark Coffey; Eric Mossel; Richard Shope; Tom Yuill

**Tropical Medicine/Global Health Exploratory Committee**
Brett Hendel-Paterson, Chair
Marc Altsusher; Elizabeth Barnett; Johanna Daily; Ashti Doobay-Persaud; Sophia Gladding; German Henostroza; John Sanders; Andrew Steenhoff; Janis Tupesis; Patricia Walker; Karen A. Goraleski (Ex-Officio)

**Membership**

**Fellows (FASTMH)**
David Hill, Chair
Josh Berman; Stephen Higgs; Laura Kramer; Rick Steketee; Mary Wilson

**ASTMH Distinguished International Fellow**
Regina Rabinovich, Chair
Chandy John; Marcel Tanner; Rose Leke; Moses Kamya

International Member
David Hamer and Jetsumon Sattabongkot Prachumsri, Co-Chairs
John Aaskov; Subash Babu; Silva Maria Fatima DiSanti; Abdoulaye Djimde; Stephen Higgs; David Hill (Ex-Officio); Pui-Ying Iroh Tam; Nadira Karunaweera; Andres Lescano; Bartholomew Ondigo; Vanessa Rivera Amill; Carola Salas; Stephanie Yanow

**Membership**
David Hill, Chair
Daniel Bausch; Joel Breman; Sarah Schaffer DeRoo; Tim Endy; Rick Fairhurst; Martin Grobusch; David Hamer; Selma Jeronimo; Kent Kester; Beth Kirkpatrick; Desiree LaBeaud; Kevin Maculuso; Wilbur Milhous; Scott Weaver; Pete Zimmerman; Karen Goraleski

**Trainee Member**
Koya Allen and Anna Uehara, Co-Chairs
Elizabeth Anderson; Dibyadyuti Datta; Shyam Dumre; Hanna Ehrlich; Cusi Ferradas; David Fidock; Krutika Kuppalli; Iset Vera

Subgroup Representatives
Lola Fagbami; Joanne; Gbenjo; Austin Jones, Amy Krystosik; Olivia Winokur

**Working Group**

**Green Group**
Hanna Ehrlich; A. Desiree LaBeaud; Katherine Taylor

Registered attendees have access to the virtual content until November 1, 2021.
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
UK Public Health Rapid Support Team

Associate Chair
Stephanie Yanow
University of Alberta

Bacterial Illness and Diarrhea
Chair: Richelle Charles, Massachusetts General Hospital
Jessica Fairley, Emory University
Daniel Leung, University of Utah
Diana Martin, Centers for Disease Control and Prevention
Megan Reller, Duke University
Mark Simons, Naval Medical Research Center
Duncan Steele, Bill & Melinda Gates Foundation

Clinical Tropical Medicine
Chair: Mark Kortepeter, University of Nebraska
Bradley Connor, Weill Cornell Medical College
John Gawoski, Lahey Hospital and Medical Center
Brett Hendel-Paterson, University of Minnesota
Jason Maguire, Pfizer
Joseph Vinetz, Yale University
Henry Wu, Emory University

Ectoparasite-Borne Diseases
Chair: J. Stephen Dumler
Robert Smith, Maine Medical Center
Sam Telford, Tufts University
Saravanan Thangamani, SUNY Upstate Medical University
Jefferson Vaughan, University of North Dakota

Entomology
Chair: Michel Slotman, Texas A&M University
Kate Aultzman, St. Mary's University
Solomon Kibret, University of California Irvine
Louis Lambrechts, Institut Pasteur
Audrey Lenhart, Centers for Disease Control and Prevention

Filariasis
Chair: Peter Fischer, Washington University
Subash Babu, NIH-NIRT-ICER
Sasisekhar Bennuru, National Institutes of Health
Daniel Tisch, Case Western Reserve University

Global Health
Chair: Richard Reithinger, RTI International
Erin Eckert, RTI International
Caterina Fanello, University of Oxford
Philip Gould, Centers for Disease Control and Prevention
Mary Hayden, University of Colorado
Louise Ivers, Massachusetts General Hospital
Kayla Laserson, Bill & Melinda Gates Foundation
Andres Lescano, Universidad Peruana Cayetano Heredia
Sachiko Ozawa, University of North Carolina at Chapel Hill
Mark Paris, Mark Paris, MD
Julie Pavlin, National Academies of Sciences, Engineering and Medicine
Miguel Reina Ortiz, University of South Florida
Laura Steinhardt, Centers for Disease Control and Prevention
Theresa Townley, Creighton University
Michael Wimberly, University of Oklahoma

HIV and Tropical Co-Infections
Chair: Martin Grobusch, Academic Medical Center
David Boulware, University of Minnesota
Joseph Masci, Elmhurst Hospital

Integrated Control Measures for Neglected Tropical Diseases
Chair: Darin Evans, United States Agency for International Development
Paul Cantey, Centers for Disease Control and Prevention
Teshome Gebre Kanno, Task Force for Global Health
Charles King, Case Western Reserve University
Eric Ottesen, Task Force for Global Health
Ricardo Soares Magalhaes, University of Queensland

Intestinal and Tissue Helminths, Cestodes
Chair: David Abraham, Thomas Jefferson University
Siddhartha Mahany, University of Melbourne
Makedonka Mitreva, Washington University
Jose Serpa-Alvarez, Baylor College of Medicine
Francesca Tamarozzi, Istituto Superiore di Sanita

Kinetoplastida
Chair: Shaden Kamhawi, National Institute of Allergy and Infectious Diseases
Caryn Bern, University of California San Francisco
Natalie Bowman, University of North Carolina
Hira Nakhhas, Food and Drug Administration
Paul Nguewa, Universidad de Navarra
Mary Wilson, University of Iowa
Scientific Program Committee (cont.)

Late-Breakers in Basic Sciences  
Co-Chair: Katherine Dobbs, Case Western Reserve University  
Co-Chair: Wei-Kung Wang, University of Hawai'i Manoa  
Yai Justin Doritchamou, National Institutes of Health  
Co-Chair:  
Sciences  
Late-Breakers in Clinical and Applied Sciences  
Co-Chair: Noreen Hynes, Johns Hopkins University  
Co-Chair: Jason Maguire, Pfizer  
Co-Chair: Miguel Cabada, University of Texas Medical Branch  
Sarah Boudova, Indiana University  
Hannah Steinberg, University of Illinois  
Co-Chair:  
Chair:  
Late-Breakers in Malaria  
Chair: Carol Sibley, University of Washington  
Silvia Di Santi, USP  
Kent Kester, Sanofi Pasteur  
Urszula Krzych, Walter Reed Army Institute of Research  
Miranda Oakley, Food and Drug Administration  
Malaria  
Chair: Carol Sibley, University of Washington  
Ruth Ashton, Tulane University  
Arlene Dent, Case Western Reserve University  
Mahamadou Diakite, Malaria Research & Training Center-USTTB  
Silvia Di Santi, USP  
Thom Eisele, Tulane University  
Francisco-Javier Gamo, GlaxoSmithKline  
Susanta Ghosh, National Institute of Malaria Research  
Michael Good, Griffith University  
Shannon Takala Harrison, University of Maryland  
Jonathan Juliano, University of North Carolina  
Stefan Kappe, Center for Infectious Disease Research  
Kent Kester, Sanofi Pasteur  
Urszula Krzych, Walter Reed Army Institute of Research  
Miriam Lauber, University of Maryland  
Jessica Lin, University of North Carolina  
Kim Lindblade, Centers for Disease Control and Prevention  
Peter McElroy, Centers for Disease Control and Prevention  
Miranda Oakley, Food and Drug Administration  
Karl Seydel, Michigan State University  
Eleanore Sternberg, Vestergaard/Liverpool School of Tropical Medicine  
Moriya Tsuji, Columbia University  
Meet the Professors  
Chair: David Boulware, University of Minnesota  
Molecular Parasitology  
Chair: Julian Rayner, University of Cambridge  
David Abraham, Thomas Jefferson University  
Manoj Duraisingh, Harvard T.H. Chan School of Public Health  
Kami Kim, University of South Florida  
Laura Kirkman, Weill Cornell Medical College  
Tracey Lamb, University of Utah  
Dylan Pillai, University of Calgary  
David Serre, University of Maryland  
Issiaka Soulama, Centre National De Recherche Et De Formation Sur Le Paludisme  
Niraj Tolia, National Institute of Allergy and Infectious Diseases  
One Health: The Interface of Human Health and Animal Diseases  
Chair: Christopher Woods, Durham Veterans Administration 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  
Jaya Shrivastava, Public Health England  
Pneumonia, Respiratory Infections and Tuberculosis  
Chair: Natasha Hochberg, Boston University  
Abdullah Brooks, Johns Hopkins Bloomberg School of Public Health  
Keith Klugman, Bill & Melinda Gates Foundation  
Samba Sow, Center for Vaccine Development Mali  
Schistosomiasis-Helminths  
Chair: Michael Hsieh, Children's National Hospital  
Stephen Davies, Uniformed Services University of the Health Sciences  
Keke Fairfax, University of Utah  
Robert Greenberg, University of Pennsylvania  
Emily McDonald, Rhode Island Hospital  
Virology  
Chair: Greg Ebel, Colorado State University  
Patricia Aguilar, University of Texas Medical Branch  
Anna Durbin, Johns Hopkins Bloomberg School of Public Health  
Brett Forshay, DoD Global Emerging Infections Surveillance (GEIS)  
Sharone Green, University of Massachusetts  
Maria Guzman, "Pedro Kouri” Tropical Medicine Institute  
Michael Holbrook, National Institute of Allergy and Infectious Diseases  
Jean Lang, Sanofi Pasteur  
Christopher Mores, George Washington University  
Lyle Petersen, Centers for Disease Control and Prevention  
John Schieffelin, Tulane University  
Theodore Tsai, Takeda Vaccines  
Nikos Vasilakis, University of Texas Medical Branch  
Water, Sanitation, Hygiene and Environmental Health  
Chair: Christine Moe, Emory University  
Emily Bailey, Texas Tech University  
Robert Dreibling, London School of Hygiene & Tropical Medicine  
Joseph Eisenberg, University of Michigan School of Public Health  
Christine George, Johns Hopkins University  
Amy Pickering, Tufts University
Fellowships, Travel Awards, and Grants

Alan J. Magill Fellowship
This fellowship, created in honor of Alan Magill, supports career-broadening experiences to enhance professional development and leadership opportunities beyond those traditionally available from within an applicant’s home organization, and in so doing, equips awardees to later assume leadership and mentoring roles in various aspects of tropical medicine.

Committee Chair: Kent Kester, Sanofi Pasteur, United States

ASTMH is grateful for the support and partnership with the Bill & Melinda Gates Foundation.

2020 Recipient

Awa Beinta Deme, PhD
University Cheikh Anta Diop, Senegal

Annual Meeting Travel Awards

Chair: Tracey Lamb, University of Utah, 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.

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

Nur Asheila Abdul Taib, UNIMAS, Malaysia

Selidji Agnandji, CERMEL, Gabon

Olabisi Akinlabi, University of Ibadan, Nigeria

Adrienne Amuri, INRB, Democratic Republic of Congo

Muhammad Asaduzzaman, University of Oslo, Norway

Euripide Avokpaho, Institut de Recherche Clinique du Bénin, Benin
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<th>Name</th>
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<td>Deepali Balasubramani</td>
<td>Indiana University School of Medicine, United States</td>
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<td>Nouhoun Barry</td>
<td>GRAS, Burkina Faso</td>
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<td>Anthony Bettee</td>
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<td>Annie Elong-Ngono</td>
<td>La Jolla Institute for Immunology, United States</td>
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<td>Francesca Falconi</td>
<td>Institute of Tropical Medicine in Antwerp, Belgium</td>
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<td>Noshi Fletcher</td>
<td>Aga Khan University Hospital, Pakistan</td>
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<td>Maria Lopez</td>
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<td>Sulochana Manandhar</td>
<td>Oxford University Clinical Research Unit, Nepal</td>
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<td>Oxford University Clinical Research Unit, Ho Chi Minh City, Vietnam</td>
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<td>Nancy Nyakoe</td>
<td>West African Centre for Cell Biology of Infectious Pathogens, Ghana</td>
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<td>Haddy Nyang</td>
<td>Medical Research Council, The Gambia Unit, The Gambia</td>
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Fellowships, Travel Awards, and Grants (cont.)

Francis Adjei Osei, Kwame Nkrumah University of Science and Technology, Ghana


Pedro Palermo, University of Texas at El Paso, United States

Danielle Porier, Virginia Polytechnic Institute and State University, United States

Christabelle Sadia, Centre Suisse de Recherches Scientifiques, Cote D’Ivoire

Mouhamad Sy, University Cheikh Anta Diop Dakar, Senegal

Belaynew Taye, University of Queensland, Australia

H. Christian Tsoungui Obama, Jr., Hochschule Mittweida, University of Applied Sciences, Germany

Gopinath Venugopal, University of Arkansas for Medical Sciences, United States

Martha Yahimbu, University of Papua New Guinea, Papua New Guinea

Redemptah Yeda, USAMRU-K, Kenya

Olga Fernandez, CIDEIM, Colombia

Emna Harigua Souiai, Institut Pasteur de Tunis, Tunisia

Masumbuko Kasereka, HEAL Africa, Kenya

Arsenia Massinga, Centro de Investigação em Saúde de Manhiça, Mozambique

Bedjou Prisca N’dri, Centre Suisse de Recherches en Cote d’ivoireand Swiss Tropical Public Health Institute, Cote d’ivoire

Shrikant Nema, ICMR-National Institute of Research in Tribal Health, India
Fellowships, Travel Awards, and Grants (cont.)

Halfan Ngowo, Ifakara Health Institute, Tanzania

Monica Pachar, Hospital Santo Tomas, Panama

Sarker Masud Parvez, icddr, b, Bangladesh

Noel Patson, University of the Witwatersrand, Johannesburg, Malawi

Cephas Sialubanje, Levy Mwanawasa Medical University, Zambia

Tulika Singh, Duke University, United States

Tais Sousa, René Rachou Institute, Brazil

Iryna Stryapunina, Harvard University, United States

Soukou Toure, African Center of Excellence in Bioinformatics, Mali

Pauline Umeanaeto, Parasitology and Public Society of Nigeria, Nigeria

Grace Umutesi Wa Mana, Vanderbilt University, United States

Nayantara Wijayanandana, London School of Hygiene and Tropical Medicine, United Kingdom
Young Investigator Awards

SUPPORTED WITH FUNDING FROM FRIENDS OF THE YOUNG INVESTIGATORS
William A. Petri Jr. in memory of William A. Petri, Sr.
Mary Denton Roberts and David Lyerly in memory of Annie Liberati

Chair: Edward Mitre, Uniformed Services University of the Health Sciences

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. 2020 recipients will be determined at the competitive judging event held on Sunday, November 15, during the Annual Meeting. Winners will be announced during the Annual Meeting.

Congratulations to the 2019 Recipients
(Selected during ASTMH 68th Annual Meeting, November 2019)
Alexandra Ehrens, University Hospital Bonn, Germany
Beatriz Galatas, ISGlobal, Spain
Maria Simoes, Johns Hopkins University, United States
Hannah Steinberg, University of Illinois Chicago, United States
Kristine Werling, Harvard T.H. Chan School of Public Health, United States

First-Tier Mention
Kristyn Hoffman, Baylor College of Medicine, United States
Paulo Manrique Valverde, Universidad Peruana Cayetano Heredia, Peru
Catherine Mitran, University of Alberta, Canada
Talia Quandelacy, Centers for Disease Control and Prevention, United States
Alyse Wheelock, Boston Medical College, United States

Honorable Mention
Marco Brustolin, Pennsylvania State University, United States
Cristina Costales, Duke University, United States
Santosh George, Yale School of Medicine, United States
Brien Haun, University of Hawaii, United States
Yvett Sosa, Albert Einstein College of Medicine, United States

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

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

Chair: Molly Hughes, University of Virginia School of Medicine, United States

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.

2020 Recipients
Yosra Alkabab
University of Virginia, United States

Khanh Pham
New York Presbyterian Hospital, Weill Cornell Medical Center, United States

Pranay Sinha
Boston Medical Center, United States
Benjamin H. Kean Travel Fellowship in Tropical Medicine

Chair: Desiree LaBeaud, Stanford 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.

2020 Recipients

Robertha Barnes, SUNY Upstate Medical University, United States

Kimberly Burke, University of Massachusetts Medical School, United States

Rebecca Carpenter, Cedarville University, United States

Michael Cheung, Jacobs School of Medicine at University at Buffalo, United States

Spencer Darveau, Brown University, United States

Samantha Herbert, Tulane University School of Public Health and Tropical Medicine, United States

Antoinette Montelibano, University of Pittsburgh School of Medicine, United States

Perneet Powar, California Northstate University, United States

Sabahat Rahman, University of California, San Francisco, United States

Christopher Reynolds, University of Michigan Medical School, United States

Toni San Miguel, University of Maryland School of Medicine, United States

Alison Smith, Emory University School of Medicine, United States

Mariame Sylla, Amherst College, United States

Rebeca Vergara Greeno, Yale School of Medicine, United States

Erin Xu, University of North Carolina School of Medicine, United States
Fellowships, Travel Awards, and Grants (cont.)

Centennial Travel Award in Basic Science Tropical Disease Research ($25,000)
Chair: Joseph Vinetz, Yale University, 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.

2020 Recipient
Kathleen Dantzler, Stanford University, 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 insect-borne 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.

2020 Recipient
Maria Onyango, New York State Department of Health, United States

ASTMH Subgroup Awards

American Committee of Medical Entomology (ACME) Student Travel Awards
Chair: Laura Harrington, Cornell University, United States
The ACME travel awards support travel to the Annual Meeting for doctoral and post-doctoral students whose work involves arthropods of medical importance.

2020 Recipients
Young Investigator Award – Graduate
Adeline Williams, Colorado State University, United States
Mary Gebhardt, Johns Hopkins School of Public Health, United States

Young Investigator Award – International
Astri Nur Faizah, The University of Tokyo, Japan
Maria Carrasquilla, Universidad de los Andes, Colombia

Young Investigator Award – Post-Doc
Thiago Soares de Souza Vieira, National Institutes of Allergy and Infectious Diseases, United States
Gabriela Garcia, Fiocruz, Brazil

American Committee of Medical Entomology (ACME) Future Leaders in International Medical Entomology Award
Chair: Matthew Thomas, Pennsylvania State University, United States
The Future Leaders fellowship is a competitive award offered to an outstanding junior medical entomology researcher (must be at the undergraduate to postdoctoral level) to showcase individuals that have matched interests to ACME’s objectives of promoting medical entomology and reducing the burden of human diseases transmitted by arthropods globally. Applicants must be non-U.S. citizens from a low or low-middle income country. This award is sponsored by a generous donation from SC Johnson: A Family Company.

2020 Recipient
Cusi Ferradas, Universidad Peruana Cayetano Heredia, Peru
American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP) Travel Award for Low and Low- Middle Income (LMIC) Trainees

Chair: Michael Ferdig, University of Notre Dame, United States

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.

2020 Recipient
Laura Baquedano Santana, Universidad Peruana Cayetano Heredia, Peru

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

Chair: Michael Ferdig, University of Notre Dame, United States

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.

2020 Recipient
Lisa Gibbs, University of Utah, United States

American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP) Exchange Fellowship Award

Chair: Michael Ferdig, University of Notre Dame, United States

This award is aimed at all levels of trainees, including junior independent researchers seeking to gain new or additional research skills by visiting laboratories employing cutting-edge methods. The trainee must be or become an ASTMH and ACMCIP member.

2020 Recipient
Fehintola Victoria Ajogbasile, Redeemer’s University, Nigeria

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

Chair: David Morens, National Institute of Allergy and Infectious Diseases, United States

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

2020 Recipients
Jasmine Ayers, University of Florida, United States
Allen Esterly, SUNY Upstate Medical University, United States
Mariah Hassert, St. Louis University, United States
Cesar Lopez, University of North Carolina at Chapel Hill, United States
Zoe Lyski, Oregon Health and Science University, United States
Taylor Stone, St. Louis University, United States
Chantal Vogels, Yale School of Public Health, United States

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

Chair: Robert Newman, The Aspen Institute, United States

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.

2020 Recipients
Barry Nouhoun, GRAS, Burkina Faso
Akilah Stewart, The University of the West Indies, Trinidad and Tobago

ASTMH Committee on Global Health (ACGH) Award for Research Support

Chair: Julie Pavlin, National Academies of Sciences, Engineering and Medicine, United States

This ACGH-sponsored award is designed to support research expenses for trainees who have approved research projects that are currently active or will start during 2019. Trainees can use the award to support travel to field sites, purchase equipment, software, reagents or supplies, or cover other expenses that will enhance the project.

2020 Recipient
Cusi Ferradas, Universidad Peruana Cayetano Heredia, Peru
Pallavi Kache, Columbia University, United States
Uchenna Chukwunonso Ogwu, Nnamdi Azikiwe University, Nigeria

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

Chair: Michael Ferdig, University of Notre Dame, United States

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.

2020 Recipient
Laura Baquedano Santana, Universidad Peruana Cayetano Heredia, Peru
American Committee on Clinical Tropical Medicine and Travelers' Health (ACCTMTH)
Martin S. Wolfe Mentoring Award

Chair: Stephen Hoffman, Sanaria, Inc., United States

The Clinical Group has established an award to honor the life of inspiring mentorship by our friend, teacher and colleague, Martin S. Wolfe, MD, FACP, FASTMH. This award, new in 2019, recognizes individuals who have served as exemplary and inspiring mentors. It is presented to a member of the American Committee on Clinical Tropical Medicine and Travelers’ Health (ACCTMTH, the Clinical Group) who has been exceptional in guiding the professional growth of careers in tropical and travel medicine.

2020 Recipient
A. Clinton White, University of Texas Medical Branch, United States

ACCTMTH Clinical Research Award

Co-Chairs: Obinna Nnedu, Ochsner Medical Center, United States and M. Patricia Joyce, Retired, United States

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 at the Annual Meeting. 2020 recipients will be determined at the competitive judging event held on Sunday, November 15, during the virtual Annual Meeting.

2019 Recipients
(selected during ASTMH 68th Annual Meeting, November 2019)

First Place:
Titus Kwambai, Kenya Medical Research Institute, Kisumu, Kenya

Second Place:
Melinda Tanabe, University of Texas Medical Branch, United States

Third Place:
Ruwandi Kariyawasam, University of Toronto, Canada

Continue the Conversation

For sessions held in the Meeting Rooms, attendees will have the chance to continue the conversation after a session ends by joining a Zoom meeting. These Zoom meetings will be available for 48 hours after the session, allowing for transition to the next session’s conversation.

Disclaimer

ASTMH is not responsible for the opinions expressed by speakers or the content of speaker slides and handout materials.
ACCTMTH Clinical Research Award Competition

Sunday, November 15, 11 a.m. – 1 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 at the virtual Annual Meeting. Support these young scientists by attending their presentations during this session. View the session schedule on page 70.

Young Investigator Award Competition

Sunday, November 15, 10 a.m. – 1 p.m.

The Young Investigator Award is presented to outstanding young researchers during the virtual 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 68.

Late-Breaker Abstracts

These sessions feature brief presentations of important new data obtained after the closing date for abstract submission. Late-Breaker poster presentations will take place during the poster sessions on Monday, Tuesday and Wednesday. A schedule of Late-Breaker Abstract presentations is available here.

Symposium 32:

Alan J. Magill Malaria Eradication Symposium

Monday, November 16, TIME

Supported with funding from the Bill & Melinda Gates Foundation

This annual symposium honors 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 in his role as the Malaria Director at the Bill & Melinda Gates Foundation.

Despite important progress malaria still claims too many lives. In sub-Saharan Africa (SSA), the decreasing trend of malaria morbidity and mortality has stalled in the last several years. Although all current tools are effectively deployed, in some areas of the SSA malaria cases are either not decreasing or the disease is returning after a few years of decline. This demonstrates a clear need for the development of novel tools to effectively eliminate malaria in SSA. The discovery of these novel tools requires vibrant basic research not only in Northern labs but also in labs that are closest to the patients in sub-Saharan Africa. This symposium will showcase some of the best basic research by young African scientists working in research Institutions in Africa. Understanding how Dantu blood group protects against severe malaria, deciphering the function of a Laveranian conserved protein in Plasmodium falciparum, editing drug resistance genes in clinical isolates or searching for new therapies for non-falciparum malaria species are some of the research that will be presented by emerging science leaders in Africa. Retaining and nurturing the next generation of African scientists in Africa and the added value of cutting edge basic research in accelerating malaria elimination in Africa will be discussed.

Looking for Meet the Professors Sessions?

The very popular Meet the Professors sessions will be held as webinars beginning in early 2021. Watch your email for an announcement in January about the schedule. The Meet the Professors webinars will feature interesting clinical case(s) of tropical diseases or relevant public health challenges that the professors have encountered over the course of their career. In addition, the professors will discuss how their careers have developed as an example to others.

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.

Calling All Early- and Mid-Career Attendees

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

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 and learn from experienced members of the various ASTMH professional communities.

Young Investigator Award Competition

Sunday, November 15, 10 a.m. – 1 p.m.

Meeting Rooms 1, 2, 3, 4, 5

ACCTMTH Clinical Research Award Competition

Sunday, November 15, 11 a.m. – 1 p.m.

Meeting Room 6
**Symposium 21**
Clinical Group Symposium II (American Committee on Clinical Tropical Medicine and Travelers’ Health – ACCTMTH): Tropical Medicine Jeopardy

**Monday, November 16, 3 p.m. - 4:45 p.m.**
Meeting Room 4

**Symposium 151**
American Committee on Arthropod-Borne Viruses (ACAV) Trainee Panel: Outbreak Response—Focusing on Communication

**Thursday, November 19, 3 p.m. - 4:45 p.m.**
Meeting Room 3

**Trainee Chats**
Trainee members, including students, post-docs, medical residents, early-career members, and others, are welcome to join us for a series of conversations and drop-in hours. We will provide a forum to meet up with old friends and colleagues, meet new peers from around the world, chat about career pathways and transitions, and discuss the issues that matter to us as early-career ASTMH participants. We'll offer multiple themed and drop-in events over the course of the week to accommodate our members in different time zones.

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**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:

Emily Ciccone  
Abstract 926

DeAnna J. Friedman-Klabanoff  
Abstract 1248

Jonathan Parr  
Abstract 483

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**Looking for the App?**
This year, stay organized by logging on to the Annual Meeting platform.
**Program Information**

**Poster Sessions**
Three poster sessions will be held in the Poster Hall. During these sessions, presenters are encouraged to be available for discussion via a real-time chat feature. There are additional times for poster viewing (presenters need not be available during these time periods). We encourage attendees to visit the Poster Hall throughout the day.

**POSTER SESSION SCHEDULE**
*All times in United States Eastern Time Zone*

**Poster Session A**
- **Monday, November 16**
- Abstracts #36 - 437
- Late-Breaker Abstracts #LB-5000 through LB-5061
  - Viewing | Midnight – 7 p.m.
  - Real-Time Chat Discussion with Presenters* | 1:30 p.m. – 3 p.m.
  - *Please note that time zone differences may preclude presenter attendance.

**Poster Session B**
- **Tuesday, November 17**
- Abstracts #533 - 945
- Late-Breaker Abstracts #LB-5069 through LB-5137
  - Viewing | Midnight – 7 p.m.
  - Real-Time Chat Discussion with Presenters* | 11:45 a.m. – 1:15 p.m.
  - *Please note that time zone differences may preclude presenter attendance.

**Poster Session C**
- **Wednesday, November 18**
- Abstracts #1004 - 1393
- Late-Breaker Abstracts #LB-1004 through LB-1393
  - Viewing | Midnight – 7 p.m.
  - Real-Time Chat Discussion with Presenters* | 11:45 a.m. – 1:15 p.m.
  - *Please note that time zone differences may preclude presenter attendance.

**Meet us in the Subgroups Hall**

**Exhibit Hall**
**Sponsor and Subgroup Lobby**
Visit the Subgroups Hall and visit with representatives from:
- 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)
- ASTMH/AJTMH

Our subgroups provide unique forums for members to engage in core scientific, educational, advocacy and policy issues related to a specific expertise with fellow stakeholders of similar interests. Benefits include networking and pre-meeting courses and symposia activities planned for Annual Meetings to enhance career development.

**Learn more about:**
- What subgroups do
- How to get involved
- The benefits of becoming an ASTMH member
- Submitting material to the *American Journal of Tropical Medicine and Hygiene*

**Don’t forget to stop at the TropMed Central!**

**I wouldn’t miss it. See you there!**
The 3rd Annual Innovations Pitch Competition: Bold Ideas to Accelerate Prediction, Prevention and Response for Epidemic-Prone Diseases

The 3rd Annual Innovations Pitch Competition at the ASTMH 2020 Annual Meeting will focus on the innovative solutions to improve children’s current and future health and well-being in low-resource settings, for a healthier, more sustainable world. This year’s competition will highlight tools and methods that will improve vaccine acceptance, accessibility and delivery, diagnosis and treatment of high impact diseases in the pediatric population living in low resource settings. Innovators are from a person or team currently working and residing in low- and low-middle income countries (LMIC), and/or have a partner based in an LMIC who is actively involved in the development of the innovation.

Many thanks to the Ronald McDonald House Charities (RMHC) and Roche for their funding contributions. A special thank you to Past President Peter Hotez, MD, PhD, FASTMH, FAAP, recipient of the 2019 RMHC Awards of Excellence, for sharing his grant award with ASTMH.

Social Media at the 2020 Annual Meeting

Follow the 69th Annual Meeting on ASTMH social media channels.

Visit asthm.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 tweeting by using the #TropMed20 and #IamTropMed hashtags.
- Enjoy archived video from past Annual Meetings, Alan Magill Symposia, Faces of TropMed, webinars and interviews with pioneers in the field.
- Did you know that ASTMH has an active LinkedIn presence with over 1,250 followers? Visit our LinkedIn page and click “follow” to see our latest news and opportunities in your feed. Don’t forget to list your ASTMH membership or announce your Annual Meeting presentation with @American Society for Tropical Medicine and Hygiene on your LinkedIn profile. It helps demonstrate your commitment to tropical medicine and global health, and can raise your professional profile.
Re-starting Malaria R&D in the Face of COVID-19

Sponsored by the RBM Partnership to End Malaria, the European Developing Countries Clinical Trials Partnership and Medicines for Malaria Ventures

Meeting Room 2
Tuesday, November 17, 6:45 a.m. – 8:30 a.m.

COVID-19 has put a halt to much of the health research happening worldwide. It is vital that malaria R&D clinical trials are re-started as soon as possible to ensure that we do not lose valuable time bringing much-needed innovations to market. This session will share perspective from research programmes and funders on how COVID-19 has affected their operations and their planning for re-starting R&D in a safe and effective manner. Holding this symposium will allow stakeholders to share their learnings about re-starting R&D in the face of COVID-19.

SETTING THE STAGE ON MALARIA IN AFRICA AND DISCUSSING THE IMPORTANCE OF NEW TOOLS TO FIGHT MALARIA AND RE-STARTING R&D AND CLINICAL TRIALS AS SOON AS POSSIBLE
Co-Chair: Abdourahmane Diallo
CEO, The RBM Partnership to End Malaria, Geneva, Switzerland

ADDRESSING THE SITUATION ON THE GROUND IN CONDUCTING CLINICAL TRIALS
Co-Chair: Bernhards Ogutu
Chief Research Officer, Kenya Medical Research Institute (KEMRI) and Senior Clinical Trialist, Malaria Clinical Trials Alliance of the INDEPTH-Network, Nairobi, Kenya

DISCUSSION OF WHITE PAPER ON INNOVATION AND OVERALL VIEWS ON INNOVATION AND ACCESS ON THE CONTINENT
Catherine Kyobutuni
Executive Director, African Population and Health Research Centre, Nairobi, Kenya

HOW COVID-19 HAS AFFECTED NOVARTIS R&D TIMELINES AND INITIAL LEARNINGS FROM RE-STARTING TRIALS
Caroline Boulton
Global Programme Head, Malaria, Novartis, Basel, Switzerland

HOW COVID-19 HAS AFFECTED THEIR R&D PARTNERSHIPS, HOW THEY HAVE BEEN DOING SCENARIO PLANNING AND HOW FUNDING STREAMS HAVE BEEN AFFECTED
David Reddy
CEO, Medicines for Malaria Venture, Geneva, Switzerland

HOW EDCTP IS HANDLING THE IMPACT OF COVID-19 ON R&D AS A FUNDER
Michael Makanga
CEO, European & Developing Countries Clinical Trials Partnership, The Hague, Netherlands

INFORMING R&D PRIORITIES THROUGH AFRICAN-WIDE DIGITAL PLATFORM FOR INFECTIOUS DISEASES
Lacina Koné
Director General, Smart Africa, Kigali, Rwanda

Observational study to evaluate the value added for High sensitive RDT (HS-RDTs) and ease of use for Smartphone Reporting in Uganda

Sponsored by Abbott

Meeting Room 3
Tuesday, November 17, 6:45 a.m. – 8:30 a.m.

Conventional rapid diagnostic tests (cRDT) for detecting malaria has been in use for many years but are unable to detect malaria in people who have low levels of parasitemia and are asymptomatic. As a result, highly sensitive rapid diagnostic tests (HS-RDT) were developed which is 10 times more sensitive. Join us as the Uganda study team presents their findings from a large study that was recently completed in the Mpigi district in Uganda where they evaluated the HS-RDT against cRDT.

WELCOME AND INTRODUCTION
Chair: Kuku Appiah
Abbott, Woodmead, South Africa

RESULTS OF HIGHLY SENSITIVE RAPID TESTS WITH SMARTPHONE READERS IN UGANDA
Daniel Kyabayinze
Ministry of Health and WHO Uganda Office, Kampala, Uganda

THE IMPACT OF INCREASED DETECTION ON MALARIA CONTROL USING HIGHLY SENSITIVE RAPID DIAGNOSTIC TEST
Giuseppe Caputo and Smarth Lakhanpal
Vista Health Pte Ltd, Singapore

Food for Thought: "Food Evolution" – Narrated by Neil DeGrasse Tyson, featuring Bill Nye, Mark Lynas & Michael Pollan

Sponsored by Bayer

Grand Ballroom
Tuesday, November 17, 3:45 p.m. – 5:30 p.m.

This film explores the importance of scientific innovation in agriculture to ensure that the expected population of 9.5 billion people have access to adequate nutrition. The film also reviews how these advances can decrease the need for pesticides while at the same time improve disease resistance and the nutrient profile of crops. The film also discusses the current controversies and challenges facing agriculture and farmers all around the world. Of note, the production of this film was independent of industry funding.

Co-Chair: S. Eliza Dunn
Medical Affairs Lead, Bayer, St. Louis, Missouri, USA

Co-Chair: Scott Hamilton Kennedy
Director, Food Evolution, Los Angeles, California, USA

Alison Van Eenennaam
Animal Scientist, Extension Specialist: Animal Biotechnology and Genomics, Department of Animal Science, UC Davis, Davis, California, USA
Information Desk Hours

**ASTMH Support Hours:**
- **Sunday, November 15**
  - 8 a.m. – 6 p.m.
- **Monday, November 16**
  - 7 a.m. – 6 p.m.
- **Tuesday, November 17**
  - 8 a.m. – 6 p.m.
- **Wednesday, November 18**
  - 8 a.m. – 6 p.m.
- **Thursday, November 19**
  - 8 a.m. – 6 p.m.

**Tech Support Hours:**
- **Sunday, November 15**
  - 8 a.m. – 6 p.m.
- **Monday, November 16**
  - 8 a.m. – 6 p.m.
- **Tuesday, November 17**
  - 5:45 a.m. – 5 p.m.
- **Wednesday, November 18**
  - 8 a.m. – 6:30 p.m.
- **Thursday, November 19**
  - 8 a.m. – 8 p.m.

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 20 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 US. CME certificates will be mailed in January 2021. Complete your online CME Attendance and Evaluation Form by accessing the evaluation form at astmh.org/annual-meeting.

American Board of Internal Medicine (ABIM) Maintenance of Certification (MOC) Credit
Submit CME Survey and CME Claim Form by Monday, November 23 in order to receive ABIM MOC credit.

If you wish to receive ABIM MOC credit, you must register for CME credit for $150. We cannot issue ABIM MOC credit unless the registration includes payment for CME credit. Successful completion of this Annual Meeting CME activity, which includes participation in the evaluation component, enables the participant to earn up to 20 Medical Knowledge MOC points in the American Board of Internal Medicine’s (ABIM) Maintenance of Certification (MOC) program. Your participation information, as well as your ABIM member ID and date of birth will be shared with the American Board of Internal Medicine via the Accreditation Council for CME PARS system for the purpose of reporting MOC completion.

**PLEASE NOTE:**
- The CME fee of $150 must be paid in order to receive ABIM MOC credit.
- CME registrants seeking ABIM MOC credit must complete the CME Survey and CME Claim Form by Monday, November 23, in order to receive ABIM MOC credit.
- Pre-meeting courses are not eligible for ABIM MOC credit.

**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 20 AMA PRA Category 1 Credits™ for completing this program. Register for CME credit ($150 US) 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. To receive veterinarian continuing education credit, attendees must pay the $150 documentation fee. An evaluation form will be e-mailed to attendees that register for veterinarian continuing education credit. This form will indicate the specific sessions that qualify for veterinary CE credits. A continuing education certificate will be sent by postal mail in January 2021.

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.
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 must 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®).

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® Program) as a means to distinguish individuals who have demonstrated advanced knowledge and experience in clinical tropical medicine and travelers’ health. The CTropMed® Certificate 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 or a domestic clinical activity meaningful to clinical tropical medicine and travelers’ health and/or refugee medicine and 3) have passed the ASTMH Examination in Clinical Tropical Medicine and Travelers’ Health.

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.

Why publish with the American Journal of Tropical Medicine and Hygiene?

- The leading journal focused on all aspects of tropical medicine
- Have your research read by half a million readers from all over the world
- No submission fees
- Low publication fees compared to many other journals
- Discounted publication costs for ASTMH members
- No charge to publish supplementary data online
- Support for authors from low- and low-middle income countries
- Open Access publishing options
- A panel of Section Editors with expertise in all aspects of tropical medicine
- Average time to first review decision of less than four weeks
- Advance online publication

We would like to take the opportunity to thank all of you who have published papers in AJTMH and we hope you will continue to submit your research to us. Remember, ASTMH members receive a discount on page charges for publishing in the Journal so if you are not already a member, please consider joining today.

MARK YOUR CALENDAR

World Malaria Day 2021
April 25, 2021

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.
NEW! ASTMH GOTropMEd

GOTropMEd

ASTMH Global Online Tropical Medical Education Website

gotropmed.astmh.org

GOTropMEd, the ASTMH Global Online Tropical Medical Education website, is a members-only benefit offering online talks and presentations by world experts in tropical medicine, hygiene and global health, including rarely seen interviews with TropMed luminaries. Who can benefit from these resources? Researchers, clinicians, students and trainees, health professionals, and policy-focused members interested in obtaining a better understanding of these diseases and conditions in evidence based policy development.

Free and unlimited access to GOTropMEd is a benefit of membership to ASTMH. Non-members are able to access the website for a one-time introductory period through December 31, 2020. For continued access to GOTropMEd, non-members will need to join ASTMH.
Check Out Our Online Page for Students, Trainees, Post-Docs, Medical Residents and Fellows

Your one-stop-shop to help build fundamental skills and perspectives for a successful start to Tropical Medicine/Global Health Careers:

- Membership Benefits
- Subgroup Information
- Career Center
- Fellowships and Awards
- Clinical Research Award Competition
- Annual Meeting
- Young Investigator Awards
- Advocacy
- Trainee Chats

Look for the Pre-/Post-Docs page under the Education & Resources tab on the ASTMH website.
Session Topic Guide

General Interest/Multi-Disciplinary

Sunday
Plenary Session 1: Opening Plenary Session and Awards Program

Monday
Plenary Session 16: Plenary Session II: COVID-19: Lessons Learned and Future Challenges

Poster Session 17: Poster Session A

Tuesday
Plenary Session 48: Plenary Session III: Charles Franklin Craig Lecture

Poster Session 49: Poster Session B

Wednesday
Plenary Session 80: Plenary Session IV: President’s Address

Poster Session 81: Poster Session C

Thursday
Plenary Session 116: Plenary Session V: Race and Social Justice: Tropical Medicine’s Troubled Past and Future Challenge

Symposium 50: From Detection to Therapy: The Continuum of Cancer Care in a Global Context

Symposium 51: Severe Tropical Diseases in the ICU: An Anatomical Tour

Symposium 53: The front lines of an epidemic: taking on the first cases of COVID-19 in the United States

Symposium 73: Clinical Conundrums in Tropical Medicine

Scientific Session 82: Clinical Tropical Medicine: Vaccines, Travel Late-Breaker Abstract Session 101: Late-Breakers in Clinical and Applied Sciences

Scientific Session 149: Clinical Tropical Medicine: Parasites/Toxins and Other Topics

Symposium 153: Clinical Tropical & Travel Medicine: Hot List of Literature

Diarrhea and Bacterial Illness

Monday
Scientific Session 6: Bacteriology: Enteric Infections I - Cholera and ETEC

Scientific Session 23: Bacteriology: Enteric Infections II

Scientific Session 35: Bacteriology: Systemic Infections

Scientific Session 54: Bacteriology: Trachoma and Other Bacterial Infections

Symposium 55: Sero-epidemiology: The Future of Enteric Disease Surveillance?

Symposium 74: Antimicrobial Resistant Bacterial Infections as a Cause of Stillbirths and Child Death in Low- and Middle-Income Countries: From Evidence to Treatment and Prevention Strategies

Symposium 110: Genomics for Typhoid Surveillance in South Asia

Clinical Tropical Medicine

Monday
Symposium 4: Clinical Group Symposium I (American Committee on Clinical Tropical Medicine and Travelers’ Health – ACCTMTH): Marcolongo Lecture and Panel Discussion

Symposium 21: Clinical Group Symposium II (American Committee on Clinical Tropical Medicine and Travelers’ Health – ACCTMTH): Tropical Medicine Jeopardy

Symposium 33: Human Challenge Infections: Learning from Nature in Controlled Settings

Symposium 34: Sepsis in Low- and Middle-Income Countries (LMICs): Current Challenges and Triumphs Illustrated Through Clinical Cases

Scientific Session 36: Clinical Tropical Medicine: VHF-Related, Viruses

Tuesday
Symposium 3: Human Challenge Infections: Learning from Nature in Controlled Settings

Symposium 34: Sepsis in Low- and Middle-Income Countries (LMICs): Current Challenges and Triumphs Illustrated Through Clinical Cases

Scientific Session 36: Clinical Tropical Medicine: VHF-Related, Viruses
Session Topic Guide

Ectoparasite-Borne Diseases
Monday
Scientific Session 5: Ectoparasite-Borne Disease

Entomology
Monday
Symposium 7: Human Landing Catches: Alternatives and Directions for the Future
Scientific Session 22: Arthropods: Other Arthropods
Symposium 24: Aedes Surveillance in Africa: (Re-) Building Capacity to Address Growing Arboviral Disease Threats

Tuesday
Symposium 38: American Committee of Medical Entomology (ACME) Symposium I: Annual Business Meeting, Awards and Hoogstraal Medal Presentation
Symposium 56: American Committee of Medical Entomology (ACME) Symposium II: The Origin of ACME: Past, Present and Future of Medical Entomology

Filariasis
Monday
Symposium 8: Onchocerciasis Elimination Mapping in Four Countries in Africa: Ensuring that No Village is Left Behind

Wednesday
Scientific Session 76: Filariasis: Epidemiology and Control I
Scientific Session 95: Filariasis: Epidemiology and Control II
Scientific Session 112: Filariasis: Molecular Biology, Immunology and Diagnostics

Thursday
Symposium 129: Operationalizing the WHO Guidelines for Onchocerciasis: Experiences and Best Practices
Scientific Session 155: Filariasis: Clinical

Global Health
Monday
Symposium 2: Confronting the Climate Change Crisis
Symposium 13: ASTMH Committee on Global Health (ACGH) Symposium I: Pathogen Metagenomics in the Developing World: Four Stories in Four Countries
Scientific Session 18: Global Health: Planetary Health and Malaria

Scientific Session 29: ASTMH Committee on Global Health (ACGH) Symposium II: Parity and Equity in Global Health: Improving Collaborations between LMIC and HIC Researchers

Tuesday
Symposium 47: Flames, Floods, Fevers and Fetuses - Can Humans Survive?
Symposium 52: Intersection of Advocacy, Policy and Social Media: A Washington, DC, Primer
Symposium 63: Innovation Pitch Session for Healthy Children, Healthy Planet
Session Topic Guide

**Wednesday**
- **Symposium 93:** Evidence to Action: Accelerating Introduction of Typhoid Conjugate Vaccines in Africa
- **Symposium 100:** Lessons from West Africa Ebola: The Potential for Community-Based Initiatives in Addressing Security Concerns, Fear and Public Distrust as an Integral Component of Outbreak Response
- **Scientific Session 102:** Global Health: Global Health Security and Information, Communications, Technology
- **Symposium 108:** The Future is in Our Hands! Diagnostics for AMR
- **Symposium 114:** Measuring Progress and Challenges for Chagas Disease Control in the Americas

**Thursday**
- **Plenary Session 116:** Plenary Session V: Race and Social Justice: Tropical Medicine’s Troubled Past and Future Challenge
- **Symposium 125:** Game Changers and Innovations During the 2018-2020 Ebola Outbreak in Democratic Republic of Congo
- **Symposium 135:** Counting the Dead: Making the Dead Count
- **Symposium 136:** Where Are We in Reaching Zero Leprosy?
- **Scientific Session 137:** Global Health: Maternal, Newborn and Child Health
- **Symposium 138:** Ethical and Equitable Digital Global Health - Issues and Opportunities
- **Symposium 139:** Female Genital Mutilation: Ending the Practice
- **Symposium 140:** Spatial Intelligence to Optimize Public Health Interventions
- **Symposium 144:** Ahead of the Curve: Challenges and Opportunities for Outbreak Science
- **Symposium 145:** The Dynamic Global Distribution of Angiostrongylus cantonensis
- **Symposium 146:** Deploying Pathogen Genomics Approaches for Disease Control and Public Health: Applications and Challenges in LMICs
- **Scientific Session 152:** Global Health: Maternal, Newborn, Child Health and Neglected Tropical Diseases

**Symposium 154:** 10 years of Joint Global Health Trials: What Lessons Have We Learned from Translating Research to Policy and Practice?

**Symposium 156:** Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) Health in Low- and Middle-Income Countries: The Struggle for Global Health Equity

**Symposium 158:** Of Dogs and Dragons: Understanding Parasite Transmission Ecology and Applying It to the Global Guinea Worm Eradication Program

**Symposium 159:** Identifying Optimal Ways to Support Countries Achieve the Last Mile in NTD Elimination

**Symposium 174:** Building Out Vector-borne Diseases in Sub-Saharan Africa

**Symposium 175:** The Skin: Where the Planet and Your Body Meet

**HIV and Tropical Co-Infections**

**Monday**
- **Scientific Session 14:** HIV and Tropical Co-Infections

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

**Tuesday**
- **Symposium 37:** Overcoming the Deworming Cliff: Challenges in Maintaining Mass Treatment for Soil Transmitted Helminths When Lymphatic Filariasis Program Stops

**Wednesday**
- **Symposium 77:** Promoting Operational & Financial Sustainability for Neglected Tropical Disease Programs in West Africa: Tools to estimate the costs and benefits and support sustainability planning
- **Symposium 87:** The Path from Development to Delivery: Accelerated Development and Introduction of Ivermectin, DEC, and Albendazole (IDA) Triple Therapy; How Was It Done?
- **Symposium 96:** Realizing the Potential of New Approaches to Lymphedema Management
- **Symposium 113:** Multisectoral Collaboration for Neglected Tropical Diseases (NTDs): Barrier Analyses and Opportunities for Multisector Coordination to Sustain NTD Programming
Session Topic Guide

Thursday  
Scientific Session 170: Integrated Control Measures for Neglected Tropical Diseases

Intestinal and Tissue Helminths, Cestodes

Monday  
Scientific Session 10: Intestinal and Tissue Helminths: Soil-Transmitted Helminths - Treatment and Diagnosis

Scientific Session 26: Intestinal and Tissue Helminths: Soil-Transmitted Helminths - Control

Tuesday  
Scientific Session 40: Cestodes and Nematodes: Molecular Biology, Pathology and Epidemiology

Wednesday  
Symposium 78: Large Scale and Large Success: Implementing, Evaluating and Future Planning of India’s National Soil-Transmitted Helminth Control Program

Thursday  
Symposium 130: Chances and Challenges for the Control and Elimination of Soil-transmitted Helminth Infections

Kinetoplastida

Monday  
Scientific Session 27: Kinetoplastida: Epidemiology

Tuesday  
Scientific Session 41: Kinetoplastida: Immunopathology and Vaccine Development

Symposium 59: Leishmania Vaccine Development: From Research and Development to Licensure

Thursday  
Scientific Session 141: Kinetoplastida: Diagnosis and Treatment

Malaria

Monday  
Symposium 3: Can We Ignore "Asymptomatic" Low-density Malaria Any More?

Symposium 19: Mechanistic Dose-Response Modelling of Antimalarial Drugs

Symposium 20: A Fundamental Way to Prevent Malaria in Pregnancy: Improving Health Outcomes for Pregnant Women and Their Babies One Nurse and Midwife at a Time

Tuesday  
Symposium 32: Alan J. Magill Malaria Eradication Symposium: Basic Research in Africa for Sustained Malaria Elimination and Eradication

Scientific Session 46: Malaria: Chemotherapy and Drug Resistance

Wednesday  
Symposium 64: Strengthening Malaria Surveillance Systems: Do We Have a Good Understanding of the Level of Investment Needed?

Symposium 65: Ivermectin and Antimalarial Mass Drug Administration for Malaria Control and Elimination: Preliminary Field Trial Results and Trial Designs

Symposium 66: Lessons from the National Malaria Elimination Program in China

Symposium 68: Triple Artemisinin Combination Therapies: A New Paradigm for the Treatment of Uncomplicated falciparum Malaria?

Symposium 69: Surveillance of Malaria: Sampling Strategies, Technical Tools and Analytic Methods to Most Accurately Represent Sampled Populations

Late-Breaker Abstract Session 70: Late-Breakers in Malaria

Scientific Session 71: Malaria Epidemiology I: Infection and Disease in High-Transmission Settings

Scientific Session 72: Malaria: Plasmodium Genetics and Genomics

Symposium 83: Monoclonal Antibodies to Prevent Malaria Infection and Transmission – from Antibody Identification to Clinical Evaluation

Symposium 84: Towards Regional Elimination of Malaria in Central America

Symposium 85: Host-directed Therapeutics for Malaria

Symposium 86: Severe Malaria: Improving the Continuum of Care

Scientific Session 89: Malaria Epidemiology II: Dynamics and Heterogeneity in Low-Transmission Settings
Session Topic Guide

Scientific Session 90: Malaria: Biology and Pathogenesis

Scientific Session 91: Malaria: Modeling to Support Implementation and New Approaches

Scientific Session 92: Malaria: SMC and Beyond

Symposium 104: Accelerating New Tools for Radical Cure of vivax Malaria from Clinical and Operational Research to Policy

Symposium 106: G6PD Deficiency: Advances in Point of Care Testing

Symposium 109: Using the Data You Have: Innovative Methods to Enhance Vector Control Evaluation and Decision-Making

Symposium 121: The RTS,S Malaria Vaccine Pilot Implementation in Africa: Generating Data for Decision-making

Scientific Session 124: Malaria Control: Innovations and Opportunities for Healthcare Systems

Scientific Session 126: Malaria: Pre-Clinical Drug Development and Clinical Trials

Scientific Session 160: Malaria: Immunology

Symposium 166: Current Knowledge of Mosquito-Stage Malaria Parasite Biology: Implications for Developing a Robust in vitro Culturing System

Symposium 167: Tracking the Threat of pfhrp2/3 Gene Deletions and Future Alternatives to HRP2-based Malaria Diagnosis

Scientific Session 168: Malaria: Developing and Evaluating LLINs

Scientific Session 169: Malaria: New Approaches to Improve the Diagnosis of Malaria

Scientific Session 171: Malaria: Vaccines

Molecular Parasitology

Monday

Symposium 12: American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP) Symposium: Friend or Foe: The Many Faces of Myeloid Cells in Parasitic Infections

Scientific Session 25: American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Immunoparasitology and Vaccine Development

Scientific Session 28: American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Malaria - Genomics

Tuesday

Late-Breaker Abstract Session 42: Late-Breakers in Basic Sciences

Plenary Session 48: Plenary Session III: Charles Franklin Craig Lecture

Scientific Session 58: American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Malaria - Molecular Mechanisms of Pathogenesis

Wednesday

Scientific Session 79: American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Parasite Biology, Genomics and Genome Editing

Symposium 97: “Next Generation” Genetic Crosses in Malaria, Cryptosporidium and Schistosomes

Scientific Session 107: American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Malaria - New Molecular and Omic Tools
Session Topic Guide

Thursday
Scientific Session 142: American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Parasite Biology and Drug Targets

One Health: Interface of Human Health/Animal Diseases
Tuesday
Scientific Session 43: One Health: Interface of Human Health/Animal Diseases

Wednesday
Symposium 60: How to Combat Tropical Zoonoses beyond Medical Interventions: Global One Health reflecting COVID-19

Symposium 98: Mitigating the Risk for Henipavirus Pandemics: From Ecology to Vaccines

Opportunistic and Anaerobic Protozoa
Monday
Scientific Session 11: Protozoa

Pneumonia, Respiratory Infections and Tuberculosis
Tuesday
Symposium 44: Epidemiologic characteristics and forecasting of COVID-19

Thursday
Scientific Session 133: Pneumonia, Respiratory Infections and Tuberculosis

Schistosomiasis-Helminths
Thursday
Scientific Session 131: Schistosomiasis - Trematodes: Epidemiology and Control

Scientific Session 147: Schistosomiasis - Trematodes: Immunology, Pathology, Cellular, Molecular

Scientific Session 161: Schistosomiasis and Other Trematodes: Diagnosis and Treatment

Symposium 176: Schistosomiasis and Climate Change

Virology
Monday
Symposium 9: Forty-Year Anniversary of Smallpox Eradication: Great News, But What Next for Poxviruses?

Symposium 15: American Committee on Arthropod-Borne Viruses (ACAV) Symposium I: Annual Business Meeting, Awards, Beyond Arboviruses

Plenary Session 16: Plenary Session II: COVID-19: Lessons Learned and Future Challenges

Symposium 30: American Committee on Arthropod-Borne Viruses (ACAV) Symposium II: This Week in Virology "Live" at ASTMH

Tuesday
Scientific Session 39: Dengue: Vaccines and Immunity

Symposium 45: Cytomegalovirus and Epstein-Barr Virus in Sub-Saharan Africa

Scientific Session 61: Coronaviruses and Alphaviruses

Wednesday
Scientific Session 67: Zika

Plenary Session 80: Plenary Session IV: President's Address

Scientific Session 88: Zika: Vaccines and Immunity

Scientific Session 99: Dengue: Transmission and Virus-Host Interactions

Late-Breaker Abstract Session 103: Late-Breakers in Coronavirus I

Scientific Session 105: West Nile and Other Viruses

Thursday
Late-Breaker Abstract Session 123: Late-Breakers in Coronavirus II

Scientific Session 134: Viral Hemorrhagic Fevers

Symposium 150: Crimean-Congo Hemorrhagic Fever, Updates on a Lesser Known Viral Hemorrhagic Fever with Widespread Impact

Symposium 151: American Committee on Arthropod-Borne Viruses (ACAV) Trainee Panel: Outbreak Response—Focusing on Communication

ASTMH — Advancing Global Health Since 1903

54
Session Topic Guide

**Symposium 173:** Frontiers in Immunologic Evaluation of Filovirus Vaccines

**Water, Sanitation, Hygiene and Environmental Health**

**Thursday**

**Scientific Session 132:** Water, Sanitation, Hygiene and Environmental Health (WaSH-E) and Behavior

**Scientific Session 148:** Water, Sanitation, Hygiene and Environmental Health (WaSH-E): Transmission and Exposure

**Scientific Session 162:** Water, Sanitation, Hygiene and Environmental Health (WaSH-E): Water Access, Quality and Treatment

**Symposium 177:** Revitalizing Informal Settlements and their Environments (RISE)
Thank you to our Virtual Exhibitors!

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Abbott
Address: 100 Abbott Park Rd
Abbott Park, IL 60064
Phone: +1 (877) 441-7440
Email: ardxevents@abbott.com
Website: www.globalpointofcare.abbott
Twitter: @AbbottNews
Abbott is the global leader in point-of-care (POC) diagnostics with the broadest portfolio of best-in-class rapid tests, services, and handheld devices across all healthcare settings: the lab, the clinic, remote healthcare outposts, retail outlets, the patient’s bedside and at home. Abbott’s offering of industry-leading near patient tests and services is unmatched across key health and therapeutic areas, including: infectious disease, cardiometabolic, informatics, toxicology and consumer diagnostics.

Barcelona Institute for Global Health (ISGlobal)
hosted by ISGlobal
Contact:
Address: C/Roselló 132
08036 Barcelona, Spain
Phone: +34 93 227 1806
Email: info@isglobal.org
Twitter:
“What is MESA Track?” describes the MESA Track online platform, an open and living database of malaria research. This user-friendly and open-access tool informs the malaria community about which questions are being addressed, which innovative strategies are being tested, and aids collaboration and information-sharing. The platform has been used by stakeholders such as the Global Malaria Programme at the World Health Organization to support their policy-development processes, as well as by the malERA Consultative Process to picture the current status of malaria research, among others. Know more and join the database of researchers, funders and institutions working to combat malaria. MESA is hosted by ISGlobal and is supported by a grant from the Bill & Melinda Gates Foundation.

Bayer Crop Science – Agriculture Division
Contact: Liza Dunn
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Website: www.cropscience.bayer.com/
Throughout history, humanity has improved lives and inspired breakthroughs for our biggest challenges. Our shared sense of inventiveness gave us agriculture—one of the oldest and most important inventions—and we believe it can do even more. We’re using innovation to shape what’s possible for farmers, consumers, and the planet as we seek to deliver world-class innovation, set new standards in sustainability, and drive digital transformation.

BEI Resources
Contact: Rebecca Bradford
Address: 10801 University Boulevard
Manassas, VA 20110
Phone: (800) 359-7370
Email: contact@beiresources.org
Website: www.beiresources.org
BEI Resources, funded by NIAID, is the leading source for high-quality microbial cultures, reagents and assays for investigating tropical and emerging infectious diseases including viral, bacterial and parasitic pathogens and arthropod vectors.

Bill & Melinda Gates Foundation
Contact: Rebecca Bradford
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Seattle, WA 98102 USA
Phone: +1-206-709-3100
Email: info@gatesfoundation.org
Website: www.gatesfoundation.org
Twitter:
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 Mark Suzman, under the direction of Bill and Melinda Gates and Warren Buffett.
Bioinformatics Resource Centers (BRCs) for Infectious Diseases
Contact: Omar Harb, Director of Outreach and Education
Email: ohabr@upenn.edu
Website: https://www.niaid.nih.gov/research/bioinformatics-resource-centers-infectious-diseases

The NIAID-funded Bioinformatics Resource Centers (BRCs) for Infectious Diseases program provides free public access to genomic scale data and analyses tools for infectious disease pathogens, vectors of transmission and interactions with their hosts. Two BRCs are currently funded: 1. VEuPathDB.org, supporting eukaryotic pathogens and invertebrate vectors of infectious diseases; 2. BV-BRC (patricbrc.org, fludb.org & viprbrc.org), supporting bacteria and viruses. Representatives from the BRCs will be available for live chats and discussions from the virtual booth.

Burroughs Wellcome Fund
Address: P.O. Box 13901
Research Triangle Park, NC 27709 USA
Phone: +1-919-991-5100
Website: www.bwfund.org
Twitter: @BWF_PATH

The Burroughs Wellcome Fund is an independent private foundation dedicated to advancing the biomedical sciences by supporting research and other scientific and educational activities. Within this broad mission, BWF has two primary goals: To help scientists early in their careers develop as independent investigators and to advance fields in the basic biomedical sciences that are undervalued or in need of particular encouragement. BWF’s financial support is channeled primarily through competitive peer-reviewed award programs.

Chan Zuckerberg Initiative, IDseq
Contact: Liz Fahsbender
Address: 601 Marshall St
Redwood City, CA 94063
Phone: (727)735-7633
Email: help@idseq.net
Website: https://www.discoveridseq.com/
Twitter: @czscience

IDseq is free open source cloud-based service for pathogen detection and surveillance. Our mission is to make complex analysis pipelines globally accessible to empower data-driven decision making about disease prevention and detection around the world. The IDseq portal is a metagenomics pipeline, which serves to reduce the barrier to entry for mNGS data analysis.

Center for Health in the Human Ecosystem (CHHE), University of Idaho
Address: 875 Perimeter Drive MS 1122
Moscow, Idaho 83844-1122
Phone: 1-208-885-0937
Email: chhe@uidaho.edu
Website: uidaho.edu/cals/chhe
Twitter: @ui_CHHE

The University of Idaho Center for Health in the Human Ecosystem (CHHE) is hosting its annual Biology of Vector-borne Diseases six-day course, Sunday through Friday, June 20-25, 2021, on the UI campus in Moscow, Idaho. This course provides accessible, condensed training and “knowledge networking” for advanced graduate students, postdoctoral fellows, new faculty and current professionals to ensure competency in basic biology, current knowledge and cutting edge technology for U.S. and global vector-borne diseases of plants, animals and humans. This course seeks to create an enduring community of participants and instructors who understand the biological connections across diverse vector-borne diseases to expand the impact and sustainability of integrated solutions to their control in complex human ecosystems.

ClinEpiDB
Contact: Sheena Tomko, Outreach Specialist
Phone: 215-573-1205
Email: stomko@sas.upenn.edu
Website: https://clinepidb.org
Twitter:@ClinEpiDB

The Clinical Epidemiology Database Resource, ClinEpiDB (https://ClinEpiDB.org), is a global open-access, epidemiological data resource charged with enabling investigators to maximize the utility and reach of their data and make optimal use of information released by others. ClinEpiDB is a project of the NIH/NIAID funded Bioinformatics Resource Center, VEuPathDB, and funded by the Bill & Melinda Gates Foundation. ClinEpiDB staff will demo the resource, discuss availability of data and answer questions.
Drugs for Neglected Diseases initiative – North America

Contact: Ilan Moss, Head, Media and Content
Address: 40 Rector Street, 16th Floor
New York, NY 10006, USA
Phone: 646 266 5216
Email: imoss@dndi.org
Website: www.dndi.org
Twitter: @DNDi

The Drugs for Neglected Diseases initiative (DNDi) is a not-for-profit, patient-oriented research and development organization working to deliver safe, effective, and accessible treatments for millions of people living in vulnerable conditions and affected by neglected diseases, notably Chagas disease, leishmaniasis, sleeping sickness, paediatric HIV, hepatitis C, filarial infections, and mycetoma. DNDi recently participated in the launch of a coalition to accelerate research on COVID-19 in low- and middle-income countries.

Eck Institute for Global Health/University of Notre Dame’s Eck Institute for Global

Contact: Kelly Thomson
Phone: 574.631.2171
Email: eigh@nd.edu
Website: globalhealth.nd.edu
Twitter: @ndeckinstitute

The University of Notre Dame’s Eck Institute for Global Health (EIGH) serves as a university-wide enterprise that recognizes health as a fundamental human right and works to promote research, training, and service to advance health standards and reduce health disparities for all. The EIGH brings together multidisciplinary teams to understand and address health challenges that disproportionately affect the poor and to train the next generation of global health leaders.

Elsevier

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Website: http://www.elsevier.com

Elsevier is a world-leading provider of information solutions that enhance the performance of science, health, and technology professionals, empowering them to make better decisions, and deliver better care.

FHI Clinical

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Website: https://www.fhiclinical.com/
Twitter: https://twitter.com/FHIClinical

FHI Clinical is a full-service contract research organization (CRO) with the global expertise, responsive approaches and proven solutions to manage complex clinical research in resource-limited settings around the world. Our mission is to address unmet research needs and achieve maximum social impact by supporting the development of life-saving vaccines and medicines. For more information, please refer to fhiclinical.com.

GSK

Contact: Rebecca Lisle
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Email: Rebecca.m.lisle@gsk.com
Website: www.gsk.com

A science-led global healthcare company with a special purpose to help people do more, feel better, live longer. We have three global businesses that discover, develop and manufacture innovative pharmaceutical medicines, vaccines and consumer healthcare products. Every day, we help improve the health of millions of people around the world.

Global Health Innovative Technology Fund (GHIT Fund)

Contact: Hironobu Itabashi
Address: Ark Hills Sengokuyama, Mori Tower, 25F
1-9-10 Roppongi
Minato-ku, Tokyo
Email: hironobu.itabashi@ghitfund.org
Website: www.ghitfund.org
Twitter: @GHITFUND

The Japan-based GHIT Fund is an international public-private partnership fund for global health R&D that mobilizes Japanese industry, academia, and research institutes to create new drugs, vaccines, and diagnostics for malaria, tuberculosis, and neglected tropical diseases, in collaboration with global partners.
Hemex Health
Contact: A. Garceau
Address: 4640 Macadam Ave
Portland, Oregon 97239
Phone: (603) 475-9942
Email: a.garceau@hemexhealth.com
Website: www.hemexhealth.com

Hemex Health connects innovation to Global Health with its affordable, life-changing medical diagnostics designed to reach at-risk populations. Our easy-to-use GazelleTM Diagnostic Device supports an affordable, one-minute malaria test that is more accurate than existing diagnostics as well as the first affordable hemoglobin variant diagnostic (e.g. for sickle cell anemia) to provide both identification and quantification of hemoglobin types.

Henry M. Jackson Foundation for the Advancement of Military Medicine
Contact: Robyn Hulvey
Address: 6720A Rockledge Drive, Suite 100
Phone: 240-694-2239
Email: rhulvey@hjf.org
Website: www.hjf.org
Twitter: @HJFMilMed

The Henry M. Jackson Foundation for the Advancement of Military Medicine is a global nonprofit organization supporting the military medical research benefiting warfighters, veterans, their families and civilians. HJF offers administrative and program management services to investigators and clinicians. For nearly 40 decades, HJF has helped guide scientific investigators through the administrative challenges associated with managing tropical disease research. From writing proposals to staffing labs, HJF is ready to be your research partner worldwide.

IAMAT – International Association for Medical Assistance to Travellers
67 Mowat Avenue, Suite 036
Toronto, ON M6K 3E3 Canada
Email: info@iamat.org
Website: www.iamat.org
Twitter: @IAMAT_Travel

Our mission is to make the world a healthier place to travel. This year we celebrate our 60th anniversary. We award scholarships to doctors and nurses from countries where travel medicine is an emerging specialty. Our scholars introduce travel health services and improve health standards in their community, benefitting local patients and travellers. 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 health needs of travelers.

ICF
Contact: Yazoume Ye, PhD, Msc
Vice President, Malaria Surveillance and Research
Technical Director, PMI Measure Malaria Project (PMM)
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Website: https://www.icf.com/work/international-development/global-health
Twitter: @ICF

ICF is a global consulting services company with over 7,000 full- and part-time employees, but we are not your typical consultants. At ICF, business analysts and policy specialists work together with digital strategists, data scientists and creatives. We combine unmatched industry expertise with cutting-edge engagement capabilities to help organizations solve their most complex challenges. Since 1969, public and private sector clients have worked with ICF to navigate change and shape the future.

Indiana University School of Medicine
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Twitter: @AMPATH
@IUCGH
@ChandyJohnLab
@IUPedsID
@iurwc

The Indiana University School of Medicine is a national leader in global health. At the Center for Global Health, AMPATH, and the Ryan White Center for Pediatric Infectious Disease and Global Health, we conduct innovative programs in global health research. Primary global health research areas at the Indiana University School of Medicine include malaria, HIV, HPV, and infections in neonates and children with sickle cell disease.
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International Society of Travel Medicine
Contact: Michelle Clark
Address: 11720 Amber Park Drive
Suite 160
Phone: (404)373-8282
Email: mclark@istm.org
Website: https://www.istm.org/
Twitter: https://twitter.com/_istm_

The ISTM, with more than 4,300 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.

Mahidol Oxford Tropical Medicine Research Unit
Contact: Rita Chanviriyavuth
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Phone: +66 2 203 6333
Email: Rita@tropmedres.ac
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MORU (Mahidol Oxford Tropical Medicine Research Unit, University of Oxford) is a Bangkok-headquartered multinational network of clinical and laboratory research units and collaborating sites in 11 Asian and 9 African countries. We seek practical ways to prevent and treat infectious diseases and improve the health of the tropical rural poor. We study infectious diseases such as malaria, melioidosis, scrub and murine typhus, CNS infections, critical care medicine, maternal and child health, childhood pneumonia, and COVID-19.

Malaria Consortium
Contact: Sarah Bond
Address: The Green House
244-254 Cambridge Heath Road
London, United Kingdom, E2 9DA
Phone: +4402035596431
Email: info@malariaconsortium.org
Website: malariaconsortium.org
Twitter: @FightingMalaria

Established in 2003, Malaria Consortium is one of the world's leading non-profit organisations specialising in the prevention, control and treatment of malaria and other communicable diseases among vulnerable populations. Our mission is to improve lives in Africa and Asia through sustainable, evidence-based programmes that combat targeted diseases and promote child and maternal health.

Medical Care Development International (MCDI)
Contact: Matthew S. Lynch
Address: 8401 Colesville Rd Suite# 425
Silver Springs, MD 20910
Phone: (301) 562-1920
Email: mlynch@mcd.org
Website: https://mcdinternational.org/
Twitter: @MCDItweets

Medical Care Development International (MCDI) has been improving the health of vulnerable populations worldwide through integrated, sustainable, and locally-driven interventions for nearly 50 years in over 40 countries. Our practical, evidence-based, and high-impact approaches transform the communities we serve. We collaborate with donors, the public and private sectors, health agencies, communities, and local stakeholders in malaria control and elimination; maternal, neonatal and child health; water, sanitation and hygiene; tuberculosis; HIV/AIDS; and other communicable diseases.

Motic Scientific
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Email: chaz@motic.com
Website: www.motiveasyscan.com
Twitter: @MoticScientific

Description: Established in 1983, Motic China Group Co. Ltd. has grown to become the world's largest manufacturer of microscopes. With offices in China, Germany, the United States, Canada, Hong Kong, and Spain, Motic is dedicated to providing quality microscopy and optical products. Motic Scientific, a division of Motic China Group Co. Ltd, was established to lead high-end product development. Motic Scientific is committed to providing customers advanced digital microscopy solutions with an outstanding price-to-performance value.
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**PEPperPRINT GmbH**
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Heidelberg, BaWu Germany
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Email: myriam.friedel@pepperprint.com
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Twitter:@PEPperCHIP

PEPperPRINT provides high-content peptide microarrays for antibody epitope mapping, as well as profiling of immune responses in blood sera linked with infection, immunization, autoimmune diseases, or cancer. The PEPperCHIP® peptide microarrays are synthesized with a patented, laser printer-based method directly on the chip. The benefits of this approach are a unique flexibility in terms of custom peptide content, a high spot density, and reduced material consumption.

**Roche Diagnostics GmbH**
Address: DE-82377 Penzberg
Germany
Phone: +49-8856 60 0
Website: http://www.roche.de

As a global leader in healthcare, Roche Diagnostics offers a broad portfolio of products, tools and services that help in the prevention, diagnosis and management of infectious diseases as well as many other medical conditions. These products and services are used by researchers, physicians, patients, hospitals and laboratories worldwide to help improve people’s lives.

**Takeda Pharmaceuticals International AG**
Contact: Mayumi Fujino Chang
Email: mayumi.chang@Takeda.com
Website: www.takeda.com
Twitter: @TakedaPharma

For more than 70 years, Takeda has developed and provided vaccines to support national immunization programs to protect the health of people in Japan. Building upon this longstanding business in Japan, Takeda is applying innovation to develop vaccines that tackle the world’s most challenging infectious diseases affecting millions of people, such as dengue, Zika and norovirus.

**Vysnova Partners, Inc.**
Contact: Caitlin Rasmussen
Address: 8400 Corporate Drive, Suite 130
Landover, MD 20785
Phone: 301-830-8885
Email: crasmussen@vysnova.com
Website: https://www.vysnova.com/
Twitter:@VysnovaPartners

Vysnova Partners is a fast-growing program management firm that primarily delivers professional and technical Public/Global Health services worldwide for US governmental and commercial clients. With over 30 years of experience, Vysnova provides subject matter expertise and institutional support to its clients in Public/ Global Health, Research and Development in the Life Sciences, Government Operations and Acquisition, and Information Technology. Our clients include; Department of Health and Human Services / Centers for Disease Control and Prevention, Department of Defense, US Agency for International Development, Department of State, and the Veterans Administration among others.
Tuesday, November 10

Clinical Pre-Meeting Course: Where Flatworms Roam: Controversies and Updates in Management of Neurocysticercosis and Echinococcus

Tuesday, November 10,
7:45 a.m. - 4 p.m. U.S. Eastern Time Zone

This one-day course will go beyond the basics of the diagnosis, imaging and management of both cestodes and larval cestodes. Expert speakers will present updates and explore controversies in diagnosis and management, unusual manifestations and imaging challenges. Imaging presentations will focus on understanding the differential diagnosis of suspicious lesions. Uncommon cestode infections also will be discussed, including alveolar hydatidosis, sparganosis and coenurosis. Presentations will be highly interactive with opportunities for active audience participation and discussion with the experts.

COURSE CO-CHAIRS
Christina Coyle  
Albert Einstein College of Medicine, Bronx, NY, United States
Michael Libman  
McGill University, Montreal, QC, Canada

7:45 a.m.  
INTRODUCTION

8 a.m.  
TAENIASIS, NATURE’S HERMAPHRODITIC FREIGHT TRAIN
Michael Libman  
McGill University, Montreal, QC, Canada

8:30 a.m.  
CYSTIC ECHINOCOCCOSIS: THE CLINICAL APPROACH
Thomas Junghanss  
Heidelberg University Hospital, Heidelberg, Germany

9:15 a.m.  
ULTRASOUND STAGING FOR ECHINOCOCCUS
Enrico Brunetti  
University of Pavia, Pavia, Italy

10:45 a.m.  
BREAK

10:15 a.m.  
ECHINOCOCCUS MULTILOCULARIS
Bruno Gottstein  
University of Bern, Bern, Switzerland

11 a.m.  
CHALLENGING ECHINOCOCCAL CLINICAL CASES: PANEL DISCUSSION
MODERATORS:  
Christina Coyle  
Albert Einstein College of Medicine, Bronx, NY, United States
Michael Libman  
McGill University, Montreal, QC, Canada

11:45 a.m.  
LUNCH

12:15 p.m.  
OVERVIEW OF NEUROCYSTICERCOSIS AND APPROACH TO PARENCHYMAL DISEASE
Hugo Garcia  
University Peruana Cayetano Heredia, Lima, Peru

1 p.m.  
NEUROCYSTICERCOSIS: AN OVERVIEW OF CALCIFIED DISEASE
Javier A. Bustos  
University Peruana Cayetano Heredia, Lima, Peru

1:30 p.m.  
DIAGNOSTIC TOOLS IN NEUROCYSTICERCOSIS
Elise O’Connell  
National Institutes of Health, Bethesda, MD, United States

2 p.m.  
INTRAVENTRICULAR NEUROCYSTICERCOSIS: MANAGEMENT ISSUES
A. Clinton White  
University of Texas Medical Branch, Galveston, TX, United States

2:45 p.m.  
SUBARACHNOID NEUROCYSTICERCOSIS: MANAGEMENT ISSUES
Christina Coyle  
Albert Einstein College of Medicine, Bronx, NY, United States

3:30 p.m.  
BREAK

3:45 p.m.  
CHALLENGING NEUROCYSTICERCOSIS CLINICAL CASES: PANEL DISCUSSION
MODERATORS:  
Christina Coyle  
Albert Einstein College of Medicine, Bronx, NY, United States
Michael Libman  
McGill University, Montreal, QC, Canada

PANELISTS:
Hugo Garcia  
University Peruana Cayetano Heredia, Lima, Peru
Javier A. Bustos  
University Peruana Cayetano Heredia, Lima, Peru
A. Clinton White  
University of Texas Medical Branch, Galveston, TX, United States

4:15 p.m.  
COURSE ADJOURNS
The COVID-19 outbreak has demonstrated to the world again how rapidly a disease can move through populations, spread exponentially in numbers and locations, and impact human health, transportation, economies, and other important and significant aspects of life. The ability to plan and implement an effective response depends on predicting as accurately as possible who, where, how many and when cases will occur, with limited information and under a range of assumptions. With this knowledge, responders can allocate resources to maximum benefit, and enact the best preventive, containment and mitigation measures. This prediction requires accurate data, an understanding of pathogen transmission dynamics, the context in which the disease is transmitted, and a range of mathematical modeling methods. Modeling is an essential tool in the study of infectious disease epidemiology which allows informed policymaking, nowcasting and forecasting of epidemics, and real-time risk assessments. COVID-19 has clearly demonstrated how model implementation is a multi-disciplinary effort best grounded in a thorough understanding of the principles and limits of communicable disease models.

This Pre-Meeting Course will provide instruction to first-time or introductory modelers in 1) key concepts of infectious disease modeling; 2) understanding the strengths and limitations of modeling in order to critically review modeling results; 3) provide a list of resources including modelers and open source modeling programs; and 4) a practical session to provide hands-on experience implementing, running and using models.

At the end of the activity, participants will be able to:
- Understand the principles underlying infectious disease modeling
- Describe dynamics in pathogen transmission
- Identify necessary data elements for accurate disease modeling
- Analyze different models and their outputs and understand limitations
- Consider different resources and programs when determining the most appropriate modeling approach
- Develop and demonstrate mastery of basic modeling using a simulated example

COURSE CO-CHAIRS
Julie Pavlin
National Academies of Sciences, Engineering and Medicine, Bethesda, MD, United States
Kathryn A. Anderson
SUNY Upstate Medical University, Syracuse, NY, United States

9 a.m.
WELCOME, INTRODUCTION OF TOPICS AND LOGISTICS

9:15 a.m.
KEYNOTE ADDRESS: METHODS AND MOTIVES FOR INFECTIOUS DISEASE MODELS - THE TALE OF COVID-19
Nicholas G. Reich
University of Massachusetts Amherst School of Public Health and Health Sciences, Amherst, MA, United States

9:45 a.m.
QUESTION AND ANSWER

10 a.m.
ADDRESSING COMMON PITFALLS IN APPLIED PUBLIC HEALTH MODELING
Michael Johansson
Centers for Disease Control and Prevention Dengue Branch, Atlanta, GA, United States

10:15 a.m.
THE INTERSECTION BETWEEN MODELING AND CLINICAL TRIAL DESIGN DURING AN EPIDEMIC
Natalie Dean
University of Florida, Gainesville, FL, United States

10:30 a.m.
MODELING COVID-19 IN ECUADOR: EVALUATING THE IMPACT OF REVERSING SOCIAL DISTANCING MEASURES IN SPRING/SUMMER 2020
Miguel Reina Ortiz
University of South Florida, Tampa, FL, United States

11 a.m.
BREAK

11:15 a.m.
PANEL DISCUSSION - CRITICAL EVALUATION OF EPIDEMIC MODELS FOR REAL-WORLD USE: A PRAGMATIC APPROACH
Moderator: Alex Perkins
University of Notre Dame, Notre Dame, IN, United States

PANELISTS:
Simon Pollett
Uniformed Services University, Bethesda, MD, United States
Sara Del Valle
Los Alamos National Laboratory, Los Alamos, NM, United States

11:45 a.m.
DISCUSSION SESSION WITH PANEL TO INCLUDE ADDITIONAL PANELISTS
Sheetal Silal
Modelling and Simulation Hub, Africa, University of Cape Town, Cape Town, South Africa
Michael Johansson
Centers for Disease Control and Prevention Dengue Branch, Atlanta, GA, United States

12:30 p.m.
LUNCH

1 p.m.
PRACTICAL EXAMPLE OF EPIDEMIC MODEL INTERPRETATIONS
Thursday, November 12

Medical Entomology Pre-Meeting Course: Vector-Borne Disease Risk and Prevention for the Clinician

Thursday, November 12
9 a.m. - 4:15 p.m. U.S. Eastern Time Zone

Blood-sucking insects and ticks transmit some of the most devastating, yet in many cases preventable, human diseases including malaria, dengue, chikungunya, Zika, Lyme disease, leishmaniasis and Chagas disease. In this course, we will review the basic biology of major arthropod vectors; discuss the geographic and behavioral risks posed by vector-borne diseases; and highlight preventive options, including personal protection and environmental control methods. The course is designed to help medical professionals advise their patients about the risks and prevention measures against biting insects and ticks.

COURSE ORGANIZERS
Christopher Barker
University of California Davis, Davis, CA, United States
Laura C. Harrington
Cornell University, Ithaca, NY, United States

9 a.m.
OVERVIEW OF THE COURSE - VECTOR BIOLOGY 101
Christopher Barker
University of California Davis, Davis, CA, United States

9:30 a.m.
TICKS AND LYME DISEASE
Robert Smith
Maine Medical Center, Portland, ME, United States

10:30 a.m.
MOSQUITOES AND MALARIA
Nicole L. Achee
University of Notre Dame, Notre Dame, IN, United States

11:30 a.m.
BREAK

11:45 a.m.
MOSQUITOES AND ARBOVIRAL DISEASES
Laura C. Harrington
Cornell University, Ithaca, NY, United States

12:45 p.m.
LUNCH

1:15 p.m.
EMERGING VECTOR BORNE DISEASE EPIDEMIOLOGY
Christopher Gregory
Centers for Disease Control and Prevention, Fort Collins, CO, United States
2:15 p.m.
KISSING BUGS AND CHAGAS DISEASE
Pamela Pennington
Universidad del Valle de Guatemala, Guatemala, Guatemala

3:15 p.m.
QUESTION AND ANSWER SESSION
MODERATORS:
Christopher Barker
University of California Davis, Davis, CA, United States
Laura C. Harrington
Cornell University, Ithaca, NY, United States

4:15 p.m.
COURSE ADJOURNS

Friday, November 13
Parasitology Pre-Meeting Course: The Science and Business of Vaccines Against Tropical Parasitic Diseases in the COVID19 Era

Friday, November 13
7:45 a.m. - 4:30 p.m. U.S. Eastern Time Zone

There is no vaccine for a human parasitic infection that has marketing authorization (licensure) anywhere in the world. However, we are on the verge of licensed vaccines for malaria, and are making enormous progress for diseases caused by other protozoans like leishmaniasis and helminths like hookworm. A distinguished international faculty from the biotechnology industry, the government, and academia will communicate their experience and insights regarding how to approach successful development of vaccines against parasites, including identification of the immunological mechanisms of protection and the antigenic targets of protective humoral and cellular immune responses, the construction of vaccine delivery systems (recombinant proteins, recombinant viruses, nucleotide (e.g. mRNA), and whole wild type and genetically altered parasites) and achieving regulatory approval for conducting phase 1-3 clinical trials and translating from the laboratory to the clinic to assess safety and vaccine efficacy in the era of COVID-19.

COURSE ORGANIZERS
John H. Adams
University of South Florida, Tampa, FL, United States
Stephen L. Hoffman
Sanaria Inc., Rockville, MD, United States

7:45 a.m.
WHY WE NEED VACCINES AND WHY THERE AREN'T ANY LICENSED VACCINES AGAINST PARASITES
Stephen L. Hoffman
Sanaria Inc., Rockville, MD, United States

8:15 a.m.
THE EUROPEAN UNION MALARIA FUND: A NEW PARADIGM FOR FUNDING PRIVATE SECTOR MALARIA VACCINE R&D
Holm Keller
kEINUP Foundation and EU Malaria Fund, Republic of Malta, Malta

8:45 a.m.
DETERMINING THE MECHANISMS OF PROTECTIVE IMMUNITY AND ESTABLISHING THEY ARE INDUCED BY VACCINES
HUMORAL IMMUNITY (ANTIBODIES): SYSTEMS IMMUNOLOGY TOOLS TO DETERMINE THE ROLE OF HUMORAL IMMUNITY IN PROTECTION AGAINST MALARIA, COVID-19 AND OTHER INFECTIOUS DISEASES AND TO MONITOR VACCINE RESPONSE
Galit Alter
Harvard Medical School and Ragon Institute of MGH, MIT and Harvard, Cambridge, MA, United States
CELLULAR IMMUNITY (T CELLS): CELLULAR IMMUNOLOGY TOOLS TO DETERMINE THE ROLE OF PROTECTIVE IMMUNITY IN PROTECTION AGAINST MALARIA, COVID-19, AND OTHER INFECTIOUS DISEASES AND TO MONITOR VACCINE RESPONSE

Robert A. Seder
Vaccine Research Center, National Institutes of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States

9:45 a.m.
DETERMINING THE TARGETS OF PROTECTIVE IMMUNITY
TARGETS OF ANTIBODIES I: STRUCTURAL VACCINOLOGY: DEFINING B CELL EPITOPE TARGETS OF PROTECTIVE IMMUNITY TO MALARIA
Niraj Tolia
National Institutes of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States

TARGETS OF ANTIBODIES II: DETERMINING TARGETS OF NATURALLY ACQUIRED PROTECTIVE IMMUNITY USING PROTEIN MICROARRAYS AND FUNCTIONAL ASSAYS
Faith Osier
Centre for Tropical Medicine and Global Health, Kilifi, Kenya

TARGETS OF CELLULAR IMMUNE RESPONSES: DETERMINING THE TARGETS OF CELLULAR IMMUNE RESPONSES AFTER NATURAL INFECTION WITH AND IMMUNIZATION AGAINST PARASITES AND SARSCOV-2
Alessandro Sette
La Jolla Institute, La Jolla, CA, United States

11 a.m.
QUESTIONS AND ANSWERS

11:15 a.m.
BREAK

11:30 a.m.
PRODUCING/MANUFACTURING IMMUNOGENS TO INDUCE THE REQUIRED IMMUNE RESPONSES AGAINST THE IDENTIFIED TARGETS AND THE MANUFACTURING AND REGULATORY CHALLENGES OF TRANSITIONING FROM PHASE 1-3, AND SCALING UP TO MEET COMMERCIAL DEMAND
RECOMBINANT PROTEIN VACCINES (VLPS) AND ADJUVANTS
Simon J. Draper
University of Oxford, Oxford, United Kingdom

R21 AND CHADS AND A PATH TO MALARIA AND CORONAVIRUS VACCINES
Adrian Hill
University of Oxford, Oxford, United Kingdom

NUCLEOTIDE VACCINES (DNA/MRNA)
Andrea Carfi
Moderna, Cambridge, MA, United States

SPEAKER TBD WILD TYPE AND GENETICALLY ALTERED WHOLE PARASITE AND ATTENUATED BACTERIA VACCINES
B. Kim Lee Sim
Sanaria, Inc. and Protein Potential LLC, Rockville, MD, United States

1:30 p.m.
QUESTIONS AND ANSWERS

1:45 p.m.
LUNCH

2:15 p.m.
EVALUATING SAFETY AND PROTECTIVE Efficacy OF VACCINES IN THE ERA OF COVID-19
CONTROLLED HUMAN INFECTIONS TO ASSESS MALARIA, SCHISTOSOMIASIS AND HOOKWORM VACCINES
Meta Roestenberg
Leiden University Medical Center, Leiden, Netherlands

FIELD AND CHMI TRIALS OF MALARIA VACCINES IN AFRICA
Said Jongo
Ifakara Health Institute and Bioko Island Malaria Elimination Program, Dar es Salaam, United Republic of Tanzania

TRANSLATING PARASITIC DISEASE AND COVID-19 VACCINES FROM DISCOVERY TO THE CLINIC
Peter J. Hotez
National School of Tropical Medicine, Baylor College of Medicine and Texas Children’s Center for Vaccine Development, Houston, TX, United States

CONDUCTING TRIALS OF COVID-19 THERAPEUTICS, COVID-19 VACCINES, AND MALARIA VACCINES AT THE SAME TIME
Peter G. Kremsner
University of Tübingen and Centre de Recherches Médicales de Lambarené (CERMEL), Tübingen, Germany

4:15 p.m.
QUESTIONS AND ANSWERS

4:30 p.m.
COURSE ADJOURNS
ASTMH Information Desk

Lobby
Sunday, November 15
8 a.m. - 6 p.m. U.S. Eastern Time Zone

Exhibit Hall
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TropMed Central
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Young Investigator Award Sessions

CHAIR
Edward Mitre
Uniformed Services University, Bethesda, MD, United States

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.

Supported with funding from Friends of the Young Investigators
William A. Petri, Jr. in memory of William A. Petri, Sr.
Mary Denton Roberts and David Lyerly in memory of Annie Liberati

Young Investigator Award Session A

Meeting Room 1
Sunday, November 15
10 a.m. - 1 p.m. U.S. Eastern Time Zone

JUDGE
Fernando Bruno
Touro College of Osteopathic Medicine and Harvard T. H. Chan School of Public Health and, Middletown, NY, United States
Tahaniyat Lalani
Infectious Disease Clinical Research Program, Portsmouth, VA, United States
Matthew Lauren
University of Maryland School of Medicine, Baltimore, MD, United States
Elise Michelle O’Connell
National Institutes of Health, Bethesda, MD, United States

10 a.m.
A COMPARISON OF TRADITIONAL DIARRHOEA SURVEILLANCE METHODS WITH STOOL MICROBIOLOGICAL INDICATORS IN THE FORCIBLY DISPLACED MYANMAR NATIONALS CAMPS IN COX’S BAZAR, BANGLADESH
Ryan T. Rego1, Samuel I. Watson1, Mohammad Atique Ul Alam2, Syed Asif Abdullah2, Mohammad Yunus3, Mohammad Sirajul Islam2, A.S.G Faruque3, Azharul Islam Khan4, John Clemens5, Richard J. Lilford6
1University of Warwick, Coventry, United Kingdom, 2International Center for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, 3University of Birmingham, Birmingham, United Kingdom

10:15 a.m.
RISK FACTORS AND OUTCOMES ASSOCIATED WITH INCREASED MORTALITY DUE TO CHOLERA INFECTION IN LMIC SETTINGS: A CASE FOR THE DOMINICAN REPUBLIC
Miguel A. Delgadillo
School of Medicine, Universidad Iberoamericana, Santo Domingo, Dominican Republic

10:30 a.m.
FILARIAL COINFECTION IS ASSOCIATED WITH HIGHER BACTERIAL BURDENS AND ALTERED PLASMA CYTOKINE AND CHEMOKINE RESPONSES IN TUBERCULOUS LYMPHADENITIS
Gokul Raj Kathamuthu
NIH-ICER-NIRT, Chennai, India

10:45 a.m.
ZIKA VIRUS RECRUDESCENCE IN THE MURINE MALE REPRODUCTIVE TRACT FOLLOWING IMMUNOSUPPRESSION
Megan B. Vogt, Nisha K. Duggal
Virginia Polytechnic Institute and State University, Blacksburg, VA, United States

11 a.m.
INTRACARDIAC TUBERCULOMA IN THE IMMUNE-COMPROMISED POPULATION - A RE-VISITATION
Cornelius C. Nwora
Texas Southern University, Houston, TX, United States

11:15 a.m.
MAPPING THE ENVIRONMENTAL SUITABILITY OF MONKEYPOX IN HUMANS ACROSS AFRICA
Erin N. Holland1, Austin N. Hardcastle1, Joshua C. Osborne1, Julia D. Morgan1, Shreya Shirude1, Kiana F. Henny1, Peter Rabinowitz2, Judith N. Wasserheit1, Molly K. Miller-Petrie1, Julia Hor1, Simon I. Hay1, David M. Pigott1
1Institute for Health Metrics and Evaluation, Seattle, WA, United States, 2University of Washington School of Medicine, Seattle, WA, United States

11:30 a.m.
THE PREVALENCE OF M. TUBERCULOSIS AMONG ACID FAST CULTURES FROM MILITARY HEALTH SYSTEM BENEFICIARIES FROM HAWAII AND PACIFIC ISLANDS FROM JANUARY 2002 TO NOVEMBER 2019
Elena M. Crecelius, Michael B. Lustik, Timothy S. Horseman, Milissa U. Jones
Tripler Army Medical Center, Honolulu, HI, United States
10:45 a.m. 728
A CONFORMATIONALLY-CONSTRAINED PEPTIDE FROM PVDBP ELICITS ANTIBODIES THAT CROSS-REACT WITH P FALCIPARUM VAR2CSA
Catherine J. Mitran1, Lauren Higa1, Michael F. Good2, Stephanie K. Yanow1
1University of Alberta, Edmonton, AB, Canada, 2Institute for Glycomics, Griffith University, Southport, Australia

11 a.m. 1082
CHARACTERIZATION OF SEROLOGICAL RESPONSE TO DENGUE AND ZIKA VIRUSES IN PREGNANT WOMEN DURING THE ZIKA OUTBREAK IN BRAZIL
Katlin Driesse1, Wen-Yang Tsai1, Carlos Brites2, Celia Pedroso2, Wei-Kung Wang1
1John A. Burns School of Medicine, University of Hawaii at Manoa, Honolulu, HI, United States, 2LAPI-Laboratório de Pesquisa em Infectologia- School of Medicine, Federal University of Bahia, Salvador, Brazil

11:15 a.m. 1093
LAG-3: A POTENTIAL CHECKPOINT OF THE HUMORAL IMMUNE RESPONSE TO IMMUNIZATION
Brien K. Haun, Albert To, Teri Wong, Eileen Nakano, Lishomwa Ndhlovu, Axel T. Lehrer
The University of Hawaii, Honolulu, HI, United States

11:30 a.m. 1095
CANONICAL PRR SIGNALING PATHWAYS ARE NOT VITAL IN THE ANTIVIRAL RESPONSE AGAINST ZIKV INFECTION IN HUMAN SERTOLI CELLS
Boonyanudh Jiyaram1, Daniel P. Strange1, Nataliya Panova1, Pei-Yong Shi2, Michael Gale Jr.1, Saguna Verma1
1University of Hawaii at Manoa, Honolulu, HI, United States, 2University of Texas Medical Branch, Galveston, TX, United States, 3University of Washington School of Medicine, Seattle, WA, United States

11:45 a.m. 1452
PROFILING OF THE EPI TOPE DIVERSITY AND EVOLUTION OF DENGUE BINDING ANTIBODIES BY PEPTIDE MICROARRAY
Francesca Falconi-Agapito1, Karen Kerkhof1, Xiomara Merino2, Marjan Van Esbroeck1, Michael Talledo1, Kevin K. Ariën1
1Virolology Unit, Institute of Tropical Medicine, Antwerp, Belgium, 2Institute de Medicina Tropical Alexander von Humboldt, Lima, Peru, 3Department of Clinical Sciences, National Reference Center for Arboviruses, Institute of Tropical Medicine, Antwerp, Belgium
Young Investigator Award Session C

Meeting Room 3
Sunday, November 15
10 a.m. - 1 p.m. U.S. Eastern Time Zone

JUDGE
Sara Anne Healy
National Institutes of Health, Rockville, MD, United States
Tracey Lamb
University of Utah, Salt Lake City, UT, United States
Nathan W. Schmidt
Indiana University, Indianapolis, IN, United States
Prakash Srinivasan
Johns Hopkins School of Public Health, Baltimore, MD, United States

10 a.m. 156

BLOCKING PLASMODIUM HOST CELL INVASION USING SMALL MOLECULE INHIBITORS TARGETING AN ESSENTIAL PROTEIN-PROTEIN INTERACTION

Geervani Dagappati1, Adam Yasgar1, Elena Fernandez Alvaro2, Maria Jesus Almela-Armendariz2, Maria Isabel Castellote-Alvaro2, Dolores Jimenez-Alfaro-Mtnez2, Francisco Javier Gamo2, Anton Simeonov2, Louis Miller3, Prakash Srinivasan1
1Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States
2National Center for Advancing Translational Sciences, National Institutes of Health, Bethesda, MD, United States
3Tres Cantos Medicine Development Campus, Recherches Médicales de Lambaréné, Lambaréné, Gabon, 3Institute of Tropical Medicine, Gent, Belgium, 3NIHR Imperial Clinical Research Facility, Imperial College, London, United Kingdom

10:15 a.m. 674

IVERCURE - A DOSE-ASCENDING, RANDOMIZED, PLACEBO-CONTROLLED, DOUBLE-BLIND CLINICAL TRIAL ON THE EFFICACY AND SAFETY OF IVERMECTIN FOR THE TREATMENT OF PLASMODIUM FALCIPARUM INFECTIONS IN ASYMPTOMATIC GABONESE ADULTS: PRELIMINARY RESULTS

Dorothea Sträßer1, Rella Zoleko Manego2, Jana Held2, Benjamin Mordmüller1, Laura C. Kalkman2, Ayola A. Adegnika2, Michael Ramharter1, Ghyslain Mombo-Ngoma2,1Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, 2Centre de Recherches Médicales de Lambaréné, Lambaréné, Gabon

10:45 a.m. 692

HIGHER ODDS OF SYMPTOMATIC PLASMODIUM FALCIPARUM INFECTION WHEN EXPOSED TO NOVEL COMPARED TO RECURRENT MALARIA INFECTIONS OVER TIME

Kelsey M. Summer1, Elizabeth Freedman1, Lucy Abel1, Andrew Obala2, Steven R. Meshnick1, Brian W. Pence1, Wendy Prudhomme-O’Meara3, Steve M. Taylor1
1University of North Carolina at Chapel Hill, Chapel Hill, NC, United States, 2Duke University, Durham, NC, United States, 3NIHR Imperial Clinical Research Facility, Imperial College, London, United Kingdom

11 a.m. 694

ASSESSMENT OF PVMSP8 AS SEROLOGICAL MARKER OF RECENT P. VIVAX EXPOSURE IN THE PERUVIAN AMAZON

Katherine Garro1, Elizabeth Villasís2, Angel Rosas-Aguirre2, Pamela Rodriguez2, Jason Rosado1, Anthony Gave1, Mitchel Guzman1, Paulo Manrique1, Níkol Speryboek2, Joseph Vinetz3, Dioni Garcia-Game3, Katherine Torres3
1Laboratorio ICERM-Amazonia, Laboratorios de Investigación y Desarrollo, Facultad de Ciencias y Filosofía Abraham Vaisberg Wolach, Facultad de Ciencias y Filosofía, Universidad Peruana Cayetano Heredia, Lima, Peru, 2UniFundo, Recherche Scientifique, Brussels, Belgium, 3Section of Infectious Diseases, Department of Internal Medicine, Yale School of Medicine, New Haven, CT, United States, 3Instituto de Medicina Tropical Alexander von Humboldt, Universidad Peruana Cayetano Heredia, Lima, Peru

11:15 a.m. 1649

LOOKING AHEAD IN MALARIA: R21/MATRIX-M, AN EXCITING NEW VACCINE CANDIDATE

Meenakshi Dato1, Meera Madhavan1, Duncan Bellamy1, Megan Baker1, Fernando Ramos-Lopez3, Amy Flaxman1, Nick J. Edwards1, Daniel Jenkin1, Hazel Morrison1, Rebecca Makinson1, Jeremy Aboagye3, Ian Poulton1, Nguyen Tran1, Alison Lawrie1, Anna Goodman2, Katrina Pollock2, Andrew Blagborough4, Jake Baum4, Saul Faust1, Brian Angus5, Umesh Shaligram8, Katie J. Ewer1, Adrian V. Hill1
1Jenner Institute, University of Oxford, Oxford, Oxford, United Kingdom, 2Department of Infectious Diseases, Guy’s & St Thomas’ NHS Foundation, London, United Kingdom, 3NIHR Imperial Clinical Research Facility, Imperial College, London, United Kingdom, 4University of Cambridge, Cambridge, United Kingdom, 5Department of Life Sciences, Imperial College, London, United Kingdom, 6NIHR Wellcome Trust Clinical Research Facility, University of Southampton, Southampton, United Kingdom, 7Oxford University Hospitals NHS Foundation Trust, Oxford, Oxford, United Kingdom, 8Serum Institute of India, Pune, India

Young Investigator Award Session D

Meeting Room 4
Sunday, November 15
10 a.m. - 1 p.m. U.S. Eastern Time Zone

JUDGE
Vitaliano A Cama
CDC, Atlanta, GA, United States
Peter Crompton
NIH, Rockville, MD, United States
Naomi W Lucchi
CDC, Atlanta, GA, United States
Mostafa Zamanian
University of Wisconsin-Madison, Madison, WI, United States

10:30 a.m. 680

THE EFFECT OF DIHYDROARTEMISININ-PIPERAQUINE INTERMITTENT PREVENTIVE TREATMENT DURING PREGNANCY COMPARED TO SULFADOXINE-PYRIMETHAMINE ON CLINICAL MALARIA AND P. FALCIPARUM INFECTION DURING INFANCY

Liana R. Andronescu1, Yuanyuan Liang1, Martin Kachingwe1, Andy Bauleni2, Witness Kachega2, Julie R. Gutman2, Joibah Chinkhumba2, Don P. Mathanga2, Miriam K. Lauber1
1University of Maryland Baltimore, Baltimore, MD, United States, 2Malaria Alert Center, University of Malawi College of Medicine, Blantyre, Malawi, 3Centers for Disease Control and Prevention, Malaria Branch, Atlanta, GA, United States

10:45 a.m. 682

HIGHER ODDS OF PREMATURE BIRTH WITH MALARIA INFECTION DURING PREGNANCY COMPARED TO NOVEL EXPOSURE OVER TIME

Michael J. Rice3,1, Andrew Obala2, Steven R. Meshnick2, Brian W. Pence2, Wendy Prudhomme-O’Meara3, Steve M. Taylor3
1University of North Carolina at Chapel Hill, Chapel Hill, NC, United States, 2Duke University, Durham, NC, United States, 3NIHR Imperial Clinical Research Facility, Imperial College, London, United Kingdom
10 a.m.  155

ASSOCIATION BETWEEN PLACENTAL MALARIA INFLAMMATORY AND ANGIogenic FACTORS IN PREGNANT WOMEN WITH PREECLAMPSIA

Dorothea Obiri1, Daniel Oduro2, Isaac Erskine3, Jones Amponsah1, Thomas Addison4, Kwame Adu-Bonsaffoh1, Kwadwo Asamoah Kusi1, Michael Ofori1, Ben Gyan1
1Noguchi Memorial Institute for Medical Research, University of Ghana, Accra, Ghana, 2Department of Animal Biology and Conservation Science, University of Ghana, Accra, Ghana, 3Department of Pathology, Korle-Bu Teaching Hospital, Accra, Ghana, 4Department of Obstetrics & Gynecology, Korle-Bu Teaching Hospital, Accra, Ghana

10:15 a.m.  423

ABO BLOOD GROUPS DO NOT PREDICT SCHISTOSOME INFECTION PROFILES IN HIGHLY ENDEMIC VILLAGES OF UGANDA

Rachel Francoeur1, Moses Arinaitwe2, Alun Atuhaire2, Poppy Lamberton2, Simon Babayan1, Edridah Muheki2
1University of Glasgow, Glasgow, United Kingdom, 2Vector Control Division, Ministry of Health, Kampala, Uganda

10:30 a.m.  717

A HIGH-THROUGHPUT PHENOTYPIC SCREEN UNRAVELS PLASMODIUM FALCIPARUM GENES ESSENTIAL FOR MALARIA TRANSMISSION (GAMETOCYTE DEVELOPMENT)

Jyotsna Chawla1, Jenna Oberstaller1, Min Zhang1, Chengqi Wang1, Shulin Xu1, Anatoli Naumov1, Andreas Seyfang1, Thomas D. Otto2, Julian C. Rayner2, John Adams1
1Center for Global Health and Infectious Diseases Research, University of South Florida, Tampa, FL, United States, 2Institute of Infection, Immunity and Inflammation, College of Medical, Veterinary and Life Sciences, University of Glasgow, Glasgow, United Kingdom, 3Cambridge Institute for Medical Research, University of Cambridge, Cambridge, United Kingdom

10:45 a.m.  1002

CHARACTERIZATION OF THE CHEMOSENSORY PATHWAY OF FILARIAL WORMS

Nicolas J. Wheeler, Zachary W. Heimark, Paul M. Airs, Alexis Mann, Lyric C. Bartholomay, Mostafa Zamanian
University of Wisconsin-Madison, Madison, WI, United States

11 a.m.  1183

INVESTIGATING IMMUNE SIGNATURES PREDICTIVE OF INCIDENT PLASMODIUM FALCIPARUM INFECTIONS IN MALIAN CHILDREN

Jyoti Bhardwaj1, Leetha C. Senkpeii2, Aditi S. Upadhye1, Aissata Ongoiba1, Joaquin Cardozo1, Aarti Jain1, Sufiatiou Doumo2, Kassoum Kayentao1, Hongyu Gao1, Hans Ackerman1, Xiaoling Xue1, Phillip L. Felgner2, Yunlong Liu2, Boubacar Traore2, Peter D. Crompton1, Tuan M. Tran1
1Division of Infectious Diseases, Department of Medicine, Indiana University School of Medicine, Indianapolis, IN, United States, 2Indiana Bio-Medical Gateway Program, Indiana University School of Medicine, Indianapolis, IN, United States, 3Mail International Center of Excellence in Research, University of Sciences, Technology and Medicine of Bamako, Bamako, Mali, 4Oberlin College, Oberlin, OH, United States, 5Division of Infectious Diseases, Department of Medicine, University of California, Irvine, CA, United States, 6Department of Medical & Molecular Genetics, Indiana University School of Medicine, Indianapolis, IN, United States, 7Laboratory of Malaria and Vector Research, National Institute of Allergy and Infectious Diseases, Rockville, MD, United States, 8Laboratory of Immunoegenetics, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, MD, United States

11:15 a.m.  1612

CD163 GENE EXPRESSION AND SOLUBLE CD163 LEVELS INCREASE IN MALARIA INFECTED PREGNANT WOMEN

Bartholomew N. Onigo1, Ian N. Moore2, Sundar Ganesan1, Kevin W. Bock3, Paul S. Blank4, Almahamoudou Mahamar5, Oumar Attar6, Bacary S. Diarra7, Youssoufou Sibide8, Jillian Neal9, Allassane Dicko9, Patrick E. Duffy10, Michal Fried11
1Department of Biochemistry and Molecular Biology, Egeron University - Kenya, 2Laboratory of Malaria Immunology and Vaccinology, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, 3Comparative Medicine Branch, Infectious Disease Pathogenesis Section, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, 4Research Technologies Branch, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, 5Section on Integrative Biophysics, Division of Basic and Translational Biophysics, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, United States, 6Malaria Research & Training Center, Faculty of Medicine, Pharmacy and Dentistry, University of Sciences Techniques and Technologies of Bamako, Bamako, Mali, 7Laboratory of Malaria Immunology and Vaccinology, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States

Young Investigator Award Session E

Meeting Room 5
Sunday, November 15
10 a.m. - 1 p.m. U.S. Eastern Time Zone

JUDGE
Lyric Bartholomay
University of Wisconsin - Madison, Madison, WI, United States

Gregory A. Deye
NIAID, Rockville, MD, United States

Nicholas Komar
CDC, Fort Collins, CO, United States

Courtney Murdock
University of Georgia, Athens, GA, United States

10 a.m.  87

EVALUATING THE COMPETENCY OF THE INVASIVE MOSQUITO SPECIES, Aedes j. Japonicus, IN TRANSMITTING VARIOUS JAPANESE ENCEPHALITIS VIRUS GENOTYPES

Astri N. Faizah1, Daisuke Kobayashi2, Haruhiko Isawa2, Michael Amoa-Bosompem3, Kozue Miura1, Kazuhiro Hirayama1, Kyoko Sawabe2
1The University of Tokyo, Tokyo, Japan, 2National Institute of Infectious Diseases, Tokyo, Japan, 3Tokyo Medical and Dental University, Tokyo, Japan

10:15 a.m.  988

INDICES OF HUMAN EXPOSURE TO ANOPHELES BITES IN CENTRAL AND SOUTHERN MALAWI

Evelyn A. Olanga1, Nellie C. Kaunde1, Eggrey A. Kambewa1, Judith S. Banda1, Christopher M. Jones2, Lisa Reimer1, Charles Wondji3, Philip McCall4, Hilary Ranson5, Thembisa Mzilahowa1
1Malaria Alert Centre of the College of Medicine, Malawi, Blantyre, Malawi, 2Malawi-Liverpool-Wellcome Trust Clinical Research Programme, Blantyre, Malawi, 3Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 4Centre for Research in Infectious Diseases, Yaounde, Cameroon
10:30 a.m. 1064

SPATIAL DISTRIBUTION AND DISPERSION OF MALARIA VECTORS ACROSS LOCAL MICRO-HABITATS IN THE PERUVIAN AMAZON

Edgar Manrique1, Manuela Herrera-Varela1, Marlon Saavedra1, Samantha Solis1, Josep M. Vinetzi, Gabriel Carrasco-Escobari2, Jan E. Conn4
1Laboratorio ICMR-Amazonia - Universidad Peruana Cayetano Heredia, Lima, Peru, 2Section of Infectious Diseases, Yale University School of Medicine, New Haven, CT, United States, 3Division of infectious diseases, Medicine School, University of California San Diego, San Diego, CA, United States, 4Wadsworth Center, New York State Department of Health; Department of Biomedical Sciences, School of Public Health, State University of New York at Albany, Albany, NY, United States

10:45 a.m. 1406

ASSESSING ANTIVIRAL FUNCTIONS OF A ZIKV-NEUTRALIZING HUMAN IGM AS A CANDIDATE FOR ANTIBODY-BASED PROPHYLAXIS DURING PREGNANCY

Tulika Singh1, Kwan Ki-Hwang1, Rebecca Jones1, Joshua Eudailey1, Helen Webster1, Cesar Lopez2, Premkumar Lakshmanan1, Ken Luo2, Robert J. Edwards1, Camila Giuberti1, Summer Zhang1, Morgan Gladden1, Jesse Mangold1, Joshua Tu1, Maria Dennis1, Reynaldo Dietze2, Aravinda de Silva1, Helen Lazear1, Eng Eong Ooi1, Sallie Permar1, Mattia Bonnignoni1
1Duke University, Durham, NC, United States, 2University of North Carolina – Chapel Hill, Chapel Hill, NC, United States, 3Universidade Federal do Espirito Santo, Vitoria, Brazil, 4Duke University-National University of Singapore Medical School, Singapore, Singapore

11 a.m. 1468

STRUCTURE-BASED ANALYSIS OF ANTIBODY BINDING TO FLAVIVIRUS E-DIMER AS MECHANISM OF POTENT NEUTRALIZATION

Cameron R. Adams1, Huy Tu2, Ellen Young1, Sean Diehl1, Ralph Baric1, Aravinda de Silva1, Premkumar Lakshmanan1
1University of North Carolina, Chapel Hill, NC, United States, 2University of Vermont, Burlington, VT, United States

11:15 a.m. 1550

EFLORNITHINE ANTITRYpanosomal EFFECTS ELICITED BY ITS L-STEROISOMER IN VITRO

Mikael Boberg1, Monica Cafl1, Marcel Kaiser2, Rasmus Jansson-Löfmark1, Pascal Mäser3, Michael Ashton1
1Unit for Pharmacokinetics and Drug Metabolism, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden, 2Parasite Chemotherapy Unit, Department of Medical Parasitology and Infection Biology, Swiss Tropical and Public Health Institute & University of Basel, Basel, Switzerland, 3DMPK, Research and Early Development Cardiovascular, Renal and Metabolism, BioPharmaceuticals R&D, AstraZeneca, Gothenburg, Sweden

11:30 a.m. 1560

INSECTICIDE RESISTANCE ALTERS THE MICROBIOTA OF ANOPHELES CULUZZI FROM AGBOVILLE—A REGION WITH INTENSE PYRETHRUID RESISTANCE IN CÔTE D’IVOIRE

Bethanie Pelloquin1, Mojca Kristan1, Constant Edi2, Anne Meiwald1, Emma Clark1, Claire Jefferies1, Thomas Walker1, Nsa Dada1, Louisa Messenger1
1Faculty of Infectious Tropical Diseases, London School of Hygiene and Tropical Medicine, London, United Kingdom, 2Centre Suisse de Recherche Scientifique en Côte d’Ivoire, Abidjan, Côte D’Ivoire, 3Faculty of Science and Technology, Norwegian University of Life Sciences, Aas, Norway

1:30 p.m. 1169

TEMPORAL GENETIC VARIATION OF PLASMODIUM FALCIPARUM PARASITES FOLLOWING THE IMPLEMENTATION OF ARTEMISININ-BASED THERAPIES IN THE VILLAGE OF FALADJÉ IN MALI

Fatoumata Maiga1, Antoine Dara1, Jeffrey Shaffer1, Jian Li1, Cheickna Cisse1, Wele Mamadou1, Abdoulaye Djimde2
1African Center of Excellence in Bioinformatics in Bamako, University of Sciences, Technologies and Researches of Bamako, Bamako, Mali, 2Tulane University, New Orleans, LA, United States

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Clinical Research Award Session

Meeting Room 6
Sunday, November 15
11 a.m. - 1 p.m. U.S. Eastern Time Zone

CHAIR
Obinna Nnaemeka Nnedu
Ochsner Clinic Foundation, New Orleans, LA, United States

M. Patricia Joyce
Tucker, GA, United States

German Henrostroza
University of Alabama at Birmingham, Birmingham, AL, United States

Kristina Krohn
University of Minnesota, St. Paul, MN, United States

Miguel Cabada
University of Texas Medical Branch, Galveston, TX, United States

Bryan N Tegomoh
University of Yaounde I Medical School, Yaounde, Cameroon

Eva Parker
Vanderbilt University, Nashville, TN, United States

11 a.m. 328

SPECIES IDENTIFICATION OF MEALIE MEAL SPOILAGE ORGANISMS AND PATHOGENIC BACTERIA FROM SELECTED FOOD STORES IN LUSAKA DISTRICT OF ZAMBIA

Dayo Omode Adeyemo, Bernard Hang’ombe, John Muma, Choolwe Munkombwe, Muso Munyeme, Kaunda Ndashe
University of Zambia, Lusaka, Zambia

11:15 a.m. 926

POTENTIAL USE OF RAPID, POINT-OF-CARE DIAGNOSTICS TO REDUCE ANTIBIOTIC PRESCRIPTION RATES AMONG PEDIATRIC PATIENTS PRESENTING WITH RESPIRATORY ILLNESS IN SOUTHWESTERN UGANDA

Emily J. Ciccone1, Lydia Kabugho2, Emmanuel Baguma3, Rabbison Muhindo2, Jonathan J. Juliano1, Edgar Mulogo2, Ross M. Boyce1
1University of North Carolina, Chapel Hill, NC, United States, 2Mbarara University of Science and Technology, Mbarara, Uganda

11:30 a.m. 848

DELAYS IN HEPATITIS C FIBROSIS STAGING ON TREATMENT RETENTION

Austin T. Jones1, Lisa Moreno-Walton2, Torrence Tran1, Christopher Briones1, Rachael Stevens1, Katharine Isaacscon1, Alexander Jafari1, Mandy Majidian1, Patricia Kissinger1
1Tulane University, New Orleans, LA, United States, 2Louisiana State University Health Sciences Center, New Orleans, LA, United States
Noon

SPUTUM MICROBIAL PROFILE AND CLINICAL FEATURES OF PATIENTS WITH GENEXPERT AND AFB NEGATIVE IN SAN LAZARO HOSPITAL MANILA-PHILIPPINES

Crespoo Mbe-cho Ndiabamoh
TMGH, Nagasaki, Japan

12:15 p.m.

LITTLE DROPS MAKE AN OCEAN: HOW COMMUNITY-BASED HEALTH INSURANCE DOES AN OCEAN OF GOOD AT THE BWINDI COMMUNITY HOSPITAL, UGANDA

Benjamin Norton, Scott Kellermann, Michael C. Borecky, Thomas E. Borecky, Birungi Mutahunga, Nahabwe Haven, Latha Rajan
1Tulane University School of Public Health and Tropical Medicine, New Orleans, LA, United States, 2Fulbright Scholarship Program, Kanungu, Uganda, 3Loma Linda University School of Medicine, Loma Linda, CA, United States, 4Church of Uganda Bwindi Community Hospital, Kinkizi Diocese, Kanungu, Uganda

12:30 p.m.

IVERCURE - A DOSE-ASCENDING, RANDOMIZED, PLACEBO-CONTROLLED, DOUBLE-BLIND CLINICAL TRIAL ON THE EFFICACY AND SAFETY OF IVERMECTIN FOR THE TREATMENT OF PLASMODIUM FALCIPARUM INFECTIONS IN ASYMPTOMATIC GABONESE ADULTS: PRELIMINARY RESULTS

Dorothea Sträßner, Rella Zoleko Manego, Jana Held, Benjamin Mordmüller, Laura C. Kalkman, Ayola A. Adegnika, Michael Ramharter, Ghyslain Mombo-Ngoma
1Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany, 2Centre de Recherches Médicales de Lambaréné, Lambaréné, Gabon, 3Institute of Tropical Medicine, University of Tübingen, Tübingen, Germany

Press Room

Sunday, November 15

The ASTMH media team is available for assistance at the following:
• Preeti Singh psingh@burness.com, tel: +1 703-862-2515
• Bridget DeSimone, bdesimone@burness.com, tel: +1 202-468-0766
• Anna Chen, achen@burness.com, tel: +1 215-262-7670

Review research highlights and more: https://astmhpressroom.wordpress.com/annual-meeting-2020/

Plenary Session 1

Opening Plenary Session and Awards Program

Grand Ballroom
Sunday, November 15
3 p.m. - 5 p.m. U.S. Eastern Time Zone

CHAIR
Joel G. Breman
Fogarty International Center, Bethesda, MD, United States

3 p.m.

WELCOMING REMARKS
Daniel G. Bausch
UK Public Health Rapid Support Team, London, United Kingdom

3:10 p.m.

KEYNOTE ADDRESS

Christiana Figueres
Global Optimism
Costa Rica

Christiana Figueres helped deliver the historic Paris Agreement on climate change during her tenure as Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC). During her tenure at the UNFCCC from 2010 to 2016, Ms. Figueres brought together national and sub-national governments, corporations and activists, financial institutions and NGOs to jointly deliver the historic Paris Agreement on climate change. Under the terms of the agreement, 195 sovereign nations agreed on a collaborative path forward to limit future global warming to well below 2°C, and strive for 1.5°C, in order to protect the most vulnerable. For this achievement, Ms. Figueres has been credited with forging a new brand of collaborative diplomacy and received multiple awards. Since then she has continued to accelerate the global response to climate change. Today, she is the co-founder of Global Optimism, co-host of the podcast “Outrage & Optimism” and is the co-author of the recently published book, The Future We Choose: Surviving the Climate Crisis. Ms. Figueres lives in Costa Rica, sits on multiple executive and advisory boards, and is a frequent public speaker and media commentator. She is a graduate of Swarthmore College in Pennsylvania and the London School of Economics.

3:30 p.m.

AWARDS PROGRAM

Presiding Officer. Joel G. Breman
Fogarty International Center, Bethesda, MD, United States

AWARD FOR OUTSTANDING SERVICE TO THE GLOBAL PUBLIC AS A TRUSTED VOICE IN SCIENCE

Anthony Fauci
National Institute of Allergy and Infectious Diseases, United States

Recognition of ASTMH/BMGF Annual Meeting Travel Awards

Recognition of Presidents’ Challenge Travel Awards

Recognition of Burroughs Wellcome Fund - ASTMH Postdoctoral Fellowship in Tropical Infectious Diseases

Recognition of 2020 Fellows of ASTMH (FASTMH)

Recognition of ASTMH Distinguished International Fellows

Nadira Karunaweera
University of Colombo, Faculty of Medicine, Sri Lanka

Suma Krishnasastry
Government T.D. Medical College, India

Karin Leder
Royal Melbourne Hospital, Australia

Peter Leggat
WHO Collaborating Centre VBD NTD, Australia

Ric Price
Menzies School of Health Research, Global and Tropical Health, Australia
Monday, November 16

Press Room

Monday, November 16

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• Bridget DeSimone, bdesimone@burness.com, tel: +1 202-468-0766
• Anna Chen, achen@burness.com, tel: +1 215-262-7670

ASTMH Information Desk

Lobby

Monday, November 16
8 a.m. - 6:45 p.m. U.S. Eastern Time Zone

Poster Session A Viewing

Poster Hall

Monday, November 16
Midnight - 1:30 p.m. U.S. Eastern Time Zone

Exhibit Hall

Visit the Exhibit Hall to view the schedule for each exhibit booth and connect with our exhibitors and learn about their products and services.

Sponsor Hall

Visit the Sponsor Hall to connect with our sponsors and learn about their work.

TropMed Central

Visit TropMed Central to connect with colleagues and attendees.

Symposium 2

Confronting the Climate Change Crisis

Meeting Room 2

Monday, November 16
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

Climate change is the most important public health issue of our lifetimes and while much progress has been made in gaining awareness, a coordinated global effort still has not been effective to respond to its impact. Therefore, this symposium will present the latest assessments of the impact of climate change in different areas as well as some of the populations at risk and the actions launched globally to address its effects. The Lancet Countdown annual report is a critical assessment prepared by a panel of independent scientists, while the impacts of climate change in indigenous populations across the globe will highlight the risks faced by some of the most vulnerable populations in the planet, particularly in tropical regions. Highly complementary initiatives
from the both the north and south are highlighted by speakers from Johns Hopkins and Cayetano Universities, illustrating how the whole tropical medicine and global health community can contribute in a meaningful way to addressing the climate change crisis. This symposium will emphasize contributions from low and middle income country institutions and scientists, and what they can do for their own regions.

**CHAIR**
Andres G. Lescano
Universidad Peruana Cayetano Heredia, Lima, Peru
Sherilee L. Harper
University of Alberta, School of Public Health, Alberta, Canada

9 a.m.
**THE LANCET COUNTDOWN ON HEALTH AND CLIMATE CHANGE ANNUAL REPORT**
Marina Romanello
The Lancet Countdown: Tracking Progress on Health and Climate Change, London, United Kingdom

9:20 a.m.
**CLIMATE CHANGE IMPACTS ON INDIGENOUS PEOPLES HEALTH ACROSS THE GLOBE**
Sherilee L. Harper
University of Alberta, Alberta, Canada

9:40 a.m.
**CLIMA, THE LATIN AMERICAN CENTER OF EXCELLENCE FOR CLIMATE CHANGE AND HEALTH**
Stella M. Hartinger
Universidad Peruana Cayetano Heredia, Lima, Peru

10 a.m.
**MOBILIZING AND ORGANIZING AN INSTITUTION-WIDE RESPONSE TO CLIMATE CHANGE IN US UNIVERSITIES**
Peter John Winch
Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States

### Symposium 3

**Can We Ignore “Asymptomatic” Low-density Malaria Any More?**

**Meeting Room 3**
Monday, November 16
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

Recent developments in ultra-sensitive diagnostics coupled with the renewed push for malaria elimination has forced the malaria community to consider closely the extent and implications of low level infections which contribute to the malaria reservoir. Major questions arise as to whether this so-called asymptomatic population infected with low level parasite burden are in fact clinically and developmentally affected by harboring parasites. This is especially true for malaria in pregnancy where low level infections may lead to adverse outcomes for the newborn. While intermittent preventive regimens address this population to some degree, empiric approaches are fraught with issues such as drug resistance, toxicity, and whether in fact the protective effect is related to the anti-malarial activity at all. Recent data has also emerged that the asymptomatic malaria reservoir may in fact be a major contributor to ongoing malaria transmission. The symposium seeks to tackle these issues head on using a cross-cutting approach, delving into knowledge of the true burden of asymptomatic malaria based on modeling, recent developments in diagnostics, clinical medicine, and vector transmission.

**CHAIR**
Dylan R. Pillai
University of Calgary, Calgary, AB, Canada
Lucy Okell
Imperial College London, London, United Kingdom

9 a.m.
**THE GLOBAL EPIDEMIOLOGY OF LOW-DENSITY MALARIA**
Lucy Okell
Imperial College London, London, United Kingdom

9:25 a.m.
**THE CHANGING LANDSCAPE OF MALARIA DIAGNOSTICS**
Dylan R. Pillai
Univ of Calgary, Calgary, AB, Canada

9:50 a.m.
**THE CLINICAL EFFECTS OF LOW-DENSITY MALARIA**
Gilles Cottrell
Institute of Research for Sustainable Development (IRD), Paris, France

10:15 a.m.
**ASYMPTOMATIC MALARIA: PARASITE DENSITY DISTRIBUTIONS, GAMETOCYTE DENSITIES, AND TRANSMISSION POTENTIAL**
Fitsum G. Tadesse
Armauer Hansen Research Institute, Addis Ababa, Ethiopia

### Symposium 4

**Clinical Group Symposium I (American Committee on Clinical Tropical Medicine and Travelers’ Health – ACCTMTH): Marcolongo Lecture and Panel Discussion**

**Meeting Room 4**
Monday, November 16
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

**Supported with funding from the International Association for Medical Assistance to Travellers (IAMAT)**

This session features the Vincenzo Marcolongo Lecture, delivered by our distinguished speaker, Dr. Soumya Swaminathan from the WHO. The Marcolongo Lecture is followed by an expert panel discussion on the topic of “TB control in the setting of COVID-19”. The expert panel session will be interactive and will feature audience Q&A.

The highlight of this session is the Marcolongo Lecture, which honors Dr. Vincenzo Marcolongo (1922–1988), founder of IAMAT - International Association for Medical Assistance to Travelers. To quote Dr. Vincenzo Marcolongo, “Distinguished physicians and respected medical institutions, with a sense of solidarity which makes them like one family, are now working in harmony to assist the traveler who may require medical assistance on his journey...The need for peace and understanding between the peoples of the world has never been as great as
now. Peace can come only with understanding, and travel is an important means of acquiring it. It is, however, only through the full consciousness of 'The essence of the human' that we shall be able to open the difficult paths of international relationships. As a traveler you have an excellent opportunity to serve your country and the world in creating ties of friendship. To you, therefore, we bring this message, a message sparked with beauty all its own: ‘The search for the human’.

CHAIR
Latha Rajan
Tulane University, New Orleans, LA, United States

9 a.m.
INTRODUCTION OF MARCOLONGO LECTURE
Latha Rajan
Tulane University, New Orleans, LA, 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. Of particular interest to him was malaria and preventing the unnecessary morbidity and mortality it causes among travelers. 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 that awards scholarships to doctors and nurses from countries where travel medicine is an emerging practice. Through IAMAT, 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.

9:05 a.m.
VINCENZO MARCOLONGO MEMORIAL LECTURE:
TUBERCULOSIS: UPDATE AND CURRENT CHALLENGES
Soumya Swaminathan, MBBS, MD
Chief Scientist
World Health Organization
Geneva Switzerland

Dr. Soumya Swaminathan was appointed WHO’s first Chief Scientist in March 2019. A pediatrician from India and a globally recognized researcher on tuberculosis and HIV, she brings with her 30 years of experience in clinical care and research and has worked throughout her career to translate research into impactful programs. Dr. Swaminathan was Secretary to the Government of India for Health Research and Director General of the Indian Council of Medical Research from 2015 to 2017. In that position, she focused on bringing science and evidence into health policy making, building research capacity in Indian medical schools and forging south-south partnerships in health sciences. From 2009 to 2011, she also served as Coordinator of the UNICEF/UNDP/World Bank/WHO Special Program for Research and Training in Tropical Diseases in Geneva.

She received her academic training in India, the United Kingdom, and the United States of America, and has published more than 350 peer-reviewed publications and book chapters. She is an elected Foreign Fellow of the US National Academy of Medicine and a Fellow of all three science academies in India. The Science division’s role is to ensure that WHO stays ahead of the curve and leverages advances in science and technology for public health and clinical care, as well as ensuring that the norms, standards and guidelines produced by WHO are scientifically excellent, relevant and timely. Her vision is to ensure that WHO is at the cutting edge of science and is able to translate new knowledge into meaningful impact on population health worldwide.

9:50 a.m.
PANEL DISCUSSION: TB CONTROL IN THE SETTING OF COVID-19
MODERATOR:
Latha Rajan
Tulane University, New Orleans, LA, United States

PANELISTS:
Ken Castro
USAID and Emory University, Atlanta, GA, United States
Cheri Vincent
U.S. Agency for International Development, Washington, DC, United States
Zolelwa Sifumba
TB Proof, Department of Health, Harding, KwaZulu Natal, South Africa
Sundari Mase
Sonoma County Department of Health Services, Santa Rosa, CA, United States

10:35 a.m.
SESSION WRAP-UP
2

TRACKING THE EMERGENCE OF TICKS AND TICK-BORNE DISEASES IN NEW YORK THROUGH COMMUNITY-ENGAGED TICK SURVEILLANCE

Charles E. Hart, Erin Reynolds, Jahnnavi Reddy-Bhaskar, Meghan Hermance, Allen Esterly, Matthew Mahoney, Ana Martinez, Martin Earl
Upstate Medical University, Syracuse, NY, United States

3

PASSIVE TICK SURVEILLANCE, ENVIRONMENTAL FACTORS AND NEIGHBORING EFFECTS AS PREDICTORS OF LYME DISEASE RISK AT FINE SPATIAL SCALES

Maria Pilar Fernandez1, Donal Bisanzio2, Richard Reithinger1, Jennifer White1, Melissa A. Prusinski1, Bryon P. Backenson1, Maria A. Diuk-Wasser1
1Columbia University, New York, NY, United States, 2RTI International, Washington DC, DC, United States, 3New York State Department of Health, Albany, NY, United States

4

EFFECT OF INCREASED TEMPERATURE ON HOST SELECTION BY THE BROWN DOG TICK

Laura H. Backus, Andrés M. López-Pérez, Janet E. Foley
University of California Davis, Davis, CA, United States

5

TICK SALIVARY FACTORS EXACERBATE THE CLINICAL OUTCOME OF HEARTLAND VIRUS DISEASE

Erin Reynolds1, Jacob Woolbridge1, Heather Stevenson1, Saravanan Thangamani1
1SUNY Upstate Medical University, Syracuse, NY, United States, 2Columbia University, New York, NY, United States, 3University of Texas Medical Branch, Galveston, TX, United States

6

REPTILE HOSTS OF IXODES SCAPULARIS: WHAT ROLE DO REPTILES PLAY IN THE EPIDEMIOLOGY OF LYME DISEASE IN THE SOUTHEASTERN US?

Carrie De Jesus, Samantha Wisely, Coleman Sheehy, David Blackburn
University of Florida, Gainesville, FL, United States

7

ROLE OF NON-IXODES Ticks TRANSMITTING BABESIA SPP. IN DOGS IN THE US

Kurayi Mahachi, Breanna Scorza, Julia Poje, Eric Kontowicz, Tyler Baccam, Christine Petersen
University of Iowa, Iowa City, IA, United States

8

IMPACT OF GUT MICROBIOME ORGANISM PARACOCUS AMINOVORANS ON VIBRIO CHOLERAE VIRULENCE

Denise Chac1, Kelsey Barasso2, Meti Debela1, Stephen Calderwood3, Edward Ryan1, Regina LaRocque1, Tauqif Bhiyani1, Jason Harris1, Firdausi Qadri1, Wai-Leung Ng2, Ana Weil1
1University of Washington, Seattle, WA, United States, 2Tufts University, Boston, MA, United States, 3International Center for Diarrheal Diseases Research, Bangladesh, Dhaka, Bangladesh

9

SINGLE-CELL T CELL RECEPTOR ANALYSIS REVEALS CLONALITY OF MOUCOSAL-ASSOCIATED INVARIANT T (MAIT) CELLS DURING VIBRIO CHOLERAE INFECTION

Taliman Afroz1, Hasan Al Banna2, Jahidul Islam3, Md. Imran Hossain Bhiyani2, Joana Pop1, Owen Jensen1, Ashraful I. Khan1, Kaisarsar Mannoor2, Jason B. Harris1, Stephen B. Calderwood3, Edward T. Ryan1, Firdausi Qadri1, Tauqif R. Bhiyani1, Daniel T. Leung1
1Division of Infectious Diseases, University of Utah, Salt Lake City, UT, United States, 2icddr,b, Dhaka, Bangladesh, 3Institute of Developing Science and Health Initiatives, Dhaka, Bangladesh, 4Massachusetts General Hospital, Boston, MA, United States

10

INVESTIGATING CHOLERA TRANSMISSION DYNAMICS USING WHOLE GENOME SEQUENCING OF WATER AND CLINICAL VIBRIO CHOLERAE ISOLATES IN DHAKA, BANGLADESH (CHOB17 TRIAL)

Christine Marie George1, Matthew Dorman2, K.M. Saif-ur-Rahman3, Shirajum Monira1, Shirajum Monira1, Md. Sazzadul Islam Bhiyani1, Khaled Hasan1, Fatema-Tuz Johura1, Toslim T. Mahmud1, Shan Li2, Jessica Brubaker1, Jamie Perin3, Zillur Rahman1, Munshi Mustafiz2, David A. Sack1, Munirul Alam4, O Colin Stine4, Nicholas Thomson5, Daryl Domm6
1Johns Hopkins University, Baltimore, MD, United States, 2Wellcome Sanger Institute, Hinxton, United Kingdom, 3International Center for Diarrheal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 4University of Maryland School of Medicine, Baltimore, MD, United States, 5Wellcome Sanger Institute and London School of Hygiene and Tropical Medicine, Keppel St, London, England, Hinxton, United Kingdom, 6University of New Mexico School of Medicine and Wellcome Sanger Institute, Hinxton, United Kingdom, 7Albuquerque, NM, United States

11

INTESTINAL & SYSTEMIC INFLAMMATION INDUCED BY SYMPTOMATIC & ASYMPOTOMATIC ENTEROTOXIGENIC E. COLI INFECTION IN AN EXPERIMENTAL CHALLENGE MODEL IN HUMANS

Subhra Chakraborty1, Jessica Brubaker1, A Louis Bourgeois2, David Sack1
1Johns Hopkins University, Baltimore, MD, United States, 2PATH, Washington, DC, United States

12

PROTECTION OF MICE AGAINST ETEC-INDUCED DIARRHEA AND WEIGHT LOSS BY IMMUNIZATION WITH BI-VALENT RECOMBINANT TY21A TYPHOID ETEC VACCINE

Tint T. Wai1, David T. Bolick2, Minglin Li1, Lixin Gao1, David A. Sack2, Richard L. Guerrant2, Stephen L. Hoffman3, B. Kim Lee Sim4
1Protein Potential, Rockville, MD, United States, 2University of Virginia, Charlottesville, VA, United States, 3Sanaria, Rockville, MD, United States, 4University of Illinois, Urbana, IL, United States, 5Johns Hopkins University, Baltimore, MD, United States

2000 PROGRAM BOOK
Onchocerciasis Elimination Mapping in Four Countries in Africa: Ensuring that No Village is Left Behind

Meeting Room 8
Monday, November 16
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

Onchocerciasis, also known as river blindness, is a parasitic disease caused by the filarial worm Onchocerca Volvulus.
transmitted by infected female blackflies of the genus Simulium. It is a neglected tropical disease targeted for global elimination. Until 2012, global efforts and policy focused on control, not elimination. Mapping surveys done prior to 2012 were focused on definition of the most intense transmission zones, and control of symptoms in these locations through mass treatment. Areas with low transmission intensity were left untreated, under the assumption that the disease will be controlled everywhere if transmission is interrupted in high and moderate settings. The global shift from control of symptoms to elimination of transmission adds an entirely new dimension to previous mapping efforts; the need for identification of all active onchocerciasis transmission zones – the geographic areas where onchocerciasis is transmitted and maintained locally. Onchocerciasis elimination mapping (OEM) is the stepwise process for identifying the location of any remaining ivermectin-naïve areas where onchocerciasis transmission is ongoing and where treatment is therefore required. The World Health Organization provides some high level guidance through reports of their Onchocerciasis Technical Advisory Committee, and several countries have successfully completed OEM within their territories. Despite this, challenges in conducting OEM are several, including: i) difficulties in identifying blackfly breeding sites in medium – low transmission settings, ii) lack of experts consensus on methods of determination of first -line and second -line villages in medium – low transmission settings, iii) the lack of gold -standard laboratory and/or rapid diagnostic tools, iv) difficulties in sourcing and importing diagnostics and controls into endemic countries to complete OEM. In the face of such challenges there is a danger that OEM will not receive the priority it deserves, hampering long-term elimination efforts. This symposium will highlight OEM success stories from four diverse settings, drawing on both common approaches in each country, and unique adaptations that allowed each country to tailor their methods for success. In doing so, the onchocerciasis elimination agenda is driven forward, through illustrating clear and implementable OEM strategies that have proven successful in a range of different settings, and further, providing a toolkit for overcoming existing perceived barriers to the successful role out of OEM more widely. This symposium aims to enable countries to fast-track onchocerciasis surveillance and control; the tools and strategies outlined here are applicable to other onchocerciasis survey types, and other neglected tropical diseases.

CHAIR
Daniel Boakye
End Fund, Accra, Ghana
Louise C. Hamill
Sightsavers, Hayward’s Heath, United Kingdom

9 a.m.
CHALLENGES IN ASSESSING THE NEEDS FOR MAPPING OF ONCHOCERCIASIS IN NIGER
Salissou Adamou
Ministry of Health, Niamey, Niger

9:20 a.m.
ONCHOCERCIASIS ELIMINATION MAPPING IN NIGERIA - A TALE OF TWO DIAGNOSTICS.
Michael Igbe
Federal Ministry of Health Nigeria, Abuja, Nigeria

9:45 a.m.
ONCHOCERCIASIS ELIMINATION MAPPING WHERE THERE IS NO ONCHOCERCIASIS PROGRAM
Rassul Nala
Instituto Nacional de Saúde de Moçambique, Vila de Marracuene, Mozambique

10 a.m.
ONCHOCERCIASIS ELIMINATION MAPPING WHERE THERE IS NO ONCHOCERCIASIS PROGRAM
Marilia Massangaie
Instituto Nacional de Saúde de Moçambique, Vila de Marracuene, Mozambique

Symposium 9

Forty-Year Anniversary of Smallpox Eradication: Great News, But What Next for Poxviruses?

Meeting Room 9
Monday, November 16
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

2020 marks the 40-year anniversary of the eradication of smallpox, one of the most significant public health achievements in history, saving many thousands of lives and sparing countless more from the suffering of this terrible disease. The success of the campaign spurred ambition of eradication of other diseases, and the now classic approach of ring vaccination has become a routine component of outbreak response. However, variola virus, the causative agent of smallpox, is not the last of the Poxviridae family. Monkeypox and other zoonotic pox viruses continue to pose threats. Furthermore, while there are successes to be celebrated, the world and its pathogens continue to evolve, bringing new infectious disease challenges, such as COVID-19 and Ebola virus. This symposium will revisit the success of the smallpox eradication effort, discuss the other pox viruses that remain threats to human and animal health, and explore how past lessons can be adapted to meet new challenges.

CHAIR
David Heymann
London School of Hygiene & Tropical Medicine, London, United Kingdom
Joel G. Breman
Fogarty International Center, Bethesda, MD, United States

9 a.m.
SMALLPOX ERADICATION: LESSONS FROM SUCCESS
Bill Foege
Emory University, Atlanta, GA, United States

9:15 a.m.
The Origin of the Smallpox Vaccine: Trying to Set the Record Straight
Jose Esparza
University of Maryland School of Medicine, Baltimore, ME, United States
9:30 a.m.
BENEFITS AND RISKS OF RETAINING VARIOLA VIRUS STOCKS: WHAT HAVE WE ACHIEVED AND WHAT IS NEXT?
Rosamund Lewis
World Health Organization, Geneva, Switzerland

9:45 a.m.
MONKEYPOX SURVEILLANCE AND CONTROL IN CENTRAL AFRICA
Anne W. Rimoine
UMASS Los Angeles, CA, United States

10 a.m.
REEMERGENCE OF MONKEYPOX IN NIGERIA
Chikwe Ihekweazu
Nigeria Centre for Disease Control, Abuja, Nigeria

Scientific Session 10
Intestinal and Tissue Helminths: Soil-Transmitted Helminths - Treatment and Diagnosis

Meeting Room 10
Monday, November 16
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

CHAIR
Sanjaya Dhakal
The Task Force for Global Health, Atlanta, GA, United States
Raffi Van Aroian
UMASS Medical School, Worcester, MA, United States

16
RECOMBINANT PARAPROBIOTICS: A NEW PARADIGM FOR TREATING GASTROINTESTINAL NEMATODES OF HUMANS
Raffi Van Aroian1, Hanchen Li2, Ambily Abraham3, David Gazzola4, Yan Hu5, Kelly Flanagan6, Emesto Soto-Villalatoro7, Florentia Rus8, Zeynep Mirza9, Gary Ostroff10
1UMASS Medical School, Worcester, MA, United States, 2Worcester State University, Worcester, MA, United States

17
MOLECULAR MODELING TO ANALYZE DIFFERENCES IN ALBENDAZOLE BINDING SITES OF THE BETA TUBULIN OF HUMAN SOIL TRANSMITTED HELMINTHS
Brian Medernach1, Yash Gupta2, Steven Goicoechea2, Ravi Durvasula2, Prakash Kempaiah2
1Loyola University Medical Center, Chicago, IL, United States, 2Loyola University Chicago Stritch school of Medicine, Maywood, IL, United States

18
EFFICACI S AND SAFETY OF ALBENDAZOLE AND HIGH-DOSE IVERMECTIN TREATMENT COMBINATION IN CHILDREN WITH TRICHURIS TRICHIURA INFECTION
Gabriela Matamoros1, Ana Sanchez2, Samary Rodriguez2, Andres Escalada3, Ramiro Aveldaño3, Maria Mercedes Rueda3, Carol Rodriguez4, Maritza Canales5, Marisa Juarez5, Pamela Cajal5, Alejandro Krolewiczi5
1Instituto de investigaciones en Microbiologia, Universidad Nacional Autónoma de Honduras, Tegucigalpa, Honduras, 2Brock University, St. Catharines, ON, Canada, 3Universidad Nacional Autonoma de Honduras, Tegucigalpa, Honduras, 4Instituto de Investigaciones de Enfermedades Tropicales, Universidad Nacional de Salta, Salta, Argentina

19
COMPARISON OF RESULTS FROM SCHOOL- AND COMMUNITY-BASED SURVEYS ASSESSING THE IMPACT OF PREVENTIVE CHEMOTHERAPY FOR SOIL-TRANSMITTED HELMINTHIASIS CONTROL
Sanjaya Dhakal1, Md. Jahirul Karim2, Abdullah Kawser3, Cara Tupps4, Rubina Imtiaz2
1The Task Force for Global Health, Decatur, GA, United States, 2Elimination of Lymphatic Filariasis & STH Control Program, Dhaka, Bangladesh, 3Children Without Worms, Decatur, GA, United States

20
ACANR3990, GENOME MINING LEADS TO AN IMPROVED RAT LUNGWORM PCR
William Sears1, Yvonne Qvarnstrom2, Eric Dahlstrom3, Jan Slapeta4, David Modry5, Vojto Balaz6, Lisa Kaluna7, Kirsten Snook8, Susan Jarvi9, Thomas B. Nutman10
1NIAD, Bethesda, MD, United States, 2CDC, Atlanta, GA, United States, 3CDC, Atlanta, GA, United States, 4RML Genomics, Hamilton, MT, United States, 5The University of Sydney, Sydney, Australia, 6University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic, 7Daniel K. Inouye College of Pharmacy, University of Hawai’i at Hilo, Hilo, HI, United States, 8Daniel K. Inouye College of Pharmacy, University of Hawai’i at Hilo, Hilo, HI, United States

Scientific Session 11
Protozoa

Meeting Room 12
Monday, November 16
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

CHAIR
M. Jahangir Hossain
Medical Research Council Unit The Gambia at the London School of Hygiene & Tropical Medicine, Banjul, Gambia
Jaya Shrivastava
Public Health England, London, United Kingdom

22
PREVALENCE, SEASONAL TREND, AND CLINICAL SEVERITY OF CRYPTOSPORIDIUM-ASSOCIATED DIARRHEAL DISEASE IN UNDER FIVE CHILDREN IN THREE SUB-SAHARAN AFRICAN COUNTRIES: RESULTS FROM THE VACCINE IMPACT ON DIARRHEA IN AFRICA (VIDA) STUDY, 2015-2018
M. Jahangir Hossain1, Helen Powell2, Leslie P. Jamka2, Samba Sow3, Richard Omore4, Jennifer Verani5, Joquina Chiquita M. Jones6, Syed M.A. Zaman7, Henry Badji8, Stephen R. C. Howie9, Golam Sarwar10, Irene Kasumba11, Uma Omwuchekwa12, Sanogo Doh13, Alex Ondeng14, Sharon M. Tennant15, Dilruba Nasrin16, Anna Roos17, Jie Liu18, James Platts-Mills19, Martin Antonio20, Eric Houpt21, Karen L. Kotloff22
1Medical Research Council Unit The Gambia at the London School of Hygiene & Tropical Medicine, Banjul, Gambia, 2Center for Vaccine Development and Global Health, University of Maryland School of Medicine, Baltimore, MD, United States, 3Center for Vaccine Development-Mali, Bamako, Mali, 4Kenya Medical Research Institute, Center for Global Health Research (KEMRI-CGHR), Kisumu, Kenya, 5Division of Global Health Protection, US Centers for Disease Control and Prevention, Nairobi, Kenya, 6Division of Infectious Diseases and International Health, Department of Medicine, University of Virginia, Charlottesville, VA, United States

23
EPIDEMIOLOGY OF INFECTION WITH BLASTOCYSTIS HOMINIS AND ASSOCIATED OUTCOMES IN SLUM- DWELLING MALNOURISHED ADULTS IN BANGLADESH
Shah Mohammad Fahim1, Md. Amran Gazi1, Md. Ashraful Alam1, Subhasish Das1, Mustafa Mahfuze2, M Masudur Rahman3, Rashidul Haque4, Shafiqul Alam Sarker1, Tahmeed Ahmed1
1icddr,b, Dhaka, Bangladesh, 2Sheikh Russel National Gastro Liver Institute and Hospital, Dhaka, Bangladesh
Symposium 12

American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP) Symposium: Friend or Foe: The Many Faces of Myeloid Cells in Parasitic Infections

Meeting Room 13
Monday, November 16
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

Supported with Funding from the Burroughs Wellcome Fund

During Parasitic infections myeloid cells can serve both pathogenic, as parasite reservoirs, and protective, modulating host immunopathology, roles. This symposium seeks to highlight new ground-breaking research into understanding how the cross-talk between myeloid cells and parasites regulates the host’s immune response and immunopathology during the course of infection. Representative of the range of parasitology covered by ACMCIP, the symposium will cover a range of significant species known to manipulate myeloid cell function, including Leishmania which uses monocytic cells as a parasite reservoir, Toxoplasma gondii which manipulates innate immune cells to resist host clearance, Plasmodium falciparum which can cause cerebral malaria in vulnerable children, and Schistosoma mansoni which manipulates myeloid effector function and metabolism. The symposium will demonstrate the multifunctionality of myeloid cells during chronic parasite infection, focusing on regulation of the parasite niche vs. immunopathology.

CHAIR
Keke C. Fairfax
University of Utah School of Medicine, Salt Lake City, UT, United States
Michael Ferdig
University of Notre Dame, Notre Dame, IN, United States

25

NANOPARTICLE-ASSISTED DETECTION OF OPPORTUNISTIC T. GONDII INFECTIONS IN PLHIV THROUGH NOVEL MASS SPECTROMETRY BASED ANTIGEN DISCOVERY

Hannah E. Steinberg1, Andrea Diestra2, Cusi Ferradas2, Maritza Calderon2, Catherine Apaza2, Manly Donayre Urquizo2, Daniela E. Kimvan2, Lilia Cabrera2, Freddy Tinajeros2, Viviana Finedo Cancino2, Lastenia Ruiz2, Cesar Ramal3, Paul Russo3, Nancy Freitag4, Natalie M. Bowman5, Lance A. Bowman5, Alessandra Luchini5, Robert H. Gilman6
1University of Illinois, Chicago, Chicago, IL, United States, 2Universidad Peruana Cayetano Heredia, Lima, Peru, 3Universidad Peruana Cayetano, Lima, Peru, 4Universidad Nacional de la Amazonía Peruana, Iquitos, Peru, 5George Mason University, Fairfax, VA, United States, 6University of North Carolina, Chapel Hill, NC, United States

9 a.m. TH1/TH2 CROSS-REGULATION CONTROLS EARLY LEISHMANIA INFECTION IN THE SKIN BY MODULATING THE SIZE OF THE PERMISSIVE MONOCYTIC HOST CELL RESERVOIR
Nathan Peters
University of Calgary, Calgary, AB, Canada

9:20 a.m.

INNATE IMMUNITY IN THE VASCULATURE AND CNS DURING TOXOPLASMA GONDII INFECTION
Melissa Loeden
University of California Irvine, Irvine, CA, United States

9:40 a.m.

EPH RECEPTORS MODULATE IMMUNITY TO MALARIA
Tracey Lamb
University of Utah School of Medicine, Salt Lake City, UT, United States

10 a.m.

SEX-DEPENDENT MODULATION OF MACROPHAGE METABOLISM DURING SCHISTOSOMA MANSONI INFECTION
Keke C. Fairfax
University of Utah School of Medicine, Salt Lake City, UT, United States

10:20 a.m.

ACMCIP ANNUAL BUSINESS MEETING
Michael Ferdig
University of Notre Dame, Notre Dame, IN, United States

Symposium 13

ASTMH Committee on Global Health (ACGH) Symposium I: Pathogen Metagenomics in the Developing World: Four Stories in Four Countries

Meeting Room 14
Monday, November 16
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

Metagenomics is the process of sequencing all genetic material in a biological sample to include commensals, environmental contaminants as well as disease-causing pathogens. Pathogen metagenomics in the realm of public health and outbreak response has grown in popularity since the term “precision public health” was coined in 2015. Despite major advances in next-generation sequencing techniques, significant decreases in the costs associated with sequencing, and availability of more rugged sequencers, necessary skills to prepare sequencing libraries and sufficient bioinformatics capabilities for timely analysis are still a challenge in the developing world. However, implementation of next-generation sequencing in field settings proved crucial to the containment of the recent Ebola virus epidemic in West Africa as well as to the development of countermeasures. In 2020, sequencing of the 2019-nCov (named SARS-CoV-2 by ICTV on Feb 12, 2020) outbreak is resulting in an unprecedented amount of sequence data sharing that is guiding outbreak response to understand transmission of a previously unknown virus. This symposium highlights four separate LMIC settings where metagenomic next generation sequencing has been implemented and applied for a variety of public health aims, while providing a foundation for outbreak readiness strategies. Speakers will review their proposed research objectives, highlight barriers and
subsequent solutions for implementation, and describe results via open-access, cloud-based metagenomics bioinformatics pipelines.

**CHAIR**
Jessica Manning
National Institute of Allergy and Infectious Diseases

**Pathogen Metagenomics: A Versatile and Efficient Tool During COVID19 Outbreak in Cambo**
Jessica Manning
National Institute of Allergy and Infectious Diseases

**9:20 a.m.**
**Unbiased Metagenomics Illustrates Diverse Etiologies of Pediatric Meningitis in Bangladesh**
Senjuti Saha
Child Health Research Foundation, Dhaka, Bangladesh

**9:40 a.m.**
**Discovering Causes of Childhood Deaths and Encephalopathy**
James Berkley
KEMRI/Wellcome Trust Research Programme, Centre for Geographic Medicine Research – Coast, Kilifi, Kenya

**10 a.m.**
**Wild Fruit Bat Surveillance and the Landscape of Emerging Zoonoses**
Cara Brook
Institut Pasteur Madagascar; Antananarivo, Madagascar

**10:20 a.m.**
**ACGH Annual Business Meeting**
Robert D. Newman
The Aspen Institute, Washington, DC, United States

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**Scientific Session 14**

**HIV and Tropical Co-Infections**

**Meeting Room 15**

**Monday, November 16**

**9 a.m. - 10:45 a.m. U.S. Eastern Time Zone**

**Chair**
Betty Mwesigwa
Makerere University Walter Reed Project, Kampala, Uganda

**Christina Polyak**
Walter Reed Army Institute of Research, Bethesda, MD, United States

**29**

**Safety and Immunogenicity of Accelerated Heterologous Two-Dose Ebola Vaccine Regimens in HIV-Infected and HIV-Infected Adults in Africa**

Betty Mwesigwa1, Fredrick Sawe1, Janet Oyieko1, Nyanda Ntinginya1, Joel Mwakisisile1, Josaphat Kosgei1, Elizabeth Ngetich1, Ilesan Juni1, Edna Viegas1, Kokogho Afoko1, Akindrnan Akintunde1, Georgi Shukarev12, Leigh Anne Eller1, Michael Eller1, Lucy Ward1, Janice Rusnak1, Callie Bouda1, Christopher Badorre1, Christina Polyak1, Lalaine Anova1, Amber Moodley1, Chi Tran1, Melissa Van Aal1, Dickson Anumendem Nkafu1, Auguste Gaddah1, Viki Bockstal1, Kerstin Luhn1, Macaya Douoguih1, Cynthia Robinson1, Prossy Nakulima1, Monica Millard1, Hannah Kibuuka1, Julie Ake1


**30**

**Implications of Asymptomatic Malaria Infections on Hematological Parameters in People Living with HIV**

Edwin Kamau1, Risper Masisa1, Michael Irozindu1, Emmanuel Bahemana1, Dennis Juma1, Hannah Kibuuka1, Nicole Dear1, Allahna Esber1, Ajay Parikh1, Trevor A. Crowell1, Julie A. Ake1, John Owuoth1, Jonah Maswai1, Ben Andagalu1, Benjamin Opot1, Amanda L. Roth1, Raphael O. Okoth1, Farid Abdi1, Marueen Mwallo1, Christina S. Polyak1

1US Military HIV Research Program, Walter Reed Army Institute of Research, Silver Spring, MD, United States, 12U.S Army Medical Research Directorate - Africa, Nairobi, Kenya, 20Makerere University Walter Reed Project, Kampala, Uganda

**32**

**Impact of Anthelmintic Therapy for Invasive Helminth Infection on Microbial Translocation, Inflammation, and Immune Response Among Ugandans Living with HIV**

Grace Turuyasingura1, Stefanie Sowinski2, Miya Yunus1, Rojelio Mejia1, David Boulware2, Bozena M. Morawski2

1Indiana University, Indianapolis, IN, United States, 2Gladstone Institutes, UCSF, San Francisco, CA, United States, 3The AIDS Support Organization (TASO), Kampala, Uganda, 4Baylor College of Medicine, Houston, TX, United States, 5University of Minnesota, Minneapolis, MN, United States

**33**

**Assessing Gaps in Care for HIV-Infected People Living with AIDS in Two Hospitals in Ethiopia**

Anteneh Zewde
University Of Minnesota, Minneapolis, MN, United States

**35**

**Lessons Learned from Community Sensitization for Human Immunodeficiency Virus Testing and Follow-Up During Pregnancy in Rural Area of Southern Mozambique**

Felizarda E. Nhacolo, Salesio Macuacua, Anifa Vala, Esperança Sevone, Khátia Munguambé

Manhica Health Research Center, Manhica, Mozambique
Symposium 15

American Committee on Arthropod-Borne Viruses (ACAV) Symposium I: Annual Business Meeting, Awards, Beyond Arboviruses

Meeting Room 16
Monday, November 16
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

The American Committee on Arthropod-Borne Viruses provides a forum for exchange of information among people interested in arbovirus research and research in diseases caused by high consequence viral pathogens. 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
David Morens
National Institutes of Health, Bethesda, MD, United States
Patricia V. Aguilar
UTMB, Galveston, TX, United States

9 a.m.
ACAV AWARDS AND ANNUAL BUSINESS MEETING, INCLUDING EPIDEMICS GROUP AND REPORTS
Moderator: David Morens
National Institutes of Health, Bethesda, MD, United States
Patricia V. Aguilar
University of Texas Medical Branch, Galveston, TX, United States
Amy R. Krystosik
Chan Zuckerberg Initiative, Redwood City, CA, United States
Rebecca Christofferson
Louisiana State University, Baton Rouge, LA, United States

11:15 a.m.
INTRODUCTION: BEYOND ARBOVIRUSES
David Morens
National Institutes of Health, Bethesda, MD, United States

BEYOND ARBOVIRUSES: FROM MOSQUITOES TO COVID-19: SHIFTING PRIORITIES TO ENHANCE TESTING CAPACITY
Nathan Grubaugh
Yale University, New Haven, CT, United States

BEYOND ARBOVIRUSES: JOURNEYING BEYOND ARBOVIRUSES INTO THE ECOLOGY AND EPIDEMIOLOGY OF BAT-ASSOCIATED VIRUSES
Rebekah Kading
Colorado State University, Fort Collins, CO, United States

BEYOND ARBOVIRUSES: WORLD REFERENCE CENTER FOR EMERGING VIRUSES AND ARBOVIRUSES (WRCEVA): RESPONSE TO COVID-19
Kenneth Plante
University of Texas Medical Branch, Galveston, TX, United States

BEYOND ARBOVIRUSES: WHAT TO DO WHEN EVERYONE IS AN EXPERT: COVID-19
Vineet Menachery
University of Texas Medical Branch, Galveston, TX, United States

Break
Monday, November 16
10:45 a.m. - 11 a.m. U.S. Eastern Time Zone

Plenary Session 16

Plenary Session II: COVID-19: Lessons Learned and Future Challenges Commemorative Lecture

Grand Ballroom
Monday, November 16
11 a.m. - 1 p.m. U.S. Eastern Time Zone

CHAIR
Joel G. Breman
Fogarty International Center, Bethesda, MD, United States

11 a.m.
INTRODUCTION
Daniel G. Bausch
UK Public Health Rapid Support Team, London, United Kingdom

11:05 a.m.
INVITED COVID-19 PRESENTATION
Anthony Fauci
Director, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States

11:30 a.m.
COMMEMORATIVE LECTURE
The Commemorative Lecture is presented annually by an invited senior researcher resident in the tropics.

John N. Nkengasong, MSc, PhD
Director, Africa Centres for Disease Control and Prevention
Addis Ababa, Ethiopia

Dr. Nkengasong is Director of the Africa Centers for Disease Control and Prevention. Prior to his current position, he served as the acting deputy principal director (acting) of the Center for Global Health, United States Centers for Disease Control and Prevention, and Chief of the International Laboratory Branch, Division of Global HIV and TB, U.S CDC. He received a Masters in Tropical Biomedical Science at the Institute of Tropical Medicine in Antwerp, Belgium and a Doctorate in Medical Sciences (Virology) from the University of Brussels, Belgium. He has received numerous awards for his work including Sheppard Award, the William Watson Medal of Excellence, the highest recognition awarded by CDC. He is also recipient of the Knight of Honour Medal by the Government of Cote d’Ivoire, was knighted in 2017 as the Officer of Loin by the President of Senegal, H.E. Macky Sall, and Knighted in November 2018 by the government of Cameroon for his significant contributions to public health. He is an adjunct professor at the Emory School of Public Health, Emory University, Atlanta, GA. He serves on several international advisory boards including the Coalition for Epidemic Preparedness Initiative – CEPI, the International AIDS Vaccine Initiative (IAVI) among others. He has authored over 250 peer-reviewed articles in international journals and published several book chapters.
11:55 a.m.
INVITED COVID-19 PRESENTATION
Heidi Larson
London School of Hygiene and Tropical Medicine, London, United Kingdom

12:20 p.m.
INVITED COVID-19 PRESENTATION
Richard Hatchett
Coalition For Epidemic Preparedness Innovations (CEPI), London, United Kingdom

12:45 p.m.
MODERATOR, PANEL DISCUSSION
Helen Branswell
STAT News, Boston, MA, United States

Poster Session 17
Poster Session A Presentations

Poster Session A Directory

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Malaria - Biology and Pathogenesis: #153 - 169
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Malaria - Diagnosis: #183 – 197
Malaria - Drug Development - Preclinical Studies: #198 – 211
Malaria - Epidemiology: #212 – 233
Malaria - Modeling: #234 – 244
Malaria - Other: 245 – 260
Malaria - Prevention: #261 – 271
Malaria - Strategies for Elimination: #272 – 290
Malaria - Technological Innovations in Prevention and Control: #291
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Clinical Tropical Medicine: #343 - 371
Helminths - Nematodes - Filariasis (Immunology): 372 - 375
Helminths - Nematodes - Filariasis (Other): #376 - 384
Kinetoplastida - Cellular and Molecular Biology
(Including Leishmania and Trypanosomes): #385
Kinetoplastida - Diagnosis and Treatment
(Including Leishmania and Trypanosomes): #386 - 396
Kinetoplastida - Immunology
(Including Leishmania and Trypanosomes): #397 - 404
Schistosomiasis and Other Trematodes –
Diagnostics and Treatment: #405 - 411
Schistosomiasis and Other Trematodes –
Epidemiology and Control: #412 - 422
Schistosomiasis and Other Trematodes –
Immunology, Pathology, Cellular and Molecular Biology: #423 - 425
Water, Sanitation, Hygiene and Environmental Health: #426 - 437
Global Health

36

PREVALENCE OF HBV, HCV, HIV AND SYPHILIS INFECTIONS AMONG SECONDARY SCHOOL STUDENTS IN JUBA, SOUTH SUDAN

Kenneth L. Sube1, Oroono Seriano1, Joseph Lak01, Charles Ochero1, Anthony Lasuba1, Emmanuel Lino2, Philip Abongo1, Akech Simon1, Ekal Lulup1, Richard Lino3
1University of Juba, Juba, South Sudan, 2Royal Infirmary of Edinburgh, Edinburgh, United Kingdom, 3National Ministry of Health, Juba, South Sudan

37

EXPERIENCES STRENGTHENING MICROBIOLOGICAL LABORATORY CAPACITY IN RURAL RWANDAN HOSPITALS TO CATALYZE ROBUST NATIONAL ANTIMICROBIAL STEWARDSHIP PROGRAMS

Grace Umutesi1, Lotta Velin2, Moses Muyvanguzi3, Gilbert Rukundo4, Aniceth Rucogoza1, Carol Mugabo5, Kara Faktor6, Christian Mazimpaka7, Jean de Dieu Gatete7, Marthe Yankurije1, Bethany Hedt-Gauthier8, Robert Riviello9, Tharcisse Mpunga10, Emil I. Mwikarago11, Fredrick Keteera12
1Partners in Health/Inshuti Mu Buzima, Kigali, Rwanda, 2Program in Global Surgery and Social Change, Harvard Medical School, Boston, MA, United States, 3National Reference Laboratory, Rwanda Biomedical Center, Kigali, Rwanda, 4Department of Global Health and Social Medicine, Harvard Medical School, Boston, MA, United States, 5Center for Surgery and Public Health, Brigham and Women’s Hospital, Boston, MA, United States, 6Butaro District Hospital, Ministry of Health, Butaro, Rwanda

38

HEALTH SEEKING BEHAVIOUR FOR BURULI ULCER DISEASE IN THE OOM SUB-DISTRICT OF THE GA SOUTH MUNICIPALITY OF GHANA

Eric Koka, Hannah Benedicta Taylor Abdulai
University of Cape Coast, Cape Coast, Ghana

39

ANTIOXIDANT ACTIVITY OF FLAVONOIDS FROM THE LEAVES OF TAPIANANTHUS PENTAGONIA, LORANTHACEAE

Herminia Nalova Ikome
Institute of Medicinal Plants and Traditional Medicine, Yaounde, Cameroon

40

KNOWLEDGE AND PRACTICES OF MEDICAL SHOP WORKERS IN NEPAL IN THE DIAGNOSIS AND TREATMENT OF CORNEAL INFECTIONS

Sadhan Bhandari1, Ram Prasad Kande1, Bimal Poudyal1, Gopal Bhandari1, Raghunandan Banya1, John M. Nesemann2, Riju Shrestha3, Valerie M. Stevens1, Jason S. Melo4, David A. Ramirez5, Travis C. Porco1, Kieran S. O’Brien1, Thomas M. Lietman1, Jeremy D. Keenan1
1Bhathatpur Eye Hospital, Bhathatpur, Nepal, 2Seva Foundation, Bhathatpur, Nepal, 3Francis I. Proctor Foundation, University of California San Francisco, San Francisco, CA, United States, 4Department of Epidemiology, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States, 5Department of Ophthalmology & Visual Sciences, University of Iowa, Iowa City, IA, United States

41

PLASMA KYNURENINE TO TRYPTOPHAN RATIO IS NEGATIVELY ASSOCIATED WITH LINEAR GROWTH OF CHILDREN LIVING IN A SLUM OF BANGLADESH: RESULTS FROM A COMMUNITY-BASED INTERVENTION STUDY


42

TRANSLATING JAMAICAN PRIMARY AND PREVENTIVE CARE FROM POLICY TO PRACTICE

Dr. Lena S. Samuel, MD
New York University, New York, NY, United States

43

CENTERS OF EXCELLENCE IN SOUTHERN AFRICA: THE CASE OF MANHICA HEALTH RESEARCH CENTER, MOZAMBIQUE

Teresa Eduarda Machai
Mancha Health Research Center, Maputo, Mozambique

44

THE PRIVATE SECTOR AS A POTENTIAL DATA SOURCE FOR EPIDEMIOLOGICAL SURVEILLANCE AND CONTROL OF ANTIMICROBIAL RESISTANCE IN UGANDA

Anthony Kabanza Mbowye1, Henry Kajumbula2, Agnes Kiragga2, Grace Banturaki2, Patrick Sesaazi2, Kenneth Katimbo2, Ibrahim Mugerwa2, Kristian Hansen3, Pascal Magnusson4, Sian Clarke1
1College of Health Sciences, Makerere University, Kampala, Uganda, 2Infectious Diseases Institute, College of Health Sciences, Makerere University, Kampala, Uganda, 3Ministry of Health, Kampala, Uganda, 4University of Copenhagen, Copenhagen, Denmark, 5LSHTM, London, United Kingdom

46

PROMISING APPROACHES FOR IMPROVING PROVIDER ADHERENCE TO MALARIA TESTS: RESULTS FROM A BEHAVIORAL ECONOMICS PILOT IN NIGERIA

Angela Acosta1, Faraz Haqqi2, Srilam Sridharan2, Temitope Ogunbi2, Enobong Idiong1, Idowu Akamnu3, Faramade Alalade3, Linda Osaji2, Lucy Okolo4, Ernest Obaseki5, Folake Odubore5, Justin DeNormandie6, Jose Tchafa7, Uwem Inyang4, Foyekye Odedokun-Adebagbo5, Owoya Samuel5, Nnenna Oguluofor6, Ian Tweedie7, Bolatito Aiyenigba1
1Breakthrough ACTION, Johns Hopkins Center for Communication Programs, Baltimore, MD, United States, 2Breakthrough ACTION, ideas42, Washington, DC, United States, 3Breakthrough ACTION, ideas42, New York, NY, United States, 4Breakthrough ACTION, Johns Hopkins Center for Communication Programs, Abuja, Nigeria, 5President’s Malaria Initiative and United States Agency for International Development, Abuja, Nigeria, 6National Malaria Elimination Program, Federal Ministry of Health, Abuja, Nigeria

47

THE BURDEN OF SEXUAL DEVELOPMENTAL DISORDERS AMONG CHILDREN REPORTING TO A TEACHING HOSPITAL IN GHANA

Phans Oduro Sarpong1, Francis Adjei Osei2, Bright Atta Dankwa2, Samuel Frimpong Odoom1, Rita Ackah2
1Kumasi Centre for Collaborative Research in Tropical Medicine, KCCR, Kumasi, Ghana, 2Komfo Anokye Teaching Hospital, Public Health Unit, Kumasi, Ghana, 3Ghana Institute of Management and Public Administration, School of Public Service and Governance, Kumasi, Ghana, 4Child Health Directorate, Komfo Anokye Teaching Hospital, Kumasi, Ghana, 5Tafo Government Hospital, Counselling Unit, Kumasi, Ghana

48

BARRIERS AND FACILITATORS OF FAMILY PLANNING USE IN FISHING COMMUNITIES OF LAKE VICTORIA IN UGANDA

Annet Nanvubya1, Faraz Haqqi2, Ibrahimm Mugerwa2, Kenneth Katimbo2, Ibrahim Mugerwa2, Kristian Hansen3, Pascal Magnusson4, Sian Clarke1
1UVRI-IAVI HIV Vaccine Program, Entebbe, Uganda, 2School of Public Health College of Health Sciences, Makerere University, Kampala, Uganda, 3Breakthrough ACTION, Johns Hopkins Center for Communication Programs, Baltimore, MD, United States, 4Breakthrough ACTION, Johns Hopkins Center for Communication Programs, Abuja, Nigeria, 5President’s Malaria Initiative and United States Agency for International Development, Abuja, Nigeria, 6National Malaria Elimination Program, Federal Ministry of Health, Abuja, Nigeria

#TropMed20 #IamTropMed
SOCIAL AND CULTURAL DETERMINANTS THAT AFFECT KNOWLEDGE, ATTITUDES, AND PRACTICES OF MATERNAL HEALTH CARE UTILIZATION IN RURAL AND URBAN AREAS OF MYSOR, INDIA

Sara Richards1, Praveen Kulkarni2, Nayanabai Shabadi3, David Hill4
1Frank H. Netter MD School of Medicine at Quinnipiac University, North Haven, CT, United States, 2JSS Academy of Higher Education and Research, Mysuru, India

GENDER DIFFERENCES FOR UNINTENTIONAL FALLS AND RELATED INJURIES AMONG OLDER PERSONS IN UGANDA; PREVALENCE AND ASSOCIATED FACTORS

Doreen Nakibuuka1, Isaac Ddumba1, David Kasibante2, Haruna Batange3
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A CLUSTER-RANDOMIZED TRIAL ON THE COMMUNITY-BASED PREVENTION OF CORNEAL ULCERS: THE VILLAGE-INTEGRATED EYE WORKER TRIAL (VIEW)

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A PRELIMINARY STUDY ON PERCEPTION OF THE COVID 19 PANDEMIC IN NORTHERN NIGERIA

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IMMERSIVE TRAVEL IS OFTEN INTERRUPTED BY ILLNESS WITH MORE THAN HALF OF TRAVELERS VISITING LOCAL CLINICS

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TRAINING THE TRAINER: EMPOWERING HEALTHCARE WORKERS TO TEACH ABOUT HEPATITIS B IN THEIR COMMUNITIES

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REASONS FOR REFUSAL OF POSTMORTEM MINIMALLY INVASIVE TISSUE SAMPLING USING MINIMALLY INVASIVE TISSUE SAMPLING (MITS) FOR CHILDREN UNDER FIVE: AN OVERVIEW FROM ETHIOPIA

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EXPERIENCES OF ADOLESCENT PREGNANCY AMONG MAASAI IN KENYA: IMPLICATIONS FOR PREVENTION

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ENGAGING LOCAL GOVERNMENT AUTHORITIES (LGA) OFFICIALS AND BUILDING CAPACITY OF HEALTH FACILITY DATA OFFICERS IMPROVES DATA QUALITY, REPORTING AND TIMELINESS IN KWARA STATE, NIGERIA

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ACCESS TO HEALTH CARE IN RURAL AREAS: CREATING A STRATEGY TO TRANSPORT SEVERELY ILL PEOPLE TO THE HEALTH FACILITIES WITHIN THE COMMUNITY IN SOUTHERN MOZAMBIQUE

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DETERMINANTS OF HEALTHCARE SEEKING AND PROVIDER SELECTION: A CROSS-SECTIONAL STUDY IN RURAL HAITI

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IMPACT OF CLIMATE CHANGE ON COVID-19 PANDEMIC: A SYSTEMATIC REVIEW
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POVERTY REDUCTION THROUGH SUSTAINABLE SCHOOLS: EFFECTS OF A SCHOOL-BASED INTERVENTION ON SCHOOL REVENUE, EDUCATION, AND HEALTH OUTCOMES
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EXPANDING TRAINING CAPACITY AND ACCESSIBILITY FOR MINIMALLY INVASIVE TISSUE SAMPLING
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COST STUDY ANALYSIS OF SLEEPING SICKNESS INTERVENTION PROGRAMMES: A SYSTEMATIC REVIEW
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GROUPMAPPERS: INTEGRATING GEOSPATIAL TECHNOLOGIES AND CROWDSOURCING TO MAP COMMUNITIES FOR HEALTH PLANNING IN SOUTHEAST BANGLADESH
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ORGANIZATIONAL LEARNING AS AN “OPERATING SYSTEM” FOR COMMUNITY AND STAKEHOLDER ENGAGEMENT: INSIGHTS FROM THE LYMPHATIC FILARIASIS ELIMINATION PROGRAM IN PORT-AU-PRINCE
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KNOWLEDGE AND ATTITUDE TOWARDS SICKLE CELL DISEASE AND PREGNATAL SCREENING AMONG WOMEN ATTENDING ANTENATAL CLINIC IN THE GAMBIA
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Arthropods/Entomology – Other

HOW MANY LUTZOMYIA UMBRATILIS (DIPTERA: PSYCHODIDAE) SPECIES ARE THERE?
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FIRST MOLECULAR DETECTION OF RICKETTSIA AFRICAE AND RICKETTSIA AESCHLMANNII IN TICKS COLLECTED FROM CATTLE LOCATED IN NORTHERN AND SOUTHERN REGIONS OF GHANA
Janice E. Tagoe, Shirley Nimo-Paintsil, Mba Moore, Seth Ofiee Addo, Clara Yeoabo, Bright Agbodjo, Eric Behene, Danielle Ladzekpo, Charlotte Addae, Courage Dafeamekpor, Victor Asaola, Langbong Bini, Anne Fox, Chasellyn Watters, LCDR Terrel Sanders, LCDR David Wolfe, Christina Farris, CDR Andrew Letizia, LCDR Joseph W. Diclaro III, Samuel Dadzie
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TECH OR TRADITIONAL: A FIELD TESTING OF AERIAL DRONE TO SAMPLE TICKS
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POTENTIAL ENTOMOLOGICAL AND HUMAN FACTORS INFLUENCING RESIDUAL MALARIA TRANSMISSION IN SELECTED AREAS OF MYANMAR
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FIRST REPORT ON THE USE OF NEAR-INFRARED SPECTROSCOPY TO AGE-AGE GRADE PHLEBOTOMUS PAPATASII SAND FLIES
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ASSESSING THE SUSCEPTIBILITY OF FLEA VECTORS TO INSECTICIDES AS PART OF PLAGUE RISK MONITORING IN MADAGASCAR, 2019
Mireille Harimalala, Soandranasana Rahelinirina, Anja Andriananja, Slash Rakotovao, Minaorisoa Rajerison, Roman Girod
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COMPARISON OF YEAST-ENCAPSULATED ESSENTIAL OILS FOR MOSQUITO POPULATION CONTROL
Alexandra V. Yingling, Tzion Castillo, Ivy Hurwitz
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NO NEED TO WING IT: A NEW METHOD FOR QUICKLY AND ACCURATELY AGE-GRADE MOSQUITOES USING WING MORPHOLOGY
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A PROTOCOL FOR A CLUSTER RANDOMIZED TRIAL OF ONE-DOSE VERSUS TWO-DOSE IVERMECTIN MASS DRUG ADMINISTRATION FOR SCABIES IN REMOTE ISLAND COMMUNITIES IN SOLOMON ISLANDS
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PREVALENCE OF SCABIES AND IMPETIGO IN SOLOMON ISLANDS
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SURVEILLANCE OF TICK-BORNE INFECTIONS IN LIVESTOCK IN THE GUINEA SAVANNA AREA OF NORTHERN GHANA
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AN EPIDEMIOLOGICAL SEARCH FOR THE ASIAN LONGHORNED TICK IN SOUTH CAROLINA
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Aedes species breeding: importance of container size and water refilling frequency in Mombasa county, Kenya
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Dogs and ticks as epidemiological sentinels: surveillance of tick-borne human pathogens in Ciudad Juárez (Chihuahua), near the Mexico-U.S. border
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DNA BARCODING REVEALS NEW RECORDS OF POTENTIAL ZOONOTIC NEARCTIC BLACK FLIES (DIPTERA: SIMULIIDAE) FROM CHIHUAHUA STATE, NORTHWEST MEXICO
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HABITAT PRODUCTIVITY OF MALARIA VECTORS IN AREAS WITH INTEGRATED ADULT VECTOR CONTROL IN WESTERN KENYA; POTENTIAL FOR TARGETED LARVAL CONTROL

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DESCRIPTION OF BLOOD MEAL SOURCES FOR DIFFERENT ANOPHELES SPECIES IN MALARIA ENDEMIC AREAS OF HONDURAS

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EXPANSION OF THE DISTRIBUTION OF Aedes Albopictus in Armenia 2016-2019

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LONGEVITY OF Aedes Aegypti in Open-Air Insectaries in Kisumu, Western Kenya

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EDUCATIONAL INTERVENTION IMPROVES SOURCE REDUCTION KNOWLEDGE AND ATTITUDES IN URBAN KENYA

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ENDOPHAGIC AND EXOPHAGIC BEHAVIOR IN ANOPHELES COLUZZII AND ANOPHELES GAMBIAE CARRYING THE L1014F KDR MUTATION IN BENIN

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IMPACT OF RECENT WEATHER EXTREMES ON MOSQUITO-BORNE DISEASE TRANSMISSION IN KENYA

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ENTOMOLOGICAL SURVEILLANCE OF MALARIA VECTORS IN FIVE SENTINEL SITES IN CAMEROON

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CHARACTERIZING EARLY-FORAGING ANOPHELES IN A HOLOENDEMIC MALARIA SETTING IN NCHELENGE DISTRICT, ZAMBIA

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ENTOMOLOGICAL INDICATORS OF MALARIA TRANSMISSION IN SIERRA LEONE: IMPLICATIONS FOR VECTOR CONTROL

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THE DAILY COLLECTION OF MOSQUITO SALIVA ON BLOTTING PAPER PADS ALLOWS FOR THE LONGITUDINAL MONITORING OF VIRAL TRANSMISSION FROM CULEX TARSALIS MOSQUITOES EXPOSED TO WEST NILE VIRUS

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ENTOMOLOGICAL CHARACTERIZATION OF Aedes MOSQUITOES AND ARBOVIRUS DETECTION IN IBAGUÉ, COLOMBIA

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EXPECTED ENDPOINTS FROM FUTURE CHIKUNGUNYA VACCINE TRIAL SITES INFORMED BY SEROLOGICAL DATA AND MODELING

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POLYCLONAL ANTIBODIES PREVENT EFFECTS OF CHIKUNGUNYA VIRUS INFECTION IN MICE

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FLAVIVIRIDAE - Dengue

DENGUE: RECOVERY VACCINES

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**DENGUE VACCINATION COVERAGE IN A SUBNATIONAL VACCINATION CAMPAIGN IN THE STATE OF PARANÁ, BRAZIL.**

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**DENGUE FEVER PREVENTION AND WEATHER FACTORS**

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**A NOVEL MULTI-LEVEL COMMUNITY-BASED ACTIVE SURVEILLANCE SYSTEM TO DETECT DENGUE IN NORTHERN ECUADOR ALONG A RURAL-URBAN GRADIENT**

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**LOW-COST, COMMUNITY-DRIVEN VECTOR-CONTROL FOR DENGUE SUPPRESSION IN THE GREATER MEKONG SUB-REGION**

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**ESTIMATING DENGUE TRANSMISSION INTENSITY FROM SEROLOGICAL DATA: A COMPARATIVE STUDY OF METHODS**

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**INTERROGATING THE PRIMARY DENGUE-SPECIFIC MEMORY B CELL FOUNDER POPULATION IN HUMANS FOLLOWING DENGUE INFECTION**

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MALARIA TREATMENT AND TRANSMISSION BLOCKING GAMETOCTYGENESIS AS A NOVEL ANTIMALARIAL AGENT FOR HOSPITALS IN THREE STATES OF NIGERIA

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TRANSMISSION BLOCKING ACTIVITIES OF CIPARGAMIN AND GANAPLACIDE IN ARTEMISININ RESISTANT PLASMODIUM FALCIPARUM

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ANTIMALARIAL ACTIVITY, ACUTE ORAL TOXICITY AND HEMOLYTIC POWER OF THREE PLANTS FROM CÔTE D’IVOIRE

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ACYL-COA SYNTHETASE 10 IDENTIFIED AS NOVEL DRUG TARGET


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PRIMAQUINE TOXICITY: METABOLIC EFFECTS OF QUINONE METABOLITES GENERATED IN HUMAN ERYTHROCYTES

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A WORLD-WIDE DIVERSE FUNGAL LIBRARY FOR DRUG DISCOVERY AGAINST MALARIA TRANSMISSION

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TARGET-BASED VIRTUAL SCREENING OF AN FDA-APPROVED DRUG LIBRARY IDENTIFIES AGE-OLD ANTI-MALARIAL DRUGS GENTAMYCIN AND CLINDAMYCIN NOVEL MECHANISM OF ACTION
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COMPUTATIONAL ANALYSIS OF PLASMEPSIN V PROTEIN AND PREDICTION OF CRUCIAL RESIDUES
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INTEGRATION OF MALARIA CASE BASED SURVEILLANCE (COCONUT) AND DHIS2 IN ZANZIBAR TO IMPROVE DATA USE IN DECISION MAKING
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IN VITRO SUSCEPTIBILITY OF TAFENOQUINE AGAINST PLASMODIUM FALCIPARUM AMONG KENYAN SAMPLES
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INVESTIGATION OF DEATHS IN MALARIA-ENDEMIC COUNTRIES: FINDINGS OF AN AUDIT OF MALARIA-RELATED DEATHS IN BENIN
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DECREASED MORTALITY OF FALCIPARUM MALARIA IN ANEMIC PRISONERS OF WAR?
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ASSESSING MALARIA DATA REPORTING ACCURACY IN THE NORTH AND FAR NORTH REGIONS IN CAMEROON: ANALYSIS OF DATA FROM A RAPID DATA QUALITY ASSESSMENT

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FOREST MALARIA IN CAMBODIA: THE OCCUPATIONAL AND SPATIAL CLUSTERING OF P. VIVAX AND P. FALCIPARUM INFECTION RISK IN A CROSS-SECTIONAL SURVEY IN MONDULKIRI PROVINCE, CAMBODIA

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EVALUATING THE ASSOCIATIONS BETWEEN LOW-DENSITY P. FALCIPARUM INFECTIONS, HIGHER-DENSITY INFECTIONS, AND POSSIBLE IMPORTED INFECTIONS ON BIOKO ISLAND, EQUATORIAL GUINEA

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Malaria - Modeling

MECHANISMS DRIVING THE SPREAD OF HISTIDINE-RICH PROTEIN 2 OR 3 DELETIONS - A MODELING APPROACH

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APPRECIATING THE COMPLEXITY OF LOCALIZED MALARIA RISK IN GHANA: SPATIAL DATA CHALLENGES AND SOLUTIONS

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REACHABLE OUTCOMES OF COMBINING MULTIPLE INTERVENTIONS FOR CONTROL OF MALARIA AND DRUG RESISTANCE: MODELS, ANALYSIS, AND A FRAMEWORK FOR ADAPTIVE PROGRAMS

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MODELLING MALARIA IN NEAR ELIMINATION SETTINGS USING HAWKES PROCESSES

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A RARE CASE OF EUMYCETOMA OF THE HAND CAUSED BY THE PATHOGENIC MOLD PHAEACREMONIUM KRAJDENII IN AN IMMUNOCOMPETENT PATIENT
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POSTNATAL OUTCOMES AND RISK FACTORS FOR IN-HOSPITAL MORTALITY AMONG ASPHYXIATED NEWBORN INFANTS IN A LOW-RESOURCE HOSPITAL SETTING IN NORTH-CENTRAL NIGERIA
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Levine1 | 1Apert Medical School of Brown University, Providence, RI, United States, 2Rhode Island Hospital, Providence, RI, United States, 3International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 4University of Florida, Gainesville, FL, United States | 357 | LEVEL OF LITERACY AND CLINICAL OUTCOMES IN PATIENTS WITH CHAGAS DISEASE: SAMI-TROP PROJECT | Clareci Silva Cardoso1, Nayara Domela Quintino1, Gabriela Lemes David1, Ester Cerdeira Sabino1, José Luiz Padilha da Silva1, Antonio Luiz Pinho Ribeiro1, Ariela Mota Ferreira1, Lea Campos Oliveira1, Claudia Di Lorenzo Oliveira1 | 1School of Medicine, Federal University of São João del-Rei, Divinópolis, Brazil, 2Institute of Tropical Medicine, University of São Paulo, São Paulo, Brazil, 3Department of Statistics, Federal University of Paraná, Curitiba, Brazil, 4Clinical Hospital and School of Medicine, Federal University of Minas Gerais, Belo Horizonte, Brazil, 5Clinical Hospital, State University of Montes Claros, Montes Claros, Brazil | 358 | DETECTION OF TLR9 POLYMORPHISMS AND THEIR ASSOCIATION WITH SEXUALLY TRANSMITTED INFECTIONS, CERVICITIS AND CERVICAL CANCER | Alex Chauhan1, Nilesh Pandey2, Neeraj Jain1 | 1Brock University, St. Catharines, ON, Canada, 2Charotar University of Science and Technology, Anand, India | 359 | CHARACTERIZATION OF HUMAN IMMUNOGLOBULIN PRODUCT GENERATED IN A MODULAR MANUFACTURING UNIT USING A RAPID MANUFACTURING PROCESS | Wesley DeLeuwe, Tharmala Tharmalingam, Patrick Wiebe, Aynslie Wall, Evelyn Van der Hart, Shelly Buhay | Emergent Biosolutions, Winnipeg, MB, Canada |
LEVERAGING TECHNOLOGY TO ADDRESS THE NEGLECTED PROBLEM OF UNDIAGNOSED HEARING LOSS IN SUB-SAHARAN AFRICA

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ASSESSMENT OF CLINICAL REFERENCE RANGES OF PULSE RATE, RESPIRATORY RATE, BLOOD PRESSURE, TEMPERATURE AMONG HEALTHY SUBJECTS ATTENDING THE SCREENING FOR MALARIA VACCINE IN BIOKO ISLAND, EQUATORIAL GUINEA

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REFERENCE RANGES, CHARACTERISTICS OF THE ECG FINDINGS, AND ITS IMPLICATION TO THE SCREENING AND RECRUITMENT FOR MALARIA CLINICAL TRIAL PARTICIPANTS IN BIOKO ISLAND, EQUATORIAL GUINEA

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MINIMALLY INVASIVE TISSUE SAMPLING ACCEPTABILITY AT KIGALI UNIVERSITY TEACHING HOSPITAL, RWANDA

Ntakirutimana Gervais

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STABILITY OF CHOLERA VACCINE CVD 103-HGR UNDER VARYING ENVIRONMENTAL CONDITIONS

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EPIDEMIOLOGY OF VIRAL HEPATITIS AND HEALTH LITERACY IN CULTURALLY AND LINGUISTICALLY DIVERSE COMMUNITIES IN SOUTH EAST QUEENSLAND, AUSTRALIA

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COMPARISON BETWEEN SD BIOLINE DENGUE DUO TEST AND INBIOS’ PROTOTYPE DENGUE IMMUNOCHROMATOGRAPHIC TESTS

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WHAT IS THE IMPACT OF MASS OR SYSTEMATIC ANTIBIOTIC ADMINISTRATION ON ANTIBIOTIC RESISTANCE IN LOW-MIDDLE-INCOME COUNTRIES? A SYSTEMATIC REVIEW

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LITTLE DROPS MAKE AN OCEAN: HOW COMMUNITY-BASED HEALTH INSURANCE DOES AN OCEAN OF GOOD AT THE BWINDI COMMUNITY HOSPITAL, UGANDA

Benjamin Norton1, Scott Kellermann2, Michael C. Borecky2, Thomas E. Borecky2, Benurungi Mutuhunga3, Nahabwe Haven4, Latha Rajan4

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CRISPR/CAS9-MEDIATED DISRUPTION OF THE ESCRTII GENE VPS36 GREATLY REDUCES THE SECRETION OF EXTRACELLULAR VESICLES AND THE INFECTIVITY OF LEISHMANIA MAJOR
George Y. Dong
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Blaise Dondji, Taylor Henne, Linsey Curry, Timothy Beng
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Kenlei Gunther, Cameron Smith, Christy Krischano, Taylor Henne, Linsey Curry, Timothy Beng, Blaise Dondji
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DRIED BLOOD ON PAPER FILTER AS AN ALTERNATIVE FOR TRYPANOSOMA CRUZI ELISA SCREENING IN RURAL AREAS OF BRAZIL
Fabio De Rose Ghilardi1, Lea Campos De Oliveira1, Mayur Desai1, 2
1Yale University, New Haven, CT, United States, 2CIDEM, Cali, Colombia

PATIENT PREFERENCES AND SATISFACTION WITH THERAPEUTICS FOR NEW WORLD CUTANEOUS LEISHMANIASIS
Rebecca Byler1, Nancy Gore Saravia1, Mayur Desai2
1Yale University, New Haven, CT, United States, 2CIDEM, Cali, Colombia

LABORATORY AND FIELD DIAGNOSTIC EFFICACY OF RECOMBINASE POLYMERASE AMPLIFICATION FOR CUTANEOUS LEISHMANIASIS
Alexandra Cossio1, Thomas Shelite2, Maxy De Los Santos3, Jimena Jojoa1, Maria del Mar Castro1, Nancy Gore Saravia1, Peter Melby1, Peter Melby1, 2, Bruno L. Travi1
1Centro Internacional de Entrenamiento e Investigaciones Medicas, Cali, Colombia, 2University of Texas Medical Branch, Galveston, TX, United States, 3U.S. Naval Medical Research Unit 6, Lima, Peru
Kinetoplastida - Immunology (Including Leishmania and Trypanosomes)

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TRYPANOTHIONE REDUCTASE: POTENTIAL TARGET FOR DEVELOPING NEW THERAPEUTICS TO TREAT LEISHMANIA DONAVANI
Raman Mathur1, Yash Gupta1, Jesus Romero1, Samuel Kwofe2, Brijesh Rathi2, Ravi Durvasula1, Prakashka Kempaiah1
1Loyola University Chicago Stritch school of Medicine, Maywood, IL, United States, 2Loyola University Chicago Stritch school of Medicine and University of Ghana, Accra, Ghana, Maywood, IL, United States, 3Loyola University Chicago Stritch school of Medicine and Hansraj College University Enclave, University of Delhi, Maywood, IL, United States

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DIFFERENTIAL MODULATION OF NEUTROPHIL ACTIVATION BY ANTIMONY-RESISTANT AND SUSCEPTIBLE CLINICAL STRAINS OF L. (V.) PANAMENSIS
Olga Lucia Fernandez1, Lady Giovanna Ramirez1, Fabienne Tachcini-Cottier2, Nancy Gore Saravia1
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IN VITRO LEISHMANIA INFANTUM AND TICK-BORNE BACTERIA CO-INFECTION MODEL IN A CANINE MACROPHAGE CELL LINE
Danielle Pessoa-Pereira1, Brenna M. Scorza, Christine A. Petersen2
University of Iowa, Iowa City, IA, United States

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RETROSPECTIVE STUDY OF SERODISCORDANT SUBJECTS FOR TRYPANOSOMA CRUZI INFECTION REVEALS DISTINCT SEROLOGICAL OUTCOMES AND INCREASED FREQUENCY OF NON-CLASSICAL MONOCYTES
Maria A. Natalie1, Maria J. Elias1, Ana M. De Rissio1, Maria G. Alvarez2, Maria C. Albareda1, Laura E. Fichera1, Gonzalo Cesar1, Constanza Lopez-Albizu2, Karenina Scollo1, Graciela Bertocchi3, Bruno Locoaco4, Susana A. Laucella1
1Instituto Nacional de Parasitologia Dr. Mario Fatala Chaben, Buenos Aires, Argentina, 2Hospital Interzonal General de Agudos Eva Peron, San Martin, Argentina

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IMMUNIZATION WITH LDCE1/-/- IS EFFICACIOUS IN MICE WITH CHRONIC T. CRUZI INFECTION
Sreenivas Gannavararam, Charles Thomas, Abraar Muneem, Nirmallya Acharyya, David Acosta, Alain Debrabant, Hira L. Nakhasi
US Food and Drug Administration, Silver Spring, MD, United States

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DIET IMPACTS LIVER ARCHITECTURE, PARASITE BURDEN, AND TRANSCRIPT EXPRESSION DURING LEISHMANIA INFANTUM INFECTION
Mark Wacker1, Upasna Dixit2, Ellen Kiser3, Hemali Batra-Sharma2, Yani Chen4, Mary Wilson5
1Department of Internal Medicine at the University of Iowa, Iowa City, IA, United States, 2Department of Microbiology and Immunology at the University of Iowa, Iowa City, IA, United States, 3Carver College of Medicine at the University of Iowa, Iowa City, IA, United States, 4Department of Internal Medicine, Department of Microbiology and Immunology, and Carver College of Medicine at the University of Iowa and Veterans’ Affairs Medical Center, Iowa City, IA, United States, 5Department of Internal Medicine at the University of Iowa and Veterans’ Affairs Medical Center, Iowa City, IA, United States

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DIABETES MELLITUS MODIFY THE CLINICAL PRESENTATION OF CUTANEOUS LEISHMANIASIS AND IMPAIR RESPONSE TO THERAPY IN PATIENTS WITH ATYPICAL LESIONS
Alexandro Souza Lago1, Augusto M. Carvalho1, Luiz Henrique Guimaraes2, Jamile Lago1, Lucas Carvalho1, Edgar M. Carvalho2
1Federal University of Bahia, Salvador, Brazil, 2Federal University of the South of Bahia, Itabuna, Brazil, 3Oswaldo Cruz Foundation, Salvador, Brazil

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INCREASED PATHOLOGY IN LEISHMANIA MAJOR INFECTION MEDIATED BY DYSBIOTIC SKIN MICROBIOTA IS DEPENDENT ON IL-1B AND IL-17 PRODUCTION
Augusto M. Carvalho1, Phillip Scott2
1Federal University of Bahia, Salvador, Brazil, 2Department of Pathobiology, School of Veterinary Medicine, University of Pennsylvania, Philadelphia, PA, United States

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CURRENT DIAGNOSIS AND BIOMARKER DISCOVERY FOR THE THREE MAJOR SCHISTOSOMA SPP.: S. MANSONI, S. HAEMATOBIUM, AND S. JAPONICUM
John C. Noh1, Yong Wang1, Olga Stuchlik, Matthew S. Reed, Jan Pohl, Sukwan Handali
Centers for Disease Control and Prevention, Atlanta, GA, United States

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DEVELOPMENT OF GENUS- AND SPECIES-SPECIFIC ANTIGENS FOR DETECTION OF ANTIBODIES AGAINST SCHISTOSOMA SPP. INFECTIONS
Sylvia Ossai1, Yong Wang1, Sukwan Handali2, Austin Newsam1, Rafael R. de Assis2, Jeffrey M. Bethony1, Rodrigo Correa-Oliveira3, Philip T. LoVerde3, Philip L. Felgner3, W. Evan Secord1
1Synergy America, Inc., Atlanta, GA, United States, 2Centers for Disease Control and Prevention, Atlanta, GA, United States, 3University of California Irvine, Irvine, CA, United States

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DIAGNOSIS OF SCHISTOSOMA MANSONI INFECTIONS IN ASYMPOTOMATIC ERIETREAN MIGRANTS BY STOOL PCR AND THE DETECTION OF CIRCULATING ANODIC ANTIGEN (CAA) IN URINE AND SERUM
Pytsje Hoekstra1, Afona Cherneti1, Claudia J. de Dood1, Eric A. Brien1, Paul L. Corstjens2, Beatrice Nickel3, Linda J. Wammes4, Govert J. van Dam4, Andreas Neumayr5, Lisette van Lieshout6
1Leiden University Medical Center, Leiden, Netherlands, 2Swiss Tropical and Public Health Institute, Basel, Switzerland, 3Department of Cell and Chemical Biology, Leiden University Medical Center, Leiden, Netherlands, 4Department of Parasitology, Leiden University Medical Center, Leiden, Netherlands, 5Department of Medical Microbiology, Leiden University Medical Center, Leiden, Netherlands, 6Swiss Tropical and Public Health Institute, b, Switzerland

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DEVELOPMENT OF NOVEL THERAPEUTICS AGAINST SCHISTOSOMIASIS
Sevan N. Alwan1, Rolando Trevino, Jr.1, Claudia Moreno Romero1, Alexander B. Taylor1, Jayce Rhodes1, Michael Tidwell2, Stanton McHardy3, Philip T. LoVerde4
1University of Texas Health Science Center, San Antonio, TX, United States, 2University of Texas at San Antonio, San Antonio, TX, United States, 3University of Texas at Austin, Austin, TX, United States, 4University of Texas Health Science Center, San Antonio, TX, United States
Schistosomiasis and Other Trematodes – Epidemiology and Control

WATER CONTACT ACTIVITIES, SNAIL INTERMEDIATE HOSTS, CERCARIAL SHEDDING AND THE SWIMMING BEHAVIOR OF THE FURCOCERCUS CERCARIA OBTAINED FROM YADAKUNYA PART OF JAKARA DAM, KANO STATE, NIGERIA

HIGH-RISK WATER CONTACT BEHAVIOUR AND INCREASED INFECION RISK AMONG SCHOOL-AGED CHILDREN WITH RAPID SCHISTOSOMA MANSONI (RE)INFECTION, LAKE VICTORIA, UGANDA

COMPARATIVE VECTORIAL COMPETENCE OF BIOMPHALARIA SUDANICA AND B. CHOANOMPHALA, SNAIL HOSTS OF SCHISTOSOMA MANSONI IN THE TRANSMISSION HOTSPOTS OF LAKE VICTORIA BASIN IN WESTERN KENYA

EFFECTS OF AGROCHEMICAL POLLUTION ON SCHISTOSOMIASIS ECOLOGY AND EPIDEMIOLOGY

PREVALENCE, EXPOSURES, AND RISK FOR SCHISTOSOMIASIS IN THE U.S. MILITARY

IMPACT OF PERIODIC SELECTIVE PZQ TREATMENT ON SCHISTOSOMA MANSONI INFECTION AS MONITORED BY KATO-KATZ AND POC-CCA IN A SCHISTOSOMIASIS ENDEMIC COMMUNITY IN THE DEMOCRATIC REPUBLIC OF CONGO

POTENTIAL IMPACT OF CLIMATE CHANGE ON SCHISTOSOMIASIS: A GLOBAL ASSESSMENT ATTEMPT AND ADAPTATION CASE STUDY IN CHINA

KNOWLEDGE LEVEL OF URINARY SCHISTOSOMIASIS, A POTENTIAL BOTTLENECK TO DISEASE CONTROL IN THE HYPERENDEMIC HEALTH DISTRICT OF KENIEBA HEALTH DISTRICT, KAYES, MALI

DISTRIBUTION OF HYPER-ENDEMIC FOCI OF URINARY SCHISTOSOMIASIS IN MALI

PREVALENCE AND FACTORS ASSOCIATED WITH SCHISTOSOMIASIS AMONG ADULTS AGED 18-35 YEARS IN KISUMU COUNTY, WESTERN KENYA

PREVALENCE AND DISTRIBUTION OF SCHISTOSOMIASIS AND SOIL TRANSMITTED HELMINTHS IN 131 DISTRICTS OF 15 PROvinces of ANGOLA, 2018-2019

Prevalence, Exposures, and Risk for Schistosomiasis in the U.S. Military

Alyssa R. Lindrose1, Indrani Mitra2, Jamie Fraser3, Patrick W. Hickey4, Edward Mitre1

1Department of Microbiology and Immunology, Uniformed Services University of the Health Sciences; The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc., Bethesda, MD, United States; 2Infectious Disease Clinical Research Program, Department of Preventive Medicine and Biostatistics, Uniformed Services University of the Health Sciences, Bethesda, MD, United States; 3Department of Pediatrics, Uniformed Services University of the Health Sciences, Bethesda, MD, United States; 4Department of Microbiology and Immunology, Uniformed Services University of the Health Sciences, Bethesda, MD, United States
Schistosomiasis and Other Trematodes – Immunology, Pathology, Cellular and Molecular Biology

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UROGENITAL SCHISTOSOMIASIS AMONG PRE-SCHOOL AND SCHOOL AGED CHILDREN IN FOUR DISTRICTS OF NORTHWESTERN TANZANIA AFTER A DECADE OF MASS DRUG ADMINISTRATION: GEOGRAPHICAL PREVALENCE, PERFORMANCE OF HAEMATURIA REAGENT STRIPS AND ASSOCIATED FACTORS

Humphrey D Mazigo1, Cecilia Ulisso2, Upendo Mwingira3, Paul Kazyoba3, Maria Zinga1, Safari M. Kinung’hi4, Francesca Mutapi1
1Department of Medical Parasitology, School of Medicine, Catholic University of Health and Allied Sciences, Mwanza, United Republic of Tanzania, 2National Institute of Medical Research, Dar es Salaam, United Republic of Tanzania, 3RTI, Washington, DC, United States, 4NIHR Global Health Research Unit Tackling Infections to Benefit Africa, University of Edinburgh, Ashworth Laboratories, King’s Buildings, Edinburgh, United Kingdom

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ABO BLOOD GROUPS DO NOT PREDICT SCHISTOSOME INFECTION PROFILES IN HIGHLY ENDEMIC VILLAGES OF UGANDA

Rachel Francoeur1, Moses Arinaitwe1, Alon Atuhaire1, Poppy Lamberton1, Simon Babayan1, Edridah Muheki1
1University of Glasgow, Glasgow, United Kingdom, 2Vector Control Division, Ministry of Health, Kampala, Uganda

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DEVELOPMENT OF COMMUNITY EFFORTS TOWARDS SCHISTOSOMIASIS VECTOR GENETIC TOOLS AND CONTROL STRATEGIES

Nicolas J. Wheeler1, Nathalie Dinguirard1, Jutta Reinhard-Rupp2, David Rollinson2, Timothy P. Yoshino1, Mostafa Zamanian1
1University of Wisconsin-Madison, Madison, WI, United States, 2Merck KGaA Global Health Institute, Eysins, Switzerland, 3Natural History Museum, London, United Kingdom

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MATERNAL SCHISTOSOMIASIS SYSTEMICALLY MODULATES ADAPTIVE IMMUNITY

Lisa C. Gibb1, Diana Cortes-Selva1, Atakan Ekiz1, Keke Fairfax1
1University of Utah, Salt Lake City, UT, United States

Water, Sanitation, Hygiene and Environmental Health

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EVALUATION OF CRASSPHAGE MARKER FOR TRACKING FECAL CONTAMINATION IN THE BAGMATI RIVER, NEPAL

Lauren M. Ward1, Rajani G. Shrestha2, Sarmila Tandukar1, Jeevan B. Sherchand3, Eiji Haramoto2, Samendra F. Sherchand1
1Department of Environmental Health Sciences, Tulane University School of Public Health and Tropical Medicine, New Orleans, LA, United States, 2Interdisciplinary Center for River Basin Environment, University of Yamanashi, Kofu, Japan, 3Department of Natural, Biotic and Social Environmental Engineering, University of Yamanashi, Kofu, Japan, 4Institute of Medicine, Tribhuvan University, Kathmandu, Nepal

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BACTERIAL AND PARASITIC CONTAMINATION OF SATCHET WATER BRANDS SOLD AT NGWO, ENUGU STATE NIGERIA

Pauline U. Umeanaeto1, Ezinne G. Ani1, Victoria I. Anyaohia1, Miriam O. Nwueze1, Chukwudinma C. Okoli2
1Nnamdi Azikiwe University, Awka, Anambra State, Nigeria, 2Hospital Management Board, Laboratory Unit, Kuje General Hospital, Federal Capital Territory, Abuja, Nigeria

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REDUCING DISABILITY ADJUSTED LIFE YEARS (DALYS) LOST AMONG CLIMATE REFUGEES IN DHAKA

Neelima Afroz Molla1, Kabirul Ahsan Mollah1, Ghaflar Ali2, Oleg Shipin4, Pongrama Ramasoota3
1BCSIR, Dhaka, Bangladesh, 2Oxford College of Arts, Business & Technology, Toronto, ON, Canada, 3University of Agriculture Faisalabad, Faisalabad, Pakistan, 4Asian Institute of Technology, Pathumthani, Thailand, 5Mahidol University, Bangkok, Thailand

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AIRBORNE FUNGI SPORE DISTRIBUTION IN TWO HOSPITALS IN KABALE DISTRICT, SOUTHWEST, UGANDA

Adeyinka Odebode, Gerald Niwamanya
Kabale University, Kabale, Uganda

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ASSESSING BEHAVIOUR TOWARDS THE UPTAKE OF A NOVEL LOW-COST WATER FILTRATION SYSTEM IN SCHISTOSOMIASIS-ENDEMIC COMMUNITIES IN MWANZA, TANZANIA

May N. Sule1, Safari M. Kinung’hi2, Askwar Hilonga3, Justina Mosha2, Michael R. Templeton1
1Imperial College London, London, United Kingdom, 2National Institute for Medical Research, Mwanza Centre, Mwanza, United Republic of Tanzania, 3The Nelson Mandela African Institution of Science and Technology, Arusha, United Republic of Tanzania

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NON-CHOLERA INVASIVE VIBRIOSIS RATES IN MARYLAND ARE RELATED TO YEARLY WATER TEMPERATURES

Naomi Hauser1, Amanda Thepotte1, Gregory Schrank2, Ronald Rabinowitz2
1University of Maryland Medical Center, Baltimore, MD, United States, 2University of Maryland School of Medicine, Baltimore, MD, United States

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EFFECT OF A WATER, SANITATION, AND HYGIENE PROGRAM ON HANDWASHING WITH SOAP AMONG HOUSEHOLD MEMBERS OF DIARRHEA PATIENTS IN HEALTH FACILITIES IN BANGLADESH: A CLUSTER-RANDOMIZED CONTROLLED TRIAL OF THE CHOBI7 MOBILE HEALTH PROGRAM

Fatema Zohura1, Md. Sazzadul Islam Bhuyian1, Ronald Saxton2, Ronald Saxton3, Tahmina Parvin1, Shirajum Monira1, Shirajum Monira1, Shwapon Kumar Biswas1, Jehovah Masud1, Sharika Nuzhat1, Nowshin Papri1, M Tassidik Hasan1, Elizabeth Thomas1, David A. Sack1, Jamie Perin2, Munirul Alam1, Christine Marie George2
1International Center for Diarrheal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 2Johns Hopkins School of Public Health, Baltimore, MD, United States, 3Johns Hopkins University, Baltimore, MD, United States
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**PROCESS EVALUATION FOR THE DELIVERY OF A WATER, SANITATION, AND HYGIENE MOBILE HEALTH PROGRAM: FINDINGS FROM THE RANDOMIZED CONTROLLED TRIAL OF THE CHOBi7 MOBILE HEALTH PROGRAM**


1International Center for Diarrheal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 2Johns Hopkins University, Baltimore, MD, United States, 3University of New South Wales, Sydney, Australia, 4University of Manitoba, Winnipeg, MB, Canada

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**DIARRHEAL DISEASE KNOWLEDGE AMONG HOUSEHOLD MEMBERS OF DIARRHEA PATIENTS: FINDINGS FROM THE RANDOMIZED CONTROLLED TRIAL OF THE CHOLERA-HOSPITAL-BASED-INTERVENTION-FOR-7 DAYS (CHOBi7) MOBILE HEALTH PROGRAM**

Jahed Masud1, Shwapon Kumar Biswas1, Fatema Zohura1, Md. Sazzadul Islam Bhuyian1, Nowshin Papi1, Fahmida Dil Farzana1, Tahmina Parvin1, Shirajum Monira1, Munirul Alam1, Christiane Marie George2

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**HEALTH BEHAVIORS AND THE SPATIAL DISTRIBUTION OF INFESTATIONAL PARASITE INFECTIONS IN SOUTH AMERICA**

Nelson Atehortua De la Pena1, Yohana Sarria-Guzman2

1Jackson State University, Jackson, MS, United States, 2Public Health Consultant, Cartagena, Colombia

**Poster Session A Viewing**

**Poster Hall**

Monday, November 16
3 p.m. - 7 p.m. U.S. Eastern Time Zone

**Break**

Monday, November 16
1 p.m. - 1:30 p.m. U.S. Eastern Time Zone

**Scientific Session 18**

**Global Health: Planetary Health and Malaria**

**Meeting Room 1**

Monday, November 16
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

**CHAIR**

Josh M. Colston

University of Virginia School of Medicine, Charlottesville, VA, United States

Andres G. Lescano

Universidad Peruana Cayetano Heredia, Lima, Peru

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**ASSOCIATIONS BETWEEN 8 EARTH OBSERVATION-DERIVED CLIMATE VARIABLES AND PATHOGEN-SPECIFIC ENTERIC INFECTIONS IN MULTIPLE LARGE SURVEILLANCE STUDIES**

Josh M. Colston

University of Virginia School of Medicine, Charlottesville, VA, United States

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**MICROBIOME OF DOMESTIC WATER FROM RURAL COMMUNITIES IN THE SOUTHERN CARIBBEAN, WATER QUALITY AND HUMAN HEALTH IMPLICATIONS**

Akihat Sh Stewart1, Adrian Cashman2, Dave Duman Chadee3, Adesh Ramsubhag1

1The University of the West Indies, St. Augustine, Trinidad and Tobago, 2The University of the West Indies, Cavehill Campus, Barbados

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**INCREASING ACCESS TO MALARIA IN PREGNANCY SERVICES THROUGH COMMUNITY HEALTH UNITS AND ENHANCED SUPPORTIVE SUPERVISION OF COMMUNITY HEALTH VOLUNTEERS**

Donald Apat1, Willis Akhware1, Moses Kidi1, Edwin Onyango2, James Andati1, Hellen Gatakaa1, Augustin Ngindu1, Lolade Oseni1, Gladys Tetteh1, Daniel Wacira2

1PMI-Impact Malaria, Nairobi, Kenya, 2Department of Health, Busia County, Kenya, 3Jhpiego, Baltimore, MD, United States

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**CO-IMPLEMENTING VITAMIN A SUPPLEMENTATION WITH SEASONAL MALARIA CHEMOPREVENTION IN SOKOTO STATE, NIGERIA: A FEASIBILITY STUDY**

Oluosola B. Oresanya1, Abraham Ahmadu1, Abimbola Phillips1, Taiwo Ibiniaye1, Olatunde Adams2, Jamilu I. Nikau3, Chris Isokpunwu4, Rilwan M. Anka4, Shiiwan H. Dlakwa5, Nana A. Ibrahim6, Ochinogbu Paul7, Abdulrahman A. Ahmed8, Mohammad A. Inname9, Charlotte Ward10, Kevin Baker10, Madeleine Marasciulo10, Christian Rassi10, Kolawole Maxwell10, Helen Smith10


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**DETERMINING SEROPRESENCE- A REVIEW OF APPROACHES TO DEFINE SEROPRESENCE WHEN USING MULTIPLEX BEAD ASSAYS TO ASSESS BURDEN OF TROPICAL DISEASES**

YuYen Chan1, Kimberly Fornace2, Eric Rogier3, Lindsey Wu4, Ben F. Arnold5, Jeffrey W. Priest1, Diana L. Martin1, Michelle Chang5, Samuel E. Jean4, Jackie Cook6, Gillian Stresman5, Chris Drakeley1

1London School of Hygiene and Tropical Medicine, London, United Kingdom, 2Centers for Disease Control and Prevention, Atlanta, GA, United States, 3University of California, San Francisco, San Francisco, CA, United States, 4Population Services International/ Organisation Haïtienne de Marketing Social pour la Santé, Port-au-Prince, Haiti

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**CERVICAL CANCER: LATE PRESENTATION AND ASSOCIATED FACTORS AT MBARARA REGIONAL REFERRAL HOSPITAL**

Sudi Mohamed

Mbarara University of Science and Technology, Mbarara, Uganda

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**ETHICAL CHALLENGES AND MORAL DISTRESS AMONG FIELD EPIDEMIOLOGISTS IN GLOBAL HEALTH**

David G. Addiss1, Emma Cooke2, George Lopez2, Angela Hilmers3

1Task Force for Global Health, Atlanta, GA, United States, 2Emory School of Medicine, Atlanta, GA, United States, 3Emory University Rollins School of Public Health, Atlanta, GA, United States
**Symposium 19**

**Mechanistic Dose-Response Modelling of Antimalarial Drugs**

*Meeting Room 2*

**Monday, November 16**

3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

Malaria is one of the most important infectious diseases in the world. Research has shown that many of the current antimalarial drugs were introduced at the wrong doses, particularly in young children and pregnant women. The only way to determine accurately the correct dose regimens for antimalarial treatments is to establish a dose-response relationship through pharmacokinetic-pharmacodynamic (PK/PD) modelling. It is necessary to identify the different demographic, physiological, disease related, and pharmaceutical factors that influence drug concentrations and thereby malaria treatment outcomes, including preventive treatment. Furthermore, better precision can be obtained with a modelling approach, compared to traditional dose-group comparisons, since the individual concentration-time profiles are used to modulate the treatment outcomes. This powerful approach allows dose-optimization in different sub-populations, at particular risk of under- or over-dosing, and it facilitates considerably the interpretation of clinical trials and other pharmacological studies. PK/PD modelling spans from simple empirical description of the PK/PD properties of a drug, to highly complex mechanistic models based on biological processes. This symposium will present four separate but interlinked talks on state-of-the-art modelling of antimalarial drugs and the translational advantages of such model approaches. The symposium will focus on different modelling-based approaches, including individual participant data (IPD) meta-analyses to characterize the pharmacokinetic properties of antimalarial drugs and the relationship between dose, exposure and pharmacodynamic outcomes, as well as using modelling and simulation as a clinical decision tool for selecting new antimalarial combination therapies. First speaker: Pharmacokinetics and mosquito-killing effects of ivermectin and its metabolites. Second speaker: Primaquine PK/PD modelling: Pharmacokinetic properties, gametocytocidal activity, and mosquito infectivity. Third speaker: WWARN IPD meta-analyses: secondary use of pooled PK data to improve malaria treatment in vulnerable sub-populations. Last speaker: Developing clinical decision tools for selecting new antimalarial combination therapies.

**Chair**

Joel Tarning

*Mahidol Oxford Tropical Medicine Research Unit, Bangkok, Thailand*

Julie Simpson

*University of Melbourne, Melbourne, Australia*

3 p.m.  
**Pharmacokinetics and mosquito-killing effects of ivermectin and its metabolites**

Joel Tarning  
*Mahidol Oxford Tropical Medicine Research Unit, Bangkok, Thailand*

**3:25 p.m.**  
**Primaquine PK/PD Modelling: Pharmacokinetic Properties, Gametocytocidal Activity, and Mosquito Infectivity**

Palang Chotsiri  
*Mahidol University, Bangkok, Thailand*

**3:50 p.m.**  
**WWARN IPD meta-analyses: secondary use of pooled PK data to improve malaria treatment in vulnerable sub-populations**

Karen Barnes  
*University of Cape Town, Cape Town, South Africa*

**4:15 p.m.**  
**Developing clinical decision tools for selecting new antimalarial combination therapies**

Julie A. Simpson  
*University of Melbourne, Melbourne, Australia*

**Symposium 20**

**A Fundamental Way to Prevent Malaria in Pregnancy: Improving Health Outcomes for Pregnant Women and Their Babies One Nurse and Midwife at a Time**

*Meeting Room 3*

**Monday, November 16**

3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

The World Health Organization (WHO) Executive Committee proclaimed 2020 the “Year of the Nurse and the Midwife” recognizing these health workers are on the frontlines every day bringing innovation and transforming health care. 2020 is also the year Roll Back Malaria renewed the Global Call to Action for Intermittent Preventive Treatment during Pregnancy (IPTp) in its five-year anniversary. Nurses and midwives are the backbone of health care systems in Africa and beyond, and it is their leadership and commitment that enables pregnant women to receive the comprehensive care they need, including prevention and control of malaria, leading to improved maternal and newborn health outcomes. This symposium will highlight the necessity of empowering nurses and midwives further to achieve our aims to prevent malaria in pregnancy. Participants will learn about the renewed Call to Action and efforts to improve the supply of medicines for IPTp at the global and country level, as well as gaining a better understanding of the role that nurses and midwives must play in improving IPTp coverage through innovative approaches to ANC. The symposium will open with a broader WHO perspective, including the Call to Action and the importance of the Year of the Midwife and Nurse for MiP agenda. Updates on new manufacturers and new packaging for quality assured MiP medicines will be reviewed. A presentation from Guinea will focus on short message services (SMSs) to remind women of upcoming ANC visits sent before each appointment. Pregnant women receiving SMSs were 48x more likely to attend all visits and were 12x more likely to receive all IPTp doses during pregnancy. Burkina Faso will share its experience with the utilization of community health workers for community delivery of IPTp in 3 districts to increase coverage of 3 or more IPTp-SP doses without detracting from ANC attendance. Administration of IPTp4 more than doubled...
between the baseline (22%) and endline (47%) in the intervention group. Delivery of the 4th and additional ANC visits increased by 15-percentage points for the intervention area between the baseline (62%) and endline (77%) surveys, while there was only a 3-percentage point increase in the control group. Nigeria and Kenya observed increases in IPTp coverage among women attending Group ANC, with the mean number of IPTp doses received was higher for intervention versus control arm in Nigeria (3.45 versus 2.14, p<0.001) and Kenya (3.81 versus 2.72, p<0.001). These experiences and global efforts will reinforce that nurses and midwives are saving lives every day to prevent MiP and that they are critical to the continuing journey to ensure that no pregnant woman experiences malaria.

CHAIR
Katherine Wolf
Jhpiego, Baltimore, MD, United States
Maurice Bucagu
World Health Organization, Geneva, Switzerland

3 p.m.
INTRODUCTION TO THE CALL TO ACTION IN THE YEAR OF THE NURSE AND MIDWIFE
Pedro Alonso
World Health Organization, Geneva, Switzerland

3:20 p.m.
QUALITY ASSURED MIP MEDICINES: AN UPDATE ON THE SUPPLY SIDE
Maud Lugand
Medicines for Malaria Venture (MMV), Geneva, Switzerland

3:40 p.m.
USING SHORT MESSAGE SERVICE ALERTS TO INCREASE ANTENATAL CARE AND MALARIA PREVENTION: FINDINGS FROM IMPLEMENTATION RESEARCH PILOT IN GUINEA
Aissata Fofana
RTI International, Conakry, Guinea

4 p.m.
TESTING THE FEASIBILITY OF COMMUNITY IPTP IN BURKINA FASO
Yacouba Ouedraogo
Jhpiego, Ouagadougou, Burkina Faso

4:20 p.m.
EFFECT OF GROUP ANTENATAL CARE (G-ANC) VERSUS INDIVIDUAL ANTENATAL CARE (ANC) ON IPTP AND ANC ATTENDANCE: A CLUSTER-RANDOMIZED CONTROLLED TRIAL IN NIGERIA AND KENYA
Jenipher Ang’a’ha
Jhpiego, Kisumu, Kenya

Symposium 21
Clinical Group Symposium II (American Committee on Clinical Tropical Medicine and Travelers’ Health – ACCTMTH): Tropical Medicine Jeopardy

Meeting Room 4
Monday, November 16
3 p.m. - 4:45 p.m., U.S. Eastern Time Zone

This session will feature, for the very first time, a highly interactive activity intended to engage the audience in an educative, yet entertaining, fashion. The format is a modified version of the quiz show “Jeopardy”, with questions primarily focused on tropical and travel medicine. The goal of the Tropical Medicine Jeopardy tournament is to further clinical tropical and travel medicine education in a fun format. Student trainees from three different institutions will compete for prizes in an exciting competition that stimulates education in a fun format. To keep the session light and entertaining, a small percentage of questions may be of the trivia type, which may include humorous ones. This is a collaborative effort that includes input from many members of the Clinical Group. As the first of its kind offered by the Clinical Group at the ASTMH Annual Meeting, this session is expected to be a front-runner for similar interactive sessions in the future.

CHAIR
Latha Rajan
Tulane University, New Orleans, LA, United States

3 p.m.
ACCTMTH ANNUAL BUSINESS MEETING
Latha Rajan
Tulane University, New Orleans, LA, United States

3:45 p.m.
TROPICAL MEDICINE JEOPARDY
CHAIR:
Latha Rajan
Tulane University, New Orleans, LA, United States
Co-Chair: Brady Page
Massachusetts General Hospital, Boston, MA, United States
Judge: Obinna Nnedu
Ochsner Clinic Foundation, New Orleans, LA, United States
SCOREKEEPER:
Austin T. Jones
Tulane University, New Orleans, LA, United States
PANELISTS:
Sarah Boudova
Indiana University Health, Indianapolis, IN, United States
Guy Crowder
Franciscan Health, School of Public Health and Tropical Medicine, Indianapolis, IN, United States
Khanh Pham
NYP/Weill Cornell Medical Center, New York, NY, United States

Scientific Session 22
Arthropods: Other Arthropods

Meeting Room 5
Monday, November 16
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

CHAIR
Chukwunonso Nzelu
University of Calgary, Calgary, AB, Canada
Soanandrasana Rahelinirina
Institut Pasteur de Madagascar, Antananarivo, Madagascar
CHARACTERIZATION OF THE ADAPTIVE IMMUNE RESPONSE ELICITED BY REPEATED EXPOSURE TO THE BITES OF AN INSECT VECTOR: IMPLICATIONS FOR VECTOR TRANSMITTED DISEASES
Chukwunonso O. Nzelu, Matheus B. Carneiro, Nathan C. Peters
Snyder Institute for Chronic Diseases, Departments of Microbiology, Immunology and Infectious Diseases, Cumming School of Medicine and Comparative Biology and Experimental Medicine, Faculty of Veterinary Medicine, University of Calgary, Calgary, AB, Canada

DECIPHERING OF MOLECULAR INTERACTIONS BETWEEN THE TRIPARTITE "SIMULIUM DAMNOSUM VECTOR, ENDOBACTERIAL BACTERIA AND OCHOCERCA VOLVULUS": EXPLORATION OF THE POTENTIAL OF BACTERIAL SPECIES AS BIOLOGICAL TOOLS FOR THE DEVELOPMENT OF A NOVEL VECTOR CONTROL STRATEGY TO FIGHT ONCHOCERCIASIS IN AFRICA
Arnauld Efon Ekangouo
Centre for Research on Filariasis and other Tropical Diseases, Yaounde, Cameroon
(ACMCIP Abstract)

DETECTION TIME LIMIT OF BLOOD MEAL HOST DEOXYRIBONUCLEIC ACID IN A TICK, RHIPICEPHALUS (BOOPHILUS) POST FEEDING.
Tanatswa X. Gara1, Sungai Mazando2
1Africa University, Mutare, Zimbabwe, 2University of Zimbabwe, Harare, Zimbabwe
(ACMCIP Abstract)

SURVEILLANCE OF PLAGUE INFECTION IN MAMMALS AND FLEAS, MADAGASCAR, 2019 &T; FOR < AND &GT; FOR >
Soanandrasana Rahelinirina1, Mireille Harimalala2, Jerry Rakotoniaina2, Romain Girod3, Minoarisoa Rajerison1
1Plague Unit, Institut Pasteur de Madagascar, Antananarivo, Madagascar, 2Medical Entomology Unit, Institut Pasteur de Madagascar, Antananarivo, Madagascar, 3Central Laboratory for Plague, Ministry of Public Health, Antananarivo, Madagascar

TEMPERATURE MEDIATED EFFECTS ON VESICULAR STOMATITIS VIRUS INFECTION IN CULICOIDES SONORENSIS MIDGES
Paula Rozo-Lopez1, Berlin Londono1, Barbara Drolet2
1Kansas State University, Manhattan, KS, United States, 2United States Department of Agriculture, Manhattan, KS, United States

A PROTOCOL FOR A CLUSTER RANDOMIZED TRIAL OF ONE-DOSE VERSUS TWO-DOSE IVERMECTIN MASS DRUG ADMINISTRATION FOR SCABIES IN REMOTE ISLAND COMMUNITIES IN SOLOMON ISLANDS
Susanna J. Lake, Josephine E. A. Girod2, Minoarisoa Rajerison1
1Murdoch Children's Research Institute, Parkville, Australia, 2Kirby Institute, University of New South Wales, Sydney, Australia, 3Ministry of Health and Medical Services, Honiara, Solomon Islands, 4McGill University Montreal, QC, Canada, 5Australian National University, Canberra, Australia, 6London School of Hygiene and Tropical Medicine, London, United Kingdom, 7St Vincent's Hospital, University of New South Wales, Sydney, Australia

Bacteriology: Enteric Infections II
Meeting Room 6
Monday, November 16
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

CHAIR
Daniel T. Leung
University of Utah, Salt Lake City, UT, United States
Theresa Ryckman
Stanford University School of Medicine, Stanford, CA, United States

EVALUATION OF A RAPID, POINT-OF-CARE MULTIPLEX IMMUNOCHEMOTRANSFERY ASSAY FOR THE DIAGNOSIS OF ENTERIC FEVER
Shailendra Kumar1, Ariana Nodoushani2, Farhana Khannam1, Alyssa T. DeCruz1, Paul Lambotte1, Robert Scott1, Isaac I. Bogoch1, Krista Vaidya1, Stephen B. Calderwood2, Taufiq R. Bhuiyan2, Javan Esfandiar1, Edward T. Ryan1, Firdausi Qadri2, Jason Andrews3, Richelle C. Charles4
1Chembio Diagnostic Systems, Inc, Medford, NY, United States, 2Massachusetts General Hospital, Boston, MA, United States, 3International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, 4University of Toronto, Toronto, ON, Canada, 5Dhulikhel Hospital, Dhulikhel, Nepal, 6Stanford University School of Medicine, Stanford, CA, United States

COMPARISON OF STRATEGIES FOR TYPHOID CONJUGATE VACCINE INTRODUCTION IN INDIA: A GEOSPATIAL COST-EFFECTIVENESS MODELING STUDY
Theresa Ryckman1, Arun S. Karthikeyan2, Dilesh Kumar1, Gigandeep Kang2, Jeremy D. Goldhaber-Fiebert1, Jacob John3, Nathan C. Lo1, Jason Andrews4
1Stanford University School of Medicine, Stanford, CA, United States, 2Christian Medical College Vellore, Vellore, India, 3University of California, San Francisco, San Francisco, CA, United States

MACHINE LEARNING IDENTIFIES KEY RISK FACTORS OF LINEAR GROWTH FAULTING IN YOUNG CHILDREN WITH AND WITHOUT DIARRHEA
Sharia M. Ahmed1, Benjamine Britz1, Patricia B. Pavlinac2, James A. Platts-Mills3, Karen L. Kotloff1, Daniel T. Leung4
1University of Utah, Salt Lake City, UT, United States, 2University of Washington, Seattle, WA, United States, 3University of Virginia, Charlottesville, VA, United States, 4University of Maryland, Baltimore, MD, United States

IMPACTS OF GIARDIA CARRIAGE AND ENTERIC PATHOGEN CODETECTION ON CHILDREN IN THE VACCINE IMPACT ON DIARRHEA IN AFRICA STUDY: KENYA, THE GAMBIA, AND MALI, 2015-2018
Perine Marencac1, Yiman Li1, Sunkyung Kim1, David M. Berendes1, Graeme Prentice-Mott1, Kristen Fagerli1, Helen Powell1, Irene N. Kasumba3, Sharon M. Tennant2, M. Jahangir Hossain1, Syed M. Zaman1, Henry Badji2, Sanwar Golan3, Richard Omore1, John B. Ochieng1, Jennifer R. Verani1, Alex Ondeng1, Billy Ogwelo1, Marc-Alain Widdowson1, Samba Sow4, Sanogo Doh5, Adama Mamby Keita5, Awa Traore5, Uma U. Onwuchekwa6, Jie Liu1, James A. Platts-Mills4, Eric R. Houpt7, Eric D. Mintz8, Ciara O’Reilly9, Karen L. Kotloff10
1Centers for Disease Control and Prevention, Atlanta, GA, United States, 2University of Maryland, Baltimore, MD, United States, 3MRC Unit The Gambia in Banjul, Gambia, 4Kenya Medical Research Institute, Kisumu, Kenya, 5Center for Vaccine Development Mali, Bamako, Mali, 6University of Virginia, Charlottesville, VA, United States
USE OF SOAP AND SAFE DISPOSAL OF CHILD’S FECES REDUCE TRANSMISSION AND CHILDREN’S EXPOSURE TO CAMPYLOBACTER JEJUNI IN THE KOLKATA, INDIA SITE OF THE GLOBAL ENTERIC MULTICENTER STUDY
Kurt Z. Long1, Inong Gunanti2, Byomesh Manna3, Thandavarayan Ramamurthy3, Suman Karunag2, Joanna Sanchez2, James Nataro5, Dilruba Nasrin7, Myron Levine4, Karin Kofoed4
1Swiss Tropical and Public Health Institute, Basel, Switzerland, 2Faculty of Medicine and Biomedical Sciences, University of Queensland, Brisbane, Australia, 3National Institute of Cholera and Enteric Diseases, Kolkata, India, 4National Institute of Cholera and Enteric Diseases, Basel, India, 5Department of Pediatrics, University of Virginia School of Medicine, Charlottesville, VA, United States, 6Department of Medicine and Center for Vaccine Development, Baltimore, MD, United States

EXCLUSIVE/PREDOMINANT BREASTFEEDING IS ASSOCIATED WITH LOWER RISK OF ENTEROPATHOGEN DETECTION: RESULTS FROM THE MAL-ED COHORT STUDY
Stephanie A. Richard1, Benjamin J. McCormick1, Laura E. Murray-Kolb2, Mihri Bebek2, Esther Legesse3, Nadjib Khokhar4, Sanath Giri5, Hakim Ouma6, Thomas Onwupara7, Andrew B. Mwebaze8
1US Centers for Disease Control and Prevention, Atlanta, GA, United States, 2University of Kentucky College of Public Health, Lexington, KY, United States, 3Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, 4IARC, Lyon, France, 5African Medical and Research Foundation, Kampala, Uganda, 6University of Nairobi, Nairobi, Kenya, 7University of Malawi, Blantyre, Malawi, 8University of Malawi, Blantyre, Malawi

Symposium 24
Aedes Surveillance in Africa: (Re-) Building Capacity to Address Growing Arbovirus Disease Threats
Meeting Room 7
Monday, November 16
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

Aedes-borne arboviral diseases such as dengue, Zika and chikungunya are being reported with increasing frequency across Africa, and despite being vaccine preventable, yellow fever outbreaks continue to persist. Although Africa was the cradle of modern Aedes surveillance and control methodologies stemming from the yellow fever research activities of the early 20th century, current entomological capacity is primarily focused on malaria vectors. This has resulted in a tremendous knowledge gap whereby most countries lack routine surveillance programs, trained personnel, and control activities that are focused on Aedes and the viruses they transmit. As outbreaks of Aedes-borne arboviruses continue to increase across Africa, establishing a strong public health entomology infrastructure around Aedes mosquitoes is critical to both containing and preventing outbreaks. The pervasive spread of Aedes-borne arboviruses across tropical and subtropical regions of the world, most recently demonstrated by the 2016 Zika pandemic (which also reached Africa), attests to the importance of establishing strong entomological surveillance and control activities if the public health impact of these pathogens is to be mitigated. Given recurrent yellow fever outbreaks and the increasing public health burden due to dengue and chikungunya, West Africa is a priority region for strengthening the public health entomology capacities around Aedes surveillance and control. The West African Aedes Surveillance Network (WAASuN) was created in 2017 at a meeting held in Sierra Leone, comprised of African scientists working on Aedes mosquitoes. WAASuN aims to strengthen the capacity of West African countries to carry out surveillance and control of Aedes arboviral disease vectors and facilitate collaboration between countries on various aspects of Aedes surveillance and control. Global efforts to eliminate malaria have resulted in unprecedented levels of investment in public health entomology, particularly in high burden countries in Africa. A wealth of opportunity exists to leverage malaria-focused activities to enhance integrated vector management practices and gain information regarding Aedes arbovirus vectors. Engagement with programs such as PMI that are conducting routine entomological monitoring for malaria represent an untapped opportunity for developing routine Aedes surveillance activities. The symposium will provide an overview of the public health burden of Aedes-borne arboviruses in Africa, and highlight recent initiatives that are underway to address the gaps around routine Aedes surveillance and control.

Chairs
Audrey Lenhart
US Centers for Disease Control and Prevention, Atlanta, GA, United States
Samuel K. Dadzie
Noguchi Memorial Institute for Medical Research, Accra, Ghana
Mamadou B. Coulibaly
University of Sciences Techniques and Technologies of Bamako, Mali, Bamako, Mali

3 p.m.
AEDES-BORNE ARBOVIRUSES AS AN EMERGING PUBLIC HEALTH THREAT IN AFRICA AND MULTI-SECTORAL APPROACHES FOR PREVENTION AND CONTROL
Florence Fouque
WHO-TDR, Geneva, Switzerland

3:25 p.m.
THE WEST AFRICAN AEDES SURVEILLANCE NETWORK (WAASUN)
Samuel K. Dadzie
Noguchi Memorial Institute for Medical Research, Accra, Ghana

3:50 p.m.
LEVERAGING EXISTING ENTOMOLOGY CAPACITIES FOR MALARIA TO ADDRESS AEDES SURVEILLANCE: AN EXAMPLE FROM SIERRA LEONE
Rebecca S. Levine
Centers for Disease Control and Prevention, Atlanta, GA, United States

4:15 p.m.
AN OPERATIONAL EXAMPLE OF AEDES SURVEILLANCE TO IMPROVE VECTOR CONTROL IN SENEGAL
Mawlouth Diallo
Institut Pasteur de Dakar, Dakar, Senegal

Scientific Session 25
American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Immunoparasitology and Vaccine Development
Meeting Room 8
Monday, November 16
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone
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LEISHMANIA-INFECTED MACROPHAGES RELEASE EXTRACELLULAR VESICLES THAT ACTIVATE ENDOTHELIAL CELL PROCESSES AND MAY PROMOTE VASCULARIZATION OF LEISHMANIA LESIONS

Anna E. Gioseffi, Kha Van, Kelly Ortega, Phil Yates, Peter Kima
University of Florida, Gainesville, FL, United States

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EFFECTOR FUNCTION PRIOR TO ESTABLISHMENT OF THE PHAGOSOMAL PATHOGEN NICHE IS REQUIRED FOR PROTECTIVE CD4+ T CELL-MEDIATED IMMUNITY AGAINST LEISHMANIA

Leah Hohman, Matheus B.H. Carneiro, Rachel Kratoof, Nathan C. Peters
Snyder Institute for Chronic Diseases, Department of Immunology, University of Calgary, Calgary, AB, Canada

1658

THE ROLE OF THE GPI ANCHOR IN IMMUNITY TO TOXOPLASMA GONDII

Julia Alvarez1, Scott P Souza1, Elisabet Gas-Pascual2, Jessica N Wilson1, Safuwwa Wizzard1, Brooke Wilson1, Christopher M West2, Kirk DC Jensen1

1University of California Merced, Merced, CA, United States, 2University of Georgia, Athens, GA, United States

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MODULATION OF HUMAN DENDRITIC CELL FUNCTION THROUGH MICROFILARIAE-DERIVED EXTRACELLULAR VESICLES

Alessandra Ricciardi, Dhalia Metenou, Gayatri Sanku, Roshanak Tolouei Semnani, Thomas B. Nutman
Laboratory of Parasitic Diseases, NIAID, NIH, Bethesda, MD, United States

(ACMCIP Abstract)

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ENVIRONMENTAL ALLERGEN SENSITIZATION PROMOTES MARKED DIVERSITY IN HELMINTH-DRIVEN MEMORY CD4+ EFFECTOR TH2 CELLS IN HUMANS

Pedro Gazzinelli-Guimarães1, Philip Swanson2, Thomas Nutman1

1NIAID, NIH, Bethesda, MD, United States, 2VRC, NIAID, NIH, Bethesda, MD, United States

(ACMCIP Abstract)

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FILARIAL COINFECTION IS ASSOCIATED WITH HIGHER CYTOTOXIC AND ALTERED PLASMA CYTOKENE RESPONSES IN TUBERCULOUS LYMPHADENITIS

Gokul Raj Kathamuthu
NIH-ICER-NIRT, Chennai, India

(ACMCIP Abstract)

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AN ADENOVIRUS-VECTOR EXPRESSING CATHEPSIN B PROTECTS FROM SCHISTOSOMIASIS INFECTION IN A PRECLINICAL MODEL

Dilhan J. Perera1, Adam S. Hassan1, Mehdy Elahi2, Christine Gadoury3, Rissani

(ACMCIP Abstract)
NEW FOCI FOR INTESTINAL SCHISTOSOMIASIS & SOIL-TRANSMITTED HELMINTHS INFECTION AFTER FIVE CONSECUTIVE YEARS OF MDA IN TWO DISTRICTS IN SOUTHERN ETHIOPIA

Zenihun Zerdo1, Jean-Pierre Van geertruyden2, Bastiaens Hilde3, Sibyl Anthierens2, Fekadu Massebo1, Roy M Anderson2, Justine Marshall6, Misgun Shewangizaw1, Yilma Chiha1
1Arba Minch University, Arba Minch, Ethiopia, 2University of Antwerp, Antwerp, Belgium, 3London Centre for Neglected Tropical Disease Research (LCNTRD), London, United Kingdom, 4London Centre for Neglected Tropical Disease Research, London, United Kingdom

ESTIMATING THE POTENTIAL IMPACT ON ELIMINATING TRANSMISSION OF SLEEPING SICKNESS DUE TO THE INTERRUPTION OF ACTIVITIES DURING THE COVID-19 PANDEMIC

Ching-I Huang1, Maryam Aliee1, Ronald Crump1, Soledad Castaño2, Chris Davis1, Erick Mwamba Miaka1, Matt Keesling1, Nakul Chitnis1, Kat Rock1
1University of Warwick, Coventry, United Kingdom, 2Swiss Tropical and Public Health Institute, Basel, Switzerland, 3Programme National de lutte contre la trypanosomiase humaine africaine, Kinshasa, Democratic Republic of the Congo, 4Swiss Tropical and Public Health Institute, Basel, Swaziland

A TOOL TO INVESTIGATE PERSISTENT HIGH TRANSMISSION OF STH INFECTIONS IN LOW PREVALENCE SETTINGS- CWW EXPERIENCE FROM BANGLADESH

Rubina Imtiaz1, Ashraful Kabir2, Abdullah Kawsar4, Md. Jahirul Karim3
1Children Without Worms, Decatur, GA, United States, 2Children Without Worms, Dhaka, Bangladesh, 3Elimination of lymphatic filariasis & STH Control Program, Dhaka, Bangladesh

ANTIBODY LEVELS IN Trypanosoma CRUZI INFECTION CORRELATE WITH PARASITEMIA AND CARDIOMYOPATHY: DATA FROM THE REDS-II COHORT

Lewis Fletcher Buss1, Ester C. Sabino1
1Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil

RAPID DIAGNOSTIC TESTS COMBINED WITH TREATMENT WITH A SINGLE-DOSE DRUG SPEEDS UP THE ELIMINATION OF GAMBIENSE HUMAN AFRICAN TRYPANOSOMIASIS

Ron Crump1, Ching-I Huang1, Erick Mwamba Miaka2, Kat S. Rock1
1The University of Warwick, Coventry, United Kingdom, 2PMLTHA, Kinshasa, Democratic Republic of the Congo

ADAPTATION TO MOSQUITO VECTOR SPECIES IMPACTS EVOLUTION OF PLASMODIUM FALCIPARUM

Ankit Dwivedi1, Alvaro Molina-Cruz2, Cara A. Moser1, Drissa Coulibaly1, Mahamadou A. Thera3, Chanthap Lon4, Lek Dysole4, Stuart D. Tyner4, David L. Saunders6, Myaing M. Nyunt1, Christopher V. Plowe1, Miriam K. Lauffer1, Mark A. Travassos1, Shannon Takala-Harrison1, Carolina Barillas Mury1, Joana C. Silva1
1Institute for Genome Sciences, University of Maryland School of Medicine, Baltimore, MD, United States, 2National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, MD, United States, 3Malaria Research and Training Center, University of Science, Techniques and Technologies, Bamako, Mali, 4Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand, 5The National Center for Parasitology, Entomology and Malaria Control, Ministry of Health, Phnom Penh, Cambodia, 6US Army Research Institute of Infectious Diseases, Ft. Detrick, MD, United States, 7Duke Global Health Institute, Duke University, Durham, NC, United States, 8Malaria Research Program, Center for Vaccine Development and Global Health, University of Maryland School of Medicine, Baltimore, MD, United States

SPATIOTEMPORAL DISTRIBUTION OF VISCERAL LEISHMANIASIS WITH CONSIDERATION OF ENVIRONMENTAL RISK FACTORS, MINAS GERAIS, BRAZIL, 2012-2018

Shelby L. Lyons1, Julie A. Cleennon1, José A. Ferreira1, Jessica K. Fairley1, Uriel Kitron1
1Emory Rollins School of Public Health, Atlanta, GA, United States, 2Faculdade de Saúde e Ecologia Humana, Vespasiano, Brazil, 3Emory University School of Medicine, Atlanta, GA, United States, 4Emory University, Atlanta, GA, United States

ANALYSIS OF THE CURRENT EPIDEMIOLOGICAL SITUATION OF CHAGAS DISEASE IN JAPAN

Inés Maria Iglesias Rodríguez1, Sachio Miura1, Takuya Maeda1, Clara Vásquez Velásquez1, Sumihisa Honda1, Satoshi Kaneko1, Kazuo Imai1, George Ito1, Taeko Naruse1, Kenji Hirayama1
1Department of Global Health, School of Tropical Medicine and Global Health, Nagasaki University, Nagasaki, Japan, 2NPO organization, MAIKEN, Tokyo, Japan, 3Department of Microbiology, Saitama Medical University, Saitama, Japan, 4Department of Immunogenetics, Institute of Tropical Medicine (NEKKEN), School of Tropical Medicine and Global Health, Nagasaki University, Nagasaki, Japan, 5Department of Nursing Sciences, Graduate School of Biomedical Science, Nagasaki University, Nagasaki, Japan, 6Department of Eecopidemiology, Institute of Tropical Medicine (NEKKEN), Nagasaki University, Nagasaki, Japan, 7Department of Infectious Disease and Infection Control, Saitama Medical University, Saitama, Japan, 8Consulate General of Brazil in Japan, Tokyo, Japan

American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Malaria - Genomics

Meeting Room 13
Monday, November 16
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

Chair
Julian C. Rayner
Cambridge Institute for Medical Research, University of Cambridge, Cambridge, United Kingdom

Supported with Funding from the Burroughs Welcome Fund

ADAPTATION TO MOSQUITO VECTOR SPECIES IMPACTS EVOLUTION OF PLASMODIUM FALCIPARUM

Ankit Dwivedi1, Alvaro Molina-Cruz2, Cara A. Moser1, Drissa Coulibaly1, Mahamadou A. Thera3, Chanthap Lon4, Lek Dysole4, Stuart D. Tyner4, David L. Saunders6, Myaing M. Nyunt1, Christopher V. Plowe1, Miriam K. Lauffer1, Mark A. Travassos1, Shannon Takala-Harrison1, Carolina Barillas Mury1, Joana C. Silva1
1Institute for Genome Sciences, University of Maryland School of Medicine, Baltimore, MD, United States, 2National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, MD, United States, 3Malaria Research and Training Center, University of Science, Techniques and Technologies, Bamako, Mali, 4Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand, 5The National Center for Parasitology, Entomology and Malaria Control, Ministry of Health, Phnom Penh, Cambodia, 6US Army Research Institute of Infectious Diseases, Ft. Detrick, MD, United States, 7Duke Global Health Institute, Duke University, Durham, NC, United States, 8Malaria Research Program, Center for Vaccine Development and Global Health, University of Maryland School of Medicine, Baltimore, MD, United States
PERSISTENCE OF GENETICALLY IDENTICAL PARASITES ACROSS MULTIPLE TRANSMISSION SEASONS AND EVIDENCE OF CO-TRANSMISSION IN THIES, SENÉGAL BETWEEN 2006 AND 2019

Stephen F. Schaffner1, Rachel F. Daniels1, Yue Die Ndiaye1, Katherine Figueroa1, Angela M. Early1, Aida S. Badiane2, Annette B. Badiane2, Aloune Badara Gueye3, Ibrahim Dia3, Moustapha Cisse4, Claudia R. Taccheri5, Albert Lee1, Caitlin Bever6, Joshua L. Proctor5, Dououdou Sen6, Daniell L. Hart6, Bronwyn MacInnis1, Sarah K. Volkman2, Moustapha Cisse5, Medoune Niass6, Cheikh Anta Diop University, Dakar, Senegal, 3Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, 2Department of Pathology and Laboratory Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States, 1Institute for Disease Modelling, Bellevue, WA, United States

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REDUCED P. FALCIPARUM DIVERSITY AND INCREASED GAMETOCYTE CARRIAGE AFTER A MALARIA ELIMINATION INITIATIVE IN SOUTHERN MOZAMBIQUE

Himanah Gupt1, Beatriz Galatas1, Gloria Matambisso2, Carlos Ruiz-Arenas3, Lidia Nhamusua4, Wilson Simon2, Arlindo Chidimatembe5, Pau Cistero5, Juan R. González1, Regina Rabinovich1, Joana C. Silva1, Yao Li2, Jonathan Juliano2, Hammond Z. Mwenje2, Alfredo Mayor1
1Barcelona Institute for Global Health (ISGlobal), Barcelona, Spain, 2Manhiça Health Initiative in Southern Mozambique

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SPATIAL PATTERNS OF FALCIPARUM MALARIA GENETIC RELATEDNESS DRIVEN BY HUMAN MOVEMENT IN THE DEMOCRATIC REPUBLIC OF THE CONGO

Nicholas F. Brazeau1, William Weil2, Amy Wesolowski3, Oliver J. Watson4, Andrew P. Morgan5, Azza C. Ghani6, Jonathan Juliano7, Steven Meshnick7, Robert Verity8, 1University of North Carolina School of Medicine, Chapel Hill, NC, United States, 2John Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, 3Brown University, Providence, RI, United States, 4Duke University, Durham, NC, United States, 5Medical Research Council Centre for International Mobility, Cambridge, England, 6Brown University, Providence, RI, United States, 7Brown University, Providence, RI, United States, 8University of North Carolina, Chapel Hill, NC, United States

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THE IMPACT OF ANTIMALarial DRUG RESISTANCE ON ESTIMATION OF MALARIA PARASITE MIGRATION AND EFFECTIVE POPULATION SIZE

Bing Guo1, Zalak Shah1, Yao Li2, Joana C. Silva1, Zackary Park1, Huy Rekol2, Soklyda Chann3, Michele D. Spring3, Mariusz Wojnar5, David L. Saunders6, Philip L. Smith7, Chanthan Lon8, Brian A. Wessely9, Jessica T. Lin10, Norman C. Waters11, Kathleen E. Stewart12, Timothy D. O’Connor13, Shannon Takala-Harrison14, 1University of Maryland School of Medicine, Baltimore, MD, United States, 2University of Maryland, College Park, MD, United States, 3University of North Carolina at Chapel Hill, Chapel Hill, NC, United States, 4National Center for Parasitology Entomology and Malaria Control, Phnom Penh, Cambodia, 5Armed Forces Research Institute of Medicine Sciences, Bangkok, Thailand, 6US Army Research Institute of Infectious Diseases, Ft. Detrick, MD, United States

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TEMPORAL AND SPATIAL ANALYSIS OF PLASMODIUM FALCIPARUM GENOMICS REVEALS PATTERNS OF CONNECTIVITY IN A LOW-TRANSMISSION SETTING IN SOUTHERN PROVINCE, ZAMBIA

Kara A. Moser1, Ozkan Aydemir2, Jeffrey A. Bailey3, Chris M. Hennelly2, Patrick W. Marsh1, Amy Wesolowski1, Tim Shields3, Harry Hamapumuntu4, Michael Musonda1, Ben Katowa5, Japhet Matoba5, Jennifer C. Stevenson3, Douglas E. Norris5, Philip E. Thuma5, William Moss7, Jonathan J. Juliano8, 1Institute for Global Health and Infectious Diseases, University of North Carolina Chapel Hill, Chapel Hill, NC, United States, 2Department of Pathology and Laboratory Medicine, Brown University, Providence, RI, United States, 3Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, 4Macha
3 p.m.
ROUNDTABLE DISCUSSION
Moderator: Johanna P. Daily
Albert Einstein College of Medicine, Bronx, NY, United States
Lyda Osorio
Universidad del Valle Cali, Cali, Colombia
Rockefeller Oteng
University of Michigan SOM, Flint, MI, United States
Anita Ghansah
Noguchi Medical Research Institute, Legon, Ghana

3:40 p.m.
EQUITY IN NORTH-SOUTH RESEARCH INTERACTIONS: EXPERIENCES FROM LATIN AMERICA
Andres Lescano
Universidad Peruana Cayetano Heredia, Lima, Peru

4 p.m. - 4:20 p.m.
EQUITY AD PARITY IN GLOBAL HEALTH RESEARCH: AN AFRICAN PERSPECTIVE
Faith Osier
KEMRI-CGMRC, Kilifi, Kenya

Symposium 30
American Committee on Arthropod-Borne Viruses (ACAV) Symposium II: This Week in Virology at ASTMH

Meeting Room 15
Monday, November 16
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

This symposium is a virtual recording of the podcast “This Week in Virology.”

CHAIR
Gregory Ebel
CSU, Fort Collins, CO, United States
Patricia Aguilar
UTMB, Galveston, TX, United States

THIS WEEK IN VIROLOGY
Vincent Racaniello
Columbia University, New York, NY, United States

PANELISTS
A. Desiree LaBeaud
Stanford University, Stanford, CA, United States
Jonathan Auguste
Virginia Tech, Blacksburg, VA, United States
Arauinda de Silva
University of North Carolina, Chapel Hill, NC, United States
Carol Blair
Colorado State University, Fort Collins, CO, United States
Mauricio Noguiera
Faculdade de Medicina de Sao Jose do Rio Preto, Sao Jose do Rio Preto, Brazil
Louis Lambrechts
Institut Pasteur, Paris, France

Symposium 31
Using Laboratory Methods to Increase Data Available for Public Health Decisions: The Nigeria Multi-Disease Serologic Surveillance using Stored Specimens (NMS4) Experience

Meeting Room 17
Monday, November 16
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

Many low- and middle-income countries lack the data necessary to fully describe public health threats in their countries and monitor the impact of efforts to prevent and control disease. Currently, serosurveillance to monitor disease threats is often focused on single diseases. Multidisease surveillance is a more cost-effective approach and could dramatically scale up the availability of data for public health action, including for diseases that are currently unmonitored. The 2018 Nigeria AIDS Indicator and Impact Survey (NAIIS) was one of the largest HIV household surveys ever conducted, including over 200,000 respondents who gave their consent for storage and further testing of their blood specimens. The NAIIS specimens stored in the biorepository at the Nigeria Center for Disease Control (NCDC) National Reference Laboratory (NRL) are a potential sample source for generating disease seroprevalence data to inform public health programs in Nigeria. Nigeria Multidisease Serologic Surveillance using Stored Specimens (NMS4) will use the sample repository, laboratory, and epidemiologic infrastructure in Nigeria to establish multidisease serosurveillance capacity to provide high-quality supplemental information to augment the existing surveillance network, the overall public health response, and the health of Nigerians. These serosurveillance data are critical to Nigeria, which has some of the highest infectious and vaccine-preventable disease burdens worldwide. NMS4 uses multiple laboratory methods to provide data for 15 infectious diseases and 6 vaccine-preventable diseases. Most tests are completed using the multiplex bead assay (MBA), which assesses antibody responses to multiple diseases simultaneously. The MBA can also assess presence of malaria antigens as an indicator of current malaria status. For tests not available on the MBA format, other methods will be used: ELISA for hepatitis B surface antigen; neutralization assay for polio; and PCR for follow up malaria tests to identify parasite species. Deletions of the gene encoding for histidine-rich protein 2 (HRP2), the protein target for most malaria rapid diagnostic tests, will also be assessed. To provide data to inform immunization program decisions by the end of January 2020, testing of specimens was prioritized to focus on all children 1-14 years (approximately 32,000) and a subset of samples from women of reproductive age (10,000). The additional data will be used to identify factors associated with disease exposure by age and sex and to map disease risk. The speakers will present the development of NMS4, considerations for establishing laboratory capacity in Nigeria, some key initial results, and how the data can be used for decision making to improve the lives of Nigerians.

CHAIR
Diana Martin
CDC, Atlanta, GA, United States
Osagie Ehanire
Nigeria Minister of State for Health, Abuja, Nigeria
3 p.m.
THE IMPORTANCE OF MULTIDISEASE SEROLOGIC SURVEILLANCE, THE PROCESS FOR STANDING UP ACTIVITIES IN NIGERIA, AND INITIAL VACCINE PREVENTABLE DISEASE (VPD), MALARIA, AND NEGLECTED TROPICAL DISEASE RESULTS FROM THE PRIORITY SAMPLE OF SPECIMENS
Chikwe Ihekweazu
Nigerian CDC, Abuja, Nigeria

3:20 p.m.
METHODOLOGICAL AND LABORATORY CONSIDERATIONS FOR MULTIDISEASE SEROLOGIC SURVEILLANCE
Diana Martin
CDC, Atlanta, GA, United States

3:40 p.m.
USE OF NMS4 PRIORITY SAMPLE RESULTS TO GUIDE IMMUNIZATION PROGRAM PLANNING AND DECISION MAKING FOR CONTROL OF VPDS
Faisal Shuaib
National Primary Healthcare Development Agency (NPHCDA), Abuja, Nigeria

4 p.m.
USE OF NMS4 RESULTS TO AUGMENT USE OF MALARIA SURVEILLANCE DATA AND PROVIDE NEGLECTED TROPICAL DISEASE BASELINE SURVEILLANCE DATA FOR PROGRAM PLANNING
Osagie Ehanire
Ministry of Health, Nigeria, Abuja, Nigeria

Press Room
Tuesday, November 17
The ASTMH media team is available for assistance at the following:
- Preeti Singh psingh@burness.com, tel: +1 703-862-2515
- Bridget DeSimone, bdesimone@burness.com, tel: +1 202-468-0766
- Anna Chen, achen@burness.com, tel: +1 215-262-7670
Review research highlights and more: https://astmhpressroom.wordpress.com/annual-meeting-2020/

ASTMH Information Desk
Lobby
Tuesday, November 17
5:45 a.m. - 5:30 p.m. U.S. Eastern Time Zone

Poster Session B Viewing
Poster Hall
Tuesday, November 17
Midnight - 11:45 a.m. U.S. Eastern Time Zone

Exhibit Hall
Visit the Exhibit Hall to view the schedule for each exhibit booth and connect with our exhibitors and learn about their products and services.

Sponsor Hall
Visit the Sponsor Hall to connect with our sponsors and learn about their work.

TropMed Central
Visit TropMed Central to connect with colleagues and attendees.

Sponsored Symposium
Re-starting Malaria R&D in the Face of COVID-19
Meeting Room 2
Tuesday, November 17
6:45 a.m. - 8:30 a.m. U.S. Eastern Time Zone
Sponsored by The RBM Partnership to End Malaria, the European Developing Countries Clinical Trials Partnership and Medicines for Malaria Ventures
See page 44 for information.
This annual symposium honors 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 in his role as the Malaria Director at the Bill & Melinda Gates Foundation. Despite important progress malaria still claims too many lives. In sub-Saharan Africa (SSA), the decreasing trend of malaria morbidity and mortality has stalled in the last several years. Although all current tools are effectively deployed, in some areas of the SSA malaria cases are either not decreasing or the disease is returning after a few years of decline. This demonstrates a clear need for the development of novel tools to effectively eliminate malaria in SSA. The discovery of these novel tools requires vibrant basic research not only in Northern labs but also in labs that are closest to the patients in sub-Saharan Africa. This Symposium will showcase some of the best basic research by young African scientists working in research Institutions in Africa. Understanding how Dantu blood group protects against severe malaria, deciphering the function of a Laveranian conserved protein in *Plasmodium falciparum*, editing drug resistance genes in clinical isolates or searching for new therapies for non-falciparum malaria species are some of the research that will be presented by emerging science leaders in Africa. Retaining and nurturing the next generation of African scientists in Africa and the added value of cutting edge basic research in accelerating malaria elimination in Africa will be discussed.

**CHAIR**
Abdoulaye Djimde  
MRTC-USTTB, Bamako, Mali  
Janice Culpepper  
Bill & Melinda Gates Foundation, Seattle, WA, United States

**9 a.m.**
INTRODUCTORY REMARKS: HONORING ALAN MAGILL  
Joel G. Breman  
Fogarty International Center, Bethesda, MD, United States  
Janice Culpepper  
Bill & Melinda Gates Foundation, Seattle, WA, United States

**9:05 a.m.**
RED BLOOD CELL TENSION PROTECTS AGAINST SEVERE MALARIA IN THE DANTU BLOOD GROUP  
Silvia N. Kariuki  
KEMRI-Wellcome, Kilifi, Kenya

**9:25 a.m.**
FUNCTIONAL INSIGHT ON THE ROLE OF PFMAAP; A LAVERANIAN CONSERVED PROTEIN  
Yaw Aniweh  
WACCBIP, University of Ghana, Accra, Ghana

**9:45 a.m.**
EMERGING PFCRT POINT MUTATIONS GENETICALLY EDITED INTO AFRICAN *PLASMODIUM FALCIPARUM* PARASITES MODIFY ANTIMALARIAL DRUG SUSCEPTIBILITY  
Kathryn J. Wicht  
H3D, University of Cape Town, Cape Town, South Africa

**10:05 a.m.**
DISCOVERING NEW THERAPIES FOR NON-FALCIPARUM PLASMODIUM SPECIES FROM THE FIELD  
Laurent Dembele  
MRTC-USTTB, Bamako, Mali

**10:25 a.m.**
PANEL DISCUSSION
Symposium 33
Human Challenge Infections: Learning from Nature in Controlled Settings

Meeting Room 2
Tuesday, November 17
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

Starting with experimental infections with yellow fever and dengue viruses in the early 20th century, controlled human infections (CHI) have been utilized to study infectious diseases ranging from typhoid fever to malaria for many decades. Evolving standards of ethics and protection of research participants in clinical trials diminished enthusiasm for use of CHI for research in succeeding decades. However, the recognition of the extraordinary value of CHI models for studies of infection dynamics, pathogenesis and treatment of infectious diseases has led to a revival of interest in application of CHI in research. CHI for investigating models of infections prevalent in lower-middle income countries (LMIC) are experiencing a resurgence of interest or are being carefully developed. The highly regulated environment in which clinical trials are conducted today has resulted in notable standardization of CHI studies, allowing their use in a variety if settings and for a range of infectious diseases. The goal of the symposium is to highlight the utility of CHI in offering unprecedented opportunities to examine pathophysiological and immunological aspects of these infections in humans and in evaluating efficacy of vaccines and drugs early in development. This symposium will focus on novel aspects of CHI and special considerations for conducting these studies in LMICs. This discussion is timely because of their potential to accelerate development of the pipeline of new vaccine candidates and drugs aimed specifically at tropical and neglected diseases. The symposium will provide a unique opportunity for Society members to hear from established and emerging leaders about promising applications and recent progress as well as ongoing conversations about potential contributions of CHI studies to the evolving SARS-CoV-2 pandemic and to neglected tropical diseases.

CHAIR
Siddhartha Mahanty
The Peter Doherty Inst for Inf and Imm, Melbourne VIC, Australia

Meta Roestenberg
Leiden University Medical Center, Leiden, Netherlands

9 a.m.
CONTROLLED HUMAN INFECTION STUDIES WITH PARASITES: TO CAPTURE AND CONTROL HETEROGENEITY

Meta Roestenberg
Leiden University Medical Center, Leiden, Netherlands

9:25 a.m.
WHAT CHI CAN REVEAL ABOUT MALARIA

James S. McCarthy
University of Melbourne, Melbourne, Australia

9:50 a.m.
LEVERAGING HUMAN INFECTION STUDIES TO UNDERSTAND IMMUNITY IN ENDEMIC POPULATIONS

Melissa C. Kapulu
KEMRI-Wellcome Trust Research Programme, Nairobi, Kenya

10:15 a.m.
SARS-COV-2 HUMAN CHALLENGE INFECTIONS IN HEALTHY VOLUNTEERS

Anna Durbin
Johns Hopkins University School of Public Health, Baltimore, MD, United States

Symposium 34
Sepsis in Low- and Middle-Income Countries (LMICs): Current Challenges and Triumphs Illustrated Through Clinical Cases

Meeting Room 3
Tuesday, November 17, 9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

At the seventieth World Health Assembly in 2017, the WHO announced a resolution to improve the prevention, diagnosis, and clinical management of sepsis with particular emphasis on its importance as a global health problem. The past several years have seen intensifying focus on the capacity of low- and middle-income countries (LMICs) to manage critically ill patients, with particular recognition of sepsis as a global health problem that disproportionately affects those living in LMICs. Sepsis is life-threatening organ dysfunction due to a dangerous host immune response to overwhelming infection and represents a final common pathway to death for patients afflicted by HIV, tuberculosis, malaria, viral hemorrhagic fevers, diarrheal disease, respiratory viruses, and other tropical diseases. Additionally, patients with chronic non-communicable diseases such as cancer, cirrhosis, and COPD are known to be at increased risk for developing sepsis. With the epidemiological transition underway globally, co-morbid NCDs complicate and worsen outcomes in sepsis. As a result of the heightened visibility of sepsis as a global health problem there is increased research on various aspects of sepsis in LMICs; however, there remains an urgent need to further build capacity and refine algorithms for decision-making in clinical care. This symposium will feature four expert discussants, each of which will discuss a specific topic within the area of sepsis in LMICs. The topics covered will include the distinctive etiologies of sepsis in LMICs, the evolving landscape of antimicrobial resistance in LMICs, current evidence-based management of sepsis in LMICs, and critical care capacity in LMICs. Globally, sepsis has become a hugely important topic, with broad engagement of clinicians and scientists from various fields. We propose an interdisciplinary symposium which maximizes updates on the clinical aspects of the important topic of sepsis and imparts significant takeaways for the audience. It should be noted that global critical care and sepsis are maturing fields with many crucial questions that beg answering. The significant controversies that exist amongst critical care and emergency providers in high-income countries with respect to management best-practices for septic patients are also present in the LMIC and are compounded by limited resources.

CHAIR
Brady Page
Massachusetts General Hospital, Boston, MA, United States

Latha Rajan
Tulane University, New Orleans, LA, United States
9 a.m.
THE ETIOLOGIES OF SEPSIS IN LMICS
Christopher Moore
University of Virginia, Charlottesville, VA, United States

9:25 a.m.
ANTIMICROBIAL RESISTANCE IN LMICS
Abdulrazaq Habib
Bayero University; Kano, Nigeria

9:50 a.m.
EVIDENCE-BASED MANAGEMENT OF SEPSIS IN LMICS
Shevin Jacob
Liverpool School of Tropical Medicine, Liverpool, United Kingdom

10:15 a.m.
THE CAPACITY CHALLENGE: BUILDING CRITICAL HEALTHCARE CAPACITY IN LMICS
Lisa Bebell
Massachusetts General Hospital, Boston, MA, United States

Scientific Session 35
Bacteriology: Systemic Infections

Meeting Room 4
Tuesday, November 17
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone
CHAIR
Christine Moe
Emory University-Rollins School of Public Health, Atlanta, GA, United States
Ashley Styczynski
Stanford University, Palo Alto, CA, United States

METABOLOMICS BIOMARKER DISCOVERY IN SEPSIS PATIENTS FROM AUSTERE ENVIRONMENTS
Joost Brandsma1, Deborah Striegel1, Will Thompson2, Paul Blair3, Josh Chenoweth4, Abdulrazaq Habib1, Subramanian Krishnan1, Kevin Schully2, Lisa St. John-Williams5, George Odouro6, Daniel Ansong7, Andrew Letizia8, Anne Fox9, Marvin Sklar10, Charmagne Beckett11, Benjamin Espinosa12, Ephraim Tsallik13, Christopher Woods14, Danielle Clark15
1Henry M. Jackson Foundation, Austere Environments Consortium for Enhanced Sepsis Outcomes, Bethesda, MD, United States, 2Duke University, School of Medicine, Durham, NC, United States, 3Biological Defence Research Directorate, Naval Medical Research Center-Frederick, Ft. Detrick, MD, United States, 4Emory University-Rollins School of Public Health, Atlanta, GA, United States, 5Center for Global Health, Centers for Disease Control and Prevention, Atlanta, GA, United States, 6Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 7Naval Medical Research Center, Silver Spring, MD, United States, 8Naval Medical Research Center - Asia, Singapore, Singapore, 9Infectious Diseases Directorate, United States, 10Naval Medical Research Center - Asia, Singapore, Singapore, 11Infectious Diseases Directorate, United States, 12Naval Medical Research Center - Asia, Singapore, Singapore, 13Infectious Diseases Directorate, United States, 14Naval Medical Research Center - Asia, Singapore, Singapore, 15Infectious Diseases Directorate, United States

PERINATAL TRANSMISSION OF ANTIMICROBIAL RESISTANT ORGANISMS - BANGLADESH
Ashley Styczynski1, Md. Badrul Amin2, Shahana Parveen3, Md. Abu Pervez4, Dilruba Zeba5, Emily Gurley6, Stephen Luby7
1Stanford University, Palo Alto, CA, United States, 2icddrb, Dhaka, Bangladesh, 3icddrb, Dhaka, Bangladesh, 4Faridpur Medical College Hospital, Faridpur, Bangladesh, 5Johns Hopkins University, Baltimore, MD, United States

ALARMING INCIDENCE OF NEONATAL SEPSIS AND ANTIMICROBIAL RESISTANCE AT TWO LARGE HOSPITALS IN ETHIOPIA
John Cramer1, Abebe Gobezyahu2, Lamesgin Alamineh3, Gizachew Yismaw4, Joseph Hopkins5, Mulusew Beliew6, Habib Yakubu7, Lindsay Denny7, Christine L. Moe8
1Emory University-Nell Hodgson Woodruff School of Nursing, Atlanta, GA, United States, 2Emory Ethiopia, Amhara Regional Office, Bahir Dar, Ethiopia, 3Amhara Public Health Institute, Bahir Dar, Ethiopia, 4Emory University, Atlanta, GA, United States, 5Emory University-Rollins School of Public Health, Atlanta, GA, United States

ASSESSMENT OF BACTERIAL AETIOLOGY, ANTIMICROBIAL RESISTANCE AND RISK FACTORS FOR NEONATAL SEPSIS IN A NEONATAL INTENSIVE CARE UNIT (NICU) OF A TERTIARY CARE HOSPITAL IN NEPAL: A PROSPECTIVE COHORT STUDY
Sulochana Manandhar1, Puja Amatya2, Imran Ansari3, Neeva Joshi1, Nhu kesh Maharan1, Sabina Dongol1, Buddha Basnyat1, Sameer Dixit1, Stephen Baker8, Abhilasha Karkey1
1Oxford university clinical research unit, Patan Academy of Health Sciences, Kathmandu, Nepal, 2Department of paediatrics, Patan Academy of Health Sciences, Kathmandu, Nepal, 3Center for molecular dynamics Nepal, Kathmandu, Nepal, 4Cambridge Infectious Diseases, University of Cambridge, Cambridge, United Kingdom

HYPERVERULENT MULTIDRUG-RESISTANT KLEBSIELLA SPP. CAUSING SEVERE AND FATAL DISEASE IN CHILDREN IN RURAL MOZAMBIQUE
Arseania Joana Massinga1, Augusto Messa Junior1, Nélito Nobela1, Marcelino Garrine1, Sergio Massora1, Anéslio Cossa1, Delfino Vubil1, Hélio Mucavel1, Tacitla Nhampossa1, Clara Menendez1, Robert Breiman2, Dianna Blau1, Quique Bassat1, Inácio Mandomando1
1Centro de Investigação em Saúde de Maniça, Maniça, Mozambique, 2ISGlobal, Hospital Clinic - Universitat de Barcelona, Barcelona, Spain, 3Emory Global Health Institute, Emory University, Atlanta, GA, United States, 4Center for Global Health, Centers for Disease Control and Prevention, Atlanta, GA, United States

RARE ORGANISMS IDENTIFIED THROUGH MITS IN BANGLADESH: POTENTIAL CONTRIBUTION IN CHILD DEATH?
Mustafizur Rahman1, Dilruba Ahmed2, Muntasir Alam3, M Ishrat Jahan4, Afruna Rahman5, Farzana Islam1, Kyu Han Lee1, Shafina Jahan1, Sanwarul Bari1, Emily S. Gurley1, Shams El Arifeen1
1icddrb, Dhaka, Bangladesh, 2Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States

CHANGE IN SALMONELLA TYPHI INCIDENCE AND ANTIMICROBIAL RESISTANCE PATTERNS FOLLOWING MASS VACCINATION WITH THE NEW TYPHOID CONJUGATE VACCINE
Ioana Diana Olaru1, Nicholas Feasey2, Rashida A. Ferrand1, Janice A. Martin1, David Mabey1, Heidi Hopkins1, Sekesai Mtapuri-Zinyowera3, Prosper Chonz1, Katharina Kranzer4
1London School of Hygiene and Tropical Medicine, London, United Kingdom, 2Liverpool School of Tropical medicine, Liverpool, United Kingdom, 3Biomedical Research and Training Institute, Harare, Zimbabwe, 4National Microbiology Reference Laboratory, Harare, Zimbabwe, 5Department of Health - Harare City, Harare, Zimbabwe

Scientific Session 36
Clinical Tropical Medicine: VHF-Related, Viruses

Meeting Room 5
Tuesday, November 17
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone
CHAIR
Nguyet M. Nguyen
Oxford University Clinical Research Unit, Ho Chi Minh, Vietnam
Robert Samuels
Kenema Government Hospital, Kenema, Sierra Leone

ANTIMICROBIAL RESISTANCE PATTERNS FOLLOWING MASS VACCINATION WITH THE NEW TYPHOID CONJUGATE VACCINE
Takashinga Gawkonde1, Nicholas Feasey1, Rashida A. Ferrand2, Janice A. Martin2, David Mabey1, Heidi Hopkins1, Sekesai Mtapuri-Zinyowera3, Prosper Chonz1, Katharina Kranzer4
1London School of Hygiene and Tropical Medicine, London, United Kingdom, 2Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 3Biomedical Research and Training Institute, Harare, Zimbabwe, 4National Microbiology Reference Laboratory, Harare, Zimbabwe

VACCINATION WITH THE NEW TYPHOID CONJUGATE VACCINE
Ioana Diana Olaru1, Nicholas Feasey2, Rashida A. Ferrand1, Janice A. Martin1, David Mabey1, Heidi Hopkins1, Sekesai Mtapuri-Zinyowera3, Prosper Chonz1, Katharina Kranzer4
1London School of Hygiene and Tropical Medicine, London, United Kingdom, 2Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 3Biomedical Research and Training Institute, Harare, Zimbabwe, 4Department of Health - Harare City, Harare, Zimbabwe

CHANGE IN SALMONELLA TYPHI INCIDENCE AND ANTIMICROBIAL RESISTANCE PATTERNS FOLLOWING MASS VACCINATION WITH THE NEW TYPHOID CONJUGATE VACCINE
Sulochana Manandhar1, Puja Amatya2, Imran Ansari3, Neeva Joshi1, Nhu kesh Maharan1, Sabina Dongol1, Buddha Basnyat1, Sameer Dixit1, Stephen Baker8, Abhilasha Karkey1
1Oxford university clinical research unit, Patan Academy of Health Sciences, Kathmandu, Nepal, 2Department of paediatrics, Patan Academy of Health Sciences, Kathmandu, Nepal, 3Center for molecular dynamics Nepal, Kathmandu, Nepal, 4Cambridge Infectious Diseases, University of Cambridge, Cambridge, United Kingdom

HYPERVERULENT MULTIDRUG-RESISTANT KLEBSIELLA SPP. CAUSING SEVERE AND FATAL DISEASE IN CHILDREN IN RURAL MOZAMBIQUE
Arseania Joana Massinga1, Augusto Messa Junior1, Nélito Nobela1, Marcelino Garrine1, Sergio Massora1, Anéslio Cossa1, Delfino Vubil1, Hélio Mucavel1, Tacitla Nhampossa1, Clara Menendez1, Robert Breiman2, Dianna Blau1, Quique Bassat1, Inácio Mandomando1
1Centro de Investigação em Saúde de Maniça, Maniça, Mozambique, 2ISGlobal, Hospital Clinic - Universitat de Barcelona, Barcelona, Spain, 3Emory Global Health Institute, Emory University, Atlanta, GA, United States, 4Center for Global Health, Centers for Disease Control and Prevention, Atlanta, GA, United States
EBOLA ASSOCIATED HEARING LOSS

Samuel C. Ficenec1, Donald Grant2, Michael Gbakie3, Ibrahim Sumah2, Susan D. Emmett1, John S. Schieffelin1
1 Tulane School of Medicine, New Orleans, LA, United States, 2 Tulane Viral Hemorrhagic Fever Organization, Kenema, Sierra Leone, 3 Duke University School of Medicine, Durham, NC, United States

POST-EBOLA SYNDROME PRESENTS WITH MULTIPLE OVERTLAPPING SYMPTOM CLUSTERS: EVIDENCE FROM AN ONGOING COHORT STUDY IN EASTERN SIERRA LEONE

Nell G. Bond1, Emily Engel1, Lansana Kanneh2, Robert Samuel3, Adacora Okoli1, Sarah T. Himmelfarb2, Jeffrey Shaffer1, Donald Grant2, John Schieffelin1
1 Tulane University SOM, New Orleans, LA, United States, 2 Kenema Government Hospital, Kenema, Sierra Leone, 3 Vanderbilt University, Nashville, TN, United States

IMPACT OF ORAL ANTIMALARIAL TREATMENT ON MORTALITY IN PATIENTS WITH EBOLA VIRUS DISEASE: A MULTISITE COHORT STUDY

Logan Abel1, Stephanie Chow Garbern2, Tao Liu2, Derrick Yam3, Shiroimi Perera4, Stephen Kennedy5, Moses Masaquio1, Foday Sahrb1, Adam C. Levine1, Adam R. Aluisio2
1 Warren Alpert Medical School of Brown University, Providence, RI, United States, 2 Department of Emergency Medicine, Brown University Alpert Medical School, Providence, RI, United States, 3 Brown University School of Public Health, Center for Statistical Sciences, Department of Biostatistics, Providence, USA, Providence, RI, United States, 4 International Medical Corps, Los Angeles, CA, United States, 5 Ministry of Health, Monrovia, Liberia, 6 College of Medicine and Allied Health Sciences, University of Sierra Leone, Freetown, Sierra Leone

LASSA FEVER AMONG CHILDREN IN EASTERN PROVINCE, SIERRA LEONE: A 7-YEAR RETROSPECTIVE ANALYSIS (2012-2018)

Robert J. Samuels1, Donald S. Grant1, Joseph R. Starnes2, Emily Engel2, Jeffrey G. Shaffer1, John S. Schieffelin1, Troy D. Moon2
1 Kenema Government Hospital, Kenema, Sierra Leone, 2 Vanderbilt Institute for Global Health, Nashville, TN, United States, 3 Tulane University, New Orleans, LA, United States

A MATCHED COHORT STUDY TO CHARACTERISE THE CLINICAL MANIFESTATIONS OF DENGUE IN PREGNANCY AND INVESTIGATE THE SPECTRUM OF ADVERSE MATERNAL AND FETAL OUTCOMES

Nguyet M. Nguyen
Oxford University Clinical Research Unit, Ho Chi Minh, Viet Nam

SYMPOSIUM 37

Overcoming the Deworming Cliff: Challenges in Maintaining Mass Treatment for Soil Transmitted Helminths When Lymphatic Filariasis Program Stops

Meeting Room 6
Tuesday, November 17
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

Lymphatic Filariasis (LF) and Soil transmitted helminths (STH) are two of the most widespread neglected tropical diseases (NTDs) amenable to preventive chemotherapy. In most countries, the LF program is the largest platform for drug distribution using Albendazole (ALB) and Ivermectin (IVM) or ALB in combination with Diethylcarbamazine (DEC) in some countries, where DEC is co-administered with ALB and IVM. Soil transmitted helminths have rarely been mapped alone at baseline prior to the starting of preventive chemotherapy. In general, STH has been treated as part of the mass drug administration (MDA) for LF - because Albendazole is also the main drug for STH control. Alternatively, STH treatments are co-implemented during Schistosomiasis (SCH) MDA in areas where the two diseases are co-endemic. Only a few countries have standalone STH control programs. In addition, impact assessments for STH programs have been very limited in most of the donors supported countries. Under the USAID funded Act to End NTD program, 468 districts from a total of 11 countries have stopped MDA for LF in 2019. Among these districts 126 are still in need for STH MDA upon evaluation (prevalence >1%). Globally, within the USAID supported countries, several programs including Togo, Mali, Cameroon and Haiti have either stopped or on track for stopping LF MDA in all their endemic districts following successful transmission assessment surveys. These countries are now facing challenges in terms of developing and implementing long-term strategies to transition their STH control programs, especially in districts where STH prevalence remains moderate to high. In fact, in areas where STH remain endemic, School health platforms, immunization outreach projects, bed nets distribution, nutrition interventions, maternal and child health campaigns have been explored or used to continue deworming programs. The
session will discuss the programmatic and operational challenges in maintaining the gains of STH control especially around and after post LF MDA. The presenters will explore country specific perspectives in terms of cross sector coordination with non-health sectors (education, water, sanitation etc.) and the integration of deworming into other public health platforms and routine health care services for people at risk for STH.

CHAIR
Achille Kabore
FHI360, Washington, DC, DC, United States
Pauline N. Mwinzi
WHO/ESPEN, Brazzaville, Republic of the Congo

9 a.m.
STATUS OF STH IN DISTRICTS WHERE LF MDA HAS STOPPED IN MALI – RESULTS OF TAS/STH SURVEYS
Traore Mahamadou
Ministry of Health Mali - Direction Générale de la Santé et l’Hygiène Publique, Bamako, Mali

9:15 a.m.
CONTROLLING SOIL TRANSMITTED HELMINTHS IN COMPLEX LYMPHATIC FILARIASIS AND LOAIS ENDEMIC SETTINGS IN CAMEROON
George Nko Ayissi
Ministère de la Sante Publique, Yaounde, Cameroon

9:30 a.m.
LF ELIMINATION AND STH CONTROL IN HAITI – SUCCESS AND CHALLENGES
AbdelDireny
IMA World Health, Washington, DC, United States

9:45 a.m.
TOGO’S PLANS FOR CONTROLLING SOIL TRANSMITTED HELMINTHS POST ELIMINATION OF LYMPHATIC FILARIASIS
Monique Dorkenoo
University of Lome - Togo, Lome, Togo

Symposium 38

American Committee of Medical Entomology (ACME)
Symposium I: Annual Business Meeting, Awards and Hoogstraal Medal Presentation

Meeting Room 7
Tuesday, November 17
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

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 the 2020 travel awardees and SC Johnson (SCJ) sponsored award. This serves in part to highlight the next generation of medical entomologists. The session then moves to the presentation of the Hoogstraal medal and a plenary lecture by the recipient.

CHAIR
Ellen M. Dotson
Centers for Disease Control and Prevention, Atlanta, GA, United States
Gabriel L. Hamer
Texas A&M University, College Station, TX, United States

9 a.m.
ACME ANNUAL BUSINESS MEETING AND AWARDS
Ellen M. Dotson
Centers for Disease Control and Prevention, Atlanta, GA, United States

9:20 a.m.
SC JOHNSON (SCJ) INTERNATIONAL RESEARCH LEADERS
Cusi Ferradas
Universidad Peruana Cayetano Heredia, Lima, Peru

9:35 a.m.
INTRODUCTION OF HOOGSTRAAL MEDAL AWARDEE
Stephanie James
Foundation for the National Institutes of Health, North Bethesda, MD, United States

9:50 a.m.
HARRY HOOGSTRAAL MEDAL PRESENTATION AND PLENARY LECTURE
Stephen Higgs
Kansas State University, Manhattan, KS, United States

10:35 a.m.
CONCLUSION AND PASSING OF THE GAVEL
Ellen Dotson
National Center for Infectious Diseases, Centers for Disease Control and Prevention, Atlanta, GA, United States

Scientific Session 39

Dengue: Vaccines and Immunity

Meeting Room 8
Tuesday, November 17,
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

CHAIR
Gregory D. Ebel
Colorado State University, Fort Collins, CO, United States
Heather Friberg
WRAIR, Silver Spring, MD, United States

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TAKEDA’S TETRAVALENT DENGUE VACCINE - TWO YEARS EFFICACY SURVEILLANCE
Shibadas Biswal1, Inge Lefevre2, Vianney Tricou2, Martina Rauscher2, Astrid Borkowski2, TIDES Study Group
1Takeda Vaccines, Inc, Cambridge, MA, United States, 2Takeda Pharmaceuticals International AG, Zurich, Switzerland

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CELL-MEDIATED IMMUNITY GENERATED BY TAKEDA’S TETRAVALENT DENGUE VACCINE CANDIDATE
Heather Friberg1, Kristin Hatch1, Faiza Mubashar1, Hayden Siegfried1, Kaitlin Victor1, Damon Ellison1, Richard G. Jarman1, Shibadas Biswal2, Derek Wallace2, Hansi Dean2, Vianney Tricou1, Jeffrey R. Currier1
1Walter Reed Army Institute of Research, Silver Spring, MD, United States, 2Takeda Vaccines, Boston, MA, United States

501
THE OLIGOMERIC STATE OF FLAVIVIRUS E- SUBUNITS DEFINES VACCINE EFFICACY IN CHALLENGE MODELS
Stefan W. Metz, Ashlie Thomas, Devina J. Thiono, Stephan Kudlacek, John Forsberg, Cesar A. Lopez, Helen M. Lazzar, Shaomin Tian, Brian Kuhlman, Aravinda M. de Silva
University of North Carolina at Chapel Hill, Chapel Hill, NC, United States
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SIGNS OF ANTIGENIC DISTANCES EMBEDDED IN DENV PROTEINS, BEYOND THE SURFACE


Armored Forces Research Institute of Medical Sciences, Bangkok, Thailand, University of Cambridge, Cambridge, United Kingdom, University of Florida, Gainesville, FL, United States, Walter Reed Army Institute of Research, Silver Spring, MD, United States, University of California, San Francisco, CA, United States, State University of New York Upstate Medical University, Syracuse, NY, United States, National Institutes of Health, Bethesda, MD, United States, University of California, Berkeley, Berkeley, CA, United States

(ACMCI Abstract)

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ZIKA VIRUS INFECTION ENHANCES FUTURE RISK OF SEVERE DENGUE DISEASE

Leah Katzelnick, César Narvaez, Sonia Arguello, Brenda Lopez Mercado, Damaris Collado, Oscarlett Ampie, Douglas Elizondo, Tatiana Miranda, Fausto Bustos, Juan Carlos Mercado, Krista Latta, Amy Schiller, Bruno Segovia-Chumbe, Sergio Ojeda, Nery Sanchez, Miguel Plazola, Josefa Coloma, M. Elizabeth Halloran, Lakshmane Prekmugur, Aubree Gordon, Federico Narvaez, Aravinda de Silva, Guillermina Kuan, Angel Balmaseda, Eva Harris

Division of Infectious Diseases and Vaccinology, School of Public Health, University of California, Berkeley, Berkeley, CA, United States, Sustainable Sciences Institute, Managua, Nicaragua, Laboratorio Nacional de Virología, Centro Nacional de Diagnóstico y Referencia, Ministry of Health, Managua, Nicaragua, Department of Epidemiology, School of Public Health, University of Michigan, Ann Arbor, MI, United States, Department of Microbiology and Immunology, University of North Carolina School of Medicine, Chapel Hill, NC, United States, Department of Biostatistics, University of Washington, Seattle, WA, United States, Centro de Salud Sócrates Flores Vivas, Ministry of Health, Managua, Nicaragua

(ACMCI Abstract)

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SKIN-BASED PROTECTIVE IMMUNITY THROUGH REPEATED HOOKWORM INFECTION

Marie-Astrid Hoogerwerf, Vincent P. Kuiper, Jacqueline J. Janse, Roos van Schuijlenburg, Marijke C. Langenberg, Beckley A. Nosof, Yvonne C. Kruize, Jeroen C. Sijtsma, Eric A. Briener, Leo G. Visser, Lisette van Lieshout, Maria Yazdanbaksh, Meta Roestenberg

Leiden University Medical Center, Leiden, Netherlands

(ACMCI Abstract)

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PROTEOMIC ANALYSIS OF ASCARIS LARVAE EXCRETORY-SECRETORY PRODUCTS

Grace Adeniyi-Ipadeola, Antrix Jain, Sung Yun Jung, Jill Weatherhead

Baylor College of Medicine, Houston, TX, United States

(ACMCI Abstract)

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STRONGYLOIDES STERCORALIS CO-INFECTION MODULATES THE CEREBROSPINAL FLUID IMMUNE PROFILE IN TUBERCULOUS MENINGITIS

Joseph Donovan, Trinh Thi Bich Tran, Nguyen Hoan Phu, Nguyen Thi Thu Hiep, Le Van Tan, Nguyen Thuy Thuong Thuong, Guy E. Thwaites

Oxford University Clinical Research Unit, Ho Chi Minh City, Viet Nam

(ACMCI Abstract)

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TAENIA SOLIUM-INDUCED AUTOANTIBODIES IN THE CEREBRAL SPINAL FLUID OF PATIENTS WITH SUBARACHNOID NEUROCYSTICERCOSIS

Aissatou Bah, Joshua Sciruba, Theodore E. Nash, Thomas Nutman

The National Institute of Health, Bethesda, MD, United States

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ALBENDAZOLE-INDUCED DAMAGE TOT. CRASSICEPHYSYTS REQUIRES EOSINOPHILS FOR MAXIMAL EFFECT IN A MOUSE INTRAPERITONEAL MODEL

Joshua C. Sciruba, Pedro H. Gazzinelli-Guiamarés, Theodore E. Nash, Thomas B. Nutman, Elise M. O’Connell

National Institutes of Health, Bethesda, MD, United States

(ACMCI Abstract)

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HISTOLOGICAL FINDINGS IN THE CALCIFIED LESIONS IN NEUROCYSTICERCOSIS DISEASE IN A STUDY LONGITUDINAL IN PIGS

Laura E. Baquedano Santana, Javier Bustos, Noemi Miranda, Jaime Caceres, Hector Garcia

Universidad Peruana Cayetano Heredia, Lima, Peru

(ACMCI Abstract)

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ESTABLISHING THE PRESENCE AND IMPACT OF PORCINE CYSTICERCOSIS IN HISPANIOLA

Yussaira Castillo Fortuna, Arve Lee Willingham

Ross University School of Veterinary Medicine, Basseterre, Saint Kitts and Nevis
Scientific Session 41

Kinetoplastida: Immunopathology and Vaccine Development

Meeting Room 10
Tuesday, November 17
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

CHAIR
Naomi E. Aronson
USUHS, Bethesda, MD, United States

Fabiano Oliveira
NIH, Rockville, MD, United States

Differential Gene Expression of Human Neutrophils from Subclinical and Clinical Leishmania Brazilianis Infection
Jacilara Alexandrino Conceicao1, Ednaldo Lago2, Pedro Carneiro2, Andreza Dorea2, Walker Nonato2, Aline Muniz2, Eric Aguiar2, Diogo Valadares1, Edgar Carvalho1, Maria Olivia Baccellar1, Mary Wilson1
1University of Iowa, Iowa City, IA, United States, 2Federal University of Bahia, Salvador, Brazil

Leishmaniasis: The Interface of Human Health/Animal Diseases

Late-Breaker Abstract Session 42

Late-Breakers in Basic Sciences

Meeting Room 11
Tuesday, November 17
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

CHAIR
Katherine R. Dobbs
Case Western Reserve University, Cleveland, OH, United States

Wei-Kung Wang
Tropical Medicine, JABSOM, University of Hawaii at Manoa, Honolulu, HI, United States

This session is specifically designed for brief presentations of new data obtained after the closing date for abstract submission. See Late-Breaker Abstract Presentation Schedule booklet (available online) for the presentation schedule.

Scientific Session 43

One Health: Interface of Human Health/Animal Diseases

Meeting Room 12
Tuesday, November 17
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

CHAIR
Claire Cornelius
US Army, Chicago, IL, United States

Kristy Murray
Baylor College of Medicine, Houston, TX, United States
COMMUNITY-BASED GUINEA WORM SURVEILLANCE IN CHAD: EVALUATING A SYSTEM AT THE INTERSECTION OF HUMAN AND ANIMAL DISEASE
Beth L. Rubenstein1, Sharon Roy1, Karmen Unterwegsner2, Sarah Yerian2, Adam Weiss2, Hubert Zirimwabagabo1, Elisabeth Chop2, Mario Romero2, Philip Tchindebet1, Tchonfienet Moundai1, Sarah Guaigliardi1
1Centers for Disease Control and Prevention – Central Asia Office, Almaty, Kazakhstan, 2The Carter Center, Atlanta, GA, United States, 3The Carter Center, N’Djamena, Chad

PREVALENCE OF CRIMEAN-Congo HEMORRHAGIC FEVER AMONG LIVESTOCK AND TICKS IN ZHAMBYL, KAZAKHSTAN
Litik Kazazian1, Yekaterina Bumburidz2, Jonathan Bryant-Genevier3, Victoria Seffren3, Jennifer R. Head4, Dmitriy Berezovskiy2, Bakhytkul Zhakipbayeva2, Stephanie J. Salyer1, Barbara Knust1, Cheng-Feng Chiang4, Gufaira Mirzabekova1, Kamil Dzhalal2, Jandar Koekeev1, Canatbek Kartabayev4, Seydiqapbar Mamadaliyev4, Curtis Blanton5, Trevor Shoemaker2, Daniel Singer5, Daphne B. Moffett2
1Centers for Disease Control and Prevention, Atlanta, GA, United States, 2The Branch of NRCV, MoES, Almaty, Kazakhstan, 3The Carter Center, Atlanta, GA, United States, 4The Carter Center, N’Djamena, Chad

ANIMAL OWNERSHIP AND INFANT FEEDING PRACTICES AS PREDICTORS OF CAMPYLOBACTER INFECTIONS IN INFANTS IN SHURUGWI DISTRICT, ZIMBABWE
C. Batsirai Mutasa1, Robert Ntizoi1, Kuda Mutasa1, Thompson Runodamoto1, Marya P. Carmolli1, Dzvaiyidzo Chidhangingo1, Naume Tavengwa2, Dorothy M. Dickson2, Beth D. Kirkpatrick1, Andrew Prendergast1, E. Ross Colligate3
1Royal Veterinary College, London, United Kingdom, 2University of Vermont Larner College of Medicine, Burlington, VT, United States

MULTI-HOST, MULTI-PARASITE SCHISTOSOMIASIS IN AFRICA: A ONE HEALTH PERSPECTIVE IN OUR CHANGING WORLD
Elsa Leger1, Anna Borlase2, Cheikh B. Fall3, Nicolaus D. Diouf1, Stefano Catalano4, Aidan M. Emery1, Momar Ndoy1, Babacar Faye1, David Rollinson1, James W. Rudge5, Mariama Sene6, Joanne P. Webster1
1Royal Veterinary College, London, United Kingdom, 2University of Oxford, Oxford, United Kingdom, 3Centre for Research in Tropical Medicine and Tulane National Primate Research Center, New Orleans, LA, United States, 4University of California, San Francisco, San Francisco, CA, United States, 5McGill University, Montreal, QC, Canada

CHICKFLOWS: A FOOD SYSTEMS APPROACH UTILIZING MICROBIAL MEASURES TO ASSESS KEY HAZARDS AND RISKS TO CHILD HEALTH ASSOCIATED WITH CHICKEN-RELATED ENTEROPATHOGENS IN MAPUTO, MOZAMBIQUE
Frederica Lamar1, Amélia Mondlane-Milise2, Courtney Victor2, Kelsey Jesser3, Hermgönes Mucache1, Matthew C. Freeman1, Karen Levy1
1Emory University, Atlanta, GA, United States, 2Eduardo Mondlane University, Maputo, Mozambique

LIVESTOCK AND THE EPIDEMIOLOGY OF SLEEPING SICKNESS: MECHANISMS AND IMPLICATIONS
Julianne Meiner1, Jonathan Wakefield2, David M. Pigott2, Ali Rowhani-Rahbar3, Jonathan D. Mayer1, Peter M. Rabinowitz2
1University of Washington, Seattle, WA, United States, 2Georgia State University, Atlanta, GA, United States, 3University of California, San Francisco, San Francisco, CA, United States, 4Centre de Recherche en Sante de Nouna, Nouna, Burkina Faso
Symposium 45

Cytomegalovirus and Epstein-Barr Virus in Sub-Saharan Africa

Meeting Room 14
Tuesday, November 17
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

In their ubiquity, herpesviruses are pervasive causes of disease worldwide, both in tropical and non-tropical environments. Established and emerging evidence, however, elucidates how many of these viruses behave differently based on the context of infection. This symposium will focus on two herpesviruses, cytomegalovirus (CMV) and Epstein-Barr virus (EBV), in various Sub-Saharan African settings. The first two speakers will discuss their investigations in congenital and postnatal CMV infections. Most children born with congenital CMV are living in low- and middle-income countries, where pregnant women are infected despite pre-existing immunity, termed non-primary infection. Despite likely significant morbidity in these settings, little is known about the maternal and fetal determinants of non-primary infection. We will present original data from Sierra Leone, Kenya and Uganda, and examine epidemiology in highly seroprevalent settings, mechanisms and determinants of transmission, and genomic distinctions in vertically versus horizontally acquired infections. The second two speakers will transition to studies of EBV which also infects African children early in life. Primary EBV infections in young children are asymptomatic but when combined with chronic Plasmodium falciparum malaria, this herpes virus triggers the most renowned EBV-associated cancer, endemic Burkitt lymphoma. This session will present original data from Kenya and examine EBV genome variation, the role of viral microRNAs, and the changing immune landscape in children that influences control over this persistent herpes virus infection.

CHAIR
Monika L. Dietrich
Tulane University, New Orleans, LA, United States

9 a.m.
CONGENITAL CMV AND NON-PRIMARY INFECTION IN PREGNANCY IN HIGHLY SEROPREVALENT POPULATIONS
Monika L. Dietrich
Tulane University, New Orleans, LA, United States

9:25 a.m.
VIRAL DETERMINANTS OF CMV INFECTION AND REINFECTION: IMPLICATIONS FOR VACCINE DEVELOPMENT
Soren Gantt
Centre de recherche du CHU Sainte-Justine, Montréal, QC, Canada

9:50 a.m.
The Changing Immune Landscape in Children and its Influence on EBV Control
Ann M. Moormann
University of Massachusetts Medical School, Worcester, MA, United States

10:15 a.m.
EBV GENETIC VARIATION AND ITS IMPACT ON CANCER
Cliff Odoo
Brown University, Providence, RI, United States

Scientific Session 46

Malaria: Chemotherapy and Drug Resistance

Meeting Room 16
Tuesday, November 17
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

CHAIRS
Mahamadou Diakite
University of Bamako, Bamako, Mali
Melissa D. Conrad
UCSF, San Francisco, CA, United States

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NOVEL HAPLOTYPES OF PFCRT IN PLASMODIUM FALCIPARUM FROM THE YUNNAN PROVINCE, CHINA CONFER RESISTANCE TO THE FIRST LINE ANTIMALARIAL PIPERAQUINE
Jennifer L. Small-Saunders1, Laura M. Hagenah1, Sathish K. Dhingra1, Kathryn J. Wicht1, Jonathan Kim1, Eva Gill Iturbe1, Matthias Quick1, Filippo Mancia1, Paul D. Roepe1, Margaret J. Eppestein1, David A. Fidock1
1Columbia University, New York, NY, United States, 2Georgetown University, Washington, DC, United States, 3University of Vermont, Burlington, VT, United States

(ACMCIP Abstract)

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DISSECTING THE ROLE OF PLASMEPSIN II AND III IN PIPERAQUINE RESISTANT P. FALCIPARUM LINES
Breanna Walsh, Robert L. Summers, Sarah K. Volkmann, Dyann F. Wirth, Selina Bopp
Harvard T.H. Chan School of Public Health, Boston, MA, United States

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DEFORMABILITY OF INFECTED RBC AS THE KEY FEATURE OF PERSISTENCE AND RECRUDESCENCE IN ARTEMISININ-RESISTANT MALARIA?
Malorie Dépont1, Chanaki Amaratunga2, Charlotte Chambiron1, Lucia Angella1, Sokunthea Sreng3, Manel Ouji4, Sivanna Mao5, Chantha Sophie6, Baramey Sam7, Kasia Stepniewska6, Seila Sou6, Sylvester Biligi7, Philippe Guerin4, Jérôme Cros1, Béatrice Ausinlhou8, Safi Dokmak9, Jean-Michel Augereau1, Françoise Benoît-Vical1, Rick Fairhurst1, Pierre Buffet1, Papa Alioune Ndour1
1INSERM U1134 INTS. Labex GRex, Paris, France, 2Laboratory of malaria and vector research NIH, Rockville, MD, United States, 3National Center for Parasitology, Phnom Penh, Cambodia, 4LCC-CNRS, Toulouse, France, 5INSERM-Cimi U1135, Paris, France, 6Sampov Meas Referral Hospital, Pursat, Cambodia, 7Makara 16 Referral Hospital, Preah Vihear, Cambodia, 8Ratanakiri Referral Hospital, Banlung, Cambodia, 9Infectious diseases data observatory WWARN, Bangkok, Thailand, 10APHP Beaugon, Paris, France

(ACMCIP Abstract)

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MUTATIONS IN A PUTATIVE LYPSOHOSPHOLIPASE ARE ASSOCIATED WITH ALTERED EX Vivo SUSCEPTIBILITY TO MULTIPLE ACT PARTNER DRUGS
Melissa D. Conrad1, Ozkan Akyemem2, Patrick K. Turnebaze3, Oswald Byaruhanga2, Martin Oktiti4, Stephen Orenia5, Roland A. Cooper6, Jeffrey A. Bailey2, Philip J. Rosenthal1
1University of California, San Francisco, CA, United States, 2Brown University, Providence, RI, United States, 3Infectious Diseases Research Collaboration, Tororo, Uganda, 4Dominican University of California, San Rafael, CA, United States

(ACMCIP Abstract)
**Symposium 47**

**Flames, Floods, Fevers and Fetuses - Can Humans Survive?**

**Meeting Room 17**

**Tuesday, November 17**

**9 a.m. - 10:45 a.m. U.S. Eastern Time Zone**

The climate emergency is at a critical point; our entire survival as a species is under threat within decades. The health impacts of this crisis have the potential to be catastrophic. Extreme heat events, floods, drought and storms are all increasing in frequency, and will continue to do so. The direct mortality related to these events is likely to rise with increasing exposure, but the impact of the indirect health effects will be much larger. Food insecurity, malnutrition, mass migration, collapse of ecosystems and outbreaks of infectious disease are the growing consequences, occurring on a global scale. Vulnerable populations, and those living in low and middle income countries are at highest risk of climate related morbidity and mortality. Although there is no scientific doubt regarding climate change, there exists a disconnect between the scientific evidence and government policies. The symposium will begin with an overview of the impact of the environmental and climate crisis on health, to give delegates a clear understanding of the gravity of the situation. In the summer of 2019, Australia burned during over its hottest summer ever recorded – resulting in over 20 million hectares being destroyed— and with that, an estimated one billion animals and 34 humans perished. The 300 million tonnes of CO2 emitted was accompanied with smoke that travelled at least 11,000km and could be seen from space. Already over 90% of people live in “unhealthy” air quality – and increasing bushfires will have a global impact on the mortality associated with this, which already is estimated to be in excess of 4 million deaths annually. The third talk will present the results from a clinical study on the impact of extreme heat in pregnancy and on fetal wellbeing in the Gambia. This talk will focus on the physiological changes that occur during extreme heat events, how the heat load can impact fetal status, and what this may mean in future climate scenarios. The fourth talk will examine the growing threat from arboviruses; specifically, the expansion in vector distribution attributable to climate change, increased risk of outbreaks after major flooding events, and impending threats to vector biocontrol strategies with even modest temperature rises.

**CHAIR**

Sophie Yacoub

Oxford University Clinical Research Unit, Ho Chi Minh City, Viet Nam

Ana Bonell

London School of Hygiene and Tropical Medicine, Banjul, Gambia

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**9 a.m.**

**FLAMES, FAMINES AND FLOODS: A PLANETARY CRISIS**

Hugh Montgomery

University College London, London, United Kingdom

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**9:25 a.m.**

**THE BURNING BUSH IN AUSTRALIA’S SUMMER OF SADNESS INDUCED BY SHORT-SIGHTED FINANCIAL MADNESS**

John Fraser

University of Queensland, Brisbane, Australia

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**9:50 a.m.**

**HOTTER AND HOTTER: EFFECTS OF EXTREME HEAT ON MATERNAL AND FETAL HEALTH IN THE GAMBIA**

Ana Bonell

Medical Research Council Gambia @ London School of Hygiene and Tropical Medicine, Banjul, Gambia

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**10:15 a.m.**

**BURNING QUESTIONS: COULD CLIMATE CHANGE CAUSE NEW CHILLING CONTAGIONS?**

Kris Murray

Medical Research Council Gambia @ London School of Hygiene and Tropical Medicine, Banjul, Gambia

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**Break**

**Tuesday, November 17**

**10:45 a.m. - 11 a.m. U.S. Eastern Time Zone**

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**Plenary Session 48**

**Plenary Session III: Charles Franklin Craig Lecture**

**Grand Ballroom**

**Tuesday, November 17**

**11 a.m. - 11:45 a.m. U.S. Eastern Time Zone**

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, in 1909 he began a long association with the Army Medical School in Washington DC, 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).

**INTRODUCTION**

William A. Petri

University of Virginia, Charlottesville, VA, United States
Elizabeth Ann Winzeler is a Professor in the Department of Pediatrics at University of California, San Diego, School of Medicine. She received her Ph.D. in 1996 from the Department of Developmental Biology at Stanford University, training under the microbiologist, Lucy Shapiro. She performed postdoctoral studies at Stanford working with the geneticist, Ronald Davis, before moving to a joint position at the Scripps Research Institute and the Genomics Institute of the Novartis Research Foundation (GNF). At the GNF, she led a malaria drug discovery program that has yielded several novel antimalarial chemotypes that are currently in clinical trials (KA609, also known as cipargamin, and KAF156). In 2012 she moved to the University of California, San Diego. She has authored more than 200 scholarly publications and has received the Bailey-Ashford Medal for distinguished achievements in tropical medicine, the ASBMB Alice and CC Wang Award in Molecular Parasitology, the ASTMH Trager Award, the Medicines for Malaria Venture Project of the Year Award. She is a fellow of the American Academy of Microbiology and is currently the director of the Malaria Drug Accelerator, an international consortium that aims to discover new treatment modalities for malaria.
Global Health

UNDERSTANDING RELIGIOUS PERSPECTIVES ABOUT DEATH AND SAMPLE COLLECTION FROM DEAD BODIES USING MINIMALLY INVASIVE TISSUE SAMPLING IN THE CONTEXT OF THE CHAMPS STUDY IN HARAR AND KERSA: EASTERN ETHIOPIA.

Ketema Degefa Begna1, Mohammad Aliyi1, Berhanu Damise1, Azeb Kidane3, Nega Assefa1, Loila Madrid2
1Haramaya University, Ethiopia, Harar, Ethiopia, 2London School of Hygiene & Tropical Medicine, London, United Kingdom

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DESCRIPTION OF ANALYSIS OF VACCINE TRENDS IN THE DOMINICAN REPUBLIC: IS THE D.R. UNAFFECTED BY THE VACCINE HESITANCY MOVEMENT?

Miguel Delgadoillo1, Alejandro Villanueva4, Priscilla Abate1, Jose Duran1, Paola Peña1, Yanimar Pérez Del Leguas1, Santos Garcia Vázquez2, Laura Manosalvas3, Leandro Tapia3, Robert Paulino-Ramirez2
1School of Medicine, Universidad Iberoamericana (UNIBE), Santo Domingo, Dominican Republic, 2Institute for Tropical Medicine & Global Health, UNIBE, Santo Domingo, Dominican Republic

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“BATAKA TWETAMBIRE” (NATIVES, WE HEAL OURSELVES): REMOVING BARRIERS TO HEALTHCARE ACCESS FOR THE SEVERELY DISADVANTAGED IN UGANDA

Benjamin B. Norton1, Scott Kellermann2, Michael C. Borecky3, Thomas E. Borecky3, Birungi Mutuhungu3, Nahabwe Haven4, Latha Rajan2
1Tulane University School of Public Health and Tropical Medicine, New Orleans, LA, United States, 2Fullbright Scholarship Program, Kanungu, Uganda, 3Loma Linda University School of Medicine, Loma Linda, CA, United States, 4Church of Uganda Bwindi Community Hospital, Kinkizi Diocese, Kanungu, Uganda

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SHARING THE SAME GEOGRAPHY - USE OF A COMMON-GEOREGISTRY AS A CENTRAL AUTHORITY FOR GEOGRAPHIC INFORMATION CORE TO DISEASE SURVEILLANCE AND RESPONSE

Anne Liu1, Abigail Ward1, Pedro Pagalday Olivares3, Julia Dunn1, Sameen Babur1, Lakshmi Balachandran2, Stevee Ebener1, Izzy Pantanilla1, Nathan McEachen3, Justin Lewis1, Derek Treatman4, Michael C. Borecky3, Scott Kellermann2, Arnaud Le Menach1
1International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, 2John Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, 3Rollins School of Public Health, Emory University, Atlanta, GA, United States, 4The Task Force for Global Health, Decatur, GA, United States

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MEASURING PERCEIVED QUALITY OF CARE TO INCREASE UTILIZATION FOR BETTER PERFORMANCE OF A MALARIA SURVEILLANCE SYSTEM IN SENEGAL

Ashley Garley1, Roger Tine2, Moustapha Cisse3, Medoune Ndiop1, Mame Birame Diouf1, Katharine Sturm-Ramirez2, Yazoumé Yé1
1ICF International, Rockville, MD, United States, 2Université Cheikh Anta Diop de Dakar, Dakar, Senegal, 3Programme National de Lutte contre le Paludisme, Dakar, Senegal, 4United States Agency for International Development, Senegal and U.S. President’s Malaria Initiative Dakar, Senegal

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COMMUNITY PERCEPTIONS, BELIEFS AND PRACTICES AROUND STILLBIRTH AND <5 CHILD DEATHS: AN EXPLORATORY STUDY IN A RURAL SETTING, BANGLADES

Sazzad Hossain Khan1, Tommoy Sarkar, Md. Saiful Islam1, Hossain MS Sazzad1, Syeda Nurunnahar1, Md. Musa Baker1, Mohammad Ariful Islam1, Kamal Ione1, Amin Chowdhury1, Dalia Yeasmin1, Faruque Hussain1, Shams El Arifeen1, Khatia Munguambe2, John Blevins1, Emily S. Gurley2, Shahana Parveen1
1icddrb, Dhaka, Bangladesh, 2Kirby Institute, New South Wales, Australia, 3Centro de Investigación emSaúde de Manhiça, Manhiça, Mozambique, 4Emory Global Health Institute, Atlanta, GA, United States, 5John Hopkins University, Baltimore, MD, United States

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EVALUATING THE INFLUENCE OF ASYMMPTOMATIC SLEEPING SICKNESS INFECTIONS ON INTERVENTION PROGRAMS AND ELIMINATION GOALS USING MATHEMATICAL MODELLING

Maryam Aliee1, Ron E Crump1, Erick Mwamba Miaka2, Matt J Keeling1, Kat S Rock1
1University of Warwick, Coventry, United Kingdom, 2Programme National de Lutte contre la Trypanosomiase Humaine Africaine, Kinshasa, Democratic Republic of the Congo

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THE APPLICATION OF PARTICIPATORY, EPIDEMIOLOGICAL-ECONOMIC MODELLING FOR POLICY GUIDANCE: THE CASE OF PERTUSSIS VACCINATION IN SOUTH AFRICA

Rachel A. Hounsell1, Rudzani Muloowiwa, Benjamin Kagina, Sheetal P. Silal2, University of Cape Town, Cape Town, South Africa

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ENGAGING YOUNG PEOPLE AS AGENTS OF CHANGE: A PRIMARY SCHOOL EDUCATIONAL INTERVENTION TO DECREASE ARBOVIRAL AND PROTOZOAL DISEASE RISK IN GRENADA

Trevor Noel1, Jeffon Telesford, Victor Ashby1, Jonathan Altamirano2, Nandy Noel1, Nikita Cudjoe1, Sherice Phillip1, Connie Dotin2, Francis Hector1, Kennie James1, Paul Fields1, Calum Macpherson1, A. Desiree LaBeaud2
1Winward Islands Research and Education Foundation, St. George’s University, St. George, Grenada, 2Stanford University, Stanford, CA, United States, 3Ministry of Health, St George, Grenada

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CAN ELIMINATION OF SLEEPING SICKNESS BE COST-EFFECTIVE? AN ECONOMIC EVALUATION OF GHAT ELIMINATION CAMPAIGNS IN THE DRC

Marina Antillon1
Swiss Tropical and Public Health Institute, Basel, Switzerland

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INTERSECTIONALITY AND HEALTH-RELATED STIGMA: A QUALITATIVE STUDY IN INDONESIA

Ruth Peters1, John Hopkins Bloomberg School of Public Health, Baltimore, MD, United States

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ETHICAL ISSUES & CHALLENGES FACED BY GLOBAL HEALTH PROGRAM DIRECTORS

Michelle Aniko Grek1, David Addiss2, Ashley Graham2, Susan Landskroener1, James V. Lavery3
1Rollins School of Public Health, Emory University, Atlanta, GA, United States, 2The Task Force for Global Health, Decatur, GA, United States, 3Centers for Disease Control and Prevention, Atlanta, USA and U.S. President’s Malaria Initiative, Dakar, Senegal

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HOW REAL-TIME DEATH NOTIFICATIONS FROM THE COMMUNITY HAVE BEEN USED TO IMPLEMENT MINIMALLY INVASIVE TISSUE SAMPLING IN BAJIANKADI, BANGLADESH

Abdullah Al Masud1, Emily S. Gurley2, Muhammad Faruque Hussain1, Sanwarul Baru1, Farzana Islam3, John Blevins1, Ahoua Kone1, Kyu Han Lee1, Qazi Sadeq-ur Rahman1, Atique Iqbal Chowdhury, Palash Mutsuddi2, Shakhor Blaise Gomes1, Abdus Suban Mulla1, Afroz Zahari1, Prabin Kumer Dey, Palash Mutsuddi1, Shahana Parveen1
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Rapid Response Platform to Manufacture Human Immunoglobulin Product
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Shweta Srivatsa, Rajat Kumar, Anil Kumar Verma, Priyalee Thota, Anne Rocheleau, Praveen K. Bharti, Tyler Witte, Ram Swaroop Uilkey, Anil Gwai, Umut Gurkan
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Community Health Workers in Dominican Republic Bateyes: The Influence of Programmatic and Contextual Factors
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Health Services Utilization by Individuals with Acute Infectious Syndromes in the Highlands of Guatemala, 2020
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Integrated Mentoring and Supervision Visits Improve Malaria Service Delivery in Health Facilities in Delta State, Nigeria
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Ectoparasite-Borne Disease - Babesiosis and Lyme Disease

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MISDIAGNOSIS OF CUTANEOUS, ARTICULAR, CARDIAC, NEUROLOGICAL, PSYCHIATRIC AND OTHER MANIFESTATIONS OF TICK-BORNE DISEASES AT THE FIRST VISIT

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EPIDEMIOLOGY OF BABESIOSIS INFECTIONS IN ZHEJIANG PROVINCE, CHINA

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Ectoparasite-Borne Disease - Other

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Mosquitoes - Biochemistry and Molecular Biology

A SALIVARY PROTEIN OF Aedes aegypti PROMOTES DENGUE-2 VIRUS REPLICATION AND TRANSMISSION

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GENETIC SILENCING OF PYRUVATE KINASE IN Aedes aegypti FEMALES IMPACTS SURVIVAL, GLUCOSE OXIDATION, AND AMMONIA DETOXIFICATION

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NEW METHODS FOR MODELING ANOPELES GAMBIAE S.L. MOVEMENT WITH ENVIRONMENTAL AND GENETIC DATA

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WHY ARE SOME MOSQUITO SPECIES INVASIVE?

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Aedes aegypti breeding in trash: barriers to effective trash collection, disposal and recycling in ukunda, kwale county kenya

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VECTOR CONTROL INTERVENTIONS DISPROPORTIONATELY AFFECT ANOPHELES GAMBIAE S.L AND ANOPHELES FUNESTUS S.L MOSQUITO DENSITIES FROM 3 SITES INUGANDA

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ECOLOGY OF ANOPHELES MOSQUITO LARVAE IN DIFFERENT ECOLOGICAL ZONES IN GHANA

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DEVELOPING A LANDSCAPE TYPOLOGY SCHEME TO ASSESS ENVIRONMENTAL AND SOCIAL RISK FACTORS FOR DENGUE IN TROPICAL URBAN SETTINGS

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ENHANCED DIGITIZATION TECHNIQUES UNLOCK SECRETS FROM THE NATIONAL MOSQUITO COLLECTION

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EFFECTS OF IRRIGATION SYSTEM ON ANOPHELES ARABIENSIS VECTORIAL CAPACITY IN WESTERN KENYA

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URBAN MALARIA VECTOR BIONOMICS AND POPULATION BEHAVIOR IN THREE CITIES OF SENEGAL

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CD8+ T CELL CROSS-REACTIVITY DURING HETEROLOGOUS FLAVIVIRUS INFECTION RESULTS IN CROSS-REACTIVE IMMUNODOMINATION AND ENHANCED CYTOLYTIC CAPACITY AT THE EXPENSE OF VIRUS-SPECIFIC RESPONSES

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BAYESIAN SPATIOTEMPORAL MODELING WITH SLIDING WINDOWS TO CORRECT REPORTING DELAYS FOR REAL-TIME DENGUE SURVEILLANCE IN THAILAND

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IMPACT OF DENGUE VIRUS GENETIC DIVERSITY ON BREADTH OF NEUTRALIZATION BY A TETRAVALENT DENGUE VACCINE
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CORRELATION BETWEEN DENGUE AND WEATHER IN YANGON, MYANMAR FROM 2012 TO 2017
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SINGLE PASSAGING OF DENGUE CLINICAL SAMPLES FOR VIRUS ISOLATION AND AMPLIFICATION DOES NOT SIGNIFICANTLY CHANGE GENOME CONSENSUS OR FREQUENCIES OF INTRA-HOST VIRAL VARIANTS
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SURVEY ON NEUTRALIZING ANTIBODIES AGAINST ZIKA VIRUS 2-YEAR POST-OUTBREAK IN TWO SOUTHERN THAILAND COMMUNITIES
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SEEROPEDEMOLOGICAL STUDY OF JAPANESE ENCEPHALITIS VIRUS IN CHIANG MAI, A HIGH ENDEMIC AREA OF THAILAND
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DETECTION OF ZIKA INFECTION IN A COHORT OF PREGNANT WOMEN IN KENYA, 2017-2019

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CO-CIRCULATION OF ZIKA VIRUS AND DENGUE VIRUS SEROTYPES 2 AND 3 IN GUERRERO STATE, MEXICO, 2019

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CYNOMOLGUS MACAQUES ARE RESISTANT TO SPONDWENI VIRUS INFECTION

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SPATIAL AND SPATIOTEMPORAL INSIGHTS FROM QUANTITATIVE METAGENOMICS AND ZIKA AND EPI DEMICS IN A PEDIATRIC COHORT IN MANAGUA, NICARAGUA

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NEUROLOGICAL SEQUELAE OF ACQUIRED ZIKA VIRUS INFECTION AMONG CHILDREN IN MANAGUA, NICARAGUA

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VECTOR COMPETENCE OF HUMAN BITING TIXES IXODES SCAPULARIS, AMBLYOMMA AMERICANUM & DERMACENTOR VARAIBILLIS FOR POWASSAN VIRUS

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CHECKLIST OF ZIKA VIRUS OUTBREAK IN BRAZIL UNDER CURRENT AND FUTURE CLIMATE

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SURVEILLANCE FOR ARTHROPOD-ASSOCIATED VIRUSES IN NORTHWESTERN AND SOUTHWESTERN MEXICO USING TRADITIONAL VIRUS DETECTION TECHNIQUES AND METAGENOMICS

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ZIK VIRUS RECRUDESCENCE IN THE MURINE MALE REPRODUCTIVE TRACT FOLLOWING IMMUNOSUPPRESSION

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WEST NILE VIRUS MUTATIONS DERIVED FROM NATURALLY OCCURRING QUASISPECIES HAVE INCREASED HOST-SPECIFIC FITNESS
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SPECIES AND STRAIN-DEPENDENT EFFECTS OF TEMPERATURE ON FLAVIVIRUS ADAPTATION AND FITNESS
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THE ERA OF PLANETARY CHANGE: EXTREME WEATHER EVENTS IN GEORGIA, USA, AND IMPACT ON ARBOVIRAL DISEASE EPIDEMIOLOGY
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VIROLOGICAL ASSESSMENT OF ARTEMISININ COMBINATION THERAPIES BETWEEN 2008 AND 2019 IN KENYA
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HIGHLY PATHOGENIC AVIAN INFLUENZA VIRUS SURVEILLANCE IN NORTHERN VIETNAM
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CORRELATION BETWEEN CYCLE-TO-THRESHOLD (CT) VALUES FOR INFLUENZA AND CLINICAL SEVERITY IN KAMPHAENG PHET, THAILAND
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VIRUSES - OTHER

BEYOND HYDROXYCHLOROQUINE: DISSECTING SARS-COV-2 FUNCTIONAL DRUGGABILITY THROUGH MULTI-TARGET CADD SCREENING OF REPURPOSABLE DRUGS
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VARIATIONS IN MALARIA PREVALENCE AND DRUG RESISTANCE PATTERNS PRE AND POST EBOLA VIRUS DISEASE OUTBREAK
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TEMPORAL TRENDS OF PLASMODIUM FALCIPARUM MULTI-DRUG RESISTANCE PROTEIN 1 GENE DURING IMPLEMENTATION OF ARTEMISININ COMBINATION THERAPIES BETWEEN 2008 AND 2019 IN KENYA
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A TREND OF IN-VITRO ANTIMALARIAL PERFORMANCE IN A SPAN OF TEN YEARS DURING ARTEMSININ COMBINATION THERAPY IN KENYA
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RETENTION OF NON-FALCIPARUM SPECIES AFTER ACT TREATMENT COULD BE RESPONSIBLE FOR RISING CASES OF EXPORTED MALARIA GLOBALLY
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THE PFCORONIN GENE IS HYPOSTATIC TO PFKELCH13
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MODELING TRANSPORT OF ANTIMALARIALS AND PEPTIDES BY PIPERAQUNINE-RESISTANT MUTANT PFCRT
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COLLATERAL SENSITIVITY AS A STRATEGY TO SUPPRESS RESISTANCE: THE CHALLENGE OF DIVERSE EVOLUTIONARY PATHWAYS
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EFFICACY AND SAFETY OF ARTESUNATE-AMODIAQUINE FOR THE TREATMENT OF UNCOMPLICATED FALCIPARUM MALARIA IN LIBERIAN CHILDREN: IN VIVO AND POLYMORPHISMS OF PFK-13 2017-2018
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EFFICACY AND SAFETY OF PYRONARIDINE-ARTESUNATE AND ARTEMETHER-LUMEFANTRINE FOR THE TREATMENT OF UNCOMPLICATED FALCIPARUM MALARIA IN CAMBODIA
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PRIMAQUINE METABOLISM: PQ-5,6-O-QUINONE AND 6-METHOXYQUINOLINE-5,8-P-QUINONE GENERATED IN HUMAN ERYTHROCYTES
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Gazelle: A Portable Point-of-Care Diagnostic with High Accuracy and Fast Turnaround Time for Detecting P. Vivax Malaria
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Malaria - Diagnosis
DEVELOPMENT OF THE 1st WHO REFERENCE REAGENT FOR ANTIMALARIA (PLASMODIUM VIVAX) HUMAN PLASMA

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UTILITY OF REPORTING PRESUMED MALARIA FOR IMPROVING MALARIA CASE MANAGEMENT IN MALI

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EVALUATION OF THE Q-PLEX™ HUMAN MALARIA ARRAY FOR THE DETECTION OF PLASMODIUM KNOWLESI

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MALARIA ANTIGEN PROFILING TO ASSESS RAPID DIAGNOSTIC TEST PERFORMANCE AND STAGE OF INFECTION IN KINSHASA PROVINCE, DEMOCRATIC REPUBLIC OF THE CONGO

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USING GAZELLE HEMOZOIN BASED MALARIA DIAGNOSTIC TO DIFFERENTIATE BETWEEN PLASMODIUM SPECIES

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OUTCOME OF MALARIA RAPID DIAGNOSTIC TEST SCALE UP ON REDUCING PRESUMPTIVE DIAGNOSIS OF MALARIA IN CHALLENGING HEALTH SETTINGS: EVIDENCE FROM 8 NIGERIAN STATES

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DIFFERENCES IN RDT PERFORMANCE IN ACTIVE VERSUS PASSIVE MALARIA SURVEILLANCE IN KINSHASA PROVINCE, DEMOCRATIC REPUBLIC OF CONGO

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ANTIBIOTICS OVERUSE AND VARYING RATES OF MALARIA TESTING IN CAMBODIA BASED ON ROUTINE PATIENT REGISTERS IN PRIMARY HEALTH CENTERS

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PREVALENCE OF PLASMODIUM FALCIPARUM ISOLATES LACKING HISTIDINE RICH PROTEIN 2 AMONG SYMPTOMATIC PATIENTS IN KWILU PROVINCE (DR. CONGO)

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CONTRIBUTION OF P. FALCIPARUM PARASITES WITH PFHRP2 GENE DELETIONS TO FALSE NEGATIVE HRP2-BASED MALARIA RDT RESULTS IN GHANA: A NATIONWIDE STUDY

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DISCOVERY OF CANDIDATE SALIVA BIOMARKERS OF PLASMODIUM VIVAX INFECTIONS

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COMPARISON OF TWO MALARIA MULTIPLEX REFERENCE IMMUNOASSAYS IN THE MEASUREMENT OF MALARIA ANTIGENS

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MOLECULAR DETECTION OF PLASMODIUM IN AUTOCHTHONOUS MALARIA AREAS LOCATED IN SAO PAULO STATE ATLANTIC FOREST BIOME

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ACCESS TO MALARIA RAPID DIAGNOSTIC TESTS AND HEALTHCARE PROVIDERS’ KNOWLEDGE OF, AND STORAGE PRACTICES IN PUBLIC HEALTH FACILITIES IN NIGERIA

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MICROSATELLITE GENOTYPING OF PLASMODIUM VIVAX MALARIA CASES IN NEPAL

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P. FALCIPARUM MALARIA PREVALENCE AND HEALTH SEEKING BEHAVIORS IN RURAL SUSSENGUDE DISTRICT, MOZAMBIQUE

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MALARIA IS NOT ASSOCIATED WITH DIFFERENCES IN MEASURES OF CHILD GROWTH OR MALNUTRITION IN A COHORT OF ONE-YEAR OLDKENYAN CHILDREN

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P. FALCIPARUM MALARIA PREVALENCE AND HOUSEHOLD LEVEL RISK FACTORS IN RURAL MOZAMBIQUE ALONG THE ZIMBABWE BORDER

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GUT MICROBIOTA COMPOSITION MODULATES THE MAGNITUDE AND QUALITY OF GERMINARY CENTERS DURING PLASMODIUM INFECTIONS
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ESTIMATING MULTICITY OF INFECTION AND ALLELE FREQUENCIES AND PREVALENCES ACCOUNTING FOR MISSING DATA
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MALARIA TEMPORAL VARIATION AND MODELING USING TIME-SERIES IN SUSSUNDENGA DISTRICT, MOZAMBIQUE
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UTILIZING SPATIAL MAPS OF ANTIMALARIAL PARTNER DRUG RESISTANCE TO IDENTIFY PRIORITY REGIONS FOR SURVEILLANCE
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TREATMENT-SEEKING BEHAVIOR FOR FEVER IN KINSHASA PROVINCE, DRC: IMPLICATIONS FOR MALARIA CASE MANAGEMENT
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MALARIA PREVALENCE AND CARE SEEKING BEHAVIORS PRIOR TO A PILOT EXPANDING MALARIA COMMUNITY CASE MANAGEMENT TO OLDER AGES IN FARAFANGANA, MADAGASCAR, 2019
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COMMUNITY ENGAGEMENT TO STRENGTHEN MALARIA ELIMINATION IN 4 PROVINCES IN VIETNAM
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DIFFERENTIAL MALARIA PREVENTION BEHAVIORS AND CARE SEEKING PRACTICES BETWEEN WORKSITE MIGRANT WORKERS AND VILLAGERS IN THE MALARIA-AT-RISK AREAS IN MYANMAR
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IMPACT OF PRIVATE HEALTH SECTOR ENGAGEMENT INTERVENTIONS ON PROVIDER QUALITY OF MALARIA CASE MANAGEMENT IN CAMBODIA, LAO PDR, MYANMAR AND VIETNAM
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INSIGHTS ON FOREST-GOER HEALTH SEEKING JOURNEYS FOR FEBRILE ILLNESS IN CAMBODIA AND VIETNAM USING RESPONDENT-DRIVEN SAMPLING
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HEALTH WORKERS’ MALARIA CASE MANAGEMENT PRACTICES IN SOUTH CENTRALUGANDA, 2017-2019
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UNDERSTANDING MALARIA PREVENTIVE BEHAVIORS AMONG THE CROSS BORDER POPULATION ALONG THE THAI-MYANMAR BORDER IN TAK PROVINCE, THAILAND
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FINDINGS OF THE INDEPENDENT SURVEY OF THE SEASONAL MALARIA CHEMOPREVENTION CAMPAIGN IN MOPTI AND SEGOU REGION IN MALI IN 2019

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ASSESSMENT OF PHARMACOVIGILANCE REPORTING IN SEASONAL MALARIA CHEMOPREVENTION IN THE SAHEL REGION OF NIGERIA

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QUALITY OF CARE FOR CHILDREN WITH MALARIA AT PRIVATE HEALTH FACILITIES IN THE MIDWESTERN REGION OF UGANDA: A CROSS SECTIONAL STUDY

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ASSURING IPTP 3 UPTAKE IN MALAWI THROUGH A HEALTH SYSTEMS APPROACH

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ASSESSING THE IMPACT OF SEASONAL MALARIA CHEMOPREVENTION (SMC) ON CHILDREN UNDER-FIVES’ MALARIA TEST PosITIVITY RATES (TPR): A COMPARATIVE STUDY OF EIGHT LOCAL GOVERNMENT SUPPORTED LOCAL GOVERNMENT AREAS (LGA) ACROSS KATSINA & YOBE STATES, NIGERIA, 2017 - 2019

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BRINGING LLIN DISTRIBUTION CLOSER TO COMMUNITIES IN GUINEA THROUGH ADAPTIVE MANAGEMENT

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PROTOCOL ADHERENCE IN SEASONAL MALARIA CHEMOPREVENTION AND FEVER OCCURRENCE AMONG UNDER-FIVE CHILDREN IN NORTHERN NIGERIA

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TRENDS OF INTERMITTENT PREVENTIVE THERAPY UPTAKE IN PREGNANT WOMEN ATTENDING ANTENATAL CARE (ANC), 2015 TO 2019, MAINLAND TANZANIA

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MALARIA - PREVENTION

SUSTAINING IPTP 3 UPTAKE IN MALAWI THROUGH A HEALTH SYSTEMS APPROACH

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IMPLEMENTING QUANTITATIVE POINT-OF-CARE 6GD TESTING IN BANGLADESH: INSIGHTS FROM A TRAINING WORKSHOP AND QUALITATIVE RESEARCH STUDY

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ACROSS-BORDER PLASMODIUM VIVAX OUTBREAK IN AMAZONIAN GOLD MINING CONTEXT; AMERINDIAN COMMUNITY ENGAGEMENT FOR CONTROL
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APPLICATION OF SEROLOGY IN EVALUATING TWO REACTIVE RESPONSE INTERVENTIONS FOR MALARIA ELIMINATION: RESULTS FROM THE CORE COMMUNITY RANDOMIZED TRIAL IN SOUTHERN PROVINCE, ZAMBIA

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SUPPORTING EVIDENCE-BASED DECISION-MAKING FOR MALARIA CONTROL IN MYANMAR THROUGH ROUTINE DATA REVIEW MEETINGS

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A SCHOOL SURVEY INDICATES CONDUCTIVE SETTINGS FOR MALARIA ELIMINATION IN THE HIGHLANDS PROVINCE OF GUINEA

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MULTI-LATERAL COOPERATION ON MALARIA ELIMINATION IN CHINA-MYANMAR BORDER AREAS

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SUCCESSFUL CASE STUDIES ON MALARIA ELIMINATION WITH MULTI-PROVINCE COOPERATION IN CHINA

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FROM PLASMODIUM VIVAX OUTBREAKS TO ELIMINATION: LESSONS LEARNED FROM RETROSPECTIVE STUDIES & IT MODELLING

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LEVELS OF PLASMODIUM FALCIPARUM PARASITEMIA DETECTED THROUGH REACTIVE CASE DETECTION IN A LOW MALARIA PREVALENCE SETTING OF SOUTHERN PROVINCE, ZAMBIA: IMPLICATIONS FOR SURVEILLANCE

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MALARIA ELIMINATION SURVEILLANCE SUCCESSES AND CHALLENGES IN BOTSWANA

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ASSESSMENT OF COMMUNITY HEALTH WORKER ADHERENCE TO MALARIA TREATMENT GUIDELINES IN NAMIBIA

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MULTI-LATERAL COOPERATION ON MALARIA ELIMINATION IN CHINA-MYANMAR BORDER AREAS

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SUCCESSFUL CASE STUDIES ON MALARIA ELIMINATION WITH MULTI-PROVINCE COOPERATION IN CHINA

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BETTER LONG-TERM PROTECTION WITH A LIVER-STAGE DEFECTIVE PLASMODIUM THAN THE WILD TYPE IN CHEMOPROPHYLAXIS VACCINATION

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EXTENDED EFFICACY AND SAFETY OF GMZ2 CANDIDATE MALARIA VACCINE IN A PHASE IIB, RANDOMIZED, CONTROLLED, DOUBLE-BLIND, MULTI-CENTRE TRIAL IN MALARIA EXPOSED CHILDREN

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CHALLENGES OF IMPLEMENTING THE NATIONAL CHOLERA CONTROL PLAN IN BANGLADESH: REALISTIC ACHIEVEMENT WITH AVAILABLE RESOURCES

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1SINOCONGOLESE FRIENDSHIP OF N’DJILI IN KINSHASA (DRC)

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IMPACT OF THE INTRODUCTION OF PCV7/13 ON ANTIMICROBIAL RESISTANCE IN INVASIVE PNEUMOCOCCAL DISEASE IN INDONESIA
Mam Mass Sey, Omar Samba, Mustapha Danso, Dawda Kijera, Abdou Barrow
State University Syarif Hidayatullah Jakarta, Jakarta, Indonesia

ASTMH — Advancing Global Health Since 1903
ACCURACY AND RELIABILITY OF FOCUSED ECHOCARDIOGRAPHY IN PATIENTS WITH CHAGAS DISEASE FROM ENDEMIC AREAS: SAMI-TROP COHORT STUDY

Maria Do Carmo P. Nunes1, Isabella Barros1, Marcio Barros1, Antonio Antonio1, Raul Silva Camargo1, Claudia Oliveira2, Ariela Ferreira2, Lea Campos Oliveira2, Ana Luiza Bierenbach1, Desireé Haikal1, Larissa Martins1, Clareci Cardoso1, Estev Sabino1, Edgar Reynoso Vanderhorst1, Desireé Haikal1, Larissa Martins1, Clareci Cardoso1, Estev Sabino1, 1Institute For Tropical Medicine & Global Health, Distrito Nacional, Dominican Republic, 2School of Medicine, Universidad Iberoamericana (UNIBE), Santo Domingo, Republic of the Dominican Republic

HIGH BURDEN OF VACCINE PREVENTABLE DISEASES AS CAUSE OF DEATH: USING INNOVATIVE POST-MORTEM SAMPLING, THE ETHIOPIAN CASE

Hiwot Yizgaw1, Mussie Berhane1, Tseyon Tesfaye1, Mersan Deresa1, Mulu Berihun1, Joseph Oundo2, Nega Assefa1, Lola Madrid3, 1Haramaya University, Harar, Ethiopia, 2London School of Hygiene & Tropical Medicine, London, United Kingdom

OPEN SOURCE MONITORING FOR CLINICAL TRIALS IN CHALLENGING INFORMATION ENVIRONS

Rhys O’Neill
Novetta, McLean, VA, United States

DELAYS IN HEPATITIS C FIBROSIS STAGING ON TREATMENT RETENTION

Austin T. Jones1, Lisa Moreno-Walton1, Torrence Tran1, Christopher Briones1, Rachael Stevens1, Katharine Isaacson1, Alexander Jafari1, Mandy Majdian1, Patricia Kissinger1, 1Tulane University, New Orleans, LA, United States, 2Louisiana State University Health Sciences Center, New Orleans, LA, United States

MAMMALIAN TARGET OF RAPAMYCIN IN CHILDHOOD MALNUTRITION: QUESTING FOR CONNECTION

Parag Palit1, Md Anwar Gazi, Subhasish Das, Md Meheedi Hasan, Md Meheedi Hasan, Jafirn Ferdous, Sharika Nuzhat, Zannatun Noor, Mustafa Mahfuz, Rashidul Haque, Tahmeed Ahmed, icddrb, Dhaka, Bangladesh

RISK FACTORS AND OUTCOMES ASSOCIATED WITH INCREASED MORTALITY DUE TO CHOLERA INFECTION IN PEDIATRIC POPULATIONS IN LMIC SETTING: A CASE FOR THE DOMINICAN REPUBLIC

Edgar Reynoso Vanderhorst1, Miguel Delgadillo2, Victoria Arís-Sanchez2, Carla Mendoza-Valiente2, Jose Moreira-Musa3, Alejandra Blaubach2, Kamila Guerrero-Richiez2, Laura Manosalvas1, Leandro Tapia4, Robert Paulino-Ramírez5, 1Instituto For Tropical Medicine & Global Health, Distrito Nacional, Dominican Republic, 2School of Medicine, Universidad Iberoamericana (UNIBE), Santo Domingo, Dominican Republic

A RETROSPECTIVE REVIEW OF PATIENTS SEEN AT THE NATIONAL SCHOOL OF TROPICAL MEDICINE CLINIC AT BAYLOR COLLEGE OF MEDICINE IN HOUSTON, TEXAS FROM 2011-2020

Julika Kaplan, Fernando H. Centeno, Jill E. Weatherhead, Laila Woc-Colburn, Baylor College of Medicine, Houston, TX, United States
FACTORs ASSOCIATED WITH THE OCCURRENCE OF EPILEPSY IN SIX HEALTH DISTRICTS IN MALI IN 2019: CASE-CONTROL STUDY

Houssenini Doli1, Fatoumata Néné Konipo1, Yaya Ibrahim Coulibaly1, Moussa Sangare1, Mariam Dau1, Hassane Diallo1, Samba Oumar Djimde1, Sekouba Goita1, Harouna Kone1, Fousseni Dioudou Coulibaly1, Mohamed Fako Keita1, Aïda Karembe1, Désiré Kissev Elvira1, Abdou Kosta1, Birama Sangare1, Tenimba Bagayoko1, Aly Badhara Dem1, Zounama Fomba1, Mamadou Gari1, Chimène Essi Kotchen1, Youssoufou Mamadou Maiga1, Seydou Doubia1

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TESTING DIFFERENT WHO HEAD CIRCUMFERENCE Z-SCORE CUTOFFs FOR ASSOCIATION WITH NEURODEVELOPMENTAL OUTCOMES IN INFANTS AND YOUNG CHILDREN IN RURAL GUATEMALA

Molly M. Lamb1, Amy K. Connery1, Alison M. Colbert1, Desiree Bauer1, Daniel Olson1, Alejandra Paniagua-Avalía1, Paola Arroyave1, Sara Hernandez2, Maria A. Martinez2, Andrea Holliday1, Hana M. El Sahly2, Flor M. Munoz2, Edwin J. Asturias2

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MARKERS OF SERIOUS BACTERIAL ILLNESS IN CHILDREN IN A MALARIA ENDEMIC SETTING

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DEVELOPING CLINICAL RESEARCH CAPACITY IN LIBERIA

Patricia McQuilkin1, Troy Moon2, Moses Badio3, Jonggyu Baek4, Nicola Bulled5, Steven Hatch6, Stuart Levitz1, Ann Moormann1, Soka Moses1, Sanjay Ram1, Richard Ssekitokele1

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VALIDATION OF A LOW-COST MOBILE RETINAL SCANNER PROTOTYPE AS A SCREENING TOOL FOR RETINAL DISEASES IN MOZAMBIQUE

Maria Postigo1, Laura Beltran-Aguillo1, Olivia Pujol1, Rubao Bilau1, Jaime Garcia1, Rosario Vareo1, Virginia Garcia1, Lucía Sallé1, Adriana Mousa1, Andrés Santos1, Maria J. Ledesma-Carbayo1, Quique Bassat1, Miguel Luengo-Oroz1

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COMPARATIVE ANALYSIS OF SEPSIS TREATMENT IN AUSTERE ENVIRONMENTS

Gary Fogel1, Derren Barken1, Deborah Streigel1, Paul Blair1, Misato Miyamasu1, Josh G. Chenoweth2, Subramaniam Krishnan1, Joost Brandsma1, Kevin L. Schully2, Te Vanth1, Marvin J. Sklar1, Anne Fox1, Andrew Letizia1, George Oduro1, Charmagne Beckett1, Benjamin Espinosa2, Danielle V. Clark1

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USE OF TAOQAM ARRARR CARD TECHNOLOGY IN DETERMINATION OF CAUSE OF DEATH FOR STILLBIRTHS AND UNDER-FIVE DEATHS IN EASTERN ETHIOPIA

Mussie Ehrane1, Mersan Dereasa1, Mulu Berihun1, Dadi Marama1, Zelalem Teklemariam1, Fami Ahmed1, Nardos Assegid1, Lola Madrid2, Joseph Oundo2, Nega Assefa1

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COMPARING PERCEIVED AND ACTUAL RISK OF TRAVEL-RELATED CONDITIONS AMONGST PAEDIATRIC AND ADULT TRAVELLERS AT A TERTIARY CARE CENTRE: A CROSS-SECTIONAL STUDY

Pierre-Philippe Piché-Renaud1, Jenny Hoang Nguyen1, Lisa G. Pell1, Xiaowei Ma1, Nadia Alattas1, Sarah Khan1, Kevin Schwartz2, Nadia Aksee2, Ray Lam1, Debra Louch1, Michelle Science1, Shaun K. Morris1

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ADVERSE BIRTH OUTCOMES AND FACTORS ASSOCIATED AMONG LIVE BIRTHS AT SAINT PAUL’S HOSPITAL MILLENNIUM MEDICAL COLLEGE

Delyehu Bekele1, Kimi Van Wickle1, Mahlet Abayneh1, Tsegayez Bezabih1, Tsedeke Wolde1, Semaria Solomon1, Tefera Biteye1, Yahya Mohammed1, Oludare A. Odumade1, Gesit Meti1, Grace J. Chan1

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Helminths - Nematodes - Intestinal Nematodes

HUMAN INTESTINAL PARASITES ASSOCIATED WITH EGGPLANT (SOLANUM AETHIOPIUM) SOLD IN OGBARU LOCAL GOVERNMENT AREA ANAMBRA STATE NIGERIA

Nkeireuka Marykate Orji1, Evelyn Nkechi Ezekwueze1, Emmanuel Chidera Orji2

1Chukwuemeka Odumegwu Ojukwu University, Uli, Anambra State, Nigeria, 2Dezen Medical Diagnostic and Research Laboratory, Owerri, Nigeria
SOIL-TRANSMITTED HELMINTHIASIS IN ADMITTED CHILDREN WITH SEVERE ACUTE MALNUTRITION, FREETOWN, SIERRA LEONE

Andrew McLellan1, Lucy Yaguo Ide2, Lucy Atieno2, Nellie Bell3, Mary Hodges4
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SOIL-TRANSMITTED HELMINTHS IN ADMITTED CHILDREN WITH SEVERE ACUTE MALNUTRITION, FREETOWN, SIERRA LEONE

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THE STRONGYLOIDES STERCORALIS-HOOKWORMS ASSOCIATION AS A PATH TO THE ESTIMATION OF THE GLOBAL BURDEN OF STRONGYLOIDIASIS. A SYSTEMATIC REVIEW

Pedro E. Fleitas1, Marina Travacio2, Helena Marti-Soler3, M. Eugenia Socías5, Walter R. Lopez2, Alejandro J. Krolewski1
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SOIL-TRANSMITTED HELMINTHS DIAGNOSTICS PERFORMANCE IN A LOW INTENSITY SETTING AND ITS IMPLICATION ON PROBABILITY OF INFECTION PREDICTION

Berta Grau-Pujol1, Javier Gandasegui2, Emanuele Giorgi3, Helena Marti4, Valdemiro Escola5, Anelise Cossad6, Jorge Caño5, Maria Martinez Valladares5, Jose Muñoz3
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PREVALENCE OF INFECTION WITH SOIL-TRANSMITTED HELMINTHS AND ITS RESPONSE TO TREATMENT WITH ALBENDAZOLE AND MEBENDAZOLE AMONG PARTICIPANTS OF A PFSPZ-VACCINE CLINICAL TRIAL ON BIOKO ISLAND, EQUATORIAL GUINEA

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INTESTINAL PARASITE INFECTION WITH A FOCUS ON SOIL-TRANSMITTED HELMINTHS IN AN INDIGENOUS COMMUNITY FROM PUERTO IGUAZÚ (MISIONES), ARGENTINA AND ENVIRONMENTAL AND SOCIOECONOMIC VARIABLES

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SOIL SURVEILLANCE FOR MONITORING SOIL TRANSMITTED HELMINTHS IN ENDEMIC COMMUNITIES IN INDIA AND BENIN: EXPERIENCE WITH QPCR AND DDPCR

Malathi Manuel1, Nils Pilotte2, Joel Thamburaj3, Rajeshkumar Rajendiran4, Gokila Palanisamy5, Saravanakumar P. Kallapran6, Joel Edoux Siko7, Parfait Hounegbemon8, William E. Oswald9, David S. Kennedy10, Maya Nadimpalli10, Sean R. Galagan11, Adrian J. Luty12, Moudachirou Ikiboule12, Judd L. Watson12, Steven A. Williams13, Sitara S.R. Ajampur14, Amy J. Pickering15
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SOIL TRANSMITTED HELMINTHIASIS IN RURAL SCHOOL CHILDREN IN RETALHULEU, GUATEMALA

Rebeca E. Vergara Greeno1, Saimikhil Sontha2, Richard A. De Los Santos Abreu3, Marcos D. Lopez Quevedo4, Emily Almendares5, Lisa M. Harrison6, Lourdes Ralda de Morataytay7, Michael Cappello8
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A RECOMBINASE POLYMERASE AMPLIFICATION TEST FOR STRONGYLOIDES STERCORALIS: MOLECULAR EPIDEMIOLOGY OF STRONGYLOIDIASIS IN TROPICAL VILLAGES IN CUSCO-PERU

Melinda B. Tanabe
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SOIL-TRANSMITTED HELMINTH INFECTIONS AND NUTRITIONAL STATUS AMONG SCHOOLCHILDREN IN LAGUNA PROVINCE, THE PHILIPPINES

Mary Lorraine S. Mationg1, Gail M. Williams2, Veronica Tallo3, Eindra Aung4, Portia Alday5, Mark Donald Reflosa6, Chona Mae Daga7, Joysi Landicho8, Maria Paz Demontevertede9, Eunice Dianne Santos10, Thea Andrea Bravo11, Franciza A Angly Bieri12, Yuesheng Li13, Donald P. McManus14, Darlen P. Tai15, Donald P. McManus16, Darren J. Gray17
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A LONGITUDINAL ANALYSIS OF DATA FROM TWO COHORTS SHOWS THAT MASS DRUG ADMINISTRATION OF ALBENDAZOLE FOR FILARIALES ELIMINATION IN CENTRAL AFRICA HAS A DOSE-RELATED BENEFICIAL EFFECT ON SOIL-TRANSMITTED HELMINTHS

Jérémy T. Campillo1, Naomi P. Awaca-Uvon2, Jean-Paul Tambwe3, Godé Kuyangisa4, Simona Galetta5, Gary J. Weil6, Michel Boussinesq7, Cédric B. Chesnais8, Sébastien D. Pion9
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## 2020 PROGRAM BOOK

Tuesday, November 17
PREVALENCE, INTENSITY, DISTRIBUTION AND DETERMINANTS OF SOIL-TRANSMITTED HELMINTHS (STH) INFECTION AMONG PRE-SCHOOL AGE CHILDREN AFTER 10 YEARS OF PREVENTIVE CHEMOTHERAPY INTERVENTION: EVIDENCE TO IMPROVE CONTROL STRATEGIES OF STH IN GAMO GOFA ZONE, SOUTHERN ETHIOPIA
Mekuria Asfaw1, Tigist Gezmu1, Teklu Wegayehu1, Alemayehu Bekele1, Zeleke H/ Mariam1, Nebiyu Mreshe2, Teshome Gebre3
1Arba Minch University, Arba Minch, Ethiopia, 2Ethiopian Public Health institute, Addis Ababa, Ethiopia, 3International Trachoma Initiative, Addis Ababa, Ethiopia, Ethiopia

MUCUS-DEGRADING BACTERIAL SPECIES COULD BE IMPORTANT BIOMARKERS FOR ACTIVE HOOKWORM INFECTIONS: A PILOT STUDY
Jewelina Efua Birago Akorli, Lydia Okyere, Hilda Darko, Michael David Wilson
Department of Parasitology, Noguchi Memorial Institute for Medical Research, University of Ghana, Legon, Ghana

ASCARIS INDUCED ALLERGIC AIRWAY DISEASE IS MEDIATED BY RAG-INDEPENDENT IMMUNE PATHWAYS
Jill Weatherhead, John Morgan Knight, Maria Elena Bottazzi, David Corry, Peter Hotez
Baylor College of Medicine, Houston, TX, United States

A CRITICAL ANALYSIS OF SOIL TRANSMITTED HELMINTHIASIS IN THE UNITED STATES, PERSISTING NEGLECTED INFECTIONS OF POVERTY
Mary K. Lynn, Josephine A. Morrissey, Donaldson F. Conserve
University of South Carolina, Columbia, SC, United States

MULTI-PARALLEL QPCR TO IDENTIFY STH IN SOIL AND WATER SAMPLES MAY PROVIDE AN ALTERNATIVE TO SAMPLING OF HUMAN STOOL FOR MONITORING OF STH CONTROL PROGRAMS: EXPERIENCE FROM KENYA
Benard Chieng1, Gretchen Walch2, Sylvie Araka1, Nils Pilottle1, Jenna Swarthout1, Sitara SR Ajampur1, Steven A. Williams2, Sammy M. Njenga1, Amy J. Pickering2
1Kenya Medical Research Institute, Nairobi, Kenya, 2Smith College, Northampton, MA, United States, 3Tufts University, Medford, MA, United States, 4Christian Medical College, Vellore, India

WASH AND ENVIRONMENTAL RISK FACTORS FOR SOIL-TRANSMITTED HELMINTH PREVALENCE AND INTENSITY IN THE WESTERN PROVINCE SOLOMON ISLANDS
Brandon Le1, Naomi Clarke2, Sze Fui Hii3, Aisling Byrne1
1The Kirby Institute, University of New South Wales, Sydney, Australia, 2University of California, San Diego, San Diego, CA, United States, 3Hennepin Healthcare Research Institute, Minneapolis, MN, United States

PREVALENCE OF MALARIA AND TYPHOID CO-INFECTION AMONG OUT PATIENTS ATTENDING IJANIKIN HEALTH CENTER, IJANIKIN, LAGOS STATE, NIGERIA
Jacob Babasola Ajayi1, Oluseyi Abike Ajayi2
1Ogun State Institute of Technology, Igbesa, Ogun State, Lagos, Nigeria, 2Lagos State University, Lagos, Nigeria

ANTI-RETROVIRAL TREATMENT WAS ASSOCIATED WITH CARDIOVASCULAR DISEASE RISK FACTORS BUT NOT WITH ENDOTHELIAL DYSFUNCTION IN HIV PATIENTS IN MTHATHA, EASTERN CAPE PROVINCE OF SOUTH AFRICA
Godwill Azeh Engwa, Benedicita Nkhe-Chungag
Walter Sisulu University, Mthatha, South Africa

INTRACARDIAC TUBERCULOMA IN THE IMMUNE-COMPROMISED POPULATION - A RE-VISITATION
Cornelius C. Nwora
Texas Southern University, Houston, TX, United States

PREVALENCE OF TB/HIV CO-INFECTION AMONG PATIENTS ATTENDING HIV CLINIC IN JUBA TEACHING HOSPITAL, SOUTH SUDAN: FIVE YEARS RETROSPECTIVE STUDY, JANUARY 2010 - DECEMBER 2014
Richard Lino Loro Lako1, Kenneth Sube2, Anthony Lasuba1, Joseph Lako2, Salvador Jaja1, Charles Longoya3
1Ministry of Health, Juba, South Sudan, 2College of Medicine, University of Juba, Juba, South Sudan, 3Royal Infirmary of Edinburgh, Dept of Infectious Dis and Medical Microbio, Edinburgh, United Kingdom

ANTIBODIES TO PLASMODIUM FALCIPARUM ANTIGENS AND THE ASSOCIATION OF ANEMIA AMONG PEOPLE LIVING WITH HIV IN WESTERN KENYA
Eliud O. Odhiambo1, Dibyadyuti Datta2, Katrina Co1, Lindsey B. Turnbull3, George Ayodo4, Sarah E. Cusick5, Chandly C. John6, Anne EP. Frosch7
1Department of Microbiology and Immunology, Indiana University School of Medicine, Indianapolis, IN, United States, 2Ryan White Center for Pediatric Infectious Diseases & Global Health, Indiana University School of Medicine, Indianapolis, IN, United States, 3Center for Global Health Research, Kenya Medical Research Institute, Kisumu, Kenya, 4Department of Pediatrics, University of Minnesota Medical School, Minneapolis, MN, United States, 5Hennepin Healthcare Research Institute, Minneapolis, Minnesota, MN, United States

PERFORMANCE OF THE HAIN GENOTYPE MTBDRSL ASSAY FOR RAPID DETECTION OF EXTENSIVELY DRUG-RESISTANT TUBERCULOSIS IN BAMAKO, MALI
Antieme Combo Georges Togo, Hawa N’Baye HBD Drame, Boureima Diegoga, Bassirou Diarra, Bocar Baya, Michael Benson, Soukalo Dao, Seydou Doumbia
SEREO/UCRC, Bamako, Mali

LATENT CO-INFECTIONS INCREASE RISK OF NEUROCognitive IMPAIRMENT AMONG OLDER PERSONS WITH HIV IN LIMA, PERU
Monica M. Diaz1, Marcela Gil Zacarías2, Maisie A. Bailey1, Donald Franklin1, Mariana Chenuet1, Serggio Lanata3, Ronald J. Ellis4, Patricia J. Garcia2
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Integrated Control Measures for Neglected Tropical Diseases (NTDs)

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PARVOVIRUS B19 INFECTION IN HIV-INFECTED PATIENTS TREATED AT THE YAOUNDE CENTRAL HOSPITAL CAMEROON
Maclere Kentsop Ngoula1, Symphorien Ewodo2, Charles Kounafack1
1Ecole des Sciences de la Santé, Yaounde, Cameroon, 2Ministère de la Santé Publique/NTS, Yaounde, Cameroon

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HIV PREVALENCE AMONG HIGH RISK MALE AND FEMALE ADULTS SCREENED FOR ENROLMENT IN A VACCINE SITE PREPAREDNESS STUDY IN KISUMU, KENYA
John Owuoth1, Valentine Sing’o1, June Otieno2, Chiaka Nwoga3, Adam Yates3, Ben Andagalu1, Nathanial K. Copeland3, Trevor A. Crowell1, Christina Polyak1

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NDARU JAMBO ABSTRACT
Ndaru Jambo1, Innocent Kadwala1, Leonard Mwaya1, Priyanka Patel1, Joyce Macheso1, Amber Majdu1, Anstead Kankwata1, Malick Gibani2, James Meiring3, Kondwani Jambo1, Lorenza Preciado Llanes1, Tonny Nyirenda4, Melita Gordon5
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REPURPOSING OF MEDICINES FOR MALARIA VENTURE'S OPEN ACCESS LIBRARIES LED TO IDENTIFICATION OF POTENT INHIBITORS OF THE CAUSATIVE AGENTS OF SELECTED NEGLECTED TROPICAL DISEASES
Fabrice Fekam Boyom1,2, Rufin Marie T. Kouipou1, Patrick Valere T. Fokou1, Benoit Laleu1,2, Thomas Spangenberg2
1University of Yaounde I, Yaounde, Cameroon, 2Faculté de Médecine de l'Université de Dschang, Dschang, Cameroon

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IMPACT OF DIFFERENT INTERVENTION STRATEGIES ON HELMINTH AND INTESTINAL PROTOZOA, IN CENTRAL CÔTE D’IVOIRE
Gaoussou Coulibaly
University Félix Houphouët-Boigny, Abidjan, Côte d'Ivoire, Abidjan, Côte D'Ivoire

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André Domche
University of Yaoundé I, Yaoundé, Cameroon

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ASSESSING THE EXTENT OF COVERAGE AND COMPLIANCE TO IVERMECTIN MASS DRUG ADMINISTRATION AND ASSOCIATED FACTORS AMONG RESIDENTS IN ONCHOCERCIASIS ENDEMIC COMMUNITIES IN OWABI CATCHMENT AREA IN GHANA
Francis Adjei Osei1, Ellis Owusu-Dabo1, Sam K. Newton1, Nicholas Karikari Mensah2, Evans Xorse Amuzu3, Samuel Frimpong Gbedu3, Isaac Nyanor2, Suraj Yawnumah Abubaka3, Bright Atta Dankwah1, Ebenezer Opoku1, Alfred K. Owusu1, Phans Oduro Sarpong1, Stephanie Boadi4, Ernest Amanor1, Peter Furu5, Dan Wolf Meyrowitsch6
1School of Public Health, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana, 2Komfo Anokye Teaching Hospital, Kumasi, Ghana, 3Kumasi Centre for Collaborative Research KNUST, Kumasi, Ghana, 4Department of Public Health, Global Health Section, University of Copenhagen, Copenhagen, Denmark

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NEED OF HEALTH POLICY AND SYSTEM RESEARCH FOR INTEGRATED CONTROL OF NEGLECTED TROPICAL DISEASES
Sehrish Ather1, Zakria Tariq1, Romana Ayub2
1University of Lahore, Lahore, Pakistan, 2Alama Iqbal Medical college Jinnah Hospital, Lahore, Pakistan, 3Khyber Medical College, Peshawar, Pakistan

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PERSPECTIVES AND CONCERNS OF IMPLEMENTERS ON INTEGRATED CONTROL OF NEGLECTED TROPICAL DISEASES INTO PRIMARY HEALTH CARE IN NIGERIA
Chinenyen Afonne1, Tony Danso-Apiah1, Ikeoluwapo Ajayi1, Patricia Akweongo1, Patricia Norte1, Solomon Ofor1, Bertram E. Nwoke1, Catherine O. Falade1
1University of Lagos, Lagos, Nigeria, 2University of Ibadan, Ibadan, Nigeria, 3State Ministry of Health, Umuhia, Abia State, Nigeria, 4Imo State University, Owerri, Nigeria

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CLOSING THE NEGLECTED TROPICAL DISEASES CROSS SECTOR COORDINATION GAP: AN ORGANIZATIONAL NETWORK ANALYSIS TO SUSTAIN ELIMINATION AND CONTROL OBJECTIVES IN GHANA
Arielle Dolegui1, Stephen O. Omunyidde1
World Vision, Washington, DC, United States

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KNOWLEDGE CONCERNING ZOOINOSIS AMONG MEDICAL PRACTITIONERS IN LUSAKA, ZAMBIA
1Ministry of Fisheries and Livestock, Luwingu, Zambia, 2Faculty of Medicine, Port Said University, Port Said, Egypt, 3Faculty of Medicine, University of Medicine and Pharmacy, Ho Chi Minh City, Viet Nam, 4Faculty of Pharmacy, Al-azhar University, Cairo, Egypt, 5Faculty of Medicine, Ain Shams University, Cairo, Egypt, 6Emeritus Faculty of Health Sciences, University of Copenhagen, Copenhagen, Denmark, 7School of Tropical Medicine and Global Health, Nagasaki University, Nagasaki, Japan, 8Department of Immunogenetics, Institute of Tropical Medicine (NEKKEN), Graduate School of Biomedical Sciences, Nagasaki University, Nagasaki, Japan

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PREDOMINANCE OF RICKETTSIA AFRICAE OF THE ETILOGIC AGENT OF SPOTTED FEVER GROUP RICKETTSIAE IN TICKS COLLECTED FROM DOMESTIC ANIMALS IN RAYMOND NKANDLA MUNICIPALITY, EASTERN CAPE, SOUTH AFRICA
Benson Chukw Chiberi1, Larry Chikwelu Obi2
1Sefako Makgatho Health Sciences University, Ga-Rankuwa, Pretoria, South Africa
ARE BAT HUNTERS AWARE REGARDING BAT-BORNE DISEASES? A QUALITATIVE STUDY AMONG A BAT-HUNTING COMMUNITY IN BANGLADESH
A.K.M. Dawlat Khan
Department of Anthropology, University of Dhaka, Dhaka, Bangladesh

EXPERIENCE IN IMPLEMENTING THE "ONE HEALTH" APPROACH IN INTEGRATED CONTROL OF EMERGING DISEASES IN GUINEA
Alpha Ahnadou Diallo
Ministry of Health and University of Conakry, Conakry, Guinea

EFFECTS OF ROAD NETWORK AND POPULATION DENSITY ON THE RISK OF RABIES AND DOG BITE INCIDENCE IN NIGERIA
Christianian C. Odita1, Ishaya S. Tekki1, Abass A. Adigun1, Israel I. Barde1, Emmanuel S. Hambolu1, Moses G. Gyangi1, Joseph D. Alex1, Dashe Y. Yakubu1, Chika C. Nwosu1
1National Veterinary Research Institute Vom Plateau State Nigeria, Jos, Nigeria, 2National Centre for Remote sensing Jos Plateau State Nigeria, Jos, Nigeria

ENVIRONMENTAL CHANGES AND POTENTIAL BAT-BORNE JAPANESE ENCEPHALITIS VIRUS TRANSMISSION IN BALI, INDONESIA
Aji Bidyayanusa, Tri Baskoro T. Satoto, Elisabeth S. Herini, Soedarmanto Indarjulianto
Universitas Gadjah Mada, Yogyakarta, Indonesia

FELINE-HUMAN ZOONOSES TRANSMISSION IN NORTH AFRICA: A SYSTEMATIC REVIEW
Breck N. Peterson, Amber N. Barnes
University of North Florida, Jacksonville, FL, United States

MAPPING THE ENVIRONMENTAL SUITABILITY OF MONKEYPOX IN HUMANS ACROSS AFRICA
Erin N. Holland1, Austin N. Hardcastle1, Joshua C. Osborne1, Julia D. Morgan1, Shreya Shihude1, Kiana F. Henry1, Peter Rabinowitz1, Judith N. Wasserheit1, Molly K. Miller-Petrie1, Julia Hon1, Simon I. Hay1, David M. Pigott1
1Institute for Health Metrics and Evaluation, Seattle, WA, United States, 2University of Washington School of Medicine, Seattle, WA, United States

PERINATAL EXPOSURE TO BISPHENOL A INCREASES IN THE ADULTHOOD OF THE OFFSPRING THE SUSCEPTIBILITY TO THE HUMAN PARASITE TOXOCARA CANIS
Victor H. Del Rio-Araiza, Karen E. Nava-Castro, Jorge Morales-Montor
Universidad Nacional Autónoma de México, Instituto de Investigaciones Biomedicas, Ciudad Universitaria, Mexico

ONE HEALTH APPROACH IN RABIES MANAGEMENT IN SARAWAK, MALAYSIA: WHERE ARE WE?
Nur Sheilla Abdul Taib, Jane Labadin, Phang Piau
Universiti Malaysia Sarawak, Kota Samarahan, Malaysia

INFEKTIOUS DISEASE AND VECTOR SURVEILLANCE IN WEST AFRICA
Naiki Puplampu1, Shirley Nimo-Paintsil1, Anne T. Fox1, James Harwood2, Matthew Montgomery3, Joseph Diclaro4, William K. Ampofo5, Samuel Dadzie6, Kennedy K. Addo7, Andrew Letizia8, David Wolfe9, Chase Watters1, Terrel Sanders1
1Naval Medical Research Unit-3-Ghana, Accra, Ghana, 2Naval Medical Research Unit-3, Sigonella, Italy, 3Navy Entomology Center of Excellence, Jackson, FL, United States, 4Noguchi Memorial Institute for Medical Research, Accra, Ghana, 5Naval Medical Research Center, Silver Spring, MD, United States

COSTA RICA WILDLIFE REPORTING OF DISEASE DATA FOR PREVENTIVE MEDICINE AND DISEASE CONTROL
Tamara Danielle Solorzano1, Fernando Aguilar2, Ana Jiménez3, Elías Barquero4, Martha Piche7, Gaby Dolz6, Carlos Jiménez5, Mario Baldi3, Bernal León8, Mario Santoro9, Alejandro Alfaro1

LIVESTOCK TICKS AND RISK FACTORS LINKED TO TICK INFESTATION IN CATTLE IN PERI-URBAN LIVESTOCK FARMING IN THE DISTRICT OF ABIJDAN AND THE MUNICIPALITY OF AZAGUA (SOUTH AND SOUTH-EAST OF CÔTE D’IVOIRE)
Claude Aimée Amani Diakha-Kouame1, Valery Edgard Adjougoua1, Negenergo Guindo-Coulibaly2, Marc Hermann Akafo1
1Institut Pasteur de Côte d’Ivoire, Abidjan, Côte D’Ivoire, 2Felix Houphouet Boigny University, Abidjan, Côte D’Ivoire

THE ROLE OF DOMESTIC ANIMALS AND RODENTS IN THE ECO-EPIDEMIOLOGY OF RICKETTSIAS IN THE PERUVIAN AMAZON BASIN
Cusi Ferradas1, David E. Payahuancá1, Diana León1, Edith Malaga2, Gabriela Salmond-Mulconovich1, Andrés G. Lescano1, Janet E. Foley4
1Emerging Diseases and Climate Change Research Unit, School of Public Health, Universidad Peruana Cayetano Heredia, Lima, Peru, 2Infectious Diseases Laboratory, School of Science, Universidad Peruana Cayetano Heredia, Lima, Peru, 4Biomedical Engineering Program PUCH-PUPC, Universidad Peruana Cayetano Heredia (UPCH), Pontificia Universidad Católica del Perú (PUCP), Lima, Peru, 5Department of Medicine and Epidemiology, School of Veterinary Medicine, University of California, Davis, Lima, Peru

URBAN PROCYONID, DOMESTIC DOGS AND HUMAN INTERACTION AS RISK FOR CONTAGION OF THE ZOONOTIC NEMATODES ANGIOSTRONGYLUS COSTARICENSIS AND BAYLISASCARIS PROCYONIS IN COSTA RICA
Alejandro Alfaro-Alarcón1, Mario Santoro2, Mario Baldi3
1Escuela de Medicina Veterinaria Universidad Nacional, Heredia, Costa Rica, 2Integrative Marine Ecology Department Stazione Zoologica Anton Dohrn, Naples, Italy, 4Programa de Investigación en Enfermedades Tropicales, Escuela de Medicina Veterinaria Universidad Nacional, Heredia, Costa Rica
IDENTIFYING AREAS AT HIGH RISK FOR DOG MEDIATED RABIES IN THAILAND
Kaushi ST Kanke1, Kaylee M. Errecaborde1, Anuwar Wiratsudakul1, Ong-orn Prasaranpanich1, Prhutsamon Wongnak1, Chakchalat Yoopathananawong1, Julio Alvarez2, Andres M. Perez3
1University of Minnesota, St Paul, MN, United States, 2Faculty of Veterinary Science, Mahidol University, Nakhon Pathom, Thailand, 3United States Centers for Disease Control and Prevention (CDC) Thailand Office, Nonthaburi, Thailand

RESPIRATORY AND ARBOVIRAL DISEASE TRENDS IN PUERTO RICO DURING THE NOVEL CORONAVIRUS PANDEMIC, 2020
RENSK Kazi2, Anjali Shetty2, Timothy C. Rodwell1, Camilla Rodrigues2
1Basic Science Laboratory, US Army Medical Research Directorate - Africa, Kisumu, Kenya, 2Viral Diseases Branch, Walter Reed Army Institute of Research, Silver Spring, MD, United States

DRUG RESISTANCE IN EXTRAPULMONARY TUBERCULOSIS: A CROSS-SECTIONAL STUDY FROM SOUTH INDIA
Saravanan Munisankar, Anuradha Rajamanickam, Suganthi B, Sathishwaran Muthusamy, Chandra Kumar Dolla, Pradeep Menon, Thomas Nutman, Subash Babu
NIRT-NIH-ICER, Chennai, India

IMPACT OF THE INTRODUCTION OF PCV7/13 ON ANTIMICROBIAL RESISTANCE IN INVASIVE PNEUMOCOCCAL DISEASE IN SENEGAL
Ebrima Bah, Sang Jatta
 Ministry of Health and Social Welfare, Banjul, Gambia

LINE PROBE ASSAYS DETECTION OF FIRST- AND SECOND-LINE DRUG RESISTANCE IN EXTRAPULMONARY TUBERCULOSIS: A RETROSPECTIVE ANALYSIS
Aislinn K. McMillan1, Swapna Naik2, Rebecca E. Colman1, Marva Seifert1, Munib Kazi2, Anjali Shetty2, Timothy C. Rodwell1, Camilla Rodrigues2
1Department of Medicine, University of California, San Diego, La Jolla, CA, United States, 2Section Microbiology, Department of Laboratory Medicine, P.D. Hinduja National Hospital and Medical Research Center, Mumbai, India

USE OF AN ACUTE FEBRILE ILLNESS ENHANCED SURVEILLANCE SYSTEM TO MONITOR CONCURRENT RESPIRATORY AND ARBOVIRAL DISEASE TRENDS IN PUERTO RICO DURING THE NOVEL CORONAVIRUS PANDEMIC, 2020
Hannah R. Volkman
Centers for Disease Control and Prevention, San Juan, Puerto Rico

THE PREVALENCE OF M. TUBERCULOSIS AMONG ACID FAST CULTURES FROM MILITARY HEALTH SYSTEM BENEFICIARIES FROM HAWAII AND PACIFIC ISLANDS FROM JANUARY 2002 TO NOVEMBER 2019
Elena M. Crecelius, Michael B. Lustik, Timothy S. Horman, Milissa U. Jones
Tripler Army Medical Center, Honolulu, HI, United States

POTENTIAL USE OF RAPID, POINT-OF-CARE DIAGNOSTICS TO REDUCE ANTIBIOTIC PRESCRIPTION RATES AMONG PEDIATRIC PATIENTS PRESENTING WITH RESPIRATORY ILLNESS IN SOUTHWESTERN UGANDA
Emily J. Ciccone1, Lydia Kabugho1, Emmanuel Baguma1, Rabbison Muhindo1, Jonathan J. Juliano1, Edgar Mulogo2, Ross M. Boyce3
1University of North Carolina, Chapel Hill, NC, United States, 2Mbarara University of Science and Technology, Mbarara, Uganda

STREPTOCOCCUS PNEUMONIAE IS AN IMPORTANT CAUSE OF BACTERIAL LOWER RESPIRATORY TRACT INFECTION IN SOUTHERN PROVINCE, SRI LANKA
Coralei E. Neighbors1, Sky Vanderburg1, Gaye B. Wijayaratne2, Champica K. Bodinayake3, Ajith Nagahawatte4, Vasantha Devasiri5, Ruvini Kurukulasooriya2, Bhagyaa Piysirse1, Munuhanth Sellathurai6, Thilini Wickremasinghe1, Thishara Nanayakara7, Tianchen Sheng8, Jack Anderson1, Bradley P. Nicholson1, L. Gayani Tillekeratne9, Christopher W. Woods10
1Duke University, Durham, NC, United States, 2Faculty of Medicine, University of Ruhuna, Galle, Sri Lanka, 3Teaching Hospital Karapitiya, Galle, Sri Lanka, 4Institute for Medical Research, Durham, NC, United States

CAN XPERT ULTRA USING STOOL SPECIMEN HELP IN UNDER-FIVE CHILDHOOD TB DIAGNOSIS?
Senjuti Kabir1, S. M. Mazidur Rahman1, Sabrina Choudhury1, Shakiel Ahmed1, Rumana Nasrin1, Shahrriar Ahmed1, Mohammad Khaja Mafij Uddin1, Razia Khatun1, Mohammad Jobayer Chisti1, Sayera Banu1
1icddr,b, Dhaka, Bangladesh, 2Shaheed Suhrawardy Medical College and hospital, Sher-E-Bangla Nagar, Dhaka, Bangladesh

SPUTUM MICROBIAL PROFILE AND CLINICAL FEATURES OF PATIENTS WITH GENEXPERT AND AFB NEGATIVE IN SAN LAZARO HOSPITAL MANILA-PHILIPPINES
Crespo Mbe-cho Ndiabamoh
TMGH, Nagasaki, Japan

MOLECULAR CHARACTERISTICS OF INFLUENZA A STRAINS IN KENYA AND CROSS REFERENCING TO RECOMMENDED VACCINE STRAINS
Faith Sigei1, Gathii Kimita1, Christian K. Fung2, Irina Maljkovic M. Berry2, John N. Waitumbi1
1Basic Science Laboratory, US Army Medical Research Directorate - Africa, Kisumu, Kenya, 2Viral Diseases Branch, Walter Reed Army Institute of Research, Silver Spring, MD, United States

RESPIRATORY TRACT MICROBES AND ASSOCIATED FACTORS IN PULMONARY TUBERCULOSIS PATIENTS AT BOBO-DIOULASSO
Nina Gouba1, Moussa Sakana2, Assana Cissé2, Kader Ilboudo3, Nadègne W. Somda4, Zékiba Tarnagda3
1Université Nazi Boni de Bobo-Dioulasso, Institut de recherche en science de la santé DRO-Bobo-Dioulasso, Bobo-Dioulasso, Burkina Faso, 2Centre médical avec Antenne Tillekeratne, Bobo-Dioulasso, Bobo-Dioulasso, Burkina Faso, 3Institut de recherche en science de la santé DRO-Bobo-Dioulasso, Bobo-Dioulasso, Burkina Faso
Symposium 50

From Detection to Therapy: The Continuum of Cancer Care in a Global Context

Meeting Room 1

Tuesday, November 17
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

Cancer is a leading cause of global mortality resulting in more than 8.2 million deaths annually. Over the past 50 years, cancer diagnostics and treatment has greatly improved, leading to increased patient survival, particularly among those living in high-income countries (HICs). However, the majority of those with cancer live in low-and-middle-income countries (LMICs) where case fatality rates can approach 65-75%. Consequently, understanding the issues faced by clinicians practicing in LMIC is vital to improving global cancer outcomes. Clinicians caring for cancer patients in LMIC face unique challenges including delayed patient presentation, lack of robust healthcare infrastructure, limited access to trained oncology staff, and decreased availability of cancer therapies including anti-neoplastic drugs and advanced treatments such as hematopoietic stem cell transplantation (HSCT). These challenges are particularly pronounced in settings with high HIV-endemicity, since chronic HIV-related inflammation and immunosuppression are linked to increased malignancy risk. In HICs, robust screening programs and creation of healthcare systems to improve cancer-care retention have been key to decreasing mortality. However, the ability to adapt these interventions to a lower resource setting remains a challenge. Even in middle-income countries like Thailand where there is access to advanced cancer therapy such as HSCT, the high cost of post-transplant monitoring and the presence of tropical infectious diseases must be considered. For patients who relocate from LMICs to HICs, cultural and language differences as well as the challenges of navigating complex healthcare systems create barriers that lead to disparities in uptake of cancer-screening services. This symposium will provide practical information regarding the diagnosis and treatment of cancer within a global context. To reflect the breadth of this subject, we will highlight key issues across diverse practice sites and patient demographics. These include: (1) the management of cancer in patients with HIV living in sub-Saharan Africa, (2) the challenges of performing HSCT in Southeast Asia, particularly focusing on the management of infectious complications such as tuberculosis and tropical infectious diseases, (3) the use of quality-improvement strategies and electronic medical resources to identify barriers to treatment, improve access to care, and increase patient retention in cancer programs located in low-resource settings, and (4) the unique considerations of cancer screening among immigrants and refugees living in high-resource settings. This symposium will equip clinicians to care for cancer patients across multiple settings and highlight this growing area of clinical concern.

CHAIR
Elizabeth A. Gulleen
Fred Hutchinson Cancer Research Center, Seattle, WA, United States
Beth Kristine Thielen
University of Minnesota, Minneapolis, MN, United States

1:45 p.m.
BONE MARROW TRANSPLANTATION IN SOUTHEAST ASIA
Kitsada Wudhikarn
Chulalongkorn University, Bangkok, Thailand

2:15 p.m.
USE OF INFORMATION SYSTEMS TO RELENTLESSLY IMPROVE THE QUALITY OF HEALTHCARE
Scott Howard
University of Tennessee, Memphis, TN, United States

2:45 p.m.
CANCER SCREENING IN IMMIGRANTS AND REFUGEES IN THE UNITED STATES
Ann Settgast
University of Minnesota, Minneapolis, MN, United States

Symposium 51

Severe Tropical Diseases in the ICU: An Anatomical Tour

Meeting Room 2

Tuesday, November 17
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

The aim of this symposium is to provide the most up-to-date science and clinical protocols for patients requiring ICU-level care of their acute tropical infectious disease. Given the increasing intersection of tropical disease epidemiology with capacity improvements in areas endemic for tropical diseases, the care of such patients is becoming increasingly germane. This symposium will illuminate the current challenges and opportunities around specific tropical infectious diseases with severe manifestations.

CHAIR
Andrea K. Boggild
University of Toronto, Toronto, ON, Canada
Robert Fowler
University of Toronto, Toronto, ON, Canada

1:45 p.m.
MALARIA
Mahalia S. Desruisseaux
Yale University School of Medicine, New Haven, CT, United States

2 p.m.
RABIES
Corey Forde
Queen Elizabeth Hospital, Bridgetown, Barbados
2:20 p.m.  
**SCRUB TYPHUS**  
Priscilla Rupali  
Christian Medical College Vellore, Vellore, India

2:45 p.m.  
**YELLOW FEVER**  
Braulio M. Valencia  
University of New South Wales, Kensington, Australia

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**Symposium 52**

**Washington, DC: The Intersection of Science Advocacy, Policy and Social Media**

*Meeting Room 3  
Tuesday, November 17  
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone*

In both style and impact, the U.S. federal scientific enterprise has never before experienced such waves of decisions from the White House and its administration that affect research, programs, funding and policy. In these politically charged and fiscally challenging times where science is under attack, scientists must take steps to help those outside their research circles better understand what they do and why. This includes the public, the media and policy makers. The overwhelming majority of decision makers are not scientists or health professionals and as a result, they look at the issues through lenses very different from someone with years, perhaps decades of science training and experience. As a whole, the research community is late (and reluctant) in thinking and acting like constituents. 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 best to use social media platforms like Twitter to inform others about the value of tropical medicine and global health overall, including your own efforts? 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 any meeting or conversation. What are the do's and don'ts? Learn how to connect with policymakers, and your family and friends who likely don’t really know what you do (whose fault is that?). Listen to the experienced perspectives from the ASTMH President, the CEO, ASTMH’s PR firm and its Washington, DC-based lobbyist.

**CHAIR**  
Karen A. Goraleski  
American Society of Tropical Medicine and Hygiene, Arlington, VA, United States

1:45 p.m.  
**ADVOCATING FOR R&D FUNDING - THE WHO, WHAT, WHERE, WHY AND HOW**  
Jodie Curtis  
The District Policy Group, Washington, DC, United States

2:05 p.m.  
**ADVOCATING FOR GLOBAL HEALTH R&D RULE #1: AVOID SCIENCE SPEAK**  
Karen A. Goraleski  
American Society of Tropical Medicine and Hygiene, Arlington, VA, United States

2:25 p.m.  
**USING SOCIAL MEDIA STRATEGICALLY AND EFFECTIVELY**  
Gideon Hertz  
Burness, Bethesda, MD, United States

2:45 p.m.  
**SCIENTISTS MUST SPEAK UP FOR SCIENCE**  
Joel G. Breman  
Fogarty International Center, Bethesda, MD, United States

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**Symposium 53**


*Meeting Room 4  
Tuesday, November 17  
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone*

In December of 2019, the appearance of a novel pneumonia disease (since named COVID-2019) was announced by authorities in Wuhan, China. Within 2 months, over 80,000 cases and almost 3000 deaths had been confirmed worldwide. The United States initially had only a limited number of cases identified through travel screening and embarked upon a policy of identification and quarantine (voluntary or required) of at risk individuals with close monitoring. Individuals of found to be positive for the virus were isolated and when necessary transferred to a health care institution for care. Although recommendations of the WHO and CDC allowed for care in any hospital facility with the capacity for negative pressure isolation and the use of contact, aerosol, and eye protection personal protective equipment, many of these patients were routed to Regional Ebola and Special Pathogens Treatment Centers (RESPTCs). In this symposium we will present the challenges and quandaries faced by RESPTCs in caring for these patients, the public health issues surrounding quarantine, isolation, and patient placement, barriers to rapid implementation of research, and the role of the NETEC network in supporting these units and the national response.

**CHAIR**  
Susan L. McLellan  
University of Texas Medical Branch, Galveston, TX, United States

1:45 p.m.  
**INTRODUCTION: WHERE WE WERE THEN IN OUR UNDERSTANDING, AND WHAT WERE THE PUBLIC HEALTH DILEMMAS?**  
Susan McLellan  
University of Texas Medical Branch, Galveston, TX, United States

2 p.m.  
**CARING FOR THE FIRST SICK PATIENT**  
Jonathan Grein  
Cedars Sinai Medical Center, Los Angeles, CA, United States
2:20 p.m.  
ACCEPTING A BOLUS OF PATIENTS  
Angela Hewlett  
University of Nebraska Medical Center, Omaha, NE, United States

2:40 p.m.  
OPERATIONALIZING A RAPID RESEARCH RESPONSE  
Lauren M. Sauer  
Johns Hopkins University, Baltimore, MD, United States

3 p.m.  
THE ROLE OF NETEC IN PREPAREDNESS AND RESPONSE  
Bruce S. Ribner  
Emory University, Atlanta, GA, United States

Scientific Session 54  
Bacteriology: Trachoma and Other Bacterial Infections

Meeting Room 5  
Tuesday, November 17  
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone  
CHAIR  
Diana Martin  
CDC, Atlanta, GA, United States

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MAPPING AND GEOGRAPHIC DISTRIBUTION OF BURKHOLDERIA PSEUDOMALLEI IN MYANMAR  
Myo Maung Maung Swe1, Mo Mo Win1, Joshua Cohen1, Aung Pyae Phyo1, Daniel Parker2, David Dance3, Elizabeth Ashley1, Frank Smithuis1  
1Myanmar Oxford Clinical Research Unit, Yangon, Myanmar, 2Department of Medical Research, Ministry of Health and Sports, Yangon, Myanmar, 3Department of Population Health and Disease Prevention Program in Public Health, University of California, Irvine, CA, United States, 4Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit, Vientiane, Laos People’s Democratic Republic

947  
DEVELOPMENT AND OPTIMIZATION OF A RAPID TEST FOR TRACHOMA ELIMINATION PROGRAMS  
Sarah Gwyn1, Scott Nash2, E. Kelly Callahan1, Andrew W. Nute2, Tiggist Astale2, Ambahun Chernet1, Eshetu Sata1, Mulat Zerihun1, Zeriuhun Tadesse1, Danaya Bethea1, Christian Laurent1, Diana Martin1  
1CDC, Atlanta, GA, United States, 2The Carter Center, Atlanta, GA, United States

948  
GENOMICS OF OCULAR CHLAMYDIA TRACHOMATIS AFTER 5 YEARS OF SAFE INTERVENTIONS FOR TRACHOMA IN AMHARA, ETHIOPIA  
Harry Pickering1, Ambahun Chernet2, Eshetu Sata2, Mulat Zerihun1, Charlotte A. Williams1, Judith Breuer1, Andrew W. Nute2, Mahiteme Haile1, Taye Zeru1, Zeriuhun Tadesse1, Robin L. Bailey1, E. Kelly Callahan1, Scott D. Nash2, Martin J. Holland1  
1Department of Clinical Research, London School of Hygiene & Tropical Medicine, London, United Kingdom, 2The Carter Center, Addis Ababa, Ethiopia, 3Division of Infection and Immunity, University College London, London, United Kingdom, 4The Carter Center, Atlanta, GA, United States, 5Amhara Public Health Institute, Bahir Dar, Ethiopia

Symposium 55  
Sero-Epidemiology: The Future of Enteric Disease Surveillance?

Meeting Room 6  
Tuesday, November 17  
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone  

Enteric infections are a significant cause of preventable morbidity and mortality in communities lacking access to clean water and sanitation infrastructure. For many bacterial pathogens, detection in some low- and middle-income settings is still reliant on culture methods that are slow, less sensitive than newer tools, and require robust laboratory capabilities. Passive, clinic-based case detection underestimates disease incidence, both due to sub-optimal diagnostic standards and barriers to health care utilization, making it difficult to accurately estimate the potential impact of disease control efforts. Advances in disease control strategies, such as the recent availability of typhoid conjugate vaccine (TCV), offer great promise in reducing disease burden. However, there is a need for robust and granular population-based data to inform how best to target control interventions. Serological markers for enteric infections have historically suffered from cross-reactivity and limited specificity. Recent advances in antigen discovery, new assay platforms, and machine learning techniques have provided emerging opportunities for measuring enteric disease burden by
sero-epidemiology. Sero-epidemiology represents a promising alternative approach to culture-dependent methods to detect where, how frequently and in whom enteric infections are occurring in the community. In the absence of sustained population-based surveillance, serological surveillance may be a more versatile and cost-effective approach to evaluating the burden of disease. This symposium brings together perspectives on the use of sero-epidemiological tools, with a specific focus on data from enteric infections research in Asia and Africa. This session will describe work in African and Asian contexts to evaluate new approaches to assessing the burden of enteric disease using serological markers of infection. The speakers will present new data from the work to develop sero-epidemiological tools to measure transmission and burden of typhoid in Bangladesh, Nepal and Pakistan, cholera in Bangladesh and Cryptosporidium, Campylobacter, Giardia, Salmonella spp. and Enterotoxigenic E. coli in Niger. Additional talks will point towards next steps for point-of-care testing. The presenters will describe the measurement of sero-prevalence, sero-conversion and sero-reversion (waning) of antibody responses in high and low-burden communities.

CHAIR
Denise Garrett
Sabin Vaccine Institute, Washington, DC, United States
Farah Qamar
Aga Khan University, Karachi, Pakistan

1:45 p.m.
NEW ADVANCES IN SEROEPIDEMIOLOGY FOR ENTERIC FEVER
Richelle C. Charles
Massachusetts General Hospital, Boston, MA, United States

2:10 p.m.
SERO-EPIDEMIOLOGY FOR TYPHOID SURVEILLANCE: METHODS AND RESULTS FROM THE SEES STUDY
Jessica Seidman
Sabin Vaccine Institute, Washington, DC, United States

2:20 p.m.
SERO-EPIDEMIOLOGY FOR TYPHOID SURVEILLANCE: METHODS AND RESULTS FROM THE SEES STUDY
Kristen Aiemjoy
Stanford University, San Francisco, CA, United States

2:45 p.m.
ADVANCES IN ESTIMATING VIBRIO CHOLERAE INFECTION RATES WITH CROSS-SECTIONAL SEROLOGY
Andrew Azman
Johns Hopkins School of Public Health, Baltimore, MD, United States

3:15 p.m.
EFFECT OF BIANNUAL MASS AZITHROMYCIN DISTRIBUTION ON SEROLOGICAL MEASURES OF ENTERIC PATHOGEN TRANSMISSION AMONG PRESCHOOL CHILDREN IN NIGER
Benjamin Arnold
University of California, San Francisco, San Francisco, CA, United States

Symposium 56
American Committee of Medical Entomology (ACME)
Symposium II: The Origin of ACME: Past, Present and Future of Medical Entomology

Meeting Room 7
Tuesday, November 17
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

The American Committee of Medical Entomology was established 35 years ago. The initial formation was spearheaded by Charlie Bailey with support from many of the prominent leaders in the field at the time. ACME’s many accomplishments include achieving its objectives of promoting medical entomology in the ASTMH, recognizing outstanding contributions by medical entomologists, and ensuring the next generation of medical entomologists. While the field of medical entomology has made countless advances, we still require core foundations in entomology and the ecology of vector-borne diseases in nature. Although, the field has faced many challenges with the global spread of arthropod vectors and the emergence of new vector-borne diseases, we also continue to battle some of the same disease systems. For example, the first ACME symposium was ’Rift Valley Fever Virus – Field Ecology, Vector Competence and Control’, which remains a system that threatens human and animal health. The aim of this symposium is to help retain the knowledge of how ACME was formed, highlight the accomplishments of ACME, and showcase the future of the field of medical entomology.

CHAIR
Gabriel Hamer
Texas A&M University, College Station, TX, United States
Ellen Dotson
Centers for Disease Control and Prevention, Atlanta, GA, United States

1:45 p.m.
NOT WILE E. COYOTE’S ACME, THE ORIGIN OF OUR ACME
Michael Turell
VectorID LLC, Frederick, MD, United States

2:05 p.m.
ACCOMPLISHMENTS OF ACME: 35 YEARS OF EXCELLENCE IN MEDICAL ENTOMOLOGY
Rebekah Kading
Colorado State University, Fort Collins, CO, United States

2:50 p.m.
WHEN VECTOR CONTROL HITS THE WALL: REDUCING THE RISK FOR CHAGAS DISEASE THROUGH INTEGRATED VECTOR AND RESERVOIR CONTROL
Pamela Pennington
Universidad del Valle de Guatemala, Guatemala, Guatemala

2:50 p.m.
HOST AND HABITAT ASSOCIATIONS FOR AN URBAN IXODID TICK COMMUNITY
Meredith VanAcker
Columbia University, New York, NY, United States
Scientific Session 58
American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Malaria - Molecular Mechanisms of Pathogenesis

Meeting Room 9
Tuesday, November 17
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

Supported with funding from the Burroughs Wellcome Fund

CHAIR
Keri Harp
Morehouse School of Medicine, Atlanta, GA, United States
Alexis Kaushansky
Seattle Children’s Hospital, Seattle, WA, United States

1659
A NOVEL PROTEIN COMPLEX IS ESSENTIAL FOR THE MATURATION OF TRANSMISSION-STAGE MALARIA PARASITES
Rebecca Clements1, Esrah W. Du1, James P. McGee2, Vincent Streva2, Jeffrey D. Dvorin2
1Biological and Biomedical Sciences, Harvard Medical School, Boston, MA, United States,
2Division of Infectious Diseases, Boston Children’s Hospital, Boston, MA, United States

1660
SHIFTING PERSPECTIVES: A MODIFICATION TO THE LIFE CYCLE OF TRYPANOSOMA BRUCEI
Jaime Lisack, Sarah Schuster, Ines Subota, Markus Engstler
Universität Würzburg, Bavaria, Germany

953
PLASMODIUM FALCIPARUM GROWTH IN ERYTHROCYTES IS GOVERNED BY HEMOGLOBIN GENOTYPE AND ENDOGENOUS EXOSOMAL MICRORNA LET-7I-5P
Keri Oxendine Harp1, Daniel Addo-Gyan2, Felix Botchway3, Yvonne Dei-Adomakoh4, Michael D. Wilson5, Andrew A. Adjei6, Jonathan K. Stiles4, Adel Driss1
1Morehouse School of Medicine, Atlanta, GA, United States,
2Noguchi Memorial Institute for Medical Research, University of Ghana, Accra, Ghana,
3Korle-Bu Teaching Hospital, University of Ghana Medical School, Accra, Ghana,
4Korle Bu Teaching Hospital, Accra, Ghana

954
VARIATIONS WITHIN NFkBIA AND NFkB1 PROMOTERS PREDICT LONGITUDINAL SUSCEPTIBILITY TO PEDIATRIC MALARIAL ANEMIA AND REDUCED ALL-CAUSE MORTALITY IN KENYA
Elly Munde1, Samuel B. Anyona1, Evans Rabalah2, Benjamin McMahon3, Nick Hengartner4, Kristian A. Schneider5, Clinton Onyango6, Ivy Hurwitz7, Qiuying Cheng8, Christophe G. Lambert9, Collins Ouma10, Douglas J. Perkins11
1Kenyatta National Hospital, Nairobi, Kenya,
2University of Nairobi, Kenya,
3Maseno University School of Medicine, Maseno, Kenya,
4Masinde Muliro University of Science and Technology, Kakamega, Kenya,
5Theoretical Biology and Biophysics Group, Theoretical Division, Los Alamos National Laboratory, Los Alamos, NM, United States,
6Department of Applied Computer and Bio Sciences, University of Applied Sciences Mittweida, Mittweida, Germany,
7Center for Global Health, Department of Internal Medicine, University of New Mexico, Albuquerque, NM, United States,
8Maseno University School of Public Health and Community Development, Maseno, Kenya

955
MECHANISMS BY WHICH GENETIC VARIATION IN ATP2B4 MAY PROTECT FROM SEVERE MALARIA
Fatou Joof1, Elena Hartmann2, Alison Jarvis3, Alhassan Colley1, Marion Avril4, Andrew M. Prentice5, Carla Cerami6
1Medical Research Council, The Gambia Unit at London School of Tropical Medicine and Hygiene, Banjul, Gambia,
2The University of Manchester, Manchester, United Kingdom,
3University of Washington, Seattle, WA, United States

956
ERYTHROCYTES CLEARANCE DURING POST-TREATMENT DELAYED HEMOLYSIS IN SEVERE MALARIA: THE BIOMECHANICAL HYPOTHESIS
Charlotte Chambrion1, Mallorrie Depond2, Oussama Mourir3, Sylvestre Bilgou4, Michael Dussiot5, Eric Kendjo6, Aurélie Fricot-Monsinjon7, Aida Taieb1, Camille Roussel1, Jerôme Crox8, Safi Dokmak9, Ilhame Tantaouil, Nicolas Argy1, Sandrine Houzet1, Renaud Pierrat1, Jean-Yves Siniez1, Sébastien Larrière1, Marc Thellier1, Pierre Buffet1, Papa Aloune Ndogour1
1INSERM U1134 INTS. French National Reference Center for Malaria, Labex GRex, Paris, France,
2INSERM U1134 INTS. Labex GRex, Paris, France,
3French National Reference Center for Malaria, Hôpital Pitié Salpêtrière, Paris, France,
4Université de Paris, Labex GR-EX, Paris, France,
5APHP Beaujon, Paris, France,
6Hôpital Xavier Bichat-Claude Bernard, French National Reference Center for Malaria, Paris, France,
7Hôpital Robert-Debré, Paris, France,
8Département de Biologie Médicale, Hôpital d’Instruction Des Armées Bégin, Paris, France

Symposium 59
Leishmania Vaccine Development: From Research and Development to Licensure

Meeting Room 10
Tuesday, November 17
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

Leishmaniasis is a neglected tropical disease caused by the Leishmania parasite following transmission by an infected sand fly and causes different clinical presentations ranging from physical disfigurement to fatal systemic visceral infection. Over 12 million people currently suffer from leishmaniasis, and approximately 2 million new cases occur annually, predominantly in areas where surveillance and health infrastructure are weak. There is no vaccine and management of leishmaniasis is primarily based on sand fly control and chemotherapeutic treatments. The majority of the patients with leishmaniasis (both cutaneous leishmaniasis (CL) and visceral leishmaniasis (VL)) develop a long-term protective immunity after cure, indicating that development of an effective vaccine against leishmaniasis should be possible. Several experimental vaccines such as whole organisms (both live and dead) or antigens both from sand fly saliva and parasite have shown promise in pre-clinical studies in different animal
models, yet few have been tested in clinical trials. With over 350 million people worldwide at risk of developing leishmaniasis, the development of a pan-Leishmania vaccine will have a major and far-reaching positive impact in controlling this major global public health problem.

CHAIR
Hira Nakhasi
USFDA, Silver Spring, MD, United States
Abhay Satoskar
The Ohio State University, Columbus, OH, United States

1:45 p.m.
LEISHMANIA VACCINES: CURRENT STATUS, CHALLENGES AND POTENTIAL SOLUTIONS.
Greg Matlashewski
McGill University, Montreal, QC, Canada

2:05 p.m.
HUMAN CHALLENGE MODEL FOR LEISHMANIA VACCINES.
Paul Kaye
University of York, Heslington, York, United Kingdom

2:25 p.m.
SELECTION OF OUTCOME MEASURES FOR EARLY STAGE CLINICAL DEVELOPMENT AND LINKING THEM TO PRECLINICAL STUDIES
Kawsar R. Talaat
Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States

2:35 p.m.
SELECTION OF OUTCOME MEASURES FOR EARLY STAGE CLINICAL DEVELOPMENT AND LINKING THEM TO PRECLINICAL STUDIES
John J. Donnelly
Vaccinology Consulting LLC, Moraga, CA, United States

2:50 p.m.
LEISHMANIA VACCINE: POSSIBILITIES AND CHALLENGES FOR DEVELOPING A SUCCESSFUL LIVE ATTENUATED PRODUCT
Sanjay Singh
Gennova Biopharmaceuticals, Pune, India

Symposium 60
How to Combat Tropical Zoonoses beyond Medical Interventions: Global One Health Reflecting COVID-19

Meeting Room 11
Tuesday, November 17
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

An increasing number of zoonotic diseases are emerging as global pandemics. Despite between 65-75% of emerging infectious diseases being of mammalian origin, there is still limited understanding by the general public and medical establishment about zoonoses, where they come from and how best to talk about them to assuage panic. This symposium will explore the role and utility of better education and understanding of zoonotic infections to provide guidance to public health and medical professionals from a Global One Health point of view. The session will highlight instances where use of a reservoir host provides critical tools for intervention and where poor understanding of how these reservoirs contribute to human disease prevents appropriate intervention(s). The topics will span the full breadth of tropical disease epidemiology; from communication and social network tools; transmission mechanisms of zoonoses demonstrated via mathematical modeling; and live market challenges and potential interventions to prevent the next COVID-19.

CHAIR
Christine Petersen
University of Iowa, Iowa City, IA, United States
Ann Stewart
USUHS, Bethesda, MD, United States

1:45 p.m.
PREVENTING MUTUAL DESTRUCTION: HOW PANIC AND MISINFORMATION ABOUT ANIMAL INFECTION DURING AN OUTBREAK CAN BE REFOCUSED INTO EFFECTIVE INTERVENTION
Ryan Wallace
Centers for Disease Control and Prevention, Atlanta, GA, United States

2:10 p.m.
HOW AGRICULTURAL ANIMAL RESEARCH BENEFITS GLOBAL PUBLIC HEALTH
Cyril G. Gay
USDA, Manhattan, KS, United States

2:35 p.m.
THE CANADIAN ONE HEALTH NETWORK FOR GLOBAL GOVERNANCE FOR INFECTIOUS DISEASE AND ANTIMICROBIAL RESISTANCE – BRINGING SOCIAL AND HEALTH SCIENTISTS TOGETHER TO BETTER PREPARE AND RESPOND TO ONE HEALTH EMERGENCIES AND CONSTANT CHALLENGES
Hélène Carabin
University of Montreal, Montréal, ON, Canada

3 p.m.
INSIGHTS FROM TRANSMISSION MODELLING: WHY ZOONOSES CAN BECOME PANDEMICS AND HOW TO INTERRUPT TRANSMISSION*
Epke Le Rutte
Erasmus MC, Rotterdam, Netherlands

Scientific Session 61
Coronaviruses and Alphaviruses

Meeting Room 12
Tuesday, November 17
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

CHAIR
Desiree LaBeaud
Stanford University, Stanford, CA, United States
Amanda E. Calvert
Centers for Disease Control and Prevention, Fort Collins, CO, United States
Coronavirus Surveillance in Congo Basin Wildlife Detects RNA of Multiple Species Circulating in Bats and Rodents

Christian E. Lange1, Charles Kumakamba2, Fabien R. Niaama1, Maria Makuwa1, Amethyst Gillis3, Matthew LeBreton4, David McIver2, Damien Joly5, Karen Saylors6, Metabiota, Inc, San Francisco, CA, United States, 2Metabiota, Inc, Kinshasa, Democratic Republic of the Congo, 3National Laboratory of Public Health, Brazzaville, Republic of the Congo, 4Labyrinth Global Health, Inc, St Petersburg, FL, United States, 5Development Alternatives, Inc., Washington, DC, United States, 6Mosaic, Yahounde, Cameroon, 7University of California, San Francisco, CA, United States, 8National Laboratory of Public Health, Brazzaville, Republic of the Congo, 9Kenya Medical Research Institute, Nairobi, Kenya, 10National Laboratory of Public Health, Brazzaville, Republic of the Congo, 11Laboratoire des Maladies Infectieuses et Parasitaires, PPEC, Brazzaville, Republic of the Congo, 12National Laboratory of Public Health, Brazzaville, Republic of the Congo

Clinical and Epidemiologic Features Associated with Mild or Early COVID-19 in an Outpatient Setting

Jessica K. Fairley1, Taylor Landay2, Arly Sherman3, Henry M. Wu1, Matthew H. Collins1
1Emory University School of Medicine, Atlanta, GA, United States, 2Emory Rollins School of Public Health, Atlanta, GA, United States

Symposium 62
A World in Transition: Human Movement and Health in the Context of a Changing Climate

Meeting Room 13
Tuesday, November 17
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

Climate changes interact dynamically with human movement as well as other natural and human systems to shape human health and disease. In the near future, these processes will be drivers of major disruptions in the distribution of human health concerns. The direct effects of climate on infectious disease risk are complicated by the multi-faceted intersections of climate change with human mobility and migration, both voluntary and reactionary, short term and permanent. Human movement, either through daily transit, seasonal travel, or large-scale migration can impact infectious disease transmission, and introduce novel exposures into previously naïve populations. Increasing travel and global connectedness alter transmission routes and complicate public health interventions to control climate-sensitive infectious diseases. Unstable climate in regions with low infrastructure-resilience is leading to the displacement of the most vulnerable populations, creating ‘climate refugees’. Large-scale climate-related disasters, in concert with a highly mobile and globally connected population are increasingly linked to major infectious disease outbreaks. The convergence of climate shifts with rapid changes in human behavior, travel, and global connectivity is linked to recurrent outbreaks of novel and emerging infectious diseases and contributes to sustained global pandemics. These complex, dynamic systems demand novel interdisciplinary research approaches to predict, mitigate, and prevent significant human disease. This symposium brings together a multi-disciplinary panel of experts on climate change, displaced populations, human movement, and their contributions to human disease. The first two presentations will take a broad view on the relationship between climate-related disaster, global change, and the globalization of disease, and the remaining two presentations will focus on location-specific research into the impacts of changing human mobility patterns on infectious disease spread and the health consequences of climate-related migration. Bringing together experts in engineering, mathematics, epidemiology, and environmental research, this session will highlight the need for interdisciplinary approaches to tackling climate and disease.

Chair
Andrea Geri Buchwald
Colorado School of Public Health, Aurora, CO, United States
Jenna Coalson
University of Notre Dame, Eck Institute for Global Health, Notre Dame, IN, United States

Risk Factors Associated with Chikungunya and Dengue Exposure Among Children in Coastal and Western Kenya

Shama Cash-Goldwasser1, Jonathan Altamirano2, Bryson Ndinga3, Loice Lwamba4, Sandra Musaki5, Charles Muiruri Ng’ang’a5, Saidi Lippi6, Priscillah W. Maina7, Elysse Grossi-Soyster2, Holden T. Macek1, Desiree LaBeaud1
1Human Immune Monitoring Center, Stanford University, School of Medicine, Stanford, CA, United States, 2LaBeaud Laboratory, Stanford University, School of Medicine, Department of Pediatrics, Division of Infectious Disease, Stanford, CA, United States, 3Smart Tube Inc., Menlo Park, CA, United States, 4Department of Environment and Health Sciences, Technical University of Mombasa, Mombasa, Kenya, 5Vector borne disease control unit, Msambweni field station, Kwale County, Kenya

A Monoclonal Antibody Mapping to the Fusion Loop of Eastern Equine Encephalitis Virus E1 Glycoprotein Cross-Neutralizes Venezuelan Equine Encephalitis Virus in Vitro by Several Mechanisms

Amanda E. Calvert1, Susan L. Bennett2, Rachel H. Fong3, Benjamin J. Doranz2, John T. Roehrig1, Carol D. Blair2
1Centers for Disease Control and Prevention, Fort Collins, CO, United States, 2Colorado State University, Fort Collins, CO, United States, 3Integral Molecular, Philadelphia, PA, United States

The Dual Impacts of Climate Change and Urbanization on Ecologically Constrained Diseases

Elizabeth Carlton
University of Colorado, Denver, Aurora, CO, United States
Symposium 63

Innovations Pitch Competition Session for Healthy Children, Healthy Planet

Meeting Room 14
Tuesday, November 17
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

For the 3rd Annual Innovations Pitch Competition session, we will focus on the interconnectivity of children's current and future health with planetary health and sustainability. This year we challenged innovators to provide proposals that support a healthier, more sustainable world, with a particular focus on benefit for future generations. Innovations should be rooted in scientific rigor, and Innovators should be able to demonstrate that their innovation will benefit the health of our planet and will impact children's health today and in the future. We put out the call for innovative ideas that address, but are not limited to 1) climate change and consequences to humans and animals, 2) mitigating childhood vaccine-preventable disease risks through social communication and new technology, and, 3) delivering better risk assessment decision tools for measuring planetary health risks and predicting global health actions. Innovators were invited to submit a 3-page proposal. Each proposal was reviewed by 3 members of the ASTMH Innovations expert group, which we have cultivated over the past 2 years. Selection of 5 finalists was based on the scientific novelty and rigor, impact, marketability, sustainability, and demonstrable benefit to children and future generations. The top 5 finalists have been invited to pitch their innovation ‘live’ at the ASTMH 2020 Annual Meeting. Each finalist will give a rapid-fire pitch in front of a judging panel and audience, following by a question and answer with the judges and audience. The winner will be determined using a weighted score of both judging panel decision and audience voting. Audience participation and real-time voting will be through the use of an interactive application. All finalists will receive a cash prize. The first place winner will receive a monetary award ($10,000), access to marketing advice, and a private pitch session with relevant potential investors.

Many thanks to the Ronald McDonald House Charities (RMHC) for their funding. A special thank you to Past President Peter Hotez, MD, PhD, FASTMH, FAAP, recipient of the 2019 RMHC Awards of Excellence, for sharing his grant award with ASTMH. Many thanks also to Roche for their contribution.

CHAIR
May C. Chu
Colorado School of Public Health, Aurora, CO, United States

JUDGE
Daniel G. Bausch
UK Public Health Rapid Support Team, London, United Kingdom
Rebecca Richards-Kortum
Rice University, Houston, TX, United States
Matthias Strobl
Roche Diagnostics GmbH, Penzberg, Germany
Minmin Yen
CEO and Co-Founder, PhagePro, Boston, MA, United States

FINALISTS
Adam Soomro
Frisco, TX, United States
Molly Klarman
Director, INACT Studies and Education Coordinator, University of Florida, Gainesville, FL, United States
Sreekar Mantena
Undergraduate Student, Harvard University, Cambridge, MA, United States
Lok Pokhrel
Assistant Professor of Toxicology, Eastern Carolina University, Greenville, SC, United States
Prince Kajazi Kaude, RN
Community Health Nurse, Daeyang Luke Hospital, Lilongwe, Malawi

Break
Tuesday, November 17
3:30 p.m. - 3:45 p.m. U.S. Eastern Time Zone

Sponsored Symposium

Food for Thought: "Food Evolution"- Narrated by Neil DeGrasse Tyson, Featuring Bill Nye, Mark Lynas & Michael Pollan

Grand Ballroom
Tuesday, November 17
3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

Sponsored by Bayer
See page 44 for information.
Wednesday, November 18

Press Room

Wednesday, November 18
The ASTMH media team is available for assistance at the following:

• Preeti Singh psingh@burness.com, tel: +1 703-862-2515
• Bridget DeSimone, bdesimone@burness.com, tel: +1 202-468-0766
• Anna Chen, achen@burness.com, tel: +1 215-262-7670

Review research highlights and more: https://astmhpressroom.wordpress.com/annual-meeting-2020/

ASTMH Information Desk

Lobby
Wednesday, November 18
8 a.m. - 5:30 p.m. U.S. Eastern Time Zone

Poster Session C Viewing

Poster Hall
Wednesday, November 18
Midnight - 11:45 a.m. U.S. Eastern Time Zone

ASTMH/AJTMH Booth

Stop by to learn about GOTropMed, the new ASTMH Global Online Tropical Medical Education website, download a copy of the Inclusion/Respect Policy, check out the latest from the Journal, learn about membership, and more.

Exhibit Hall

Visit the Exhibit Hall to view the schedule for each exhibit booth and connect with our exhibitors and learn about their products and services.

Sponsor Hall

Visit the Sponsor Hall to connect with our sponsors and learn about their work.

Subgroup Hall

Visit the Subgroup Hall to connect with ASTMH's Subgroups: ACAV (Arbovirology), ACCTMTH (Clinical Group), ACGH (Global Health), ACMCIP (Parasitology), and ACME (Medical Entomology)

TropMed Central

Visit TropMed Central to connect with colleagues and attendees.

Symposium 64

Strengthening Malaria Surveillance Systems: Do We Have a Good Understanding of the Level of Investment Needed?

Meeting Room 1

Wednesday, November 18
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

In the current epidemiological context where national malaria programs are addressing multiple transmission settings within country boundaries, surveillance techniques must be robust and multifaceted. These data allow program managers to take appropriate, tailored action. However, investments in such surveillance systems, estimated at 5-10% of the malaria intervention budget, may detract from other critical malaria interventions and efforts if resources (financial, human, or otherwise) are limited. Furthermore, while malaria endemic countries are adding surveillance as an intervention in their strategic plans, there is limited understanding of how much it costs to set up and sustain a strong and effective malaria surveillance systems, and to track value for money across the transmission continuum. Better understanding of the cost, coupled with empirical evidence, is important for strategic planning and for advocating for investment in malaria surveillance strengthening, especially in the context in which countries are treating it as an intervention. This symposium will bring lessons learned from Southeast Asia and sub-Saharan Africa to highlight current work on costing surveillance systems. An initial presentation will discuss strategies to establish an operational and financial framework for malaria surveillance. Representatives of two national malaria programs will share country-level experience with costing surveillance, monitoring, and evaluation plans, including lessons learned and persistent challenges. The presentations will conclude with the results of a mapping that has been done to identify existing tools and gaps. The co-chairs will moderate a discussion on how to use existing evidence to best address challenges and gaps in costing malaria surveillance systems.

CHAIR

Jui Shah
RTI International, Bangkok, Thailand

Yazoume Ye
ICF, Rockville, MD, United States

9 a.m.
DEVELOPING AN OPERATIONAL AND FINANCIAL FRAMEWORK FOR A HIGHLY EFFECTIVE SURVEILLANCE SYSTEM IN A RESOURCE LIMITED ENVIRONMENT

Arnaud Le Menach
Clinton Health Access Initiative, Washington, DC, United States

9:15 a.m.
ZAMBIA: COSTING THE MALARIA SURVEILLANCE, MONITORING, AND EVALUATION PLAN

Busiku Hamainza
National Malaria Elimination Centre, Lusaka, Zambia

9:30 a.m.
THAILAND: KEY ELEMENTS IN COSTING AN EFFECTIVE SURVEILLANCE SYSTEM FOR AN ELIMINATION SETTING

Cheewanan Lertpiriyasuwat
Division of Vector-Borne Disease (Thailand), Nonthaburi, Thailand
Ivermectin and Antimalarial Mass Drug Administration for Malaria Control and Elimination: Preliminary Field Trial Results and Trial Designs

Meeting Room 2
Wednesday, November 18
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

Ivermectin mass drug administration (MDA) to humans and/or livestock has been proposed as potential vector control tools to accelerate malaria elimination efforts. The mainstays of malaria vector control, insecticide-treated nets and indoor residual spraying with insecticides, have been very effective at reducing the global malaria burden but efforts are beginning to stall and even reverse in some areas. Thus, novel vector control tools are needed, particularly methods that can target vectors outside the home. Ivermectin treatment makes human or animal blood lethal to feeding Anopheles, and this measure can directly target outdoor and early evening biting Anopheles. Ivermectin MDAs to humans in West Africa have been shown to reduce the survival, shift the population age structure, and reduce the sporozoite rate of wild Anopheles gambiae, which in turn reduces malaria parasite transmission to humans. Ivermectin alone will not clear treated persons of their malaria infections, so efforts have been made to assess the safety of ivermectin and antimalarial drugs. Two clinical trials administering ivermectin and dihydroartemisinin-piperaquine in Kenya and Thailand demonstrated the safety, tolerability, and pharmacokinetic interaction that caused increased ivermectin concentrations when co-administered with dihydroartemisinin-piperaquine, and subsequent enhanced mosquito-lethal effect. MDAs with ivermectin alone combined with mass ivermectin treatment of livestock are planned for Mozambique and Tanzania. MDAs with ivermectin and dihydroartemisinin-piperaquine are being evaluated in the Gambia and Guinea-Bissau in two large cluster-randomized trials. Modeling indicates that the addition of ivermectin to dihydroartemisinin-piperaquine will reduce the number of rounds and time necessary to achieve malaria elimination. Seasonal Malaria Chemoprevention (SMC) is the monthly administration of sulfadoxine-pyrimethamine plus amodiaquine during the malaria transmission season to children 3-59 months old in the Sahel of Africa. Modeling indicates that combining SMC with ivermectin MDA to eligible persons = 5 years old would be extremely impactful, and this combination is being assessed in Burkina Faso. Ivermectin-only treatments in low transmission areas outside of Africa where it is more common for malaria vectors to feed outdoors, such as the Greater Mekong Subregion, may be more impactful as few people will harbor malaria parasites, reducing justification for combining ivermectin with antimalarial drugs, and this is being assessed in Thailand. Preliminary results or trial designs from each of these trials will be presented here.
If ecological conditions are unchanged and Anopheles mosquitoes remain widespread, once intervention activities cease there is always potential for malaria to be re-introduced and surge. In recent years, the number of recorded falciparum malaria cases has increased with most patients being residents returning from business, tourism or work in malaria highly endemic regions, such as Southeast Asia and Africa. To mitigate risks of re-introduction, malaria surveillance and response activities need to be continue and reinforced. New techniques, such as tracking malaria cases, screening key populations, and multi-lateral cooperation are warranted. The symposium is the one of two joint symposia to share Chinese experiences on malaria elimination in China, including lessons of malaria elimination, from general to case studies, from national level to local level, and from domestic to international cooperation.

**CHAIR**

Xiao-Nong Zhou  
National Institute of Parasitic Diseases at China CDC, Shanghai, China

9 a.m.  
**STRATEGY AND ACHIEVEMENTS OF THE NATIONAL MALARIA ELIMINATION PROGRAMME IN CHINA**  
Xiao-Nong Zhou  
National Institute of Parasitic Diseases at China CDC, Shanghai, China

9:25 a.m.  
**SUCCESSFUL CASE STUDIES ON MALARIA ELIMINATION WITH MULTI-PROVINCE COOPERATION IN CHINA**  
Ying Liu  
Henan Provincial Center for Disease Control and Prevention, Zhengzhou, China

9:50 a.m.  
**MULTI-LATERAL COOPERATION ON MALARIA ELIMINATION IN CHINA-MYANMAR BORDER AREAS**  
Kay Thwe Han  
Department of Medical Research, MoH, Myanmar, Yangon, Myanmar

10:15 a.m.  
**CASE STUDIES ON CHINA-TANZANIA COOPERATION ON MALARIA CONTROL IN TANZANIA**  
Prosper Pius Chaki  
Ifakara Health Institute, Dar es Salaam, United Republic of Tanzania

10:40 a.m.  
**SUMMARY**  
Pedro Alonso  
World Health Organization, Geneva, Switzerland

**Scientific Session 67**

**Zika**

Meeting Room 4  
Wednesday, November 18  
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

**CHAIR**

Christina M. Newman  
University of Wisconsin-Madison, Madison, WI, United States

Nikos Vasilakis  
UTMB Health, Galveston, TX, United States

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965  
**DETERMINANTS OF ARBOVIRUS VECTOR DENSITY AS A MEASURE OF TRANSMISSION RISK IN REGIONS OF RECENT ZIKA VIRUS INTRODUCTION IN THE AMERICAS**  
Benoit Talbot1, Beate Sander1, Camila González1, Yassirio Cevallos1, Marcos Miretti1, Mauricio Espinio1, Jianhong Wu1, Maria Cristina Carraquilla Ferro1, Mario Iván Ortiz Yanine1, Denisse Benitez2, Patricio Ponce3, Heros Gauto3, Karen López3, Claudio Carissimo3, Fabián Zálaya3, Sergio Litwiñiuk3, Manisha A. Kulkarni3  
1University of Ottawa, Ottawa, ON, Canada, 2University Health Network, Toronto, ON, Canada, 3Universidad de los Andes, Bogota, Colombia, 4Instituto Nacional de Investigación en Salud Pública, Quito, Ecuador, 5Unam-CONICET, Posadas, Argentina, 6Universidad Laica Elroy Alfaro de Manabi, Manta, Ecuador, 7York University, Toronto, ON, Canada, 8Municipalidad de Posadas, Posadas, Argentina

966  
**CARING FOR CHILDREN EXPOSED TO ZIKA VIRUS PRENATALLY**  
Viviana Rosario-Villafañe1, Irelis C. Repollet-Carrer, Marilyn Borges-Rodriguez, Paola B. Velázquez-González, Vanessa Rivera-Amill, Mary Rodriguez-Rabassa, Luisa I. Alvarado-Domenec  
Ponce Health Sciences University, Ponce, PR, United States

967  
**RAPID HOST ADAPTATION AND EMERGENCE OF A VIRULENCE-ENHANCING MUTATION DURING SERIAL VERTEBRATE TRANSMISSION OF ZIKA VIRUS**  
Kasen Riemsma1, Anna Jaeger1, Chelsea Crooks1, Katarina Braun1, James Weger-Lucarelli1, Greg Ebel1, Thomas Friedrich1, Matthew Aliota2  
1University of Wisconsin, Madison, WI, United States, 2University of Minnesota, St. Paul, MN, United States, 3Virginia Tech, Blacksburg, VA, United States, 4Colorado State University, Fort Collins, CO, United States

968  
**EARLY FETAL DEMISE FOLLOWING INTRAVAGINAL ZIKA VIRUS CHALLENGE IN RHESUS MACAQUES**  
Christina M. Newman1, Alice F. Tarantal2, Christopher J. Miller2, David H. O’Connor3  
1University of Wisconsin-Madison, Madison, WI, United States, 2California National Primate Research Center, Davis, CA, United States

969  
**THE INFLUENCE OF TYPE 1 INTERFERON ON PROGRAMMING THE ZIKA VIRUS SPECIFIC T-FOLLICULAR HELPER CELL AND B CELL RESPONSE**  
Tara L. Steffen1, Mariah Hassert, Amelia K. Pinto, James D. Brien  
Saint Louis University, Saint Louis, MO, United States

970  
**A ROBUST NONHUMAN PRIMATE PREGNANCY MODEL TO TEST ZIKA VIRUS COUNTERMEASURES**  
Dawn M. Dudley1, Keisuke Yamamoto1, Phoenix M. Shepherd1, Meghan E. Breitbach1, Christina M. Newman1, Kathryn Bach1, Mason I. Bliss2, Sierra L. Rybarczyk2, Emily Sneed2, Heather A. Simmons2, Andres Mejía2, Michael K. Fritsch2, Emma L. Mohr2, Karla K. Ausderau3, Matthew T. Aliota1, Thomas C. Friedrich1, David H. O’Connor1  
1University of Wisconsin-Madison, Madison, WI, United States, 2Wisconsin National Primate Research Center, University of Wisconsin-Madison, Madison, WI, United States, 3University of Minnesota, St. Paul, MN, United States

971  
**CLARIFYING THE CONGENITAL ZIKA SYNDROME PHENOTYPE AND EXPANDING TO CONGENITAL ZIKA SPECTRUM**  
Laura D. Zambrano1, Augustine Delaney1, Charles E. Rose1, Suzanne Gilboa1, Van Tong1, Miguel Valenciac, Nicole M. Roth1, Janet Cragan1, Jazmyn Moore1, J. Erin Staples1, Margaret Honein1, Cynthia Moore1  
1Centers for Disease Control and Prevention, Atlanta, GA, United States, 2Puerto Rico Department of Health, San Juan, PR, United States
**Symposium 68**

**Triple Artemisinin Combination Therapies: A New Paradigm for the Treatment of Uncomplicated falciparum Malaria?**

*Meeting Room 5*

*Wednesday, November 18*

9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

Artemisinin Combination Therapies (ACTs) have contributed to substantial reductions in global malaria morbidity and mortality over the last decade. However, further gains are threatened by the emergence of artemisinin and partner drug resistance in Southeast Asia. A major concern is that artemisinin and partner drug resistance may spread across a wider geographic area, as chloroquine resistance did in the 1960s and 1970s, moving from Southeast Asia to the Indian subcontinent and subsequently to Africa, which bears the vast majority of the global malaria burden. New antimalarial drugs may not come to the market within the next 5 years or more. There is an urgent need to evaluate alternative treatments using combinations of existing drugs which will not fall rapidly to resistance and can be deployed immediately. These treatments are needed now for areas in the Greater Mekong Subregion where ACTs are increasingly failing. For regions where ACTs are still effective, including Sub-Saharan Africa, it is important to develop strategies to prevent the spread or delay the emergence of artemisinin and ACT partner drug resistance. Triple Artemisinin Combination Therapies (TACTs) could be part of such a strategy. They were first tested in a study titled Tracking Resistance to Artemisinin Collaboration II (TRACII), where the second partner drug was carefully selected based on the pharmacokinetic profiles of the drugs and resistance profiles of parasites to these drugs. This randomized study, conducted in 8 countries, enrolling >1000 patients, was the first study to show that two TACTs, dihydroartemisinin-piperaquine with mefloquine and artemether-lumefantrine with amodiaquine, are safe, well tolerated and efficacious even in patients with multi-drug resistant uncomplicated falciparum malaria. The results of clinical studies with these TACTs in the TRACII study and a follow-up study in Cambodia and Vietnam, which might directly inform first-line antimalarial treatment in Cambodia in the near future will be presented. Drug-drug interactions observed during these studies that have implications on dosing regimens will be presented. The results of TRACII led to further development of TACTs in a project titled Development of Triple Artemisinin Combination Therapies (DeTACT), which will be presented. The DeTACT project takes a holistic approach to provide evidence needed for immediate deployment of TACTs in Asia and Africa. In association with the DeTACT project, mathematical modeling of the impact of deploying TACTs in different settings of drug resistance and malaria transmission intensities will be presented. Similarly, as part of the DeTACT project, the ethical considerations of deploying these TACTs in Africa will be presented.

**Chair**

Arjen M. Dondorp  
Mahidol Oxford Tropical Medicine Research Unit, Bangkok, Thailand

Mehul J. Dhorda  
Mahidol Oxford Tropical Medicine Research Unit, Bangkok, Thailand

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**Symposium 69**

**Surveillance of Malaria: Sampling Strategies, Technical Tools and Analytic Methods to Most Accurately Represent Sampled Populations**

*Meeting Room 6*

*Wednesday, November 18*

9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

Surveillance data that report key variables of the disease in a way that is representative of the population surveyed are essential for programmatic intervention and effective disease control. In malaria, population representative surveillance is often dependent on data collected from health centers through systems like DHIS2. This reporting is often supplemented by occasional large population surveys, such as Malaria Indicator Surveys (MIS). Moreover, a plethora of information is derived from convenience sampling and other sentinel site studies, in particular for antimarial resistance. Each of these approaches has limitations and critical populations for malaria surveillance are missed by each of these approaches. In addition, new technologies for analysis of biological samples are available that are scalable and inexpensive enough to provide additional information about malaria epidemiology. However, the widespread implementation of these techniques at a national or regional scale has been slow, in part by a lack of firm recommendations about their collection and analysis. This symposium will explore issues about implementation of population representative surveillance and novel methods for understanding the burden of malaria in these studies. The first talk will focus on understanding current surveillance, the
gaps that are missed by these methods and guidance on how to implement assessment for malaria in a population representative way. The second talk will focus on on new high-throughput genomics tools that can be added to population surveys to provide additional data missed by simple prevalence estimates. The third talk will focus on implementation and challenges of serological surveillance at a population level. The last talk will describe novel simulation methods that allow for the evaluation of study designs for genomic studies of malaria on a population scale. Together, these talks will highlight the challenges and potential solutions for providing rapid and accurate population representative surveillance data that can be useful for malaria control programs.

**CHAIR**
Carol Hopkins Sibley  
*University of Washington, Seattle, WA, United States*

Jonathan J. Juliano  
*University of North Carolina, Chapel Hill, NC, United States*

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**9 a.m.**
**MALARIAS ROUTINE SURVEILLANCE DATA: MAKING USE OF STRENGTHS AND ADDRESSING THE WEAKNESSES**
Katherine E. Battle  
*Institute for Disease Modeling, Bellevue, WA, United States*

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**9:30 a.m.**
**SEROLOGY FOR MALARIAS SURVEILLANCE**
Chris Drakeley  
*London School of Hygiene and Tropical Medicine, London, United Kingdom*

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**10 a.m.**
**POWERING SAMPLING DESIGNS FOR GENETIC APPLICATIONS**
Robert J. Verity  
*Imperial College, London, United Kingdom*

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**Late-Breaker Abstract Session 70**

**Late-Breakers in Malaria**

**Meeting Room 8**
**Wednesday, November 18**
**9 a.m. - 10:45 a.m. U.S. Eastern Time Zone**

This session is specifically designed for brief presentations of new data obtained after the closing date for abstract submission. See Late-Breaker Abstract Presentation Schedule booklet (available online) for the presentation schedule.

**CHAIR**
Miranda Oakley  
*FDA, Silver Spring, MD, United States*

Silvia M. Di Santi  
*São Paulo University, São Paulo, Brazil*

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**Scientific Session 71**

**Malaria Epidemiology I: Infection and Disease in High-Transmission Settings**

**Meeting Room 9**
**Wednesday, November 18**
**9 a.m. - 10:45 a.m. U.S. Eastern Time Zone**

**CHAIR**
Francisca Abanyie-Bimbo  
*Centers for Disease Control and Prevention, Atlanta, GA, United States*

Sumiyaay Thawer  
*Swiss Tropical and Public Health Institute, Dar-es-Salaam, United Republic of Tanzania*

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**972**
**CROSS BORDER SURVEILLANCE IN SOUTHERN ANGOLA: AN ANALYSIS OF RESULTS ACHIEVED AFTER THREE YEARS (2017-2020) OF ACTIVITY IMPLEMENTATION**
José Franco Martines, Joana Rosário, Rukkaal Mugizi, Paulo Máquina, Nyasha Mwendera, Anna Johansson, Sergio Lopes, Julio Ramirez  
1National Malaria Control Program, National Directorate for Public Health, Ministry of Health Angola, Luanda, Angola, 2Elimination 8 Secretariat, Luanda, Angola, 3Elimination 8 Secretariat, Windhoek, Namibia, 4ADPP Angola – Ajudade Desenvolvimento de Povo para Povo, Luanda, Angola, 5The MENTOR Initiative, Luanda, Angola  
*Swiss Tropical and Public Health Institute/University of Basel, Basel, Switzerland*

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**973**
**A MALARIA MICRO-STRATIFICATION APPROACH TO SUPPORT EVIDENCE-BASED DECENTRALIZED MALARIAS CONTROL PLANNING AND IMPLEMENTATION IN MAINLAND TANZANIA**
Sumiyaay Thawer, Victor Alegana, Frank Chackyi, Sigisbert Mkude, Peter M. Macharia, Samwel Lazaro, Ally Mohammed, Christian Lengeler, Amanda Ross, Robert W. Snow, Fabrizio Molteni, Emilie Pothin  
1Swiss Tropical and Public Health Institute/University of Basel, Basel, Switzerland, 2Population Health Unit, KEMRI-Welcome Trust Research Programme, Nairobi, Kenya, 3National Malaria Control Programme,Ministry of Health, Community Development, Gender, Elderly, and Children, Dodoma, United Republic of Tanzania, 4Swiss Tropical and Public Health Institute, Dar es Salaam, United Republic of Tanzania, 5Population Health Unit, KEMRI-Welcome Trust Research Programme, Nairobi, Kenya, 6National Malaria Control Programme,Ministry of Health, Community Development, Gender, Elderly, and Children, Dodoma, United Republic of Tanzania, 7Swiss Tropical and Public Health Institute/University of Basel, Basel, Switzerland, 8Centre for Tropical Medicine and Global Health, Nuffield Department of Clinical Medicine, University of Oxford, Nairobi, Kenya, 9Swiss Tropical and Public Health Institute/National Malaria Control Programme, Dar es Salaam, United Republic of Tanzania, 2Swiss Tropical and Public Health Institute/University of Basel/Clinton Health Access Initiative, Basel, Switzerland  
*Swiss Tropical and Public Health Institute, Dar es Salaam, United Republic of Tanzania*

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**974**
**PLASMODIUM MALARIASiae INFECTION IS ASSOCIATED WITH ANEMIA AMONG FEBRILE PATIENTS PRESENTING TO AN URBAN EMERGENCY DEPARTMENT IN DOUALA, CAMEROON**
Daniel Z. Hodson, Yannick M. Mbang, Tatiana Nngaso, Giwadys Cheute N, Abigail D. Pershing, Narcisse M. Nkontokeng, Martina Wade, Carol E. Ebomou Moukoko, Sunil Parikh, Yen Boum  
1Yale University School of Medicine, New Haven, CT, United States, 2Douala Military Hospital, Douala, Cameroon, 3Pasteur Center of Cameroon, Yaoundé, Cameroon, 4University of Buea, Buea, Cameroon, 5Yale Law School, New Haven, CT, United States, 6Yale School of Public Health, New Haven, CT, United States, 7Médecins Sans Frontières/Epicentre, Yaoundé, Cameroon  
*Swiss Tropical and Public Health Institute, Dar es Salaam, United Republic of Tanzania*

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**975**
**PREDICTORS AND THE EFFECTS ON BIRTH OUTCOMES OF PLASMODIUM FALCIPARUM INFECTION IN EARLY PREGNANCY AMONG NULLIPAROUS WOMEN FROM THE DEMOCRATIC REPUBLIC OF THE CONGO, KENYA, AND ZAMBIA**
Sequoia iris Leuba, Melissa Bauserman, Carl Bose, Daniel Westreich, Kimberly Powers, Andrew Olshan, Antoinette Tshefu, Waldemar Carlo, Elwyn Chomba, Edward Liechty, Fabian Esamai, Saleem Jessani, Janet Moore, Jennifer Hemingway-Foday, Steven Meshnick  
1University of North Carolina at Chapel Hill, Chapel Hill, NC, United States, 2Kinshasa School of Public Health, Kinshasa, Democratic Republic of the Congo, 3University of Alabama at Birmingham, Birmingham, AL, United States, 4University Teaching Hospital, Lusaka, Zambia, 5School of Medicine, Indiana University, Indianapolis, IN, United States, 6Department of Child Health and Paediatrics, Moi University School of Medicine, Eldoret, Kenya, 7Aga Khan University, Karachi, Pakistan, 8RTI International, Research Triangle Park, NC, United States  
*Swiss Tropical and Public Health Institute/University of Basel, Basel, Switzerland*
ESTIMATING CASES OF SEVERE MALARIA AT THE POPULATION-LEVEL: AN ANALYSIS OF HOUSEHOLD SURVEYS FROM 19 MALARIA ENDENTIC COUNTRIES IN AFRICA

Cameron Taylor1, Sorrel Namaste1, Joanna Lowell1, Johanna Useem1, Yazoumé Yé1
1The DHS Program-ICF, Rockville, MD, United States, 2The DHS Program-Vysnova Partners, Rockville, MD, United States, 3PMI Measure Malaria-ICF, Rockville, MD, United States

SEASONAL MALARIA CHEMOPREVENTION WITH SULFADOXINE-PYRIMETHAMINE PLUS AMODIAQUINE AND GAMETOCYTE CARRIAGE IN CHILDREN WITH ASYMPTOMATIC PLASMODIUM FALCIPARUM INFECTIONS

Abdullahi Ahmad, Mamadou Ndiath, Aurelia Prom, Blessed Etoketim, Mamadou Bah, Bennoit Assagba, Umberto D’Alessandro
Medical Research Council Unit The Gambia at the London School of Hygiene and Tropical Medicine, Banjul, Gambia

Scientific Session 72

Malaria: Plasmodium Genetics and Genomics

Meeting Room 10
Wednesday, November 18
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone
CHAIR
Xue Li
Texas Biomedical Research Institute, San Antonio, TX, United States
Shannon Takala Harrison
University of Maryland School of Medicine, Baltimore, MD, United States

COMPARATIVE GENOMIC ANALYSIS OF RIFIN AND STEVOR VARIANT SURFACE ANTIGENS REVEALS HIGHLY CONSERVED, STRAIN-TRANSCEDENT SEQUENCES AND LIMITED DIVERSITY IN CLINICAL AND REFERENCE ISOLATES

Albert E. Zhou1, Zakal V. Shah1, James B. Munro1, Katie R. Bradwell1, Emily M. Stucke1, Kara A. Moser1, Drissa Coulibaly2, Mahamadou A. Thera1, Chanthap Lon2, Dysoley Lek1, Stuart D. Tyner2, David L. Saunders1, Myaing M. Nyunt3, Christopher V. Plowe1, Andrea A. Berry1, Shannon Takala-Harrison1, Timothy D. O’Connor1, David Serre1, Joana C. Silva5, Mark A. Travassos1
1University of Maryland School of Medicine, Baltimore, MD, United States, 2Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand, 3The National Center for Parasitology, Entomology and Malaria Control, Ministry of Health, Phnom Penh, Cambodia, 4US Army Research Institute of Infectious Diseases, Ft. Detrick, MD, United States, 5Case Western Reserve University, Cleveland,OH, United States, 6University of California, Irvine, Irvine, CA, United States, 7Jimma University, Jimma, Ethiopia

EFFICIENT MAPPING OF COMPLEX TRAITS IN THE MALARIA PARASITE PLASMODIUM FALCIPARUM USING GENETIC CROSSES AND BULK SEQUENCING

Xue Li1, Sudhir Kumar2, Kate Vendrely3, Marina McDew-White1, Ann Reyes1, Katie Button-Simons1, Abeer Sayeed1, Lisa Checkley1, Meseret Haile5, Spencer Kennedy3, Ian Cheeseman1, Stefan Kappe1, Francois Nosten4, Michael Fergidl2, Ashley Vaughan5, Tim Anderson3
1Texas Biomedical Research Institute, San Antonio, TX, United States, 2Seattle Children’s Research Institute, Seattle, WA, United States, 3University of Notre Dame, Notre Dame, IN, United States, 4Shoklo Malaria Research Unit, Mae Sai, Thailand

MALARIA PARASITE GENOMICS AND EVOLUTION: ADVANCED SESSION

Symposium 73

Clinical Conundrums in Tropical Medicine

Meeting Room 11
Wednesday, November 18
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

During this symposium updates on the management of neurocysticercosis, refractory giardia, treatment and screening of Chagas disease and an update on approach to echinococcal disease will be covered. The first talk, Neurocysticercosis Update on Management of Disease, will focus on subarachnoid disease and calcified parenchymal disease addressing emerging literature by the leading expert in the field. The second talk, Unraveling the Complexity of Testing and Treating Chagas Disease, will review how to approach and develop a robust screening program for Chagas disease. The speaker will also address approaches to treatment of Chagas disease and complications of treatment.
The third talk, Refractory Giardia: A Bloaty Issue, will review epidemiology of refractory giardia and approach to treatment. The last talk, Echinococcus: Cases that Blur the Line, will review approach to imaging, diagnosis and management of Echinococcus and complications of disease.

**CHAIR**
Christina Coyle  
Albert Einstein College of Medicine, Bronx, NY, United States  
Michael Libman  
J.D. Maclean Centre for Tropical Diseases at McGill University, Montreal, Canada

9 a.m.  
**UNRAVELING THE COMPLEXITY OF TESTING AND TREATING CHAGAS DISEASE**  
Natasha Hochberg  
Boston University, Boston, MA, United States

9:20 a.m.  
**ECHINOCOCCUS: CASES THAT BLUR THE LINE**  
Christina Coyle  
Albert Einstein College of Medicine, Bronx, NY, United States

9:40 a.m.  
**REFRACTORY GIARDIASIS: A BLOATY ISSUE**  
Michael Libman  
J.D. Maclean Centre for Tropical Diseases at McGill University, Montreal, Canada

10 a.m.  
**NEUROCYSTICERCOSIS: UPDATE ON MANAGEMENT OF DISEASE**  
Hugo Garcia  
Cayetano Heredia University, Lima, Peru

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**Symposium 74**

Antimicrobial Resistant Bacterial Infections as a Cause of Stillbirths and Child Death in Low- and Middle-Income Countries: From Evidence to Treatment and Prevention Strategies

**Meeting Room 12**  
**Wednesday, November 18**  
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

Globally, bacterial resistance to antibiotics has been steadily increasing and is a major public health concern. Strong surveillance for resistant infections is limited to higher income countries where the resources and awareness about prevention are strongest. Nonetheless, resistant strains continue to emerge in new areas, and increasingly, are resistant to multiple antibiotics or are untreatable with available antibiotics. Relatively little evidence is available on the burden of antimicrobial resistant bacterial infections in low- and middle-income countries, where prevention programs are weak or non-existent. Healthcare facilities can be contaminated, leading to outbreaks, but increasing evidence suggests that resistant infections are carried my health community members. The Child Health and Mortality Prevention Surveillance (CHAMPS) project is a seven-country study aiming to identify the etiology of child deaths and stillbirths through use of minimally invasive tissue sampling postmortem. Some of the countries participating in this network — Bangladesh, Kenya, and South Africa — are beginning to identify the burden of antimicrobial resistant infections as causes of stillbirths and child deaths, providing important insights into the true burden of these infections, and the threat they pose to global gains in child survival. This symposium will present new findings about infections from CHAMPS sites as well as current recommendations for control and prevention. The speakers will discuss the implications of emerging evidence from the unprecedented sampling and surveillance efforts from these countries and recommendations for changes to local or global policies in light of the improving understanding of burden of resistant infections.

**CHAIR**
Emily Gurley  
Johns Hopkins Bloomberg School of Public Health, Baltimore, United States  
Beth Barr  
CDC-Western Kenya, Kisumu, Kenya

9 a.m.  
**IMPORTANCE OF INFECTION CONTROL FOR RESISTANT INFECTIONS – EXAMPLE FROM A NEONATAL INTENSIVE CARE UNIT**  
Portia Mutevedzi  
Chris Hani Baragwanath Academic Hospital, Soweto, South Africa

9:20 a.m.  
**THE ROLE OF UNTREATABLE INFECTIONS IN STILLBIRTHS AND NEONATAL DEATHS**  
Muntasir Alam  
ICDDR,B, Dhaka, Bangladesh

9:40 a.m.  
**RESISTANT KLEBSIELLA PNEUMONIAE INFECTIONS CAUSING DEATH – CAN THESE OCCUR IN THE COMMUNITY?**  
Jennifer Verani  
US Centers for Disease Control and Prevention, Atlanta, United States

10 a.m.  
**GLOBAL EFFORTS TO PREVENT DRUG RESISTANT INFECTIONS: WHAT IS WORKING AND WHAT ELSE IS NEEDED TO REDUCE IMPACT ON CHILD MORTALITY**  
Benjamin Park  
US Centers for Disease Control and Prevention, Atlanta, United States

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**Scientific Session 75**

Mosquitoes: Vector Biology - Epidemiology I

**Meeting Room 13**  
**Wednesday, November 18**  
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

**CHAIR**
Evelyn A. Olanga  
Malaria Alert Centre of the College of Medicine, Malawi, Blantyre, Malawi  
Michel Slotman  
Texas A&M University, College Station, TX, United States

**986**  
**USING THE M-LOCUS GENE NIX FOR Aedes aegypti SPERM QUANTIFICATION**  
Miguel Angel Toro-Londoño, Frank W. Avila  
Max Planck Tandem Group in Mosquito Reproductive Biology - Universidad de Antioquia, Medellin, Colombia
THE RAPID DETECTION OF ZIKA, DENGUE AND CHIKUNGUNYA VIRUSES IN Aedes aegypti MOSQUITOES TO PRODUCE A RAPID RESPONSE VECTOR CONTROL
Gabriela A. Garcia1, Lilha M. Santos1, Mariana R. David1, Marcio G. Pavan1, Maggy Sikulu-Lord2, Anton Lord2, Rafael Maciel-de-Freitas1
1Oswaldo Cruz Foundation, Rio de Janeiro, Brazil, 2School of Public Health, University of Queensland, Brisbane, Australia, 3QIMR Berghofer Medical Research Institute / School of Public Health, University of Queensland, Brisbane, Australia

ALTERNATIVE TREATMENT STRATEGIES IN ACCELERATING ONCHOCERCIASIS ELIMINATION IN THE MASSANGAM HEALTH DISTRICT IN CAMEROON
Karen Atekom1, Ruth Dixon1, Rogers Nditanchou1, Benjamin Biholong2, Joseph Oye1, Hugues Nana Djengu1, Philippe Nwane1, Franklin Ayisi3, Daniel Boakye4, Joseph Kamgno5, Lena Schmidt1, Laura Senyonjo5
1Sightsavers, Yaounde, Cameroon, 2Sightsavers, Haywards Heath, United Kingdom, 3National Onchocerciasis Control Program, Ministry of Health, Yaounde, Cameroon, 4Centre for Research on Filariasis and other Tropical Diseases (CRFilMT), Yaounde, Cameroon, 5Parasitology Department, Noguchi Memorial Institute for Medical Research, University of Ghana, Legon, Accra, Ghana

INDICES OF HUMAN EXPOSURE TO ANOPHELES BITES IN CENTRAL AND SOUTHERN MALAWI
Evelyn A. Olanga1, Nellie C. Kaunde2, Eggrey A. Kambewa1, Judith S. Banda1, Christopher M. Jones2, Lisa Reimer2, Charles Wondji1, Philip McCall1, Hilary Hanson1, Thembia Mzilahowa1
1Malawi-Liverpool-Wellcome Trust, Blantyre, Malawi, 2Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 3Centre for Research on Filariasis and other Tropical Diseases (CRFilMT), University of Cambridge, Cambridge, United Kingdom, 4Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 5Liverpool School of Tropical Medicine, Liverpool, United Kingdom

COMPARING POST-MDA COVERAGE SURVEY DATA FOR TRACHOMA, ONCHOCERCIASIS AND LYMPHATIC FILARIASIS WITH REPORTED DATA AMONG 14 DISTRICT COUNCILS IN TANZANIA
Veronica Kabona1, Denis Kailombo1, Gerald Robi1, Oscar Kaitaba2, Kerry Dobies3, Mary Linehan1, Abdel Direny1, Josh West2, Benjamin Crookston4
1IMA World Health, Dar Es Salaam, United Republic of Tanzania, 2Ministry of Health, Dar Es Salaam, United Republic of Tanzania, 3IMA World Health, Washington, DC, United States, 4Brigham Young University, Provo, UT, United States

RAPID INDUCTION OF APOPTOSIS IN Aedes aegypti MIDGUTS FOLLOWING DENGUE-2 OR ZIKA VIRUS INFECTION
Jasmine Blue Ayers, Rhelo Dinglasan, Lei Zhou
University of Florida, Gainesville, FL, United States

USING MULTI-SCALE REMOTELY SENSED DATA TO UNDERSTAND SPATIO-TEMPORAL PATTERNS IN MALARIA RISK IN CENTRAL MALAWI: HOW HIGH DO WE NEED TO FLY?
Patrick K. Kalonde1, Christopher M. Jones1, Kenneth K. Zembere2, Michelle C. Stanton2
1Malawi-Liverpool-Wellcome Trust, Blantyre, Malawi, 2Liverpool School of Tropical Medicine, Liverpool, United Kingdom

NEW METHODS FOR MODELING ANOPHELES GAMBIAE S.L. MOVEMENT WITH ENVIRONMENTAL AND GENETIC DATA
Tomás M. León1, Héctor M. Sánchez Castellanos1, Yoosook Lee2, John M. Marshall1
1University of California, Berkeley, Berkeley, CA, United States, 2University of California, Davis, Davis, CA, United States

CHALLENGES OF TRANSMISSION ASSESSMENT SURVEYS (TAS) FOR DETERMINING TRANSMISSION INTERRUPTION FOR LYMPHATIC FILARIASIS IN EAST NEW BRITAIN PROVINCE, PAPUA NEW GUINEA
Kruftinta Bun1, Michael Payne1, Daniel Tisch1, Catherine Bjerum1, Benedict Mode1, Moses Laman1, Melinda Susapuri1, Makoto Sekihara2, Peter J. Diggle1, Emanuele Giorgi1, Leanne Robinson1, Gary Weil3, Christopher L. King1
1Case Western Reserve University, Cleveland, OH, United States, 2East New Britain Provincial Health Department, Kokopo, Papua New Guinea, 3Papua New Guinea Institute of Medical Research, Madang, Papua New Guinea, 4National NTD Program, Ministry of Health, Port Moresby, Papua New Guinea, 5Japan International Cooperation Agency (JICA), Tokyo, Japan, 6Lancaster University, Lancaster, United Kingdom, 7Burnet Institute, Melbourne, Australia, 8Washington University, St. Louis, MO, United States

MONITORING IMPACT OF MASS DRUG ADMINISTRATION USING A 3-DRUG REGIMEN ON LYMPHATIC FILARIASIS IN AMERICAN SAMOA
Tara A. Brant1, Afifil J. Tufa1, Faru Utu1, Lynette Siaunao-Scanlan2, June Vaifanua-Leo3, Loretta S. Lees2, Benjamin Still1, Rebecca J. Chancey1, Marisa A. Hast1, Keri L. Robinson1, Emily A. Doddi1, Janet Carnacho1, Eni Chutarof2, Kimberly Y. Won1, Motusa T. Nua2
1Centers for Disease Control and Prevention, Atlanta, GA, United States, 2American Samoa Department of Health, Pago Pago, American Samoa, 3Pacific Island Health Officers’ Association, Pago Pago, American Samoa, 4Pacific Island Health Officers’ Association, Honolulu, HI, United States

SEGMENr IMPLEMENTATION UNITS (IUS) DURING PRE-TAS IN HAITI TO STRENGTHEN MASS DRUG ADMINISTRATION (MDA) IN CONFIRMED HOTSPOTS
Carl Renaud Fayette1, Alain Javel1, Eufica Denis1, Paul-Emile Dalexis2, Marc-Aurele Telfort3, Ellen Knowles1, Abdel Direny1, Mary Linehan2, Josh West4, Benjamin Crookston4
1IMA World Health, Port au Prince, Haiti, 2Ministry of Health and Population, Port au Prince, Haiti, 3IMA World Health, Washington, DC, United States, 4Brigham Young University, Provo, UT, United States
Symposium 77

Promoting Operational and Financial Sustainability for Neglected Tropical Disease Programs in West Africa: Tools to Estimate the Costs and Benefits and Support Sustainability Planning

Meeting Room 15
Wednesday, November 18
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

NTD programs have made significant progress over the last decade leading to global declines in the burden for five of the NTDs responsive to Preventive Chemotherapy. Act West I NTDs is a USAID-funded project supporting 11 countries in West Africa to achieve elimination and control goals of the five PCT diseases. As programs near elimination targets, sustaining gains met by NTD programs may be challenging as national health programs may prioritize other high-prevalence diseases with higher visibility. To ensure countries are pursuing a greater proportion of financing from local sources, NTD Programs are deploying tools to understand the financial and economic impacts of sustaining their investments and progress. Deloitte has developed and deployed a Sustainability Maturity Model (SMM) to assess and improve national NTD program sustainability along the six sustainability outcomes identified in USAID’s Strategy and Framework for Promoting Sustainable NTD Control and Elimination: (i) coordination, (ii) policy, (iii) operational capacity, (iv) strategic information, (v) service delivery, and (vi) financing. The SMM was developed based on Deloitte’s Capacity Results Performance Sustainability (CYPRESS) capacity building methodology and adapted to an NTD sustainability context through an extensive review of available scientific and gray literature and systematic input of domain experts. Further, Sierra Leone is currently developing applied cost-effectiveness tools for NTDs to support advocacy for domestic resource mobilization, emphasizing investments made in reducing NTDs, potential benefits of integrated programs and projected gaps in future stakeholder investments and capacity. This symposium will focus on tools being used by countries to support integration and sustainability where PCT NTDs are endemic, highlighting innovations in post-elimination and investment case development to support domestic resource mobilization. An emphasis will be placed on presenting tools that use real data from national programs. Presentations will incorporate applied use of the tool results to support decision-making and advocacy for domestic resource mobilization.

CHAIR
Courtney Johnson
Deloitte Consulting, Washington, DC, United States

Justin Tine
FHI 360, Accra, Ghana

9 a.m.
INTRODUCTION OF THE USAID ACT | WEST PROGRAM AND ITS SPECIFIC FOCUS ON NTD PROGRAM SUSTAINABILITY IN GHANA
Benjamin Marfo
Ghana Health Services, Accra, Ghana

9:15 a.m.
SIERRA LEONE COUNTRY EXPERIENCES USING THE TOOL FOR INTEGRATED PLANNING AND COSTING TO SUPPORT EVIDENCE-DRIVEN NTD PROGRAM BUDGETING AND SUSTAINABILITY MATURITY MODEL
Mary Hodges
Helen Keller International, Freetown, Sierra Leone

9:30 a.m.
SUSTAINABILITY MATURITY MODEL FOR NEGLECTED TROPICAL DISEASES
Berthine Njiemoun
Deloitte Consulting, Atlanta, GA, United States

9:45 a.m.
PRESENTATION OF A MODEL TOOL FOR FORECASTING THE BENEFITS OF LYMPHATIC FILARIASIS PROGRAM INVESTMENT USING DATA FROM SIERRA LEONE
AnnaMaria Shaker
Deloitte Consulting, Washington, DC, United States

Symposium 78

Large Scale and Large Success: Implementing, Evaluating and Future Planning of India’s National Soil-Transmitted Helminth Control Program

Meeting Room 16
Wednesday, November 18
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

The growing success of the Government of India’s (GOI) National Deworming Day (NDD) is possible due to significant GOI investment and political commitment. A strong example of achievable gains will be presented, detailing strategic and operational development of India’s NDD, and how best practice evaluation is enabling the GOI to evaluate success and develop a five-year STH Control Roadmap; an international first. In 2015-16 the National Centre for Disease Control led national mapping of STH. This important baseline was used to develop the national treatment strategy, implemented through the NDD. Results, the first STH map of India, and impact assessments will be presented, detailing strategic and operational development of India’s NDD, and how best practice evaluation is enabling the GOI to evaluate success and develop a five-year STH Control Roadmap; an international first. In 2015-16 the National Centre for Disease Control led national mapping of STH. This important baseline was used to develop the national treatment strategy, implemented through the NDD. Results, the first STH map of India, and impact assessments will be presented. In 2018 and 2019, seven state-representative community- and school-based STH impact assessment surveys were conducted. Substantial STH reductions were observed (up to 99%), likely reflecting combined consistent high coverage NDD and India’s Total Sanitation Campaign. Results and future implications will be presented. No standardized protocol exists for surveying STH in non-school cohorts. An expanded cohort community-based method for assessing STH was piloted in India in 2018, then evaluated for feasibility. Development, application, and evaluation of community- versus school-based surveys will be presented.

CHAIR
Mark Minnery
Evidence Action, Washington DC, DC, United States

Donald Bundy
London School of Hygiene and Tropical Medicine, London, United Kingdom
9 a.m.  DEVELOPMENT OF THE GOVERNMENT OF INDIA’S 5-YEAR
STH CONTROL ROADMAP: DESIGNING A ‘NEW CHAPTER’ IN
HELMINTH CONTROL FOR ONE OF THE WORLD’S LARGEST
POPULATIONS
Sila Deb
Ministry of Health & Family Welfare, Government of India, New Delhi, India

9:20 a.m.  MAPPING SOIL-TRANSMITTED HELMINTHS ACROSS THE
WHOLE OF INDIA
C.S. Aggarwal
National Centre for Disease Control, Government of India, New Delhi, India

9:35 a.m.  EXTENSIVE REDUCTIONS IN STH IN LARGE-SCALE EXPANDED
AND SCHOOL-BASED IMPACT ASSESSMENTS IN SEVEN STATES
OF INDIA
Manoj Murhekar
National Institute of Epidemiology, Government of India, Chennai, India

9:55 a.m.  EVALUATING THE FEASIBILITY AND COST-EFFECTIVENESS OF
CONDUCTING COMMUNITY-BASED SURVEYS OF STH
Priya Jha
Evidence Action, Washington DC, United States

Scientific Session 79
American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Parasite Biology, Genomics and Genome Editing

Meeting Room 17
Wednesday, November 18
9 a.m. - 10:45 a.m. U.S. Eastern Time Zone

Supported with funding from the Burroughs Wellcome Fund

CHAIR
Jessica C. Kissinger
University of Georgia, Athens, GA, United States
Nicolas J. Wheeler
University of Wisconsin-Madison, Madison, WI, United States

1661
IMMUNOMODULATORY EFFECTS OF HELMINTH
(LITOMOSOIDES SIGMONTIS) ANTIGEN ON HUMAN BLOOD
CELLS
Priscilla Kini, Priscilla Kyerewaa Okomeng, Alexander Kwarteng
Department of Biochemistry and Biotechnology, College of Science, Kwame Nkrumah
University of Science and Technology (KNUST), Kumasi, Ghana

1662
DETERMINANTS OF PRAZIQUANTEL MASS DRUG
ADMINISTRATION FAILURE TO CONTROL SCHISTOSOMIASIS
INFECTION IN A PERSISTENT FOCI OF TRANSMISSION: A
CROSS SECTIONAL STUDY OF FIVE DIFFERENTIALLY AFFECTED
NEIGHBOURING VILLAGES IN RURAL CAMEROON
Donald Severin Kamdem1, Erve Martial Kuenkomm2, Francis Konhawa2, Leonel Meyo
Kamgula1, Gladys K. Tchanana1, Frunqwa Nche1, Alim Oumarou1, Essomba Rene
Ghislain1, Marie Claire Okomo Assoumou1, Frank Brombacher1, Justin Komguep
Nono1
1International Centre for Genetic Engineering and Biotechnology, Cape Town Component,
Cape Town, South Africa, 2Ministry of Public Health, Yaounde, Cameroon
Plenary Session 80

Plenary Session IV: President’s Address

**Grand Ballroom**

**Wednesday, November 18**

11 a.m. - 11:45 a.m. U.S. Eastern Time Zone

**11 a.m.**

INTRODUCTION

Anne W. Rimoin

UCLA, Los Angeles, CA, United States

**11:15 a.m.**

PRESIDENT’S ADDRESS: SMALLPOX ERADICATION: AFRICAN ORIGIN, AFRICAN SOLUTIONS AND RELEVANCE TO COVID-19

Joel G. Breman, MD, DTPH, FASTMH

Fogarty International Center, Bethesda, MD, United States

After undergraduate studies at the University of California, Los Angeles, Dr. Breman was an artillery officer. Following post-bac, pre-med work, he trained at the Keck School of Medicine, University of Southern California, with an internal medicine residency at the Los Angeles-County-USC Medical Center. In the late 1960s, he lived in Guinea, as CDC-supported chief of project to eliminate smallpox and control measles in 20 West and Central African countries as part of the global smallpox program. With a career development award from the CDC, Dr. Breman was an infectious diseases fellow on the Harvard Medical Service, Boston City Hospital, followed by study at the London School of Hygiene & Tropical Medicine. In the mid-1970s, he worked with eight francophone countries to develop surveillance for epidemic diseases as Chief of Epidemiology at the Organisation de Coopération et de Coordination pour la lutte contre les Grandes Endémies, a regional African health organization based in Burkina Faso. There, he began research into the immuno-depressive effect of malaria on childhood immunizations.

In 1977, Dr. Breman became deputy chief of the Smallpox Eradication unit at WHO, Geneva, where he was responsible for certifying eradication, decreasing the number of laboratories with variola virus, and, characterizing human monkeypox.

Returning to CDC in 1980, Dr. Breman began work on malaria full-time. The Malaria Branch had 15 persons in 1981 and he became chief of the epidemiology and control activities and then deputy chief. During the 1980s and 1990s, he helped African countries define: antimalarial drug efficacy; the importance of malaria in pregnancy; and, the benefits of insecticide-treated bed nets. The U.S.-based scientists partnered with those in 15 African countries doing research that was incorporated into national and international control guidelines. By 1993, there were 74 persons in the Branch.

Dr. Breman then became Associate Director of the National Vaccine Program Office in Washington, DC where he learned much about the way things work in Washington: networking, diplomacy, and money are key.

Dr. Breman came to the Fogarty International Center, NIH in 1995 to begin the emerging infectious diseases program. The only research training program we had focused on HIV/AIDS. Today, there are many extramural programs and work in over 100 lower-income countries. Although retired from Federal service since 2010, he has continued to collaborate with FIC, as a honorary Senior Scientist Emeritus, on epidemiological research defining the burden of malaria and the pervasiveness of poor quality drugs.

Dr. Breman currently teaches at George Washington University, consults for the WHO, The Carter Center, the Gates Foundation, USAID, FDA, and the Multilateral Initiative on Malaria. He is Co-chair of the WHO International Commission for the Certification of Dracunculiasis Eradication and chair of an ad hoc group planning the celebration of the 40th anniversary since the World Health Assembly confirmed the eradication of smallpox.
DATA VALIDATION AND REVIEW ACTIVITIES, COMPLEMENTED WITH TRAINING AND MENTORING, IMPROVE DATA QUALITY IN OSUN STATE, NIGERIA

Isaac Adejo1, Chinedu Chukwu1, Olabisi Kaleshaye1, Mariah Boyd-Boffa1, Tom Hall2, Sonachi Ezeiru3, Frank Oronsaye3, Diwe Ekweremadu4, Perpetua Uwomolhi5, Bala Mohammed Audu6, Ibrahim Maikore7, Cyril Ademu8, James Ssekitooleko9

1Management Sciences for Health (MSH), Abuja, Nigeria, 2Management Sciences for Health (MSH), Medford, MA, United States, 3Management Sciences for Health (MSH), Arlington, VA, United States, 4Catholic Relief Services (CRS), Abuja, Nigeria, 5National Malaria Elimination Program (NMEP), Abuja, Nigeria, 6The Global Fund, Geneva, Switzerland

A COMPARISON OF COVID-19 RESPONSE IN THREE EAST AFRICAN COUNTRIES

Ruth N. Kigozi1, Simon Peter Kigozi2, Adeko Yeka2

1Malaria Consortium, Kampala, Uganda, 2London School of Hygiene and Tropical Medicine, London, United Kingdom, 3Makere University School of Public Health, Kampala, Uganda

AN ANALYSIS OF THE IDEATIONAL, BEHAVIORAL AND STRUCTURAL DETERMINANTS OF ANTIMICROBIAL RESISTANCE: A GLOBAL REVIEW OF THE LITERATURE

William Benié1, Abdal Dosso2, Serge Daï1, Natalie Tibbels4, Jeanne Brou1, Anne Yao2, Mieko McKay6, Anne Yao5, Mieko McKay2, Anne Yao4, Mieko McKay6, Anne Yao5, Mieko McKay6

1Johns Hopkins Center for Communication Programs, Abidjan, Côte D'Ivoire, 2Technical Working Group, Abidjan, Côte D'Ivoire, 3Consultant, Abidjan, Côte D'Ivoire, 4Johns Hopkins Center for Communication Programs, Baltimore, MD, United States, 5National Institute of Public Hygiene, Abidjan, Côte D'Ivoire, 6Johns Hopkins Center for Communication Programs, Baltimore, Côte D'Ivoire, 7US Agency for International Development, Abidjan, Côte D'Ivoire

WHEN WOMEN RETURN TO THEIR NATAL HOMES TO DELIVER: IMPACT ON HEALTHCARE SEEKING AND HEALTH OUTCOMES

Atique Iqbal Chowdhury1, Asraful Alam1, Abu Bakkar Siddique1, Md. Mamunur Rashid2, Kyu Han Lee1, Sanwarul Bari1, Gazi Sadeq-ur Rahman1, Abu Mohammed Naser1, Solveig A. Cunningham5, Shams El Aifeen6, Emily S. Gurley1

1icddr,b, Dhaka, Bangladesh, 2John Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, 3Department of Global Health, Rollins School of Public Health, Emory University, USA, Atlanta, GA, United States

A COMPREHENSIVE RADIO-BASED ARCHIPELAGO SYNDROMIC SURVEILLANCE SYSTEM (RASSS) PROVIDED PROSPECTIVE DEFENSE IN ISLANDS COUNTRIES FOR EMERGING RESPIRATORY INFECTIONS

HAN-YI CHIU1, HUI-JI CHIANG2, Arata Nathan1

1Mackay Memorial Hospital, Taipei, Taiwan, 2Ministry of Health, Majuro, the Republic of the Marshall Islands, Marshall Islands
1010
IDENTIFY, DESIGN AND IMPLEMENT CULTURALLY APPROPRIATE STRATEGIES TO APPROACH BANGLADESHI FAMILIES FOR MINIMALLY INVASIVE TISSUE SAMPLING WHEN CHILDREN DIE AT HOME

Shahana Parveen1, Emily S. Gurley2, Farzana Islam1, Sazzad Hossain Khan1, Tonny Sarkar1, Kamal Ijne Chowdhury1, Dalia Yesami1, Abdullah Al Masud1, Muhammad Faruque Hussain1, John Blevins2, Sanwarul Bar2, Shams El Arifeen1
1International Centre for Diarrhoeal Diseases Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 2John Hopkins Bloomberg School of Public Health, Baltimore, MD, United States

1011
THE HELP MODEL OF STAKEHOLDER ENGAGEMENT FOR GLOBAL HEALTH PROGRAMS

James V. Lavery1, Emma Z. Richardson2, Breanna K. Wodnik1, Michelle Grek3, Lee Wilkers1, Susan Landskroener2
1Emory University, Atlanta, GA, United States, 2St. Michael’s Hospital, Toronto, ON, Canada, 3Emory University, Avondale Estates, GA, United States

1012
NETWORK MODELS TO IDENTIFY SIGNIFICANT ENTERIC PATHOGEN COINFECTIONS AND THEIR RELATIONSHIP TO ACUTE DIARRHEA IN INFANTS IN DHAKA, BANGLADESH

Connor L. Klopfer1, Laurent Hébert-Dufresne1, John P. Hanley2, Dorothy M. Dickson2, Marya P. Carmolli2, Med. Ashrafual Alam3, Benjamin Lee4, Mami Taniuchi4, Beth D. Kirkpatrick5, E. Ross Collgate2
1Department of Computer Science, Vermont Complex Systems Center, University of Vermont, Burlington, VT, United States, 2Department of Microbiology and Molecular Genetics, Translational Global Infectious Disease Research Center, University of Vermont, 3Larner College of Medicine, Burlington, VT, United States, 4Maternal and Child Nutrition and Clinical Services Division, icddr,b, Dhaka, Bangladesh, 5Division of Infectious Diseases and International Health, Department of Medicine, University of Virginia, Charlottesville, VA, United States

1013
TOWARDS UNIVERSAL HEALTH CARE: ECONOMIC COSTS AND BENEFITS OF COMMUNITY HEALTH WORK IN RWANDA

Janna M. Schurer1, Kelly Fowler1, Ellen Rafferty2, Ormella Masimbi3, Olivia Rozanski4, Hellen Amuguni5
1University of Global Health Equity, Kigali, Rwanda, 2Cumming School of Veterinary Medicine at Tufts University, North Grafton, MA, United States, 3University of Alberta, Edmonton, AB, Canada

1014
STRENGTHENING MALARIA DATA CAPTURE AND ADDRESSING DATA ACCURACY THROUGH TARGETED SUPPORTIVE SUPERVISION OF HEALTHCARE WORKERS AT FACILITY LEVEL: EARLY LESSONS IN PROGRAMMING

Hellen Gataka1, James Andati2, Christine Mbuli3, Willis Akhwale4, Gladys Tetteh5, Lolade Oseni6
1RTI International, Research Triangle Park, NC, United States, 2Kigali University Teaching Hospital, Kigali, Rwanda, 3Butare University Teaching Hospital, Butare, Rwanda, 4Gandaki Medical College, Pokhara, Nepal

1015
BUILDING CAPACITY AND INFRASTRUCTURE AT HOSPITALS IMPLEMENTING MINIMALLY INVASIVE TISSUE SAMPLING

Anna Marie Aceituno1, Gervais Ntakirutimana1, Marie Claire Ndayisaba2, Djibril Mbaruishimana2, Elisé Hategiķimana2, Nuwadatta Subedi3, Christina Paganelli4, Norman Goco1
1RTI International Research Triangle Park, NC, United States, 2Kigali University Teaching Hospital, Kigali, Rwanda, 3Butare University Teaching Hospital, Butare, Rwanda, 4Gandaki Medical College, Pokhara, Nepal

1016
 PATTERNS OF MOBILITY AND ITS IMPACT ON RETENTION IN CARE AMONG PEOPLE LIVING WITH HIV IN THE MANHIÇA DISTRICT, MOZAMBIQUE

Edson L. Bernardo1, Tacita Nhampossaa1, Denise Nancie2, Troy D. Moon3, Kate Clouse4, James G. Carlucci5, Moshin Sidad6
1Health Research Center of Manhiça, Maputo, Mozambique, 2Vanderbilt Institute for Global Health, Vanderbilt, TN, United States, 3Eduardo Mondlane University, Maputo, Mozambique

1017
 IMPROVING THE QUALITY OF MALARIA SERVICE DELIVERY BY COMMUNITY HEALTH OFFICERS THROUGH INTERNSHIP TRAINING IN GHANA

James Sarkodie1, Akosua Gyasi2, Amos Asiedu3, Eric LaFary4, Richard Dogoli5, Raphael Ntumy5, Keziah Malm6, Lolade Oseni7, Gladys Tetteh8
1Impact Malaria Ghana, Accra, Ghana, 2National Malaria Control Programme, Accra, Ghana, 3Impact Malaria Ghana, Accra, Ghana, 4Jhpiego, Baltimore, MD, United States

1018
 HUMAN AND COMPUTER GENERATED REMOTE ENUMERATIONS OF SATELLITE IMAGERY: A COMPARATIVE ANALYSIS AGAINST A FIELD VERIFIED GOLD STANDARD

Anne Martin1, Frazer Bwalya1, Derek Pollard1, Hugh Sturrock1, Claire Dooley1, Heather Chamberlain1, Olena Borkovska2, Rhiannon Price3, Silvia Rene4, Hannah Koener5, Emmanuel Kooma6, Anna Winters7, John Miller8
1Akros, Lusaka, Zambia, 2University of California San Francisco, San Francisco, CA, United States, 3WorldPop, University of Southampton, Southampton, United Kingdom, 4Center for International Earth Science Information Network, New York, NY, United States, 5Maxar Technologies, Denver, CO, United States, 6Afgeo, Lusaka, Zambia, 7Jhpiego Center for Communication Programs, Baltimore, MD, United States, 8National Malaria Elimination Centre, Ministry of Health, Lusaka, Zambia, 9PATH Malaria Control and Elimination Partnership in Africa (MACEPA), Lusaka, Zambia

1019
 PROTECTING PEOPLE IN LONG-TERM CARE FACILITIES FROM COVID-19 BY ROUTINE TESTING OF EMPLOYEES – A MODELING APPROACH

Nurhuma Adi Mahmoud Youssi1, Looli Alawam2, Pierre Ngougoue Ngougoue3, Henri Christian Tsoungui Obama4, Gideon Ngwa5, Martin Eichner6, Kristian A. Schneider7
1AIMS Cameroon, Limbe, Cameroon, 2University of Tubingen, Tbingen, Germany, 3University of applied sciences of Mittweida, Mittweida, Germany, 4University of Buea, Buea, Cameroon

1020
 ASSESSING THE ETHICAL COMPLEXITIES OF CONFIDENTIALITY DURING APPROACH AND FOLLOW-UP ON MORTALITY SURVEILLANCE

John Blevins1, Maria Maixenchs2, Ahoua Kone1, Emily S. Gurley2, Faruque Hussain3, Shahana Parveen4, Berhanu Damise5, Ketema Degefa6, Peter Otieno7, Kounandi Dior8, Tieman Diarra9, Rui A. Guila2e, Nellie Myburgh10, Baindu Kosia11, Khatia Mungumbe12
1Emory University Rollins School of Public Health, Atlanta, GA, United States, 2ISGlobal, Barcelona, Spain, 3Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD, United States, 4International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, 5Haramaya University, Harar, Ethiopia, 6Kenya Medical Research Institute, Kisumu, Kenya, 7Centre for Vaccine Development, Mali, Bamako, 8Centre de Investigation en Sante de Manicha, Manicha, Mozambique, 9University of the Witwatersrand, Johannesburg, South Africa, 10FOCUS1000, Makeni, Sierra Leone, 11Eduardo Mondlane University, Maputo, Mozambique
1021
CLINEPDB.ORG: GLOBAL HEALTH DATA SHARING, SEMANTIC HARMONIZATION AND EXPLORATORY DATA ANALYSIS
Brianne Lindsay1, Cristina Aurrecochea1, John Bresteller1, Brian Brunk1, Danielle Callan1, Dave Falle1, Steve Fischer1, Danica Hebl1, Jay Humphrey1, John Judkins1, Jessica C. Kissinger1, David S. Roos1, Sheena Shah Tomko1, Christian J. Stoeckert Jr1, Jie Zheng1
1University of Pennsylvania, Philadelphia, PA, United States, 2University of Georgia, Athens, GA, United States

1022
ENHANCING COMPETENCE OF HEALTH FACILITY WORKERS TO USE DATA TO IMPROVE INTERMITTENT PREVENTIVE TREATMENT IN PREGNANCY (IPTp) UPTAKE, LIBERIA
Lauretta Nagbe1, Gaspar Mbita1, Birhanu Getahun1, Jessica Kafuko1, Joseph O. Alade1, Maweyata Sow1, Gladys Tetteh1, Lolade Oseni1, Shelly Wright1, Anne Fiedler1
1USAID Maternal and Child Survival Program/Expansion of Malaria Services (MCSP/EMS), Jhpiego Liberia, Monrovia, Liberia, 2U.S. President’s Malaria Initiative (PMI), U.S. Agency for International Development (USAID), Monrovia, Liberia, 3National Malaria Control Program (NMCP), Ministry of Health (MOH), Monrovia, Liberia, 4Jhpiego Johns Hopkins University, Baltimore, MD, United States, 5U.S. Agency for International Development (USAID), Monrovia, Liberia

1023
PERFORMANCE OF THE GUARAL+ST MOBILE APP IN ASSESSING THERAPEUTIC RESPONSE IN CUTANEOUS LEISHMANIASIS PATIENTS IN COLOMBIA
Alejandra Maria Del Castillo1, Maria Del Mar Castro1, Alexandra Cossio1, Ruth Mabel Castillo1, Domiciano Rincon1, Andres Navarro1, Neal Alexander1
1Centro Internacional de Entrenamiento e Investigaciones Medicas-CIDEIM, Cali, Colombia, 2Universidad Icesi, Cali, Colombia

1024
ADDRESSING THE MENTAL HEALTH OF PERSONS LIVING WITH LYMPHATIC FILARIASIS IN LEÔGâNE, HAITI: EFFECTIVENESS OF A CHRONIC DISEASE SELF-MANAGEMENT PROGRAM
Sarah Bazur-Leidy1, Lucrenci Desir1, Martha Desir1, Lauren Paul1, Cassandra Bryan1, Tson Horra1, Samhita Kumar1, Gregory Noland1, Eve Byrd1
The Carter Center, Atlanta, GA, United States, 2Global Health

1025
UTILIZATION OF A HEALTH-RELATED DATA COLLECTION TOOL DURING SHORT-TERM EDUCATIONAL MEDICAL TRIPS TO DEVELOPING COUNTRIES FOR SURVEILLANCE AND REPORTING
Etienne Jaime1, Joe Bryan1, Julissu Grullon1, Duffelina Cruz2, Mayelin Peña2, Alexandra Amador2, Xiomara Erazo2, Zaira Alvarado3, Pedro Solano4, Harold R. Garner5, Cameron Sumpter5, Dean Sutphin6
1Edward Via College of Osteopathic Medicine, Blacksburg, VA, United States, 2Veronica Rural Clinic, Veron, Dominican Republic, 3Oscar de la Renta Pediatric Center, Veron, Dominican Republic, 4James Moody Adams Clinic, Tegucigalpa, Honduras, 5Shalom Family Medical Center, Santiago Texacuangos, El Salvador, 6Edward Via College of Osteopathic Medicine, Spartanburg, SC, United States

1026
EXPANDED PRIMARY CARE IN BUGESERA DISTRICT, RWANDA: OPPORTUNITIES FOR INCREASING PREVENTIVE SERVICES
Donald S. Shepard1, Regis Hitimana1, Maria Kulchyczkyj1, Sabine F. Musange2
1Brandeis University, Waltham, MA, United States, 2University of Rwanda School of Public Health, Kigali, Rwanda

1027
DRIVING FORCES BEHIND TIMING AND DECISION-MAKING FOR U.S. PUBLIC AND PRIVATE UNIVERSITIES DURING THE COVID-19 PANDEMIC
Michael E. von Fricken1, Kevin Cevasco1, Hayley North1, Rachel Wofford1, Sheryne Zeitoun1, Abigail Gregory1, Maha Hassan1, Graham Matulis1, Aya Abdo1, David Farris1, Amira Roess1
1George Mason University, Fairfax, VA, United States

1029
EMPOWERMENT THROUGH EDUCATION: A QUALITATIVE ANALYSIS OF THE SOCIO-CULTURAL AND ECONOMIC FACTORS IMPACTING MAASAI GIRLS’ EDUCATIONAL ATTAINMENT IN LAIKIPIA COUNTY, KENYA
Margaret E. Crampton1, Saumya Kumar2
Frank H. Netter School of Medicine at Quinnipiac University, Hamden, CT, United States

1032
ONE-YEAR IMPLEMENTATION OUTCOMES OF ICD-10 BASED ELECTRONIC CLINIC REPORT AT SHALOM FAMILY MEDICAL CENTER IN SANTIAGO TEXACUANGOS, EL SALVADOR
Zaira Alvarado1, Etienne Jaime Hinojosoa1, Andrea Lopez1, Teri Benner1, Harold R. Garner1, Cameron Sumpter1, H. Dean Sutphin2
1Shalom Family Medical Center, Santiago Texacuangos, El Salvador, 2The Edward Via College of Osteopathic Medicine, Blacksburg, VA, United States, 3Harvesting in Spanish, Santiago Texacuangos, El Salvador, 4The Edward Via College of Osteopathic Medicine, Spartanburg, SC, United States

1033
GLOBAL SEMINAR FOR HEALTH AND ENVIRONMENT
Dean Sutphin1, Etienne Jaime Hinojosoa1, Gabriela Estrada1, Sandra Gomez2, Alba Beltre3, Zaira Alvaradod3, Dolores Munro3, Ana Jones3
1Via College of Osteopathic Medicine/UEES, Blacksburg, VA, United States, 2UNITEC, Tegucigalpa, Honduras, 3INTEC, Santo Domingo, Dominican Republic, 4Via College of Osteopathic Medicine/UEES, Blacksburg, VA, United States, 5Via College of Osteopathic Medicine, Spartanburg, SC, United States, 6Via College of Osteopathic Medicine, Auburn, AL, United States

1034
UNDERSTANDING RESEARCH VULNERABILITIES AND RESEARCHER OBLIGATIONS ALONG THE THAI-MYANMAR BORDER
Napat Khiriokkong1, Suphak Nosten1, Supa-at Arasarath2, Rose McGready1, Francois Nosten1, Jennifer Roest1, Michael Parker2, Maureen Kelley2, Phaik Yeong Cheah2
1Shoklo Malaria Research Unit, Mae Sot, Thailand, 2Mahidol Oxford Tropical Medicine Research Unit, Bangkok, Thailand, 3Ethox Centre, University of Oxford, Oxford, United Kingdom

1035
DEVELOPING INTERNATIONAL PARTNERSHIPS FOR MPH GLOBAL HEALTH TRAINING
Peter A. Zimmerman1, Andrew Morris1, Daniel J. Tisch2
1Case Western Reserve University, Cleveland, OH, United States

1036
IDENTIFYING STAKEHOLDER ENGAGEMENT NEEDS FOR DEVELOPMENT, REGULATION, AND TESTING OF GENE DRIVE MOSQUITOES
Kanya C. Long1, Cynthia Triplett1, Omar S. Akbari1, Cinnamon S. Bloss1
1University of California San Diego, La Jolla, CA, United States
Market Characteristics and Risk Perception in Cameroon Bushmeat Markets
Karen Saylors1, Moctar M. Mouchié2, Ashley Lucas1, David J. McVier1, Annie Matsida5, Catherine Clary3, Victorie T. Mapute4, Jason D. Euren1, Matthew LeBerton3, Ublad Tamoufe5
1Labyrinth Global Health, Saint Petersburg, FL, United States, 2Mosaic, Yaoundé, Cameroon, 3Metabiota Inc., Nainaino, BC, Canada, 4Ministère de la Recherche Scientifique et de l'Innovation, Yaoundé, Cameroon, 5Metabiota Inc., San Francisco, CA, United States

Insecticide Resistance Status and Mechanisms in Ae. Mosquitoes in Ghana
Anisa Abdulai, Simon Kweku Atta, Akua Obeng Forson, Christopher Mtum Asenso, Yaw Asare Afrane
University of Ghana, Accra, Ghana

A Comparative Analysis of the Spatial Distribution of Insecticide Resistance in Ae. Albopticus for Informed Control of Associated Neglected Tropical Diseases
Duncan K. Athinya1, Melinda P. Hadif, Selene A. Omondii, Eric O. Ochomo2
1Vestergaard, Nairobi, Kenya, 2Vestergaard, Lausanne, Switzerland

Influence of Agricultural Practices on the Pathways of Metabolic Resistance in Malaria Vectors
France Paradie Affoue Koudou1, Nadja Christina Wipf1, Angele Sika Nygbe1, Behi Fodjo Koudou1, Christabelle Gba Sadi1, Konstantinos Mavridis2, John Vontas2, Pie Müller3, Choualiou Seidou Mouhamadou4,5
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Community Based Approach to Conduct Widespread Mosquito Surveillance Using Biogens
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Insecticide Resistance Status and Mechanisms in Ae. Mosquitoes in Ghana
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A Comparative Analysis of the Spatial Distribution of Insecticide Resistance in Ae. Albopticus for Informed Control of Associated Neglected Tropical Diseases
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Multiple Insecticides Resistance and First Detection of Ace-1 Mutation in Culex Quinquefasciatus from Lagos, Nigeria
Ifeoluwa Kayode Fagbohun1, Emmanuel Taiwo Iduw1, Tolulope Amos Oyeniyi2, Adedapo Adeogun2, Taiwo Sam Awolola1, Olubunmi Adetoro Otofan1
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Design, Development and Evaluation of the Mosquito Repellent Activity of Azadirachta Indica Oil Based Solid Lipid Nanoparticles Against Ae. Aegypti
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Allelic Frequencies of Kdr and Ace-1 Mutations Among Wild Anopheles arabiensis and An. Melas Populations in the Coastal Zone of Low Malaria Transmission in Senegal
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UCAAD, Dakar, Senegal

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Francis Banjo Adewoyin, Funmilayo G. Famuyiwa, Oluwemiyi J. Oladiran, Oluwatosin R. Obagbemi
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Centre Suisse de Recherches en Cote d’Ivoirend Swiss Tropical Public Health Institute, Abidjan, Côte D’Ivoire

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POPULATION-LEVEL DEMONSTRATION OF A CONFINABLE CRISPR/CAS9 GENE DRIVE SYSTEM IN THE YELLOW FEVER MOSQUITO Aedes aegypti
Michelle A. Anderson1, Estela Gonzalez2, Matt Edgington1, Joshua Ang Xin De1, Katherine Nevard1, Lewis Shackelford1, Sebald Verkuilj1, Tim Harvey-Samuel1, Phil Leftwich1, Luke Alphey1
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Solomon Yared Gebremeskel1, Araya Gebresilassie2, Tamar Carter2
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Nils Pilotte1, Joseph Pryce1, Michael F. Zulch2, Benjamin D. Menze1, Charles S. Wondji3, Lisa J. Reimer1, Steven A. Williams2
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Adriana Troyo1, Tannia Gomez-Quesada, Rolando D. Moreira-Soto, Luis M. Romero-Vega, Eugenia Corrales-Aguilar, Juan C. Cambronero-Heinrichs, Olger Calderon-Arguedas
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**UBIQUITIN-CONJUGATING ENZYME ‘UBE2J1’ PROMOTES THE DEVELOPMENT OF DENGUE HEMORRHAGIC FEVER**

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**ACCEPTABILITY OF DENGUE VACCINE AMONG PARTICIPANTS OF A COMMUNITY-BASED COHORT STUDY FOR ARBOVIRAL DISEASES IN PONCE, PUERTO RICO**

Chelsea Grace Major1, Liliana Sánchez-González2, Laura E. Adams1, Kyle Ryff1, Dania M. Rodríguez1, Olga D. Lorenzi1, Stephen H. Waterman1, Vanessa Rivera-Amill1, Gabriela Paz-Bailey1
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**AN EARLY AND DIFFERENTIAL SEREOLOGICAL DIAGNOSTIC TEST FOR ZIKA - IN THE CENTER OF AN ARBOVIRUS CLOUD IN BRAZIL**

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**IDENTIFICATION OF NOVEL YELLOW FEVER CLASS II EPITOPES IN YF17D VACCINEES**

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**THE EFFECTS OF A ZIKA VIRUS INFECTION ON CAMP Responsive ELEMENT BINDING PROTEIN 3 LIKE 1 NEUROPROTECTIVE PATHWAY**

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**THE EFFECT OF PRIOR ZIKA VIRUS INFECTION ON MARKERS OF MALE FERTILITY**

Viviana Pinedo-Cancino1, Filipen Bucardo2, Jayrizztina Palacios3, Hernan Vanegas-Solis1, Maria Vasquez-Chasnamote1, Rafael Saavedra-Langer1, Saby Pinedo-Sotelo1, Aravinda de Silva1, Benjamin Leader1, R. Matthew Coward3, Natalie M. Bowman1
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**INSECT-SPECIFIC FLAVIVIRUS HOST RANGE AND TRANSMISSION**

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**SEROCONVERSION RATES OF TORCH PATHOGENS IN WOMEN PARTICIPATING IN A ZIKA PREGNANCY COHORT STUDY IN MOMBASA, KENYA FROM 2017-2019**

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**THE MEASLES-VECTORED LASSA VACCINE MV-LASV IS SAFE AND IMMUNOGENIC - INTERIM RESULTS FROM A FIRST IN MAN PHASE 1 CLINICAL TRIAL**

Sylvain Baize1, Yvonne Tomberger2, Roland Tschismarov2, Eric Osoro1, Denys Odhiambo2, Moshe Alando2, Victor Omballa3, Eric C. Tauber2, Katrin Ramsauer1
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**SURVEILLANCE OF NEURAMINIDASE INHIBITION SUSCEPTIBILITY OF INFLUENZA A VIRUS (IAV) ISOLATES OBTAINED FROM KENYA, 2008 TO 2017 INDICATED MIXED SENSITIVITIES**

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**IDENTIFICATION OF JAPANESE ENCEPHALITIS VIRUS GENOTYPE V AND OTHER MOSQUITO-BORNE VIRUSES IN CAMP HUMPHREYS, REPUBLIC OF KOREA, USING METAGENOMIC ANALYSIS**

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**LAG-3: A POTENTIAL CHECKPOINT OF THE HUMORAL IMMUNE RESPONSE TO IMMUNIZATION**

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**Viruses - Other**

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ANTIBODY-MEDIATED IMMUNITY IN EBOLA VIRUS DISEASE SURVIVORS AND THEIR HOUSEHOLD CONTACTS
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ABSENCE OF SARS-COV-2 IN RESPIRATORY SAMPLES OF PATIENTS WHO PRESENTED WITH INFLUENZA-LIKE ILLNESS IN WESTERN CAMBODIA
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CASE REPORT: A DIABETIC, HYPERTENSIVE, OBESITY AND COVID19 INFECTION PATIENT AT IQUITOS, PERU
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UTILIZING EBOLA VIRUS GLYCOPROTEIN SUBUNITS TO REVEAL ANTIBODY POPULATIONS ELICITED BY A RECOMBINANT SUBUNIT EBOLA VIRUS VACCINE
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PRIMAQUINE PHARMACOGENOMICS: IDENTIFICATION OF HUMAN URINARY METABOLITES ASSOCIATED WITH CYTOCHROME P450 2D6
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KINETICS OF HRP-2 DETECTION BY ALERE™ ULTRASENSITIVE MALARIA AG PLASMODIUM FALCIPARUM RAPID DIAGNOSTIC TEST AFTER ARTEMETHER-LUMEFANTRINE TREATMENT IN CHILDREN IN BUSIA, UGANDA

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COMPETENCY ASSESSMENT OF MALARIA MICROSCOPISTS USING PROFICIENCY TESTING SLIDES IN TWO STATES OF NIGERIA

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ADDED VALUE OF ULTRA-SENSITIVE RDT FOR MALARIA SURVEILLANCE IN ENDEMIC AFRICA IN THE CONTEXT OF RAPIDLY CHANGING EPIDEMIOLOGY

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PLASMODIUM FALCIPARUM INFECTION IN TRANSFUSION MEDICINE: EVALUATION OF SAFE BLOOD DONATION

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RISK FACTORS FOR MALARIA IN HIGH INCIDENCE AREAS OF VIET NAM: A CASE-CONTROL STUDY

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LONGITUDINAL ASSESSMENT OF THE HUMAN INFECTIOUS RESERVOIR IN AN AREA UNDER INTENSIVE MALARIA CONTROL: PERSISTING INFECTIOUSNESS TO MOSQUITOES AND SUPER SPREADERS

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P. FALCIPARUM PREVALENCE, SPATIAL DISTRIBUTION, AND SOCIO-DEMOGRAPHIC FACTORS ASSOCIATED WITH INFECTION IN SUSSUNDENGA, MOZAMBIQUE ALONG THE ZIMBABWE BORDER

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DYNAMICS OF SUBCLINICAL MALARIA DETECTED BY ULTRASENSITIVE PCR IN DIFFERENT TRANSMISSION ZONES OF MYANMAR AND ALONG ITS BORDER WITH CHINA

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IMPORTATION OF HAPLOTYPES MAY DRIVE MALARIA EPIDEMICS IN A HIGHLAND AREA OF WESTERN KENYA WITH UNSTABLE TRANSMISSION

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MALARIA TREATMENT-SEEKING BEHAVIOR FROM MALARIA AT COYAH DISTRICT HOSPITAL, GUINEA

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PLASMODIUM FALCIPARUM GAMETOCYTE SEX RATIOS IN CHILDREN AND ADULTS WITH ASYMPTOMATIC, LOW-DENSITY INFECTION IN TANZANIA

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MALARIA PREVALENCE AND GAMETOCYTE CARRIAGE IN ENDEMIC AREA OF BANCOUMANA, MALI, A MALARIA VACCINE TESTING SITE


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LONG-TERM PREDICTION OF MALARIA IN MOZAMBIQUE USING INTERANNUAL CLIMATE VARIABILITY

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EFFECTS OF CLIMATE CHANGE AND URBANIZATION ON MALARIA TRANSMISSION IN URBAN ETHIOPIA—A SCOPING REVIEW

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SEASONAL MALARIA CHEMOPREVENTION WITH SULFADOXINE-PYRIMETHAMINE PLUS AMDIAQUINE AND GAMETOCYTE CARRIAGE IN CHILDREN WITH ASYMPTOMATIC PLASMODIUM Falciparum INFECTIONS

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MALARIA PREVALENCE AND INCIDENCE IN HIV POSITIVE, SEROCONVERTED, AND HIV NEGATIVE INDIVIDUALS IN A HOLOENDMIC SETTING IN KISUMU COUNTY, WESTERN KENYA

Risper Maisiba, Benjamin Opol, Raphael O. Okoth, Farid Abdi, Maureen Mwalio, Jew Ochola, June Otieno, Eric Ogonda, Dennis Juma, Valentine Singo, Hosea Akalah, John Owwoth, And Bagda, Amanda L. Roth, Julie Ake, Christina Polyak, Edwin Kamau


DATA-DRIVEN AND INTERVENTION-SPECIFIC STRATIFICATION IN MOZAMBIQUE TO GUIDE DECISION MAKING IN A HIGH-BURDEN, HIGH-IMPACT COUNTRY

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INTEGRATING PARASITOLOGICAL AND ENTOMOLOGICAL OBSERVATIONS TO UNDERSTAND MALARIA TRANSMISSION IN RIVERINE VILLAGES IN THE PERUVIAN AMAZON

Angel Rosas-Aguirre, Marta Moreno, Diamantina Moreno-Gutierrez, Alejandro Llanos-Cuentas, Marlon Saavedra, Juan Contreras-Mancilla, Jose Barbosa, Freddy Alava, Krishanthi Aiguirre, Gabriel Carrasco-Escobar, Catharine Prussing, Joseph Vinetz, John E. Conn, Niko Speybroeck, Dionicia Gamboa

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COM-PUBLICATIONS

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MALARIA PREVALENCE AND GAMETOCYTE CARRIAGE IN ENDEMIC AREA OF BANCOUMANA, MALI, A MALARIA VACCINE TESTING SITE


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LONG-TERM PREDICTION OF MALARIA IN MOZAMBIQUE USING INTERANNUAL CLIMATE VARIABILITY

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EFFECTS OF CLIMATE CHANGE AND URBANIZATION ON MALARIA TRANSMISSION IN URBAN ETHIOPIA—A SCOPING REVIEW

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SEASONAL MALARIA CHEMOPREVENTION WITH SULFADOXINE-PYRIMETHAMINE PLUS AMDIAQUINE AND GAMETOCYTE CARRIAGE IN CHILDREN WITH ASYMPTOMATIC PLASMODIUM Falciparum INFECTIONS

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CO-INFECTION OF PLASMODIUM Falciparum AND HELMINTHS AMONG SCHOOL CHILDREN IN COMMUNITIES IN SOUTHERN AND NORTHERN GHANA

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HIGH PREVALENCE OF CO-INFECTION IN PATIENTS WITH MALARIA: A CROSS-SECTIONAL STUDY IN THE MAIN ENDEMIC REGION OF VENEZUELA

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ANTIBODY PROFILE KINETICS TO PLASMODIUM FALCIPARUM DURING A PERIOD OF DECLINING MALARIA TRANSMISSION IN SOUTHERN ZAMBIA FROM 2008 TO 2015

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PROGNOSTICS OF MALNUTRITIONAL STATUS IN THE OCCURRENCE OF MULTIPLES MALARIA EPISODES IN CHILDREN AGED 6-59 MONTHS FROM 2013-2016 IN DANGASSA, KATI HEALTH DISTRICT MALI

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MOLECULAR EPIDEMIOLOGY OF PLASMODIUM FALCIPARUM BY MULTIPLEXED AMPLICON DEEP SEQUENCING IN SENEGAL

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GENETIC DIVERSITY OF PLASMODIUM FALCIPARUM STRAINS IN YAOUNDE, CAMEROON AMONG PATIENTS SUFFERING FROM UNCOMPLICATED MALARIA FOR 2014 AND 2018

Selly Ngaloumo Abdel Aziz, Akindeh Mbuh Nji, Peter Thelma Niba, Aristid Ekollo Mnange, Calvino Tah Fomboh, Jean Paul Chedjou, Wilfred Fon Mbacham

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EFFICACY AND SAFETY OF ARTEMISININBASED COMBINATION THERAPY AND THE IMPLICATIONS OF PFKELCH13 AND FCORONIN MOLECULAR MARKERS IN TREATMENT FAILURE IN SENEGAL

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OPTIMIZATION OF MCFACSSEQ FOR LARGE SCALE TRANSCRIPTOME PROFILING OF PLASMODIUM FALCIPARUM ISOLATES

Catherine Jett, Aliou Dia, Xue Li, Anna Reyes, Marina McDew-White, Ian H. Cheeseman, Timothy J. Anderson

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INFECTION DYNAMICS OF PLASMODIUM FALCIPARUM USING AMPLICON DEEP SEQUENCING DURING AN ACT EFFICACY TRIAL IN NW ETHIOPIA

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TEMPORAL GENETIC VARIATION OF PLASMODIUM FALCIPARUM PARASITES FOLLOWING THE IMPLEMENTATION OF ARTEMISININ-BASED THERAPIES IN THE VILLAGE OF FALADJÉ IN MALI

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ASSOCIATION BETWEEN FCGM3 RS396991 AND FCGM3 RS5030738 POLYMorphisms AND PLASMODIUM FALCIPARUM INFECTION OUTCOME IN GHANAIAN CHILDREN

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**DISPERSION PATTERN OF PLASMODIUM VIVAX AMONG FIVE DIFFERENT SETTINGS IN THE PERUVIAN AMAZON**

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**INFLUENCE OF CYTOKINE RATIO ON ANEMIA STATUS OF MALARIOUS CHILDREN IN SOUTH EASTERN NIGERIA**

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**PREVALENCE OF PVBP1A, PVBP2B, PVR1 AND PVEBP, PLASMODIUM VIVAX PARASITE ANTIGENS AMONG PRIMARY SCHOOL CHILDREN IN A MALARIA ENDEMIC TRANSMISSION REGION IN SENEGAL**

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**WILD-DERIVED MICE AS A MODEL FOR ASYMPTOMATIC MALARIA**


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**PLASMODIUM FALCIPARUM GENETIC VARIATIONS UNDERLYING ACQUISITION OF MALARIA INFECTIONS AMONG GHANAIAN CHILDREN**

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**VEUPATHDB.ORG: EUKARYOTIC PATHOGEN, VECTOR AND HOST OMICS DATA MINING FOR EVERYONE**

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**POPULATION GENOMICS OF PLASMODIUM VIVAX FROM PANAMA USING SELECTIVE WHOLE GENOME AMPLIFICATION**

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**SHORT-TERM LONGITUDINAL DYNAMICS OF MALARIA ANTIBODIES IN CHILDREN TREATED FOR PLASMODIUM FALCIPARUM INFECTION**

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Malaria - Immunology
INVESTIGATING IMMUNE SIGNATURES PREDICTIVE OF INCIDENT PLASMODIUM FALCIPARUM INFECTIONS IN MALIAN CHILDREN

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ANTIBODY SIGNATURES ASSOCIATED WITH DIFFERENT MALARIA TRANSMISSION INTENSITIES IN CHILDREN DURING ACUTE PLASMODIUM FALCIPARUM INFECTION AND CONVALESCENCE

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ELEVATED ADMISSION SERUM URIC ACID LEVELS ARE ASSOCIATED WITH MORTALITY IN UGANDAN CHILDREN WITH SEVERE MALARIA

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ANTIBODY RESPONSES TO REPETITIVE CONTROLLED HUMAN MALARIA INFECTIONS IN MALARIA-NAIVE ADULTS USING NF54 STRAIN PLASMODIUM FALCIPARUM

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ESTIMATING HAPLOTYPE FREQUENCIES AND PREVALENCE ALONGSIDE MULTIPLICITY OF INFECTION FROM MALARIA SNPS DATA

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Malaria - Modeling

PRIORITIZATION OF INSECTICIDE-TREATED NET INTERVENTIONS IN HAITI, USING A GEOGRAPHICALLY CONNECTED MATHEMATICAL MODEL FOR MALARIA

Clara Champagne1, Marc Aurèle Telfort2, Darlie Antoine3, Emmanuel Forlack Allo1, Phoebe Meyer1, Sharif Egal1, Justin Lana1, Paola Blendt4, Perez Luis1, Nick Ruktanonchai5, Maximilian Gerhards1, Ewan Cameron6, Katherine Battle1, Emilie Potthin1
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INVESTIGATION OF PARASITE-HOST DYNAMICS IN ANTIMALARIAL DRUG DEVELOPMENT REVEALS A DISCONNECT IN EXPERIMENTAL ENDPOINTS

Lydia Burget1, Sophie Zaloumis1, Saber Din2, Louise Marquart3, Pengxing Cao2, Mohammed Cherkaoui4, Nathalie Gobeau5, Matthias Rottmann5, Sergio Wittlin5, James McCarthy6, Julie A. Simpson6, Jörg J. Möhrle6, Melissa A. Penny6
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COMPARATIVE TRANSCRIPTOMIC ANALYSIS OF THE PRIMATE IMMUNE RESPONSE TO MALARIA AND MALARIA-LIKE PARASITES

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THE SPREAD OF DRUG RESISTANCE IN P. VIVAX VS. P. FALCIPARUM MALARIA - THE EFFECT OF HYPONOZOITES

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MESSANGER RNA EXPRESSING PFCSP INDUCES FUNCTIONAL, PROTECTIVE IMMUNE RESPONSES AGAINST MALARIA IN MICE

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MITIGATING THE IMPACT OF COVID-19 ON MALARIA BURDEN IN BURKINA FASO WITH CHEMOPREVENTION STRATEGIES: A MODELING STUDY

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MAPPING HUMAN DWELLINGS WITH REMOTE SENSING AND MACHINE LEARNING METHOD IN RURAL ETHIOPIA
Ming-Chieh Lee, Hao Tang, Xiaohui Xie, Guiyun Yan
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A DETAILED MODEL OF P. FALCIPARUM RECOMBINATION RUNS MODULARLY ON TRANSMISSION TREES TO PROVIDE NEW INSIGHTS ON POPULATION GENETIC DYNAMICS
Albert Lee, Jonathan Russell, Daniel Bridenbecker, Jessica Ribado, Kathleen Battle, Edward Wenger, Joshua L. Proctor
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UNDERSTANDING THE DETERMINANTS OF THE SPREAD OF ANTIMALARIAL DRUG RESISTANCE USING AN INDIVIDUAL-BASED MODEL
Thierry Masserey, Tamsin Lee, Monica Golumbeau, Andrew James Shattock, Melissa Penny
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A SPATIAL EPIDEMIOLOGICAL-GENETIC MODEL TO SUPPORT COUNTRY PROGRAM DECISION-MAKING IN MALARIA CONTROL AND ELIMINATION STRATEGY
Jonathan R. Russell, Albert Lee, Daniel Bridenbecker, Jessica Ribado, Katherine Battle, Edward A. Wenger, Joshua L. Proctor, Caitlin A. Bever
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MODELING P. FALCIPARUM PARASITE GENETICS INSIDE AN AGENT-BASED, SPATIAL MODEL
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**Malaria - Other**

"WHEN WE GOT HERE, THEY WELCOMED US”: EXPERIENCES OF PRIMARY CAREGIVERS OF CEREBRAL MALARIA SURVIVORS WITH BEHAVIOR PROBLEMS ENROLLED IN THE COPS STUDY IN BLANTYRE, MALAWI
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COBALT PORPHRYIN-PHOSPHOLIPID LIPOSOMES FOR SPONTANEOUS NANOLIPOSOMAL ANTIGEN PARTICLEIZATION AND ENHANCED IMMUNOGENICITY

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MULTISTAGE VACCINE CANDIDATES INDUCE ANTIBODIES THAT BLOCK PRE-ERYTHROCYTIC DEVELOPMENT AND TRANSMISSION OF PLASMODIUM FALCIPARUM

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SAFETY AND EFFICACY OF RADIATION ATTENUATED PLASMODIUM FALCIPARUM SPOZOITES (PFSPZ VACCINE) IN HEALTHY AFRICAN ADULT WOMEN OF CHILDBEARING POTENTIAL IN OUELESSEBOUGOU, MALI

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EXCEPTIONAL IMMUNOGENICITY OF THE R21/MATRIX-M MALARIAN VACCINE CANDIDATE IN ADULTS, CHILDREN, AND INFANTS IN KILIFI, KENYA

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KNOWLEDGE, ATTITUDES, AND PRACTICES RELATED TO MALARIAN TRANSMISSION-BLOCKING VACCINE ACCEPTABILITY IN BO, SIERRA LEONE: A MIXED-METHODS STUDY

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EXPLORING MRNA IN VITRO EXPRESSION AND IMMUNE POTENCY IN MICE USING THE MALARIAN ANTIGEN, PFCELTOS

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INHIBITORY ACTIVITY OF THE JUNCTIONAL AND MAJOR VLARES AGAINST PLASMODIUM FALCIPARUM CIRCUMSPOROZOE PROTEIN

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Malaria - Vector Control

CLINICAL AND COST-EFFECTIVENESS OF A LONG-LASTING FORMULATION OF MICROBIAL LARVICIDES ON MALARIA TRANSMISSION IN WESTERN KENYA: A CLUSTERED, BLOCK-RANDOMIZED, CONTROLLED, CROSSOVER TRIAL
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METABOLIC PLASTICITY OF PLASMODIUM FALCIPARUM IN THE ANOPHELES FEMALE SHAPES PARASITE TRANSMISSION
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MAKE DIVERSITY MEASURES GREAT
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ENTOMOLOGICAL SURVEILLANCE OF MALARIA VECTOR POPULATIONS AND RESISTANCE AT SEVEN SITES IN KINSHASA PROVINCE, DRC: A LONGITUDINAL STUDY
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MALARIAN ENTOMOLOGY INDICES INDICATE THE NEED TO CURB OUTDOOR TRANSMISSION AT THREE ECOCLOGICAL ZONES IN NIGERIA
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ANOPHELES SPECIES INVOLVED IN MALARIAN TRANSMISSION IN THE COLOMBIAN PACIFIC REGION
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PREDICTING COMMUNITY-LEVEL IMPACT OF TRANSFLUTHRIN-TREATED EAVE RIBBONS ON MALARIAN TRANSMISSION FROM SEMI-FIELD STUDIES
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PRELIMINARY ESTIMATES OF THE COST-EFFECTIVENESS OF NEXT-GENERATION INSECTICIDE-TREATED BEDNETS IN VARIED RESISTANCE AND TRANSMISSION SETTINGS
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EFFICACY OF ENTOMOLOGICAL INOCULATION RATES IN NCHELENGU, A MALARIAN HOLOENDEMIC DISTRICT IN NORTHERN ZAMBIA
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AN OPERATIONAL REAL-TIME DASHBOARD TO TRACK VECTOR CONTROL ACTIVITIES ON BIOKO ISLAND
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HABITAT ADAPTATION OF ANOPHELES COLUZZI AND AN. MELAS TO NEGLECTED POLLUTED SWIMMING POOLS, ABANDONED BOATS AND CRAB HOLES ON BIOKO ISLAND
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EXAMINING HUMAN BEHAVIOR TO ESTIMATE THE MALARIA PREVENTION IMPACT OF NEXT-GENERATION INSECTICIDE-TREATED BEDNETS
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TO SUPPRESS OR TO MODIFY - EVALUATING GENE DRIVE STRATEGIES FOR MALARIA ELIMINATION THROUGH AGENT-BASED MODELING
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MITIGATING THE EFFECTS OF A CYCLONE IN MOPEIA, MOZAMBIQUE
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EVIDENCE OF PLASMODIUM VIVAX TRANSMISSION IN A HIGHLY P. FALCIPARUM ENDEMIC REGION OF CENTRAL MOZAMBIQUE
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HOSPITAL RISK FACTORS ASSOCIATED WITH INDOOR VECTOR DENSITY IN RURAL SOUTHWEST BURKINA FASO
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ROLE OF PUBLIC ENGAGEMENT IN IMPLEMENTING A LARGE SCALE TYPHOID CONJUGATE VACCINE TRIAL IN LALITPUR, NEPAL
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RETROSPECTIVE ANALYSIS OF DIARRHEAL ETIOLOGIES IN THE COUNTRY OF GEORGIA
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COMPARISON OF HOST FECAL MRNAS AND STOOL INFLAMMATION BIOMARKERS IN THE EVALUATION OF ENVIRONMENTAL ENTERIC DYSFUNCTION (EED) IN AN URBAN ETHIOPIAN INFANT COHORT
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THE PREVALENCE OF ANTIMICROBIAL RESISTANCE GENES IN ANAEROBES ISOLATED FROM HEALTHY PEOPLE IN RURAL AREAS IN VIETNAM AND JAPAN
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DEATH IN HOSPITALIZED SEVERELY MALNOURISHED CHILDREN PRESENTING WITH DIARRHEA & VOMITING
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DRUG USE EVALUATION ON THE MANAGEMENT OF CHILDHOOD DIARRHEA AND USE OF ZINC SULFATE IN ETHIOPIA
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SUBCLINICAL ENTERIC INFECTIONS ARE WIDESPREAD IN APPARENTLY HEALTHY INFANTS IN RURAL BANGLADESH
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ASSOCIATION BETWEEN THE GUT MICROBIOTA AT THE TIME OF ORAL CHOLERA VACCINATION AND DEVELOPMENT OF VIBRO CHOLERAE-SPECIFIC LONG-TERM MEMORY B CELLS
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EVALUATION OF THREE RAPID DIAGNOSTIC TESTS IN FIELD SETTINGS DURING CHOLERA EPIDEMIC IN CAMEROON
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Bacteriology - Enteric Infections

ROLE OF PUBLIC ENGAGEMENT IN IMPLEMENTING A LARGE SCALE TYPHOID CONJUGATE VACCINE TRIAL IN LALITPUR, NEPAL
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RETROSPECTIVE ANALYSIS OF DIARRHEAL ETIOLOGIES IN THE COUNTRY OF GEORGIA
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Bacteriology - Systemic Infections

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MICROBES AND ANTIMICROBIAL RESISTANCE PROFILES AMONG PATIENTS WITH OPEN WOUNDS IN THREE HOSPITALS IN RWANDA: A CROSS-SECTIONAL SURVEY

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THE EPIDEMIOLOGY AND CLINICAL COURSE OF INVASIVE STAPHYLOCOCCUS AUREUS AND GROUP A STREPTOCOCCUS INFECTIONS IN FIJI, A PROSPECTIVE STUDY

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APPLYING NEXT-GENERATION SEQUENCING FOR GENOMIC ANALYSIS OF STREPTOCOCCUS SUIS ISOLATED IN PATIENTS WITH MENINGITIS FROM NORTHERN VIETNAM

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A SYSTEMATIC REVIEW ON ANTIMICROBIAL RESISTANCE AMONG SALMONELLA TYPHI WORLDWIDE

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MULTI DRUG RESISTANT NONTYPHOIDAL SALMONELLA AS CAUSE OF CHILD DEATH: USING INNOVATIVE POST-MORTEM SAMPLING

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CONTRIBUTION OF MICROBIAL CULTURE AND TAQMAN ARRAY CARD (TAC) ASSAY FOR DETECTING PATHOGENS IN STILLBIRTHS AND POST-MORTEM UNDER-5 BLOOD SPECIMENS IN BANGLADESH

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PREDICTING NEONATAL SEPSIS FROM MATERNAL AND INFANT CHARACTERISTICS, SIGNS, AND SYMPTOMS IN ETHIOPIA

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 PATTERNS OF ANTIMICROBIAL RESISTANCE AMONG GRAM-NEGATIVE ISOLATES FROM NEONATES WITH SEPSIS IN ETHIOPIA

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PREVALENCE, RISK FACTORS, AND OUTCOMES AMONG PATIENTS WITH CARBAPENEM-RESISTANT GRAM-NEGATIVE BACTERIAL INFECTIONS IN GALLE, SRI LANKA

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Bacteriology - Trachoma

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ALTERNATIVE INDICATORS TO MONITOR TRACHOMA ELIMINATION; DOES LONGITUDINAL CHLAMYDIA INFECTION AND ANTIBODY DATA ADD EVIDENCE TO THE UNDERSTANDING OF RESURGENCE

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THE TRACHOMA ELIMINATION STUDY BY FOCUSED ANTIBIOTICS (TESFA) CLUSTER-RANDOMIZED CONTROL TRIAL FOR TRACHOMA HYPERENDEMIC DISTRICTS, AMHARA, ETHIOPIA

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THE USE OF PHOTOGRAPHIC GRADING FOR TRACHOMA DIAGNOSIS WITHIN TRACHOMA IMPACT SURVEYS: A PILOT STUDY IN AMHARA REGION, ETHIOPIA

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POST-ENDEMIC SURVEILLANCE FOR TRACHOMA: SUCCESSES AND CHALLENGES FROM A HIGHLY ENDEMIC REGION, AMHARA, ETHIOPIA

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WHAT TO DO DIFFERENTLY TO ENHANCE ELIMINATION OF TRACHOMA IN TANZANIA: LESSONS LEARNED FROM DISTRICTS WITH PERSISTENT TF PREVALENCE OF MORE THAN 5%

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Clinical Tropical Medicine

NOVEL THERAPIES FOR GLOBAL HEALTH DISEASES

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AN UNUSUAL CLINICAL PRESENTATION OF CENTRAL AMERICAN PHONEUTRISM

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BLASTOMYCOSIS IN KENTUCKY

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OPTIMIZED MOLECULAR XENOMONITORING OF ONCHOCERCA VOLVULUS, THE CAUSATIVE AGENT OF RIVER BLINDNESS
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PREVALENCE OF CHAGAS DISEASE IN AT-RISK POPULATIONS IN SAN DIEGO COUNTY
Katherine Promer, Kimberly C. Brouwer, Jair L. de Siqueira-Neto, James McKerrow
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METEOROLOGICAL FACTORS ASSOCIATED TO A HIGH PREVALENCE OF LEISHMANIASIS IN NICARAGUA
Santiago Ernesto Hernandez1, Marissa Anne Rickloff1, Gerardo Blass2, Nathanael Stanley3, Benjamin George Jacob1
1University of South Florida, Tampa, FL, United States, 2Universidad Nacional Autonoma de Nicaragua, Managua, Managua, Nicaragua

ANALYSIS OF THE CURRENT EPIDEMIOLOGICAL SITUATION OF CHAGAS DISEASE IN JAPAN
Inés Maria Iglesias Rodríguez1, Sachio Miura1, Takuya Maeda1, Clara Vásquez Velásquez1, Sumihisa Honda2, Satoshi Kaneko2, Kazuo Imai3, George Itó4, Taeko Naruse4, Kenji Hirayama4
1Department of Global Health, School of Tropical Medicine and Global Health, Nagasaki University, Nagasaki, Japan, 2NPo organization, MAIKEN, Tokyo, Japan, 3Department of Microbiology, Saitama Medical University, Saitama, Japan, 4Department of Immunogenetics, Institute of Tropical Medicine (NEKKEN), School of Tropical Medicine and Global Health, Nagasaki University, Nagasaki, Japan, 5Department of Nursing Sciences, Graduate School of Biomedical Science, Nagasaki University, Nagasaki, Japan, 6Department of Ecopathology, Institute of Tropical Medicine (NEKKEN), Nagasaki University, Nagasaki, Japan

INFLUENCE OF THE SOCIAL CONTEXT ON SELF-PERCEPTION OF HEALTH IN INDIVIDUALS WITH CHAGAS DISEASE: A MULTILEVEL STUDY
Desirée S. Haikal1, Renata F. Damasceno1, Ariela M. Ferreira1, Samara F. Leite1, Thallyma M. Vieira1, Lea C. de Oliveira1, Antonio L. Ribeiro1, Ester C. Sabino1
1Postgraduate Program in Health Sciences, Universidade Estadual de Montes Claros, Montes Claros, Brazil, 2Hospital Aroldo Tourinho, Member of the SamiTrop Research Nucleus, Montes Claros, Brazil, 3Institute of Tropical Medicine, Universidade de Sao Paulo, Montes Claros, Brazil, 4Department of Internal Medicine, Universidade Federal de Minas Gerais, Montes Claros, Brazil, 5Sao Paulo-Minas Gerais Neglected Tropical Diseases Research Center for Biomarkers Discover, Institute of Tropical Medicine, Universidade de Sao Paulo, Montes Claros, Brazil

THE INTERACTION BETWEEN TRYPAansomA CRUZI AND STRONGYLOIDES STERCORALIS INFECTIONS IN THE CHACO/YUNGAS REGION
Pedro E. Fleitas1, Noelia Floridia-Yapur1, Elvia Nieves1, Adriana Echazu1, Paola Vargas1, Nicolas Caro2, Favio Crudo2, Ruben O. Cimino2, Alejandro J. Krolewiecki2
1Instituto de Investigaciones de Enfermedades Tropicales, Universidad Nacional de Salta, Salta, Argentina, 2Asociación para el Desarrollo Sanitario Regional (ADESAR), Buenos Aires, Argentina

EVALUATING A PREDICTIVE ALGORITHM FOR SCREENING CHRONIC CHAGAS INFECTION AMONG PEOPLE LIVING IN RURAL AREAS OF MINAS GERAIS- BRAZIL
Fabio De Rose Ghiardi
São Paulo University, São Paulo, Brazil
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**TRYPANOSOMA CRUZI INFECTION AMONG RURAL AND URBAN VIRGINIA OPOSSUMS AND NORTH AMERICAN RACCOONS FOUND IN NORTH FLORIDA, USA**

Norman L. Beatty¹, Zoe S. White¹, Chanalnya R. Bhosale¹, Kristen N. Wilson², Sarah E. Maestas³, Samantha M. Wisely²

¹University of Florida College of Medicine, Department of Medicine, Division of Infectious Diseases and Global Medicine, Gainesville, FL, United States, ²University of Florida Institute of Food and Agriculture Sciences, Department of Wildlife Ecology and Conservation, Gainesville, FL, United States, ³University of Florida Institute of Food and Agricultural Sciences, Entomology and Nematology Department, Gainesville, FL, United States

**EPIDEMIOLOGY OF SCHISTOSOMIASIS IN AN URBAN AREA OF THE CITY OF SALVADOR, BA**

Camila F. Chaves¹, Luciano K. Silva¹, Lúcio M. Barbosa¹, Mitermayer G. Reis¹, Ronald E. Blanton²

¹Oswaldo Cruz Foundation, BA, Salvador, Brazil, ²Tulane School of Public Health and Tropical Medicine, New Orleans, LA, United States

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**EVALUATION OF INTERVENTIONS AND RISK FACTORS CONTRIBUTING TO SCHISTOSOMIASIS PERSISTENCE IN SALVADOR, BRAZIL**

Fernanda M. Cedraz¹, Luciano K. Silva¹, Mitermayer G. Reis¹, Ronald E. Blanton², Lúcio M. Barbosa¹

¹Oswaldo Cruz Foundation, BA, Salvador, Brazil, ²Tulane School of Public Health and Tropical Medicine, New Orleans, LA, United States

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**VISCERAL LEISHMANIASIS IN PREGNANCY AND VERTICAL TRANSMISSION: A SYSTEMATIC REVIEW OF THE LITERATURE ON THE THERAPEUTIC ORPHANS**

Prabin Dahal¹, Sauman Singh-Phulendra¹, Brittany J. Maguire¹, Philippe J. Guerin¹, Piero L. Olliaro²

¹Infectious Diseases Data Observatory, Centre for Tropical Medicine & Global Health, University of Oxford, Oxford, United Kingdom, ²Centre for Tropical Medicine & Global Health, University of Oxford, Oxford, United Kingdom

**DEVELOPMENT & EVALUATION OF CANDIDATE MARKERS FOR THE DIAGNOSIS OF VISCERAL LEISHMANIASIS.**

Samson Muuo Nzou¹, Ann Wanjiro Mwangi⁴, Matthew Mutinda Munyao², Tony Teya³, Joanne Jepkemei³, Caroline Wangu Njoroge³, Peter Kembo³, Esther Muthoni Kiriyu¹, Eberhard Zeyhel³, Robinson Irweka³, Satoshi Kaneko³

⁴Kenya Medical Research Institute, Nairobi, Kenya, ³Nagasaki University, Institute of tropical medicine-Kenya Medical Research Institute, Nairobi, Kenya, ²Nagasaki University, institute of tropical medicine-Kenya Medical Research Institute project, Nairobi, Kenya, ¹Ministry of health, Nakuru, Kenya, ³Meru University of science and technology, Meru, Kenya, ³Pan-African University Institute of Basic Sciences, Technology and Innovation, Nairobi, Kenya, ²Nagasaki University, Japan, Japan

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**MEASURING THE IMPACT OF MASS TREATMENT WITH PRAZIQUANTEL ON SCHISTOSOMIASIS IN THREE BORDER COUNTIES IN LIBERIA: ASSESSING THE IMPACTS OF A DISRUPTED TREATMENT PATTERN**

Anthony Kerkula Bettee¹, Karsor Kollie¹, Precious Z. Cooper Bettee¹

¹Ministry of Health, Monrovia, Liberia, ²Ministry of Health, Congo Town, P.O. Box 10-9009, 1000, Monrovia, Liberia

**LOCALISATING EVIDENCE FOR DECISION-MAKING: A PARTICIPATORY AND AGENT-BASED MODELLING APPROACH TO INFORM AND ASSIST SCHISTOSOMIASIS CONTROL AND ELIMINATION**

Cristin Alexis Fergus¹, Georgina Pearson¹, Liz Store⁴, Melissa Parker⁴, Tim Allen¹

¹London School of Economics and Political Science, London, United Kingdom, ²London School of Hygiene and Tropical Medicine, London, United Kingdom

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**SCHISTOSOMA MANSONI ASSOCIATED MORBIDITY ALONGSIDE ANNUAL MASS DRUG ADMINISTRATION IN A HARD TO REACH DISTRICT OF MADAGASCAR**

James M. Penney¹, Stephen A. Spencer⁴, Cortland Linder⁴, Hannah Russell⁴, Kate Hyde⁴, Jemima Henstridge-Blows⁴, Isla Young⁴, Russell J. Stothard⁴, Amaya L. Bustinduy⁴, Alain Rahetilahy⁴

¹Greater Glasgow and Clyde NHS Trust, Glasgow, United Kingdom, ²North Bristol NHS Trust, Bristol, United Kingdom, ³University of Manchester, Manchester, United Kingdom, ⁴Liverpool School of Tropical Medicine, Liverpool, United Kingdom, ⁵London School of Hygiene and Tropical Medicine, London, United Kingdom, ⁶Ministère de la Santé Publique, Antananarivo, Madagascar

**SENSITIVE DIAGNOSTIC TOOLS AND TARGETED DRUG ADMINISTRATION STRATEGIES ARE NEEDED TO ELIMINATE SCHISTOSOMIASIS**

Govert J. van Dam¹, Abena S. Amoah¹, Pytsje T. Hoekstra¹, Miriam Casacuberta Partal¹, Luc E. Coffeng¹, Paul L. Cortjens³, Beatrice Greco³, Lisette van Lieshout³, Mark D. Lim³, Christine F. Markwalter³, Maurice R. Odiero³, Jutta Reinhard-Rupp³, Russell Stothard³, Louis-Albert Tchuem Tchuenté³, Sake J. de Vlas³

¹LUMC - Dept. of Parasitology, Leiden, Netherlands, ²Erasmus University Medical Center - Dept. Public Health, Rotterdam, Netherlands, ³LUMC - Dept. of Cell and Chemical Biology, Leiden, Netherlands, ⁴Merck Global Health Institute, Eysins, Switzerland, ¹The Bill & Melinda Gates Foundation, Seattle, WA, United States, ²Vanderbilt University - Dept. of Chemistry, Nashville, TN, United States, ³Kenya Medical Research Institute, Kisumu, Kenya, ⁴Liverpool School of Tropical Medicine, Liverpool, United Kingdom, ⁵University of Yaoundé I - Lab. of Parasitology and Ecology, Yaoundé, Cameroon

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**INTEGRATING WATER CONTACT BEHAVIOR, ENVIRONMENTAL HAZARD AND SOCIAL VULNERABILITY INTO ESTIMATES OF SCHISTOSOMIASIS OCCURRENCE IN NORTHERN SENEGAL**

Andrea Lund¹, Susanne Sokolow¹, Isabel Jones¹, Andrew Chamberlin¹, Nicolas Jouanand¹, Simon Senghor¹, Assane Fall¹, Gilles Niveau¹, Giulio De Leo¹, David Lopez-Carr¹

¹Stanford University, Stanford, CA, United States, ²Centre de Recherche Biomédical Espoir pour la Sante, Saint-Louis, Senegal, ³University of California, Santa Barbara, Santa Barbara, CA, United States

**OCCUPATIONAL RISK FOR SCHISTOSOMA MANSONI AND EVIDENCE FOR RAPID REINFECTION IN AGRICULTURAL WORKERS IN SALVADOR, BRAZIL**

Pedro S. Mucillo¹, João R. Cruz¹, Luciano K. Silva¹, Adriano P. dos Santos¹, Mitermayer G. Reis¹, Ronald E. Blanton², Lúcio M. Barbosa¹

¹Oswaldo Cruz Foundation, BA, Salvador, Brazil, ²Tulane School of Public Health and Tropical Medicine, New Orleans, LA, United States

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**EVALUATION OF INTERVENTIONS AND RISK FACTORS CONTRIBUTING TO SCHISTOSOMIASIS PERSISTENCE IN SALVADOR, BRAZIL**

Fernanda M. Cedraz¹, Luciano K. Silva¹, Mitermayer G. Reis¹, Ronald E. Blanton², Lúcio M. Barbosa¹

¹Oswaldo Cruz Foundation, BA, Salvador, Brazil, ²Tulane School of Public Health and Tropical Medicine, New Orleans, LA, United States

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**SCHISTOSOMA MANSONI ASSOCIATED MORBIDITY ALONGSIDE ANNUAL MASS DRUG ADMINISTRATION IN A HARD TO REACH DISTRICT OF MADAGASCAR**

James M. Penney¹, Stephen A. Spencer⁴, Cortland Linder⁴, Hannah Russell⁴, Kate Hyde⁴, Jemima Henstridge-Blows⁴, Isla Young⁴, Russell J. Stothard⁴, Amaya L. Bustinduy⁴, Alain Rahetilahy⁴

¹Greater Glasgow and Clyde NHS Trust, Glasgow, United Kingdom, ²North Bristol NHS Trust, Bristol, United Kingdom, ³University of Manchester, Manchester, United Kingdom, ⁴Liverpool School of Tropical Medicine, Liverpool, United Kingdom, ⁵London School of Hygiene and Tropical Medicine, London, United Kingdom, ⁶Ministère de la Santé Publique, Antananarivo, Madagascar

**SENSITIVE DIAGNOSTIC TOOLS AND TARGETED DRUG ADMINISTRATION STRATEGIES ARE NEEDED TO ELIMINATE SCHISTOSOMIASIS**

Govert J. van Dam¹, Abena S. Amoah¹, Pytsje T. Hoekstra¹, Miriam Casacuberta Partal¹, Luc E. Coffeng¹, Paul L. Cortjens³, Beatrice Greco³, Lisette van Lieshout³, Mark D. Lim³, Christine F. Markwalter³, Maurice R. Odiero³, Jutta Reinhard-Rupp³, Russell Stothard³, Louis-Albert Tchuem Tchuenté³, Sake J. de Vlas³

¹LUMC - Dept. of Parasitology, Leiden, Netherlands, ²Erasmus University Medical Center - Dept. Public Health, Rotterdam, Netherlands, ³LUMC - Dept. of Cell and Chemical Biology, Leiden, Netherlands, ⁴Merck Global Health Institute, Eysins, Switzerland, ¹The Bill & Melinda Gates Foundation, Seattle, WA, United States, ²Vanderbilt University - Dept. of Chemistry, Nashville, TN, United States, ³Kenya Medical Research Institute, Kisumu, Kenya, ⁴Liverpool School of Tropical Medicine, Liverpool, United Kingdom, ⁵University of Yaoundé I - Lab. of Parasitology and Ecology, Yaoundé, Cameroon
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SCHISTOSOMIASIS AMONG VILLAGES SURROUNDING LAKE NYASA, SOUTHERN TANZANIA: PREVALENCE, INTENSITY OF INFECTION AND GEOGRAPHICAL DISTRIBUTION AMONG PRE-SCHOOL & SCHOOL AGED CHILDREN

Humphrey D Mazigo1, Cecilia Ussio2, Paul Kazooya2, Andreas Nshala2, Upendo Mwingira2
1Department of Medical Parasitology, School of Medicine, Catholic University of Health and Allied Sciences, Mwanza, United Republic of Tanzania, 2National Institute of Medical Research, Dar es Salaam, United Republic of Tanzania, 3RTI, Maryland, WA, United States

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IS KNOWLEDGE POWER OR A PREDICTOR?: ASSESSING PARENTAL EDUCATION ASSOCIATIONS WITH SCHISTOSOMA HAEMATOBIUM INFECTION IN KANO STATE, NIGERIA

Angela Udongwo
Rollins School of Public Health, Emory University, Decatur, GA, United States

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A PROSPECTIVE COHORT STUDY OF CHILD MOUTHING OF FECES AND FOMITES IN URBAN DHAKA, BANGLADESH (CHOBI7 PROGRAM)

Tahmina Parvin1, Ismat Minjih Uddin1, Md. Sazzadul Islam Bhuviyan1, Ronald Saxton1, Fatema Zohura1, Marzia Sultan1, Fatema-Tuz Johura1, Shirajum Monira1, M Tasdik Hasan2, Nowshin Papri2, Md. Ahshulan Haque2, Shwapon Kumar Biswas2, Shwapan Kumar Biswas2, David A. Sack3, Jamie Perin3, Munirul Alam4, Christine Marie George5
1International Center for Diarrheal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 2Johns Hopkins University, Baltimore, MD, United States, 3University of Liverpool, London, United Kingdom, 4Rangpur Medical College and Hospital, GOB, Dhaka, Bangladesh

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CHILD MOUTHING OF SOIL AND ANIMALS PRESENCE IN CHILD SLEEPING SPACES ARE ASSOCIATED WITH GROWTH FALTERING AMONG YOUNG CHILDREN IN URBAN DHAKA, BANGLADESH (CHOBI7 PROGRAM)

1International Center for Diarrheal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 2Johns Hopkins University, Baltimore, MD, United States, 3University of Liverpool, London, United Kingdom, 4Rangpur Medical College and Hospital, GOB, Dhaka, Bangladesh

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SUSTAINED WASH BEHAVIOR CHANGE AMONG HOUSEHOLD MEMBERS OF DIARRHEA PATIENTS (CHOBI7 PROGRAM): LESSONS LEARNED FROM DOERS AND NON-DOERS

Elizabeth D. Thomas1, Fatema Zohura1, Md. Sohel Rana1, Alana Teman1, Tahmina Parvin1, Jahed Masud1, Md. Sazzadul Islam Bhuviyan2, Sanya Tahmina3, Farzana Mummun1, Md. Abul Hashem Khan1, David A. Sack3, Elli Leontsini3, Peter J. Winch1, Munirul Alam3, Christine Marie George4
1Johns Hopkins University, Baltimore, MD, United States, 2International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 3Ministry of Health and Family Welfare, Dhaka, Bangladesh, 4Directorate General of Health Services, Dhaka, Bangladesh

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IMPLEMENTING INTEGRATED WASH, NUTRITION, AND EARLY CHILDHOOD DEVELOPMENT INTERVENTIONS - COMMUNITY HEALTH WORKERS’ EXPERIENCES FROM BANGLADESH

Tania Jahir1, Mahbubur Rahman1, Elli Leontsini1, Farzana Yeasmin1, Stephen P. Luby2, Peter J. Winch3
1icddr,b, Dhaka, Bangladesh, 2John Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, 3Stanford University, Stanford, CA, United States

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MEASURING THE WATER QUANTITY FOR PERSONAL AND DOMESTIC HYGIENE AND DETERMINANTS OF WATER USE IN LOW-INCOME URBAN COMMUNITY

Rebeca Sultana1, Nadia Ali Rimi1, Nazmunn Nahari1, Syeda Tasnua Swarna1, Shifat Khan1, Humayun Kabir1, Khaled Saifullah1, Peter Kjær Mackie Jensen3
1University of Dhaka, Dhaka, Bangladesh, 2icddr,b, Dhaka, Bangladesh, 3University of Copenhagen, Copenhagen, Denmark

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COMPARATIVE ASSESSMENT OF FECAL CONTAMINATION IN ‘IMPROVED’ PIPED-TO-LOT COMMUNAL SOURCE AND POINT-OF-DRINKING WATER

Jannatul Ferdous1, Rebeca Sultana2, Ridwan Rashid1, Anowara Begum2, Peter Kjær Mackie Jensen3
1University of Dhaka, Dhaka, Bangladesh, 2icddr,b, Dhaka, Bangladesh, 3University of Copenhagen, Copenhagen, Denmark

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LOCAL PERCEPTIONS, CULTURAL BELIEFS, PRACTICES AND CHANGING PERSPECTIVES OF HANDLING INFANT FECES: A CASE STUDY IN A RURAL GEITA DISTRICT, NORTH-WESTERN TANZANIA

Joy J. Chebet1, Aminata Kilungo2, Halimatou Alaofè3, Hamisi Malebo2, Shaaban Katani2, Mark Nichter1
1University of Arizona, Tucson, AZ, United States, 2Tanzania National Institute for Medical Research, Dar es Salaam, United Republic of Tanzania

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MEASURING EFFECT OF A MENSTRUAL HYGIENE MANAGEMENT (MHM) INTERVENTION THROUGH SCHOOL PERFORMANCE OF GIRLS IN BANGLADESH

Farhana Sultana1, Shirina Aktar1, Shifat Khan1, Farhana Akand1, Md. Nuruzzaman1, Supta Sarker1, Md. Mahbubur Rahman1, Leanne Unicombi2, Peter J. Winch2, Stephen P. Luby3, Fahmida Tofail1
1icddr,b, Dhaka, Bangladesh, 2Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, 3Stanford University, Stanford, CA, United States

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HEAVY METAL RESIDUAL ANALYSIS OF TOMATO IN THE HOHOE MUNICIPAL MARKET, GHANA

Forgive A. Norvivor1, Nicholas O. Opoku2
1University of Health and Allied Sciences, Ho, Ghana

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EXPOSURE TO FECAL PATHOGENS AMONG INFANTS IN URBAN ECUADOR: DEVELOPMENT OF A STRUCTURED OBSERVATION INSTRUMENT

Andrea Sosa-Moreno1, Gwenthé O. Lee1, Amanda Van Engen1, Kelly Sun1, Jessica Uruchumela1, Laura Kwong2, Elizabeth Ludwig-Borycz2, Bethany Caruso2, William Cavallos2, Karen Levy3, Joseph N. Eisenberg4
1University of Michigan, Ann Arbor, MI, United States, 2Stanford University, Stanford, CA, United States, 3Emory University, Atlanta, GA, United States, 4Instituto de Biomedicina, Carrera de Medicina, Universidad Central del Ecuador, Ecuador
BURDEN OF CHOLERA IN NORTHWESTERN NIGERIA. AN ANALYSIS OF TREND OF CASES BETWEEN 2014-2019 IN KANO STATE, NIGERIA
Usman L. Shehu
AFENET/Nigeria Field Epidemiology and Laboratory Training Program, Abuja, Nigeria

ACCESS TO ALCOHOL-BASED HAND RUB AND HAND HYGIENE ADHERENCE AMONG HEALTHCARE PROFESSIONALS IN KABAROLE DISTRICT, UGANDA, 2018-2019
Matthew Lozier1, Maureen Kesande1, Sunkyoung Kim1, Patricia Akers1, Olive Tumuhairwe2, Martin Watsisi2, Winifred Omuut3, Margaret Person4, Mohammed Lamorde5, Jennifer Murphy6, Robert Quick7, David Berendes8
1Centers for Disease Control and Prevention, Atlanta, GA, United States, 2Infectious Diseases Institute, Kampa, Uganda, 3Kabarole District Health Office, Ministry of Health, Fort Portal, Uganda, 4International Water and Sanitation Centre – WASH, Fort Portal, Uganda

PERSISTENCE OF SALMONELLA TYPHI VIABILITY AND DNA IN SEWAGE
Renuka Kapoor, Christine L. Moe
Center for Global Safe Water, Sanitation, and Hygiene, Emory University, Atlanta, GA, United States

INTEGRATING PREVENTATIVE MEASURES OF COVID 19 THROUGH NEGLECTED TROPICAL DISEASES WASH & HEALTH PROMOTION: TANZANIA EXPERIENCE
Alistidia Simon1, Cecilia Uisso1, Oscar Kaitaba1, Upeno Mwingira1, Jeremiah Ng’ondi1, Kimberly Kamara2
1Ministry of Health, Dar es salaam, United Republic of Tanzania, 2National Institute of Medical Research, Dar es salaam, United Republic of Tanzania, 3RTI, Washington, DC, United States, 4END FUND, New York, NY, United States

Poster Session C Viewing
Poster Hall
Wednesday, November 18
1:15 p.m. - 11:59 p.m. U.S. Eastern Time Zone

Break
Wednesday, November 18
1:15 p.m. - 1:45 p.m. U.S. Eastern Time Zone

Scientific Session 82

Clinical Tropical Medicine: Vaccines, Travel
Meeting Room 1
Wednesday, November 18
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

CHAIR
Nouhoun Barry
Groupe de Recherche Action en Santé (GRAS), Ouagadougou, Burkina Faso
Lin H. Chen
Mount Auburn Hospital, Cambridge, MA, United States

SAFETY AND IMMUNOGENICITY OF COADMINISTRATION OF MENINGOCOCCAL TYPE A VACCINE WITH TYPHOID CONJUGATE VACCINE IN HEALTHY CHILDREN 15-23 MONTHS OF AGE IN BURKINA FASO
Sodionmon B. Sirima1, Alphonse Ouédraogo1, Nouhoun Barry1, Mohamadou Sinibé1, Alfred Tiona1, Issa Nébïé Ouédraogo1, Shirinati Datta2, Yuanyuan Liang2, Kathleen M. Neuze2, Matthew B. Laurens2
1Groupe de Recherche Action en Santé (GRAS), Ouagadougou, Burkina Faso, 2University of Maryland School of Medicine, Baltimore, MD, United States, 3Center for Vaccine Development and Global Health, University of Maryland School of Medicine, Baltimore, MD, United States

SINGLE-DOSE, LIVE ORAL CHOLERA VACCINE CVD 103-HGR (PXVX0200) INDUCES LONG-TERM SERUM VIBRIOCIDAL ANTIBODIES (SVA) IN ADOLESCENTS
James M. McCarty1, Lisa Bedell2, Sean Bennett3
1Stanford University, Stanford, CA, United States, 2Emergent BioSolutions, Gaithersburg, MD, United States

ONE DOSE ORAL CHOLERA VACCINE COVERAGE DURING AN OUTBREAK IN URBAN HARARE, ZIMBABWE, 2018
Ashley T. Longley1, Nandini Sreenivasan1, Emmaculate Lebo2, Aluwiso Mukavhi3, Grace Chaora1, Trymore Chawurura1, Maxwell Rufutse2, Lloyd Machacha1, Manes Munyanyi1, Jethro Chakauya2, Mayuko Takamiya3, Naema Logan4, Marc Poncin2, Kashmira Date5, Portia Nanangazira6

PERSISTENCE OF IMMUNOGLOBULIN M ANTIBODIES AFTER VACCINATION WITH LIVE ATTENUATED JAPANESE ENCEPHALITIS VACCINE
Susan L. Hills1, Alex Van Keulen1, Jodi Feser1, Amanda Panella1, G William Letson2, J Erin Staples3, Anthony A Marfin1, Aaron C. Brault1
1Centers for Disease Control and Prevention, Fort Collins, CO, United States, 2PATH, Seattle, WA, United States

UNPLANNED HEALTHCARE DURING TRAVEL: A DESCRIPTIVE ANALYSIS FROM THE GEOSENTINEL NETWORK
Lin H. Chen1, Watcharapong Piyanaphene2, Marta Diaz-Menendez2, Hilmir Asgeirsson3, Philippe Gautret4, Elizabeth Barnett5, Michael Libman6, Patricia Schlagenhauf7, Karin Leder8, Katherine Plewes9, Kunjana Mavunda1, Martin Grobusch10, Davidson Hamer11
1Mount Auburn Hospital and Harvard Medical School, Cambridge, MA, United States, 2Mahidol University Faculty of Tropical Medicine, Bangkok, Thailand, 3Hospital La Paz Carlos III, Madrid, Spain, 4Karolinska University Hospital, Stockholm, Sweden, 5Aix Marseille University, Marseille, France, 6Boston Medical Center, Boston, MA, United States, 7McGill University J.D. Maclean Centre for Tropical Diseases, Cambridge, QC, Canada, 8University of Zurich, Zurich, Switzerland, 9Monash University and Royal Melbourne Hospital, Melbourne, Australia, 10University of British Columbia, Vancouver, BC, Canada, 11International Travel Clinic, Miami, FL, United States

12University of Amsterdam, Amsterdam, Netherlands, 13Boston University School of Public Health and Boston University School of Medicine, Boston, MA, United States
One of which targeted a highly conserved epitope and potently blocked transmission to mosquitoes. The general discussion will focus on the use-scenarios of mAbs for malaria prevention and control efforts. The overall goals of the symposium are i) to provide the first data on the safety, pharmacokinetics and protective efficacy to illustrate how the scientific investigation on mAbs, a much-debated topic in malaria research, has moved from an attractive concept to clinical testing; ii) to discuss critical scientific insights into the mechanisms of efficacy and the deployability of mAbs for future clinical use.

CHAIR
Teun Bousema
Radboud University Medical Center, Nijmegen, Netherlands
Robert Seder
NIH/NIAID, Bethesda, MD, United States

1:45 p.m.
NATURALLY ACQUIRED ANTIBODIES TARGETING PLASMODIUM FALCIPARUM SPOROZOITES
Joshua Tan
NIAID, NIH, Rockville, MD, United States

2:05 p.m.
PREVENTION OF MALARIA BY A MONOCLONAL ANTIBODY (CIS43LS) AGAINST PFCSP IN HUMANS FOLLOWING CONTROLLED HUMAN MALARIA INFECTION
Robert Seder
NIH/NIAID, Bethesda, MD, United States

2:30 p.m.
A HUMAN MONOCLONAL ANTIBODY BLOCKS MALARIA TRANSMISSION AND DEFINES A HIGHLY CONSERVED NEUTRALIZING EPITOPE ON GAMETES.
Camila Henriques Coelho
NIAID/NIH, Rockville, MD, United States

5:50 p.m.
SAFETY AND TRANSMISSION BLOCKING ACTIVITY OF HUMANIZED MONOCLONAL ANTIBODY TB31F
Saskia C. van der Boor
Radboud University Medical Center, Nijmegen, Netherlands

Symposium 84
Towards Regional Elimination of Malaria in Central America

Meeting Room 3
Wednesday, November 18
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

Malaria elimination is an ambitious and achievable goal for Central America. In 2018, three of the seven countries in the region reported fewer than 100 cases, including El Salvador (0), Belize (3), and Costa Rica (70). Not too far behind are Honduras and Guatemala which will end 2019 with less than 350 and 1800 indigenous cases, respectively, representing case declines of over 50% in the past two years alone. The impressive progress across the region can be attributed, in part, to high level commitment leading to country-specific mixes in improved case management and better targeted vector control interventions on a base of strengthened surveillance. While it is possible that case
reductions may be catalyzed by favorable ecological conditions (i.e. reduced rainfall), the historically low case numbers suggest elimination is within reach. Despite the success in recent years, challenges remain to reaching zero cases. Importation, especially from Nicaragua (>10000 cases) and potentially from Venezuela (>400,000 cases), threatens regional progress. Questions related to Plasmodium vivax relapses and vector biting behavior continue to obscure where interventions are most effective or how capital should be allocated between available interventions. As cases become more concentrated to remote, and often indigenous, communities, gaps in access to treatment and diagnosis may grow. As case numbers fall, shifting financial and human resources away from malaria towards other vector borne diseases like dengue and Zika also threatens to slow progress. This symposium will provide an overview from country malaria programs and their partners on the progress towards malaria elimination and the main remaining hurdles in the path towards elimination. Specific emphasis will be given to describing drivers of country-specific case declines, discussing region wide challenges for elimination, and outlining the path forward as it relates to financial commitment and innovative funding schemes from donors and financial institutions.

CHAIR
Justin T. Lana
Clinton Health Access Initiative, Panama City, Panama
Blanca Escribano
Pan American Health Organization, Washington, DC, United States

1:45 p.m.
PROGRESS TOWARDS MALARIA ELIMINATION ACROSS CENTRAL AMERICA AND ENSUING CHALLENGES
Blanca Escribano
Pan American Health Organization, Washington, DC, United States

2:05 p.m.
NEARING ELIMINATION: HOW HONDURAS PLANS TO ACHIEVE ZERO CASES IN THE NEXT FEW YEARS
Carlos Miranda
Ministry of Health, Honduras, Tegucigalpa, Honduras

2:25 p.m.
MAINTAINING ZERO CASES IS DIFFICULT: EXPERIENCES FROM COSTA RICAN PROGRAMME
Alejandra Acuña Navarro
Ministry of Health, Costa Rica, San Jose, Costa Rica

2:45 p.m.
WAY FORWARD: SUSTAINABLE FINANCIAL MECHANISM TO ACHIEVE MALARIA ELIMINATION
Emma Margarita Iriarte
Inter-American Development Bank, Panama City, Panama

Symposium 85
Host-Directed Therapeutics for Malaria

Meeting Room 4
Wednesday, November 18
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

Infectious diseases remain a leading cause of morbidity and mortality worldwide, yet most of the world’s most dangerous infectious diseases still lack specific adjunct therapies that could be given in combination with anti-pathogen drugs to improve patient outcomes. Host-directed therapy is a new direction for infectious disease drug development that is designed to interfere with host pathways that are required for host cell infection or contribute to disease mechanisms. Drugs that target human proteins are safely in widespread usage to treat non-communicable diseases, ranging from cancer to blood pressure control, and represent a rich arsenal of safe and effective human-targeted interventions. Host-directed therapies are increasingly recognized as a safe and viable adjunct therapy for antimicrobial treatments. Significant progress has been made in the understanding of host pathways critical for Plasmodium survival in hepatocytes or involved in pathogenic mechanisms in severe malaria. The aim of this symposium is to discuss recent progress in identifying host pathways as druggable targets of liver stage parasites or as adjunct treatments for severe malaria.

CHAIR
Joseph D. Smith
Seattle Children’s Research Institute, Seattle, WA, United States
Alexis Kaushansky
Seattle Children’s Research Institute, Seattle, WA, United States

1:45 p.m.
NEW APPROACHES TO ELUCIDATE HOST REGULATORS AND HOST-BASED INHIBITORS OF PLASMODIUM LIVER INFECTION
Alexis Kaushansky
Seattle Children’s Research Institute, Seattle, WA, United States

2:05 p.m.
NEUROPATHOLOGY OF MALARIAL MALARIA: DISCOVERY OF DRUGGABLE HOST FACTORS CRITICAL TO LIVER STAGE INFECTION
Emily Derbysth
Duke University, Durham, NC, United States

2:25 p.m.
THE HOST INFECTION: KINASE INHIBITOR MODULATION OF ENDOTHELIAL BARRIER PERMEABILITY: TACKLING VASCULAR LEAK SYNDROMES
Joseph Smith
Seattle Children’s Research Institute, Seattle, WA, United States

3 p.m.
NEW INSIGHTS INTO MICROVASCULAR INJURY TO INFORM HOST-TARGETED THERAPEUTICS
Kevin Kain
University of Toronto, Toronto, ON, Canada

Sympoism 86
Severe Malaria: Improving the Continuum of Care

Meeting Room 5
Wednesday, November 18
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

Severe malaria is typically the result of a failure in the healthcare delivery and/or healthcare seeking behavior for uncomplicated malaria. In 2019, an estimated 405,000 malaria related deaths occurred, mostly in children in sub-Saharan Africa. There is mounting evidence that a pre-referral intervention with artesunate rectal capsules, followed by appropriate severe malaria treatment with injectable artesunate at a referral health facility, and
completed with a full ACT course, leads to better outcomes. An increasing number of countries have updated their national guidelines for the treatment of severe malaria. Translating these guidelines into practice is proving challenging in remote settings. This symposium will provide an opportunity to learn from diverse country experiences where activities are being operationalized to improve prompt access to severe malaria case management in the continuum of care for severe malaria patients.

**CHAIR**
Hans Rietveld  
Medicines for Malaria Venture, Geneva, Switzerland
Elizabeth Juma  
World Health Organization, Africa Regional Office, Harare, Zimbabwe

**1:45 p.m.**  
**BEHAVIOR-CHANGE COMMUNICATION AND TRAINING OF HEALTH SURVEILLANCE ASSISTANTS TO IMPROVE SEVERE MALARIA CASE-MANAGEMENT PRACTICES: RESULTS FROM A STUDY IN MALAWI**
John Phuka  
University of Malawi, School of Public Health and Family Medicine, College of Medicine, Lilongwe, Malawi

**2:05 p.m.**  
**A RAPID ASSESSMENT OF SEVERE MALARIA CASE-MANAGEMENT PRACTICES, INCLUDING REFERRALS, IN ANGOLA**
José Martins  
Programa Nacional de Controlo da Malária, Direcção Nacional de Saúde Pública, Luanda, Angola

**2:25 p.m.**  
**ROLLING OUT ARTESUNATE RECTAL CAPSULES AS A PRE-REFERRAL INTERVENTION IN SIERRA LEONE**
Anitta R. Kamara  
National Malaria Control Programme, Freetown, Sierra Leone

**2:45 p.m.**  
**A COUNTRY EXPERIENCE: TRAINING, IMPLEMENTATION AND PROCESS EVALUATION RELATED TO A PRE-REFERRAL INTERVENTION FOR SEVERE MALARIA PATIENTS IN MADAGASCAR**
Mauricette Andriamanananjara Nambinisoa  
National Malaria Control Program Madagascar, Antananarivo, Madagascar

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**Symposium 87**

The Path from Development to Delivery: Accelerated Development and Introduction of Ivermectin, DEC, and Albendazole (IDA) Triple Therapy; How Was It Done?

**Meeting Room 6**  
**Wednesday, November 18**  
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

The combination of ivermectin, DEC, and albendazole (IDA) triple therapy was researched, developed and introduced at a remarkable pace. This session will review the data, the partnerships, and the process to achieve this rapid uptake to help eliminate lymphatic filariasis (LF).

**CHAIR**
Julie A. Jacobson  
Bridges to Development, Seattle, WA, United States
Jonathan King  
World Health Organization, Genève, Switzerland

**1:45 p.m.**  
**INTRODUCTION TO PANEL DISCUSSION #1: IVERMECTIN, DEC, AND ALBENDAZOLE (IDA) TRIPLE THERAPY DEVELOPMENT; WHAT MADE THIS UNIQUE?**
Julie Jacobson  
Bridges to Development, Seattle, WA, United States

**1:55 p.m.**  
**PANEL DISCUSSION #1: IVERMECTIN, DEC, AND ALBENDAZOLE (IDA) TRIPLE THERAPY DEVELOPMENT; WHAT MADE THIS UNIQUE?**
Moderator: Julie Jacobson  
Bridges to Development, Seattle, WA, United States
Gary J. Weil  
Washington University School of Medicine, St. Louis, MO, United States
Rachel Taylor  
Merck Mectizan Donation Program, Kenilworth, NJ, United States
Warren Lancaster  
END Fund Amsterdam, Amsterdam, Netherlands
Alison Krentel  
Bruyère Research Institute, University of Ottawa, Ottawa, ON, Canada
Jonathan King  
World Health Organization, Genève, Switzerland

**2:35 p.m.**  
**INTRODUCTION TO PANEL DISCUSSION #2: ACCELERATING INTRODUCTION OF IDA INTO COUNTRY PROGRAMS**
Jonathan King  
World Health Organization, Genève, Switzerland

**2:45 p.m.**  
**PANEL DISCUSSION #2: ACCELERATING INTRODUCTION OF IDA INTO COUNTRY PROGRAMS**
Moderator: Jonathan King  
World Health Organization, Genève, Switzerland
Sultani H. Matendechero  
MOH Kenya, Nairobi, Kenya
Neeraj Dhingra  
National Vector Borne Disease Control Programme (NVBDCP), New Delhi, India
Aya Yajima  
NTD Focal Point, WPRO, Manila, Philippines
Melinda Susapu  
National Department of Health, Port Moresby, Papua New Guinea

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**Scientific Session 88**

Zika: Vaccines and Immunity

**Meeting Room 7**  
**Wednesday, November 18**  
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

**CHAIR**
Jason S. Richardson  
EBSI, Winnipeg, MB, Canada
Anna P. Durbin  
Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States
LIVE-ATTENUATED CHIMERIC VACCINE CANDIDATES AGAINST ZIKA VIRUS INDUCE PROTECTIVE IMMUNITY IN AG129 MICE AND NON-HUMAN PRIMATES  

Whitney Baldwin1, Holli Giebler1, Janae Stovall1, Ginger Young2, Kelly Bohning2, Hansi Dean3, Jill Livengood4, Claire Huang5  
1Takeda Vaccines; Centers for Disease Control and Prevention/Division of Vector-Borne Diseases, Fort Collins, CO, United States, 2Centers for Disease Control and Prevention/Division of Vector-Borne Diseases, Fort Collins, CO, United States, 3Takeda Vaccines, Cambridge, MA, United States

A PHASE 1 DOSE RANGING TRIAL OF A ZIKV MRNA VACCINE CANDIDATE IN HEALTHY FLAVIVIRUS BASELINE SEROPositIVE AND SERONEgATIVE ADULTS  

Nancy Le Cam, Veronica Faughnahn, Rolando Pajon, Shiva Katalindhi, Shu Han, Wellington Sun, Tal Zaks, Hamilton Bennett  
ModernaTx, Cambridge, MA, United States

RESULTS OF A PHASE 1 STUDY TO EVALUATE SAFETY AND PHARMACOKINETICS OF ANTI-ZIKA VIRUS IMMUNE GLOBULIN (HUMAN) (ZIKV-IG) IN HEALTHY VOLUNTEERS  

Jane White1, Priya Tunga1, Debbie Anderson1, Ken C. Iledan2, Tobi Loreth1, Geraldine Parrera1, Hugo Astacio1, Bojan Drobic2, Jason S. Richardson2  
1Emergent BioSolutions Inc, New York, NY, United States, 2Emergent BioSolutions Inc, Toronto, ON, Canada, 3Emergent BioSolutions Inc, Winnipeg, MB, Canada

CD8+ T CELLS MEDIATE AN NS3-BASED VACCINE PROTECTION AGAINST ZIKA VIRUS: A NEW STRATEGY FOR VACCINE DEVELOPMENT  

Annie Elong-Ngono1, Thasneem Syed1, Anh-Viet Nguyen1, Jose Angel Regla-Nava1, Mercyla Susantono1, Darina Spasova1, Allison Aguilar2, Melissa West1, Jessica Sparks1, Andrew Gonzalez2, Emilie Branche1, Jason L DeHart1, Jerel Boyd Vega1, Priya Prakash Karmali1, Padmanabh Chivukula1, Parinaz Alahmad2, Nathaniel Wang1, Sujan Shresta1  
1La Jolla Institute for Immunology, La Jolla, CA, United States, 2Synthetic Genomics, Inc, La Jolla, CA, United States

ANTIGEN-SPECIFIC T CELLS RESTRICT VIRAL DIVERSITY AND DISSEMINATION DURING ZIKA VIRUS INFECTION  

Mariah Hassert1, Christopher M. Weiss1, Lark L Coffey2, Amelia K. Pinto1, James D. Brien1  
1Saint Louis University, St. Louis, MO, United States, 2University of California-Davis, Davis, CA, United States

ASSESSING ANTIVIRAL FUNCTIONS OF A ZIKV-NEUTRALIZING HUMAN IGM AS A CANDIDATE FOR ANTIBODY-BASED PROPHYLAXIS DURING PREGNANCY  

Tulika Singh1, Kwan Ki-Hwang1, Rebecca Jones1, Joshua Eudaly1, Helen Webster1, Cesar Lopez2, Premkumar Lakshmana2, Kan Luo1, Robert J. Edwards1, Camila Giuberti1, Summer Zhang1, Morgan Gladden1, Jesse Mangold1, Joshua Tu1, Maria Dennis1, Reynaldo Dietze1, Aravinda de Silva1, Helen Lazeai1, Eng Eong Ooi1, Sallie Permar1, Mattia Bonsignori1  
1Duke University, Durham, NC, United States, 2University of North Carolina – Chapel Hill, Chapel Hill, NC, United States, 3Universidade Federal do Espirito Santo, Vitória, Brazil, 4Duke University-National University of Singapore Medical School, Singapore, Singapore

PRIOR DENGUE IMMUNITY MAY ENHANCE ZIKA VIRUS INFECTION IN THE PLACENTA IN NON-HUMAN PRIMATES  

Chelsea M. Crooks1, Andrea M. Weiler1, Sierra L. Rybarczyk2, Mason I. Bliss1, Anna S. Jaeger1, Megan E. Murphy1, Heather A. Simmons1, Jennifer M. Hayes1, Andres Mejia1, Michael K. Fritsch1, Elizabeth A. Brown1, Katarina M. Braun2, Ann M. Mitze2, Elaina Razo2, Keiisuke Yamamoto2, Phoenix M. Shepherd2, Amber R. Possell2, Kara Weaver2, Terry K. Morgan2, Christina M. Newman1, Dawn M. Dudley2, Nancy Schultz-Darken2, Eric Peterson2, Leah C. Katzennick1, Angel Balmaseda1, Eva Harris1, Emma L. Mohr1, Thaddeus G. Golos1, David H. O’Connor1, Matthew T. Aliotta1, Thomas C. Friedrich1  
1Department of Pathobiological Sciences, University of Wisconsin-Madison, Madison, WI, United States, 2Wisconsin National Primate Research Center, University of Wisconsin-Madison, Madison, WI, United States, 3Department of Veterinary and Biomedical Sciences, University of Minnesota, Twin Cities, St. Paul, MN, United States, 4Department of Comparative Biosciences, University of Wisconsin-Madison, Madison, WI, United States, 5Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI, United States, 6Department of Pediatrics, University of Wisconsin-Madison, Madison, WI, United States, 7Departments of Pathology and Obstetrics and Gynecology, Oregon Health and Science University, Portland, OR, United States, 8Division of Infectious Diseases and Vaccinology, University of California Berkeley, Berkeley, CA, United States, 9Laboratorio Nacional de Virologia, Centro Nacional de Diagnostico y Referencia, Ministry of Health, Managua, Nicaragua

Malaria Session 89

Malaria Epidemiology II: Dynamics and Heterogeneity in Low-Transmission Settings

Meeting Room 8

Wednesday, November 18

1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

CHAIR

Tatiana Loboda
University of Maryland, College Park, MD, United States

THE TOP 1% - QUANTIFYING THE UNEQUAL DISTRIBUTION OF MALARIA: THE CASE OF BRAZIL  

Narimane Nekkab1, Raquel Lana2, Andre Siqueira2, Cassio Peterka1, Paola Marchesini1, Marcus Lacerda1, Ivo Mueller1, Michael White1, Daniel Villeda1, Istitut Pasteur, Paris, France, 2Fundação Oswaldo Cruz, Rio de Janeiro, Brazil, 3Fundação de Medicina Tropical Dr. Heitor Vieira Dourado, Manaus, Brazil, 4Department of Transmissible Diseases Surveillance, Ministry of Health, Brasilia, Brazil

ASSESSING MULTI-SCALE EXPOSURE PATHWAYS IN ZONES OF PATCHY DISTRIBUTION OF MALARIA RESERVOIRS WITHIN REMOTE REGIONS OF MYANMAR  

Tatiana Loboda1, Amanda Hoffman-Hall1, Dong Chen1, Allison Baer1, Varada Shevade1, Robin Puett2, Julie Silva1, Kay Thwe Han1, Kyin Hla Aye2, Zay Yar Han3, Thura Htay4, Zaw Win Thein5, Poe Poe Aung6, Christopher Plowe7, Myaing Myaing Nyunt8  
1University of Maryland, College Park, MD, United States, 2Department of Medical Research, Yangon, Myanmar, 3Duke Global Health Institute, Yangon, Myanmar, 4Duke Global Health Institute, Yangon, Myanmar
FACTORS ASSOCIATED WITH CLUSTERING OF MALARIA CASES WITHIN THE INDEX CASE HOUSEHOLDS AND NEIGHBORHOOD HOUSEHOLDS IN ZANZIBAR
Abdul-wahid Al-mafazy1, Abdullah Ali2, Faiza Abbas2, Mohamed Ali2, Wahida Hassan1, Makame Makame1, Raya Ibrahim3, Salum Massoud3, Moza Khamis3, Chonge Kitojo2, Richard Rethinger3, Mike McKay2, Sasany Niyond1, Joseph Joseph1, Humphrey Mkali1, Erik Reaves2, Shabbir Laili3, Jeremiah Ngondi1
1RTI International, Zanzibar, United Republic of Tanzania, 2Zanzibar Malaria Elimination Programme, Zanzibar, United Republic of Tanzania, 3U.S. President’s Malaria Initiative/State University of New York, Albany, NY, United States, 4Department of Biomedical Sciences, School of Public Health, University at Albany, 5(‘MORU), Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand

TEMPORAL AND MICRO-SPATIAL HETEROGENEITY IN TRANSMISSION DYNAMICS OF CO-ENDEMIC PLASMODIUM VIVAX AND PLASMODIUM FALCIPARUM IN TWO RURAL COHORT POPULATIONS IN THE PERUVIAN AMAZON
Angel Rosas-Aguirre1, Mitchel Guzman-Guzman2, Raul Chiquiuyari2, Marta Moreno3, Paulo Manrique4, Roberson Ramirez5, Gabriel Carrasco-Escobar6, Hugo Rodriguez6, Niko Speybroec7, Jan Conn7, Dionicia Gamboa7, Joseph M. Vinetz8, Alejandro Llanos-Cuentas8
1Fund for Scientific Research FNRS; Research Institute of Health and Society (IRSS), Université catholique de Louvain, Brussels, Belgium, 2Instituto de Medicina Tropical Alexander von Humboldt, Laboratorio ICEMR-Amazonia, Laboratorios de Investigación y Desarrollo, Facultad de Ciencias y Filosofía, Universidad Peruana Cayetano Heredia, Lima, Peru, 3London School of Hygiene and Tropical Medicine, Department of Immunology and Infection, London, United Kingdom, 4Laboratorio ICEMR-Amazonia, Laboratorios de Investigación y Desarrollo, Facultad de Ciencias y Filosofía, Universidad Peruana Cayetano Heredia, Lima, Peru, 5Dirección Regional de Salud Loreto DIRESA Loreto, Iquitos, Peru, 6Research Institute of Health and Society (IRSS), Université catholique de Louvain, Brussels, Belgium, 7Wadsworth Center, NYSDOH, Albany, NY, United States, 8Department of Biomedical Sciences, School of Public Health, University at Albany, State University of New York, Albany, NY, United States

A HIGH PROPORTION OF PLASMODIUM VIVAX RECURRENTS ARE DUE TO RELAPSE ACROSS DIVERSE GEOGRAPHICAL LOCATIONS
Robert J. Commons1, Julie A. Simpson2, James Watson3, Nicholas J. White4, Ric N. Price5
1Menzies School of Health Research, Darwin, Australia, 2Centre for Epidemiology and Biostatistics, Melbourne School of Population and Global Health, The University of Melbourne, Melbourne, Australia, 3Mahidol-Oxford Tropical Medicine Research Unit (MORU), Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand

CHARACTERIZING THE PHYSIOLOGY OF HEMOLYTIC TOXICITY IN A HUMANIZED MOUSE MODEL OF 6GPD DEFICIENCY
Siobhan Flaherty1, Pamela Strauch1, Conner Jackson1, Mahdi Maktabi1, Larry Walker2, Rosemary Rochford2
1University of Colorado, Aurora, CO, United States, 2University of Mississippi, Oxford, MS, United States

ANEMIA AND INFLAMMATION IN CHILDREN BELOW 5 YEARS LIVING IN AREAS OF HIGH AND LOW TRANSMISSION SETTINGS IN WESTERN KENYA
Shehu S. Awandu1, Lindsay B. Turnbull2, Veronicaich Knight3, George Ayodo1, John C. Chandy4
1Kenya Medical Research Institute (KEMRI) / Jaramogi Oginga Odinga University of Science and Technology, Kisumu, Kenya, 2Ryan White Center for Pediatric Infectious Disease & Global Health, Department of Pediatrics, Indiana University, Indianapolis, IN, United States

SEVERE FALCIPARUM MALARIA IN YOUNG CHILDREN IS ASSOCIATED WITH POOR POST-DISCHARGE OUTCOMES: A PROSPECTIVE COHORT STUDY
Robert O. Opoka1, Ruth Namazzi2, Dibyadyuti Datta2, Paul Bangirana3, Andrea L. Conroy2, Chandy C. John3
1Makerere University, Kampala, Uganda, 2University of Colorado, Aurora, CO, United States, 3University of Mississippi, Oxford, MS, United States

DIFFERENTIAL EXPRESSION OF UBIQUITYLATION PATHWAY GENES IN KENYAN CHILDREN WITH SEVERE MALARIAL ANEMIA
Samuel Bonuke Anyona1, Evans Raballahi1, Qiuying Cheng1, Ivy Hurwitz2, Caroline Ndege3, Elly Munde3, Clinton Onyango3, Nick Lauve4, Kristan A. Schneider5, Christoph G. Lambert6, Benjamin H. McMahon6, Collins Ouma6, Douglas J. Perkins6
1Maseno University School of Medicine, Kisumu, Kenya, 2Masinde Muliro University of Science and Technology, Kakamega, Kenya, 3Center for Global Health, Department of Internal Medicine, University of New Mexico, Albuquerque, NM, United States, 4Department of Psychiatry, College of Health Sciences, Kampala, Uganda

PERSISTENT DYSREGULATION OF METABOLISM IN CHILDREN WITH ACUTE MALARIA
Arlene E. Dent1, Adam Pelletier1, Leanne Robinson2, Katherine Dobbs3, Moses Laman4, Rafiek Sekaly4, James Kazura5
1Case Western Reserve University, Cleveland, OH, United States, 2Burnett Institution, Melbourne, Australia, 3PNG IMR, Madang, Papua New Guinea

ACUTE KIDNEY INJURY AND PERSISTENT KIDNEY INJURY AT ONE MONTH FOLLOW-UP IN UGANDAN CHILDREN WITH SEVERE MALARIA
Andrea L. Conroy1, Ruth Namazzi1, Anthony Batte2, Dibyadyuti Datta2, John Ssenkusu3, Robert O. Opoka2, Chandy C. John3
1Indiana University School of Medicine, Indianapolis, IN, United States, 2Makerere University, Kampala, Uganda, 3Makerere University School of Public Health, Kampala, Uganda

Scientific Session 90
Malaria: Biology and Pathogenesis
Meeting Room 9
Wednesday, November 18
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone
CHAIR
Arlene E. Dent
Case Western Reserve University, Cleveland, OH, United States
Robert O. Opoka
Makerere University, Kampala, Uganda

ASTMH — Advancing Global Health Since 1903

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**Scientific Session 91**

**Malaria: Modeling to Support Implementation and New Approaches**

*Meeting Room 10*

**Wednesday, November 18**

1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

**CHAIR**

Jonathan J. Juliano
University of North Carolina, Chapel Hill, NC, United States

Hannah Slater
PATH, Seattle, WA, United States

**1421**

**NEUREGULIN-1 ATTENUATES HEME- AND PLASMODIUM FALCIPARUM HISTIDINE RICH PROTEIN II (HRPII)- INDUCED INFLAMMATION AND NEURONAL DAMAGE IN CORTICAL BRAIN ORGANOIDS**

Adriana Harbuzariu1, Annette Nti1, Juan Carlos Cespedes1, Keri Harp1, Andrew Shaw2, Sha’requa Asberry2, Jonathan K. Stiles1
1Morehouse School of Medicine, Atlanta, GA, United States, 2Georgia Institute of Technology, Atlanta, GA, United States

**1422**

**QUANTIFYING AND PREVENTING PLASMODIUM VIVAX RECURRENCES IN PRIMAquine-UNTREATED PREGNANT WOMEN: AN OBSERVATIONAL AND MODELING STUDY IN BRAZIL**

Rodrigo M. Cordes1, Antonio C. de Lima1, David S. Khoury2, Steffen S. Docken2, Miles P. Davenport1, Marcelo U. Ferreira1
1University of Sao Paulo, Sao Paulo, Brazil, 2University of New South Wales, Sydney, Australia

**1423**

**MODELLING PUBLIC HEALTH IMPACT AND PRIMAquine OVERTREATMENT FOR SEROLOGICAL-TEST-AND-TREAT STRATEGIES TARGETING THE HIDDEN PLASMODIUM VIVAX RESERVOIR**

Thomas Obadia, Michael White, Nairiane Nekkab, Ivo Mueller
Institut Pasteur, Paris, France

**1424**

**USING MECHANISTIC MODELS TO SUPPORT DECISION-MAKING IN COUNTRIES WITH HIGH MALARIA BURDEN**

Monique Ambrose1, Ifeoma D. Ozoegwu2, Aadranta Nandi3, Kamaldeen Okuneye2, Sebastian Rodriguez2, Maraiza Zimmermann1, Beatriz Galatas2, Abdusalam Noor2, Caitlin Bever1, Jeline Gerardini5
1Institute for Disease Modeling, Bellevue, WA, United States, 2Northwestern University, Chicago, IL, United States, 3World Health Organization, Geneva, Switzerland

**1425**

**PROJECTED DEVELOPMENT OF ANTIMALARIAL DRUG RESISTANCE IN BURKINA FASO USING HIGH RESOLUTION SPATIAL MODELING**

Robert J. Zupko1, Thu Tran1, Tran Dang Nguyen1, Fabrice Somé4, Jean-Bosco Ouédraogo5, Maciej F. Boni5
1Pennsylvania State University, State College, PA, United States, 2Institut de Recherche en Sciences de la Santé, Direction Régionale de l'Ouest, Bobo-Dioulasso, Burkina Faso

**1426**

**USING MALARIA ANTIGEN DATA AND MACHINE LEARNING MODELS TO CLASSIFY MALARIA INFECTIONS AND STRATIFY VILLAGES BY PREVALENCE LEVEL**

Leo Zoeckler1, Hannah Slater1, Ihn Kyung Jang1, Allison Golden1, Francois Nosten2, Jordi Lander1, Gonzalo J. Domingo1
1PATH, Seattle, WA, United States, 2Mahidol Oxford Tropical Medicine Research Unit, Shoklo Malaria Research Unit, Bangkok, Thailand, 3French National Research Institute for Sustainable Development, Marseille, France

**1427**

**TRANSLATING OBSERVATIONAL STUDIES FOR DISEASE MODELLING**

Theresa Reiker1, Thomas Smith1, Manuela Runge1, Melissa Penny1
1Swiss Tropical and Public Health Institute, Basel, Switzerland, 2Northwestern University, Chicago, IL, United States

**Scientific Session 92**

**Malaria: SMC and Beyond**

*Meeting Room 11*

**Wednesday, November 18**

1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

**CHAIR**

Sol Richardson
Malaria Consortium, London, United Kingdom

Monica Anna de Cola
Malaria Consortium, London, United Kingdom

**1429**

**IMPACT OF SEASONAL MALARIA CHEMOPREVENTION (SMC) BEYOND MALARIA CONTROL AMONGST UNDER-FIVE CHILDREN IN EIGHT LOCAL GOVERNMENT AREAS (LGAS) ACROSS KATSINA AND YOBE STATES.**

Akinola Shonde1, Frank Oronsaye2, Jamilu Nikau2, Olatayo Abikoye1, Jane Onyilo1, Nnenna Ogbulafor2, Yakubu Cherima2, Bala Mohammed1, Diwe Ekweremadu2, Sonachi Ezeiru2, Olugbenga Mokuolu2
1Catholic Relief Services Nigeria, Abuja, Nigeria, 2National Malaria Elimination Program, Abuja, Nigeria, 3Malaria Consortium, Abuja, Nigeria

**1430**

**ASSESSING THE IMPACT OF SEASONAL MALARIA CHEMOPREVENTION (SMC) ON SUSPECTED AND CONFIRMED MALARIA CASES IN 10 HEALTH DISTRICTS IN CHAD USING ROUTINE CLINICAL DATA, 2013-2018**

Sol Richardson1, Azoukalne Moukenet2, Arantxa Roca-Feltrer1, Monica A. de Cola1, Zana Coulibaly1
1Malaria Consortium, London, United Kingdom, 2Malaria Consortium, N’Djamena, Chad
EXTENDING SEASONAL MALARIA CHEMOPREVENTION IN BURKINA FASO TO FIVE CYCLES TO COINCIDE WITH THE START OF THE RAINY SEASON IN THE CASCADES REGION: RESULTS FROM A PILOT STUDY TO ASSESS FEASIBILITY, ACCEPTABILITY, COST AND IMPACT ON MALARIA INCIDENCE

Kevin Nicholas Baker1, Aduama Traore2, Charlotte Ward1, Benoit Sawadogo2, Helen Courinhan1, Christian Rassi1, Sol Richardson3, Helen Smith1, Johann Johansson1, Justin Savadogo1, Alain Toe1

1Malaria Consortium, London, United Kingdom, 2Malaria Consortium, Ouagadougou, Burkina Faso, 3National Malaria Control Programme, Ouagadougou, Burkina Faso

MEASURING IMPACT OF SEASONAL MALARIA CHEMOPREVENTION (SMC) IN BURKINA FASO USING NATIONAL HOUSEHOLD SURVEYS (2010-2017)

Monica Anna deCola1, Benoit Sawadogo2, Sol Richardson3, Arantxa Rocafelter1, Christian Rassi1

1Malaria Consortium, London, United Kingdom, 2Malaria Consortium, Ouagadougou, Burkina Faso

DIFFERENTIAL REDUCTION IN FACILITY-LEVEL AND DISTRICT-LEVEL MALARIA CASES FOLLOWING A NATIONAL MASS BEDNET DISTRIBUTION CAMPAIGN WITH TWO TYPES OF NETS, MALAWI, 2018-2019

Collins Kwizomba1, Tyson Volkman1, Kevin Griffith1, Julie Gutman2, Pius Masach2, Lilia Gerberg1, John Ginnig1, Austin Gumbo1, Michael Kayange1, Edson Dembo1, Monica Bautista1, John Painter3

1PMI, Lilongwe, Malawi, 2PMI, Washington, DC, United States, 3CDC, Atlanta, GA, United States, 4NMCP, Lilongwe, Malawi

GROUP ANTENATAL CARE (GANC): A BASELINE INITIATIVE TO IMPROVE MALARIA IN PREGNANCY & ANC INDICATORS. A CASE FROM GEITA TANZANIA

Jasmine Chedeva1, Mary Drake1, Chonge Kitojo1, Ryan Lash2, Stephanie Suhowatsky1, Abdalah Lusabi1, Japhet Simeo1, Goodluck Tesh1, Ruth Lemway1, Issaa Garimo1, Agnes Kosia1, Alice Christensen1, Rita Noronha1, Zahra Mkomwa1, Naomi Serbantez1, Melkior Assenga1, Erik Reaves1, Samwel Lazaro1, Miriam Komba1, Alen Kimina1, Aliy Mohamed1, Gladys Tetteh2, Bill Brieger1, Edward Keny1, Annette Almeida1, Julie Gutman1

1USAID Boresha Afya Project -Jhpiego Tanzania, Dar es Salaam, United Republic of Tanzania, 2President’s Malaria Initiative/United States Agency for International Development, Tanzania, Dar es Salaam, United Republic of Tanzania, 3Malaria Branch, Division of Parasitic Diseases and Malaria, Center for Global Health, Centers for Disease Control and Prevention, Dar es Salaam, United Republic of Tanzania, 4Jhpiego Headquarters U.S.A, Baltimore, MD, United States, 5National Malaria Control Programme, Tanzania Ministry of Health, Community Development, Gender, Elderly and Children, Dar es Salaam, United Republic of Tanzania, 6Regional Health Management Team, Dar es Salaam, United Republic of Tanzania, 7USAID Boresha Afya Project –Path Tanzania, Dar es Salaam, United Republic of Tanzania, 8USAID, Dares Salama, Dar es Salaam, United Republic of Tanzania, 9Jhpiego Headquarters U.S.A, Dar es Salaam, United Republic of Tanzania

BRINGING LLIN DISTRIBUTION CLOSER TO COMMUNITIES IN GUINEA THROUGH ADAPTIVE MANAGEMENT

Aissata Fofana1, Mohamed Sitan Keita1, Hamidou Barry2, Mohamed Saran Condé1, Lamine Bangoura1, Eugène Kaman Lama1, Alioune Camara1, Donal Bisanzio1, Elizabeth Pich1


Evidence to Action: Accelerating Introduction of Typhoid Conjugate Vaccines in Africa

Meeting Room 12
Wednesday, November 18
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

Vaccination is a promising strategy to reduce morbidity & mortality caused by typhoid. Each year, typhoid accounts for nearly 11 million cases and >116,000 deaths worldwide. The disease is mainly spread through contaminated food & water, with the highest burden in sub-Saharan Africa & Asia. While typhoid can be treated with antibiotics, multidrug-resistant (MDR) & extensively drug resistant (XDR) typhoid are rising – both more difficult & costly to treat. In addition, access to care is often limited, which can lead to increased complications of the disease. Current trends in drug resistance, urbanization, & climate change may increase typhoid transmission & hamper control efforts. While improvements in water, sanitation, & hygiene are the major ways to break the transmission cycle, many countries in sub-Saharan Africa lack the necessary infrastructure. Until these investments can be made in all countries, vaccination is an important & effective adjunct to prevent typhoid. In March 2018, the World Health Organization (WHO) recommended the introduction of the prequalified typhoid conjugate vaccine (TCV) for infants & children beginning at six months of age in campaigns & routine vaccinations in endemic countries. Subsequently, Gavi, the Vaccine Alliance earmarked $85M to fund the introduction of TCV in the world’s poorest countries. Two countries in Africa, Liberia & Zimbabwe, will introduce TCV into their immunization programs when it is safe to do so, with other countries to follow. As most of the supporting data that informed global decisions was generated in Asia, understanding the performance of TCV in Africa is critical to driving country introduction decisions. The Typhoid Vaccine Acceleration Consortium (TyVAC), led by the Center for Vaccine Development and Global Health (CVD) at the University of Maryland School of Medicine & THECA consortium, led by the University of Cambridge, are generating such data through studies in Malawi, Burkina Faso, Ghana & the Democratic Republic of Congo (DRC). These data are critical to inform decision-making & accelerate the introduction of TCVs in Africa. This symposium will present data on the ongoing studies in Malawi, Ghana, & DRC. The objectives are: (1) Provide data from the first clinical trial of TCV in Africa, including safety, immunogenicity, & effectiveness in Malawi; (2) Discuss the status of planned studies in Ghana & surveillance data in DRC; & (3) Understand the importance of these data to regional & country policy-makers for TCV introduction. The session will begin with an overview of global policy recommendations, followed by data on the clinical studies, & ending with policy implications for TCV introduction in Africa. There will be time for discussion.

Chair
Kathleen M. Neuzil
Center for Vaccine Development and Global Health at the University of Maryland School of Medicine, Baltimore, MD, United States

Florian Marks
International Vaccine Institute, Seoul, Republic of Korea
1:45 p.m.  
SAFETY, IMMUNOGENICITY, AND EFFECTIVENESS OF TYPHOID CONJUGATE VACCINES IN MALAWI  
Priyanka Patel  
Malawi-Liverpool Wellcome Trust, Blantyre, Malawi  

2:05 p.m.  
USING DATA TO SUPPORT TYPHOID CONJUGATE VACCINE INTRODUCTION IN AFRICA. A CLUSTER-RANDOMIZED TRIAL IN GHANA  
Ellis Owusu-Dabo  
Kwame Nkrumah University of Science and Technology, Kumasi, Ghana  

2:25 p.m.  
TYPHOID SURVEILLANCE IN THE DEMOCRATIC REPUBLIC OF CONGO (DRC)  
Octavie Lunguya  
University of Kinshasa, Faculty of Medicine, Kinshasa, Democratic Republic of the Congo  

2:45 p.m.  
TYPHOID CONJUGATE VACCINE INTRODUCTION IN AFRICA: REGIONAL AND COUNTRY POLICY CONSIDERATIONS  
Phionah Atuhebwe  
World Health Organization Regional Office for Africa, Brazzaville, Republic of the Congo  

Scientific Session 94  
Mosquitoes: Vector Biology - Epidemiology II  
Meeting Room 13  
Wednesday, November 18  
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone  
CHAIR  
John Marshall  
University of California, Berkeley, Berkeley, CA, United States  
Bernard Kouassi  
Abt Associates/Vectorlink, Abidjan, Côte D’Ivoire  

1435  
MODELING NOVEL GENETIC CONTROL STRATEGIES FOR Aedes aegypti DISEASE VECTORS  
John M. Marshall1, Héctor M. Sánchez C.1, Jared B. Bennett1, Sean L. Wu1, Tomás M. León1, Gordana Rašić2, Omar S. Akbari3  
1University of California, Berkeley, Berkeley, CA, United States, 2Australian Institute of Tropical Health and Medicine, Townsville, Australia  

1436  
OPPORTUNISTIC BLOOD HOST UTILIZATION AND SPATIAL HETERGENEITY OF ANOPHELES BITES PROMOTE PERSISTENT MALARIA TRANSMISSION IN MADANG, PAPUA NEW GUINEA  
John B. Keven1, Michelle Katusele2, Rebecca Vinit3, Daniella Rodriguez-Rodriguez4, Manuel Hetzel5, Moses Laman6, Leanne Robinson7, Stephan Karl4, Edward D. Walker1  
1Michigan State University, East Lansing, MI, United States, 2PNG IMR, Madang, Papua New Guinea, 3Swiss Tropical and Public Health Institute, Basel, Switzerland, 4Burnet Institute, Melbourne, Australia, 5Australian Institute of Tropical Health and Medicine, Townsville, Australia  

1437  
The Anopheles gambiae vitellogenin regulates fertility and affects plasmodium falciparum development  
Iryna Stryapunina, Lydia Mendoza, Maurice A. Itoe, W. Robert Shaw, Kristine Welringer, Flaminia Catteruccia  
Harvard University, Boston, MA, United States  

1438  
RELEVANCE OF ENTOMOLOGICAL MONITORING DATA IN DECISION MAKING FOR APPROPRIATE AND SUSTAINABLE MALARIA VECTOR CONTROL IN CÔTE D’IVOIRE  
Bernard L. Kouassi1, Constant V. Eidi2, Emmanuel Tia1, Lucien Y. Konan1, Maurice A. Aki1, Alphonse A. Koffi1, Allassane F. Ouattara2, Antoine Tano7 Mear1, Constant G. Gbalegba1, Pascal Zinzinhoue1, Blaise Kouadio1, McKenzie Andre1, Seth R. Irish1, Jennifer Armistead1, Dereje Bengela1, Ndombour G. Cissé1, Cecilia Flatley1, Joseph Chabi1  
1PMI VectorLink Project, Abidjan, Côte D’Ivoire, 2´Swiss Center of Scientific Research, Abidjan, Côte D’Ivoire, 3Centre of Veterinary and Medical Entomology, Abidjan, Côte D’Ivoire, 4National Institute of Public Hygiene, Abidjan, Côte D’Ivoire, 5National Institute of Public Health, Pierre Richet Institute, Bouaké, Côte D’Ivoire, 6National Malaria Control Programme, Abidjan, Côte D’Ivoire, Abidjan, Côte D’Ivoire, 7U.S. President’s Malaria Initiative, USAID, Abidjan, Côte D’Ivoire, 8U.S. President’s Malaria Initiative, Entomology Branch, U.S. Centers for Disease Control and Prevention, Atlanta, GA, United States, 9U.S. President’s Malaria Initiative, USAID, Washington, DC, United States, 10PMI VectorLink Project, Washington, DC, United States  

1439  
LABORATORY DEMONSTRATION OF TRANSOVARIAL TRANSMISSION OF RIFT VALLEY FEVER VIRUS IN Culex Tarsalis Mosquitoes  
Nicholas A. Bergren, Erin M. Borland, Daniel A. Hartman, Rebekah C. Kading  
Colorado State University, Fort Collins, CO, United States  

1440  
ASSESSING ULTRA-FINE-SCALE FACTORS TO IMPROVE HUMAN WEST NILE VIRUS DISEASE MODELS IN THE CHICAGO AREA  
Johnny Jelmen1, Patrick Irwin2, William Brown1, Surendra Karl2, Marilyn O’Hara Ruiz1, Bo Li1, Rebecca Smith1  
1University of Illinois, Urbana, IL, United States, 2Northwest Mosquito Abatement District, Wheeling, IL, United States  

1441  
EFFECTS OF HETEROGENEOUS MICROCLIMATE TEMPERATURES ON THE RNA INTERFERENCE PATHWAY OF Aedes aegypti  
Tyler Pohlenz, Byul Hur, Madhav Erraguntla, Mark Lawley, Mustapha Deboun, Jeremy Vela, Chris Fredregill, Martin Reyna, Zach Adelman, Kevin Myles  
Texas A&M University, College Station, TX, United States  

Scientific Session 95  
Filariasis: Epidemiology and Control II  
Meeting Room 14  
Wednesday, November 18  
1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone  
CHAIR  
Obiora Enenanya  
Washington University, St. Louis, MO, United States  
Moses Katabarwa  
The Carter Center, Atlanta, GA, United States  

1442  
FOLLOW UP OF CHILDREN ANTIGEN-POSITIVE FOR LYMHPHATIC FILARIOIS IDENTIFIED DURING A TRANSMISSION ASSESSMENT SURVEY IN HAITI  
Marisa A. Hast1, Alain Javel1, Eurica Denis2, Kira A. Barbre3, Jonas Rigodon4, Keri Robinson1, Katherine Gass2, Christine Dubray3  
1CDC, Atlanta, GA, United States, 2IMA World Health, Port-au-Prince, Haiti, 3Task Force for Global Health, Atlanta, GA, United States, 4CDC, Port-au-Prince, Haiti
INCREASED BENEFIT OF SEMI-ANNUAL TREATMENT WITH ABBENDAZOLE ALONE TO CLEAR INDIVIDUAL INFECTION WITH WUCHERERIA BANKROFTI, WHEN COMPARED WITH ANNUAL TREATMENT: LONGITUDINAL ANALYSIS FROM TWO COHORT DATA FROM CENTRAL AFRICA

Jérémy T. Campillo1, Naomi P. Awaca-Uvon2, Jean-Paul Tambwe2, Godé Kuyangisa Simuna1, Gary J. Weil3, Michel Boussinesq4, Cédric B. Chesnais1, Sébastien D. Pion1
1Institut de Recherche pour le Développement, Montpellier, France, 2Ministry of health, Kinshasa, Democratic Republic of the Congo, 3Washington University School of Medicine, St. Louis, MO, United States

ONCHOCERCIASIS TRANSMISSION LIKELY INTERRUPTED IN MUCH OF THE REMAINING ACTIVE ENDEMIC AREA IN THE AMERICAS

Lindsay Rakers1, Mauricio Sauerbery2, Carlos Botto2, Andrea de Padua Careli Dantas1, Oscar Noya-Alarcon2, João Luiz Pereira De Araujo2
1Centers for Disease Control and Prevention, Atlanta, GA, United States, 2Onchocerciasis Elimination Program for the Americas, Guatemala City, Guatemala, 3CAICET/UCV/CMT, Puerto Ayacucho, Bolivarian Republic of Venezuela, 4DEVIT/VS/MS, Brasilia, Brazil

DISPERAL OF SIMULIUM VECTORS AND ITS EFFECT ON ONCHOCERCIASIS ELIMINATION DEMYSTIFIED. LESSONS FROM THE ELIMINATION PROGRAMS

Moses Katabarwa1, Peace Habomugisha1, Zerihun Tadesse2, David Oguttu3, Aderajew Mohammed1, Edson Byamukama2, Abedal Yilak2, Tewodros Seid1, Kadu Meribo1, Lauri Bernard1, Emily Griswold1, Frank O. Richards1
1The Carter Center, Atlanta, GA, United States, 2The Carter Center, Kampala, Uganda, 3The Carter Center, Addis Ababa, Ethiopia, 4Ministry of Health, Vector Control Division, Kampala, Uganda

A GEOSPATIAL ANALYSIS OF THE IMPACT OF INTERVENTION ON ONCHOCERCIASIS ENDEMICITY IN CÔTE D’IVOIRE

Obiora Eneanya4, Benjamin G. Koudou2, Yeo Souleymane1, Marie-Madeleine Kouakou1, Peter U. Fischer1, Gary J. Weil2
1Washington University in St. Louis, St. Louis, MO, United States, 2Centre Suisse de Recherches Scientifiques en Côte d’Ivoire, Abidjan, Côte d’Ivoire, 3Ministry of Public Health and Hygiene, Abidjan, Côte D’Ivoire, 4Ministry of Public Health and Hygiene, Abidjan, Côte D’Ivoire

A COMPARISON OF ONCHOCERCIASIS SEROLOGICAL TOOLS AND POTENTIAL APPLICATION FOR PROGRAM USE

Eric Scott Elder1, Holly Chastain1, Henry M. Kanyi2, Sammy M. Njenga1, Joseph Kamgnio1, Laston Sitima4, Benjamin A. Marfo3, Guilherme M. Ogawa1, Vitaliano A. Camá1, W. Evan Secor1, Kimberly Y. Won1
1Centers for Disease Control and Prevention, Atlanta, GA, United States, 2Kenya Medical Research Institute (KEMRI), Nairobi, Kenya, 3Centre for Research on Filariasis and other Tropical Diseases (CRFilMT), Yaounde, Cameroon, 4Community Health Sciences Unit (CHSU), Lilongwe, Malawi, 5Ghana Health Service, Accra, Ghana

Symposium 96

Realizing the Potential of New Approaches to Lymphedema Management

Meeting Room 15

Wednesday, November 18

1:45 p.m. - 3:30 p.m. U.S. Eastern Time Zone

Not only is lymphedema among the most prevalent and impactful morbidities caused by the NTDs, but there is also a general perception that there is little hope of avoiding its relentless progression towards elephantiasis, whether caused by filarial infection, podoconiosis or other etiology. This symposium aims to present data that will dispel this misconception. The goal of this symposium is to highlight approaches and new technologies to facilitate lymphedema management, which through treatment and rigorous personal hygiene can bring dramatic benefits to affected patients. A brief, global overview of NTD-related lymphedema will set the stage for a review of tools for the clinical assessment of lymphedema (including 3D infrared imaging and tonometry) that have transformed our ability to quantify and track changes over time and with treatment. It is essential to recognize how effective treatment can be. This point will be emphasized first through a presentation of studies using lymphoscintigraphy to show that early, sub-clinical lymphatic damage in young children living in lymphatic filariasis-endemic areas of India is reversible after treatment with albendazole and DEC. Then, a review of the promise of hope for the tens of millions already suffering from lymphedema will be presented, emphasizing how new assessment tools provide quantitative documentation of the dramatic effectiveness that intensive personal management can bring. It is clear that effective lymphedema management reduces overt pathology, and even more importantly, reduces stigma and improves quality of life both for patients with podoconiosis and for those with lymphatic filariasis. We have today become much more knowledgeable about how to combat the scourge of lymphedema. What still needs to be learned, however, is how best to export these new tools and understandings to the patients, their care providers, and the medical and public health communities responsible for the management of individuals with lymphedema from any cause.
Formal Coding: 02000
2:05 p.m. DIFFERENCES IN HENIPAVIRUS TRANSMISSION POTENTIAL
Kyu H. Lee
Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States

2:25 p.m. PROGRESS IN VACCINE DEVELOPMENT AGAINST NIPAH VIRUS
Nicholas Jackson
Center for Epidemic Preparedness and Innovation, London, YT, United Kingdom

2:45 p.m. IMPLEMENTING INTERVENTIONS TO PREVENT NIPAH VIRUS TRANSMISSION IN BANGLADESH
Nazmun Nahar
International Center for Diarrheal Diseases Research, Bangladesh, Dhaka, Bangladesh

Break

Wednesday, November 18
3:30 p.m. - 3:45 p.m. U.S. Eastern Time Zone

Scientific Session 99
Dengue: Transmission and Virus-Host Interactions

Meeting Room 1
Wednesday, November 18
3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

CHAIR
Rebecca Christofferson
Louisiana State University, Baton Rouge, LA, United States
Peter B. Gallagher
Oxford University Clinical Research Unit, Ho Chi Minh City, Vietnam

1449 COST-BENEFIT ANALYSIS OF WOLBACHIA TO CONTROL DENGUE IN SUVA, FIJI AND PORT VILA, VANUATU
Donald S. Shepard1, Dhwani Harirhan2, Anaseini Ratu2, Katherine L. Anders3
1Brandeis University, Waltham, MA, United States, 2World Mosquito Program, Suva, Fiji, 3Monash University, Melbourne, Australia

1450 TEMPORAL PATTERNS IN SYNCHRONY IN THE DYNAMICS OF DENGUE: THE ROLE OF TEMPERATURE AND IMMUNITY
Bernardo Garcia-Carreras1, Angkiana T. Huang1, Bingyi Yang1, Henrik Salje2, Mary K. Grabowski3, Sopon Jamsinthaworn4, Justin Lessler5, Derek A. Cummings1
1University of Florida, Gainesville, FL, United States, 2University of Cambridge, Cambridge, United Kingdom, 3Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, 4Thailand Ministry of Public Health, Nonthaburi, Thailand

1451 TEMPORALLY INTEGRATED SINGLE CELL RNA SEQUENCING ANALYSIS OF CONTROLLED AND NATURAL DENV-1 INFECTIONS
Adam Waickman1, Heather Friberg1, Gregory D. Gromowski2, Wiriya Rutvisuttinunt1, Tao Li1, Hayden Siegfried1, Kaitlin Victor1, Caitlin Kuklis1, Michael K. McCracken6, Stefan Fernandez3, Anon Srikiatkhachorn2, Damon Ellison1, Richard G. Jarman1, Stephen J. Thomas2, Alan L. Rothman2, Timothy Endy4, Jeffrey R. Currier1
1Walter Reed Army Institute of Research, Silver Spring, MD, United States, 2Army Research Institute of Medical Sciences, Bangkok, Thailand, 3 Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand, 4University of Rhode Island, Providence, RI, United States, 5State University of New York, Upstate Medical University, Syracuse, NY, United States

1452 PROFILING OF THE EPITOPE DIVERSITY AND EVOLUTION OF DENGUE BINDING ANTIBODIES BY PEPTIDE MICROARRAY
Francesca Falconi-Agapito1, Karen Kerkhof1, Xiomara Merino4, Marjan Van Esbroeck6, Michael Talleedo2, Kevin K. Ariën1
1Virology Unit, Institute of Tropical Medicine, Antwerp, Belgium, 2Virology Unit, Instituto de Medicina Tropical Alexander von Humboldt, Lima, Peru, 3Department of Clinical Sciences, National Reference Center for Arboviruses, Institute of Tropical Medicine, Antwerp, Belgium

1453 OBESITY AND THE INCREASED RISK OF SEVERE DENGUE: POSSIBLE PATHOPHYSIOLOGICAL MECHANISMS
Peter B. Gallagher1, Nguyet M. Nguyen, Huynh T. Duyen, Nguyen L. Vuong, Tran T. Vi, Nguyen T. Kieu, Huynh L. Huy, Phung K. Lam, Dong T. Tam, Sophie Yacoub
Oxford University Clinical Research Unit, Ho Chi Minh City, Vietnam

1454 STRUCTURAL BASIS FOR ANTIBODY-MEDIATED INHIBITION OF FLAVIVIRUS NS1-TRIGGERED ENDOTHELIAL DYSFUNCTION
Scott B. Biering1, David L. Akey2, Marcus P. Wong1, William Clay Brown3, Nicholas TN Lo1, Henry Puerta-Guardo, Chunling Wang5, Jamie R. Konwerski1, Francielle Tramontini Gomes de Sousa1, Diego A. Espinosa1, Dustin R. Glassner6, Jeffrey Li7, Sophie F. Blanc, Stephen J. Elledge1, Michael J. Min5, P. Robert Beatty7, Janet L. Smith1, Eva Harris1
1Division of Infectious Diseases & Vaccinology, School of Public Health, University of California, Berkeley, Berkeley, CA, United States, 2Life Sciences Institute, University of Michigan, Ann Arbor, MI, United States, 3Harvard Medical School, Boston, MA, United States, 4Vaccine and Infectious Disease Organization, University of British Columbia, Canada, 5Institute of Molecular Biotechnology, University of Zürich, Switzerland, 6Comprehensive Cancer Center, University of California, Los Angeles, United States, 7Center for Cancer Research, Massachusetts General Hospital, Boston, MA, United States

Symposium 100

Meeting Room 2
Wednesday, November 18
3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

A major issue that has severely hampered the public health response to the current Ebola outbreak in the eastern Democratic Republic of Congo (DRC) involves security threats to Ebola response personnel and facilities. From January to May 2019 there were 174 attacks on Ebola Treatment Units by armed groups in North Kivu. Security issues have led to significant problems and delays in identifying and accessing those with the disease as well as their contacts, resulting in increased incidence. During the 2014 Ebola outbreaks in Sierra Leone and Liberia, a key strategic element of the public health response was to recruit community leaders and residents to be actively involved in many aspects of outbreak response that have conventionally been carried out only by public health experts and outsiders – including case
identification and contact tracing. This approach, referred to as the Community-Based Initiative (CBI) in Liberia, was critical in halting the Ebola epidemic in West Africa. Notably, the initiative was effective in countries where recent civil wars had fostered a social and political climate of government distrust and suspicion—conditions that are mirrored in the present circumstances found in the Democratic Republic of the Congo (DRC). The panelists in this symposium have expertise in social science, politics, vaccinology and epidemiology and were involved in the Ebola responses in Sierra Leone, Liberia, and the DRC in various capacities. They will discuss how community engagement and social mobilization efforts, such as those used by CBI, are integral to disease outbreak response by improving sensitivity to and effective action around imminent security threats based on public distrust and suspicion. In light of recent developments, notably the current COVID-19 public health emergency, the panel will also consider the broader applicability of community-based initiatives and methods on a more global scale for pandemic response more generally.

**CHAIR**
Harris Ali  
York University, Toronto, ON, Canada  
Axel T. Lehrer  
University of Hawaii, Honolulu, HI, United States

**THE COMMUNITY-BASED INITIATIVE IN THE 2014 EBOLA RESPONSE IN LIBERIA**
Mosoka Fallah  
PREVAIL/NIH, National Public Health Institute of Liberia, Monrovia, Liberia

**GETTING ACTION TO LIMIT EBOLA RISKS/TRANSMISSION: LESSONS FROM INFORMAL URBAN SETTLEMENTS IN FREETOWN**
Joseph McCarthy  
Njala University, Moyamba District, Sierra Leone

**MODELING THE EPIDEMIOLOGICAL IMPACT OF A COMMUNITY-BASED INITIATIVE TO ADDRESS RESISTANCE, INSECURITY, AND MOBILITY DURING THE EBOLA OUTBREAK IN THE EASTERN DRC**
Laura Skrip  
Institute for Disease Modeling, Bellevue, WA, United States

**EBOLA AND COVID-19: THE ROLE OF SOCIAL INFRASTRUCTURE**
Harris Ali  
York University, Toronto, ON, Canada

**Late-Breaker Abstract Session 101**

**Late-Breakers in Clinical and Applied Sciences**

**Meeting Room 3**
Wednesday, November 18  
3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

This session is specifically designed for brief presentations of new data obtained after the closing date for abstract submission. See Late-Breaker Abstract Presentation Schedule booklet (available online) for the presentation schedule.
CLINEPIDB.ORG: GLOBAL HEALTH DATA SHARING, SEMANTIC HARMONIZATION AND EXPLORATORY DATA ANALYSIS

Brianna Lindsay1, Cristina Aurrecoechea2, John Brestelli1, Brian Brunk1, Danielle Callan1, Dave Faller1, Steve Fischer1, Danica Helb1, Jay Humphrey1, John Judkins1, Jessica C. Kissinger1, David S. Roos1, Sheena Shah Tomko1, Christian J. Stoeckert Jr1, Jie Zheng1

1University of Pennsylvania, Philadelphia, PA, United States, 2University of Georgia, Athens, GA, United States

Late-Breaker Abstract Session 103

Late-Breakers in Coronavirus

Meeting Room 5
Wednesday, November 18
3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

This session is specifically designed for brief presentations of new data obtained after the closing date for abstract submission. See Late-Breaker Abstract Presentation Schedule booklet (available online) for the presentation schedule.

CHAIR
Noreen A. Hynes
Johns Hopkins School of Medicine, Baltimore, MD, United States
Katherine R. Dobbs
Case Western Reserve University, Cleveland, OH, United States

Symposium 104

Accelerating New Tools for Radical Cure of vivax Malaria from Clinical and Operational Research to Policy

Meeting Room 6
Wednesday, November 18
3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

Tafenoquine, a single-dose radical cure treatment, and new diagnostics could transform treatment and elimination prospects for P. vivax malaria. Widespread use of tafenoquine depends on our ability to identify all cases of P. vivax malaria and safely screen patients’ glucose-6-phosphate dehydrogenase (G6PD) enzyme activity. The potential of this expanded access will only be realized when accurate, reliable point-of-care (POC) malaria and G6PD testing is concurrently adopted in vivax-endemic settings. This symposium will explore the modeling, clinical, and operational research platforms that have been established to generate the tools and data needed to bridge the gap between current P. vivax case management practices and future elimination goals. The symposium has three themes: 1. Advent of new diagnostics to support improved case management. New diagnostic tests for P. vivax: The first speaker will present an assessment of different biomarkers for *Plasmodium vivax* infection used as targets of new diagnostics to inform P. vivax case management and elimination. A clinical research platform for the validation of novel G6PD tests was established across Brazil, Ethiopia the US. The second speaker will present a pooled analysis of performance and usability data generated using the SD Biosensor STANDARD G6PD test. 2. Potential impact of new tools on P. vivax malaria - the third speaker will present the work undertaken by Institut Pasteur and Fiocruz on a transmission model of the rollout and potential impact of tafenoquine on P. vivax in Brazil, adapted from a mathematical model developed for Papua New Guinea. Modeling examined the potential direct benefit to treated patients and indirect benefit by preventing onward transmission, thereby reducing population-level transmission in the entire community. 3. Assessing the operational feasibility of integrating new P. vivax products to achieve best clinical practices and elimination goals. TRuST study - the fourth speaker will present the planned approach to assess the operational feasibility of providing appropriate radical cure (tafenoquine or primaquine) after quantitative G6PD testing under field conditions and the practicalities of implementation. TRuST is jointly sponsored by the Ministry of Health and Medicines for Malaria Venture. Pathway for policy adoption of new tools for radical cure in Myanmar - New tools for P. vivax, including the POC G6PD diagnostic and tafenoquine, expand the armamentarium for radical cure and have the potential to play a critical role in reaching elimination goals. The last speaker will present on the pathway forward in Myanmar toward policy change and key considerations for future adoption and deployment of the new tools for radical cure.

CHAIR
Jimee Hwang
CDC, Atlanta, GA, United States
Caroline Lynch
Medicines for Malaria Ventures, Geneva, Switzerland

3:45 p.m.
NEW DIAGNOSTIC TESTS FOR P. VIVAX
Allison L. Golden
PATH, Seattle, WA, United States

4 p.m.
A CLINICAL RESEARCH PLATFORM FOR THE VALIDATION OF NOVEL G6PD TESTS WAS ESTABLISHED ACROSS BRAZIL, ETHIOPIA THE US
Daniel Yilma
Jimma University, Jimma, Ethiopia

4:15 p.m.
POTENTIAL IMPACT OF NEW TOOLS ON P. VIVAX MALARIA
Michael White
Institut Pasteur, Paris, France

4:30 p.m.
PLANNED APPROACH TO ASSESS THE OPERATIONAL FEASIBILITY OF PROVIDING APPROPRIATE RADICAL CURE AFTER QUANTITATIVE G6PD TESTING IN BRAZIL
Marcus Lacerda
Fiocruz Amazônia/Tropical Medicine Foundation Dr. Heitor Vieira Dourado, Manaus, Amazonas, Brazil

4:45 p.m.
PATHWAY FOR POLICY ADOPTION OF NEW TOOLS FOR P. VIVAX IN MYANMAR
Wint Phyo Than
Ministry of Health and Sports, Nay Pi Taw, Myanmar
Scientific Session 105

West Nile and Other Viruses

Meeting Room 7
Wednesday, November 18
3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

CHAIR
Laura Kramer
Wadsworth Center, NYSDOH; SUNY, Albany, NY, United States
Marta Piche-Ovares
Universidad de Costa Rica, Heredia, Costa Rica

1463
CORRELATES OF PROTECTION FOR POWASSAN VIRUS IN MOUSE MODELS OF INFECTION

E. Taylor Stone1, Mariah Hassert1, Gregory D. Ebel2, Alec J. Hirsch3, James D. Brien1, Amelia K. Pinto1

1Saint Louis University, Saint Louis, MO, United States, 2Colorado State University, Ft. Collins, CO, United States, 3Oregon Health & Science University, Portland, OR, United States

1464
EMERGENCE AND SPREAD OF POWASSAN VIRUS IN THE NORTHEASTERN UNITED STATES


1Yale School of Public Health, New Haven, CT, United States, 2Broad Institute of MIT and Harvard, Cambridge, MA, United States, 3Maine Medical Center Research Institute, Scarborough, ME, United States, 4Wadsworth Center, New York State Department of Health, Slingerlands, NY, United States, 5The Connecticut Agricultural Experiment Station, New Haven, CT, United States, 6Colorado State University, Fort Collins, CO, United States, 7Tufts University, North Grafton, MA, United States, 8Cornell University, Ithaca, NY, United States, 9Emory Vaccine Center, Atlanta, GA, United States

1465
A NOVEL INSECT-SPECIFIC VIRUS AS A VECTOR FOR DEVELOPING FLAVIVIRUS VACCINES EMPHASIZES NEW POSSIBILITIES FOR HIGH DEGREES OF SAFETY WITHOUT SACRIFICING IMMUNOGENICITY

Danielle LaBrrie Porier1, Sarah N. Wilson1, Dawn I. Auguste1, Andrew Leber2, James D. Weger-Lucarelli1, Scott C. Weaver1, Albert J. Auguste1

1Virginia Polytechnic Institute and State University, Blacksburg, VA, United States, 2Landos Biopharma Inc., Blacksburg, VA, United States, 3University of Texas Medical Branch, Galveston, TX, United States

1466
OBESE MICE HAVE A HIGHER MORTALITY RATE AND ALTERED IMMUNE RESPONSES FOLLOWING FLAVIVIRUS INFECTION IN COMPARISON TO WILD TYPE MICE

Elizabeth Geerling, Mariah Hassert, E Taylor Stone, Tara L. Steffen, Amelia K. Pinto

Saint Louis University, St. Louis, MO, United States

1467
WEST NILE VIRUS GENOTYPE DISPLACEMENT IS DRIVEN BY INCREASED INFECTIVITY IN CULEX MOSQUITOES AND AVIAN TRANSMISSION EFFICIENCY

Sean M. Biasioluknia1, Alan P. Dupuis II2, Steven D. Zink3, Cherri A. Koetzner3, Joseph G. Maffei2, Jennifer C. Owen2, Hannah Landwerlen3, Laura D. Kramer3, Alexander T. Ciota3

1NYS DOH, Wadsworth Center, Griffin Laboratory, Slingerlands, NY, United States, 2Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI, United States

1468
STRUCTURE BASED ANALYSIS OF ANTIBODY BINDING TO FLAVIVIRUS E-DIMER AS MECHANISM OF POTENT NEUTRALIZATION

Cameron R. Adams1, Huy Tu2, Ellen Young3, T. Dehthi4, Ralph Baric5, Aravinda de Silva6, Premkumar Lakshmanane7

1University of North Carolina, Chapel Hill, NC, United States, 2University of Vermont, Burlington, VT, United States

1469
ACTIVE CIRCULATION OF WEST NILE VIRUS AND SAINT LOUIS ENCEPHALITIS VIRUS IN TWO DENGUE ENDEMIC REGIONS OF COSTA RICA

Marta Piche-Ovares1, Mario Romero-Vega2, Diana Vargas-González3, Daniel Barrantes-Murillo4, Claudio Soto-Garita5, Alejandro Alfaro-Alarcón6, Carlos Jiménez-Sánchez7, Eugenia Corrales-Aguilar8

1Universidad de Costa Rica, San José, Costa Rica, 2Universidad Nacional, Heredia, Costa Rica

Symposium 106

G6PD Deficiency: Advances in Point of Care Testing

Meeting Room 8
Wednesday, November 18
3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

Malaria has seen a significant decline over the last decades, though to a much greater extent in P. falciparum compared to P. vivax. In contrast to P falciparum, P vivax forms dormant liver stages (hypnozoites) that reactivate weeks to months after the primary episode causing significant morbidity and mortality among affected populations. Hypnozoites are metabolically inactive, accordingly treatment is difficult. The 8-aminoquinolines primaquine (PQ) and the more recently introduced tafenoquine (TQ) are the only drugs on the market that effectively clear hypnozoites from the human host. While well tolerated in most patients, either drug can cause severe and potentially lethal hemolysis in individuals with low activities of the glucose-6-phosphate dehydrogenase enzyme (G6PD). Identifying patients with low G6PD levels is therefore crucial to ensuring safe treatment. The half-life of PQ is approximately 6 hours, treatment can be aborted if the patient develops a hemolytic crisis, PQ based radical cure is therefore frequently administered in the absence of routine G6PD testing or following screening with qualitative tests that can only identify individuals with very low G6PD activities. In contrast, the half-life of TQ is around 14 days and treatment is contraindicated in patients with low and intermediate G6PD activities; to date these patients can only be diagnosed by a quantitative measurement. The current quantitative reference method to measure G6PD activity, spectrophotometry, is
complicated, costly and time consuming, not suitable for use at the bed side, but crucial for the evaluation of novel diagnostics. New quantitative and qualitative diagnostics have been developed over the last years that show a performance that may render these assays suitable for routine use at the bed side. This symposium covers essential aspects of quantitative and qualitative G6PD testing in the context of *P. vivax* treatment. The symposium will provide an update on current and future diagnostics, the reliability of the current reference method, field performance of novel point of care diagnostics, a qualitative assessment on the user friendliness of some of these diagnostics and the cost-effectiveness of novel diagnostics in routine care.

**CHAIR**

Benedikt Ley  
*Menzies School of Health Research, Casuarina, Australia*

Rosalind E. Howes  
FIND, Geneva, Switzerland

**3:45 p.m.**

**G6PD DEFICIENCY – AN UPDATE ON THE DIAGNOSTIC PIPELINE, GONZALO DOMINGO, PATH**

Gonzalo J. Domingo  
PATH, Seattle, WA, United States

**4:05 p.m.**

**PERFORMANCE OF THE BIOSENSOR UNDER FIELD CONDITIONS IN BANGLADESH**

Shafual Alam  
*International Center for Diarrheal Disease Research, Bangladesh, Dhaka, Bangladesh*

**4:25 p.m.**

**QUALITATIVE EVALUATION OF BIOSENSOR USE AND TRAINING**

Rosalind E. Howes  
FIND, Geneva, Switzerland

**4:45 p.m.**

**COST-EFFECTIVENESS ANALYSIS OF SEX-BASED TREATMENT ALGORITHMS FOR *PLASMODIUM VIVAX* MALARIA USING AVAILABLE DIAGNOSTICS TO ACCELERATE ACCESS TO RADICAL CURE**

Angela Devine  
*University of Melbourne / Menzies School of Health Research, Melbourne, Australia*

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**Scientific Session 107**

American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Malaria - New Molecular and Omic Tools

**Meeting Room 9**

**Wednesday, November 18, 3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone**

**Supported with funding from the Burroughs Wellcome Fund**

**CHAIR**

Ian H. Cheeseman  
Texas Biomedical Research Institute, San Antonio, TX, United States

Regina Joice Cordy  
Wake Forest University, Winston-Salem, NC, United States

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**1663**

HIGH-THROUGHPUT FUNCTIONALIZATION OF THE *TOXOPLASMA GONDII* PROTEOME

Tyler Smith¹, Gabriella Lopez-Perez², Emily Short¹, Sebastian Lourido¹

¹Whitehead Institute for Biomedical Research, Massachusetts Institute of Technology, Cambridge, MA, United States, ²University of Puerto Rico at Mayaguez, Mayaguez, PR, United States

**1471**

RELATEDNESS AND MUTATION SHAPE THE GENOMIC DIVERSITY OF RECURRENT *PLASMODIUM VIVAX* INFECTION

Aliou Dia¹, Catherine Jett¹, Simon G. Trevino¹, Cindy Chu², Kanlaya Sriprawat¹, Timothy Anderson¹, Francois Nosten², Ian H. Cheeseman³

¹Texas Biomedical Research Institute, San Antonio, TX, United States, ²Centre for Tropical Medicine and Global Health, Nuffield Department of Medicine Research Building, University of Oxford, Oxford, United Kingdom  
(ACMCIP Abstract)

**1472**

A NOVEL AMPLICON DEEP SEQUENCING TOOL FOR STUDYING *PLASMODIUM VIVAX* INFECTIONS AT THE CLONAL LEVEL

Jason Rosado¹, Shazia Ruybal-Pesantez², Jacob Munro², Jiru Han², Zeinabou Traore¹, Ghania Boularias¹, Michael White¹, Melanie Bahlo³, Alyssa Barry¹, Dionicia Gamboa¹, Ivo Mueller¹

¹Institut Pasteur, Paris, France, ²Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia, ³Deakin University, Melbourne, Australia, ²Universidad Peruana Cayetano Heredia, Lima, Peru  
(ACMCIP Abstract)

**1473**

OVER 100 INDEPENDENT RECOMBINANT PROGENY FROM A NOVEL *PLASMODIUM FALCIPARUM* EXPERIMENTAL GENETIC CROSS

Ashley Michael Vaughan¹, Sudhir Kumar¹, Xue Li², Katrina Button-Simons³, Spencer Kennedy³, Ann Reyes³, Mackenzie Sievert³, Lisa Checkley³, Merseret Haile³, Abeer Sayeed³, Katelyn Vendrely¹, Ian Cheeseman³, Tim Anderson³, Mike Ferdiq³

¹Seattle Children's Research Institute, Seattle, WA, United States, ²Texas Biomedical Research Institute, San Antonio, TX, United States, ³University of Notre Dame, South Bend, IN, United States, ²Texas Biomedical Research Institute, Seattle, TX, United States

**1474**

A METABOLOMICS APPROACH IDENTIFIES SPECIFIC BIOMARKERS OF DISEASE SEVERITY IN HUMAN CASES OF *PLASMODIUM KNOWLESI* MALARIA IN MALAYSIA

Regina Joice Cordy¹, Miriam Lachs³, Mariko S. Peterson², Khamisah A. Kadir³, VuLinh Tran¹, Karan Uppal³, Dean P. Jones², Balbir Singh³, Mary R. Galinski³

¹Wake Forest University, Winston-Salem, NC, United States, ²Emory University, Atlanta, GA, United States, ³Universiti Malaysia Sarawak, Kuching, Malaysia  
(ACMCIP Abstract)

**1475**

REGULATION OF *ANOPHELES ADIPOKINETIC HORMONE* SIGNALING IN MALARIA PARASITE SPOROGONY

Vincent O. Nyasembe, Timothy Hamerly, Prachi V. Khare, Borja Lopez-Gutiérrez, Rhoel R. Dinglasan

University of Florida, Gainesville, FL, United States
Symposium 108

The Future is in Our Hands! Diagnostics for AMR

Meeting Room 10

Wednesday, November 18, 3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

Years of unrestricted use of antibiotics and other antimicrobial medicines have created a ticking time bomb that threatens all of modern medicine. Without effective diagnostics, routine surgery, childbirth and cancer and diabetes therapy will become high risk. AMR currently kills 70,000 patients a year. By 2050 that figure will become 10 million. Resistant infections require more expensive drugs, long stays in hospitals and will push another 28 million people into poverty. Diagnostics play an important role in patient management to reduce misuse of antibiotics, surveillance of AMR trends and monitoring the effectiveness of antibiotic stewardship strategies. However, there is a scarcity of educational materials for the current and next generation of health providers on the use of diagnostics in fight against AMR. Following a call for public-private partnerships in the global fight against AMR at the World Economic Forum in Davos in 2016, LSHTM developed a massive open online course (MOOC) entitled, “The Role of Diagnostics in the AMR Response,” in partnership with Becton, Dickinson and Company, ASLM, ALADDIV and the governments of Philippines and Indonesia joined this partnership to increase access to AMR education and drive workforce development to meet the challenge of AMR globally. The goal of the MOOC is to increase awareness of the role of diagnostics in the AMR response. The MOOC consists of 6 weekly modules addressing topics such as what is AMR and the role of diagnostics can play to reduce mis-use of antibiotics for common clinical syndromes, for screening and surveillance in healthcare associated infections, enteric infections and One Health. The course is free for anyone with an internet connection and an interest in combating AMR. Course material is presented using news stories, reports, film/video, Powerpoint presentations, animations, case studies from different countries and settings, and reference materials for further reading. All materials are downloadable for use as teaching materials. Since it was launched in Sept 2019, the course has reached more than 8,000 people. A post course survey showed that 97% of learners gained new knowledge, 87% have applied what they learned and 91% have shared what they learned with others. In this symposium, speakers will present the AMR situation in their region and the impact that this MOOC has had on increasing knowledge and use of diagnostics in the AMR response.

CHAIR
Noah Fongwen
London School of Hygiene and Tropical Medicine, London, United Kingdom

Rosanna Peeling
London School of Hygiene and Tropical Medicine, London, United Kingdom

3:45 p.m.
ONEHEALTH APPROACH AND AMR DIAGNOSTICS
Ndlovu Nqobile
African Society for Laboratory Medicine, Addis Ababa, Ethiopia

4:10 p.m.
ADVOCATING FOR THE USE OF DIAGNOSTICS TO SAVE ANTIBiotics USE
Carlos Gouvea
Latin America Alliance for in-vitro Diagnostics, Sao Paulo, Brazil, Sao Paulo, Brazil

4:35 p.m.
EFFECTIVENESS OF THE MOOC IN EDUCATING A LARGE WORLDWIDE AUDIENCE
Regina Berba
Ministry of Health, Philippines, Manila, Philippines

5 p.m.
THE FUTURE IN OUR HANDS. THE NEXT STEPS.
Rosanna Peeling
London School of Hygiene and Tropical Medicine, London, United Kingdom

Symposium 109

Using the Data You Have: Innovative Methods to Enhance Vector Control Evaluation and Decision-Making

Meeting Room 11

Wednesday, November 18
3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

Insights on the effectiveness of vector control interventions come from many sources like routine data, controlled trials, and modelling. This symposium will present three scenarios across five countries to illustrate how multiple methodologies of assessing impact can help provide information for decision-making. The first presenter will discuss the use of routine data to conduct ongoing, annual evaluations of indoor residual spraying (IRS) impact in Mali. The second presenter will illustrate how routine data was paired with modelling to optimize the timing of multiple interventions. The third presenter will discuss how models can be used to assist in decisions for insecticide-treated net placement and how collecting routine data can help validate and strengthen the models. The final presenter will look broadly across the various methods of using existing data to assess the effectiveness of vector control interventions, identify challenges, and propose opportunities for strengthening these approaches. A discussion at the conclusion will allow for the presenters and others to continue developing ideas on how to use available data for evaluation.

CHAIR
Molly L. Robertson
PATH, Washington, DC, United States

Laurence Slutsker
PATH, Washington, DC, United States

3:45 p.m.
MAKING VECTOR CONTROL IMPACT EVALUATION PART OF THE ROUTINE: A CASE STUDY FROM MALI
Jules Mihigo
US President’s Malaria Initiative, Bamako, Mali

4 p.m.
PAIRING ROUTINE DATA WITH MODELING TO INFORM THE TIMING OF IRS AND MASS DRUG ADMINISTRATION: ENVIRONMENTAL AND INTERVENTION-BASED SEASONALITY
Dorothy Echodu
Pilgrim Africa, Kampala, Uganda
Genomics for Typhoid Surveillance in South Asia

Meeting Room 12
Wednesday, November 18
3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

Typhoid fever, caused by Salmonella enterica serovar Typhi (Salmonella Typhi), remains endemic in South Asia and is a significant burden on patients and health systems. Antimicrobial resistance (AMR) in typhoid has been an increasing concern. The recent emergence and clonal expansion of new AMR variants (ceftiraxone resistance in extensively drug resistant (XDR) strains in Pakistan, highly fluoroquinolone-resistant triple mutants in India and Nepal, azithromycin-resistant strains in Bangladesh) highlight the real possibility that S. Typhi could acquire resistance to all available oral antibiotics. Genomic surveillance studies can be used to track movement of strains across geographic areas, identify hotspots for emergence of new strains and inform clinical treatment guidelines to respond to changing AMR patterns. In 2019, typhoid conjugate vaccine (TCV) was introduced in Pakistan to respond to the XDR outbreak, and other endemic countries are now facing important decisions regarding its introduction. These studies are also necessary to monitor the impact of vaccine introduction on the evolutionary dynamics of S. Typhi strains, particularly to facilitate inter- and intra-country coordination of intervention strategies in South Asia. The session will describe work in the region utilizing genomics data captured from enteric fever surveillance studies to highlight current trends. The speakers will present on work arising out of Bangladesh, Nepal, and Pakistan from the Surveillance for Enteric Fever in Asia Project (SEAP) and from India as part of the Surveillance for Enteric Fever in India Program (SEFI). The presenters will describe the genomic profiles of circulating S. Typhi strains, exploring the phylogenographical patterns in Nepal and genomic determinants of antimicrobial resistance, including XDR Typhi in Pakistan. The session will also cover how these data are being used to generate evidence to inform the decision-making process around TCV introduction in Bangladesh.

CHAIR
Samir Saha
Child Health Research Foundation, Dhaka, Bangladesh

Stephen Baker
Cambridge Institute of Therapeutic Immunology & Infectious Disease (CITIID), Cambridge, United Kingdom
1479

ASYMMETRIC MECHANISMS OF HYBRID MALE STERILITY IN RECIPROCAL CROSSES BETWEEN SPECIES OF THE ANOPHELES GAMBIAE COMPLEX
Jiangtao Liang, Igor V. Sharakhov
Virginia Tech, Blacksburg, VA, United States

1481

POPULATION GENOMICS OF ANOPHELES MINIMUS IN CAMBODIA
Brandy St. Laurent1, Nick Harding1, Kirk Rockett1, Eleanor Drury1, Sonia Goncalves1, Alistair Miles2, Dominik Kwiatkowski3
1Wellcome Sanger Institute, Cambridge, United Kingdom, 2Big Data Institute, Oxford, United Kingdom

1482

CONSTRUCTION AND ANALYSIS OF VISUALLY IMPAIRED Aedes aegypti MUTANTS
Matthew R. Gregory, Andrew Cameron, Hannah Cunniff, Aidan Cook, Megan Decker, Brian Dineen, Daniel Guobadia, Patrick Kollman, Jeannie Nash, Caroline Seymour, Calla Sullivan, Joseph Y. Tang, Michelle A. Whaley, Joseph E. O’Toosa
University of Notre Dame, Notre Dame, IN, United States

Scientific Session 112

Filariasis: Molecular Biology, Immunology and Diagnostics

Meeting Room 14
Wednesday, November 18
3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

CHAIR
Sasisekhar Bennuru
National Institutes of Health, Bethesda, MD, United States
Sarah E. Greene
Washington University in St Louis, Saint Louis, MO, United States

1483

ONCHOCERCA VOLVULUS: DETECTION OF CIRCULATING CELL FREE DNA IN BODY FLUIDS THROUGH THE DETECTION OF A NOVEL HIGHLY REPETITIVE DNA SEQUENCE
Sasisekhar Bennuru, Chinweoke Osigwe, Frimpong Kodua, Eric Dahlstrom, Thomas Nutman
National Institutes of Health, Bethesda, MD, United States

1484

DESCRIPTION OF A BRUGIA MALAYI MUCIN, BM18019: A MODEL GLYCOPROTEIN TO UNDERSTAND CIRCULATING FILARIAL ANTIGENS
Marla Hertz, Amy Rush, Philip Budge
Washington University in Saint Louis, St Louis, MO, United States

(ACMCIP Abstract)

1485

ASSESSMENT OF SEROLOGICAL RESPONSES TO WUCHERERIA BANCROFTI AND ONCHOCERCA VOLVULUS DURING POST-TREATMENT SURVEILLANCE FOR LYMPHATIC FILARIASIS, PLATEAU STATE, NIGERIA
Rebecca Castor1, Gregory S. Noland2, Barminas Kahansim3, Kenrick Anorue4, Yohana Sambo5, Abel Ejege6, Solomon E. Adelamo7, Bulus Mancha8, Nils Pilotté9, Steven A. Williams10, Emily Griwold11, Emmanuel S. Mir12, Frank D. Richards Jr13
1Emory University, Atlanta, GA, United States, 2The Carter Center, Atlanta, GA, United States, 3The Carter Center, Jos, Nigeria, 4Smith College, Northampton, MA, United States

A NEW ANTIBODY TEST FOR WUCHERERIA BANCROFTI INFECTION THAT IS USEFUL FOR ASSESSING THE IMPACT OF TREATMENT
Sarah E. Greene, Kurt Curtis, Peter U. Fischer, Gary J. Weil
Washington University in St Louis, Saint Louis, MO, United States

(INTEGRATED SERO PREVALENCE ASSESSMENT OF WUCHERERIA BANCROFTI AND ONCHOCERCA VOLVULUS IN THREE DISTRICTS CO-ENDEMIC FOR LYMPHATIC FILARIASIS AND ONCHOCERCIASIS IN GAMBELLA REGION, ETHIOPIA
Mohammed Hassan1, Aderajew Mohammed2, Tekola Endeshaw1, Tewodros Seid3, Fikre Seife4, Mossie Tamiru5, Kadu Meribo6, Emily Griswold6, Moses Katabarwa6, Frank Richards7, Zenihu Tadesse1
1The Carter Center, Addis Ababa, Ethiopia, 2Federal Ministry of Health, Addis Ababa, Ethiopia, 3The Carter Center, Atlanta, GA, United States

EFFICACY OF EMODEPside AGAINST ONCHOCERCA OCHENGI IN NATURAL INFECTED CATTLE
Germanus S. Bah1, Daniel Kulke2, Nicolas H. Bayang3, Sebastian Schneckener4, Ralph Kребber5, Henrietta F. Ngangyung5, David D. Ekale1, Youssouf M. Mfopot6, John D. Graham-Brown7, Vincent N. Tanya8, Martin Glenschek-Sieberth9, Benjamin L. Makepeace1
1Institut de Recherche Agricole pour le Développement, Ngaoundéré, Cameroon, 2Bayer Animal Health GmbH, Leverkusen, Germany, 3Bayer AG, Leverkusen, Germany, 4Bayer AG - Division Crop Science, Monheim, Germany, 5Institut de Recherche Agricole pour le Développement, Mankon, Cameroon, 6University of Liverpool, Liverpool, United Kingdom, 7Bayer AG - Division Pharmaceuticals, Leverkusen, Germany

SPATIAL TEMPORAL MODELING OF LINKED EPIDEMIOLOGICAL AND GENOMIC DATA OF CHADIAN GUINEA WORMS REVEALS PROGRAMMATIC RELEVANT TRANSMISSION CHARACTERISTICS
Jessica Ribado1, Nancy Li1, Elizabeth Thiele1, James Cotton2, Adam Weiss1, Hubert Zirimwabagabo1, Philippe Thchinedebt Ouakou1, Tchonfienet Moundai1, Guillaume Chabot-Couture2, Joshua L. Proctor1
1Institute for Disease Modeling, Bellevue, WA, United States, 2Vassar College, Poughkeepsie, NY, United States, 3Wellcome Sanger Institute, Hinxton, United Kingdom, 4The Carter Center, Atlanta, GA, United States, 5Ministry of Public Health, NDjamena, Chad

Symposium 113

Multisectoral Collaboration for Neglected Tropical Diseases (NTDs): Barrier Analyses and Opportunities for Multisector Coordination to Sustain NTD Programming

Meeting Room 15
Wednesday, November 18
3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone

As countries progress towards the 2030 SDGs targets aimed at sustaining the gains achieved in the fight against NTDs in line with the WHO NTD Roadmap, national programs are focusing on coordination and integration across sectors to achieve long-term objectives of prevention, control, and elimination of NTDs. It is critical to identify and leverage existing service delivery platforms for integration and mainstreaming of NTD programming for sustainability approaches. Research has shown that gains made
from mass drug administration (MDAs) alone cannot be sustained without a substantial level of investment in Education, WASH, MNCH and other relevant sectors. Establishing a responsive multisector coordination mechanism for NTD interventions through solid evidence is a pillar priority to sustain MDA gains and provide an integrated platform for collaborative implementation. USAID’s ACT to End NTDsWest program supported national programs conduct a barrier analysis in Ghana, Mali, Senegal and Sierra Leone. The analysis examined key structural and infrastructural factors that can motivate or hinder multisectoral collaboration for NTD programming and present tangible opportunities to address them. In addition, the assessment identified existing service delivery platforms that can bridge the communication and collaboration gap for MOH programs such as the School Feeding Program in Sierra Leone, the School Health and Hygiene unit in Ghana, the Sexual Reproductive MCH platform in Senegal, and the Malaria-NTD program in Mali. Across countries, barriers in effective coordination and collaboration included: 1) siloed planning and insufficient joint implementation within and outside MOH sectors to leverage on their existing platform to support NTD programming; 2) Limited NTD advocacy strategy and missed opportunities to raise awareness of NTDs and their impact on public health and economic growth, 3) coordination mechanisms largely driven by donor funding, 4) limited national level coordination of regional programing resulting in inadequate collaboration with other campaigns such as bednet distribution or national immunization days. The findings informed strategic development of multisector coordination approaches to effectively and intentionally engage relevant key sectors. For instance, the Ghana NTDP is revamping the intra-country coordination committee (ICCC) as the multisector coordination mechanism to formalize collaboration across key sectors for NTD interventions. In Mali, Senegal, and Sierra Leone, the national programs, are establishing strategic multisector coordination platforms with targeted and structured sub-committees to reform technical, infrastructural factors that can motivate or hinder multisectoral collaboration for NTD programming and present tangible opportunities to address them. In addition, the assessment identified existing service delivery platforms that can bridge the communication and collaboration gap for MOH programs such as the School Feeding Program in Sierra Leone, the School Health and Hygiene unit in Ghana, the Sexual Reproductive MCH platform in Senegal, and the Malaria-NTD program in Mali. Across countries, barriers in effective coordination and collaboration included: 1) siloed planning and insufficient joint implementation within and outside MOH sectors to leverage on their existing platform to support NTD programming; 2) Limited NTD advocacy strategy and missed opportunities to raise awareness of NTDs and their impact on public health and economic growth, 3) coordination mechanisms largely driven by donor funding, 4) limited national level coordination of regional programing resulting in inadequate collaboration with other campaigns such as bednet distribution or national immunization days. The findings informed strategic development of multisector coordination approaches to effectively and intentionally engage relevant key sectors. For instance, the Ghana NTDP is revamping the intra-country coordination committee (ICCC) as the multisector coordination mechanism to formalize collaboration across key sectors for NTD interventions. In Mali, Senegal, and Sierra Leone, the national programs, are establishing strategic multisector coordination platforms with targeted and structured sub-committees to reform technical, resource mobilizations, social mobilization, communication and advocacy approaches.

**CHAIR**

Stephen O. Omunyidde  
*World Vision, Washington, DC, United States*

Gagik Karapetyan  
*World Vision, Washington, DC, United States*

**3:45 p.m.**  
**THE ROLE OF SOCIAL AND BEHAVIOR CHANGE COMMUNICATION IN STRENGTHENING NTD PREVENTION AND CONTROL INTERVENTIONS**

Doris Bah  
*Ministry of Health and Sanitation - Sierra Leone, Freetown, Sierra Leone*

**4:15 p.m.**  
**THE INTEGRATION OF A MULTISECTORAL APPROACH IN THE REVITALIZATION OF THE ICCC AS THE CROSS-SECTOR PLATFORM FOR LONG SERVICE DELIVERY AND COORDINATION OF NTD ACTIVITIES.**

Benjamin Marfo  
*Ghana Health Services, Accra, Ghana*

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**Symposium 114**

**Measuring Progress and Challenges for Chagas Disease Control in the Americas**

**Meeting Room 16**

**Wednesday, November 18**

**3:45 p.m. - 5:30 p.m. U.S. Eastern Time Zone**

Chagas disease (CD), caused by the protozoan parasite Trypanosoma cruzi, is a vector (triatomine)-borne neglected tropical disease (NTD) particularly (but not exclusively) important in the Americas, where measuring progress towards its control is both essential and challenging. Population migration, increased urbanization, and environmental change have all contributed to make CD a disease of planetary relevance, well beyond its original distributional range. The World Health Organization (WHO) recently launched a new NTD roadmap, proposing CD goals to be reached between 2020 and 2030 that include achieving (and verifying where feasible) the interruption of intra-domiciliary (vectorial) transmission in an increasing proportion of the 21 CD-endemic countries in the Americas, as well as the interruption of blood transfusion, organ transplantation, and congenital transmission in endemic and non-endemic countries. Developing and implementing tools to reach, quantify, and verify progress towards the attainment of such targets is, therefore, paramount. This symposium will: describe data platforms that are being developed to collate, curate, and use CD seroprevalence (and other) data to measure temporal and spatial trends of Chagas disease incidence in endemic countries; review progress towards using the above mentioned platform to quantify the burden of disease in selected Latin American countries; describe innovative methods for integrated vector management towards interruption of intra-domiciliary transmission and control of new scenarios of transmission, and discuss issues regarding the epidemiology and control of CD in urban settings and challenges faced in its control and that of its vectors.

**CHAIR**

Maria-Gloria Basañez  
*Imperial College London, London, United Kingdom*

Luis G. Castellanos  
*Pan American Health Organization, Washington, DC, United States*

**3:45 p.m.**  
**THE DICTUM (DECREASING THE IMPACT OF CHAGAS DISEASE THROUGH MODELLING) PLATFORM: DEVELOPMENT, ADVANCES AND APPLICATIONS TO ESTIMATE CHANGES IN CHAGAS DISEASE INCIDENCE.**

Zulma M. Cucunubá  
*Imperial College London, London, United Kingdom*

**4:05 p.m.**  
**TOWARDS ESTIMATION OF CHAGAS DISEASE TRANSMISSION AND DISEASE BURDEN: DATA, INTERPRETATION AND UNCERTAINTY.**

Julia Ledien  
*University of Sussex, Brighton, United Kingdom*
Thursday, November 19

ASTMH Information Desk

Lobby
Thursday, November 19
8 a.m. - 6:45 p.m. U.S. Eastern Time Zone

Poster Session Viewing

Poster Hall
Thursday, November 19
Midnight - 6:45 p.m. U.S. Eastern Time Zone

Exhibit Hall
Visit the Exhibit Hall to view the schedule for each exhibit booth and connect with our exhibitors and learn about their products and services.

Sponsor Hall
Visit the Sponsor Hall to connect with our sponsors and learn about their work.

TropMed Central
Visit TropMed Central to connect with colleagues and attendees.

Plenary Session 116

Plenary Session V: Race and Social Justice: Tropical Medicine’s Troubled Past and Future Challenge

Grand Ballroom
Thursday, November 19
9 a.m. - 10:30 a.m. U.S. Eastern Time Zone

Recent events have brought racial injustice, especially against Blacks, to the forefront of society. In this symposium we explore the history of the field of tropical medicine, with its roots intertwined in colonialism and racism, and reflect on how educational institutions and societies of tropical medicine can move beyond this complex history, eliminate structural racism, and be forces for global health equity and justice.

CHAIR
Jonathan K. Stiles
Morehouse School of Medicine, Atlanta, GA, United States
Julie Jacobson
Bridges to Development, Seattle, WA, United States

9:05 a.m. - 9:45 a.m.
KEYNOTE ADDRESS
Linnie Golightly
Cornell University Weill Medical College, New York, NY, United States

9:45 a.m. - 9:50 a.m.
DISCUSSANT
Amadou A. Sall
Institut Pasteur Dakar, Dakar, Senegal
Vaccines against Placental Malaria

Meeting Room 1
Thursday, November 19
10:45 a.m. - 12:30 p.m. U.S. Eastern Time Zone

Malaria infection in pregnancy can lead to the accumulation of parasites in the placenta, which poses a significant threat to both the mother and her fetus. One of the major targets of natural immunity to *P. falciparum* placental malaria is the parasite surface antigen VAR2CSA. As a result, efforts to develop a vaccine to protect pregnant women from placental malaria focus on this antigen. Two vaccines, PRIMVAC and PAMVAC, based on recombinant domains of VAR2CSA, recently underwent randomized double-blind Phase Ia/Ib dose-escalated vaccine trials in Europe and in Africa. Both vaccines were safe and immunogenic, but these trials identified a major challenge to achieving broad vaccine efficacy: the extensive sequence polymorphisms among natural var2csa alleles that hinder vaccine responses to heterologous parasites. This issue is compounded by the recent finding in Benin of a rare variant of *P. falciparum* that particularly infects multigravid women with high anti-VAR2CSA acquired IgG. These VAR2CSA-expressing parasite variants display epitopes in the CSA-binding pocket that are distinct from those of the common variants FCR3 and 3D7, upon which the vaccines are based. These parasites escape the CSA-binding inhibitory effects of the antibodies induced by common variants. The reports from the vaccine trials also highlight key differences in the activities of VAR2CSA antibodies elicited in humans, which appeared lower compared to the pre-clinical immunogenicity studies in rodents. This symposium will present recent data to map an epitope in *P. vivax* PvDBP that elicits antibodies that cross-react with VAR2CSA and block parasite adhesion in vitro. The symposium will also discuss ways to exploit these evolutionarily conserved epitopes in the optimization of VAR2CSA vaccines.

**CHAIR**
Stephanie K. Yanow
University of Alberta, Edmonton, AB, Canada

**10:45 a.m.**
PROGRESS TOWARD A PLACENTAL MALARIA VACCINE
Arnaud Chene
INSERM, Paris, France

**11:10 a.m.**
CLINICAL DEVELOPMENT OF A VAR2CSA-BASED VACCINE FOR PLACENTAL MALARIA: THE PERSISTENT CHALLENGE OF ANTIGENIC POLYMORPHISM
Nicaise Ndam
IRD at Noguchi Memorial Institute for Medical Research, Accra, Ghana

**11:35 a.m.**
AOTUS MODEL IS SUPERIOR TO RODENT MODELS IN PREDICTING HUMAN IMMUNE RESPONSE TO VAR2CSA VACCINE
Justin Doritchamou
Laboratory of Malaria Immunology & Vaccinology, National Institute of Allergy and Infectious Disease, Bethesda, MD, United States

**Noon**
A CROSS-SPECIES VACCINE APPROACH TO ELICIT VAR2CSA ANTIBODIES
Stephanie K. Yanow
University of Alberta, Edmonton, AB, Canada

Symposium 118

Persistence and Transmissibility of Malaria Infections – Examples from Different Malaria Endemic Settings

Meeting Room 2
Thursday, November 19
10:45 a.m. - 12:30 p.m. U.S. Eastern Time Zone

This symposium will present results from research projects in 4 African settings which marry the use of detailed molecular characterisation of sexual and asexual parasites with epidemiology. A unique aspect of these studies is that they quantify infectiousness to locally relevant mosquitoes over time and directly compare infectiousness of clinical and asymptomatic cases. Study sites differed in transmission intensity and approaches to detect clinical cases, providing detailed insights in the transmissibility of infections in relation at the time of detection and the local epidemiology. The symposium starts with two observational studies. In Ethiopia, temporal fluctuations in parasite densities, gametocyte production and infectivity were assessed for *P. falciparum* and *P. vivax* infections over 12 months of intensive follow-up. Concurrently, the transmissibility...
of passively recruited clinical malaria infections was assessed. In The Gambia, similar data was collected in a longitudinal study that involved repeated cross-sectional surveys and enhanced clinical case detection in all inhabitants of four villages exposed to moderate transmission intensity. These observational studies are complemented by a detailed study on parasite biology in relation to the persistence of infections during the dry season in an area of intense malaria transmission in Mali. Parasite multiplication rates and gametocyte production were examined between chronic asymptomatic infections and clinical malaria cases. This work uncovered strategies the parasite uses to maximize its survival in the human host as well as potential triggers and sensors of gametocyte commitment. The last presentation of the symposium describes the detectability and targetability of infections in relation to gametocyte production and infectivity. In Burkina Faso, 180 compounds were randomized to routine care, enhanced malaria case detection by weekly fever screening and monthly mass screening and treatment. During the intervention over two consecutive seasons, gametocyte production and infectivity to mosquitoes was assessed for all age groups and all parasite densities in these three arms. The general discussion will focus on the implications of results for understanding asexual and sexual parasite biology in relation to human host and environmental characteristics. This will be extended to discuss how these data can be used to better inform targeting of these infections to improve malaria control and elimination.

**CHAIR**

Christopher Drakeley  
London School of Hygiene and Tropical Medicine, London, United Kingdom

Alfred Tiono  
Centre National De Recherche Et De Formation Sur L, Ouagadougou, Burkina Faso

**10:45 a.m.**  
THE DYNAMICS AND INFECTIVITY TO MOSQUITOES OF LOW-DENSITY P. FALCIPARUM AND P. VIVAX INFECTIONS IN LOW TRANSMISSION SETTING IN ETHIOPIA  
Fitsum G. Tadesse  
Armauer Hansen Research Institute, Addis Ababa, Ethiopia

**11:05 a.m.**  
THE ROLE OF SUBMICROSCOPIC P. FALCIPARUM INFECTIONS IN MAINTAINING MALARIA TRANSMISSION IN A LOW TRANSMISSION SETTING OF THE GAMBIA  
Abdullahi Ahmad  
Medical Research Council Unit, The Gambia, Banjul, Gambia

**11:25 a.m.**  
DRY SEASON SEXUAL COMMITMENT AND GAMETO CYTOGENESIS  
Silvia Portugal  
Heidelberg University Hospital, Heidelberg, Germany

**11:45 a.m.**  
INVESTIGATING THE IMPACT OF ENHANCED COMMUNITY CASE MANAGEMENT AND MONTHLY SCREENING AND TREATMENT ON THE TRANSMISSIBILITY OF MALARIA INFECTIONS IN BURKINA FASO  
Katharine A. Collins  
Radboud University Medical Center, Nijmegen, Netherlands
Symposium 120

Translation of Research into Policy and Practice: Using Mathematical Models to Inform Decision Making for Malaria Elimination Strategies

Meeting Room 4
Thursday, November 19
10:45 a.m. - 12:30 p.m. U.S. Eastern Time Zone

Mathematical models are increasingly being used to understand the transmission of infections and to evaluate the potential impact of disease control programs. They can be used to determine optimal control strategies against new or emergent infections such as Zika or against HIV, TB and malaria. Mathematical models also bring a semblance of order to an otherwise messy and dynamic decision-making process that often involves simultaneous cognitive sifting and balancing of information, stimuli, alternative courses of action and multiple stakeholders. They are therefore valuable tools for strategic planning and decision-making and to inform policies in countries. This symposium will focus on the role of mathematical models incorporating climate and other intrinsic and extrinsic factors on malaria transmission and their value in providing the evidence base for decision-making for malaria elimination policy. The symposium will showcase recent examples of contributions mathematical models have made on providing real world evidence for decision making: Four short presentations which draw on data and application of the models in a variety of epidemiological, regional and health infrastructure settings will be made mainly by participants from countries: (i) Incorporating operational efficiency and a health system landscape analysis to determine paths to elimination in Guyana (ii) Estimating the cost of malaria elimination and the investment case for continued funding in Zambia (iii) Building an advocacy strategy based on the outcome of models in South Africa (iv) Using the outcomes of epidemiological and economic models to develop a domestic resource mobilization strategy in Ghana. These presentations will be followed by a discussion on the role of models in decision-making for malaria elimination and how the evidence generated can be used more effectively to institute policy change.

Chair
Rima Shretta
University of Oxford, Oxford, United Kingdom
Lisa White
University of Oxford, Oxford, United Kingdom

10:45 a.m.
INCORPORATING OPERATIONAL EFFICIENCY AND A HEALTH SYSTEM LANDSCAPE ANALYSIS TO DETERMINE PATHS TO ELIMINATION IN GUYANA
Sheetal Prakash Silal
University of Cape Town, Cape Town, South Africa

11 a.m.
BUILDING AN ADVOCACY STRATEGY BASED ON THE OUTCOME OF MODELS IN SOUTH AFRICA
Patrick Moonasar
National Department of Health, Pretoria, South Africa

11:15 a.m.
USING THE OUTCOMES OF EPIDEMIOLOGICAL AND ECONOMIC MODELS TO DEVELOP A DOMESTIC RESOURCE MOBILIZATION STRATEGY IN GHANA
Wahjib Mohamme
National Malaria Control Programme, Accra, Ghana

11:30 a.m.
ESTIMATING THE COST OF MALARIA ELIMINATION AND THE INVESTMENT CASE FOR CONTINUED FUNDING IN ZAMBIA
Elizabeth Chizema-Kawesha
End Malaria Council, Lusaka, Zambia

Symposium 121

Comprehensive Surveillance in the Setting of a Dramatic Decline in Malaria Following Sustained Control Interventions in a Historically High Transmission Area of Uganda: From Mosquito to Human and Back Again

Meeting Room 5
Thursday, November 19
10:45 a.m. - 12:30 p.m. U.S. Eastern Time Zone

Increased investment in efforts to control malaria have resulted in substantial declines in burden in the majority of endemic settings. These declines have been heterogeneous. Where interventions have been successful, a comprehensive study of epidemiologic changes may shed important insights on what contributes to sustained reduction in transmission and what we might hope to see elsewhere in terms of entomology, clinical outcomes, parasite – host dynamics, and human to mosquito transmission. The symposium presents cutting edge comprehensive surveillance data from an area that exemplifies many African settings where intensive control efforts are implemented in the context of intense, ongoing transmission. As part of an international consortium, we have closely followed the decline of malaria in Tororo District,
Uganda, where the annual entomological inoculation rate was >300 eight years ago and is now close to zero due to highly successful indoor residual spraying of insecticide and universal distribution of long-lasting insecticidal nets. As part of the NIH-funded International Centers of Excellence in Malaria Research (ICEMR), longitudinal cohorts have been enrolled across all age groups to study the epidemiology of malaria in this area in exceptional detail, collecting multiple modalities of data from the same households. This symposium will present 4 aspects of these linked studies followed by a general discussion on how successful control can be sustained and the presented findings and methodologies can support surveillance efforts in other endemic regions. The first presentation will provide insights in changes in the numbers, composition, behavior, infection prevalence, and insecticide susceptibility of vector species. Next, the downstream effects of changes in exposure to infected mosquitoes on human measures of malaria morbidity will be presented. The third presentation will focus on uniquely detailed measures of human infection dynamics at the level of the parasite clone to better understand the underlying biology of infection and immunity. The fourth presentation will follow these infections back into the mosquito population via studies of gametocyte commitment and maturation, an unsurpassed number of mosquito feeding experiments, and detailed assessments of mosquito biting preference by blood meal analysis. Altogether, the results paint a complete picture of what successful control can look like in high burden areas of sub-Saharan Africa, and stimulate thought on how to sustain these gains and go the last mile towards elimination.

**CHAIR**

Bryan Greenhouse  
*University of California, San Francisco, San Francisco, CA, United States*

Joaniter I. Nankabirwa  
*Makarere University Kampala, Kampala, Uganda*

**10:45 a.m.**  
**CHANGES IN MALARIA VECTOR BIOLOGY AND BIONOMICS FOLLOWING INTENSIFIED VECTOR CONTROL IN TORORO, UGANDA**  
Alex K. Musiime  
*Infectious Diseases Research Collaboration, Kampala, Uganda*

**11:10 a.m.**  
**MALARIA TRANSMISSION, INFECTION AND DISEASE FOLLOWING SUSTAINED INDOOR RESIDUAL SPRAYING OF INSECTICIDE IN TORORO, UGANDA**  
Joaniter I. Nankabirwa  
*Makarere University Kampala, Kampala, Uganda*

**11:35 a.m.**  
**WITHIN-HOST PARASITE DYNAMICS FOLLOWING HIGHLY EFFECTIVE IRS IN NAGONGERA, UGANDA USING LONGITUDINAL AMPLICON DEEP-SEQUENCING**  
Jessica J. Briggs  
*UCSF, San Francisco, United States*

**Noon**  
**THE KINETICS OF GAMETOCYTE PRODUCTION AND HUMAN INFECTIOUSNESS TO MOSQUITOES FOLLOWING MARKED REDUCTIONS IN MALARIA EXPOSURE IN TORORO, UGANDA**  
Chiara Andolina  
*Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands*

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**Symposium 122**

**The RTS,S Malaria Vaccine Pilot Implementation in Africa: Generating Data for Decision-making**

**Meeting Room 6**  
**Thursday, November 19**  
**10:45 a.m. - 12:30 p.m. U.S. Eastern Time Zone**

The RTS,S/AS01 (RTS,S) malaria vaccine was shown to significantly reduce malaria when given to children from 5 months of age in 4 vaccine doses. The incidence of malaria in young children was reduced by 39% over 4 years in a large Phase 3 trial that ended in 2014. The vaccine has received a positive scientific opinion from the European Medicines Agency (EMA), and was reviewed by World Health Organization (WHO) expert advisory bodies, which recommended pilot implementation to answer outstanding questions about the vaccine’s public health use. The Malaria Vaccine Implementation Programme (MVIP), coordinated by WHO, comprises the introduction of the vaccine by the ministries of health in Ghana, Kenya, and Malawi, through their respective routine childhood vaccination services, and a concurrent evaluation of implementation experience and evidence from each of the countries. The ministries are introducing the vaccine in a phased manner, in areas that were selected randomly at the programme start, and they will later consider expanding vaccination to other parts of their countries. The accompanying evaluation, known as the Malaria Vaccine Pilot Evaluation (MVPE), is being conducted by independent evaluation partners. The goals are to determine the public health role of the vaccine; generate data on the operational feasibility of administering 4 vaccine doses in the context of routine health service delivery; understand the vaccine’s impact on severe malaria and mortality; and establish the safety profile of the vaccine in routine use. This experience is expected to inform policy pathways for future vaccines or medicines primarily targeted for use in lower-resource settings, and the data collected will inform a decision on broader use of the RTS,S vaccine, which could benefit populations at highest risk of dying from malaria. Modeled estimates show the vaccine could avert 1 death for every 200 children vaccinated and that it is cost effective at an estimated cost of 5–10 $ per vaccine dose. In addition to providing an overview of the MVIP and approach to analysis of the evaluation, this symposium will focus on 3 of the essential components of the MVPE: - Sentinel hospital surveillance: used to assess safety signals identified in the Phase 3 trial, including an excess in the number of meningitis cases and the number of cerebral malaria cases, and to collect data on the vaccine’s impact on severe malaria and mortality; - Community mortality surveillance: used to resolve a post-hoc finding of an imbalance in female deaths among children receiving the vaccine compared with those who did not; and - Qualitative assessment of vaccine implementation and utilization: used to provide information on the feasibility of reaching children with 4 vaccine doses.

**CHAIR**

Mary Hamel  
*World Health Organization, Geneva, Switzerland*

Rose Jalang’o  
*Kenya Ministry of Health, Nairobi, Kenya*
10:45 a.m.
OVERVIEW OF THE MVIP AND PROGRESS IN THE VACCINE INTRODUCTION
Rose Jalang’o
Kenya Ministry of Health, Nairobi, Kenya

11:05 a.m.
BUILDING ON A CLINICAL INFORMATION NETWORK TO DEVELOP A SENTINEL HOSPITAL SURVEILLANCE SYSTEM IN KENYA
Sam Akech
KEMRI/Wellcome Trust Programme, Nairobi, Kenya

11:25 a.m.
SCALING UP COMMUNITY MORTALITY SURVEILLANCE SYSTEMS IN GHANA
Kwaku Poku Asante
Kintampo Health Research Centre, Brong Ahafo Region, Ghana

11:45 a.m.
METHODOLOGY AND PRELIMINARY FINDINGS OF A LONGITUDINAL QUALITATIVE ASSESSMENT OF VACCINE INTRODUCTION AND IMPLEMENTATION IN MALAWI
Nicola Desmond
Malawi-Liverpool-Wellcome Trust Clinical Research Programme, Blantyre, Malawi

12:05 p.m.
MALARIA VACCINE PILOT EVALUATION ANALYSIS APPROACH
Paul John Milligan
London School of Hygiene and Tropical Medicine, London, United Kingdom

Scientific Session 124
Malaria Control: Innovations and Opportunities for Healthcare Systems
Meeting Room 8
Thursday, November 19
10:45 a.m. - 12:30 p.m. U.S. Eastern Time Zone

CHAIR
Kent Kester
Sanofi Pasteur, Swiftwater, PA, United States
Kim C. Williamson
Loyola University Chicago, Chicago, IL, United States

TAILORING MALARIA ROUTINE ACTIVITIES WITHIN THE COVID-19 PANDEMIC: A RISK AND MITIGATION ASSESSMENT OF EIGHT COUNTRIES IN WEST AFRICA
Suzanne Van Hulle1, Joseph Lewinski1, Ghislain Nana1, Chrestien Yameni2, Dominque Guinot1, Sylvia Mollet Sangare1
1Catholic Relief Services, Baltimore, MD, United States, 2Catholic Relief Services West Africa, Dakar, Senegal, 3Catholic Relief Services Europe, Geneva, Switzerland

OUTREACH TRAINING SUPPORTIVE SUPERVISION IMPROVED THE QUALITY OF MALARIA MICROSCOPY IN THE DEMOCRATIC REPUBLIC OF CONGO
Ange Landela1, Séraphine Kutumbakana2, Anselme Manyong3, Lennie Kyomuhangi3, Emmanuel Yamo3, Dieudonne M. Ngoy4, Aboubacar Sadou5, Godefroid Tshiswa2, Lawrence Barat1, Ricki Orford1, Eric Mukomena1, Pharath Lim1
1PMI Impact Malaria, Kinshasa, Democratic Republic of the Congo, 2PMI Impact Malaria, MCDI Silver Spring, MD, United States, 3Institut National de Recherche Biomédicale (INRB), Kinshasa, Democratic Republic of the Congo, 4U.S. President’s Malaria Initiative, Kinshasa, Democratic Republic of the Congo, 5PMI Impact Malaria Project, PSI, Washington, DC, United States, 6Programme National de Lutte contre le Paludisme (PNLP), Kinshasa, Democratic Republic of the Congo

STRENGTHENING INTEGRATION OF MALARIA INTO REPRODUCTIVE, MATERNAL, NEONATAL, CHILD, ADOLESCENT HEALTH AND NUTRITION (MALARIA-RMNCAH+N) IN NIGERIA - MAJOR MILESTONES AND SUCCESSES
Victoria Erinle1, Chinedu Chukwu2, Isaac Adejo1, Tom Hall1, Olatayo Abikoye1, Sonachi Ezeiri1, Emmanuel Shekaru1, Ninenna Ogbulara1, Bala Muhammed Adu2, Olugbenga Mokuolu1, Ojonye Ega1, Kayode Afolabi1, Olumuyiwa Ojo1, Lynda Ozor1
1Management Sciences for Health (MSH), Abuja, Nigeria, 2Management Sciences for Health (MSH), Arlington, VA, United States, 3Catholic Relief Services (CRS), Abuja, Nigeria, 4National Malaria Elimination Program (NMEP), Abuja, Nigeria, 5Ministry of Health, Abuja, Nigeria, 6Reproductive Health Unit, Fed. Min. of Health, Abuja, Nigeria, 7World Health Organization (WHO), Abuja, Nigeria

USING A MODIFIED CHALLENGE MODEL TO IDENTIFY MALARIA DATA ISSUES & IMPROVE KEY PERFORMANCE INDICATORS IN LIBERIA
Eric Diboulo1, D. Levi Hinneh2, Victor S. Koko1, O. Joseph Alade1, Patrick Konwloh3, Julius Gilayeneh1, Oliver J. Pratt1, Luke L. Bawo1, Jessica Kafuko1, Agneta Mbiti1, Yazoum Ye2
1ICF International Inc., Monrovia, Liberia, 2National Malaria Control Program (NMCP), Monrovia, Liberia, 3Ministry of Health, Monrovia, Liberia, 4U.S. President’s Malaria Initiative (PMI), Monrovia, Liberia, 5ICF International Inc., Nairobi, Kenya, 6ICF International Inc., Rockville, MD, United States

EVIDENCE OF IMPROVED MALARIA CASE MANAGEMENT BY PRIVATE SECTOR PROVIDERS THROUGH THE PROVISION OF SUBSIDIZED RDTs IN MADAGASCAR
Bakoly Nirina Rahavondrafahalitr1, Mickael Randriamanjaka1, Mauricette Andriamananijara2, Saraha Rabeherisoa3, Jacky Raharinjatovo1, Ilo Andriamanamihaja1, Aarons Chea3, Christopher Lourenco7, Stephen Poyer4

PERFORMANCE OF ELECTRONIC DISEASE SURVEILLANCE SYSTEM IN MADAGASCAR: EVIDENCE FROM COMPARATIVE STUDY AMONG TWO CLUSTERS OF HEALTH DISTRICTS
Maurice Ye1, Lea Bricette Randriamampionona2, Jean-Marie N’Gbibchi2, Laurent Kapesa1, Jocelyn Razafindrakoto4, Armand Solofoniaina Rafalimanantsoa2, Mauricette Nambinisoa Andriamananjara3, Yazoum Ye2
1PMI Measure Malaria, ICF Macro Madagascar, Antananarivo, Madagascar, 2Department of Epidemiological Surveillance and Response, Ministry of Public Health, Antananarivo, Madagascar, 3PMI Measure Malaria, ICF, Rockville, MD, United States, 4President’s Malaria Initiative, Health Population and Nutrition Office, Antananarivo, Madagascar, 5National Malaria Control Program, Ministry of Public Health, Antananarivo, Madagascar
Symposium 125

Game Changers and Innovations During the 2018-2020 Ebola Outbreak in Democratic Republic of Congo

Meeting Room 9
Thursday, November 19
10:45 a.m. - 12:30 p.m. U.S. Eastern Time Zone

On August 1, 2018, the Ministry of Health of DRC confirmed an outbreak of Ebola virus disease (EVD) in North Kivu and Ituri provinces in Eastern DRC, an area of armed conflict and high population mobility. As of February 25, 2020, 3444 confirmed and probable cases, including 2264 deaths and 172 healthcare workers, have been reported. The Ebola response in DRC has been affected by longstanding violence by armed groups that has led to injury, death, and displacement of the affected population and health workers. Control measures used in previous Ebola outbreaks, such as community engagement, active surveillance, contact tracing, and infection prevention and control, were adapted to this context. The response has also benefited from the introduction of new effective therapeutics and, for the first time during an outbreak, the use of two vaccines against Ebola Zaire virus. Investigators demonstrated the feasibility of conducting rigorous clinical trials while accessing and working with disillusioned, densely populated and highly mobile communities. The transition from the acute public health response will need to address the infrastructure-poor health system, ongoing conflict, as well as other concurrent outbreaks. The symposium will present innovations and lessons learned, followed by moderated discussion. The first speaker will provide an overview of the 2018-2020 Ebola outbreak epidemiology, and highlight major areas of scientific innovations in the clinic (clinical trial of Ebola therapeutics, novel technologies to reduce nosocomial transmission), laboratory (field laboratories; whole genome sequencing), and community (ring and geographic vaccination; Ebola survivor programs) in the midst of insecurity. The second speaker will describe the evolution of Ebola vaccination implementation in DRC, and the two new vaccines’ role in controlling current and future Ebola outbreaks in DRC. The third speaker will present clinical trial findings of new treatments against EVD, and their role in improving clinical outcomes. Areas for continued investigation will be addressed. The last two speakers will jointly present an overview of adaptations of common public health practices such as community engagement, contact tracing, and infection prevention and control employed during the outbreak, plans for incorporating improvements in preparedness into the DRC health system, and how these lessons can be applied to other complex health emergencies. The discussion will aim to advance understanding of best practices in outbreak preparedness and response in insecure settings.

CHAIR
Pratima Raghunathan
Centers for Disease Control and Prevention, Atlanta, GA, United States
Ibrahima Socé Fall
WHO, Geneva, Switzerland

10:45 a.m.
INNOVATIONS IN THE CLINIC, LABORATORY, AND COMMUNITY DURING THE EBOLA OUTBREAK IN NORTH KIVU/ITURI PROVINCES, DRC
Steve Ahuka
Institut National de Recherche Biomédicale, Kinshasa, Democratic Republic of the Congo

11:05 a.m.
THE ROLE OF VACCINES IN EBOLA OUTBREAK RESPONSE
Elisabeth Mukamba
Programme Elargi de Vaccination, Kinshasa, Democratic Republic of the Congo

11:25 a.m.
FINDINGS FROM THE PAMOJA TULINDE MAISHA (PALM) CLINICAL TRIAL OF THERAPEUTICS AND THE EXTENSION PHASE
Placide Mbala-Kengebeni
Institut National de Recherche Biomédicale, Kinshasa, Democratic Republic of the Congo

11:45 a.m.
TRANSITIONING FROM EBOLA RESPONSE IN A COMPLEX ENVIRONMENT – TIME TO REWRITE OUR TEXTBOOKS?
Gisèle Mbuyi wa Mulambu
Direction Surveillance Épidémiologique, Kinshasa, Democratic Republic of the Congo

Scientific Session 126

Malaria: Pre-Clinical Drug Development and Clinical Trials

Meeting Room 10
Thursday, November 19
10:45 a.m. - 12:30 p.m. U.S. Eastern Time Zone

CHAIR
Francisco-Javier Gamo
GlaxoSmithkline, Tres Cantos (Madrid), Spain
Carol H. Sibley
University of Washington, Seattle, WA, United States

1497
INHIBITION OF THE PLASMODIUM FALCIPARUM ACETYL-CoA SYNTHETASE BY MULTIPLE CHEMOTYPES DISRUPTS PROTEIN ACETYLATION AND EPIGENETIC REGULATION IN BLOOD STAGE PARASITES
Robert L. Summers1, Charsisse F. Pasaje2, Manu Vanaerschot1, James M. Murithi3, Madeline R. Luth4, Justin T. Munro5, Pamela Magristado-Coxen1, Emily F. Carpenter6, Jade Bath7, Joao P. Picco8, Avinash S. Punekar9, Beatriz Baragaña10, Ian H. Gilbert11, Manuel Llinás12, Sabine Ottilie13, Elizabeth A. Winzeler14, Marcus C. Lee15, Jacquin C. Niles16, David A. Fidock17, Amanda K. Lukens18, Dyann Wirth19
1Department of Immunology & Infectious Diseases, Harvard T.H. Chan School of Public Health, Boston, MA, United States, 2Department of Biological Chemistry and Drug Discovery, University of Dundee, Dundee, United Kingdom, 3Department of Microbiology & Immunology, Columbia University Irving Medical Center, New York, NY, United States, 4Department of Pediatrics, University of California San Diego School of Medicine, La Jolla, CA, United States, 5Biochemistry and Molecular Biology, Pennsylvania State University, University Park, PA, United States, 6Wellcome Centre for Anti-Infectives Research, Drug Discovery Unit, Division of Biological Chemistry and Drug Discovery, University of Dundee, Dundee, United Kingdom, 7Department of Biochemistry and Molecular Biology, Pennsylvania State University, University Park, PA, United States, 8Department of Microbiology & Immunology & Division of Infectious Diseases, Dept. of Medicine, Columbia University Irving Medical Center, New York, NY, United States, 9Infectious Disease and Microbiome Program, Broad Institute, Cambridge, MA, United States

#TropMed20 #IamTropMed
**A FIRST IN HUMAN STUDY TO INVESTIGATE THE SAFETY, PHARMACOKINETICS AND ANTIMALARIAL ACTIVITY OF ZY-19489 IN THE INDUCED BLOOD STAGE PLASMODIUM FALCIPARUM MALARIA MODEL**

Bridge E. Barber, Melissa L. Fernandez, Hardik B. Patel, Stephen Woolley, Azrin N. Abd-Rahman, Ilaria Di Resta, Aline Fuchs, Harilal V. Patel, Stephan Chalon, Parmar V. Deven, James S. McCarthy, Kevinkumar Kansa, 

1QMIR Berghofer Medical Research Institute, Brisbane, Australia, 2Cadila Healthcare Ltd, Ahmedabad, India, 3Medicines for Malaria Venture, Geneva, Switzerland, 4QMIR Berghofer Medical Research Institute, Brisbane, Malaysia

**EVALUATION OF THE EFFICACY AND SAFETY OF TAFENOQUINE CO-ADMINISTERED WITH DIHYDROARTESMISININ-PIPERAQUINE FOR THE RADICAL CURE (ANTI-RELAPSE) OF PLASMODIUM VIVAX MALARIA IN INDONESIA - INSPECTOR STUDY**

J. Kevin Baird, Inge Sutanto, Amin Soebandrio, Lenny Ekawati, Rintis Noviyanti, Disala Fernando, Eve Cedar, Alessandro Berni, Katie Rolfe, Sion Jones, Stephan Duparc, Lionel Tan

1Eijkman Oxford Clinical Research Unit (EOCRU), Jakarta, Indonesia, 2Faculty of Medicine, University of Indonesia, Jakarta, Indonesia, 3Eijkman Institute for Molecular Biology (EIMB), Jakarta, Indonesia, 4GlaxoSmithKline, London, United Kingdom, 5GlaxoSmithKline, Stockley Park, Uxbridge, United Kingdom, 6Medicines for Malaria Venture, Geneva, Switzerland

**A RANDOMIZED, OPEN-LABEL, NON-COMPARATIVE, MULTICENTER STUDY TO ASSESS THE PHARMACOKINETICS, SAFETY, AND EFFICACY OF TAFENOQUINE IN THE TREATMENT OF INFECTIOUS SUBJECTS WITH PLASMODIUM VIVAX MALARIA (TEACH STUDY)**

Ivan D. Velez, Hien Tran, Ana Martin, Hema Sharma, Vicki Roussel, Liz Hardaker, John Breton, Terry Ernest, Katie Rolfe, Maxine Taylor, Stephan Duparc, Justin Green, Navin Goyal, Lionel Tan

1University of Antioquia, Medellin- Antioquia, Colombia, 2Oxford University Clinical Research Unit, Hospital for Tropical Diseases, Hô Chi Minh, Viet Nam, 3GlaxoSmithKline, London, United Kingdom, 4GlaxoSmithKline, Ware, United Kingdom, 5Medicines for Malaria Venture, Geneva, Switzerland, 6GlaxoSmithKline, Upper Providence, PA, United States

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**Scientific Session 127**

**Mosquitoes: Insecticide Resistance and Control I**

**Meeting Room 11**

Thursday, November 19

10:45 a.m. - 12:30 p.m. U.S. Eastern Time Zone

**CHAIR**

Antoine Sanou
Centre National de Recherche et de Formation sur le Paludisme (CNRFP), Ouagadougou, Burkina Faso

Mojca Kristan
London School of Hygiene & Tropical Medicine, London, United Kingdom

**POSSIBLE DECREASE IN EFFICACY OF INTERCEPTOR G2 IN AREAS OF HIGHLY RESISTANCE ANOPHELES GAMBIAE SENSU LATO POPULATION IN BURKINA FASO**

Antoine Sanou, Fatounama Cisse, Moussa Wandaigo Guebêogo, N'Falé Sagnon, Phillip MacCall, Geraldine Foster, Hilary Ransom

1Centre National de Recherche et de Formation sur le Paludisme (CNRFP), Ouagadougou, Burkina Faso, 2Liverpool School of Tropical medicine, Liverpool, United Kingdom

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**Analysis of a Large Database of Intensity Bioassays for Phenotypic Insecticide Resistance Monitoring in Malaria Vectors**

Mara D. Kont, Ben Lambert, Jan Kolaczinski, Lucia Fernandez Montoya, Audrey Lenhart, Hilary Ransom, Rosemary S. Lees, Natalie Lissenden, Catherine L. Moyes, Penelope A. Hancock, Thomas S. Churcher

1Imperial College London, London, United Kingdom, 2World Health Organization, Geneva, Switzerland, 3CDC, Atlanta, GA, United States, 4Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 5University of Oxford, Oxford, United Kingdom

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**EVALUATION OF PARTIAL INDOOR RESIDUAL SPRAYING: AN EFFECTIVE AND COST SAVING POTENTIAL ALTERNATIVE TO CONVENTIONAL SPRAYING FOR MALARIA VECTOR CONTROL**


1PMI VectorLink Project, Abt Associates, Plot 11 Waterson Road, Tamale, Ghana, 2PMI VectorLink Project, Abt Associates, 6130 Executive Blvd, Rockville, 20852, MD, United States, 3Noguchi Memorial Institute for Medical Research, University of Ghana, Legon, Ghana, 4U.S. President’s Malaria Initiative, U.S. Agency for International Development, Accra, Ghana, 5U.S. President’s Malaria Initiative, U.S. Agency for International Development, Washington, DC, United States, 6U.S. President’s Malaria Initiative, Centers for Disease Control and Prevention, Atlanta, GA, United States

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**Assessment of the Residual Effectiveness of Clothinidin for the Control of Pyrethroid Resistant Malaria Vectors in North Western Lake Zone Regions in Tanzania**


1National Institute for Medical Research (NIMR), Mwanza Centre, United Republic of Tanzania, 2U.S. President’s Malaria Initiative, United States Agency for International Development, Dar es Salaam, United Republic of Tanzania, 3Centres for Disease Control and Prevention (CDC), Atlanta, GA, United States, 4National Malaria Control Program, Ministry of Health, Community Development, Gender, Elderly and Children, Dodoma, United Republic of Tanzania, 5RTI International, Dar es Salaam, United Republic of Tanzania

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**Use of Colorimetric Tests and HPLC-PDA to Determine the Amount of Insecticides Mosquitoes Pick up from Treated Bed Nets**

Mojca Kristan, Jo Lines, Harparkash Kaur
London School of Hygiene & Tropical Medicine, London, United Kingdom

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**Household Acceptance of Yeast Interfering RNA Baited Ovitraps in Trinidad**

Akilah Stewart, Nikhella Winter, Jessica Igiede, Rachel M. Wiltshire, Limb K. Hapairai, Azad Mohammed, David W. Severson, Molly Duman-Scheel

1The University of the West Indies at St. Augustine, Trinidad and Tobago, St. Augustine, Trinidad and Tobago, 2The University of Notre Dame, Notre Dame, IN, United States, 3Indiana University School of Medicine, South Bend, IN, United States

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**1500**

**1501**

**1502**

**1503**

**1504**

**1505**

**1506**

**1507**

**1508**

**1509**

**1510**
**Symposium 128**

**The Impact of Multiple Blood Meals on the Vector-pathogen Interface**

**Meeting Room 12**
**Thursday, November 19**
**10:45 a.m. - 12:30 p.m. U.S. Eastern Time Zone**

Hematophagy, the process of consuming and metabolizing blood, is utilized by arthropod vectors for nutrient acquisition and egg production. This reliance on blood necessitates frequent feeding episodes that require the ability to digest and detoxify large volumes of blood. Not surprisingly, pathogens have evolved mechanisms to take advantage of this physiological process where blood-feeding behavior is intricately tied to vector-borne disease transmission. Despite this importance, there is a limited understanding of how blood-feeding influences pathogen outcomes in infected arthropod vectors. Historically, a singular blood meal has been used to introduce pathogens into vector species to study aspects of vector competence in laboratory experiments. However, these experiments have been performed without considerations of the physiological effects of an additional blood meal, which can induce global physiological changes that directly or indirectly impact pathogen infection. Recent work across multiple vector-pathogen systems is beginning to reveal the significance that additional non-infectious blood meals can have on vector-pathogen interactions and disease transmission. This symposium will discuss the impact of multiple blood meals on leishmania parasite development and transmission, malaria parasite adaptation to its mosquito vector, arbovirus transmission and its consequent epidemiological significance, and role of blood-feeding in the vertical transmission of arboviruses. This symposium provides a timely and compelling view of the role of repeated blood-feeding behavior as an integral component of laboratory vector-pathogen interaction studies.

**CHAIR**
Doug E. Brackney
*The Connecticut Agricultural Experiment Station, New Haven, CT, United States*
Ryan C. Smith
*Iowa State University, Ames, IA, United States*

**10:45 a.m.**
**MULTIPLE BLOODMEALS ARE KEY TO EFFICIENT TRANSMISSION OF LEISHMANIA PARASITES BY VECTOR SAND FLIES**
Shaden Kamhawi
*NIH, Bethesda, MD, United States*

**11:05 a.m.**
**THE ACQUISITION OF MULTIPLE BLOOD MEALS INFLUENCES MALARIA PARASITE IMMUNE EVASION AND ADAPTATION TO ITS MOSQUITO HOST**
Ryan C. Smith
*Iowa State University, Ames, IA, United States*

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**Symposium 129**

**Operationalizing the WHO Guidelines for Onchocerciasis: Experiences and Best Practices**

**Meeting Room 13**
**Thursday, November 19**
**10:45 a.m. - 12:30 p.m. U.S. Eastern Time Zone**

Onchocerciasis is a debilitating, blinding disease caused by the parasite *Onchocerca volvulus* and transmitted by the *Simulium* species of black fly. While the disease is endemic to certain parts of the Americas and Yemen, more than 95% of the disease burden is in Africa where it has historically had devastating effects on populations and economies. Since 1974, efforts have been underway to curb the effects of the disease first through the Onchocerciasis Control Program (OCP; 1974-2002) and later by the African Program for Onchocerciasis Control (APOC; 1995-2015). While both programs were successful in their own rights, they each utilized differing tools, methodologies and approaches for determining when, where, and for whom interventions were required. For the OCP, the principal focus of the program was on vector management in the Sahelian regions of Africa until the drug ivermectin was introduced in 1987 for treatment of infected individuals. For APOC, the focus was always on the distribution of ivermectin with a broader focus on the more forested areas of Africa. As such, each of these programs had differing goals and indicators of success: for the OCP the effort was to reduce the vector population to a point where it could no longer sustain transmission of the disease while for APOC the focus was on reducing the infection in the human hosts to a point where morbidity was no longer seen. The varying level of interaction of the different national programs with OCP and APOC has resulted in programs that have quite different goals, objectives and indicators. In 2016, WHO published new criteria for stopping mass drug administration and verifying elimination of human onchocerciasis marking a significant step in defining the transition from control to elimination of the disease in Africa. These guidance documents describe the serologic and entomologic threshold requirements needed for making programmatic decisions using newer, more sensitive diagnostic tools such as the OV16 ELISA and O-150 PCR but do not provide guidance on how to move from a historic approach of vector management or disease control to one of elimination of transmission. Onchocerciasis programs in Nigeria, Uganda and Ethiopia have been among the first to operationalize these new guidelines in Africa. As such, the national programs have had to struggle with numerous challenges including analyzing historic data and treatment decisions, understanding onchocerciasis transmission in the context of programs using the same drug, ivermectin, to treat lymphatic filariasis, and in capturing the requisite number of the blackfly vector needed to make programmatic decisions in areas where the vector density has been declining.
of three projects funded by the Bill & Melinda Gates Foundation with a focus on soil-transmitted helminthiasis. The session will highlight findings from randomized controlled trials exploring the benefits of increased dosages of albendazole against T. trichiura and hookworm infections in preschoolers, school-aged children and adults. Results will be presented from a multi-country study on albendazole-ivermectin against T. trichiura and demonstrate that combination chemotherapy is the way forward to effectively treat soil-transmitted helminthiasis. In addition, the challenges of assessing the emergence of anthelmintic resistance will be discussed along with current research to develop and deploy molecular genetic tests.

**CHAIR**
Jennifer Keiser
Swiss Tropical and Public Health Institute, Basel, Switzerland
Judd Walson
University of Washington, Seattle, United States

**10:45 a.m.**
WHEN A PROGRAM APPEARS TO FAIL – DETERMINING FAILURE OF COMPLIANCE OR EMERGENCE OF RESISTANCE
Judd Walson
University of Washington, Seattle, WA, United States

**11:05 a.m.**
MULTI-COHORT RANDOMIZED TRIALS TO EVALUATE THE EFFICACY AND SAFETY OF ASCENDING DOSAGES OF ALBENDAZOLE AGAINST TRICHIURIS TRICHIURA AND HOOKWORM
Jean Coulibaly
Centre Suisse de Recherches Scientifiques, Abidjan, Côte D’Ivoire

**11:25 a.m.**
BENEFITS OF COMBINATION CHEMOTHERAPY FOR SOIL-TRANSMITTED HELMINTHIASIS
Jennifer Keiser
Swiss Tropical and Public Health Institute, Basel, Switzerland

**11:45 a.m.**
MOLECULAR APPROACHES TO SCREEN FOR ANTHELMINTIC DRUG RESISTANCE EMERGENCE IN SOIL TRANSMITTED HELMINTHS
John Gilleard
University of Calgary, Calgary, Canada

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### Symposium 130

**Chances and Challenges for the Control and Elimination of Soil-transmitted Helminth Infections**

**Meeting Room 14**

**Thursday, November 19**

**10:45 a.m. - 12:30 p.m. U.S. Eastern Time Zone**

Millions of people are infected with soil-transmitted helminths, resulting in anemia, malnutrition, growth stunting, and cognitive deficits. The current control strategy of the World Health Organization to reduce the burden and morbidity of these infections is preventive chemotherapy, i.e. the administration of the two benzimidazoles (albendazole and mebendazole) using single, oral doses to at risk populations, mainly children without prior diagnosis. There is interest in moving beyond control of these infections trying to achieve elimination in some geographic settings. Both benzimidazoles are highly efficacious against Ascaris lumbricoides, but only albendazole is efficacious against hookworm, and both drugs are unsatisfactory against Trichuris trichiura infections. Moreover, there is a growing concern that the increasing drug selection pressure will result in the emergence of anthelmintic resistance which will gravely compromise the sustainability of preventive chemotherapy programs and threaten elimination efforts. This symposium will present exciting new findings generated in the framework
1511

REVISITING DENSITY DEPENDENCE IN SCHISTOSOMES USING SIBSHIP RECONSTRUCTION

M. Inês Neves, Joanne P. Webster, Martin Walker
Royal Veterinary College, University of London, Hatfield, United Kingdom

1512

MISMATCHES IN THERMAL OPTIMA OF SCHISTOSOMA MANSONI AND BIOMPHALARIA SPP: LIFE-HISTORY TRAITS SHIFT THE THERMAL OPTIMUM OF HUMAN SCHISTOSOMIASIS TRANSMISSION UNDER DIFFERENT INTERVENTION SCENARIOS

Karen H. Nguyen, Philipp H. Boersch-Supan, Valerie J. Harwood, Jason R. Rohr
Emory University, Atlanta, GA, United States, 2British Trust for Ornithology, Thetford, United Kingdom, 3University of South Florida, Tampa, FL, United States, 4University of Notre Dame, Notre Dame, IN, United States

1513

DYNAMICS OF PARASITE AGGREGATION UNDER INTENSE CONTROL EFFORTS: INSIGHTS FROM THE ZANZIBAR ELIMINATION OF SCHISTOSOMIASIS TRANSMISSION (ZEST) STUDY

Christopher M. Hoover, Stefanie Knoop, Alan Hubbard, Joseph A. Lewnard, Giulio A. de Leo, Susanne H. Sokolow, Fatma Kable, David Rollinson, Justin V. Remais
1UC Berkeley, Berkeley, CA, United States, 2Swiss Tropical and Public Health Institute, Basel, Switzerland, 3Stanford University, Stanford, CA, United States, 4Neglected Disease Program, Zanzibar Ministry of Health, Unguja, United Republic of Tanzania, 5Natural History Museum, London, United Kingdom

1514

SCHISTOSOMA MANSONI TRANSMISSION IN UGANDAN HOTSPOT AREAS. WHO IS REINFECTING WHOM?

Christina L. Faust, Olivia Ericson, Moses Ainaite, Moses Adirko, Andrina Nankasi, Fred Bisegye, Aaron Atuhaire, Edridah M. Tukahebwa, Poppy HL Lamberton
1Penn State University, State College, PA, United States, 2University of Glasgow, Glasgow, United Kingdom, 3Vector Control Division, Ministry of Health, Kampala, Uganda

1515

SCHISTOSOMA MANSONI INFECTION IN A HARD TO REACH DISTRICT OF MADAGASCAR FOLLOWING FOUR ROUNDS OF MASS DRUG ADMINISTRATION: RESULTS FROM REPEATED ANNUAL CROSS-SECTIONAL STUDIES

Stephen Spencer, James Penney, Hannah Russell, Cortland Linder, Caitlin Sheehy, Kate Hyde, J. R. Stothard, Amaya Bustinduy, Sheena Cruickshank, Emmanuel Andriamasy, Alain Rahetilahy
1University of Manchester, Manchester, United Kingdom, 2Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 3London School of Hygiene and Tropical Medicine, London, United Kingdom, 4Faculté de Médecine, Université d’Antananarivo, Antananarivo, Madagascar, 5Ministère de la Santé Publique, Antananarivo, Madagascar

1516

PERSISTENT HOTSPOTS OF SCHISTOSOMA MANSONI INFECTIONS AFTER 14 YEARS OF MASS DRUG ADMINISTRATION IN UGANDA: OPERATIONAL OR BIOLOGICAL FAILURES?

1University of Glasgow, Glasgow, United Kingdom, 2The Center for Infectious Disease Dynamics, Pennsylvania State University, State College, PA, United States, 3Schistosomiasis Control Initiative, Imperial College, London, United Kingdom, 4Imperial College, London, United Kingdom, 5Vector Control Division, Ministry of Health, Kampala, Uganda, 6Vector Control Division, Ministry of Health, Kampala, Uganda, 7Big Data Institute, Oxford, United Kingdom, 8University of London, Royal Veterinary College, London, United Kingdom

1517

SCHISTOSOMIASIS, A DATA-DRIVEN ANALYSIS OF SYMPTOMS

Goyette Chami, Edridah Tukahebwa, Narcis Kabaterine
1University of Oxford, Oxford, United Kingdom, 2Vector Control Division, Ministry of Health, Kampala, Uganda

1518

EFFECTS OF A WATER, SANITATION AND HYGIENE MOBILE HEALTH PROGRAM ON DIARRHEA AND CHILD GROWTH IN BANGLADESH: A CLUSTER-RANDOMIZED CONTROLLED TRIAL OF THE CHOBIT MOBILE HEALTH PROGRAM

1Johns Hopkins University, Baltimore, MD, United States, 2International Center for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 3Bangladesh Ministry of Health and Family Welfare, Dhaka, Bangladesh

1520

LEAD IS A POTENT NEUROTOXIN: DEVELOPING AN INTERVENTION TO REDUCE LEAD EXPOSURE AMONG PREGNANT AND LACTATING WOMEN IN BANGLADESH

Mahbubur Rahman, Tania Jahir, Helen Pitchik, Stephen P. Luby, Jasmin Sultana, AKM Shobab, Tarique Md Nurul Huda, Md Saiful Islam, Farzana Yeasmin, Musa Baker, Dalia Yeasmin, Syeda Nurunnahar, Peter J. Winch, Jenna Forsyth
1International Center for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 2University of California Berkeley, Berkeley, CA, United States, 3Stanford University, Stanford, CA, United States, 4Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States

1521

STRATEGIES TO CONNECT LOW-INCOME COMMUNITIES WITH THE PROPOSED SEWERAGE NETWORK OF THE DHAKA SANITATION IMPROVEMENT PROJECT, BANGLADESH

Mahbub Ul Alam, James B. Tidwell, Atik Ahsan, Ayesha Afroz, Sharika Ferdous, Fazlie Sharior, Farhana Akand, Supta Sarker, Guy Norman, Mahbub Rahman
1International Center for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, 2Harvard Kennedy School of Government, Cambridge, MA, United States, 3Water & Sanitation for the Urban Poor (WSUP), London, United Kingdom
1522
PATTERNS AND DRIVERS OF SUSTAINED AND GAINED HOUSEHOLD SANITATION ACCESS BETWEEN 2015 AND 2017 AMONG HOUSEHOLDS IN THE TUMIKIA TRIAL IN KWALE COUNTY, KENYA

Hugo Legge1, Stella Kepha1, Stefan S. Witek-McManus1, Katherine E. Halliday1, Carlos Mcharo1, Hajara El-Busaidy1, Redempta Muendo1, Thiva Safari2, Charles S. Mwandawiro1, Sultani H. Matemedechero1, Rachel L. Pullan1, William E. Oswald1
1London School of Hygiene and Tropical Medicine, London, United Kingdom, 2Eastern and Southern Africa Centre of International Parasite Control, Kenya Medical Research Institute, Nairobi, Kenya, 3Ministry of Health, County Government of Kwale, Kwale, Kenya, 4Division of Vector Borne and Neglected Tropical Diseases Unit, Ministry of Health, Nairobi, Kenya

1523
ENDLINE EVALUATION OF A WASH IN SCHOOL PROGRAM FOR ABSENTEEISM, DIARRHEA AND RESPIRATORY INFECTIONS AMONG STUDENTS IN SECONDARY SCHOOLS IN BANGLADESH

Debashish Biswas1, Abul K. Shoab1, Mahbub-Ul Alam1, Mahbubur Rahman1, Mirza M. Sultana2, Mahfuj-ur Rahman2, Aftab Ope1, Leanne Unicom1
1International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh, 2WaterAid Bangladesh, Dhaka, Bangladesh

1524
HAND HYGIENE DURING CHILDBIRTH: A MIXED-METHODS OBSERVATIONAL STUDY IN CAMBODIA

Robert Dreibelbis1, Yolisa Nalule1, Ponnary Pons1, Helen Buxton1, Channa Sam Ol1, Alison Macintyre1, Leang Supheap1, Ir Por1
1London School of Hygiene and Tropical Medicine, London, United Kingdom, 2WaterAid Cambodia, Phnom Penh, Cambodia, 3WaterAid Australia, Melbourne, Australia, 4National Institutes of Public Health, Cambodia, Phnom Penh, Cambodia

1527
RESPIRATORY VIRUS INFECTIONS FROM THE SENTINEL ENHANCED DENGUE SURVEILLANCE SYSTEM, 2016-2019

Rachel M. Rodríguez-Santiago1, Robert Rodríguez-González1, Kelmie Torres-Rivera1, Vanessa Rivera-Amill1, Luisa I. Alvarado-Domenech1, Laura Adams2
1Ponce Health Sciences University, Ponce, PR, United States, 2Dengue Branch, Centers for Disease Control and Prevention Division of Vector-Borne Diseases, San Juan, PR, United States

1528
PREVALENCE, RISK FACTORS AND OUTCOME OF HOSPITAL ACQUIRED PNEUMONIA IN YOUNG BANGLADESHI CHILDREN

Mohammad J. Chisti1, Abu S. Shahid, K. M. Shahunja
International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh

1529
PERFORMANCE EVALUATION OF THE XPERT MTB/RIF ULTRA ASSAY ON POSTMORTEM NASOPHARYNGEAL SPECIMENS TO IDENTIFY SUSPECTED AND UNSUSPECTED TUBERCULOSIS DEATHS AMONG HOSPITALIZED PATIENTS AT AUTOPSY IN NORTHERN TANZANIA

Cristina R. Costales1, John A. Crump1, Alex R. Mremi2, Patrick T. Amsi1, Manuela Carugati1, Deng Madut2, Ann M. Nelson2, Venance P. Maro1, Matt P. Rubach1
1Keck School of Medicine of the University of Southern California, Los Angeles, CA, United States, 2Centre for International Health, University of Otago, Dunedin, New Zealand, 3Kilimanjaro Christian Medical Centre, Moshi, United Republic of Tanzania, 4Division of Infectious Diseases and International Health, Duke University, Durham, NC, United States, 5Inpala Consulting, Washington, DC, United States

1530
THE POISONED CHALICE: A BIOMIMETIC ‘TROJAN HORSE’ PLATFORM FOR PRECISION KILLING OF MDR TUBERCULOSIS

Andrew W. Simonson1, John N. Alumasa1, Agustey S. Mongia1, Matthew R. Aronson1, Michael D. Howe1, Bailey Klein1, Sarah Almarzooq2, Aida Ebrahimi1, Anthony D. Baughn4, Kenneth C. Keiler1, Scott H. Medina1
1Pennsylvania State University, University Park, PA, United States, 2University of Minnesota, Minneapolis, MN, United States

1531
CASCADE ANALYSIS OF HOUSEHOLD CONTACT INVESTIGATION FOR TUBERCULOSIS IN CALI, COLOMBIA

Gustavo Diaz1, Angela M. Victoria1, Amanda J. Meyer1, Yessenia Niño1, Lucy Luna1, Beatriz E. Ferro1, J. Lucian Davis4
1Centro Internacional de Entrenamiento e Investigaciones Medicas-CIDEIM & Alianza TB, Cali, Colombia, 2Department of Epidemiology of Microbial Diseases, Yale School of Public Health, New Haven, CT, United States, 3Centro de Comunicación y Liderazgo de la Alianza TB, Cali, Colombia, 4Division of Infectious Diseases and International Health, Duke University, Durham, NC, United States

1532
VIRAL HEMORRHAGIC FEVERS

Caitlin Cossaboom
Centers for Disease Control and Prevention, Atlanta, GA, United States

Eddy Kinganda Lusamaki
Institut National de Recherche Biomédicale, Kinshasa, Democratic Republic of the Congo
A PHASE I OPEN-LABEL, DOSE-ESCALATION CLINICAL TRIAL TO EVALUATE THE SAFETY, TOLERABILITY AND IMMUNOGENICITY OF THE MARBURG CHIMPANZEE ADENOVIRUS VECTOR VACCINE, VRC-MARADC087-00-VP (CAD3-MARBURG), IN HEALTHY ADULTS

Melinda J. Hamer1, Julie A. Ake1, Martin R. Gaudinski2, LaSonji A. Holman3, Christine E. Lee4, Alicia Widge5, Anne C. Preston1, Josephine H. Cox6, Jack N. Hutter1, James E. Moon1, Steven A. Schecht7, Victoria Kioko8, Casey Storme8, Paul T. Scott8, Kayvon Modjarrad9, Merlin Robb5, Nancy J. Sullivan1, Julie E. Ledgerwood1
1Walter Reed Army Institute of Research, Silver Spring, MD, United States, 2Vaccine Research Center, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, 3Walter Reed Army Institute of Research; Henry M. Jackson Foundation for the Advancement of Military Medicine, Silver Spring, MD, United States

EVALUATING THE LONG-TERM IMMUNOGENICITY OF ADENOVIRAL AND MVA VECTORED EBOLA VACCINE SCHEDULES AND RESPONSE TO A BOOSTER DOSE OF AD26.ZEBOV

Catherine Clare Smith1, Rebecca Makinson2, Meheen S. Datoo3, Souleymane Mboup4, Birahim P. Ndiaye1, Amy Flaxman2, Tandakha Diaye3, Josefine Badiane4, Juliana Barinumut5, Jamie Burbage6, Katja Pfafter7, Sarah Kelly8, Duncan Bellamy8, Charlotte Black9, Rachael Drake-Brockman10, Parvinder Aley1, Katrina Pollock1, David Lewis1, Adrian V. Hill1, Katie Ewer1, Matthew D. Snape1
1Oxford Vaccine Group and NIHR Oxford Biomedical Research Centre, University of Oxford, Oxford, United

MERCK RVSVÂG-ZEBOV-GP EBOLA VACCINE: UPDATED SAFETY, IMMUNOGENICITY, AND EFFICACY AND ESTIMATION OF THE CORRELATES OF PROTECTION

Jakub Simon1, Stepen Kennedy2, Barbara Mahon3, Sheri Dubey3, Rebecca Grant-Klein1, Ken Liu4, Jonathan Hartzel1, Beth-Ann Collier1, Carolee Welebob1, Mary Hansen1, Rebecca Grais4
1Merck & Co., Inc., Kenilworth, NJ, United States, 2Liberian Ministry of Health, Monrovia, Liberia, 3Bill & Melinda Gates Foundation, Seattle, WA, United States, 4Epicenter, Paris, France

CHARACTERISTICS OF EBOLA VIRUS DISEASE SURVIVOR BLOOD AND SEMEN IN LIBERIA: SEROLOGY AND RT-PCR

Aaron Kofman1, Susanne Linderman2, Kaithong Su3, Lawrence J. Purpora4, Elizabeth Ervin1, Shelley Brown5, Maria Morales-Betoulle1, James Graziason6, Deborah L. Cannon7, John D. Klena7, Rodel Desamuro-Thorpe8, John Fankhauser9, Romeo Oracle10, Moses Soka11, Uriah Glaybo6, Moses Massaquoi10, Tolbert Nysenswah6, Stuart T. Nichol10, Jomah Kollie11, Armah Kiawu6, Edna Freeman12, Giovanni Giah6, Henry Tony3, Mylene Faikai5, Mary Jawara1, Kuku Kamara1, Samuel Kamara1, Benjamin Flowers1, Kromah L. Mohammed12, David Chiriboga13, Desmond E. Williams14, Steven H. Hinrichs1, Rafi Ahmed4, Benjamin VonHim1, Pierre E. Rollins1, Mary J. Choi4
1Epidemic Intelligence Service, Viral Special Pathogens Branch, Division of High-Consequence Pathogens and Pathology, National Center for Emerging and Zoonotic Infectious Diseases, Centers for Disease Control and Prevention, Atlanta, GA, United States, 2Emory Vaccine Center, Emory University, Atlanta, GA, United States, 3Department of Pathology and Microbiology, University of Nebraska Medical Center, Omaha, NE, United States, 4Viral Special Pathogens Branch, Division of High-Consequence Pathogens and Pathology, National Center for Emerging and Zoonotic Infectious Diseases, Centers for Disease Control and Prevention, Atlanta, GA, United States, 5Office of Public Health Preparedness and Response, Center for Preparedness and Response, Centers for Disease Control and Prevention, Atlanta, GA, United States, 6Santa Clara Valley Medical Center, San Jose, CA, United States, 7ELWA Hospital, Samaritan’s Purse, Monrovia, Liberia, 8Ministry of Health, Liberia, Monrovia, Liberia, 9Men’s Health Screening Program, Monrovia, Liberia, 10University of Massachusetts Medical School, Worcester, MA, United States, 11Center for Global Health, Centers for Disease Control and Prevention, Atlanta, GA, United States

RHABDOMYOLYSIS, KIDNEY INJURY, AND MORTALITY IN EBOLA VIRUS DISEASE IN EASTERN DEMOCRATIC REPUBLIC OF THE CONGO

Claude Masumbuko Kasereka1, Zubia Mumtaz2, Andrea Conroy3, Malengeta Kambale4, Tsongo Kibendewa5, Didier Mwesha6, Michael T. Hawkes7
1University of Alberta, Edmonton, AB, Canada, 2Indiana University School of Medicine, Indianapolis, IN, United States, 3Universite Catholique du Graben, Butembo, Democratic Republic of the Congo, 4Universite de Kisangani, Kisangani, Democratic Republic of the Congo, 5World Health Organization, Butembo, Democratic Republic of the Congo

RE-EMERGENCE OF CHAPARE HEMORRHAGIC FEVER IN BOLIVIA, 2019

Caitlin Cossaboom1, Armando Medina2, Carla Romero3, Maria Morales-Betoulle4, Grisel Alarcon5, Jhemis Molina5, Roxana Loayza6, Cinthia Avila6, Sebastian Sasias2, Mirian Cruz7, Eliana Gil8, Gabriela Anez9, Jimmy revollo10, Fernando Morales11, Carlos E. Alvarez12, Jairo Mendez-Rico13, Shannon Whitmer14, Ketan Patel15, John Klena16, Stuart Nichol17, Christina Spriopoulou18, Mary Choi16, Trevor Shoemaker17, Joel Montgomery18
1Centers for Disease Control and Prevention, Atlanta, GA, United States, 2Unidad de Epidemiologia, Ministerio de Salud, La Paz, Bolivia, Plurinational State of, 3Centro Nacional de Enfermedades Tropicales, Santa Cruz de la Sierra, Bolivia, Plurinational State of, 4Pan American Health Organization, Washington, DC, United States

OPERATIONALIZING GENOMIC EPIDEMIOLOGY DURING THE NORD-KIVU EBOLA OUTBREAK, DEMOCRATIC REPUBLIC OF THE CONGO

Eddy Kingonga Lusamaki1, Allison Black2, Daniel Mukadi1, James Hadfield3, Placide Mbala Kingebeni4, Catherine Pratt4, Adrienne Aziza Amuni5, Junior Bulabula6, Fabrice Mambu7, Michael Wiley8, Steve Ahuka Mundeke9, Trevor Bedford10, Jean Jacques Tamfum Muyembe11
1Institut National de Recherche Biomedica, Kinshasa, Democratic Republic of the Congo, 2University of Washington, Washington, WA, United States, 3Fred Hutch, Seattle, WA, United States, 4University of Nebraska Medical Center, Omaha, NE, United States

Symposium 135

Counting the Dead: Making the Dead Count

Meeting Room 3
Thursday, November 19
1 p.m. - 2:45 p.m. U.S. Eastern Time Zone

Public health was founded on knowing about who dies and why, yet for most of the world, this information is not collected routinely. Over half of global deaths leave no trace in the public record, including the vast majority of deaths in low- and middle-income countries, especially those occurring outside of healthcare facilities. Medical certification of deaths is possible only when most deaths occur in facilities, but most countries are decades from that. The most successful strategy short of medical certification is “verbal autopsy” (VA), which assigns the most likely cause of death based on structured interviews and family members and their narratives within a few months of a death, supplemented by any medical records. The Million Death Study (MDS) covering over 1.3 million randomly selected households in all Indian states, has been operating continuously since 2002 and has logged more than 700,000 deaths with assigned causes. Similar systems are now being established in Sierra Leone, Mozambique, and Ethiopia. VA is most accurate for causes that follow distinctive pathways, e.g., death from snakebite. For conditions with significant symptom overlap—e.g., many acute infections—the attribution is less definitive. This is the case for...
malaria, particularly among adults. New measures in addition to VA—in particular, confirmation through a variety of possible biomarkers—are needed to differentiate causes such as malaria, influenza, arboviruses, rickettsiae, meningitis, and bacterial sepsis syndrome. Improved VA can also be adapted for use in outbreak mortality surveillance in the absence of well-developed vital registration systems. In the wake of the 2019 novel coronavirus and the 2015 Ebola outbreak, VA supplements for special conditions are being developed. Cause-of-death information is vital for countries to develop effective public and clinical health measures to avert preventable premature deaths. Gathering this information is feasible and affordable even in poor countries. From the first publication of the maternal mortality estimates in 2006, the MDS has vastly improved the understanding of Indian patterns of death, resulting in more rational priority setting. VA and supplementary data gathering techniques should be adopted in all countries lacking the capacity for widespread medical certification of deaths.

**CHAIR**
Hellen Gelband  
Centre for Global Health Research, University of Toronto, Toronto, ON, Canada

**1 p.m.**
THE INDIAN MILLION DEATH STUDY: RESULTS AND IMPACTS, 2002-2014, FROM SNAKEBITES TO HEART ATTACKS  
Prabhat Jha  
Centre for Global Health Research, University of Toronto, Toronto, ON, Canada

**1:20 p.m.**
SIERRA LEONE’S SAMPLE REGISTRATION SYSTEM FOR MORTALITY: CHALLENGES FOR A LOW-INCOME COUNTRY AND THE SURPRISINGLY INFORMATIVE FIRST WAVE OF RESULTS  
Rashid Ansumana  
Njala University, Bo, Sierra Leone

**1:40 p.m.**
IS MALARIA AN IMPORTANT CAUSE OF DEATH AMONG ADULTS? EXISTING EVIDENCE AND ONGOING EFFORTS TO COMBINE STANDARD VA FINDINGS WITH BIOMARKERS AND A TARGETED VA MODULE  
Hellen Gelband  
Centre for Global Health Research, University of Toronto, Toronto, ON, Canada

**2 p.m.**
OUTBREAKS AND EPIDEMICS AND ADAPTING STANDARD VA TOOLS TO AID SURVEILLANCE IN REAL TIME: THE CASE OF THE 2019 NOVEL CORONAVIRUS  
Isaac I. Bogoch  
Toronto General Hospital, Toronto, ON, Canada

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**Symposium 136**

**Where Are We in Reaching Zero Leprosy?**

**Meeting Room 4**

**Thursday, November 19**

**1 p.m. - 2:45 p.m. U.S. Eastern Time Zone**

Leprosy is a disease documented since ancient times. However, progress towards elimination of this persistent and disabling disease has been slow, with more than 200,000 new cases reported every year. Several crucial characteristics of this disease are posing a challenge to reaching the goal of transmission interruption and elimination, including the long incubation time, diagnostic difficulties, our inability to predict who is at risk, and unavailability of *in vitro* culturing. Furthermore, stigma and discrimination are long-standing barriers to early detection of leprosy and disability prevention. Needless to say that social exclusion contributes to the decrease in quality of life of those affected by the disease. Over recent years, important tools and approaches have become available for leprosy control, including chemoprophylaxis for contacts with a single dose of rifampicin and retrospective active case finding. Additional innovations are currently under study, and dedicated research funding instruments have been established. Global coordination of efforts has been strengthened by the creation of the Global Partnership for Zero Leprosy. As we are approaching the end of the 5-year WHO Strategy for Accelerating towards a Leprosy-free World 2016-2020, it is timely that we look at: 1) Where we are with regard to leprosy elimination? 2) What new tools and interventions have been developed? 3) Where are we heading? A better understanding of these points will help develop the next WHO strategy for leprosy control fully aligned with the NTDs Roadmap 2021-2030, in order for us to reach a leprosy-free world. There are also increased opportunities for leprosy control with the move towards integration with other NTDs, especially the skin-NTDs. Innovative models integrating leprosy care with chronic disease management that share similar manifestations should also be explored.

**CHAIR**
Rie R. Yotsu  
Nagasaki University, School of Tropical Medicine and Global Health, Nagasaki, Japan

**1:15 p.m.**
REVIEW OF THE GLOBAL BURDEN AND WHERE WE ARE IN TERMS OF THE WHO STRATEGY 2016-2020 AND LOOKING BEYOND  
Erwin Cooreman  
World Health Organization, New Delhi, India

**1:30 p.m.**
A NEW TOOL FOR CUTTING TRANSMISSION? - CHEMOPROPHYLAXIS WITH SINGLE-DOSE RIFAMPICIN AND RELATED ONGOING RESEARCH  
Peter Steinmann  
Swiss Tropical and Public Health Institute, Basel, Switzerland

**1:45 p.m.**
ZERO LEPROSY PROGRAM IN THE MALDIVES  
Sana Saleem  
Ministry of Health, Maldives, Maldives
2 p.m.
LEPROSY AND INTEGRATION WITH OTHER DISEASES: WHAT ARE THE EXISTING AND NEW OPPORTUNITIES?
Rie Yotsu
Nagasaki University, School of Tropical Medicine and Global Health, Nagasaki, Japan

Scientific Session 137

Global Health: Maternal, Newborn and Child Health

Meeting Room 5
Thursday, November 19
1 p.m. - 2:45 p.m. U.S. Eastern Time Zone

CHAIR
Michael J. Boivin
Michigan State University, East Lansing, MI, United States
Farzana Islam
International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh

MALNUTRITION IS STRONGLY ASSOCIATED WITH CHILDHOOD MORTALITY IN SUB-SAHARAN AFRICA AND SOUTH ASIA: FINDINGS FROM THE CHILD HEALTH AND MORTALITY PREVENTION SURVEILLANCE (CHAMPS) NETWORK
Kasthuri Sivalogan1, Priya M. Gupta1, Ashika Mehta2, Nega Assefa3, Shams El Arifeen4, Victor Akelo4, Quique Bassat5, Beth A. Tippett Barr6, Emily Gurley7, Amara Jambai8, Shabir A. Madhi9, Lola Madrid Castillo10, Inacio Mandomando11, Portia C. Mutevedzi12, Ikechukwu U. Ogbuanu13, Dickens Onyango14, Anthony Scott15, Samba Sow16, Karen Kotloff17, Parminder Sudeck18, Dianna M. Blau19
1Emory University, Atlanta, GA, United States
2University of Maryland Baltimore, Baltimore, MD, United States
3Haramaya University, Harar, Ethiopia
4ICF, Dhaka, Bangladesh
5CDC, Kismu, Kenya
6Global, Barcelona, Spain
7John Hopkins University, Baltimore, MD, United States
8Sierra Leone MSHs, Freetown, Sierra Leone
9Wits University, Johannesburg, South Africa
10London School of Tropical Medicine & Hygiene, London, United Kingdom
11Centro de Investigación en Salud de Manbiça, Manbiça, Mozambique
12Crown Agents, Freetown, Sierra Leone
13Kisumu County Ministry of Health, Kismu, Kenya
14Centre Pour les Vaccins en Développement, Bamako, Mali
15CDC, Atlanta, GA, United States

EFFORTS TO IMPROVE POSTMORTEM ANTHROPOMETRIC MEASUREMENTS IN CHILDREN UNDER 5 YEARS OF AGE
Priya M. Gupta1, Victor Akelo2, O Yaw Addo3, Kasthuri Sivalogan4, Richard Ollech5, Dickson Geth6, Beth Tippett Barr7, Dianna Blau8, Parminder Sudeck9
1Emory University, Atlanta, GA, United States
2University of Maryland Baltimore, Baltimore, MD, United States
3Haramaya University, Harar, Ethiopia
4ICF, Dhaka, Bangladesh
5CDC, Kismu, Kenya
6Global, Barcelona, Spain
7John Hopkins University, Baltimore, MD, United States
8Sierra Leone MSHs, Freetown, Sierra Leone
9Wits University, Johannesburg, South Africa

TRAINING MOTHERS IN THE DR CONGO IN EARLY CHILDHOOD DEVELOPMENT (ECD) TECHNIQUES TO MITIGATE THE RISK OF EARLY CHILDHOOD NEURODEVELOPMENTAL DEFICITS FROM DEPENDENCE ON POORLY PROCESSED TOXIC CASSAVA
Michael J. Boivin1, Esperance Kashala-Abotnes2, Alla Sikorski3, Nicole Mashukiano4, Marcel L. Kunyu5, Daniel Mkueba6, Miriam Namiremb6, Fiona Bukena7, Daniel Okitundu8, Dieudonne Ngoyi Mumba9, Desire Tshala-Katumbay7
1Michigan State University, East Lansing, MI, United States
2University of Bergen, Bergen, Norway
3Programme National de Nutrition (PRONANUT), Kinshasa, Democratic Republic of the Congo
4University of Kinshasa, Kinshasa, Democratic Republic of the Congo
5Global Health Uganda, Kampala, Uganda
6Institut National de Recherche Biomédicale (INRB), Kinshasa, Democratic Republic of the Congo
7Oregon Health and Sciences University, Portland, OR, United States

THE ADDED VALUE OF THE MINIMALLY INVASIVE TISSUE SAMPLING OVER MEDICAL RECORDS AND VERBAL AUTOPSY IN DIAGNOSING THE CAUSE OF DEATH AMONG UNDER-5 CHILDREN AND STILLBIRTHS IN BANGLADESH
Farzana Islam1, Kyu Han Lee2, Atique Iqbal Chowdhury3, Afruna Rahman1, Abu Faisal Md Pervez2, Abu Bakar Siddique2, Qazi Sadeq-ur Rahman3, Kazi Munisul Islam1, Syed Aminul Islam1, Shuvo Deb Nath4, Sharmin Sultan5, Rajib Biswas6, Faria Ahmed5, Sabbir Ahmed1, Muntasir Alam6, Mustafizur Rahman1, Sanwarul Bari5, Shams El Arifeen1, Emily S. Gurley2
1International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka, Bangladesh
2John Hopkins Bloomberg School of Public Health, Baltimore, MD, United States
3Emory University, Atlanta, GA, United States

Symposium 138

Ethical and Equitable Global Digital Health - Issues and Opportunities

Meeting Room 6
Thursday, November 19
1 p.m. - 2:45 p.m. U.S. Eastern Time Zone

This symposium brings together “problem owners” and “problem solvers” in a call-response format to discuss 4 key themes in conducting ethical and equitable global health research. The 4 themes are: 1) Trust and accountability in AI-powered digital health tools. Issues faced by field implementers in this topic paired with opportunities: Ubuntu digital health through local ownership. 2) Environmentally conscious digital health. Issues faced by field implementers in this topic paired with opportunities: 4) Transparent, data-driven pandemic policymaking. Issues faced by field implementers in this topic paired with opportunities: What if...? the COVID policy simulator.
It is estimated that 200 million girls and women in more than 30 countries, primarily in Africa and a few countries in the Middle East and Asia, have been subjected to female genital mutilation (FGM). The practice extends to migrant communities in North America and Western Europe. FGM has no health benefits, is a violation of human rights and is never acceptable. FGM leads to gynecological and obstetric complications, urinary problems, sexual dysfunction and mental health disorders. The economic burden of treating these complications is estimated to be more than 1 billion USD. International efforts to counteract FGM include awareness of the negative effects, legal frameworks to prohibit FGM, and community response. Sustainable Development Goal 5 aims to: ‘eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation.’ This symposium will address four aspects of FGM: the current epidemiology and practice of FGM, surgical approaches to managing complications of FGM, efforts to abandon FGM though changing social norms, and community empowerment of girls and women to resist the practice.

CHAIR
David R. Hill
Frank H. Netter MD School of Medicine, Quinnipiac University, Hamden, CT, United States

1 p.m.
SURGICAL APPROACHES TO REDUCE THE MEDICAL AND PSYCHOSOCIAL BURDEN OF FEMALE GENITAL MUTILATION
Ivona Percec
University of Pennsylvania School of Medicine, Philadelphia, PA, United States

1:20 p.m.
THE SALEEMA INITIATIVE IN SUDAN: CHANGING SOCIAL NORMS AROUND FEMALE GENITAL MUTILATION
W. Douglas Evans
Milken Institute School of Public Health, George Washington University, Washington, DC, United States

1:40 p.m.
EMPOWERING YOUNG WOMEN AND GIRLS TO RESIST FEMALE GENITAL MUTILATION
Josephine Ndirias
Mukogodo Girls Empowerment Program, Nanyuki, Kenya

Symposium 140
Spatial Intelligence to Optimize Public Health Interventions

Meeting Room 8
Thursday, November 19
1 p.m. - 2:45 p.m. U.S. Eastern Time Zone

If disease was uniform across populations, and populations were spread evenly across space, interventions would be easy to plan. But we know this is not the case; more often than not, distribution of disease is heterogeneous and service delivery is challenging, particularly in countries with limited address systems and rural population distribution. The global health community can now access remotely sensed data and satellite imagery to understand distribution of population and built structures. When these tools are smartly combined with algorithms and geotechnology, field-based service delivery of life-saving health campaigns becomes more precise, targeted and impactful. At the nexus of these powerful areas is the field of ‘spatial intelligence’. This symposium will share case studies which show how ‘spatial intelligence’ is pushing the frontier of public health through the
use of geo-technology to ensure equitable health service delivery. Case studies from southern and western Africa will share spatial intelligence approaches to optimise mass drug administration for malaria and neglected tropical disease, indoor residual spraying and seasonal malaria chemoprevention. Perspectives from academic institutions, Ministries of Health and implementing partners will showcase how the field of spatial intelligence is benefiting from a tight integration of these often disparate partners. The first two presenters will highlight the available remotely sensed satellite imagery and use of those sources to build maps of settlements and communities and to apply powerful algorithms to detect important variables for intervention planning. The third and fourth presenters will share results of a powerful new open-source tool which utilizes geo-referenced population and household maps to plan and guide field implementation of malaria-related interventions in Zambia and Nigeria. The discussion will focus on lessons learned through these and other implementations of spatial intelligence, collaboration opportunities to improve planning and deployment of these tools, and areas of growth and exploration.

CHAIR
Anna M. Winters
Akros, Lusaka, Zambia
Roly D. Gosling
University of California San Francisco, San Francisco, CA, United States

1 p.m.
SPATIAL INTELLIGENCE FOR MALARIA ELIMINATION IN SOUTHERN PROVINCE, ZAMBIA
Kafula Silumbe
PATH - MACEPA, Lusaka, Zambia

1:25 p.m.
PILOTING REVEAL FOR USE IN SEASONAL MALARIA CHEMOPREVENTION IN NIGERIA
Olatunde Adesoro
Malaria Consortium, Abuja, Nigeria

1:50 p.m.
HIGH RESOLUTION POPULATION AND SETTLEMENT DATA FOR IMPACTFUL MALARIA INTERVENTIONS IN SUB-SAHARAN AFRICA
Olena Borkovska
Columbia University, Center for International Earth Science Information Network (CIESIN), New York, NY, United States

2:15 p.m.
IMPROVING ACCESS TO DATA SCIENCE AND AI: A GLOBAL HEALTH PRIORITY
Hugh Sturrock
Locational, London, United Kingdom
Scientific Session 142

American Committee of Molecular, Cellular and Immunoparasitology (ACMCIP): Parasite Biology and Drug Targets

Meeting Room 10
Thursday, November 19
1 p.m. - 2:45 p.m. U.S. Eastern Time Zone

Supported with funding from the Burroughs Wellcome Fund

CHAIR
Katrina A. Button-Simons
University of Notre Dame, Notre Dame, IN, United States

Erica Silberstein
CBER/FDA, Silver Spring, MD, United States

1664

THE CRYPTOSPORIDIUM SINGLE-CELL ATLAS REVEALS KEY LIFE CYCLE STAGES AND A COMMITMENT TO MALE AND FEMALE DEVELOPMENT
Katelyn A. Walzer, Jayesh Tandel, Jodi A. Gulicksrud, Stephen Carro, Eoin Whelan, Elise Krespan, Daniel P. Beiting, Boris Striepen
University of Pennsylvania, Philadelphia, PA, United States

1665

THE VSG-EXCLUSION (VEX) COMPLEX ORCHESTRATES VSG ALLELE-EXCLUSIVE INTERACTIONS WITH THE SPLICED-LEADER LOCUS IN TRYPANOSOMES
Joana Correia Faria1, Vanessa Luzak2, Laura S.M. Müller2, Benedikt G. Brink2, Sebastian Hutchinson1, Lucy Glover1, T. Nicolai Siegel2, David Horn1
1The Wellcome Trust Centre for Anti-Infectives Research, School of Life Sciences, University of Dund, Dundee, United Kingdom, 2Department of Veterinary Sciences, Experimental Parasitology, Ludwig-Maximilians-Universität München, Planegg-Martinsried, Germany

1553

CONSTRUCTING A PHENOME: INTEGRATED ANALYSIS OF DRUG RESISTANCE, COMPETITIVE GROWTH AND GENE EXPRESSION IN NOVEL PLASMODIUM FALCIPARUM GENETIC CROSSES
Katrina A. Button-Simons1, Sudhir Kumar1, Katelyn M. Vendrey1, Lisa A. Checkley1, Mackenzie A. Sievert1, Gabriel J. Foster1, Catherine Jett4, Xue Li4, Douglas A. Shoue1, Meseret T. Haile1, Spencer Y. Kennedy1, Ann Reyes1, Abeer Sayeed1, Marina McDew-White1, François H. Nosten2, Stefan H. Kappe2, Scott J. Emrich1, Timothy J. Anderson1, Ian H. Cheeseman1, Ashley M. Vaughan1, Michael T. Ferdig1
1Eck Institute for Global Health, Department of Biological Sciences, University of Notre Dame, St. Joseph, MI, United States, 2Center for Global Infectious Disease Research, Seattle Children’s Research Institute, Seattle, WA, United States, 3Davis Arbovirus Research and Training Lab, Department of Pathology, Microbiology, and Immunology, University of California, Davis, Davis, CA, United States, 4Department of Microbiology, Immunology and Pathology, Colorado State University, Fort Collins, CO, United States

1554

UNRAVELING THE STRUCTURE AND FUNCTION OF THE NEMATODE SECRETORY SYSTEM TO IDENTIFY NEW ANTI-FILARIAL TARGETS
Paul M. Airs, Zachary W. Heimark, Kendra Gallo, Kathy Vaccaro, Nicolas J. Wheeler, Mostafa Zamanian
University of Wisconsin-Madison, Madison, WI, United States

(ACMCIP Abstract)

1555

HUMAN PLACENTAL TROPHOBLASTS ARE RESISTANT TO TRYPANOSOMA CRUZI INFECTION IN A 3D CULTURE MODEL OF THE MATERNAL-FETAL INTERFACE
Erica Silberstein1, Kwang Sik Kim1, David Acosta1, Alain Debrabant1
1CBER/FDA, Silver Spring, MD, United States, 2Johns Hopkins University School of Medicine, Baltimore, MD, United States
(ACMCIP Abstract)

1556

PATHOGEN BOX COMPOUNDS AS POSSIBLE LEADS FOR NEW INTERVENTIONS AGAINST LEISHMANIASIS
Wandayi Emmanuel Amlabu, Gordon A. Awandare, Theresa Manful Gwira
West African Center for Cell Biology and Infectious Diseases, WACCBIP, University of Ghana, East Legon, Accra, Ghana

1557

PHOSPHOMANNOMUTASE AS A NOVEL ANTIMALARIAL DRUG TARGET
Philip M. Frasse1, Daniel Goldberg1, Audrey R. Odom John2
1Washington University in Saint Louis, Saint Louis, MO, United States, 2Children’s Hospital of Philadelphia, Philadelphia, PA, United States
(ACMCIP Abstract)

Scientific Session 143

Mosquitoes: Insecticide Resistance and Control II

Meeting Room 11
Thursday, November 19
1 p.m. - 2:45 p.m. U.S. Eastern Time Zone

CHAIR
Jessy Goupeyou-Youmsi
University of Malawi College of Medicine, Blantyre, Malawi

Louisa Alexandra Messenger
London School of Hygiene and Tropical Medicine, London, United Kingdom

1558

IMPACTS OF IVERMECTIN-TREATED BACKYARD CHICKENS ON CULEX MOSQUITOES AND WEST NILE VIRUS TRANSMISSION IN DAVIS, CALIFORNIA
Karen M. Holcomb1, Chilinh Nguyen2, Brian D. Foy3, Christopher M. Barker1
1Davis Arbovirus Research and Training Lab, Department of Pathology, Microbiology, and Immunology, University of California, Davis, Davis, CA, United States, 2Arthropod-borne and Infectious Diseases Laboratory, Department of Microbiology, Immunology and Pathology, Colorado State University, Fort Collins, CO, United States

1559

IDENTIFICATION OF MALARIA VECTORS AND INSECTICIDE RESISTANT USING MID-INFRARED SPECTROSCOPY THROUGH A PORTABLE QUANTUM CASCADE LASER DEVICE
Mauro Pazmino Betancourt, Francesco Baldini, Heather Ferguson, Klaas Wynne, Lisa Ranford-Cartwright, David Childs
University of Glasgow, Glasgow, United Kingdom
1560
INSECTICIDE RESISTANCE ALTERS THE MICROBIOTA OF ANOPHELES COLUZZII FROM AGBOVILLE—A REGION WITH INTENSE PYRETHRROID RESISTANCE IN CÔTE D’IVOIRE
Bethanie Pelloquin1, Moja Kristan1, Constant Edi1, Emma Meiwald1, Emma Clark1, Claire Jeffries1, Thomas Walker1, Nsa Dada1, Louisa Messenger1
1Faculty of Infectious Tropical Diseases, London School of Hygiene and Tropical Medicine, London, United Kingdom, 2Centre Suisse de Recherche Scientifique en Côte d’Ivoire, Abidjan, Côte D’Ivoire, 3Faculty of Science and Technology, Norwegian University of Life Sciences, As, Norway

1561
SELECTION FOR INSECTICIDE RESISTANCE IN ANOPHELES Gambiae RESULTS IN INCREASED COMPETENCE FOR PLASMODIUM FALCIPARUM INFECTIONS
Kelsey L. Adams1, Emily K. Selland1, Naresh Singh1, Flaminia Catteruccia1
1Harvard T.H. Chan School of Public Health, Boston, MA, United States, 2Harvard University, Boston, MA, United States

1562
TRANSCRIPTOME ANALYSIS OF ANOPHELES Gambiae MOSQUITOES ASSOCIATED WITH RESISTANCE SELECTION WITH THREE DIFFERENT GROUPS OF AGRICULTURAL PESTICIDES
Christabelle Gba Sadia1, France-Paraudie A. Kousadio1, Marius G. Zoh1, Behi K. Fodjo1, Benjamin G. Koudou1, Jean-Marc Bonneville1, Stéphane Reynaud1, Jean-Philippe David1, Chouaibou S. Mouhamadou2
1Nangui Abrogoua University, Abidjan, Côte d’Ivoire, 2Univ. Grenoble-Alpes, Univ. Savoie Mont Blanc, CNRS, LECA, 38000 Grenoble, Grenoble, France

1563
MODULATION OF MALARIA VECTOR BLOOD-FEEDING SUCCESS IS ASSOCIATED WITH INSECTICIDE-TREATED BED NETS CONTAINING THE PBO RESISTANCE-REDUCING SYNERGIST IN MALAWI
Jessy Goupey Youmsi1, Lauren M. Cohee1, Atusaye Simbeye1, Chifundo Kadangwe1, Alfred Matengeni1, Clarissa Valim1, Miriam K. Laufer2, Mark L. Wilson3, Edward D. Walker1, Charles Mangani1, Don P. Mathanga1, Thenba Mzilahowa1
1University of Malawi College of Medicine, Blantyre, Malawi, 2University of Maryland School of Medicine, Baltimore, MD, United States, 3Boston University, Boston, MA, United States, 4University of Michigan School of Public Health, Ann Arbor, MI, United States, 5Michigan State University, East Lansing, MI, United States

1564
REDUCED LONG-LASTING INSECTICIDAL NET EFFICACY AND PYRETHRROID INSECTICIDE RESISTANCE ARE ASSOCIATED WITH OVER-EXPRESSION OF CYP6P4, CYP6P3 AND CYP6Z1IN POPULATIONS OF ANOPHELES COLUZZII FROM CÔTE D’IVOIRE
Anne Meiwald1, Emma Clark1, Moja Kristan1, Constant Edi1, Claire L. Jeffries1, Bethanie Pelloquin1, Thomas Walker1, Louisa Alexandra Messenger1
1London School of Hygiene and Tropical Medicine, London, United Kingdom, 2Centre Suisse de Recherche Scientifique en Côte d’Ivoire, Abidjan 01, Côte D’Ivoire

Symposium 144
Ahead of the Curve: Challenges and Opportunities for Outbreak Science
Meeting Room 12
Thursday, November 19
1 p.m. - 2:45 p.m. U.S. Eastern Time Zone
From SARS to Ebola to COVID-19, outbreak science has become increasingly integrated into infectious disease outbreak response. Outbreak science combines mathematical modeling with statistics, data science, clinical research, and laboratory diagnostics to support public health decision-making. These models are then better able to produce timely estimation of important variables including the incubation period, serial interval, and reproductive number, to project final outbreak size and to compare the impact of potential interventions. During the COVID-19 outbreak, outbreak science has been an important component of the public health response. Many of the processes and relationships that make this interdisciplinary work possible were developed in the wake of the West African Ebola outbreak. However, challenges remain surrounding issues of data ownership, international collaboration, communication, and transparency. This symposium is intended as a forum to highlight the progress made and to openly discuss the areas in which improvement remains necessary. Public health practitioners, both modelers and non-modelers, are encouraged to join the conversation with our panel of experts.

CHAIR
Meagan C. Fitzpatrick
University of Maryland School of Medicine, Baltimore, MD, United States

1 p.m.
IF MODELING IS THE ANSWER, WHAT IS THE QUESTION? MAKING MODELS USEFUL FOR PUBLIC HEALTH PRACTICE
Rebecca L. Smith
University of Illinois Urbana-Champaign, Urbana-Champaign, IL, United States

1:15 p.m.
COORDINATING THE COVID-19 MODELING RESPONSE FROM CDC
Michael A. Johansson
US Centers for Disease Control and Prevention, Atlanta, GA, United States

1:30 p.m.
HOUSEHOLD TRANSMISSION OF SARS-COV2: THE ROLE OF PRESYMPTOMATIC AND ASYMPTOMATIC INFECTION
Yang Yang
University of Florida, Gainesville, FL, United States

1:45 p.m.
OPEN DATA SAVES LIVES: ON THE IMPORTANCE OF OPEN SCIENCE DURING OUTBREAKS
Samuel V. Scarpino
Network Science Institute at Northeastern University, Boston, MA, United States

Symposium 145
The Dynamic Global Distribution of Angiostrongylus cantonensis
Meeting Room 13
Thursday, November 19
1 p.m. - 2:45 p.m. U.S. Eastern Time Zone
Angiostrongylus (rat lungworm disease) is a globally emerging, potentially serious nematode infection caused by Angiostrongylus cantonensis. Human infection was first documented in Taiwan in 1945 and has been reported from Southeast Asia to China, many of the Pacific Islands and Australia. More recently it has been reported in the southern United States and many countries in the
Caribbean, Indian subcontinent, Central and South America as well as Africa. Rats are the definitive hosts and are infected typically from ingestion of an A. cantonensis infected intermediate host (snails or slugs) or paratenic host (e.g. freshwater shrimps, frogs, land crabs and lizards). Numerous birds and mammals, including humans, dogs and primates are accidental hosts and are infected in the same manner as rats. In humans the most predominate presentation of disease is eosinophilic meningitis. Spread of A. cantonensis has been driven by human activity, through dispersal of both the definitive and intermediate hosts. Rats have long been associated with human travel and trade and if infected provide a source of A. cantonensis in areas where snails occur. Snails are also easily dispersed by human activities, and are transported around the world both intentionally and accidentally by various pathways, notably the agricultural and horticultural industries. As a result of the increased movement of these hosts around the world, eosinophilic meningitis caused by A. cantonensis is an emerging infectious disease, increasing in incidence and expanding in geographical range. With global climate change, suitable habitat for the intermediate hosts may increase and those regions with appropriate conditions for parasite transmission to occur could expand. Thus, A. cantonensis may expand from being only a tropical concern to one of a more global nature.

**CHAIR**
Vernon E. Ansdell  
*University of Hawaii at Manoa, Honolulu, HI, United States*

William L. Gosnell  
*University of Hawaii at Manoa, Honolulu, HI, United States*

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### Symposium 146

**Deploying Pathogen Genomics Approaches for Disease Control and Public Health: Applications and Challenges in LMICs**

**Meeting Room 14**

**Thursday, November 19**

1 p.m. - 2:45 p.m. U.S. Eastern Time Zone

There is a growing consensus that pathogen genomics - the combination of next-generation DNA sequencing laboratory technologies with advanced bioinformatics analyses - will play an important role in the future of infectious disease control and elimination. To benefit from pathogenic genomics, countries need to build and/or strengthen the capacity for local genomics data generation and analysis in order to produce information of public health value to address operational questions and help guide responses and strategic planning in a timely manner. Recently, genomic methods have been used successfully to elucidate the source, timing, transmission and spread of both epidemic and endemic pathogens. These data can provide insight into indigenous strains circulating within a country or strains imported from other countries, identify emergence and track the spread of drug resistance to guide drug use and treatment policies, and can predict transmission risks and the emergence of new strains. The African Union through the Africa CDC is working with diverse stakeholders to build a consensus for and promote the adoption of a harmonized framework for the implementation of pathogen genomics in Africa. Speakers in this session will present recent findings which have been generated through the ongoing efforts to establish the capacity for pathogen genomics in LMICs. Case applications, challenges and opportunities for establishing the African-lead capacity for pathogen genomics will be discussed.

**CHAIR**
Deus S. Ishengoma  
*National Institute for Medical Research, Tanga, United Republic of Tanzania*

Jaishree Raman  
*National Institute of Infectious Diseases, Durban, South Africa*

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1 p.m.

**USING GENOMICS TO SUPPORT DISEASE CONTROL AND ELIMINATION IN AFRICA; SCALING UP PATHOGEN GENOMICS IN AFRICAN PUBLIC HEALTH INSTITUTIONS**

Sofonias Tessema  
*Africa CDC, Addis Ababa, Ethiopia*

1:20 p.m.

**GENOMIC SURVEILLANCE OF MALARIA IN AFRICA: CURRENT UPDATES, CHALLENGES AND OPPORTUNITIES**

Isabella Oyier  
*KEMRI-Wellcome Trust Research Programme, Kilifi, Kenya*

1:40 p.m.

**DIAGNOSIS AND SURVEILLANCE OF EPIDEMICS AND EMERGING PATHOGENS: OPPORTUNITIES AND CHALLENGES OF APPLYING PATHOGEN GENOMICS IN RESOURCE LIMITED SETTINGS**

Christian Happi  
*Redeemer’s University, Ede, Osun State, Nigeria*

2 p.m.
Scientific Session 147

Schistosomiasis - Trematodes: Immunology, Pathology, Cellular, Molecular

Meeting Room 15
Thursday, November 19
1 p.m. - 2:45 p.m. U.S. Eastern Time Zone

Chair
Momar Ndao
McGill University, Montreal, QC, Canada
Lisa Christine Gibbs
University of Utah, Salt Lake City, UT, United States

The Role of Vaginal Inflammation in HIV Vulnerability in Zambian Women with Female Genital Schistosomiasis

Amy S. Sturt1, Emily L. Webb1, Catriona Patterson1, Comfort R. Phiri2, Bellington Vwalika3, Eyrun F. Kjetland4, Mauna Muden4a, Joyce Mapani4, Mabel Mutengo5, James Chipeta6, Govert J. van Dam1, Paul L. Corstjens1, Helen Ayles6, Richard J. Hayes1, Grace McComsey5, Isaiah Hansongo5, Piet Cools5, Lisette A. van Lieshout5, Suzanna C. Francis5, Amayla A. Bustinduy5

1London School of Hygiene and Tropical Medicine, London, United Kingdom, 2Zambart, Lusaka, Zambia, 3University of Zambia School of Medicine, Lusaka, Zambia, 4Oslo University Hospital, Oslo, Norway, 5Livingstone Central Hospital, Livingstone, Zambia, 6Levy Mwanawasa Medical University, Lusaka, Zambia, 7Leiden University Medical Center, Leiden, Netherlands, 8Case Western Reserve University, Cleveland, OH, United States, 9Ghent University, Ghent, Belgium

Enhancing Cathepsin B Responses of YS1646 Salmonella Typhimurium Vectored Vaccination Using Mucosal Adjuvants in a Murine Schistosomiasis Model

Adam S. Hassan, Dillhan J. Perera, Brian J. Ward, Momar Ndao
Research Institute of the McGill University Health Centre, Montreal, QC, Canada

(ACMCIP Abstract)

H06-IPSE, a Pathogen-Secreted Host Nucleus-Infiltrating Protein (Infiltrin), Varies in Internalization Mechanism and Efficiency by Target Cell Type

Olivia K. Lamanna1, Evaristus Mbanefo2, Kenji Ishida1, Franco Falcone2, Theodore Jardelezy2, Luke Pennington1, Michael Haish1

1Children's National Medical Center, Washington, DC, United States, 2University of Giessen, Giessen, Germany, 3Stanford University, Stanford, CA, United States

(ACMCIP Abstract)

A Pilot Investigation of Schistosome Hybrids: A Morphological Characterization of Schistosoma Haematobium Eggs, Within a Putative Hybrid Zone in Ogun State, Nigeria

Uwemedimo Friday Expo1, Adedotun Ayodeji Bayegun1, Foluke Adebayo Akande2, Kehinde Olutoyin Ademolu1, Russell John Stothard2

1Federal University of Agriculture Abeokuta, Abeokuta, Nigeria, 2Liverpool School of Tropical Medicine, Liverpool, United Kingdom

Scientific Session 148

Water, Sanitation, Hygiene and Environmental Health (WaSH-E): Transmission and Exposure

Meeting Room 16
Thursday, November 19
1 p.m. - 2:45 p.m. U.S. Eastern Time Zone

Chair
Robert Dreibelbis
London School of Hygiene and Tropical Medicine, London, United Kingdom
Nuhu Amin
International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh


David Berendes1, Graeme Prentice-Mott1, Kirsten Fagerli2, Sunkyoung Kim2, Diluoba Nasrin3, Helen Powell3, Irene Kasumba2, Sharon Tennant4, Anna Roose5, M. Jahangir Hossain6, Joquna Chiquita M. Jones7, Syed M. Zaman1, Richard Omole8, John Benjamin Ochieng9, Jennifer Verani10, Marc-Alain Widdowson1, Samba Sow7, Dramane Malle7, Sanogo Doh2, Ciara O'Reilly1, Jie Liu2, James Platts-Mills6, Eric Houpit1, Karen Kotloff1, Eric Mintz1

1Division of Foodborne, Waterborne, and Environmental Diseases, Centers for Disease Control and Prevention, Atlanta, GA, United States, 2Department of Medicine, Center for Vaccine Development and Global Health, University of Maryland School of Medicine, Baltimore, MD, United States, 3Department of Pediatrics, Center for Vaccine Development and Global Health, University of Maryland School of Medicine, Baltimore, MD, United States, 4Medical Research Council Unit The Gambia at the London School of Hygiene and Tropical Medicine, Banjul, Gambia, 5Center for Global Health Research, Kenya Medical Research Institute, Kisumu, Kenya, 6Division of Global Health Protection, Centers for Disease Control and Prevention, Nairobi, Kenya, 7Center for Vaccine Development-Mali, Bamako, Mali, 8University of Virginia, Charlottesville, VA, United States

Campylobacter Infection and Household Factors Are Associated with Childhood Growth in Urban Bangladesh

J. Johanna Sanchez1, Md. Ashraful Alam2, Christopher B. Stride3, Md. Ahshanal Haque4, Subhashis Das5, Mustafa Mahfuz6, Daniel E. Roth7, Peter D. Sly8, Kurt Z. Long9, Tahmeed Ahmed10

1University of Queensland, University of Toronto, Toronto, ON, Canada, 2icddr,b, Dhaka, Bangladesh, 3University of Sheffield, Sheffield, United Kingdom, 4Hospital for Sick Children and University of Toronto, Toronto, ON, Canada, 5icddr,b, Dhaka, Bangladesh, 6University of Sheffield, Sheffield, United Kingdom, 7Hospital for Sick Children and University of Toronto, Toronto, ON, Canada, 8University of Queensland, Brisbane, Australia, 9Swiss Tropical and Public Health Institute, Basel, Switzerland
1574

COMPARING GUT BACTERIAL MICROBIOCES AND ANTIMICROBIAL RESISTOMES BETWEEN HUMANS, CHICKENS, AND GOATS IN URBAN AND RURAL BANGLADESH

Jenna Swarhout1, Erica R. Fuhrmeister1, Latifah Hamzah1, Angela R. Harris1, Emily S. Gurley1, Syed M. Satter2, Alexandria B. Boehm1, Amy J. Pickering1
1Tufts University, Medford, MA, United States, 2Stanford University, Stanford, CA, United States
3North Carolina State University, Raleigh, NC, United States, 4Johns Hopkins University, Baltimore, MD, United States, 5International Centre for Diarrhoeal Disease Research, Dhaka, Bangladesh

1575

PATHOGEN FLOWS FROM ON-SITE SANITATION SYSTEMS IN LOW-INCOME URBAN NEIGHBORHOODS, DHAKA: A QUANTITATIVE ENVIRONMENTAL ASSESSMENT

Md. Nuhu Amin1, Pengbo Liu2, Tim Foster3, Mahbubur Rahman1, Md. Rana Miah1, Golam Bashar Ahmed1, Mamun Kabir1, Surajya Raj2, Guy Norman3, Christine L. Moe4, Juliet Willetts2
1Infectious Diseases Division, International Centre for Diarrheal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 2Center for Global Safe Water, Sanitation, and Hygiene, Emory University, Atlanta, GA, United States, 3Institute for Sustainable Futures, University of Technology Sydney, Sydney, Australia, 4Water and Sanitation for the Urban Poor (WSUP), London, United Kingdom

1576

ENVIRONMENTAL TRANSMISSION OF DRUG RESISTANT BACTERIA IN COMMUNITY THROUGH WASTE WATER RUN-OFF IN BANGLADESH- PLANETARY HEALTH EVIDENCE OF ANTIBIOTIC RESISTANCE

Muhammad Asaduzzaman1, Rizwan Uddin2, Muhammad Aminul Islam3
1Centre for Global Health, Institute of Health and Society, University of Oslo, Oslo, Norway, 2Centre for Global Health and Human Development, School of Sport, Exercise and Health Sciences, Loughborough University, Loughborough, United Kingdom, 3Laboratory Sciences and Services Division, icddr,b, Dhaka, Bangladesh

1577

IMPACT OF WASH CONDITIONS ON MICROBIAL CONTAMINATION OF THE ENVIRONMENT IN TWO HOSPITALS IN AMHARA, ETHIOPIA

Kristen Carr1, Kun Zhao1, Habib Yakubu1, Lamesgin Alamene1, Mulusew Belew1, Abebe Gebremariam1, Gizachew Yismaw1, John Cranmer4, Christine L. Moe1
1Center for Global Safe Water, Sanitation, and Health at Emory University, Atlanta, GA, United States, 2Centers for Disease Control and Prevention, Atlanta, GA, United States, 3Emory Ethiopia - Amhara Regional Office, Bahir Dar, Ethiopia, 4Emory University-Nell Hodgson Woodruff School of Nursing, Atlanta, GA, United States, 5Amhara Public Health Institute, Bahir Dar, Ethiopia

1578

HOME WASH CONDITIONS AND POST-CAESAREAN SECTION SURGICAL SITE INFECTION RISKS

Sadoscar Hazikimana1, Ildephonse Simbanani1, Elizabeth Miranda1, Anne Niyigena2, Laban Bikorimana3, Andrea Goodman3, Theoneste Nkurunziza3, Robert Rivelli4, Bethany Hedt-Gauthier4, Fredrick Kateera1
1Infectious Diseases Division, International Centre for Diarrheal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 2Center for Global Safe Water, Sanitation, and Hygiene, Emory University, Atlanta, GA, United States, 3Institute for Sustainable Futures, University of Technology Sydney, Sydney, Australia, 4Univeridade Federal de Minas Gerais, Belo Horizonte, Brazil

Break

Thursday, November 19
2:45 p.m. - 3 p.m. U.S. Eastern Time Zone

1579

ECHOCARDIOGRAPHIC PREDICTORS OF MORTALITY IN PATIENTS WITH CHAGAS DISEASE FROM REMOTE ENDEMIC AREAS: SAMI-TROP COHORT STUDY

Maria Do Carmo P. Nunes1, Marcelo Maia1, Antonio Ribeiro1, Claudia Oliveira1, Ariela Ferreira1, Lea Campos Oliveira1, Ana Luiza Bierenbach2, Desireé Haikal2, Lanissa Martins2, Clareci Cardoso3, Ester Sabino3
1Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, 2Universidad de Estadual de Montes Claros, Montes Claros, Brazil, 3Federal University of São João del-Rei, Divinópolis, Brazil, 4Hospital das Clinicas da Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil, 5Hospital Siro-Libanés, São Paulo, Brazil, 6Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil

1580

NAT2 GENETIC VARIATIONS AMONG CHILDREN INFECTED WITH PLASMODIUM FALCIPARUM MALARIA IN YAOUNDE, CAMEROON: IMPLICATIONS FOR ANTI-MALARIAL DRUG DOSING, METABOLISM AND RESPONSE

Peter Thelma Ngwa P. Niba1, Akindeh Mbuh A. Nji1, Innocent Mbulli I. Ali2, Lawrence Fonyonga L. Akam1, Cedric Hermann C. Dongmo1, Calvino Tah C. Fomboh1, Jean Paul J. Chedjou4, Kelly Ngaloumo Abdel S. Aziz2, Jude D. J. Bigoga1, Michael M. Alifrangis3, Wilfred Fon W. Mbacham4
1University of Yaounde I, Yaounde, Cameroon, 2University of Dschang, Dschang, Cameroon, 3University of Copenhagen, Copenhagen, Denmark

1584

EFFECT OF PROLONGED FLAVIVIRUS RNA SHEDDING IN CHIKUNGUNYA CHRONICITY OF INDIVIDUALS WITH ARBOVIRUS CO-INFECTIONS

Marta G. Cavalcanti1, Eduardo Scarlatelli Pimenta, Mauro Jorge Cabral-Castro, Jose Mauro Peralta
1Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

1585

HOUSEHOLD CASSAVA FLOUR CYANIDE AND URINARY THIOCYANATE LEVELS ARE PREDICTIVE OF NEUROCOGNITIVE AND MOTOR PROFICIENCY DEFICITS IN SCHOOL-AGE CONGOLESE CHILDREN DEPENDENT ON TOXIC CASSAVA

Michael J. Bovin1, Musasa Hanshi Hilaire1, Alla Sikorskii2, Nicole Mashukano3, Hilaire Lufuluabo1, Tshingamb Ndaya4, Greigore Kamanga5, Sanea J. Mayambu6, Justin Kombi7, Gedeon Bongo8, Esperance Kashala-Abotnes9, Daniel Okitundu10, Dieudonne Ngoyi Mumba11, Desire Tshala-Katumbay12
1Michigan State University, East Lansing, MI, United States, 2University of Kinshasa, Kinshasa, Democratic Republic of the Congo, 3Programme National de Nutrition (PRONANUT), Kinshasa, Democratic Republic of the Congo, 4Institut National de la Recherche Biomédicale (INRB), Kinshasa, Democratic Republic of the Congo, 5University of Bergen, Bergen, Norway, 6Oregon Health Sciences University, Portland, OR, United States

Scientific Session 149

Clinical Tropical Medicine: Parasites/Toxins and Other Topics

Meeting Room 1
Thursday, November 19
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

CHAIR

Maria Do Carmo P. Nunes
Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Jason D. Maguire
Pfizer, White Plains, NY, United States
UNDERLYING CAUSES OF PERINATAL DEATHS AMONG CASES UNDERGOING MINIMALLY INVASIVE TISSUE SAMPLING IN BANGLADESH

icddr,b, Dhaka, Bangladesh, “John Hopkins Bloomberg School of Public Health, Baltimore, MD, United States

Symposium 150

Crimean-Congo Hemorrhagic Fever, Updates on a Lesser Known Viral Hemorrhagic Fever with Widespread Impact

Meeting Room 2
Thursday, November 19
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

Crimean-Congo hemorrhagic fever (CCHF) is a zoonotic infection causing hemorrhagic fever in humans. Although it is less well known than other viral hemorrhagic fevers, it has a broader geographic range and causes a significant amount of devastation in the world including Sub-Saharan Africa, Asia, and the Middle east. Humans get infected after contact with blood of infected animals or following the bite of an infected tick. The World Health Organization has identified CCHF in its blueprint of priority, understudied, emerging infections. This symposium will bring together international experts from some of the most affected areas of the world, to discuss the epidemiology, clinical management, diagnosis, and treatment and preventive modalities on CCHF. The discussion will also include the use of animal models for development of vaccines and therapeutic agents.

CHAIR
Maryam keshtkar Jahromi
National Institute of Health, Rockville, MD, United States
Mark Kortepeter
University of Nebraska College of Public Health, Omaha, NE, United States

3 p.m.
CRIMEAN CONGO HEMORRHAGIC FEVER (CCHF) IN TURKEY (2002-2020), YEARS OF EXPERIENCE IN DIAGNOSIS, TREATMENT AND OUTBREAK INVESTIGATION
Ifthir Koksal
Acibadem University Hospital, Istanbul, Turkey

3:20 p.m.
CRIMEAN-CONGO HEMORRHAGIC FEVER: WHERE WE ARE AND WHERE WE WOULD LIKE TO BE: THE CURRENT CCHF SITUATION IN THE RUSSIAN FEDERATION
Natalia Pshenichnaya
Central Research Institute of Epidemiology, Moscow, Russian Federation

3:40 p.m.
CRIMEAN-CONGO HEMORRHAGIC FEVER VACCINE DEVELOPMENT
Aura R. Garrison
United States Army Medical Research Institute of Infectious Diseases, Frederick, MD, United States

Symposium 151

American Committee on Arthropod-Borne Viruses (ACAV) Trainee Panel: Outbreak Response—Focusing on Communication

Meeting Room 3
Thursday, November 19
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

As emerging and reemerging pathogens continue to threaten our global society, as evidenced by the recent COVID-19 pandemic, and the challenge of outbreak response and communication, this event aims to bring together accomplished scientists working at the government and community levels. The session will feature an engaging discussion on the challenges and skills that make for failures and successes in outbreak response—with a special focus on communication.

CHAIR
Amy R. Krystosik
Chan Zuckerberg Initiative, Redwood City, CA, United States
David Morens
National Institutes of Health, Bethesda, MD, United States

PANELISTS
Yodi Alakija
Humanitarian Coordinator, Nigeria, Nigeria
Shabnum Sarfraz
Ministry of Planning, Development and Special Initiatives, Government of Pakistan, Pakistan
Nicole Mbaraga
MSF Cameroon, Cameroon, Cameroon
Amina Jama
Save the Children, Somalia, Somalia
Mauricio Espinel
Social Security Hospitals, Ecuador, Ecuador
Ann Powers
CDC, Fort Collins, CO, United States
Daniel G. Bausch
UK Public Health Rapid Support Team, London, United Kingdom

Scientific Session 152

Global Health: Maternal, Newborn, Child Health and Neglected Tropical Diseases

Meeting Room 5
Thursday, November 19
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

CHAIR
Caterina A. Fanello
Oxford University, Oxford, United Kingdom
Nicholas L. Roberts
Institute for Health Metrics and Evaluation, Seattle, WA, United States
**Symposium 154**

10 years of Joint Global Health Trials: What Lessons Have We Learned from Translating Research to Policy and Practice?

*Meeting Room 7*
*Thursday, November 19*
*3 p.m. - 4:45 p.m. U.S. Eastern Time Zone*

The Joint Global Health Trials scheme funds late stage clinical and health interventions addressing the major causes of mortality and morbidity in low- and middle-income countries likely to produce implementable results. For research to have a lasting impact on the health of the public, it needs to inform health policies and practice. This symposium will convene researchers funded by this scheme to highlight successes and challenges of achieving health policy impact and engaging with decision-makers through their work. The symposium is convened by the funders of the scheme. The discussion will bring together 3 case studies of Phase III/IV infectious disease trials on tuberculosis, talaromycosis and meningitis, demonstrating different approaches to achieving policy and practice and drawing on lessons learned. It will include examples of trials that have changed policy, been scaled up or replicated, as well as reflect on challenges of achieving public health impact nationally, regionally and globally. The panel of researchers and research users will reflect on successes and challenges of working at the interface of research and policy and will offer insights and recommendations for others undertaking research to ultimately influence policy and practice.

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**Symposium 153**

Clinical Tropical and Travel Medicine: Hot List of Literature

*Meeting Room 6*
*Thursday, November 19*
*3 p.m. - 4:45 p.m. U.S. Eastern Time Zone*

Clinicians in tropical medicine and travelers’ health base their decisions on the knowledge of disease epidemiology, clinical course, diagnostic tools, resistance patterns, and vaccine data. This symposium will highlight recent studies on these aspects of malaria, yellow fever, other travel-associated vaccine developments, and consideration of SARS-CoV2/COVID-19 with respect to travel medicine. This session is co-organized with the International Society of Travel Medicine (ISTM).

**Chair**

Lin H. Chen
Mount Auburn Hospital and Harvard Medical School, Cambridge, MA, United States
Anne McCarthy
University of Ottawa and Ottawa Hospital, Ottawa, ON, Canada

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**Symposium 158**

**Effects of Removing User Fees on Barriers to Care Among Children with Diarrhea, Fever, and Pneumonia in Rural Mali**

Hailey Zuverink1, Naimatou Kone2, Mohamed Bana Traore1, Mahamadou Sogoba2, Caroline Whidden3, Tracy Lin4, Nancy Padian3, Ari Johnson1, Kassoum Kayentao1, Jenny Liu5, Emily Treleaven1
1University of Michigan, Ann Arbor, MI, United States, 2Muso, Bamako, Mali, 3University of California, San Francisco, San Francisco, CA, United States, 4Malaria Research and Training Centre, Bamako, Mali

**Antibiotic Use Among Residents in Uganda, Zimbabwe, and Maliawi - A Mixed Methods Study**

Alexander Matthews, Justin Dixon, Susan Nayiga, Eleanor MacPherson, Salome Manyavu, Christine Nabirye, Mabvuto Chimena, Sam Lai, Chrissey Roberts, Edward Green, Katharina Kranzer, Sarah G. Staedke
1London School of Hygiene & Tropical Medicine, London, United Kingdom, 2Infectious Diseases Research Collaboration, Kampala, Uganda, 3Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 4Biomedical Research and Training Institute (BRTI), Harare, Zimbabwe, 5Malawi Liverpool Wellcome Trust, Blantyre, Malawi

**Compliance and Spillover Effects with Azithromycin Distribution for Child Survival in Niger: Secondary Analyses of the Mordor Trial**

Kieran S. O’Brien1, Ahmed M. Arzika2, Ramatou Maliki3, Farouk Manzo4, Alio K. Mamkara2, Abdou Amza2, Eldie Lesbas1, Catherine Cook1, Benjamin Arnold2, Catherine E. Oldenburg3, Jeremy D. Keenan1, Thomas M. Lietman1
1University of California, San Francisco, San Francisco, CA, United States, 2The Carter Center, Nnamry, Niger, 3Programme Nationale de Sante Oculaire, Niamey, Niger

**The Global Burden of Snakebites: A Modeling Study of Mortality and Nonfatal Health Outcomes**

Nicholas L. Roberts, Erin Hamilton, Theo Vos, Spencer James, David Pigott
Institute for Health Metrics and Evaluation, Seattle, WA, United States

**Prevalence of Scabies and Impetigo Amongst School Children in Timor-Leste: School Surveys in Three Municipalities**

Alexander Matthews1, Brandon Le2, Paul Arkell1, Naomi Clarke1, Daniel Engelman1, Merita Monteiro1, Salvador Amaral1, Terlinda Barros4, Joshua Francis5, Susana Vaz Nery6
1Royal Darwin Hospital, Darwin, Australia, 2Kirby Institute, Sydney, Australia, 3National Health Laboratory, Timor-Leste, Timor-Leste, 4Murdoch Children’s Research Institute, Melbourne, Australia, 5Ministry of Health, Dili, Timor-Leste, 6Menzies School of Health Research, Darwin, Australia

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**Symposium 1587**

**Antibiotic Use Among Residents in Uganda, Zimbabwe, and Maliawi - A Mixed Methods Study**

Clare L. Chandler1, Justin Dixon1, Susan Nayiga1, Eleanor MacPherson1, Salome Manyavu1, Christine Nabirye1, Mabvuto Chimena1, Sam Lai1, Chrissey Roberts1, Edward Green1, Katharina Kranzer1, Sarah G. Staedke1
1London School of Hygiene & Tropical Medicine, London, United Kingdom, 2Infectious Diseases Research Collaboration, Kampala, Uganda, 3Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 4Biomedical Research and Training Institute (BRTI), Harare, Zimbabwe, 5Malawi Liverpool Wellcome Trust, Blantyre, Malawi

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**Symposium 1588**

**Compliance and Spillover Effects with Azithromycin Distribution for Child Survival in Niger: Secondary Analyses of the Mordor Trial**

Kieran S. O’Brien1, Ahmed M. Arzika2, Ramatou Maliki3, Farouk Manzo4, Alio K. Mamkara2, Abdou Amza2, Eldie Lesbas1, Catherine Cook1, Benjamin Arnold2, Catherine E. Oldenburg3, Jeremy D. Keenan1, Thomas M. Lietman1
1University of California, San Francisco, San Francisco, CA, United States, 2The Carter Center, Nnamry, Niger, 3Programme Nationale de Sante Oculaire, Niamey, Niger

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**Symposium 1590**

**Prevalence of Scabies and Impetigo Amongst School Children in Timor-Leste: School Surveys in Three Municipalities**

Alexander Matthews1, Brandon Le2, Paul Arkell1, Naomi Clarke1, Daniel Engelman1, Merita Monteiro1, Salvador Amaral1, Terlinda Barros4, Joshua Francis5, Susana Vaz Nery6
1Royal Darwin Hospital, Darwin, Australia, 2Kirby Institute, Sydney, Australia, 3National Health Laboratory, Timor-Leste, Timor-Leste, 4Murdoch Children’s Research Institute, Melbourne, Australia, 5Ministry of Health, Dili, Timor-Leste, 6Maluk Timor, Dili, Timor-Leste, 7Hospital Nacional Guido Valadares, Dili, Timor-Leste, 8Menzies School of Health Research, Darwin, Australia
### Scientific Session 155

**Filariasis: Clinical**

**Meeting Room 8**

**Thursday, November 19**

**3 p.m. - 4:45 p.m. U.S. Eastern Time Zone**

**CHAIR**

| Philip Budge |
| Washington University in St. Louis, St. Louis, MO, United States |
| Thishan Channa Yahathugoda |
| University of Ruhuna, Galle, Sri Lanka |

**1593**

**DRUG DEVELOPMENT FOR THE TREATMENT AND CONTROL OF ONCHOCERCIASIS: POPULATION PHARMACOKINETIC AND ADVERSE EVENTS MODELING OF EMODEPSIDE (BAY 44-4400) IN HEALTHY VOLUNTEERS**

| Frauke Assmus1, Richard Hoglund1, Ivan Scandale2, Frédéric Monnot1, Sabine Specht1, Joel Tarning1 |
| 1Mahidol-Oxford Tropical Medicine Research Unit, Mahidol University, Bangkok, Thailand, 2Drugs for Neglected Diseases initiative, Geneva, Switzerland |

**1594**

**COMPARISON OF FOUR LONGITUDINAL OUTCOME MEASURES FOR LIMB LYMPHEDEMA**

| Philip Budge1, Lalindi De Silva1, Michael Weiler1, Sarah Sullivan1, Mirani Weerasooriya1, Sharmini Gunawardena1, Channa Yahathugoda2 |
| 1Washington University in St. Louis, St. Louis, MO, United States, 2University of Ruhuna, Galle, Sri Lanka, 3Lymphatech, Atlanta, GA, United States, 4Task Force for Global Health, Atlanta, GA, United States, 5Antifilariasis Campaign, Colombo, Sri Lanka |

**1595**

**THE SAFETY OF TRIPLE DRUG TREATMENT WITHIVERMECTIN, DEC, AND ALBENDAZOLE IN PERSONS WITH ONCHOCERCIASIS**

| Nickolas O. Opoku1, Michael E. Gyasi1, Eric M. Kanza1, Augustine R. Hong2, Catherine M. Bjornum3, Christopher L. King3, Peter U. Fischler4, Gary J. Weil5 |
| 1University of Health and Allied Sciences, Hoehoe, Ghana, 2Washington University School of Medicine, St. Louis, MO, United States, 3Case Western Reserve University, Cleveland, OH, United States, 4Washington University in St. Louis, St. Louis, MO, United States |

**1596**

**DEVELOPMENT AND ASSESSMENT OF THE PSYCHOMETRIC PROPERTIES OF A NEW SCALE (15 ITEM PSB-CL) TO MONITOR THE PSYCHOSOCIAL BURDEN OF CHRONIC LYMPHEDEMA IN FILARIASIS**

| Janaka Ruben, Thishan Channa Yahathugoda, Mirani Vasanthamala Weerasooriya, Chandanie Senadheera, K. G. Somasiri, Bilesha Perera |
| Faculty of Medicine, University of Ruhuna, Galle, Sri Lanka |

**1597**

**USING MOBILE DATA COLLECTION TECHNOLOGY TO HELP OVERCOME CHALLENGES DURING MASS DRUG ADMINISTRATION (MDA) IN PORT-DE-PAIX, HAITI**

| Alain Javel1, Eunica Denis1, Carl Renand Fayette1, Paul-Emile Dalexis1, Marc-Aurele Telfort1, Ellen Knowles3, Mary Linehan3, Abdel Direny4, Josh West5, Benjamin Crookston6 |
| 1IMA World Health, Port au Prince, Haiti, 2Ministry of Health and Population, Port au Prince, Haiti, 3IMA World Health, Washington, DC, United States, 4Brigham Young University, Provo, UT, United States |

**1598**

**APPLYING THE RANAS FRAMEWORK TO ASSESS PSYCHOSOCIAL DRIVERS OF COMPLIANCE WITH MASS DRUG ADMINISTRATION FOR LYMPHATIC FILARIASIS**

| Caitlin M. Worrell1, Christiana Titalay1, Ryan Wiegand1, Filda de Lima2, Yuniasih Taihuttu2, Tara A. Brant1, Lisa Renata1, Alison Krentel6 |
| 1The Centers for Disease Control and Prevention, Atlanta, GA, United States, 2Faculty of Medicine, Pattimura University, Ambon, Indonesia, 3Subdit Filariasis, Ministry of Health, Jakarta, Indonesia, 4Bruyere Research Institute, Ottawa, ON, Canada |

**1599**

**ASSESSING ANTI-FILARIAL ANTIBODY AS A COMMUNITY INFECTION INDICATOR IN AREAS TREATED WITH DOUBLE- OR TRIPLE-DRUG MASS DRUG ADMINISTRATION IN QUARTIER MORIN, HAITI**

| Keri L. Robinson1, Christine L. Dubray1, Anita D. Sircar1, Jean Romuald Ernest2, Marisa Hatt3, Ryan Wiegand3, Jean Frantz Lemoine4, Kimberly Won5 |
| 1Centers for Disease Control and Prevention, Atlanta, GA, United States, 2Pan American Health Organization, Port-au-Prince, Haiti, 3Ministere de la Sante et de la Population, Port-au-Prince, Haiti |

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**New York, New York, USA**

**Thursday, November 19**

**Meeting Room 8**

**10 YEARS OF JOINT GLOBAL HEALTH TRIALS: AN OVERVIEW**

| Elena Netsi |
| Wellcome Trust, London, United Kingdom |

**3:35 p.m.**

**COMMUNITY RANDOMIZED EVALUATION OF SOCIOECONOMIC INTERVENTION TO PREVENT TB IN PERU: THE IMPORTANCE OF STAKEHOLDER ENGAGEMENT**

| Carlton A. Evans |
| Imperial College London, London, United Kingdom |

**3:55 p.m.**

**INFORMING GLOBAL POLICY AND PRACTICE: EVALUATION OF A RAPID TEST FOR TUBERCULOUS MENINGITIS IN UGANDA**

| David B. Meya |
| Makerere University Medical School Kampala Uganda, Kampala, Uganda |

**4:15 p.m.**

**THE HEALTH POLICY PERSPECTIVE: HOW DO DECISION-MAKERS ENGAGE WITH TRIAL FINDINGS?**

| Mary Hamel |
| World Health Organization, Geneva, Switzerland |
Symposium 156

Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) Health in Low- and Middle-Income Countries: The Struggle for Global Health Equity

Meeting Room 9
Thursday, November 19
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

The WHO’s constitution, along with many other international human rights treaties, consistently state the “highest attainable standard of health” as a fundamental human right. Yet, the lesbian, gay, bisexual, transgender, and queer (LGBTQ) community continues to face inequities in access to health around the world. In high disease burden settings such as low- and middle-income countries (LMICs), where there is the greatest need for healthcare, marginalization and criminalization of LGBTQ populations result in serious and under-addressed health and human rights disparities. The LGBTQ community faces unique barriers to healthcare including denial of care or substandard care due to stigma, discrimination, and criminalization; avoidance of health services for fear of harassment, breach of confidentiality, forced procedures, violence, criminal charges, and/or incarceration; and inadequate understanding of specific health-care needs of LGBTQ individuals. In LMICs, LGBTQ-specific barriers to health intersect with other social determinants of health (e.g. socioeconomic status, geography, etc.) to compound disparities. Exclusion from the right to health on the basis of sexual orientation significantly contributes to the global burden of disease. LGBTQ individuals carry a disproportionate burden of HIV and other STIs, and increased rates of depression, substance abuse, and suicidal ideation. In the case of HIV, evidence suggests that anti-LGBTQ legislation, under which individuals face systemic marginalization and criminalization, compromises the HIV treatment cascade (e.g. limiting access to prevention, testing, and treatment services). This both violates the fundamental human right to health and undermines global public health objectives like the UNAIDS 90-90-90 targets and the Sustainable Development Goals. In order to address this healthcare gap, a stronger awareness and understanding of the unique barriers to health for LGBTQ communities in LMICs is essential. Increased research, advocacy, and engagement of scientists and policy makers are necessary to address and reduce health disparities for these vulnerable populations. LGBTQ health is an integral and multi-disciplinary part of global health; however, it is infrequently discussed in international global health forums. This symposium will highlight a neglected facet of global health equity and its impact on public health. This symposium will begin a dialogue on the unique challenges and solutions to promote healthcare access for LGBTQ communities in LMICs through the lens of epidemiology, social justice, human rights, and patient care.

CHAIR
Andrea Weckman
University of Toronto, Toronto, ON, Canada
Chandy C. John
Indiana University School of Medicine, Indianapolis, IN, United States

3 p.m.
INTERSECTIONAL STIGMA APPROACHES TO UNDERSTANDING LGBTQ+ HEALTH INEQUITIES ACROSS GLOBAL CONTEXTS
Carmen H. Logie
University of Toronto, Toronto, ON, Canada

3:20 p.m.
LGBTQ RIGHTS AND THE GLOBAL HIV/AIDS EPIDEMIC
Chris Beyrer
Johns Hopkins Bloomberg School of Global Health, Baltimore, MD, United States

3:40 p.m.
LESBIAN, BISEXUAL AND TRANSGENDER WOMEN FROM BRAZIL: QUEER WOMEN’S LIVES MATTER
Monica Malta
University of Toronto, Toronto, ON, Canada

4 p.m.
PARTNERING WITH THE SAME GENDER-LOVING COMMUNITY FOR SEXUAL HEALTH PROMOTION AND HIV PREVENTION IN KENYA
Susan M. Graham
University of Washington, Seattle, WA, United States

Scientific Session 156A

Malaria Elimination: From Potential New Tools to Challenges for National Strategies

Meeting Room 10
Thursday, November 19
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

CHAIR
Thom Eisele
Tulane University, New Orleans, LA, United States
Kim Lindblade
CDC, Bangkok, Thailand

A SCHOOL SURVEY INDICATES CONducive SETTINGS FOR MALARIA ELIMINATION IN THE HIGHLANDS PROVINCES OF PAPUA NEW GUINEA
Osama Seidahmed1, Sharon Jamea2, Serah Kurumop2, Manuel Hetzel2, William Pomat1
1Swiss Tropical and Public Health Institute and PNG Institute of Medical Research, Goroka, Papua New Guinea, 2PNG Institute of Medical Research, Goroka, Papua New Guinea

GENETIC DIVERSITY AND THE REPRODUCTION OF PLASMODIUM VIVAX IN RIVERINE VILLAGES ALLOCATED TO DIFFERENT TEST-AND-TREAT INTERVENTIONS IN THE PERUVIAN AMAZON
Roberson Ramirez1, Paulo Manrique1, Angel Rosas-Aguirre1, Juan Contreras-Mancilla1, Jose Barboza1, Niko Speybroeck1, Alejandro Llanos-Cuentas1, Joseph Vinetz2, Dionicia Gamboa3
1Laboratorio ICEMR-Amazonia, Laboratorios de Investigación y Desarrollo, Facultad de Ciencias y Filosofía, Universidad Peruana Cayetano Heredia, Lima, Peru, 2Instituto de Medicina Tropical Alexander von Humboldt, Universidad Peruana Cayetano Heredia, Lima, Peru, 3Research Institute of Health and Society (IRSS), Université catholique de Louvain, Brussels, Belgium, 4Section of Infectious Diseases, Department of Internal Medicine, Yale School of Medicine, New Haven, CT, United States
Implementing Primaquine Radical Cure in Cambodia: Evaluating Impact on Plasmodium Vivax Infection and Relapse, Identifying Operational Roadblocks and Maximizing Effectiveness

Dysoley Lek1, Yucheng Tsai2, Jillian Dunning2, Silv Sovannaroith1, Or Vanthen1, Srey Sin1, Kros Sarath1, Prak Von2, Keo Sophakhtra1, Top Sophorn Narann2, Nguon Sokomar1, Huy Rekol1, Evelyn Wong2, Michelle Pahl3
1 National Center for Parasitology, Entomology and Malaria Control, Phnom Penh, Cambodia, 2 Clinton Health Access Initiative, Phnom Penh, Cambodia, 3 Provincial Health Department, Ministry of Health, Kampong Speu, Cambodia, 4 Provincial Health Department, Ministry of Health, Kampong Thom, Cambodia, 5 Provincial Health Department, Ministry of Health, Siem Reap, Cambodia, 6 Provincial Health Department, Ministry of Health, Kampong Chhnang, Cambodia, 7 Ministry of Health, Banteay Meanchey, Cambodia, 8 Cambodia Elimination Malaria Project, Phnom Penh, Cambodia

Evaluation of the Community Health Worker (CHW) Network to Achieve and Sustain Malaria Elimination in Gracias a Dios, Honduras

Manuel Espinoza Garcia1, Madeline Baird2, Justin Lana1, Kim Hanson1, Sarah Park1, Lizeth Cartagena1, Ana Vallecillo2
1 Clinton Health Access Initiative (CHAI), Tegucigalpa, Honduras, 2 Secretary of Health (SESAL), Puerto Lempira, Honduras

Symposium 158

Of Dogs and Dragons: Understanding Parasite Transmission Ecology and Applying It to the Global Guinea Worm Eradication Program

Meeting Room 12
Thursday, November 19
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

Chair
Guodong Niu
Florida International University, Miami, FL, United States

Hunting Sexual Stages of Plasmodium Falciparum Proteins to Identify Transmission Blocking Targets Against Malaria

Guodong YC Niu
Florida International University, Miami, FL, United States

(ACMCIP Abstract)

Glycolysis and Blood-Meal Enhanced Immunity of Anopheles Gambiae Mosquitoes

Alex S. Moon1, Jiannong Xu2
New Mexico State University, Las Cruces, NM, United States

Revising the Process of Sex Differentiation in the Anopheles Gambiae Mosquito Using RNA Interference for Sexlethal and Doublesex

Mabel L. Taracena1, Catherine M. Hunt1, Mark Q. Benedict1, Pamela M. Pennington2, Ellen M. Dotson2
1 CDC Foundation, Atlanta, GA, United States, 2 Universidad del Valle de Guatemala, Guatemala City, Guatemala

Keeping the Immune System in Check: Uses of CRISPR for Malaria

Ehud Inbar1, Abraham Eappen1, Robert Allford1, Robert Harrell1, William Reid1, Tao Li1, Sumana Chakraravty1, Donald Ward1, Maryam Hosseini1, Kim Lee Sim1, Stephen L. Hoffman1, Peter F. Billingsley1
1 Sanaria Inc., Rockville, MD, United States, 2 University of Maryland, Rockville, MD, United States, 3 University of Missouri, Columbia, MO, United States

CTL4-Knockout to Suppress Plasmodium Transmission in the Vector Mosquito

Maria L Simoes1, Yuemei Dong1, Godfree Mlambo, George Dimopoulos
1 Johns Hopkins University, Baltimore, MD, United States

(ACMCIP Abstract)

Engineering Transgenic Aedes Aegypti Resistant to Arbovirus Transmission

Adeline E. Williams1, William R. Reid1, Irma Sanchez-Vargas1, Alexander W. Franz1, Malcolm J. Fraser1, Jingyi Lin1, Ken E. Olson1
1 Colorado State University, Fort Collins, CO, United States, 2 University of Missouri, Columbia, MO, United States, 3 University of Notre Dame, South Bend, IN, United States
for treatment of infected dogs. Next, results of an ecological risk map using remotely sensed imagery and surveillance data will be presented. This map, in conjunction with a serologic assay recently developed by the CDC, will provide insights as to how and where future surveillance and containment efforts should be directed within Chad. Thirdly, speakers will report results from a rigorous analysis of a 2019 outbreak among humans and dogs that draws on population genetics approaches and classic epidemiologic investigation methods. Finally, the symposium will discuss the application of research findings to improve surveillance (i.e., early detection) of and interventions aimed at infected dogs.

CHAIR
Sarah Yerian
The Carter Center, Atlanta, GA, United States
Dieudonne Sankara
World Health Organization, Geneva, Switzerland

3 p.m.
THE DRAGON'S LAIR: RESEARCH INSIGHTS AND THE PURSUIT OF GUINEA WORM ERADICATION
Christopher Cleveland
University of Georgia-College of Veterinary Medicine, Athens, GA, United States

3:20 p.m.
GETTING AHEAD OF SURVEILLANCE: ASSESSING ECOLOGICAL RISK OF GUINEA WORM TRANSMISSION IN UNMONITORED AREAS IN CHAD
Sarah Anne Guagliardo
Centers for Disease Control and Prevention, Atlanta, GA, United States

3:40 p.m.
GUMSHOES AND GENETICISTS: COMBINING CLASSIC EPIDEMIOLOGY AND POPULATION GENETICS TO CHARACTERIZE GUINEA WORM TRANSMISSION EVENTS
Elizabeth A. Thiele
Vassar College, Poughkeepsie, NY, United States

4 p.m.
ENDING THE BATTLE: INNOVATIONS IN SURVEILLANCE AND INTERVENTION DELIVERY AMONG DOGS IN CHAD
Hubert Zirimwabagabo
The Carter Center, Ndjamena, Chad

Symposium 159
Identifying Optimal Ways to Support Countries Achieve the Last Mile in NTD Elimination

Meeting Room 13
Thursday, November 19
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

One of the important factors that is enhancing national disease control and elimination programs in Africa today is the increasing ability, and willingness, of countries to manage and implement their own national programs - to make essential decisions, to professionally manage fiscal support, and similarly to commit local resources and to proclaim their national successes. Undeniably, implementation partners such as NGOs have historically been vital to supporting in country activities and in many instances this remains the case; however, there is an active, and appropriate, move across global programs to actively strengthen national programs and reduce their dependence on direct external technical and administrative support. This symposium will focus on learning through examples from a leading NTD mass drug administration program, the onchocerciasis elimination program, the factors and the optimal actions that country programs have found advantageous to establishing their professional independence and capability to manage and carry out these programs successfully. Identifying and fully understanding these factors are both important to the long-term development of health systems in countries in Africa and elsewhere. In addition, the impact these activities are an example of the extraordinary impact programs such as the onchocerciasis programs and other mass chemotherapy programs are having on healthcare in developing countries.

CHAIR
Charles D. Mackenzie
Task Force for Global Health, Dimondale, MI, United States
Daniel Boakye
The End Fund, Accra, Ghana

3:20 p.m.
SUPPORTING PARTNERS TO ELIMINATE NTDS - END FUND PERSPECTIVE
Jamie Tallant
END Fund, Atlanta, GA, United States

3:40 p.m.
CHALLENGES FACED BY A NATIONAL PROGRAM - SOUTH SUDAN PERSPECTIVE
Makoy Y. Iogora
Ministry of Health, Juba, South Sudan

4 p.m.
SUPPORTING LABORATORY NEEDS FOR NTDS - ESPEN PERSPECTIVE
Aime Adjami
ESPEN Laboratory WHO AFRO, Ouagadougou, Burkina Faso

4:20 p.m.
SUPPORTING LABORATORY NEEDS FOR NTDS - MALI PERSPECTIVE
Yaya Couilabaly
International Center for Excellence in Research, Bamako, Mali, Bamako, Mali

Scientific Session 160
Malaria: Immunology

Meeting Room 14
Thursday, November 19
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

CHAIR
Linda Reiling
Burnet Institute, Melbourne, Australia
Arlene E. Dent
Case Western Reserve University, Cleveland, OH, United States
CD8+ T CELLS: A PARADIGM SHIFT IN TREATING CEREBRAL MALARIA?
Brittany A. Riggle, Louis H. Miller, Susan K. Pierce
National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, MD, United States
(ACMCIP Abstract)

CD163 GENE EXPRESSION AND SOLUBLE CD163 LEVELS INCREASE IN MALARIA INFECTED PREGNANT WOMEN
Bartholomew N. Ondigo1, Jan N. Moore2, Sundar Ganesan3, Kevin W. Bock3, Paul S. Blank3, Almahamoudou Mahamara4, Omar Attaher5, Bacary S. Diarra6, Youssoufa Sidibe7, Jillian Neal8, Allassane Dicko9, Patrick E. Duffy9, Michelle Fried9
1Department of Biochemistry and Molecular Biology, Egerton University - Kenya, Laboratory of Malaria Immunology and Vaccinology, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, 2Comparative Medicine Branch, Infectious Disease Pathogenesis Section, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, MD, United States, 3Research Technologies Branch, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States, 4Section on Integrative Biophysics, Division of Basic and Translational Biophysics, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, United States, 5Laboratory of Malaria Immunology and Vaccinology, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, United States
(ACMCIP Abstract)

REPEATED CONTROLLED HUMAN MALARIA INFECTION IN AFRICAN ADULTS TO DISSECT NATURALLY-ACQUIRED IMMUNITY
Matthew B. McCall1, F. Jeannot Zinsou2, B. Roméo Adégbètì3, Raïfou Adamou3, Hutch H. Nzenguele4, Paulin N. Essone4, Yonas Abebe5, B. Kim Lee Sim3, Bertrand Lell3, Sélidji T. Aagnandji3, L.W. Preston Church3, Thomas L. Richie2, Ayola A. Adegikina6, Stephen L. Hoffman2, Peter G. Kremsner6, Benjamin Mordmüller6
1Centre de Recherches Médicales de Lambaréné (CERME), Lambaréné, Gabon, 2Sanaria Inc., Rockville, MD, United States, 3Institut für Tropenmedizin (ITM), Tübingen, Germany

LILRB1 AND LILRB2 EXPRESSION IN PERIPHERAL BLOOD IMMUNE CELLS AT 18 AND 24 MONTHS OF AGE IN INFANTS BORN FROM MOTHERS WITH PLACENTAL MALARIA
Celia Dechavanne1, Odillon Nouatin2, Rafiou Adamou2, Sofie M. Edslev3, Anita Hansen3, Ibrahim Sadsou3, Erasme Gbaguidi4, Jacqueline Milet5, Gilles Cottrell5, Laure Gineau5, Audrey Sabbagh6, Achille Massougbodji7, Kabirou Moutairou7, Eduardo A. Donadi2, Edgardo D. Carosella2, Philippe Moreau2, Edmond J. Remarque1, Michael Theisen1, Nathalie Rouas-Freiss1, Andre Garcia1, Benoit Favier1, David Courtin1
1UMR261 - MERIT - Institut de Recherche pour le Développement (IRD), Paris, France, 2Faculté des Sciences et Techniques (FAST), Cotonou, Benin, 3UMR261 - MERIT - Centre d’Études et de Recherche sur le Paludisme Associé à la Grossesse et l’Enfance (CERPAG), Cotonou, Benin, 4Department of Bacteria, Parasites, and Fungi - Statens Serum Institut, Copenhagen, Denmark, 5Statens Serum Institut, Copenhagen, Denmark, 6UMR261 - MERIT - Université de Paris, Paris, France, 7Centre d’Études et de Recherche sur le Paludisme Associé à la Grossesse et l’Enfance (CERPAG), Cotonou, Benin, 8Division of Clinical Immunology, Department of Medicine, School of Medicine of Ribeirão Preto, University of São Paulo, Ribeirão Preto, Brazil, 9Commissariat à L’Energie Atomique Et Aux Energies Alternatives (CEA), Direction de la Recherche Fondamentale (DRF), Service de Recherche en Hémato-Immunologie (SRHI), Paris, France, 10Department of Parasitology - Biomedical Primate Research Centre, Rijswijk, Netherlands, 11Department for Congenital Disorders, Statens Serum Institut, Copenhagen, Denmark, 12UMR 1611 - IDMIT Department - Commissariat à L’Energie Atomique Et Aux Energies Alternatives (CEA), Direction de la Recherche Fondamentale (DRF), Fontenay-aux-Roses, France

Scientific Session 161

Schistosomiasis and Other Trematodes: Diagnosis and Treatment

Meeting Room 15
Thursday, November 19
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

CHAIR
Pytje Hoekstra
Leiden University Medical Center, Leiden, Netherlands

Emily McDonald
Rhode Island Hospital, Providence, RI, United States
SINGLE AND REPEATED PRAZIQUANTEL TREATMENTS SIGNIFICANTLY REDUCE SCHISTOSOMA INFECTION INTENSITY BUT SHOW A POOR CURE RATE AS DEMONSTRATED BY URINE CIRCULATING ANODIC ANTIGEN DIAGNOSTICS: RESULTS FROM THE REPST TRAIL

Pytsje T. Hoekstra1, Miriam Casacuberta-Partal1, Rufin K. Assare2, Kigbafori D. Silué2, Roula Tsonakia, Evelien van Kaathoven1, Claudia J. de Dood1, Paul L. Corstjens1, Stefanie Knopp3, Jürg Utzinger4, Jean T. Coulibaly5, Lisette van Lieshout5, Govert J. van Dam1

1Department of Parasitology, Leiden University Medical Center, Leiden, Netherlands, 2Centre Suisse de Recherches Scientifiques en Côte d’Ivoire, Abidjan, Côte d’Ivoire, 3Department of Biomedical Data Sciences, Leiden University Medical Center, Leiden, Netherlands, 4Department of Cell and Chemical Biology, Leiden University Medical Center, Leiden, Netherlands, 5Swiss Tropical and Public Health Institute, Basel, Switzerland

COMPARISON OF POC-CCA WITH KATO-KATZ IN DIAGNOSING SCHISTOSOMIASIS MANSONI INFECTION IN A PEDIATRIC L-PRAZIQUANTEL CLINICAL TRIAL

Xiaoyan Yin1, Brooke Hayward2, Wilhelmina Bagchus3, Dezkan Yalkinoglu4, Deon Bezuudenhout5, Elly Kourany-Lefoll6, Stefanie Knopp3, Govert J. van Dam1

1Leiden University Medical Center, Leiden, Netherlands, 2Swiss Tropical and Public Health Institute, Basel, Switzerland, 3Department of Cell and Chemical Biology, Leiden University Medical Center, Leiden, Netherlands, 4Swiss Tropical and Public Health Institute, Basel, Switzerland

EVALUATION OF REPORTER PARTICLES TO DEVELOP A POINT-OF-CARE LATERAL FLOW ASSAY TO DIAGNOSE SCHISTOSOMIASIS INFECTION

Elias Kabbas-Piñango1, Arnaud Chalin1, Paul L. Corstjens2, Maxime Laroche2, Milovan Stankov2, Govert J. van Dam3, Jonathan M. Cooper1, Poppy H. Lamberton1

1University of Glasgow, Glasgow, United Kingdom, 2NG Biotech, Guipry-Messac, France, 3Leiden University Medical Center, Leiden, Netherlands

DISCOVERY AND DEVELOPMENT OF HIGHLY POTENT AND EFFICACIOUS IMIDAZOPYRAZINE DERIVATIVES FOR THE TREATMENT AND PREVENTION OF SCHISTOSOMIASIS

Shashank Kulkarni1, Brooke Hayward1, Wilhelmina Bagchus2, Oezkan Yalkinoglu2

1EMD Serono, Billerica, MA, United States, 2Swiss Tropical and Public Health Institute, Basel, Switzerland

USE OF A TABLET-BASED SYSTEM WITH PORTABLE TRANSDUCERS TO PERFORM ABDOMINAL ULTRASOUNDS IN A FIELD INVESTIGATION OF SCHISTOSOMIASIS-RELATED MORBIDITY

Anne Straily1, Alfred Maliti2, Dollycate Wanja Njagi2, MORBID Ultrasound Team Kenya1,2, Emmy Awino Kaveere2, Ryan E. Wieging3, Susan P. Montgomery1, Ali Elvedd4, Alex Mwaki5, William E. Secor1, Maurice R. Odiero4

1Centers for Disease Control and Prevention (CDC), Atlanta, GA, United States, 2Safe Water and AIDS Project, Kisumu, Kenya, 3Safe Water and AIDS Project, Kenya Medical Research Institute, Kisumu, Kenya

DIAGNOSIS OF SCHISTOSOMA MANSONI INFECTIONS IN ASYMPTOMATIC ERIITREAN MIGRANTS BY STOOL PCR AND THE DETECTION OF CIRCULATING ANODIC ANTIGEN (CAA) IN URINE AND SERUM

Pytsje T. Hoekstra1, Afiona Chernet2, Claudia J. de Dood3, Eric A. Brienen4, Paul L. Corstjens1, Beatrice Nickel5, Linda J. Wammes6, Govert J. van Dam3, Andreas Neumayr4, Lisette van Lieshout4

1Leiden University Medical Center, Leiden, Netherlands, 2Swiss Tropical and Public Health Institute, Basel, Switzerland, 3Department of Cell and Chemical Biology, Leiden University Medical Center, Leiden, Netherlands, 4Department of Parasitology, Leiden University Medical Center, Leiden, Netherlands, 5Department of Medical Microbiology, Leiden University Medical Center, Leiden, Netherlands, 6Swiss Tropical and Public Health Institute, Basel, Switzerland

Water, Sanitation, Hygiene, and Environmental Health (WaSh-E): Water Access, Quality and Treatment

Meeting Room 16
Thursday, November 19
3 p.m. - 4:45 p.m. U.S. Eastern Time Zone

CHAIR
Emily Bailey
Texas Tech University Health Sciences Center, Lubbock, TX, United States

Amy Pickering
Tufts University, Medford, MA, United States

EFFECT OF DRINKING WATER CHLORINATION ON FECAL CARRIAGE OF CULTURABLE ANTIMICROBIAL RESISTANT BACTERIA IN BANGLADESHICHKIDREN: RESULTS FROM A RANDOMIZED CONTROLLED TRIAL

Maria Camila Montealegre1, Esther E. Greenwood1, Lisa Teichmann1, Maya L. Nadimpalli2, Lea Caduff1, Jenna Swarthout1, Tabea Nydegger1, Mohammad A. Islam3, Val F. Lanza2, Stephen P. Luby5, Amy J. Pickering, Timothy R. Julian1

1Eawag, Dübendorf, Switzerland, 2Tufts University, Medford, MA, United States, 3Washington State University, Pullman, WA, United States, 4Hospital Universitario Ramón y Cajal, Madrid, Spain, 5Stanford University, Stanford, CA, United States

IMPACT OF DRINKING WATER CHLORINATION ON CHILDREN’S GUT MICROBIOMES IN DHAKA, BANGLADESH

Maya L. Nadimpalli1, Val F. Lanza2, Maria Camila Montealegre1, Lisa Teichmann, Lea Caduff1, Jenna Swarthout1, Sonia Suliana3, Mohammad Aminul Islam4, Stephen P. Luby1, Timothy R. Julian1, Amy J. Pickering2

1Tufts University, Medford, MA, United States, 2Hospital Universitario Ramón y Cajal, Madrid, Spain, 3Eawag, Dübendorf, Switzerland, 4International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 5Washington State University, Pullman, WA, United States, 6Stanford University, Stanford, CA, United States

IDENTIFICATION OF MULTI-DRUG RESISTANT BACTERIA IN PRIMARY DRINKING WATER SOURCES IN SOUTHWEST COASTAL BANGLADESH

Sarker Masud Parvez1, Davidson H. Hamer2, Jean M. van Seventer1, Mohammad Aminul Islam4, Mohammad Badrul Amin5, Nafisa Halim1, Jeffrey K. Griffiths3, Tremearne Hotz4, Mahbubur Rahman1

1International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 2Section of Infectious Diseases, Department of Medicine, Boston University School of Medicine, Boston, MA, United States, 3Department of Environmental Health, Boston University School of Public Health, Boston, MA, United States, 4Paul G. Allen School for Global Animal Health, Washington State University, Pullman, WA, United States, 5Department of Global Health, Boston University School of Public Health, Boston, MA, United States, 6Department of Public Health & Community Medicine, Tufts University, Boston, MA, United States

ANALYSIS OF HOUSEHOLD ANTIBIOTIC USE AND MULTIDRUG RESISTANT BACTERIAL CONTAMINATION OF DRINKING WATER PONDS IN SOUTHWEST COASTAL BANGLADESH

Jean Maguire van Seventer1, Tremearne Hotz1, Sarker M. Parvez2, Emily E. van Seventer1, Mohammad A. Islam3, Mohammad B. Amin5, Nafisa Halim1, Jeffrey K. Griffiths3, Davidson H. Hamer2, Mahbubur Rahman1

1Boston University School of Public Health, Boston, MA, United States, 2International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh, 3Paul G. Allen School for Global Animal Health, Washington State University, Washington, MA, United States, 4Tufts University School of Medicine, Boston, MA, United States
needs to adapt interventions to the urban context. These will lead to a final discussion around how to respond to the challenge of vector borne diseases in the context of urban expansion.

**Symposium 163**

Responding to the Challenge of Vector Borne Diseases in the Context of Urban Expansion

**Meeting Room 1**

**Thursday, November 19**

5 p.m. - 6:45 p.m. U.S. Eastern Time Zone

According to the United Nations, 68% of the world’s population will live in urban areas by 2050. As much as 90% of this urban growth is expected to be in the African and Asian continents, meaning an increase of around 2.5 billion people. Urban sprawl, the unrestricted growth of housing, roads and commercial development with little or no urban planning, poses not only numerous negative environmental challenges but also raises the spectre of emerging health threats. New megacities can be the perfect environment for vector borne diseases to develop and spread, and in fact, many vectors that used to cause traditional rural infections are adapting to the urban environment, creating new challenges for both the local and the global community. This symposium will bring together a wide range of actors to discuss the challenges posed by urban expansion and how they interfere with vector borne diseases, with a focus on malaria. An overview of the differences between rural and urban malaria and the challenges these poses will be the starting point of a presentation on the impact that urbanization may have on malaria, the different ways in which we can approach housing modifications in the context of increasing urbanization, the concept of microstratification in urban areas and the research priorities and

**Symposium 164**

Integrating Functional, Population Genomic and Transcriptomic Data to Decipher Antimalarial Drug Resistance and Guide Drug Discovery

**Meeting Room 2**

**Thursday, November 19**

5 p.m. - 6:45 p.m. U.S. Eastern Time Zone

Resistance to antimalarial drugs, and in particular to the artemisinin derivatives and their partner drugs, threatens recent progress toward regional malaria elimination and eventual global malaria eradication. The advent of technologies allowing genome-wide sequencing and genotyping at epidemiological scales has facilitated the use of population genomics and transcriptomics to identify regions of the parasite genome or gene expression patterns associated with both clinical and in vitro drug resistance phenotypes. Indeed, over the past decade, such studies have provided insight into the function of many Plasmodium genes as well as some of the genes that relate to several phenotypes, including drug resistance. Some of these genes may be involved in the drug-resistance mechanisms themselves or may contribute to improved parasite fitness, allowing the parasite to overcome fitness costs stemming from resistance mutations. In this symposium, we will integrate findings from previous population genomic and transcriptomic studies with recent genome-scale experimental genetics screens in an effort to
further characterize genes associated with artemisinin resistance and to explore how this knowledge can inform rational drug discovery. The first speaker will present a synthesis of population genomic studies of resistance to artemisinin derivatives and/or their partner drugs, with a focus on genomic regions identified in multiple studies for which a favored mutation/gene has not been identified. The second speaker will discuss population-level transcriptomic and expression quantitative trait loci (eQTL) analyses in the context of a transition from a soft to a hard sweep of artemisinin resistance in the eastern Greater Mekong Subregion. The third speaker will discuss how recent functional studies have revealed the relationship between clinical drug resistance and ancient plant-like survival mechanisms co-opted from the apicoplast’s algal progenitor and how these observations corroborate previous population-level studies. The final speaker will discuss how findings from genomic, transcriptomic, and functional studies can be leveraged to identify drug resistance pathways, select new drug targets, and guide the discovery and development of novel antimalarial drugs to counter resistance.

**CHAIR**
Shannon Takala Harrison  
University of Maryland School of Medicine, Baltimore, MD, United States

John H. Adams  
University of South Florida, Tampa, FL, United States

**5 p.m.**  
**SYNTHESIS OF POPULATION GENOMIC STUDIES OF RESISTANCE TO ARTEMISININ DERIVATIVES AND THEIR PARTNER DRUGS**  
Shannon Takala Harrison  
University of Maryland School of Medicine, Baltimore, MD, United States

**5:25 p.m.**  
P. falciparum POPULATION TRANSCRIPTOMICS IN THE CONTEXT OF EVOLVING MULTIDRUG RESISTANCE IN THE GREATER MEKONG SUBREGION  
Zbyněk Bozdech  
Nanyang Technological University, Singapore, Singapore

**5:50 p.m.**  
ARTEMISININ RESISTANCE IS ENABLED BY PLASTID-DERIVED SURVIVAL MECHANISMS  
Jenna Oberstaller  
University of South Florida, Tampa, FL, United States

**6:15 p.m.**  
RATIONAL DISCOVERY OF NEW ANTIMALARIALS TO REVERSE RESISTANCE  
Stanley C. Xie  
University of Melbourne, Melbourne, Australia

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**Symposium 166**

**Current Knowledge of Mosquito-Stage Malaria Parasite Biology: Implications for Developing a Robust in vitro Culturing System**

*Meeting Room 5  
Thursday, November 19  
5 p.m. - 6:45 p.m. U.S. Eastern Time Zone*

The *in vitro* culturing of mosquito-stage malaria parasites has been demonstrated by several laboratories. Their work encompasses the progression from gametes to infective sporozoites while documenting the conditions and factors required for success, but further research is needed to establish a more robust and potentially high-throughput *in vitro* culture system. With such a system in hand, fundamental aspects of parasite biology would be more amenable to the innovative tools currently being used to interrogate other stages of the malaria parasite life cycle. Additionally, much like liver-stage development, the mosquito-stage represents a bottleneck where relatively few oocysts develop to form many thousands of sporozoites. In the context of malaria elimination, the ability to target the parasite within the mosquito in order to block transmission is an attractive proposition. The symposium aims to provide current knowledge of parasite strategies and biological requirements within the vector, from gametes in the bloodmeal to transmission of mature sporozoites.

**CHAIR**
Adriana Costero-Saint Denis  
National Institutes of Health, Rockville, MD, United States

Flaminia Catteruccia  
Harvard School of Public Health, Boston, MA, United States

**5 p.m.**  
**HOST FACTORS IN THE BLOODMEAL AS REGULATORS OF VECTOR-PARASITE INTERACTIONS AND TRANSMISSION IN MALARIA**  
Shirley Luckhart  
University of Idaho, Moscow, ID, United States

**5:20 p.m.**  
**OOKINETE-TO-OOCYST TRANSITION: A MOST VALUABLE TARGET**  
Marcelo Jacobs-Lorena  
Johns Hopkins School of Public Health, Baltimore, MD, United States

**5:40 p.m.**  
**TAKE IT AND MAKE IT: OOCYST DEVELOPMENT REQUIRES NUTRIENT UPTAKE AND DE NOVO BIOSYNTHESIS**  
Ashley M. Vaughan  
Seattle Children’s Research Institute, Seattle, WA, United States

**6 p.m.**  
**SPOROZOITES: MOVING FROM MOSQUITO TO MAMMALIAN HOST**  
Photini Sinnis  
Johns Hopkins University, Baltimore, MD, United States

**Symposium 167**

**Tracking the Threat of pfhrp2/3 Gene Deletions and Future Alternatives to HRP2-Based Malaria Diagnosis**

*Meeting Room 6  
Thursday, November 19  
5 p.m. - 6:45 p.m. U.S. Eastern Time Zone*

The *in vitro* culturing of mosquito-stage malaria parasites has been tracked by several laboratories. Their work encompasses the progression from gametes to infective sporozoites while documenting the conditions and factors required for success, but further research is needed to establish a more robust and potentially high-throughput *in vitro* culture system. With such a system in hand, fundamental aspects of parasite biology would be more amenable to the innovative tools currently being used to interrogate other stages of the malaria parasite life cycle. Additionally, much like liver-stage development, the mosquito-stage represents a bottleneck where relatively few oocysts develop to form many thousands of sporozoites. In the context of malaria elimination, the ability to target the parasite within the mosquito in order to block transmission is an attractive proposition. The symposium aims to provide current knowledge of parasite strategies and biological requirements within the vector, from gametes in the bloodmeal to transmission of mature sporozoites.
status of pfhrp2/3 deletions globally, trends after replacement with non-HRP2 RDTs, and anticipated trends with continued HRP2 RDT use. The second speaker will discuss high throughput screening for malaria antigen in human blood – experiences from multiple countries. Laboratory assays have recently been developed to allow for the multiplex detection of malaria antigens in human biospecimens. With the optimization of this assay for blood dried on filter paper, the large-scale and economical collection of specimens and antigen data from a population allows for a comprehensive picture of antigen carriage in the populace. Persons positive for pan-Plasmodium antigens, but negative for the HRP2 and HRP3 antigens can be further interrogated by molecular assays to determine the presence of non-falciparum malaria or P. falciparum not producing the HRP2 and HRP3 antigens. The third speaker will discuss the evolving approach to pfhrp2/3 deletion characterization. Surveillance for pfhrp2/3-deleted parasites is challenging due to the difficulty of proving the absence of genes using PCR. Newly developed molecular assays and next-generation sequencing approaches provide opportunities to overcome these difficulties, streamline laboratory workflows, and gain new insights into the biology of these parasites. A novel deep sequencing approach that enables high-resolution mapping of deletion regions using field samples and other advances in molecular methods for pfhrp2/3 deletion surveillance will be discussed. The last speaker will discuss promising alternatives to HRP2 based rapid tests – options, performance and affordability. Improved diagnostic tools are needed for the diagnosis of falciparum malaria. Recently, Global Good / Intellectual Ventures and Access Bio Incorporated have created prototype lactate dehydrogenase (LDH) tests for P. falciparum and P. vivax with the intent to create two new products: a P. falciparum single-line lateral flow assay and a P. falciparum / P. vivax LDH combination test. A diagnostic accuracy trial is underway at Universidad Peruana Cayetano Heredia in Peru. Initial performance of these prototypes and their applicability in field settings affected by pfhrp2/3 deletions will be discussed.

CHAIR
Qin Cheng
Australian Defence Force Malaria and Infectious Disease Institute, Brisbane, Australia
Jonathan B. Parr
University of North Carolina, Chapel Hill, NC, United States

5 p.m.
TRACKING THE GLOBAL DISTRIBUTION AND PREVALENCE OF PFHRP2/3 GENE DELETIONS
Jane A. Cunningham
World Health Organization, Geneva, Switzerland

5:25 p.m.
HIGH THROUGHPUT SCREENING FOR MALARIA ANTIGEN IN HUMAN BLOOD – EXPERIENCES FROM MULTIPLE COUNTRIES
Eric Rogier
Centers for Disease Control and Prevention, Berkeley Lake, GA, United States

5:50 p.m.
THE EVOLVING APPROACH TO PFHRP2/3 DELETION CHARACTERIZATION
Jonathan B. Parr
University of North Carolina, Chapel Hill, NC, United States

6:15 p.m.
PROMISING ALTERNATIVES TO HRP2 BASED RAPID TESTS – OPTIONS, PERFORMANCE AND AFFORDABILITY
Dionicia Gamboa
Universidad Peruana Cayetano Heredia, Lima, Peru

Scientific Session 168

Malaria: Developing and Evaluating LLINs

Thursday, November 19

5 p.m. - 6:45 p.m. U.S. Eastern Time Zone

CHAIR
Corine A. Ngufor
London School of Hygiene and Tropical Medicine, London, United Kingdom
Joseph D. Challenger
Imperial College London, London, United Kingdom

1628

DECREASED BIOEFFECTIVENESS OF LONG-LASTING INSECTICIDAL NETS AND THE RESURGENCE OF MALARIA IN PAPUA NEW GUINEA
Rebecca J. Vinit1, Lincoln Timinao2, Nakei Bubun1, Michelle Katusele1, Leanne J. Robinson2, Peter Kaman1, Muker Sakur1, Leo S. Makita2, Lisa Reimer2, Louis D. Schofield1, Ivo Mueller2, William Pomat1, Moses Laman1, Tim Freeman2, Stephan Karl1,2
1Papua New Guinea Institute of Medical Research, Madang, Papua New Guinea, 2Burnet Institute, Melbourne, Australia

1629

SLIPPING THROUGH THE NET: RELATIVE IMPACTS OF OWNERSHIP, RETENTION, AND USE ON INSECTICIDE-TREATED NET COVERAGE IN SUB-SAHARAN AFRICA
Amelia Bertozzi-Villa1, Peter W. Getting1, Caitlin Bever1, Samir Bhatt3
1Institute for Disease Modeling, Bellevue, WA, United States, 2Telethon Kids Institute, Perth, Australia, 3Papua New Guinea National Department of Health

1630

EFFICACY OF TWO NEXT GENERATION LONG-LASTING MOSQUITO BED NETS (INTERCEPTOR® G2 AND ROYAL GUARD®) AGAINST PYRETHROID RESISTANT MALARIA VECTORS IN SOUTHERN BENIN; AN EXPERIMENTAL HUT EVALUATION
Corine A. Ngufor1, Peter W. Getting1, Caitlin Bever1, Samir Bhatt3
1Institute for Disease Modeling, Bellevue, WA, United States, 2Telethon Kids Institute, Perth, Australia, 3Papua New Guinea National Department of Health

1631

ASSESSING THE NON-INFERIORITY OF NOVEL INSECTICIDE-TREATED NETS IN EXPERIMENTAL HUT TRIALS
Joseph D. Challenger1, Rebecca K. Nash1, Mark Rowland2, Corine Ngufor2, Raphael N’Guessan3, Antoine Sanour4, Fatoumata Cissé5, Richard M. Oxborough6, Sarah J. Moore6, Thomas S. Churcher1
1Imperial College London, London, United Kingdom, 2London School of Hygiene and Tropical Medicine, London, United Kingdom, 3Institut Pierre Richet, Bouaké, Côte D’Ivoire, 4Centre National de Recherche et de Formation sur le Paludisme, Ouagadougou, Burkina Faso, 5PMI-VectorLink Project, Rockville, MD, United States, 6Ifakara Health Institute, Bagamoyo, United Republic of Tanzania
1634
A PILOT STUDY TO EVALUATE THE EFFECT OF NEXT-GENERATION INSECTICIDE-TREATED BEDNETS ON MALARIA MORBIDITY IN THREE HEALTH DISTRICTS IN BURKINA FASO: PRELIMINARY RESULTS OF THE BASELINE CROSS-SECTIONAL SURVEY
David Kangoye1, Christelle Goguel2, Siaka Debe1, René Kinda1, Adaman Ganaou1, Casimir Tarama1, Harouna Sore1, Cheick S. Compaore1, N’Fale Sagnon1, Moussa Guelpbeogo1, Molly Robertson1, Adama Gansané1, 2Centre National de Recherche et de Formation sur le Paludisme, Ouagadougou, Burkina Faso, 1Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 2PATH, Washington, DC, United States

1635
MULTI-CENTRE FIELD EVALUATION OF A DIGITAL MALARIA MICROSCOPY DEVICE BASED ON MACHINE-LEARNING: EASYSCAN GO - A PRELIMINARY ANALYSIS
Debashish Das1, Ranitha Vongpromek1, Thanawat Assawaryaphit1, Ketsanan Srimaron1, Kalynn Kennon1, Kasja Stepniewska1, Anirudha Ghose1, Abdullah Abu Sayed1, Rebeca Netto1, Andre Siqueira1, Serge R Yerbanga6, Jean Bosco Ouédraogo6, Casimir Tarama1, Harouna Sore1, Cheick S. Compaore1, N’Fale Sagnon1, Moussa Guelpbeogo1, Molly Robertson1, Adama Gansané1, 2Centre National de Recherche et de Formation sur le Paludisme, Ouagadougou, Burkina Faso, 1Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 2PATH, Washington, DC, United States

1636
A NEW BIOINFORMATIC PIPELINE FOR IDENTIFYING DIAGNOSTIC-RESISTANT PLASMODIUM FALCIPARUM WITH HRP2/3 DELETIONS USING LONG-READ SEQUENCING TECHNOLOGY
Camille E. Morgan1, Jonathan B. Parr2, Kara A. Moser2, Chris M. Hennelly1, Jonathan J. Juliano1, Corbin D. Jones1, Jeremy R. Wang2
1Department of Epidemiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States, 2Institute for Global Health and Infectious Diseases, University of North Carolina Chapel Hill, Chapel Hill, NC, United States

1637
FIGHTING MALARIA, ONE IMAGE AT A TIME: THE DESIGN AND PRELIMINARY VALIDATION OF A LOW-COST FIELD TOOL FOR THE RAPID AND ACCURATE MORPHOLOGICAL IDENTIFICATION OF MALARIA VECTORS
Sophia Diaz1, Monet Slinowski1, Kiley Gersch1, Ebenezer Arma1, Karina Frank1, Zachary Buono1, Tristan Ford1, Adam Goodwin1, Margaret Glancy1, Soumyadipta Acharya1, 2Department of Medicine, Columbia University, New York, NY, United States, 3Department of Chemistry and Biochemistry, California State University Fullerton, Fullerton, CA, United States, 4Centre for Tropical Medicine and Global Health, Mahidol Oxford Tropical Medicine Research Unit, Bangkok, Thailand, 5Clinical Pharmacology, Mahidol Oxford Tropical Medicine Research Unit, Bangkok, Thailand

Scientific Session 169
Malaria: New Approaches to Improve the Diagnosis of Malaria

Meeting Room 8
Thursday, November 19
5 p.m. - 6:45 p.m. U.S. Eastern Time Zone

1632
BEHAVIORAL BIOASSAYS TO IMPROVE BEDNET EVALUATION IN THE LABORATORY AND FIELD
Geraldine M. Foster1, Agnes Matopé1, Amy Guy1, Mischa Emery1, Keith Steen1, Katherine Gleave1, Jeff Jones1, David T. Towers1, Hilary Ranson1, Philip J. McCall1, 2Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 3University of Warwick, Warwick, United Kingdom

1633
COMMUNITY PERCEPTION OF THE USE OF NEXT-GENERATION INSECTICIDE-TREATED BEDNETS IN RURAL AREAS IN THE HEALTH DISTRICTS OF BANFORA, ORODARA AND GAOUA IN BURKINA FASO: BASELINE DATA
Moubassira Kagone1, Abdoulaye Traore1, Federica Guglielm1, Adama Traore1, Samuel Poda1, Aboubacar Fofana1, Kenzle Tynuv1, Moussa Guelpbeogo1, N’Fale Sagnon1, Christelle Goguel2, Adama Gansané1, Molly Robertson1, 2Centre National de Recherche et de Formation sur le Paludisme, Ouagadougou, Burkina Faso, 1Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 2PATH, Washington, DC, United States

1638
STRUCTURE-SWITCHING APTAMER SENSORS FOR THE SPECIFIC DETECTION OF PIPERAQUINE AND MEFLOQUINE
Erin S. Coonahan1, Kyung-Ae Yang1, Maarten De Vos1, Stevan Pecic1, Joel Tarning1, Thomas E. Wellems1, John F. Andersen1, Carole A. Long1, 1Laboratory of Malaria and Vector Research, NIAID, NIH, Rockville, MD, United States, 2Department of Medicine, Columbia University, New York, NY, United States, 3Institute of Biomedical Engineering, University of Oxford, Oxford, United Kingdom, 4Department of Chemistry and Biochemistry, California State University Fullerton, Fullerton, CA, United States, 5Clinical Pharmacology, Mahidol Oxford Tropical Medicine Research Unit, Bangkok, Thailand

1640
DEVELOPMENT OF THE 1ST WORLD HEALTH ORGANIZATION INTERNATIONAL STANDARD FOR PLASMODIUM VIVAX ANTIGENS
Charles Olomu1, Lynne M. Harris1, Seda Yerlikaya2, Peter Rigby1, Eleanor Atkinson1, Adéla Nacer1, Xavier Ding1, Paul W. Bowyer1, the Collaborative Study Group2, 1National Institute for Biological Standards and Control (NIBSC), Blanche Lane, South Mimms, Hertfordshire, United Kingdom, 2FIND, Geneva, Switzerland

1641
DEVELOPING A SEROLOGICAL RAPID TEST FOR AN UNMET DIAGNOSTIC NICHE: THE PLASMODIUM VIVAX HYPNOZOITE
Rosalind E. Howes1, Anya Gregg1, Matthias Harbers2, Andrew Lover1, Agatha Mia Puspitasari3, Rintis Noviyanti1, Jutta Marfurt1, Ric Price1, Sabine Dittrich1, Marta Fernandez Suarez1, Xavier C. Ding1, 1Foundation for Innovative New Diagnostics (FIND), Geneva, Switzerland, 2Mologic, Bedford Technology Park, United Kingdom, 3CellFree Sciences Co. Ltd., Yokohama, Japan, 4Dept of Biostatistics and Epidemiology, School of Public Health and Health Sciences, University of Massachusetts - Amherst, Amherst, MA, United States, 5Eijkman Institute for Molecular Biology, Jakarta, Indonesia, 6Menzies School of Health Research, Darwin, Australia, 1404
Scientific Session 170

Integrated Control Measures for Neglected Tropical Diseases

Meeting Room 9
Thursday, November 19
5 p.m. - 6:45 p.m. U.S. Eastern Time Zone

CHAIR
Malwina Carrion
Boston University College of Health and Rehabilitation Sciences: Sargent College, Boston, MA, United States
Michael French
RTI International, Washington D.C., DC, United States

1642
REASONS FOR INSUFFICIENT PREVENTIVE CHEMOTHERAPY COVERAGE FOR NEGLECTED TROPICAL DISEASES, A MULTI-COUNTRY ANALYSIS
Sabrina Eyob1, Alexander H. Jones1, Margaret Baker1, Alfred Mubangizi2
1RTI International, Washington, DC, United States, 2Vector Control Division, Ministry of Health, Kampala, Uganda

1643
USING PARTICIPATORY METHODS TO IMPROVE NTDS PROGRAMME OUTCOMES IN NIGERIA AND TO INFORM INTERVENTION DESIGN
Martins Imhansoleova1, Laura Dean2, Ruth Dixon3, Margo Greenwood4, Shahreen Chowdhury5, Catherine Kajang6, Celestine Njoku7, Sunday Isiyaku3
1Sightsavers Nigeria, Abuja, Nigeria, 2Liverpool School of Tropical Medicine, Liverpool, United Kingdom, 3Sightsavers UK, Haywards Heath, United Kingdom, 4Federal Ministry of Health, Abuja, Nigeria

1644
BROKERED DESIGN: A NOVEL METHOD FOR DESIGNING (AND RE-DESIGNING) NTD ELIMINATION PROGRAMS
Lee T. Wilkers1, Luccene Desir2, Gregory S. Noland2, James V. Lavery1
1Rollins School of Public Health, Emory University, Atlanta, GA, United States, 2The Carter Center, Atlanta, GA, United States

1645
INFORMATION SHARING AND SUPPLY CHAIN PERFORMANCE: EVIDENCE FROM THE NEGLECTED TROPICAL DISEASES PREVENTIVE CHEMOTHERAPY SUPPLY CHAIN
Elena Kasparis1, Yufei Huang2, William Lin1, Christos Vasilakis1
1University of Bath, Bath, United Kingdom, 2Trinity College Dublin, Dublin, Ireland

1646
EFFORTS TOWARDS STRENGTHENING THE INTEGRATION OF SUPPLY CHAIN OF NEGLECTED TROPICAL DISEASE MEDICINES INTO THE ELECTRONIC LOGISTICS MANAGEMENT INFORMATION SYSTEM IN TANZANIA
Frank Komakoma1, Upendo Mwingira1, Jeremiah Ngondi1, Daudi Msasi2, William Reuben1, Nabilah Hemed2, Godfrey Kingalu1, Kerry Dobbies1, Elisabeth Wilskie2, Abdallah Ngenery1, Oscar Kaitaba1, George Kabona1
1IMA World Health, Dar es Salaam, United Republic of Tanzania, 2RTI International, Washington, DC, United States, 3Pharmaceutical Services Unit-MoHCDGEC, Dodoma, United Republic of Tanzania, 4IMA World Health, Washington, DC, United States, 5PATH, Dar es Salaam, United Republic of Tanzania, 6MoHCDGEC, Dar es Salaam, United Republic of Tanzania

Scientific Session 171

Malaria: Vaccines

Meeting Room 10
Thursday, November 19
5 p.m. - 6:45 p.m. U.S. Eastern Time Zone

CHAIR
Urszula Krzych
Walter Reed Army Institute of Research, Silver Spring, MD, United States
Moriya Tsuji
Columbia University Medical Center, New York, NY, United States

1649
LOOKING AHEAD IN MALARIA: R21/MATRIX-M, AN EXCITING NEW VACCINE CANDIDATE
Mehreen S. Datoo1, Meera Madhavan2, Duncan Bellamy2, Megan Baker1, Fernando Ramos-Lopez3, Amy Flaxman1, Nick J. Edwards4, Daniel Jenkin5, Hazel Morrison6, Rebecca Makinson1, Jeremy Abogaige7, Ian Poulton8, Nguyen Tran1, Alison Lawrie1, Anna Goodman1, Katrina Pollock9, Andrew Blagborough1, Jake Baum10, Saul Faust11, Brian Angus1, Umem Shaligram12, Katie J. Ewer13, Adrian V. Hill1
1 Jenner Institute, University of Oxford, Oxford, United Kingdom, 2Department of Infectious Diseases, Guy’s & St Thomas’ NHS Foundation, London, United Kingdom, 3NHR Imperial Clinical Research Facility, Imperial College, London, United Kingdom, 4University of Cambridge, Cambridge, United Kingdom, 5Department of Life Sciences, Imperial College, London, United Kingdom, 6NIHR Wellcome Trust Clinical Research Facility, University of Southampton, Southampton, United Kingdom, 7Oxford University Hospitals NHS Foundation Trust, Oxford, United Kingdom, 8Serum Institute of India, Pune, India

1651
GENOME, PROTEOME, AND IMMUNONE DATA EXPLAIN WHY CONTROLLED HUMAN MALARIA INFECTION WITH SPOROZITES OF THE PF768 CLONE OF PLASMODIUM FALCIPARUM IS A RIGOROUS PREDICTOR OF THE EFFICACY OF THE PFNPF54-BASED PFSPZ VACCINE IN AFRICA
Joana C. Silva1, Arkit Dwivedi2, Kara A. Moser1, Mahamadou S. Sissoko3, Judith E. Epstein4, Sara Healy5, Kirsten E. Lyke6, Benjamin Mordmueller7, Tao Li8, Tooba Mursheed9, Peter Kremsner1, Patrick E. Duffy2, Thomas Richie1, B. Kim Lee3, Stephen L. Hoffman4
1University of Maryland School of Medicine, Baltimore, MD, United States, 2University of Science, Techniques and Technologies of Bamako, Bamako, Mali, 3Naval Medical Research Center, Silver Spring, MD, United States, 4National Institutes of Health, Bethesda, MD, United States, 5University of Tübingen, Tübingen, Germany, 6Sanaria, Inc., Rockville, MD, United States
1652

A FOUR-TIERED HIGH-THROUGHPUT APPROACH IDENTIFIES TWO NOVEL TRANSMISSION BLOCKING VACCINE CANDIDATES WITH POTENT TRANSMISSION REDUCING ACTIVITY

Miranda S. Oakley1, Nitin Verma1, Abhai K. Tripathi2, Hong Zheng1, Edward Essuman1, Ankit Puri1, Richard A. Skelton3, Scott Meredith4, Kazuyo Takeda5, Victoria Majami1, Godfrey Miambo1, Kazutoyo Miura1, Carole A. Long1, Sanjai Kumar1

1FDA, Silver Spring, MD, United States, 2Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States, 3NIADC, Rockville, MD, United States

(ACMCIP Abstract)

1653

STRUCTURAL DELINEATION OF NEUTRALIZING EPITOPE ON MALARIA ANTIGEN PfS230D1

Wai Kwan Tang1, Camila H. Coelho1, Martin Burkhardt1, Olga Muratova1, Nichole D. Salinas1, Reiter Karine1, Macdonald J. Nicholas1, Nguyen Vu1, Herrera Raul1, Richard Shimp1, David L. Narum1, Jacob D. Galson1, Thiago Luiz Alves E Silva1, Miranda Byme-Steel1, Wenjing Pan1, Xiaohong Hou1, Brittany Brown1, Mary Eisenhower1, Jian Han1, Joel Vega-Rodriguez1, Johannes Truck4, Justin J. Taylor1, Issaka Sagara1, Jonathan P. Renn1, Duffy E. Patrick1, Niraj H. Tolia1

1National Institutes of Health, Bethesda, MD, United States, 2University children’s hospital, Zurich, Switzerland, 3Reporo Inc, Huntsville, AL, United States, 4University of Zurich, Zurich, Switzerland, 5Fred Hutchinson Cancer Research Center, Seattle, WA, United States, 6University of Sciences, Bamako, Mali

1654

STRUCTURAL BASIS FOR PLACENTAL SEQUESTRATION OF P. FALCIPARUM BY VAR2CSA

Rui Ma1, Tengfei Lian, Rick Huang, Jonathan P. Renn, Jennifer D. Petersen, Joshua Zimmerberg, Jiansen Jiang, Patrick E. Duffy, Niraj H. Tolia

National Institute of Health, Bethesda, MD, United States

1655

IMMUNOFOCUSING THE HUMORAL RESPONSE TO FUNCTIONAL EPITOPES OF THE ANAPN1 MALARIA TRANSMISSION-BLOCKING VACCINE ANTIGEN POTENTIATES EFFICACY

Nicole Bender1, Prachti Khare1, Juan Martinez2, Rebecca Tweedle1, Vincent Nyasembe1, Abhai Tripathi3, Dustin Miller1, Timothy Hamerly1, Eric Vela1, Ronald Cobb1, Matthias Harbers1, Rhoel Dinglasan1

1University of Florida, Gainesville, FL, United States, 2Ology Bioservices Inc, Alachua, FL, United States, 3Johns Hopkins University, Baltimore, MD, United States

Symposium 173

Frontiers in Immunologic Evaluation of Filovirus Vaccines

Meeting Room 12
Thursday, November 19
5 p.m. - 6:45 p.m. U.S. Eastern Time Zone

The need for a safe and effective vaccine to filoviruses remains a global health imperative as evidenced by the two largest outbreaks of Ebola virus disease in the last decade occurring in West Africa and most recently in the Democratic Republic of Congo. The Walter Reed Army Institute of Research (WRAIR), which has executed clinical trials of three major Ebola vaccine candidates, is sponsoring a proposed symposium entitled “Frontiers in Immunologic Evaluation of Filovirus Vaccines.” The symposium will highlight novel approaches to interrogating immune responses elicited by major filovirus vaccine candidates. The session will specifically provide a forum for the presentation of the latest data on the humoral, cellular, and innate immune responses to filovirus vaccines, including responses among HIV infected individuals. The focus will be on immune responses to leading filovirus vaccine candidates including those based on the rVSV, cAd3, and Ad26/ MVA viral vector platforms.

CHAIR
Julie Ake
Walter Reed Army Institute of Research, Silver Spring, MD, United States

Melanie McCauley
Henry Jackson Foundation, Bethesda, MD, United States

5 p.m.
SYSTEMS SEROLOGY ANALYSIS OF HIV AND FILOVIRUS RESPONSE

Morgan Rolland
Henry M. Jackson Foundation, Bethesda, MD, United States

Symposium 172

Arbovirus Vectors in Brazil: Recent Advances

Meeting Room 11
Thursday, November 19
5 p.m. - 6:45 p.m. U.S. Eastern Time Zone

Brazil continues to be the epicenter of arboviral disease outbreaks in the Americas. While dengue has been a persistent serious disease, recent rises in chikungunya and yellow fever as well as the notorious Zika outbreak in 2014-15 demonstrate the diversity of arboviruses in Brazil and the central role this country plays in understanding arboviruses in the New World. We will discuss advances in understanding and controlling Brazilian vectors, focusing on Aedes aegypti and including Aedes albopictus.

CHAIR
Jeffrey Powell
Yale University, New Haven, CT, United States
Symposium 174

Building Out Vector-borne Diseases in Sub-Saharan Africa

Meeting Room 13
Thursday, November 19
5 p.m. - 6:45 p.m. U.S. Eastern Time Zone

Over 80% of the world’s population is threatened by at least one disease transmitted by insects or ticks, with 50% threatened by two or more. These diseases represent 17% of the global burden of infectious diseases and kill over 700,000 people each year, with much of the impact occurring amongst the poorest of the poor in sub-Saharan Africa. In sub-Saharan Africa, most transmission of mosquito-transmitted diseases, such as malaria or dengue, occurs within or around houses. Preventing mosquito house entry and reducing mosquito production around the home would help reduce the transmission of these diseases. Based on recent research, key recommendations are made for reducing the threat of mosquito-transmitted diseases through changes to the built environment. The mnemonic, DELIVER, recommends the following best practices: (1) Doors should be screened, self-closing and without surrounding gaps, (2) Eaves, the space between the wall and roof, should be closed or screened, (3) houses should be Lifted above the ground, (4) Insecticide-treated nets should be used when sleeping in houses at night, (5) rooms should be Ventilated, with at least two large screened windows on opposite sides of the room, (6) Environmental management should be conducted regularly inside and around the home and (7) Roofs should be solid, rather than thatch. This symposium will describe in more detail the DELIVER recommendations and the science underpinning them. The session features three novel projects using different means to build out mosquitoes: one exploring a transdisciplinary intervention to contribute to reducing mosquitoes in peri-urban areas of Jimma Town, Ethiopia through the spatial improvement of Integrated Housing Development Program housing structures and settlements, a second tests whether a community-based recycling program can engage aspiring business people to turn trash into profit in Kwale County, Kenya and at the same time remove plastic containers, tires, and other rubbish which are potential mosquito breeding sites, the third is to design and test mosquito repellent chairs and eaves ribbons to reduce both outdoor biting and entry into houses by malaria mosquitoes in Ulanga District, Tanzania. Such changes also provide many collateral benefits including reducing the use of insecticides, helping to reduce plastic waste in our communities and building homes that are healthier and more comfortable in general. Control of mosquito-transmitted diseases through improvements to the built environment has the potential to be more sustainable than other typical vector control interventions, particularly if the community and other stakeholders are engaged in the design and implementation of solutions.

Symposium 175

The Skin: Where the Planet and Your Body Meet

Meeting Room 14
Thursday, November 19
5 p.m. - 6:45 p.m. U.S. Eastern Time Zone

The skin is the organ system perhaps most vulnerable to the health consequences of climate change. These effects are best communicated in a systems-based manner, essentially the way an ecologist discusses symbiosis and biogeography. This symposium presents several paradigms to emphasize these points: how changing patterns of temperature, precipitation, seasonality, and other climate variables influence populations of pathogens, vectors, and reservoirs/host; the effects of floods and other water-associated disasters (natural and man-made) on migrating human populations; and the role of soil geochemistry & microbiology on human health. Each paradigm is presented from a dermatologic perspective. After all, the skin is where the body and the environment meet.
5:50 p.m.  
**CLIMATE CHANGE AND HUMAN HEALTH IN AFRICA: A DERMATOLOGIC PERSPECTIVE**
Sarah J. Coates  
Academic Model Providing Access to Healthcare (AMPATH), Eldoret, Kenya

The precise impact of climate change on schistosomiasis, a parasitic disease of poverty affecting more than 200 million people mainly in tropical and subtropical countries, is still largely unknown. The intermediate snail hosts of schistosome parasites have limited thermoregulation ability and, therefore, their reproduction, survival, and dispersal in the environment can be influenced even by small changes in temperature. As a consequence, projected climate change, along with the associated variation in temperature extremes and precipitation, could alter the distribution and abundance of the intermediate snail hosts and, as a consequence, the spatial and temporal distribution of the disease. In addition, the effects of climate change are expected to combine with those due to other global change drivers of disease. In fact, social-ecological systems are major drivers of the transmission of schistosomiasis, and hence, these must be considered when attempting to identify the specific impact of climate change. In particular, water resources development and water management infrastructures, such as dams and irrigation schemes, alter water availability in the face of climate change. In addition, the effects of climate change are expected to combine with those due to other global change drivers of disease. The project, which is being undertaken in 24 settlements in Indonesia and Fiji, employs a “water sensitive cities” approach that integrates ecological and economically sustainable water infrastructure like constructed wetlands, bio-filtration gardens, stormwater harvesting, and local sanitation systems based on “smart” new septic tanks, into buildings and landscapes. Among the keys to the success of the intervention is an authentic co-design process that engages community members in identifying the main sources facing humanity in the near future. In this symposium, speakers will discuss state of the art approaches to investigate the effects of future climate and land-use change on schistosomiasis, current evidence as well as projections of potential changes in schistosomiasis distribution, and the knowledge gaps that need to be addressed for the effective control of schistosomiasis transmission in the 21st century.

**Chair**  
Giulio De Leo  
Stanford University, Pacific Grove, CA, United States  
Jürg Utzinger  
Swiss Tropical and Public Health Institute, Basel, Switzerland

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**Symposium 177**

**Revitalizing Informal Settlements and their Environments (RISE)**

**Meeting Room 16**  
Thursday, November 19  
5 p.m. - 6:45 p.m. U.S. Eastern Time Zone

An estimated 1 billion people live in slum conditions, representing nearly a third of urban populations. Rapid urbanization, particularly in informal settlements, poses serious risks to fragile land and water systems and to human health and wellbeing. Poor water supplies and sanitation, combined with inadequate drainage and flood management exacerbated by climate change, expose vulnerable populations to diseases associated with fecal-oral transmission, respiratory insults and water-related disease vectors. They also threaten the environment, including vital food supplies and natural habitat. This symposium describes and presents initial results of an innovative solution to the special water and sanitation challenges of informal settlements in low-income settings. The project, which is being undertaken in 24 settlements in Indonesia and Fiji, employs a “water sensitive cities” approach that integrates ecological and economically sustainable water infrastructure like constructed wetlands, bio-filtration gardens, stormwater harvesting, and local sanitation systems based on “smart” new septic tanks, into buildings and landscapes. Among the keys to the success of the intervention is an authentic co-design process that engages community members in identifying the main sources
of environmental contamination and developing an integrated and sustainable solution, transforming water infrastructure, water management and sanitation practices while improving resilience to flooding. A rigorous evaluation of the project employs a randomized controlled trial design to assess the impact of the intervention on fecal contamination of the environment and on the health and wellbeing of local residents. Among the outcomes are enteric inflammation and carriage of drug-resistant gene markers, and increased diversity of the gastrointestinal microbiome. The symposium presents the background and context for the study as well as the initial results from the pilot intervention in Batua, Makassar. It includes a multi-disciplined panel comprised of lead investigators from the Wellcome Trust-funded RISE study. Throughout their presentations, the panel will address the policy implications of the intervention, including the economic and political barriers and drivers to successfully scaling up of the intervention.

CHAIR
Thomas Clasen
Emory University, Rollins School of Public Health, Atlanta, GA, United States

5 p.m.
RISE - ASSESSMENT OF THE ENVIRONMENT AND HUMAN HEALTH IMPACT
Stephen Luby
Stanford University, Stanford, CA, United States

5:25 p.m.
RISE - USING GREEN TECHNOLOGY FOR WATER SANITATION MANAGEMENT
Diego Ramirez-Lovering
Monash University- Monash Art Design and Architecture, Caulfield, Australia

5:50 p.m.
RISE - PERSPECTIVES OF PROGRESSING RISE STUDY IN SUVA FIJI.
Amelia Turagabeci
Fiji National University, Tamavua, Suva, Suva, Fiji

6:15 p.m.
RISE - PILOTING RISE INTERVENTION IN MAKASSAR INDONESIA.
Ruzka Taruc
Hasanuddin University, Makassar, South Sulawesi, Indonesia, Indonesia

ASTMH 69th Annual Meeting Adjourns
Thursday, November 19, 6:45 p.m. U.S. Eastern Time Zone
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Plenary and Symposium Sessions (Speakers and Session Chairs)
The number(s) following each individual’s name indicates the session number.

See page 280 for the list of abstract authors of abstracts presented during Scientific Sessions and Poster Sessions.
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The number(s) following each individual’s name indicates the session number.

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Abstract Authors (Scientific Sessions and Poster Sessions)

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70th Annual Meeting
November 17-21, 2021 (Thursday through Sunday)
Gaylord National Resort and Convention Center
National Harbor, Maryland USA (adjacent to Washington, DC)

71st Annual Meeting
October 29-November 3, 2022 (Sunday through Thursday)
Washington State Convention Center
Seattle, Washington USA

72nd Annual Meeting
October 18-22, 2023 (Wednesday through Sunday)
Hyatt Regency Chicago
Chicago, Illinois USA

73rd Annual Meeting
October 23-27, 2024 (Wednesday through Sunday)
New Orleans Ernest N. Morial Convention Center
New Orleans, Louisiana USA

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