

AGENDA

Centre International de Conférences Abdou Diouf (CICAD) & Centre des Expositions

Sunday, 8 October through Wednesday, 11 October

All agenda times listed in Greenwich Mean Time

The Grand Challenges Annual Meeting is for invited guests only. Your invitation is non-transferable, and we are unable to offer access to any additional guests.

SUNDAY, 8 OCTOBER

4:30 pm **Registration Opens** (Savana, CICAD)

5:30 pm – 7:30 pm **Poster Session & Welcome Reception** (Hall F, Centre des Expositions)

MONDAY, 9 OCTOBER

7:30 am **Registration Opens** (Savana, CICAD)

10:00 am – 12:30 pm **Mainstage Session: Innovation Saves Lives**
(Grand Amphitheater, CICAD)

Meeting Opening

*Kedest Tesfagiorgis, Deputy Director, Global Partnerships & Grand Challenges,
Bill & Melinda Gates Foundation, United States*

Welcome

*Cheikh Oumar Seydi, Director, Africa, Bill & Melinda Gates Foundation,
South Africa*

Opening Keynote

H.E. President Macky Sall, President, Republic of Senegal

Keynote Remarks: Innovation Saves Lives

Bill Gates, Co-Chair, Bill & Melinda Gates Foundation, United States

High Level Conversation:

The Role of Leadership in Catalyzing Innovation

- *H.E. President Macky Sall, President, Republic of Senegal*
- *Bill Gates, Co-Chair, Bill & Melinda Gates Foundation, United States*

Creative Moment

Boubou Design, Artist, Senegal

Spotlight Talk

- *Dr. Amadou Sall, Chief Executive Officer, Institut Pasteur de Dakar, Senegal*
- *José Castillo, Chief Executive Officer, Quantoom Biosciences, Belgium*

Panel: Health Technology Research and Access:

Realizing the Power of Innovation

Moderator: *Katey Einterz Owen, Director, Neglected Tropical Diseases; Director, Vaccine Development, Bill & Melinda Gates Foundation, United States*

Panelists:

- *Dr. Carlos Gadelha, Secretary of Science, Technology, Innovation and Health Complex, Ministry of Health, Brazil*
- *Prof. Petro Terblanche, Chief Executive Officer, Afrigen Biologics, South Africa*
- *Dr. Neni Nurainy, Head Division of Translational Development of Life Science Product, PT Bio Farma, Indonesia*
- *Dr. Ebrahim Mohamed, Head of Science and Innovation, Biovac, South Africa*

Closing Comments

H.E. Nardos Bekele-Thomas, Chief Executive Officer, AUDA-NEPAD, South Africa (TBC)

12:30 pm – 2:00 pm

Lunch (Marquee, CICAD lawn)

2:00 pm – 4:00 pm

Scientific Tracks:

Joint Session: Advancing Drug Discovery for Global Health / Malaria: Innovation for Eradication

(Track Room A1, Hall A, Centre des Expositions)

Recent advancement in malarial drug discovery pipeline

Artificial Intelligence & Medical Devices: Strengthening the Ecosystem for Development, Implementation, and Scale in LMICs

(Track Room C1, Hall C, Centre des Expositions)

Product development of medical devices for low-resource settings:

Evolving from prototypes and pilots to commercial product

Catalyzing Systems-level Agriculture Climate Adaptation in Africa

(Track Room D2, Hall D, Centre des Expositions)

Connecting ecosystem actors for adaptation research and implementation

The Evolving Role of Pathogen Genomics in Public Health

Surveillance (Track Room C2, Hall C, Centre des Expositions)

Global health EDCTP3/BMGF partnership on genomic epidemiology

Joint Session: Global Health Discovery Collaboratory:

Enabling a Global Health R&D Network /

Vaccine and Biologics Innovations for Global Health

(Track Room B1, Hall B, Centre des Expositions)

Accelerating the evaluation of malaria interventions in Africa

Global Network and Partnership Building to Combat the Effects of Climate Change on Health

(Track Room E2, Hall E, Centre des Expositions)

Network building and collaborations to further better health outcomes considering climate impacts

Innovations in Reproductive Health Technologies for Advancement of Global Health (Track Room E3, Hall E, Centre des Expositions)

Vagina dialogues: Impact of vaginal practices on product use and development

	Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs (Track Room E1, Hall E, Centre des Expositions) African voices on the vision for African science
	The Road Ahead: Opportunities for HIV Prevention and Cure (Track Room D1, Hall D, Centre des Expositions) Tackling viral diversity: bNAbs in prevention and cure of HIV
4:00 pm – 4:30 pm	Break
4:30 pm – 6:30 pm	Scientific Tracks: Joint Session: Advancing Drug Discovery for Global Health / Innovations in Reproductive Health Technologies for Advancement of Global Health (Track Room E3, Hall E, Centre des Expositions) Between you and me: The reproductive tract at the interface of contraceptive innovation Joint Session: Applying a Translational Lens to Global Health / Global Health Discovery Collaboratory: Enabling a Global Health R&D Network (Track Room A1, Hall A, Centre des Expositions) Innovations in biomarker discovery and therapeutic development Artificial Intelligence & Medical Devices: Strengthening the Ecosystem for Development, Implementation, and Scale in LMICs (Track Room C1, Hall C, Centre des Expositions) Unlocking the opportunity for AI/ML in clinical risk stratification: Considerations for building and deploying AI-powered software products in LMICs Catalyzing Systems-level Agriculture Climate Adaptation in Africa (Track Room D2, Hall D, Centre des Expositions) Action research: Data, adaptation prioritization methods, and decision making for impact Global Network and Partnership Building to Combat the Effects of Climate Change on Health (Track Room E2, Hall E, Centre des Expositions) Role of innovation in climate & health — Pipeline & funding opportunities Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs (Track Room E1, Hall E, Centre des Expositions) Mobilizing R&D and innovation investments from Africa for Africa Looking Ahead to the Next 20 Years: Sharing Learnings and Best Practices for Grand Challenge Implementation and Partnership (Track Room C2, Hall C, Centre des Expositions) New approaches to support power shifting and localization Joint Session: Malaria: Innovation for Eradication / Vaccine and Biologics Innovations for Global Health (Track Room B1, Hall B, Centre des Expositions) Monoclonal antibodies for prevention of malaria The Road Ahead: Opportunities for HIV Prevention and Cure (Track Room D1, Hall D, Centre des Expositions) Advancing long-acting anti-retrovirals for HIV prevention: Implementation, research & development

6:30 pm – 8:30 pm

Reception & Musical performance featuring Youssou N'Dour and the Super Etoile de Dakar

(Marquee, CICAD lawn)

Concert begins promptly at 7:00 pm. The Grand Challenges Annual Meeting is for invited guests only. Your invitation is non-transferable, and we are unable to offer access to any additional guests.

TUESDAY, 10 OCTOBER

7:30 am

Registration Opens (Savana, CICAD)

9:30 am – 11:30 am

Mainstage Session: Scientists Save Lives

(Grand Amphitheater, CICAD)

Opening Keynote: Scientists Save Lives

*Ambassador Meg Whitman, United States Ambassador to Kenya,
US Department of State, United States*

Panel: AI for the World: Advancing Inclusive and Equitable Use of Artificial Intelligence

Moderator: Larry Madowo, International Correspondent, CNN, Kenya

Panelists:

- *Dr. Rachel Adams, Programme Director: AI, Research ICT Africa, South Africa*
- *Bill Gates, Co-Chair, Bill & Melinda Gates Foundation, United States*
- *Juliana Rotich, Head of Fintech Integration, M-PESA, Kenya*
- *Dr. Sabin Nsanzimana, Minister of Health, Rwanda (TBC)*
- *CM Dr. David Sengh, Chief Minister and Chief Innovation Officer, Republic of Sierra Leone*

Panel: Harnessing the Power of Science Against Malaria

Moderator: Raïssa Okoi, Freelance Journalist and Communications Specialist, Senegal

Panelists:

- *Dr. Abdoulaye Diabaté, Head of Medical Entomology and Parasitology, Institut de Recherche en Science de la Santé; Principal Investigator, Target Malaria, Burkina Faso*
- *Dr. Ify Aniebo, Principal Investigator, African Centre of Excellence for Genomics of Infectious Diseases (ACEGID), Nigeria*
- *Youssou N'Dour, Singer, Songwriter, Businessman, and Global Advocate, Senegal*

Spotlight Talk: Innovation for Addressing Childhood Malnutrition: Microbiota Directed Food

Dr. Tahmeed Ahmed, Executive Director, International Centre for Diarrhoeal Disease Research, Bangladesh

Remarks

Dr. Anita Zaidi, President, Gender Equality Division, Bill & Melinda Gates Foundation, United States

Panel: Innovation for the Next Generation:

A Rising Community of Scientific Leaders

Moderator: *Mohamed Abdel-Kader, Chief Innovation Officer and Executive Director for the Innovation, Technology, And Research Hub, United States Agency for International Development, United States*

Panelists:

- *Suhani Jalota, Chief Executive Officer and Founder, Myna Mahila, India*
- *Prof. Moses Obimbo Madadi, Clinician-Scientist, University of Nairobi, Kenya*
- *Dr. Dandara Ramos, Associate Professor, Federal University of Bahia, Brazil*

Closing Creative Moment

Emtithal (Emi) Mahmoud, World Champion Poet, Sudan

11:30 am – 1:00 pm

Lunch (Marquee, CICAD lawn)

1:00 pm – 3:00 pm

Scientific Tracks:

Joint Session: Advancing Drug Discovery for Global Health / Sickle Cell Disease: Global Burden and Therapeutic Opportunities

(Track Room A1, Hall A, Centre des Expositions)

Sickle cell disease: Global burden and therapeutic opportunities

Joint Session: Applying a Translational Lens to Global Health / Innovations in Reproductive Health Technologies for Advancement of Global Health (Track Room E3, Hall E, Centre des Expositions)

Bridging biomes for better pregnancy outcomes

Catalyzing Systems-level Agriculture Climate Adaptation in Africa

(Track Room D2, Hall D, Centre des Expositions)

Innovative approaches to multi-level capacity strengthening and community engagement

The Evolving Role of Pathogen Genomics in Public Health Surveillance (Track Room C2, Hall C, Centre des Expositions)

Modeling optimal sampling strategies for genomic surveillance

Global Network and Partnership Building to Combat the Effects of Climate Change on Health

(Track Room E2, Hall E, Centre des Expositions)

Emerging research and data in climate and health

Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs (Track Room E1, Hall E, Centre des Expositions)

Advancing Africa-led and Africa-owned platforms to increase the number of African universities and research institutions directly participating in their own research & development, to accelerate innovation adoption

Malaria: Innovation for Eradication

(Track Room C1, Hall C, Centre des Expositions)

Reaching at-risk populations: Improving delivery & implementation

	The Road Ahead: Opportunities for HIV Prevention and Cure (Track Room D1, Hall D, Centre des Expositions) Optimism in the face of challenge: Strategies for HIV vaccines — Humoral, cellular & integrated immune response: Part one
	Vaccine and Biologics Innovations for Global Health (Track Room B1, Hall B, Centre des Expositions) Vaccines for global health
3:00 pm – 3:30 pm	Break
3:30 pm – 5:30 pm	Scientific Tracks: Joint Session: Advancing Drug Discovery for Global Health / Global Health Discovery Collaboratory: Enabling a Global Health R&D Network (Track Room A1, Hall A, Centre des Expositions) Novel approaches and innovative partnerships in drug discovery Joint Session: Applying a Translational Lens to Global Health / Innovations in Reproductive Health Technologies for Advancement of Global Health (Track Room E3, Hall E, Centre des Expositions) HPV at your cervix: HPV termination Artificial Intelligence & Medical Devices: Strengthening the Ecosystem for Development, Implementation, and Scale in LMICs (Track Room E3, Hall E, Centre des Expositions) Advocacy to maximize impact: The role of policy in successful introduction and scale up of innovative technologies Joint Session: Catalyzing Systems-level Agriculture Climate Adaptation in Africa / Global Network and Partnership Building to Combat the Effects of Climate Change on Health (Track Room E2, Hall E, Centre des Expositions) Adaptation impact measurement & evaluation in agriculture and health The Evolving Role of Pathogen Genomics in Public Health Surveillance (Track Room C2, Hall C, Centre des Expositions) The role of genomics in cholera control Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs (Track Room E1, Hall E, Centre des Expositions) Understanding African governments contributions towards competitive R&D Looking Ahead to the Next 20 Years: Sharing Learnings and Best Practices for Grand Challenge Implementation and Partnership (Track Room D2, Hall D, Centre des Expositions) Scaling innovation: Exploring public and private pathways The Road Ahead: Opportunities for HIV Prevention and Cure (Track Room D1, Hall D, Centre des Expositions) Optimism in the face of challenge: Strategies for HIV vaccines — Humoral, cellular & integrated immune response:
5:30 pm – 5:45 pm	Transition to Roundtables

5:45 pm – 6:45 pm

Roundtables:

African Entrepreneurs Accelerating Global Health Innovation

(Track Room E1, Hall E, Centre des Expositions)

Applying a Gender Lens to Data Analytics & Modeling in

Global Health: Challenges, Opportunities, & Implications for Practice

(Track Room E3, Hall E, Centre des Expositions)

Exemplars in Global Health: Successes from Senegal, Africa, and Beyond

(Track Room D1, Hall D, Centre des Expositions)

The Global Listening Project: Sharing Findings from a

71-Country Study on Public Sentiments and Experiences During

the COVID-19 Pandemic

(Track Room B1, Hall B, Centre des Expositions)

Humans at the Heart of AI: Ethical Dimensions and

Global Implications

(Track Room C1, Hall C, Centre des Expositions)

Human/Community Centered R&D: From People to Labs

(Track Room E2, Hall E, Centre des Expositions)

Moving Beyond Theory to Find Practical Solutions for Scaling Humanitarian Innovations

(Track Room D2, Hall D, Centre des Expositions)

Rethinking Women's Health: The New Bill & Melinda Gates Foundation's Women's Health Innovations Team

(Track Room A1, Hall A, Centre des Expositions)

Wastewater Environmental Surveillance for Pandemic Preparedness

(Track Room C2, Hall C, Centre des Expositions)

6:45 pm – 8:45 pm

Poster Session & Reception

(Hall F, Centre des Expositions)

WEDNESDAY, 11 OCTOBER

7:30 am

Registration Opens

(Savana, CICAD)

9:30 am – 10:30 am

Roundtables:

Academic Publishing: An Editorial View Behind the Scenes

(Track Room B1, Hall B, Centre des Expositions)

The Africa Microscopy Initiative: Impactful Bioimaging for

Life Scientists in Africa

(Track Room E3, Hall E, Centre des Expositions)

Building an Open Access Interactive Dollar Street Clinic Tool:

A Collective Resource to Inform Innovation for Medical Equipment Needs for Delivering Primary Healthcare Services in LMICs

(Track Room C2, Hall C, Centre des Expositions)

The Emerging African Regulatory Ecosystem and its Implications on Development and Introduction of Innovations

(Track Room D1, Hall D, Centre des Expositions)

Grand Challenges Partners for Impact: Requests for Proposals 2023

(Track Room E1, Hall E, Centre des Expositions)

	It's in the Blood: How Multi-pathogen Serosurveillance Can Advance Public Health Decision-making (Track Room D2, Hall D, Centre des Expositions)
	Keeping the Health System Healthy: An Interactive Ideation on Innovation for Integrity (Track Room E2, Hall E, Centre des Expositions)
	Making Curative Therapies for Sickle Cell Disease Accessible in Africa (Track Room A1, Hall A, Centre des Expositions)
	AI Change Makers: The People Behind the Tech (Track Room C1, Hall C, Centre des Expositions)
10:30 am – 10:45 am	Break
10:45 am – 12:45 pm	Scientific Tracks: Joint Session: Advancing Drug Discovery for Global Health / Applying a Translational Lens to Global Health (Track Room A1, Hall A, Centre des Expositions) Drug discovery & development opportunities at the host-pathogen interface for NTDs Artificial Intelligence & Medical Devices: Strengthening the Ecosystem for Development, Implementation, and Scale in LMICs (Track Room C1, Hall C, Centre des Expositions) From product development to policy: Introducing AI-enabled ultrasound into primary health care settings Joint Session: Enhancing African Vaccine Manufacturing Through Technology and Training / Vaccine and Biologics Innovations for Global Health (Track Room B1, Hall B, Centre des Expositions) Enhancing African vaccine manufacturing through technology and training Joint Session: The Evolving Role of Pathogen Genomics in Public Health Surveillance / Global Health Discovery Collaboratory: Enabling a Global Health R&D Network (Track Room E3, Hall E, Centre des Expositions) Strengthening laboratory capabilities for sustainable pathogen surveillance and response Innovations in Reproductive Health Technologies for Advancement of Global Health (Track Room C2, Hall C, Centre des Expositions) HPV at your cervix: HPV diagnostics Joint Session: Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs / Looking Ahead to the Next 20 Years: Sharing Learnings and Best Practices for Grand Challenge Implementation and Partnership (Track Room E1, Hall E, Centre des Expositions) Partnerships: Lessons from 20 years of the Grand Challenges model Malaria: Innovation for Eradication (Track Room D2, Hall D, Centre des Expositions) Through new lenses: Malaria eradication in a broader context The Road Ahead: Opportunities for HIV Prevention and Cure (Track Room D1, Hall D, Centre des Expositions) Bringing HIV curative interventions to Africa

12:45 pm – 1:45 pm

Lunch (Marquee, CICAD lawn)

1:45 pm – 2:00 pm

Transition to Mainstage

2:00 pm – 4:15 pm

Mainstage Session: Collaboration Saves Lives

(Grand Amphitheater, CICAD)

Opening Keynote: Collaboration Saves Lives

Muhammad Pate, Coordinating Minister of Health and Social Welfare, Nigeria (TBC)

Panel: Innovating to Accelerate Women's Health Progress

Moderator: *Prof. Helen Rees, Professor, Wits RHI, South Africa*

Panelists:

- *Dr. Ana Sofia Teixeira de Cerdeira, Clinical Lecturer, University of Oxford and Queen Charlotte's and Chelsea Hospital, United Kingdom*
- *Prof. Nelly Mugo, Principal Senior Clinical Research Officer, Kenya Medical Research Institute, Kenya*
- *Dr. Jeffrey Stringer, Professor of Obstetrics and Gynecology, University of North Carolina School of Medicine, United States*

Remarks

Astou Ndiaye, WNBA Legend; Founder, ASTOUNDIAYEF; Country Director, CorpsAfrica Senegal, Senegal

Spotlight Talk: The Science of Where:

Innovations in Geospatial Data and Mapping

Rose Malot Waswa, Project Manager/Senior Remote Sensing Analyst, Agriculture and Food Security Projects, Regional Centre for Mapping of Resources for Development, Kenya

Panel: The Climate – Health Crisis: Innovation for Adaptation

Moderator: *Dr. Alan Dangour, Director of Climate and Health, Wellcome, United Kingdom*

Panelists:

- *Dr. George Fu Gao, Member (academician), Chinese Academy of Sciences (CAS); International member, U.S. National Academy of Sciences (NAS); Foreign member, U.K. Royal Society (RS); Member, German National Academy of Sciences Leopoldina; Professor, Institute of Microbiology, CAS; Member, WHO Science and Technology Expert Group; Member, WHO One Health High-Level Expert Panel; China*
- *Alaa Murabit, Director, Global Policy, Advocacy & Communications (Health), Bill & Melinda Gates Foundation, United States*
- *Tala Ismail Al Ramahi, Director, Reaching the Last Mile, United Arab Emirates*

**Panel: Envisioning the Next 20 Years of the Global Health
Innovation Journey**

Moderator: *Dr. Trevor Mundel, President, Global Health, Bill & Melinda Gates Foundation, United States*

Panelists:

- *Dr. Moses Alobo, Head of Programmes, Science for Africa Foundation, Kenya*
- *Dr. Delese Darko, Chief Executive Officer, Food and Drugs Authority, Ghana (TBC)*
- *Dr. Tariro Makadzange, Director, Charles River Medical Group and Mutala Research, Zimbabwe*
- *Dr. Amadou Sall, Chief Executive Officer, Institut Pasteur de Dakar, Senegal*

Keynote

Dr. Trevor Mundel, President, Global Health, Bill & Melinda Gates Foundation, United States

Closing Creative Moment

Kanjele Choir, Senegal

4:15 pm – 7:00 pm

Closing Reception & Celebration of Senegalese Culture
(Marquee, CICAD lawn)

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APPENDIX 1

African Entrepreneurs Accelerating Global Health Innovation

Roundtable Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

As emerging technologies and shifting global priorities are rapidly changing the landscape and opportunities for global health innovation, African entrepreneurs are poised to lead this evolution. This roundtable will convene leading entrepreneurs who are advancing global health R&D in Africa to ignite meaningful discussion about the current African R&D landscape and the challenges and opportunities that characterize their entrepreneurial endeavors in this field. Speakers will share lessons from their own business ventures, describing the resources that were critical to their success and impact as well as the obstacles they faced along the way. Participants will consider the progress that has been made to empower emerging leaders in the field — specifically referencing any progress they’ve observed since similar discussions at last year’s Annual Meeting — while still emphasizing the unique strategies required to bolster and incentivize African entrepreneurship for the future. There will also be time for audience Q&A, to encourage broader discussion and knowledge sharing around the future of entrepreneurship in Africa.

TUESDAY, 10 OCTOBER

5:45 pm – 6:45 pm

African Entrepreneurs Accelerating Global Health Innovation

(Track Room E1, Hall E, Centre des Expositions)

Session Chairs: *Peter Piot, European Commission;*

Kedest Tesfagiorgis, Bill & Melinda Gates Foundation

Moderator: *Peter Piot, European Commission*

Panelists:

- *Moses Aloba, Grand Challenges Africa*
- *Precious Lunga, Baobab Circle*
- *Myriam Sidibe, Brands on a Mission*

Audience Q&A

APPENDIX 2

Applying a Gender Lens to Data Analytics & Modeling in Global Health: Challenges, Opportunities, & Implications for Practice

Roundtable Organizers: *Bill & Melinda Gates Foundation; Amel Ghouila, Quantitative Sciences, IDev; Helen Olsen, Institute for Disease Modeling; Jenn Maroa, Global Partnerships & Grand Challenges; Mahlet Woldetsadik, Gender Equality Division*

ABSTRACT

As the global health community increasingly relies on mathematical analytics and modeling to inform programmatic and policy decisions, it is critical to integrate context-specific gender analysis that can identify how people might experience a problem differently because of their gender and intersecting identities. In this round table discussion, we highlight the question of why applying a gender lens to data analytics and modeling matters in global health, what this approach entails, and discuss challenges, opportunities, and implications for practice.

The need for gender integration in global health research is particularly salient as the global health community continues to address issues that disproportionately affect women and girls, especially in low- and middle-income countries (LMICs), where gender differences might be magnified and often build upon one another. By adopting a gender lens, researchers can meaningfully address systemic gender disparities and advance gender equality, both of which are crucial for improving health and development outcomes that can help countries meet the Sustainable Development Goals. In addition, this approach can identify gender gaps in access to and control over resources, as well as illuminate gendered power relations that can affect how a problem might be best addressed.

During the 2022 Grand Challenges, the Gender Data & Insights Team in the Gender Equality Division launched a project focused on strengthening modeling of women's health issues on broader health topics that incorporate a gender lens and enhancing local modeling and analytics capacity in LMIC institutions. Building on this work, this session seeks to facilitate a conversation on what it means to integrate gender into data analysis and modeling, and the value that it brings to the broader modeling and global health communities.

After this session, our hope is that participants will walk away with a better understanding of how to integrate gender into their modeling & analytics work, foster a sense of community, and get a deeper understanding of where to access additional resources focused on putting gender-integration into practice.

TUESDAY, 10 OCTOBER

5:45 pm – 6:45 pm

Applying a Gender Lens to Data Analytics & Modeling in Global Health: Challenges, Opportunities, & Implications for Practice

(Track Room E3, Hall E, Centre des Expositions)

Session Chair: *Mahlet A. Woldetsadik, Gender Equality Division,
Bill & Melinda Gates Foundation*

*Iris Mwanza, Women in Leadership, Gender Equality Division,
Bill & Melinda Gates Foundation*

Introductory remarks

*Mahlet A. Woldetsadik, Gender Equality Division,
Bill & Melinda Gates Foundation*

Panelists:

- *Sandra Milena Agudelo-Londoño, Pontificia Universidad Javeriana*
- *Alex Riolexus Ario, Ugandan National Institute of Public Health*
- *Noor Sabah Rakhsani, Precision Health Consultants (PHC) Global*
- *Asnake Worku, Ethiopian Public Health Institute*
- *Elizabeth Katz, Global Center for Gender Equality*

Questions and answers

- Moderator: *Mahlet A. Woldetsadik, Bill & Melinda Gates Foundation*
- We will start with a set of 2–3 questions and then leave
10 minutes for audience Q&A

APPENDIX 3

Exemplars in Global Health: Successes from Senegal, Africa, and Beyond

Roundtable Organizers:

ABSTRACT

Senegal has made exemplary progress improving the health of its population over the past few decades, with strides made in maternal, neonatal, and child health outcomes, family planning outcomes, and testing and surveillance during COVID-19. Exemplars in Global Health has conducted research on these successes with the goal of understanding the environment that enabled Senegal to achieve this extraordinary progress, led by local academic research partners and in close partnership with the Ministry of Health and Social Action.

Co-hosted by the Ministry of Health and Social Action and Exemplars in Global Health, this roundtable will highlight best practices from Senegal and other countries across Africa that are positive outliers in global health to encourage cross-country learning. The roundtable will also foster broader conversation around translating research and evidence into public health action and impact.

TUESDAY, 10 OCTOBER

5:45 pm – 6:45 pm

**Exemplars in Global Health:
Successes from Senegal, Africa, and Beyond**
(Track Room D1, Hall D, Centre des Expositions)

APPENDIX 4

The Global Listening Project: Sharing Findings from a 71-Country Study on Public Sentiments and Experiences During the COVID-19 Pandemic

Roundtable Organizer: *The Global Listening Project*

ABSTRACT

The Global Listening Project (GLP) is dedicated to building societal cohesion as a key element of preparedness for future crises. In a global mapping of public sentiments and experiences during the Covid-19 pandemic, the GLP conducted nationally representative surveys in 70 countries, along with focus group discussions and in-depth interviews. We have identified key issues that resonate globally to inform a Societal Preparedness Index, informed by the public themselves. In this panel, we will share the early findings of the 71 country surveys and local focus groups in select large cities, followed by a facilitated discussion with participants on how these findings resonate with their experiences.

TUESDAY, 10 OCTOBER

5:45 pm – 6:45 pm

The Global Listening Project: Sharing Findings from a 71-Country Study on Public Sentiments and Experiences During the COVID-19 Pandemic (Track Room B1, Hall B, Centre des Expositions)

Session Chair: *Heidi Larson, Founder of The Global Listening Project*

Panelists:

- *Elhadj As Sy, Chair of the Board, Kofi Annan Foundation*

Agenda

- Brief introduction to the Global Listening Project and presentation of interim findings on 71-country survey
- International advisory board panel members reflect on implications of the findings
- Audience Q&A

APPENDIX 5

Humans at the Heart of AI: Ethical Dimensions and Global Implications

Roundtable Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

Humans at the Heart of AI, invites the audience to explore the responsible implementation of AI in healthcare settings around the world. Through multi-disciplinary dialogue, the session aims to provide actionable insights for the ethical deployment of AI, ensuring that these technologies serve as a force for equitable advancement in global health.

TUESDAY, 10 OCTOBER

5:45 pm – 6:45 pm

**Humans at the Heart of AI:
Ethical Dimensions and Global Implications**

(Track Room C1, Hall C, Centre des Expositions)

Session Chair and Moderator: *Trevor Mundel,*
Bill & Melinda Gates Foundation

Panelists:

- *Tariro Makadzange, CEO & Founder of Charles River Medical Group*
- *Manu Chopra, Founder of Karya*
- *Urvashi Aneja, Co-Founder of Digital Future Lab*
- *Moustapha Cisse, Head of Google AI Center, Ghana*

APPENDIX 6

Human/Community Centered R&D: From People to Labs

Roundtable Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

In today's rapidly evolving world, it is crucial to rethink the research and development (R&D) process, shifting the focus from laboratories to people and communities. The traditional approach to R&D often overlooks the voice and needs of the recipients, limiting the effectiveness and impact of scientific innovations. This roundtable discussion aims to explore the challenges, opportunities, and potential solutions associated with embracing human/community centered R&D. The objective of this session is to delve into the theme of human/community centered R&D and explore its implications for the scientific community. By engaging in open dialogue, we should aim, once the challenges have been identified with the participation of the population, to reframe development policies to systematically apply the fruits of R&D.

TUESDAY, 10 OCTOBER

5:45 pm – 6:45 pm

Human/Community Centered R&D: From People to Labs

(Track Room E2, Hall E, Centre des Expositions)

Session Chair: *Valerie Nkamgang Bemo, Bill & Melinda Gates Foundation*

Speakers:

- *Youssou Mbargane Mbaye, First vice-president and current President of the Senegalese traditional communicators network*
- *Emmanuel Bassene, Head of the Faculty of Medicine, Pharmacy and Odontostomatology (FMPOS) and Head of Pharmacy Pedagogical Commission at the University of Cheikh Anta Diop*

APPENDIX 7

Moving Beyond Theory to Find Practical Solutions for Scaling Humanitarian Innovations

Roundtable Organizer: *Grand Challenges Canada (Creating Hope in Conflict: A Humanitarian Grand Challenge)*

ABSTRACT

Over the last decade, the humanitarian sector has been increasing investment in innovation in areas such as the establishment of innovation funds and challenges, incubators and accelerators or the establishment of innovation units within larger humanitarian agencies. Despite increased investments and existing efforts to increase adoption of innovations across the sector, many promising and potentially transformative innovations have been unable to reach their full potential amidst a sector that struggles with limited or poor incentives to change established ways of working.

To solve for this recurring challenge, *Creating Hope in Conflict: A Humanitarian Grand Challenge* intends to test a new funding modality that seeks to better incentivize the adoption of humanitarian innovations across the sector. To this aim, Humanitarian Grand Challenge will convene a roundtable discussion with humanitarian actors, stakeholders, and innovators to consult with and co-create the essential design features of a forthcoming funding modality that will aim to foster demand and catalyze adoption of humanitarian innovations.

The roundtable discussion will explore the following key questions:

- What are the key constraints that prevent humanitarian actors from taking up potentially transformative solutions?
 - What are the ideal design features to be included in a new funding call to foster adoption of promising humanitarian innovations? What lessons can we learn from similar past initiatives?
 - How can a new funding call enable more locally-led solutions to reach the forefront of adoption efforts?
-

TUESDAY, 10 OCTOBER

5:45 pm – 6:45 pm

Moving Beyond Theory to Find Practical Solutions for Scaling Humanitarian Innovations

(Track Room D2, Hall D, Centre des Expositions)

Session Chair: *Zainah Alsamman, Grand Challenges Canada*

Participants:

- *Iffat Zafar, Sehat Kahani*
- *Hisham Alshaer, Pragmatic Innovation Inc.*
- *Hussam Alkhellou, Hand in Hand for Aid and Development*
- *Jessica Camburn, Elrha*

APPENDIX 8

Rethinking Women's Health: The New Bill & Melinda Gates Foundation's Women's Health Innovations Team

Roundtable Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

The Bill & Melinda Gates Foundation Women's Health Innovation (WHI) team was recently established to address health needs that impact women disproportionately and differently. The women's health sector is neglected and fragmented; funding remains a major constraint in both research & development (R&D) and access. Our goal is to improve women and girl's health across the life course. Working closely with other teams at the foundation, WHI invests across the value chain to improve access to women's health interventions. We support research and development to generate data and develop products/tools in three health focus areas: contraceptive technology R&D, sexually transmitted infections, and gynecology conditions, including menstrual health. Two cross cutting initiatives span these health areas. The first is product introduction and market access, which focuses on introduction, access to and adoption of priority WHI products, including work to secure product availability (manufacturing, financing, and supply chain) and to understand user insights and market analytics. Second, we work to strengthen the women's health R&D ecosystem, by investing in technical advocacy (including policy change and sector coordination), talent development, and resource mobilization to incentivize donors and investors, foster partnerships, and create a talent pool of future investable women's health researchers.

TUESDAY, 10 OCTOBER

5:45 pm – 6:45 pm

Rethinking Women's Health: The New Bill & Melinda Gates Foundation's Women's Health Innovations Team

(Track Room A1, Hall A, Centre des Expositions)

Session Chair: *Mark Barone, Bill & Melinda Gates Foundation*

Context: The case for women's health

- *Radhika Koyawala, Bill & Melinda Gates Foundation*

The women's health innovation team: Who we are and what we do

- *Griffins Manguro, Bill & Melinda Gates Foundation*
- *Maike Scharp, Bill & Melinda Gates Foundation*
- *Radhika Koyawala, Bill & Melinda Gates Foundation*

Q&A

- *Griffins Manguro, Bill & Melinda Gates Foundation*
- *Mark Barone, Bill & Melinda Gates Foundation*
- *Maike Scharp, Bill & Melinda Gates Foundation*
- *Radhika Koyawala, Bill & Melinda Gates Foundation*

APPENDIX 9

Wastewater Environmental Surveillance for Pandemic Preparedness

Roundtable Organizers: *HERA; The Bill & Melinda Gates Foundation*

ABSTRACT

Wastewater environmental surveillance has been a valuable tool for monitoring pathogens like poliovirus and SARS-CoV-2, and informing non-pharmaceutical interventions or vaccination campaigns. In the aftermath of the global COVID-19 pandemic, the public health community is considering the utility of wastewater environmental surveillance for pandemic preparedness. As surveillance of individual animals can be cost-prohibitive, environmental matrices such as air and fecally contaminated water could provide an effective medium to understand pathogen diversity in communities and detect spillover events. Aircraft wastewater surveillance may allow for early detection of a pandemic potential pathogen that is transmitting regionally. Although in its early stages, defining a research agenda, developing methods, and employing genomic epidemiology will all be essential next steps to unlock the potential power of wastewater environmental surveillance in a global early warning system to control the spread of pandemic potential pathogens. In this roundtable, we will discuss network modeling to define an optimal aircraft wastewater sentinel surveillance system, and the potential role of community wastewater environmental surveillance in pandemic preparedness.

TUESDAY, 10 OCTOBER

5:45 pm – 6:45 pm

Wastewater Environmental Surveillance for Pandemic Preparedness

(Track Room C2, Hall C, Centre des Expositions)

Session Chair: *Laurent Muschel, HERA*

- *Judith Wong, Singapore Environmental Health Institute*
Community-based wastewater surveillance in Singapore
- *Nicholas Grassly, Imperial College London*
Imagining a role for wastewater surveillance in pandemic preparedness
- *Guillaume St-Onge, Network Science Institute at Northeastern University*
Transmission modeling for pandemic and endemic diseases
- *Dirk Brockmann, Humboldt University of Berlin*
Modeling for pandemic early warning systems

APPENDIX 10

Academic Publishing: An Editorial View Behind the Scenes

Roundtable Organizers: *Nature Medicine*; *The Bill & Melinda Gates Foundation*

ABSTRACT

Publishing in high-profile journals is often considered a 'black box' with the requirements and protocols available to only a handful of established investigators. This roundtable on academic publishing aims to increase accessibility to journals by sharing knowledge about the review and publication processes. In an interactive workshop, we will cover tips for collaborating with journal editors, including submission requirements, maximizing the likelihood of your manuscript review, and how to revise/respond to review. Questions are encouraged, and the session will be tailored to the interests of the participants.

WEDNESDAY, 11 OCTOBER

9:30 am – 10:30 am

Academic Publishing: An Editorial View Behind the Scenes

(Track Room B1, Hall B, Centre des Expositions)

Session Chairs: *Jennifer Sargent, Nature Medicine*;

David Blazes, Bill & Melinda Gates Foundation

- *Jennifer Sargent, Nature Medicine*

Behind the scenes in academic publishing

APPENDIX 11

The Africa Microscopy Initiative: Impactful Bioimaging for Life Scientists in Africa

Roundtable Organizer: *The Africa Microscopy Initiative & University of Cape Town*

ABSTRACT

The routine use of bioimaging and microscopy in life science research has been challenging for many biomedical researchers across Africa. The reasons for this include limited resources and technical support, as well as infrequent access to quality training and instrumentation. Holistic and collaborative strategies are necessary to combat these challenges to ensure impactful, equitable, and sustainable bioimaging research capacity development on the continent. The Africa Microscopy Initiative (AMI) is a cutting-edge platform that aims to expand access to and grow expertise in bioimaging across Africa. Launched in 2022 with co-funding support from Chan-Zuckerberg Initiative (CZI) and the Bill & Melinda Gates Foundation (BMGF), AMI is addressing the inequitable access to advanced microscopy techniques facing researchers in Africa. AMI comprises a multifaceted approach that includes a purpose-built, open-access imaging center to facilitate microscopy research, open-access educational programs, and instrument distribution. In this roundtable session, we will 1) highlight key opportunities and programs making microscopy and bioimaging more accessible to researchers across Africa, 2) explore the impact of bioimaging on research and scientists, 3) contextualize the complementary activities driven by partner organizations on the continent, and 4) engage the research community around strategies to ensure sustained impact of programs such as AMI and how they might serve as models for further democratization of advanced technologies.

WEDNESDAY, 11 OCTOBER

9:30 am – 10:30 am

The Africa Microscopy Initiative: Impactful Bioimaging for Life Scientists in Africa

(Track Room E3, Hall E, Centre des Expositions)

Session Chairs: *Michael Reiche; Caron Jacobs, University of Cape Town, Africa Microscopy Initiative, and African BioImaging Consortium*

- *Caron Jacobs, African BioImaging Consortium and University of Cape Town, South Africa*
Microscopy and BioImaging in Africa — Community developments and continent-wide support
- *(Recorded) Mai Atef Rahmoon, Howard Hughes Medical Institute Janelia Research Campus, USA*
Training, exposure, and a supportive ecosystem can change a career and highlight a region
- *Michael Reiche, Africa Microscopy Initiative and University of Cape Town, South Africa*
How the Africa Microscopy Initiative is ready to overcome the barriers to research

- *Seth Agyei Domfeh, Kwame Nkrumah University of Science and Technology, Ghana*
Overcoming research barriers with AMI microscopy support to study the suppression of the type 1 interferon response during diabetic hyperglycaemia
- *Jerolen Naidoo, Council for Scientific and Industrial Research, South Africa*
Closing the [accessibility] gap: Microscopic validation of accelerated cortical neuronal differentiation

Open discussion and audience questions

APPENDIX 12

Building an Open Access Interactive Dollar Street Clinic Tool: A Collective Resource to Inform Innovation for Medical Equipment Needs for Delivering Primary Healthcare Services in LMICs

Roundtable Organizer: *Global Health Labs*

ABSTRACT

Health technology innovators need opportunities to identify technological gaps in healthcare delivery. There are few materials which are interactive enough to enable ideation in needs finding. GH Labs' goal is to develop a Dollar Street Clinic tool to inform health technology innovation for PHC equipment, and use it to identify which and where technology solutions are required. GH Labs will introduce the Dollar Street Clinics tool in an interactive roundtable exercise to solicit participant input on technology needs for primary health care.

WEDNESDAY, 11 OCTOBER

9:30 am – 10:30 am

Building an Open Access Interactive Dollar Street Clinic Tool: A Collective Resource to Inform Innovation for Medical Equipment Needs for Delivering Primary Healthcare Services in LMICs

(Track Room C2, Hall C, Centre des Expositions)

Introducing 'Dollar Street Clinic': An interactive, open-access, collaborative resource to inform innovative primary healthcare solutions for LMICs

Session Chairs: *Julian Atim; Jamie Purcell; Noni Gachuhi, Global Health Labs*

Welcome remarks, and overview of GH Labs and health technology innovation for PHC

Participant roundtable sessions to identify innovation opportunities for PHC

Readouts from roundtable discussions and closing

APPENDIX 13

The Emerging African Regulatory Ecosystem and its Implications on Development and Introduction of Innovations

Roundtable Organizers: *David Mukanga, Deputy Director Africa regulatory systems, Bill & Melinda Gates Foundation; Chimwemwe Chamdimba, Head of Health Programs, AUDA-NEPAD*

ABSTRACT

The Bill & Melinda Gates Foundation's Integrated Development team and AUDA-NEPAD will co-host a roundtable on Africa's regulatory ecosystem at the Grand Challenges meeting in Dakar, Senegal. The session will last for one hour and include 20 minutes of presentations to set the stage and 30 minutes of discussion, including 3 high-level panelists to discuss the implications of the new African regulatory ecosystem that is being designed with the upcoming launch of AMA.

WEDNESDAY, 11 OCTOBER

9:30 am – 10:30 am

The Emerging African Regulatory Ecosystem and its Implications on Development and Introduction of Innovations

(Track Room D1, Hall D, Centre des Expositions)

Session Chairs: *David Mukanga, Deputy Director Africa regulatory systems, Bill & Melinda Gates Foundation; Chimwemwe Chamdimba, Head of Health Programs, AUDA-NEPAD*

- *Mimi Darko, Ghana FDA*

The emerging African regulatory ecosystem, current state of AMA's procedures, and how these will impact R&D and innovation introduction

- *Martin Harvey Allchurch, European Medicines Agency*

Lessons from the EMA of potential relevance for AMA

APPENDIX 14

Grand Challenges Partners for Impact: Requests for Proposals 2023

Roundtable Organizers: *Grand Challenges Network Partners; Bill & Melinda Gates Foundation*

ABSTRACT

Grand Challenges is a family of initiatives that takes a unique crowd sourcing approach for innovations geared towards solving health and development challenges. Please come and join us and hear about the various open Grand Challenges Request for Proposals offered by the Bill & Melinda Gates Foundation and partners listed below:

- Grand Challenges Brazil (sponsored by the Government of Brazil Ministry of Health)
- Grand Challenges Ethiopia (sponsored by the Government of Ethiopia Ministry of Health)
- Grand Challenges India (sponsored by the Government of India Department of Technology)
- Grand Challenges Rwanda (sponsored by the Rwanda National Council of Science and Technology)
- Grand Challenges South Africa (sponsored by the Government of South Africa Department of Science and Technology)
- Grand Challenges Senegal (sponsored by Government of Senegal Ministry of Economy, Planning and Cooperation and Pasteur Network)
- Grand Challenges Africa (sponsored by Wellcome, Foundation Sanofi, The Patrick J McGovern Foundation and Gates Foundation)

WEDNESDAY, 11 OCTOBER

9:30 am – 10:30 am

Grand Challenges Partners for Impact: Requests for Proposals 2023

(Track Room E1, Hall E, Centre des Expositions)

Session Chair: *Jenn Maroa, Bill & Melinda Gates Foundation*

- *Jenn Maroa, Bill & Melinda Gates Foundation*
Opening remarks
- *Zoleka Ngcete, Grand Challenges South Africa*
Catalyzing equitable artificial intelligence (AI) use to improve global health
- *Juliette Mutheu, Grand Challenges Africa*
Accelerating and catalyzing solutions for climate change's impact on health
- *Tess Russo, Bill & Melinda Gates Foundation*
Accelerating and catalyzing solutions for climate change's impact on agriculture
- *Georgina Murphy, Bill & Melinda Gates Foundation*
Strengthening health and disease modeling for public health decision making In Africa
- *Mark Barone, Bill & Melinda Gates Foundation*
Opportunities to advance women's health innovation
- *Iris Mwanza, Bill & Melinda Gates Foundation*
Women's health innovation — Childcare models that advance women's economic power
- *Karen Makar, Bill & Melinda Gates Foundation*
Supporting researchers through the technologies of the Global Health Discovery Collaboratory platforms

- *Jenn Maroa, Bill & Melinda Gates Foundation*
2023 Grand Challenges annual meeting call-to-action
- *Shirshendu Mukherjee, Biotechnology Industry Research Assistance Council*
India
- *Ana Maria Caetano de Faria, Ministry of Health, Brazil*
Brazil
- *Jenn Maroa, Bill & Melinda Gates Foundation*
Q&A

APPENDIX 15

It's in the Blood: How Multi-pathogen Serosurveillance Can Advance Public Health Decision-making

Roundtable Organizers: *Malawi Liverpool Wellcome Research Programme (MLWRP); the Public Health Institute of Malawi (PHIM); the KEMRI-Wellcome Trust Research Programme (KWTRP) in Kenya; the Bill & Melinda Gates Foundation's Pneumonia and Pandemic Preparedness (PPP) team*

ABSTRACT

Integrated multi-pathogen serosurveillance is a powerful tool to understand important public health questions, and the onset of the COVID-19 pandemic spurred rapid development and piloting to measure population immunity for a new pathogen. Serosurveillance is an important complement to event-based clinical surveillance, providing insights into human exposure to priority pathogens including asymptomatic infections. Routine serosurveillance (e.g., every 2–3 years) can identify immunity gaps, detect antibody signatures of emerging infections, estimate prevalence and incidence of infections over time, and identify priority populations for disease control, including targeted vaccination programs. Multi-pathogen serosurveillance serves as one pillar of integrated disease surveillance and complements traditional public health surveillance for infectious diseases. Despite the rich data that multiplex serosurveillance provides, there are current limitations to their broader adoption and use in LMICs, including challenges related to supply chain and affordability, timely data analysis and interpretation, and needed technological innovations for more widespread implementation. This roundtable brings together technical experts and country implementors who are paving the way for more standardized and routine, future use of this novel multi-pathogen surveillance platform.

WEDNESDAY, 11 OCTOBER

9:30 am – 10:30 am

It's in the Blood: How Multi-pathogen Serosurveillance Can Advance Public Health Decision-making

(Track Room D2, Hall D, Centre des Expositions)

Session Chair: *Marc Bulterys, Bill & Melinda Gates Foundation*

- *Marc Bulterys, Bill & Melinda Gates Foundation*
Introduction to multiplex serosurveillance and how the SARS-CoV-2 pandemic spurred new investments
- *Kondwani Jambo, Upendo Mseka; Annie Chauma-Mwale (MLWRP & PHIM); Wangechi Kagucia (KWTRP — Kenya)*
Determining national and subnational use cases for multi-pathogen serosurveillance, with the greatest potential to shape disease control priorities

Panel discussion: Group experiences with analyzing population immunity to SARS-CoV-2, vaccine-preventable diseases, arboviruses, respiratory and other priority pathogens

- *Ifedayo Adetifa, Nigeria Centre for Disease Control*
- *Celso Monjano, INS Mozambique*
- *Nicole Wolter, NCID South Africa*
- *Kondwani Jambo, MLWRP & PHIM*
- *Upendo Mseka, MLWRP & PHIM*
- *Annie Chauma-Mwale, MLWRP & PHIM*
- *Wangezi Kagucia, KWTRP, Kenya*

Panel discussion: Moving forward: Multiplex bead assay implementation and integration, priority public health use cases, challenges and technological innovations

- *Ifedayo Adetifa, Nigeria Centre for Disease Control*
- *Celso Monjano, INS Mozambique*
- *Nicole Wolter, NCID South Africa*
- *Kondwani Jambo, MLWRP & PHIM*
- *Upendo Mseka, MLWRP & PHIM*
- *Annie Chauma-Mwale, MLWRP & PHIM*
- *Wangezi Kagucia, KWTRP, Kenya*
- *May Chu, Colorado School of Public Health*
- *Fiona Van der Klis, RIVM*

Audience Q&A with panel

- *Scott Dowell, Bill & Melinda Gates Foundation*
- Closing remarks

APPENDIX 16

Keeping the Health System Healthy: An Interactive Ideation on Innovation for Integrity

Roundtable Organizer: *United States Agency for International Development*

ABSTRACT

USAID's Countering Transnational Corruption Grand Challenge for Development is hosting a lively roundtable discussion to collaboratively explore how we might ensure that more patients have access to much needed health resources and care by promoting the integrity of health systems and supply chains. The World Health Organization (WHO) estimates that globally more than US\$400 billion in health resources are lost annually to corruption, and academic research found that more than 80 percent of people in many low-income countries have experienced health sector corruption.

Join us to learn more about the CTC Grand Challenge, and to participate in this interactive ideation around a new potential call for innovations that will focus on addressing transnational corruption risks in the health sector. As part of this discussion, we are keen to explore how you and your organization might partner with us on this new activity!

WEDNESDAY, 11 OCTOBER

9:30 am – 10:30 am **Keeping the Health System Healthy: An Interactive Ideation on Innovation for Integrity** (Track Room E2, Hall E, Centre des Expositions)

APPENDIX 17

Making Curative Therapies for Sickle Cell Disease Accessible in Africa

Roundtable Organizer: *Emily Turner, Bill & Melinda Gates Foundation*

ABSTRACT

Several novel therapeutic modalities for sickle cell disease have emerged in recent years, including some that have the potential to provide 'curative' therapeutic benefit for patients. This roundtable will address the complex systems-level issues associated with making these modalities available and accessible in Africa.

WEDNESDAY, 11 OCTOBER

9:30 am – 10:30 am

Making Curative Therapies for Sickle Cell Disease Accessible in Africa (Track Room A1, Hall A, Centre des Expositions)

Session Chairs: *Daima Bukini, Muhimbili University of Health Allied Sciences (MUHAS); Françoise Baylis, Dalhousie University*

- *Izukanji Sikazwe, Center for Infectious Disease Research in Zambia*
- *Margo Warren, Access to Medicine Foundation*
- *Jennifer Adair, Fred Hutchinson Cancer Center*

APPENDIX 18

AI Change Makers: The People Behind the Tech

Roundtable Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

In this session we bring to life the personal journeys and projects of five exceptional AI grantees, each a pioneer in AI for development applications. through evocative storytelling, they will share their backgrounds, the milestones they've achieved, and the unique ways they're implementing AI technology in their initiatives. What if we could transform communities, industries, or even the world through the responsible and imaginative application of AI?

WEDNESDAY, 11 OCTOBER

9:30 am – 10:30 am

AI Change Makers: The People Behind the Tech

(Track Room C1, Hall C, Centre des Expositions)

Session Chair: *Zameer Brey, Bill & Melinda Gates Foundation*

- *Nneka Mobisson, CEO & Founder of mDOC*
- *Maryam Mustafa, Founder of Awaaz-e-Sehat*
- *Joyce Nakatumba-Nabende, Senior Lecturer of Computer Science at Makerere University*
- *Hugo Morales, Co-founder & Chief Medical Officer*
- *Tonee Ndungu, Founder & CEO of Kytabu*

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APPENDIX A

Advancing Drug Discovery for Global Health

Track Organizers: *Rob Jordan; Vivian Nguyen, Bill & Melinda Gates Foundation*

ABSTRACT

This track highlights some opportunities, lessons learned, and updates on the innovation and challenges in drug discovery for global health. The track will focus on application of novel tools and technologies, including AI/ML focusing on therapeutic areas that include Sickle cell disease, malaria, non-hormonal contraceptive innovation, neglected tropical diseases, and platform technologies and global health partnerships designed to catalyze global health drug discovery.

Session Abstracts:

Recent advancement in malarial drug discovery pipeline (Joint session with Malaria: Innovation for Eradication)

Safe, effective, and affordable treatment of uncomplicated malaria remains one of the key pillars for eradication. This session showcases the remarkable recent progress in antimalarial drug discovery. During this session, we will sample two programs that delivered novel anti-*P. falciparum* compounds as possible single dose cure with high barrier for resistance, even as potential monthly chemoprevention modality. We will also hear efforts in the screening and lead optimization against *P. vivax* liver hypnozoite for radical cure, and in uncovering the mode of action (MoA) insights into the imidazolopiperazine scaffold. The application of artificial intelligence (AI) and machine learning (ML) in generating bispecific antimalarials will also be highlighted to offer directions for bespoke polypharmacology. Collectively, these talks provide a good overview of the cutting-edge research and discovery processes in the fight against malaria.

Between you and me: The reproductive tract at the interface of contraceptive innovation (Joint session with Innovations in Reproductive Health Technologies for Advancement of Global Health)

Contraceptives promote women's health and sexual agency as a crucial component of family planning and reproductive health more broadly. While hormonal contraceptives are widely used, hormone-related side effects present a barrier to uptake and effective use for many women, incentivizing innovation in nonhormonal contraceptive discovery. With multiple reproductive pathways at various stages of the fertility process under investigation, new tools, technologies, and approaches are required to expand our understanding of the biology, identify potential drug targets, and profile the activity of compounds. This session will explore how new approaches are being applied to drive insights into contraceptive and reproductive health R&D, with an emphasis on the diversity of reproductive tract tissues and how that diversity is informing critical research questions.

Sickle cell disease: Global burden and therapeutic opportunities (Joint session with Sickle Cell Disease: Global Burden and Therapeutic Opportunities)

Understand the global burden of sickle cell disease, and the challenges and opportunities in developing curative therapies to reach patients across the Global South.

Novel approaches and innovative partnerships in drug discovery (Joint session with Global Health Discovery Collaboratory: Enabling a Global Health R&D Network)

Within Discovery & Translational Sciences, the Global Health Discovery Collaboratory has expanded its scope to support technologies and partnerships that can be leveraged across key Global Health priority collaborations and BMGF strategic initiatives. This work aims to develop new tools, technologies, and capabilities that can be applied across disease areas and close gaps in existing programs. This session will highlight several emerging themes that are expected to be catalytic to demonstrate the power of engaging global partners to accelerate drug discovery. We will share technology focused exemplars including an AI-based drug discovery engine that is transforming the design of non-hormonal contraceptives with specific desirable properties, a mouse model with humanized drug metabolism, and strategies to effectively leverage induced pluripotent stem cells (iPSCs). These approaches promise to advance our understanding of differential drug metabolism, facilitate prioritization of early product candidates, and develop new research opportunities globally.

Drug discovery & development opportunities at the host-pathogen interface for NTDs (Joint session with Applying a Translational Lens to Global Health)

Discovery and development of therapeutics, biomarkers, and diagnostics for Neglected Tropical Diseases (NTDs) poses significant R&D challenges. Antimicrobial agents will surely be useful and important components of future treatments, but to achieve full cures for complicated infectious diseases or to prevent the development of pathology may require combination treatment with host directed therapies. Developing a better understanding of the host-pathogen interface will inform therapeutic strategies and facilitate the development of biomarkers and signatures of infection. This is also important for development of diagnostics and monitoring the response to treatment. The opportunities for host directed approaches for NTDs will be explored in the context of Dengue, schistosomiasis, Chagas' disease, and leishmaniasis.

MONDAY, 9 OCTOBER

2:00 pm – 4:00 pm

Joint session: Advancing Drug Discovery for Global Health / Malaria: Innovation for Eradication

(Track Room A1, Hall A, Centre des Expositions)

Recent advancement in malarial drug discovery pipeline

Session Chairs: *Gang Liu; Janice Culpepper, Bill & Melinda Gates Foundation*

- *Gang Liu; Janice Culpepper, Bill & Melinda Gates Foundation*
Moderator intro
- *Thierry Diagana, Novartis Global Health Unit*
The discovery of INE963
- *Steven Maher, University of Georgia (pre-recorded presentation)*
Radical cure discovery against Pv liver hypnozoite
- *Elizabeth Winzeler, University of California, San Diego*
The journey of MoA interrogation on imidazolopiperazines
- *Thorsten Nowak, Exscentia*
Bispecific antimalarials using AI
- *Yan Xia, Global Health Drug Discovery Institute (GHDDI)*
Discovery of an irresistible series of antimalarial

Panelists:

- *Beatriz Baragana, Drug Discovery Unit University of Dundee*
- *James Duffy, Medicines for Malaria Venture*

4:30 pm – 6:30 pm

Joint session: Advancing Drug Discovery for Global Health / Innovations in Reproductive Health Technologies for Advancement of Global Health (Track Room E3, Hall E, Centre des Expositions)

Between you and me: The reproductive tract at the interface of contraceptive innovation

Session Chairs: *Stephen Ward; Sharon Achilles, Bill & Melinda Gates Foundation*

- *Stephen Ward; Sharon Achilles, Bill & Melinda Gates Foundation*
Moderator intro
- *Abidemi Junaid, The Wyss Institute*
Tissue-on-a-chip models of reproductive function
- *Yong Wang, Washington University (pre-recorded presentation)*
Uterine peristalsis, gamete transport, and implications for reproductive health
- *Sissy Wamaitha, University of California, Los Angeles*
Development and characterization of mouse and human ovarian follicle organoid systems
- *Jeff Lee, University of Toronto*
Nanobodies to block the Juno-IZUMO1 complex in fertilization

TUESDAY, 10 OCTOBER

1:00 pm – 3:00 pm

Joint Session: Sickle Cell Disease: Global Burden and Therapeutic Opportunities / Advancing Drug Discovery for Global Health

(Track Room A1, Hall A, Centre des Expositions)

Sickle cell disease: Global burden and therapeutic opportunities

Session Chairs: *Emily Turner, Bill & Melinda Gates Foundation; Françoise Baylis, Dalhousie University*

- *Leon Tshilolo Muepu Malaika, Le Centre de Formation et d'Appui sanitaire, DRC*
Sickle cell disease in Sub-Saharan Africa, a public health priority: Burden, challenges and strategies
- *Solomon Fiifi Ofori-Aquah, University of Ghana*
Sickle cell disease in Africa: Progress made in disease management and opportunities in advancing genomic interventions
- *Emmanuel Balandya, Muhimbili University of Health and Allied Sciences (MUHAS), Tanzania*
Partnerships for advocacy, training, care and research for sickle cell disease in Africa: The SickleInAfrica Consortium
- *Obiageli Nnodu, Centre of Excellence for Sickle Cell Disease Research and Training University of Abuja*
Expansion of access to evidence based interventions in SSA as a foundation for novel and curative therapies
- *Daima Bukini, Muhimbili University of Health and Allied Sciences (MUHAS)*
The establishment of sickle cell disease advanced therapy program at MUHAS
- *Jennifer Adair, Fred Hutchinson Cancer Center*
The Global Gene Therapy Initiative (GGTI): Translating cures for a global sickle cell population

3:30 pm – 5:30 pm

**Joint session: Advancing Drug Discovery for Global Health /
Global Health Discovery Collaboratory: Enabling a Global Health
R&D Network** (Track Room A1, Hall A, Centre des Expositions)

Novel approaches and innovative partnerships in drug discovery

Session Chairs: *Dan Goldberg; Colleen Woods,*

Bill & Melinda Gates Foundation

- *Colleen Woods; Dan Goldberg, Bill & Melinda Gates Foundation*
Moderator intro
- *Maneesha Inamdar, Institute for Stem Cell Science and
Regenerative Medicine (inStem)*
Closing the gap: Developing generalizable organoid models of early
human development to de-risk drug discovery
- *Kenneth MacLeod, University of Dundee*
Acceleration of drug discovery and development with a humanized mouse
model of drug metabolism
- *Nyasha Kapungu, African Institute of Biomedical Science and
Technology (AiBST)*
The African liver tissue biorepository, for preclinical DMPK and
drug discovery
- *Radha Rangarajan, Central Drug Research Institute (CDRI)*
Drug discovery and development: Perspectives from a publicly funded
Indian institution
- *Petrina Kamy InSilico Medicine*
Leveraging AI to democratize access to precision medicine
- *Colleen Woods; Dan Goldberg, Bill & Melinda Gates Foundation*
Moderator close

WEDNESDAY, 11 OCTOBER

10:45 am – 12:45 pm

**Joint session: Advancing Drug Discovery for Global Health /
Applying a Translational Lens to Global Health**

(Track Room A1, Hall A, Centre des Expositions)

Drug discovery & development opportunities at the host-pathogen interface
for NTDs

Session Chairs: *Gang Liu; Gary Means, Bill & Melinda Gates Foundation;*

Charles Mowbray, DNDi

- *Charles Mowbray, DNDi*
Overview/introduction
- *Dan Smith, BenevolentAI*
AI guided drug re-purposing of HDTs for Dengue
- *Sabine Specht, DNDi*
Reverting granuloma formation in female genital schistosomiasis (FGS)
- *Kathryn Jones, Baylor College of Medicine*
Chagas disease: Exploring HDT to achieve parasitological cure and limit
pathology caused by a chronic infection with *T. cruzi*
- *Maria Adelaida Gómez, Centro Internacional de Entrenamiento e
Investigaciones Medicas — CIDEIM*
Approaches to tackle complicated forms of cutaneous leishmaniasis
through HDTs

Panelist:

- *Charles Mowbray, DNDi*

APPENDIX B

Applying a Translational Lens to Global Health

Track Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

The rapid and effective development of novel interventions for global health requires the nimble translation of information produced in cellular and animal models that, in turn, is applied to better understand and develop treatments for diseases that impact human health. Ensuring the best possible chance for success also requires that translational information obtained in clinical trials feeds back again to preclinical models. This iterative process is essential for understanding mechanisms of action, and informs dosing, safety, and appropriate patient selection for clinical trials. Presentations in this track represent the rigorous application of translational disciplines to all phases of drug development, starting during the discovery phase and extending through proof-of-concept clinical trials, thereby empowering the development of better interventional tools.

Session Abstracts:

Innovations in biomarker discovery and therapeutic development

(Joint session with Global Health Discovery Collaboratory: Enabling a Global Health R&D Network)

Scientific innovation has led to novel approaches to human clinical studies and implementation that may accelerate understanding of the safety, efficacy, and mechanisms of action of potential new therapies. These advancements offer exciting opportunities to optimize the development of therapeutics through more efficient and informative trials. The session will explore method development that gives rise to innovative trial designs, such as controlled human infection models, which enable more flexible and adaptive decision-making in phase 1 trials. We will also highlight how cutting-edge science plays a pivotal role in the feedback from laboratory models to translational insights that inform clinical development.

Bridging biomes for better pregnancy outcomes

(Joint session with Innovations in Reproductive Health Technologies for Advancement of Global Health)

Microbiomes are crucial determinants of health throughout the life of the host and play particularly important roles during pregnancy and development. Although the gut and vaginal microbiomes populate two distinct tissue compartments, evidence suggests that they are crucial for supporting maternal and infant health. This session will explore novel approaches to observe and perturb communication between these two microbiomes as a potential mechanism to promote healthy pregnancies and babies.

HPV at your cervix: HPV termination

(Joint session with Innovations in Reproductive Health Technologies for Advancement of Global Health)

A therapeutic HPV vaccine designed to clear high risk HPV infection and regress low-grade lesions has the potential to make a major global impact on morbidity and mortality due to cervical cancer. Deeper understanding of natural immune responses, particularly T cell responses, that mediate clearance of high risk HPV infection can help provide a path towards development of an effective therapeutic vaccine. This session will explore approaches to define biological correlates of viral clearance that can inform the design of a therapeutic HPV vaccine.

Drug discovery & development opportunities at the host-pathogen interface for NTDs (Joint session with Advancing Drug Discovery for Global Health)

Discovery and development of therapeutics, biomarkers, and diagnostics for Neglected Tropical Diseases (NTDs) poses significant R&D challenges. Antimicrobial agents will surely be useful and important components of future treatments, but to achieve full cures for complicated infectious diseases or to prevent the development of pathology may require combination treatment with host directed therapies. Developing a better understanding of the host-pathogen interface will inform therapeutic strategies and facilitate the development of biomarkers and signatures of infection. This is also important for development of diagnostics and monitoring the response to treatment. The opportunities for host directed approaches for NTDs will be explored in the context of Dengue, schistosomiasis, Chagas' disease, and leishmaniasis.

MONDAY, 9 OCTOBER

4:30 pm – 6:30 pm

Joint session: Applying a Translational Lens to Global Health / Global Health Discovery Collaboratory: Enabling a Global Health R&D Network (Track Room A1, Hall A, Centre des Expositions)
Innovations in biomarker discovery and therapeutic development
Session Chairs: *Gary Means; Colleen Woods, Bill & Melinda Gates Foundation*

- *Eric Rubin, Harvard T.H. Chan School of Public Health*
Safe but not too safe — A human challenge model for tuberculosis
 - *Gerhard Walzl, Stellenbosch University*
Where should we pitch host-based diagnostic markers for TB in the diagnostic portfolio?
 - *Kondwani Jambo, Malawi-Liverpool-Wellcome Trust Clinical Research Programme*
Establishment of controlled human infection models in relevant at-risk populations in Africa
 - *Catherine Blish, Stanford University*
Developing in vitro models of host-pathogen interactions for therapeutic discovery
 - *Erica Andersen-Nissen, Cape Town HVTN Immunology Laboratory*
Single cell approaches to identify cellular correlates of protection in TB vaccination
-

TUESDAY, 10 OCTOBER

1:00 pm – 3:00 pm

Joint session: Applying a Translational Lens to Global Health / Innovations in Reproductive Health Technologies for Advancement of Global Health (Track Room E3, Hall E, Centre des Expositions)
Bridging biomes for better pregnancy outcomes
Session Chairs: *Vanessa Ridaaura; Jennifer Gardiner, Bill & Melinda Gates Foundation*

- *Jennifer Gardiner, Bill & Melinda Gates Foundation*
Welcome & introduction
- *Doug Kwon, Harvard Medical School, Ragon Institute*
Impact of the female genital tract mucosal environment on reproductive outcomes
- *Yasmine Belkaid, National Institute of Health*
Microbiome control of host immunity

- *Elizabeth Costello, Stanford University*
Postpartum dynamics of the human vaginal ecosystem
- *Latecia Celine Toe, Ghent University / Institut de Recherche en Sciences de la Santé*
Implementing cutting-edge research in a developing context: Challenges, opportunities, and lessons learned
- *Fyezah Jehan, Aga Khan University*
Microbiome — targeted measures to improve pregnancy outcomes — results from the Mumta trial

Panelists:

- Moderator: *Vanessa Ridaura, Bill & Melinda Gates Foundation*
- *Ana Maldonado-Contreras, University of Massachusetts Chan Medical School*
- *S. M. Tafsir Hasan, International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)*
- *Moses Obimbo Madadi, University of Nairobi*
- *Jo-Ann Passmore, University of Cape Town*

Discussion

- All speakers and panelists
- *Vanessa Ridaura; Jennifer Gardiner, Bill & Melinda Gates Foundation*
Closing remarks

3:30 pm – 5:30 pm

Joint session: Applying a Translational Lens to Global Health / Innovations in Reproductive Health Technologies for Advancement of Global Health (Track Room E3, Hall E, Centre des Expositions)

HPV at your cervix: HPV termination

Session Chairs: *Haina Shin; Gary Means, Bill & Melinda Gates Foundation*

- *Haina Shin; Gary Means, Bill & Melinda Gates Foundation*
Welcome
- *Nelly R. Mugo, University of Washington; Kenya Medical Research Institute*
Introductions
- *Margaret Stanley, University of Cambridge*
Therapeutic HPV vaccines – The immune challenges (pre-recorded)
- *Nelly R. Mugo, University of Washington; Kenya Medical Research Institute*
Incidence and persistence of HPV in Kenyan girls around the time of first sexual intercourse
- *Lyle McKinnon, University of Manitoba*
Mucosal predictors of HPV clearance in a Kenyan cohort
- *Mark Davis, Stanford University*
Broad T cell receptor repertoire analysis to identify key T cell specificities and functions in HPV
- *Doug Kwon, Harvard Medical School, Ragon Institute*
Mapping of CD8+ T cell epitopes association with HPV clearance in the FRESH cohort
- *Gaurav Gaiha, Harvard Medical School, Ragon Institute*
Development of CD8+ T cell-based Therapeutic HPV Vaccines

Q&A

- All speakers
- *Haina Shin; Gary Means, Bill & Melinda Gates Foundation*
Closing remarks

WEDNESDAY, 11 OCTOBER

10:45 am – 12:45 pm

Joint session: Applying a Translational Lens to Global Health / Advancing Drug Discovery for Global Health

(Track Room C2, Hall C, Centre des Expositions)

Drug discovery & development opportunities at the host-pathogen interface
for NTDs

Session Chairs: *Gang Liu, Gary Means, Bill & Melinda Gates Foundation,*
Charles Mowbray, DNDi

- *Charles Mowbray, DNDi*
Overview/introduction
- *Dan Smith, BenevolentAI*
AI guided drug re-purposing of HDTs for Dengue
- *Sabine Specht, DNDi*
Reverting granuloma formation in female genital schistosomiasis (FGS)
- *Kathryn Jones, Baylor College of Medicine*
Chagas disease: Exploring HDT to achieve parasitological cure and limit
pathology caused by a chronic infection with *T. cruzi*
- *Maria Adelaida Gómez, Centro Internacional de Entrenamiento e
Investigaciones Medicas — CIDEIM*
Approaches to tackle complicated forms of cutaneous leishmaniasis
through HDTs

Panelist:

- *Charles Mowbray, DNDi*

APPENDIX C

Artificial Intelligence & Medical Devices: Strengthening the Ecosystem for Development, Implementation, and Scale in LMICs

Track Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

Session Abstracts:

Product development of medical devices for low-resource settings: Evolving from prototypes and pilots to commercial product

The last decade has brought increased attention to the process of innovation in global health. The path to tackling context specific barriers to health technology access has been made clearer through user-centered design, rapid prototyping, and product development toolkits. While there have been numerous successes in the development and commercialization of medical devices built for LMICs, localized product development is still nascent. This session will explore the current state of medical device product development across LMICs, including 1) the unique complexity of medical device development vs. other global health products, 2) how to build robust product development systems and 3) learnings from successful development and scale of new medical device innovations.

Unlocking the opportunity for AI/ML in clinical risk stratification: Considerations for building and deploying AI-powered software products in LMICs

The promise of machine learning to enable tools that aid clinical decision-making, support task shifting, and increase access to care has accelerated algorithm development and assessment for low-resource settings. High quality data and successful productization of algorithms are critical to achieving this promise. In this session we will hear from teams working to build the future of AI in healthcare.

Advocacy to maximize impact:

The role of policy in successful introduction and scale up of innovative technologies

The development of new medical technologies holds potential to alleviate overburdened healthcare systems and expand equitable access by equipping health care workers at community and primary health care levels to provide high-quality treatment for patients who need it most. To harness this possibility, the introduction and scale up of new technologies must be paired with new policies and updated clinical guidelines that enable their implementation, which includes integration in regulatory frameworks, procurement budgets, maintenance plans, regular monitoring & evaluation efforts, pre- and in-service training programming, and clinical/referral management. This session will surface challenges in this policy continuum for new MNCH technologies, highlight solutions from successful interventions for other diseases and conditions, and generate considerations for how to successfully integrate new technologies into health care delivery.

From product development to policy:

Introducing AI-enabled ultrasound into primary health care settings

The previous discussions of the Devices & AI track will culminate in this final session, amplifying the full continuum from product development to policy through the lens of AI-enabled Point of Care Ultrasound (AI-POCUS) in Kenya. This session will discuss real-time challenges, solutions, and planning for product development and implementation of AI-POCUS as a screening tool in primary health care, including training, operational feasibility, advances in product development, and approaches to adoption and scaling.

MONDAY, 9 OCTOBER

2:00 pm – 4:00 pm

Artificial Intelligence & Medical Devices: Strengthening the Ecosystem for Development, Implementation, and Scale in LMICs

(Track Room C1, Hall C, Centre des Expositions)

Product development of medical devices for low-resource settings:

Evolving from prototypes and pilots to commercial product

Session Chairs: *Amy Schellpfeffer; Amrita Sekhar,*

Bill & Melinda Gates Foundation

- *Wambui Gachiengo Nyabero, Chief Technology Officer Villgro Africa*
Current state of medical device product development in low-resourced settings
- *Stephen Tashobya, Founder & CEO Wekebere*
Founder ignite talk: Innovating affordable fetal monitoring in Africa
- *Chris de Villiers, Managing Director Sinapi Biomedical*
Setting up design control and quality management system from scratch
- *Vibhav Joshi, Co-Founder & Director of Product InnAccel*
Building medical device products in India for India and beyond
- *Krupali Shah, Technical Director Revital Healthcare*
Developing regional manufacturing capacity at scale

Panel discussion with Q&A

- Moderator: *Amrita Sekhar, Bill & Melinda Gates Foundation*
- Panelists: *Chris de Villiers, Sinapi Biomedical; Vibhav Joshi, InnAccel; Krupali Shah, Revital Healthcare*
- *Amrita Mahale, Director of Product & Innovation ARMMAN*
Ignite talk: Integrating an LLM copilot into ARMMAN's high risk pregnancy management program for health workers

4:30 pm – 6:30 pm

Artificial Intelligence & Medical Devices: Strengthening the Ecosystem for Development, Implementation, and Scale in LMICs

(Track Room C1, Hall C, Centre des Expositions)

Unlocking the opportunity for AI/ML in clinical risk stratification:

Considerations for building and deploying AI-powered software products in LMICs

Session Chairs: *Amy Schellpfeffer, Bill & Melinda Gates Foundation;*

Wei Luo, Global Health Labs

Generating quality data for AI development:

Methods, challenges, and opportunities

- *Samuel Oppong, University of Ghana*
Collecting robust, high quality physiological data from labor and delivery in 12,000 pregnant women
- *Zahra Hoodbhoy, Aga Khan University (Karachi)*
Collecting doppler ultrasounds at ANC through a novel platform for quality control and labeling
- *Mamadou Diop, Aristide le Dantec Hospital*
Collecting quality data for cervical cancer AI screening tools

Panel discussion:

- Moderator: *Wei Luo, Global Health Labs*

Transitioning from machine learning model to validated SaMD

- *Gabriel Jones, Lead Researcher Oxford University*
Development and validation of a diagnostic aid for epilepsy in Sub-Saharan Africa
- *Prashant Warier, Founder & CEO Qure.ai*
How AI technology enabled accessible, affordable, and timely care across the globe
- *Enya Seguin, Unit Manager, Baby Checker, Delft Imaging*
Launching an AI-powered obstetric ultrasound product in LMIC settings
- *Andrea Cherubini, SVP Science, AI and Data Cosmo Intelligent Medical Devices*
Building the first U.S. FDA cleared computer-aided polyp detection system
- *Ni Dong, Founder & CEO RayShape*
The potential how real-time 3D imaging guidance can influence the care practice in LMICs

TUESDAY, 10 OCTOBER

3:30 pm – 5:30 pm

Artificial Intelligence & Medical Devices: Strengthening the Ecosystem for Development, Implementation, and Scale in LMICs

(Track Room C1, Hall C, Centre des Expositions)

Advocacy to maximize impact: The role of policy in successful introduction and scale up of innovative technologies

Session Chairs: *Amanda Schwartz; Sanjana Bhardwaj, Bill & Melinda Gates Foundation*

Panel: Discussion of challenges

Panelists will discuss challenges to introducing innovative technologies into health systems, from each of their perspectives, which include regulatory, policy, financing, and clinical care

- Panelists: *Hinsermu Bayu, Ethiopia Midwives Association & Assistant Professor of Clinical Midwifery; Y.K. Gupta, All institute of Medical Science; Doris Mollel, Doris Mollel Foundation; Edward Serem, Ministry of Health, Kenya*
- Moderator: *Sanjana Bhardwaj, Bill & Melinda Gates Foundation*

Presentations: Solutions from the field

Experienced practitioners from around the world will provide insights into their experiences introducing a new innovative technology/device into health systems and share lessons learned for stakeholders across the continuum.

- *Matiko Riro, Clinton Health Access Initiative (CHAI)*
Navigating the regulatory and financing ecosystems to introduce innovative MNCH devices in LMIC settings
- *Taiwo Amole, Africa Center of Excellence in Population Health and Policy (ACEPHAP)*
Our pathway to policy implementation: Lessons from ACEPHAP research experience
- *Millicent Alooh, NEST360*
Navigating away from the medical devices graveyards
- *Nahreen Ahmed, MedGlobal*
From the probe to the patient: Are we making impact?

WEDNESDAY, 11 OCTOBER

10:45 am – 12:45 pm

Artificial Intelligence & Medical Devices: Strengthening the Ecosystem for Development, Implementation, and Scale in LMICs

(Track Room C1, Hall C, Centre des Expositions)

From product development to policy: Introducing AI-enabled ultrasound into primary health care settings

Session Chair: *Ari Moskowitz, Bill & Melinda Gates Foundation*

Discussion #1: What is happening in region today from a local perspective

- Panelists: *Grace Githemo, Kenyatta University; Nidhi Leekah, Aga Khan University; Angela Nguku, White Ribbon Alliance; Edward Serem, Ministry of Health, Kenya; Jeff Stringer, University of North Carolina*
- Moderator: *Caroline Kendi, Center for Public Health & Development*

Discussion #2: Company perspective operating in LMICs bringing the products to life — Challenges and opportunities

- Panelists: *Killian Koepsell, GE/Caption Health; Enya Seguin, Delft Imaging; Sachita Shah, Butterfly; Nicholas Sleep, Intelligent Ultrasound; Jonathan Sutton, Philips*
- Moderator: *Ari Moskowitz, Bill & Melinda Gates Foundation*

Discussion #3: Public-private partnership — How to foster a sustainable ecosystem for medical device & AI impact in LMICs

- Panelists: *Sasha Gallant, United States Agency for International Development; Rasa Izadnegahdar, Bill & Melinda Gates Foundation; Beatrice Murage, Philips; Bernard Olayo, Center for Public Health and Development; Samba Sow, CVD-Mali; Marleen Temmerman, Aga Khan University, Nairobi*
- Moderator: *Bernard Olayo, Center for Public Health & Development*

APPENDIX D

Catalyzing Systems-level Agriculture Climate Adaptation in Africa

Track Organizers: *Bill & Melinda Gates Foundation; Science for Africa Foundation; Grand Challenges Africa*

ABSTRACT

The climate crisis increasingly threatens farming populations and national food systems, making urgent action an imperative. Adapting to climate change is an ongoing process, and while individual products and tools will be essential for increasing small scale producer resilience, this track focuses on the research ecosystem-level innovations for successful and sustained African climate change adaptation. Recognizing the fundamental need for an engaged, capacitated, and financed network of African climate and adaption scientists, the sessions include partnership building activities, innovations in analytics, and recommended approaches to measuring and sustaining impact. The Session topics will highlight common themes identified by our African adaptation research partners that if strengthened will serve as catalysts for future research and implementation. With participants from academia, public and private sector, this track will facilitate networking within and outside of agriculture by including one session jointly organized with Climate & Health.

Session Abstracts:

Connecting ecosystem actors for adaptation research and implementation

This session, the first of the meeting, will serve to introduce the participants, build awareness of each project, and generate a support network through a systematic “asks” and “offers” exercise. “Asks” will be generated by all participants and then clustered by topic, and could include items ranging from requests for datasets, introductions to experts in a given geography, or a complex challenge needing a yet-to-be-identified analytical solution. The group will have time to review the “asks” and post written “offers” to help address each request. Participants include the eight recently awarded Grand Challenge project teams, our African Capacity Building Foundation partners and their four client climate-ag organizations, plus several other innovation partners and experts in ag adaptation from across Africa. The session will include 2 minute presentations from each project team, followed by discussion around themes and key topic areas, then posting of “asks” and posting of “offers” among all participants.

Action research: Data, adaptation prioritization methods, and decision making for impact

A common theme among our Grand Challenge awardee cohort group is taking science to action. This session covers the processes around evidence assembly and data sharing, prioritization methods, and decision support tools. We will begin the session by hearing examples of end-users’ needs, from community-scale to National Ministry and Pan-Africa representatives. The speakers will describe their actionable information needs, including features like spatial or temporal scale, level of accuracy, appropriate technical complexity, etc. We will then cover approaches to address these needs and will highlight key data and analytic resources that may be broadly relevant. This session will emphasize the variety and combinations of adaptation practice solutions, the possible differences in success metrics among decision makers, and therefore the heterogeneity of adaptation practice suitability and the importance of a customizable and evidence-based prioritization process. The session will include lightning talks and roundtable discussions divided by themes.

Innovative approaches to multi-level capacity strengthening and community engagement

Taking science to action for sustained impact requires the technical components discussed in Session 2, as well as social and capacity components. This session focuses on personnel, institutional, and community-level characteristics of long-lasting adaptation research programs and research impact. Presentations by experts will include capacity strengthening exemplars across scales and successful governance models for adaptation research, including knowledge and collaboration management, and technology transfer best practices. This session will allow teams to reflect on what social and capacity components may be required to meet their specific technical and impact objectives, and how best to address those needs. This session will include lightning talks followed by group exercises and “report-backs” highlighting both proven and planned approaches.

Impact measurement & evaluation in climate and ag and climate and health (Joint session with Global Network and Partnership Building to Combat the Effects of Climate Change on Health)

In the climate change space, monitoring and evaluation (M&E) is different for mitigation and adaptation. Mitigation, often being the goal in and of itself, is typically measured by greenhouse gas emission reductions, emissions avoided, or gases sequestered. On the other hand, adaptation is not a stand-alone goal, instead it represents acceptable performance of an often pre-defined goal under changing climate conditions. The adaptation indicator will vary based on the pre-defined goal and the climate hazard of interest. For example, successful climate adaptation for Farmer A might look like steadily improving crop yields despite more frequent drought seasons, and for Health worker B, it might look like steadily declining rates of pregnancy complications despite increasing heat spell intensity. In both cases, the adaptation indicator is a combination of the original factor of interest and a climate variable. In this session, we focus on climate adaptation M&E. Due to the structure of interweaving climate data with any given indicator, this session will be cross-sector, bringing together Grand Challenge awardees working on climate & health and climate & agriculture. Expert speakers will highlight the key differences from non-climate-related M&E with respect to the types of data needed, duration of the monitoring period, and the analysis approaches. We will review best practices and lessons learned from impact measurement and evaluation plans currently applied, and invite participants to reflect on their work, share ideas, challenges and identify opportunities to improve their M&E plans. This session will include lightning talks followed by group exercises and “report-backs”.

MONDAY, 9 OCTOBER

2:00 pm – 4:00 pm

Catalyzing Systems-level Agriculture Climate Adaptation in Africa (Track Room D2, Hall D, Centre des Expositions)

Connecting ecosystem actors for adaptation research and implementation

Session Chairs: *Simon Ndoria, Science for Africa Foundation;*

Tess Russo, Bill & Melinda Gates Foundation

- *NARO: National Agricultural Research Organisation, Uganda*
- *CIFOR-ICRAF: Center for International Forestry Research-World Agroforestry*
- *ICED: International Center for Evaluation and Development, Ghana*
- *CERAAS: Le Centre d'étude régional pour l'amélioration de l'adaptation à la sécheresse*
- *Sokoine University of Agriculture, Tanzania*
- *The Medical Research Council, Gambia*
- *GanzAfrica, Rwanda*
- *Jimma University, Ethiopia*
- *RCMRD: Regional Centre for Mapping of Resources for Development*
- *IWMI: International Water Management Agency*
- *Alliance of Bioversity International and CIAT + Ethiopian Institute of Agricultural Research*

- ACBF: *African Capacity Building Foundation*
- HESPI: *The Horn Economic and Social Policy Institute*
- ACED: *Centre d'Actions pour l'Environnement et le Développement Durable*
- CERAPE: *Centre d'Etudes et de Recherche sur les Analyses et Politiques Economiques*
- ICCASA: *Inclusive Climate Change Adaptation for a Sustainable Africa*
- AGRA: *Alliance for a Green Revolution in Africa*
- Haramaya University, ACE Climate SABC: *African Centre of Excellence for Climate Smart Agriculture and Biodiversity Conservation*
- IGAD Climate Prediction & Applications Centre
- Federal University of Technology, Nigeria
- Ethiopian Institute of Agricultural Research, Girma
- AGNES: *African Group of Negotiators Expert Support*

4:30 pm – 6:30 pm

Catalyzing Systems-level Agriculture Climate Adaptation in Africa

(Track Room D2, Hall D, Centre des Expositions)

Action research: Data, adaptation prioritization methods, and decision making for impact

Session Chair: *Tess Russo, Bill & Melinda Gates Foundation*

- *George Wamukoya, Africa Group of Negotiators Experts Support*
African agricultural adaptation status and priorities
- *Eliud Baraka, Kenya Ministry of Agriculture and Livestock Development*
National data and decision support needs for crop risk management
- *Solomon Zena Walelign, International Center for Evaluation and Development*
Climate change adaptation research in Africa: Evidence gap map
- *Masilin Gudoshava, IGAD Climate Prediction and Applications Centre*
Climate and weather model outputs and data accessibility
- *Namita Joshi, Alliance of Bioversity International and CIAT*
Evidence for resilient agriculture: Data synthesis and platform
- *Tess Russo, Bill & Melinda Gates Foundation*
Africa Agriculture Adaptation Atlas: Mapping climate risks and solutions
- *Tess Russo, Bill & Melinda Gates Foundation*
Moderator: Panel Q&A and roundtable discussion

TUESDAY, 10 OCTOBER

1:00 pm – 3:00 pm

Catalyzing Systems-level Agriculture Climate Adaptation in Africa

(Track Room D2, Hall D, Centre des Expositions)

Innovative approaches to multi-level capacity strengthening and community engagement

Session Chair: *Lillian Mutengu, Science for Africa Foundation*

- *Seyram Awushie Agbemenya, African Capacity Building Foundation*
Organizational capacity assessment and strengthening
- *Bobe Bedadi Woreka, Harayama University*
Research program management: African Center for Excellence for climate-smart agriculture
- *Waswa Rose Malot; Josphat Makanga, Regional Centre for Mapping Resources for Development*
Individual capacity building and training best practices
- *Thierry Ngoga, GanzAfrica*
Youth professional development through job placements

- *Lillian Mutengu, Science for Africa Foundation*
Community engagement for context specific, sustainable adaptation
- *Lillian Mutengu, Science for Africa Foundation*
Panel Q&A and closing

3:30 pm – 5:30 pm

Joint Session: Catalyzing Systems-level Agriculture Climate Adaptation in Africa / Global Network and Partnership Building to Combat the Effects of Climate Change on Health

(Track Room E2, Hall E, Centre des Expositions)

Impact measurement & evaluation in climate and ag and climate and health

Session Chairs: *Tess Russo, Bill & Melinda Gates Foundation;*

Joe Torres, Grand Challenges Canada

- *David Phillips, Gates Ventures*
Exemplars in climate-resilient food & nutrition systems:
Metrics and approaches to identifying success
- *Oluwole Akinagbe, Federal University of Technology, Akure, Nigeria*
Adaptation measurement & evaluation
- *Linda Etale, African Capacity Building Foundation*
Tools for evaluation and gender inclusion in adaptation
- *Dominique Laforest, Grand Challenges Canada*
Adaptation measurement & evaluation in health
- *Alan Dangour, Wellcome*
Guided reflection on climate and health & development
- *Joe Torres, Grand Challenges Canada*
Moderator: Panel Q&A

APPENDIX E

Enhancing African Vaccine Manufacturing Through Technology and Training

Track Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

Session Abstract:

Enhancing African vaccine manufacturing through technology and training (Joint session with Vaccine and Biologics Innovations for Global Health)

The pandemic highlighted inequalities in accessing lifesaving vaccines and biologics and the means to produce supplied. Diversified vaccine manufacturing is an important element of ensuring supply of affordable, high-quality vaccines for those who live in low- and middle-income countries (LMICs). Vaccine manufacturers have operated for decades on the continent of Africa. However, access to new products and new technologies is required to enable such manufacturers to contribute to the bigger effort across the continent. In addition, a larger skilled workforce is needed to realize these opportunities. This session will provide an overview of manufacturing investments on the African continent covering both product-specific tech transfer activities and workforce development training programs. The session will begin with an overview of these activities and will end with a moderated panel discussion capturing insights from stakeholders who will share their considerations and lessons learned for an expanding vaccine ecosystem.

WEDNESDAY, 11 OCTOBER

10:45 am – 12:45 pm

Joint session: Enhancing African Vaccine Manufacturing Through Technology and Training / Vaccine and Biologics Innovations for Global Health (Track Room B2, Hall B, Centre des Expositions)

Enhancing African vaccine manufacturing through technology and training

Session Chairs: *Marie-Angélique Sène, Institut Pasteur de Dakar;*

Julia Kuhn, Bill & Melinda Gates Foundation

- *Marie-Angélique Sène, Institut Pasteur de Dakar*
Advanced vaccine bioprocessing lab: Building the ecosystem for acceleration and intensification of vaccine production
- *Ebrahim Mohammed, Biovac*
Oral cholera vaccine project: Building end to end vaccine development and manufacturing capacity in Africa
- *Himant Maharaj, Aspen Pharmacare*
Overview of capabilities and serum vaccine project
- *Héla Kallel, Quantoom Biosciences*
Realising the potential of mRNA for health in Africa
- *Santosh Ramchuran, Council for Scientific and Industrial Research*
African bio-manufacturing workforce training program
- *Marianne Munene, KEMRI-Wellcome Trust Research Programme*
Nurturing African talent for vaccine manufacturing

Panel moderator: *David Robinson, Bill & Melinda Gates Foundation*

Panelists:

- *Akhona Tshangela, Africa CDC*
- *Simone Blayer, PATH*
- *Frauke Uekermann, Clinton Health Access Initiative*

APPENDIX F

The Evolving Role of Pathogen Genomics in Public Health Surveillance

Track Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

Pathogen genomic sequencing has played an important role in the description, understanding and control of the COVID-19 pandemic. Capacity for sequencing pathogens has grown at a rapid pace over the past four years, including in lower and middle-income settings. The value of Genomic Sequencing Data (GSD) for other pathogens such as malaria, cholera, and Ebola is increasingly being realized but is most apparent when appropriately combined with other data streams, such as clinical, epidemiologic or laboratory data. This session will discuss some considerations in the evolving field of genomic epidemiology, with specific focus on key partnerships with the EU, the importance of laboratory strengthening and the core epidemiology principles of sampling, using cholera as an exemplar of the potential value of this approach.

Session Abstracts:

Global health EDCTP3/BMGF partnership on genomic epidemiology

The global health EDCTP3 joint undertaking (global health EDCTP3) builds on the first and second EDCTP programs and is a partnership between the EU, and the EDCTP association, whose members are several European and African countries. The goal of the global health EDCTP3 is to deliver new solutions for reducing the burden of infectious diseases in sub-Saharan Africa and strengthen research capacities to prepare and respond to re-emerging infectious diseases in this region and across the world. BMGF partnered with the global health EDCTP3 for a joint project on genomic epidemiology, which was launched with a EDCTP3 call for proposals in 2022. The consortia that were funded represent strong partnerships between African and European institutions to apply genomic epidemiology to a range of disease areas of importance to global health. These include AMR, TB, HIV, EDD, animal health, and malaria. These EDCTP3 genomic epidemiology projects form a collation with the Africa Pathogen Genomics Initiative (PGI) and Public Health Alliance for Genomic Epidemiology (PHA4GE) to strengthen the capacity and application of genomic epidemiology in national public health institutions (NPHIs) in Africa. During this session, NPHI representatives from the funded projects will describe the planned consortia projects, with a focus on highlighting how they intend to increase the use of genomic epidemiology to answer public health questions of most concern nationally and regionally.

Modeling optimal sampling strategies for genomic surveillance

Genomic sequencing is a versatile and powerful platform for multi-pathogen surveillance with the potential to rapidly provide accurate and detailed epidemiological data that can inform public health responses to existing challenges and emerging threats. However, well-designed sampling frameworks are essential to ensure cost-effective implementation that can generate the data necessary to provide actionable information. This session will explore the role that modeling can play in informing sampling strategies for clinical and environmental pathogen surveillance, with a focus on opportunities and challenges with genomic data.

The role of genomics in Cholera control

There has been a resurgence of cholera outbreaks in the past few years. The roadmap for cholera elimination has a goal of eliminating cholera in 20 countries and reducing cholera deaths by 90% by 2030. Such control of cholera will need a regional approach to eliminating cross-border transmission,

and phylogenetic data can be key to understanding how cholera transmits in space and time. This session will provide an overview of what genomics has taught us about cholera transmission to date, discuss current approaches to strengthening cholera genomics capabilities in public health labs, opportunities for developing innovative protocols for generating genomic data from stool samples, and review needs for metadata standards so that data from neighboring countries can be jointly analyzed. The session will conclude with a discussion on how genomics might inform OCV use and cholera control in general.

Strengthening laboratory capabilities for sustainable pathogen surveillance and response (Joint session with Global Health Discovery Collaboratory: Enabling a Global Health R&D Network)

The COVID-19 pandemic created both the need and opportunity to enhance regional pathogen surveillance, rapidly characterize emerging variants, and inform the development of effective vaccines, therapeutics, and diagnostics. The scientific community has made significant strides towards achieving a sustainable, local infrastructure that can be activated to respond to any newly emerging pathogen locally and leverage connections and collaborations between sites and international decision-making bodies. We have witnessed a movement towards country-led efforts to lead their own discovery and development of locally relevant interventions, enabled by access to transformative technologies and training. Collaborations among funders and local partners who are committed to rapid sharing of data, resources, and expertise have been and will continue to be critical to maintaining the necessary infrastructure to support the rapid response to emerging pathogens, as well as apply key resources to existing priority diseases. This session will feature leading scientists and partners who have made significant contributions to both local laboratory strengthening and building international collaborations towards a coordinated surveillance network backed by technology, infrastructure and expertise to accelerate R&D of impactful interventions.

MONDAY, 9 OCTOBER

2:00 pm – 4:00 pm

The Evolving Role of Pathogen Genomics in Public Health Surveillance (Track Room C2, Hall C, Centre des Expositions)

Global health EDCTP3/BMGF partnership on genomic epidemiology
Session Chair: *Georgina Murphy, Bill & Melinda Gates Foundation*

- *Elmar Nimmesgern, Global Health EDCTP3 Joint Undertaking*
Introduction to EDCTP3 genomic epidemiology partnership
- *Agapitus Kato, Uganda Virus Research Institute*
GREAT-LIFE project overview
- *Vito Baraka, National Institute for Medical Research*
ODIN project overview
- *Nalia Ismael, Instituto Nacional De Saude Mozambique*
GenPath project overview
- *Dawit Wolday, McMaster University*
EpiGen Ethiopia project overview
- *Dorothy Yeboah-Manu, Noguchi Memorial Institute for Medical Research, University of Ghana*
PANGenS project overview
- *Alan Christoffels, NGS4PH*
Collaboration with Africa pathogen genomics initiative and partners

Panel moderator: *Georgina Murphy, Bill & Melinda Gates Foundation*

- Project leads listed above

TUESDAY, 10 OCTOBER

1:00 pm – 3:00 pm

The Evolving Role of Pathogen Genomics in Public Health Surveillance (Track Room C2, Hall C, Centre des Expositions)

Modeling optimal sampling strategies for genomic surveillance

Session Chairs: *Simon Harris; Jillian Gauld, Bill & Melinda Gates Foundation*

- *Brooke Nichols, FIND*
Considerations for pathogen genomics sampling strategies
- *Nuno Faria, Imperial College London*
Sampling strategies for genomic epidemiology
- *Kath O'Reilly, London School of Hygiene & Tropical Medicine*
Sampling strategies for wastewater surveillance
- *Zinhle Mthombothi, SACEMA*
Metadata collection for wastewater surveillance

Panel moderator: *Jillian Gauld, Institute for Disease Modeling*

- *Brooke Nichols, FIND*
- *Kath O'Reilly, London School of Hygiene & Tropical Medicine*
- *Patrick Musicha, Wellcome Sanger Institute*
- *Mukhlid Yousif, Africa CDC*
- *Rukie De Alwis Adamberage, Duke-NUS*

3:30 pm – 5:30 pm

The Evolving Role of Pathogen Genomics in Public Health Surveillance (Track Room C2, Hall C, Centre des Expositions)

The role of genomics in cholera control

Session Chairs: *Natsuko Imai, Wellcome;*

Supriya Kumar, Bill & Melinda Gates Foundation

- *Nick Thomson, Wellcome Sanger Institute*
State of global cholera transmission
- *Mirriam Nyenje, Public Health Institute of Malawi*
Cholera transmission in southern Africa
- *Josefina Campos, WHO hub for Pandemic and Epidemic Intelligence*
Metadata standards for cholera genomics

Panel moderator: *Sofonias Tessema, Africa CDC*

- *Sam Kariuki, Kenya Medical Research Institute*
- *Eduardo Samo Gudo, INS Moçambique*
- *Josefina Campos, PH4GE*
- *Antoine Abou Fayad, American University of Beirut*

WEDNESDAY, 11 OCTOBER

10:45 am – 12:45 pm

Joint session: The Evolving Role of Pathogen Genomics in Public Health Surveillance / Global Health Discovery Collaboratory: Enabling a Global Health R&D Network

(Track Room E3, Hall E, Centre des Expositions)

Strengthening laboratory capabilities for sustainable pathogen surveillance and response

Session Chairs: *Jinal Bhiman, NICD; Chinedu Ugwu, Redeemer's University*

- *Jennifer Serwanga, Uganda Virus Research Institute*
Gates of change for country driven epidemic response: Insights from Uganda
- *Inès VIGAN-WOMAS, Institut Pasteur Dakar*
Building an integrated and collaborative public health surveillance and R&D ecosystem in Senegal to accelerate vaccine and diagnostic discovery
- *Charles Sande, KEMRI-Wellcome Trust Research Programme*
Discovery and immunological analysis of novel SARS CoV-2 variants in Kenya and eastern Africa region
- *Eduardo Samo Gudo, Ministry of Health, Mozambique*
Integrating lab data for surveillance in Mozambique:
Challenges and opportunities
- *Senjuti Saha, Child Health Research Foundation*
Building an atlas of the known pathogens to fight the unknowns

APPENDIX G

Global Health Discovery Collaboratory: Enabling a Global Health R&D Network

Track Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

The Collaboratory track will exemplify the breadth of areas of our engagement in bringing together the brightest minds and cutting-edge technologies to solve tough problems in global health. Key themes will include progress towards understanding mechanisms and correlates of natural and vaccine-induced immunity for malaria, strategies to accelerate evaluation of product candidates, and innovative approaches to enable drug discovery. We will also feature success stories from laboratory leaders in Africa and Asia who are well positioned to respond to newly emerging pathogens.

Session Abstracts:

Accelerating the evaluation of malaria interventions in Africa

(Joint session with Malaria: Innovation for Eradication and Vaccine and Biologics Innovations for Global Health)

There has been significant progress in malaria vaccine development. However, difficult challenges must be overcome to achieve highly efficacious vaccines that elicit lasting immunity in endemic populations. Controlled human malaria infection (CHMI) models have proven to be highly effective in studying markers of natural immunity as well as vaccine efficacy. Longitudinal cohort studies have likewise provided key insights into susceptibility, biomarkers of naturally acquired immunity, and the impact of interventions. Improved understanding of mechanisms and targets of immunity, as well as robust, readily deployable assays will be crucial to advance next generation vaccine candidates. This session will highlight recent progress in advancing our understanding of natural and vaccine-induced immunity, and critical gaps that remain to be filled.

Innovations in biomarker discovery and therapeutic development

(Joint session with Applying a Translational Lens to Global Health)

Scientific innovation has led to novel approaches to human clinical studies and implementation that may accelerate understanding of the safety, efficacy, and mechanisms of action of potential new therapies. These advancements offer exciting opportunities to optimize the development of therapeutics through more efficient and informative trials. The session will explore method development that gives rise to innovative trial designs, such as controlled human infection models, which enable more flexible and adaptive decision-making in phase 1 trials. We will also highlight how cutting-edge science plays a pivotal role in the feedback from laboratory models to translational insights that inform clinical development.

Novel approaches and innovative partnerships in drug discovery

(Joint session with Advancing Drug Discovery for Global Health)

Within Discovery & Translational Sciences, the Global Health Discovery Collaboratory has expanded its scope to support technologies and partnerships that can be leveraged across key Global Health priority collaborations and BMGF strategic initiatives. This work aims to develop new tools, technologies, and capabilities that can be applied across disease areas and close gaps in existing programs. This session will highlight several emerging themes that are expected to be catalytic to demonstrate the power of engaging global partners to accelerate drug discovery. We will share technology focused exemplars including an AI-based drug discovery engine that is transforming the design of non-hormonal contraceptives with specific desirable properties, a mouse model with

humanized drug metabolism, and strategies to effectively leverage induced pluripotent stem cells (iPSCs). These approaches promise to advance our understanding of differential drug metabolism, facilitate prioritization of early product candidates, and develop new research opportunities globally.

Strengthening laboratory capabilities for sustainable pathogen surveillance and response (Joint session with The Evolving Role of Pathogen Genomics in Public Health Surveillance)

The COVID-19 pandemic created both the need and opportunity to enhance regional pathogen surveillance, rapidly characterize emerging variants, and inform the development of effective vaccines, therapeutics, and diagnostics. The scientific community has made significant strides towards achieving a sustainable, local infrastructure that can be activated to respond to any newly emerging pathogen locally and leverage connections and collaborations between sites and international decision-making bodies. We have witnessed a movement towards country-led efforts to lead their own discovery and development of locally relevant interventions, enabled by access to transformative technologies and training. Collaborations among funders and local partners who are committed to rapid sharing of data, resources, and expertise have been and will continue to be critical to maintaining the necessary infrastructure to support the rapid response to emerging pathogens, as well as apply key resources to existing priority diseases. This session will feature leading scientists and partners who have made significant contributions to both local laboratory strengthening and building international collaborations towards a coordinated surveillance network backed by technology, infrastructure and expertise to accelerate R&D of impactful interventions.

MONDAY, 9 OCTOBER

2:00 pm – 4:00 pm

Joint session: Global Health Discovery Collaboratory: Enabling a Global Health R&D Network / Malaria: Innovation for Eradication / Vaccine and Biologics Innovations for Global Health (Track Room B1, Hall B, Centre des Expositions)

Accelerating the evaluation of malaria interventions in Africa

Session Chairs: *Melissa Kapulu, KEMRI; Hedda Wardemann,
Bill & Melinda Gates Foundation*

- *Melissa Kapulu, KEMRI*
Leveraging CHMI in Kenyan healthy adults to accelerate vaccine development
- *James Beeson, Burnet Institute*
Deciphering correlates and mechanisms of immunity to advance current and next generation vaccines
- *Faith Osier, Imperial College London*
IgG Fc-mediated mechanisms of immunity against malaria
- *Isaac Ssewanyana, Uganda National Health Laboratory Services*
Immune regulation and innate immune adaptation
- *Lucas Otieno, USAMRD-A*
Evaluation of efficacy and immunogenicity of a delayed, fractional dose of RTS,S/AS01E malaria vaccine in *Plasmodium falciparum*-infected and uninfected adults in Kenya

4:30 pm – 6:30 pm

**Joint session: Global Health Discovery Collaboratory:
Enabling a Global Health R&D Network / Applying a Translational
Lens to Global Health** (Track Room A1, Hall A, Centre des Expositions)
Innovations in biomarker discovery and therapeutic development
Session Chairs: *Gary Means; Colleen Woods, Bill & Melinda Gates Foundation*

- *Eric Rubin, Harvard T.H. Chan School of Public Health*
Safe but not too safe — A human challenge model for tuberculosis
- *Gerhard Walzl, Stellenbosch University*
Where should we pitch host-based diagnostic markers for TB in the diagnostic portfolio?
- *Kondwani Jambo, Malawi-Liverpool-Wellcome Trust Clinical Research Programme*
Establishment of controlled human infection models in relevant at-risk populations in Africa
- *Catherine Blish, Stanford University*
Developing in vitro models of host-pathogen interactions for therapeutic discovery
- *Erica Andersen-Nissen, Cape Town HVTN Immunology Laboratory*
Single cell approaches to identify cellular correlates of protection in TB vaccination

TUESDAY, 10 OCTOBER

3:30 pm – 5:30 pm

**Joint session: Global Health Discovery Collaboratory:
Enabling a Global Health R&D Network / Advancing Drug Discovery
for Global Health** (Track Room A1, Hall A, Centre des Expositions)
Novel approaches and innovative partnerships in drug discovery
Session Chairs: *Dan Goldberg; Colleen Woods, Bill & Melinda Gates Foundation*

- *Maneesha Inamdar, Institute for Stem Cell Science and Regenerative Medicine (inStem)*
Closing the gap: Developing generalizable organoid models of early human development to de-risk drug discovery
- *Kenneth MacLeod, University of Dundee*
Acceleration of drug discovery and development with a humanized mouse model of drug metabolism
- *Nyasha Kapungu, African Institute of Biomedical Science and Technology (AiBST)*
The African liver tissue biorepository, for preclinical DMPK and drug discovery
- *Radha Rangarajan, Central Drug Research Institute (CDRI)*
Drug discovery and development: Perspectives from a publicly funded Indian institution
- *Petrina Kamya InSilico Medicine*
Leveraging AI to democratize access to precision medicine

WEDNESDAY, 11 OCTOBER

10:45 am – 12:45 pm

Joint session: Global Health Discovery Collaboratory: Enabling a Global Health R&D Network / The Evolving Role of Pathogen Genomics in Public Health Surveillance

(Track Room E3, Hall E, Centre des Expositions)

Strengthening laboratory capabilities for sustainable pathogen surveillance and response

Session Chairs: *Jinal Bhiman, NICD; Chinedu Ugwu, Redeemer's University*

- *Jennifer Serwanga, Uganda Virus Research Institute*
Gates of change for country driven epidemic response: Insights from Uganda
- *Inès VIGAN-WOMAS, Institut Pasteur Dakar*
Building an integrated and collaborative public health surveillance and R&D ecosystem in Senegal to accelerate vaccine and diagnostic discovery
- *Charles Sande, KEMRI-Wellcome Trust Research Programme*
Discovery and immunological analysis of novel SARS CoV-2 variants in Kenya and eastern Africa region
- *Eduardo Samo Gudo, Ministry of Health, Mozambique*
Integrating lab data for surveillance in Mozambique:
Challenges and opportunities
- *Senjuti Saha, Child Health Research Foundation*
Building an atlas of the known pathogens to fight the unknowns

APPENDIX H

Global Network and Partnership Building to Combat the Effects of Climate Change on Health

Track Organizers: *Grand Challenges Canada; Wellcome Trust; Grand Challenge Africa; Grand Challenges South Africa; Gates Ventures; Bill & Melinda Gates Foundation*

ABSTRACT

Climate change threatens the health, well-being, and livelihoods of people around the world. Those who are being most affected by climate change, despite contributing the least to its causes, are facing the most severe impacts. Building upon last year's dialogue on this topic and the increasing momentum globally to act, this track will provide updates on efforts within the network and with our close partners to address this global challenge. Catalytic research and innovation are urgently needed to drive policy change and help those most impacted adapt to these rapidly changing conditions. This track brings together innovators, partners, and policymakers across geographies to showcase work already underway in research and innovation.

Session Abstracts:

Network building and collaborations to further better health outcomes considering climate impacts

Incredible networks of talent exist globally within this network and beyond that are ready and able to apply their talents to support research and innovation in the climate and health space. How can we build on the existing infrastructure through networks like the Grand Challenges partner network, the Pasteur Network, and others to accelerate progress in this area? What types of collaborations are being supported and what is still needed to be able to allow communities around the world facing similar challenges to collaborate, share information, and create spaces with unique opportunities. We will address what opportunities exist and how we can work in partnership to build new ones where they don't already exist.

Role of innovation in climate & health — pipeline & funding opportunities

The intersection of climate change and health is undeniable, impactful and complex. As the global health community looks to tackle this intersection, a robust pipeline of innovative solutions in this new space is developing, but requires funding, support and cultivation. We will share current initiatives to support locally-led projects across the globe that are working on early stage projects to help meet this critical and growing need. The session will serve as an opportunity to learn, be inspired and build meaningful collaboration to spearhead how innovation can help tackle one of the largest challenges of the 21st century.

Emerging research and data in climate and health

The Wellcome Trust and other research partners are funding a transformation in the scale of research into the impacts of climate change on human health, and using the evidence that is generated to advocate for change. In this session, we will explore ongoing research to increase our understanding of the effects of climate change on human health, and how that evidence can be used to guide policy making, support local prioritization of climate funding, and better understand where partnerships can accelerate impact.

Impact measurement & evaluation in climate and ag and climate and health (Joint Session with Catalyzing Systems-level Agriculture Climate Adaptation in Africa)

In the climate change space, monitoring and evaluation (M&E) is different for mitigation and adaptation. Mitigation, often being the goal in and of itself, is typically measured by greenhouse gas emission reductions, emissions avoided, or gases sequestered. On the other hand, Adaptation is not a stand-alone goal, instead it represents acceptable performance of an often pre-defined goal under changing climate conditions. The adaptation indicator will vary based on the pre-defined goal and the climate hazard of interest. For example, successful climate adaptation for Farmer A might look like steadily improving crop yields despite more frequent drought seasons, and for Health worker B, it might look like steadily declining rates of pregnancy complications despite increasing heat spell intensity. In both cases, the adaptation indicator is a combination of the original factor of interest and a climate variable. In this session, we focus on climate adaptation M&E. Due to the structure of interweaving climate data with any given indicator, this session will be cross-sector, bringing together Grand Challenge awardees working on climate & health and climate & agriculture. Expert speakers will highlight the key differences from non-climate-related M&E with respect to the types of data needed, duration of the monitoring period, and the analysis approaches. We will review best practices and lessons learned from impact measurement and evaluation plans currently applied, and invite participants to reflect on their work, share ideas, challenges and identify opportunities to improve their M&E plans. This session will include lightning talks followed by group exercises and “report-backs”.

MONDAY, 9 OCTOBER

2:00 pm – 4:00 pm

Global Network and Partnership Building to Combat the Effects of Climate Change on Health

(Track Room E2, Hall E, Centre des Expositions)

Network building and collaborations to further better health outcomes considering climate impacts

Session Chair: *Joe Torres, Grand Challenges Canada*

- *Anna Stewart-Ybarra, Inter-American Institute for Global Change Research (IAI)*
- *Bruce Gellin, Rockefeller Foundation*
- *Kimber Bogard, National Academy of Medicine*
- *Maria Uhle, National Science Foundation*
- *Alphonsus Neba, Science for Africa Foundation*
- *Rebecca Grais, Pasteur Network*
- *Zoleka Ngcete, Grand Challenges South Africa*
- *David Phillips, Gates Ventures*
- *Patricia Peña, Global Affairs Canada*

4:30 pm – 6:30 pm

Global Network and Partnership Building to Combat the Effects of Climate Change on Health

(Track Room E2, Hall E, Centre des Expositions)

Role of innovation in climate & health — pipeline & funding opportunities

Session Chair: *Deepika Devadas, Grand Challenges Canada*

- *Daouda Diouf, Foundation S*
- *Katie Robertson, DHSC*
- *Moses Aloba, Grand Challenges Africa*
- *Zoleka Ngcete, Grand Challenges South Africa*
- *Ana Maria Caetano, Ministry of Health, Brazil*

TUESDAY, 10 OCTOBER

1:00 pm – 3:00 pm

Global Network and Partnership Building to Combat the Effects of Climate Change on Health

(Track Room E2, Hall E, Centre des Expositions)

Emerging research and data in climate and health

Session Chair: *Alan Dangour, Wellcome Trust*

- *Agnes Kiragga, African Population and Health Research Centre (APHRC)*
- *Elizabeth Kimani-Murage, APHRC*
- *Fatoumata Nafo-Traoré, IFRCRC*
- *Mouhamadou Bamba Sylla, African Institute for Mathematical Sciences (AIMS) Rwanda*
- *Ousmane Ndiaye, National Civil Aviation and Meteorology Service (ANACIM)*
- *Revati Phalkey, Save the Children*

3:30 pm – 5:30 pm

Joint Session: Catalyzing Systems-level Agriculture on Health Climate Adaptation in Africa / Global Network and Partnership Building to Combat the Effects of Climate Change

(Track Room E2, Hall E, Centre des Expositions)

Impact measurement & evaluation in climate and ag and climate and health

Session Chairs: *Tess Russo, Bill & Melinda Gates Foundation;*

Joe Torres, Grand Challenges Canada

- *David Phillips, Gates Ventures*
Exemplars in climate-resilient food & nutrition systems:
Metrics and approaches to identifying success
- *Oluwole Akinagbe, Federal University of Technology, Akure, Nigeria*
Adaptation measurement & evaluation
- *Linda Etale, African Capacity Building Foundation*
Tools for evaluation and gender inclusion in adaptation
- *Dominique Laforest, Grand Challenges Canada*
Adaptation measurement & evaluation in health
- *Alan Dangour, Wellcome*
Guided reflection on climate and health & development
- *Joe Torres, Grand Challenges Canada*
Moderator: Panel Q&A

APPENDIX I

Innovations in Reproductive Health Technologies for Advancement of Global Health

Track Organizers: *Sharon Achilles; Jennifer Gardiner; Haina Shin; Celina Schoken, Bill & Melinda Gates Foundation*

ABSTRACT

Session Abstracts:

Vagina dialogues: Impact of vaginal practices on product use and development

The vagina is a barrier surface that has the potential to transform treatment of women's health issues but is underutilized due to widespread reluctance for developing products that are designed for vaginal delivery. Discourse around current practices and potential advantages of vaginal product delivery may encourage greater acceptance of this delivery mechanism. This session will introduce the current role of vaginal practices, including self-sampling, in women's health, and will explore the biological interactions that may govern the impact of vaginally applied interventions.

Between you and me: The reproductive tract at the interface of contraceptive innovation (Joint session with Advancing Drug Discovery for Global Health)

Contraceptives promote women's health and sexual agency as a crucial component of family planning and reproductive health more broadly. While hormonal contraceptives are widely used, hormone-related side effects present a barrier to uptake and effective use for many women, incentivizing innovation in nonhormonal contraceptive discovery. With multiple reproductive pathways at various stages of the fertility process under investigation, new tools, technologies, and approaches are required to expand our understanding of the biology, identify potential drug targets, and profile the activity of compounds. This session will explore how new approaches are being applied to drive insights into contraceptive and reproductive health R&D, with an emphasis on the diversity of reproductive tract tissues and how that diversity is informing critical research questions.

Bridging biomes for better pregnancy outcomes

(Joint session with Applying a Translational Lens to Global Health)

Microbiomes are crucial determinants of health throughout the life of the host and play particularly important roles during pregnancy and development. Although the gut and vaginal microbiomes populate two distinct tissue compartments, evidence suggests that they are crucial for supporting maternal and infant health. This session will explore novel approaches to observe and perturb communication between these two microbiomes as a potential mechanism to promote healthy pregnancies and babies.

HPV at your cervix: HPV termination

(Joint session with Applying a Translational Lens to Global Health)

A therapeutic HPV vaccine designed to clear high risk HPV infection and regress low-grade lesions has the potential to make a major global impact on morbidity and mortality due to cervical cancer. Deeper understanding of natural immune responses, particularly T cell responses, that mediate clearance of high risk HPV infection can help provide a path towards development of an effective therapeutic vaccine. This session will explore approaches to define biological correlates of viral clearance that can inform the design of a therapeutic HPV vaccine.

HPV at your cervix: HPV diagnostics

Current diagnostic tests used for HPV infection present a number of challenges that limit their utility in low- and middle-income settings. Advancements in the design and function of HPV diagnostics test could facilitate multiple aspects of HPV treatment and prevention of cervical cancer by increasing accessibility to testing and ease of use. This session will discuss cutting-edge technologies that were accelerated by the recent COVID-19 pandemic and their adaptation for HPV diagnostics.

MONDAY, 9 OCTOBER

2:00 pm – 4:00 pm

Innovations in Reproductive Health Technologies for Advancement of Global Health (Track Room E3, Hall E, Centre des Expositions)

Vagina dialogues: Impact of vaginal practices on product use and development

Session Chairs: *Sharon Achilles; Haina Shin; Jennfer Gardiner; Mark Barone; Griffin Manguro, Bill & Melinda Gates Foundation*

- *Sharon Achilles, Bill & Melinda Gates Foundation*

Welcome & introduction

- *Elizabeth Bukusi, University of Washington & University of Nairobi/ Aga Khan University*

Vaginally inserted products: Opportunities and challenges learned from HIV prevention

- *Kenneth Ngunjiri, Jomo Kenyatta University of Agriculture and Technology & University of Washington*

Acceptability of vaginally delivered HIV prevention products: Lessons from African dapivirine ring end users

- *Craig Hendrix, Johns Hopkins University*

Getting vaginal drug delivery right: Using pharmacokinetics to guide vaginal product development

- *Caroline Mitchell, Massachusetts General Hospital*

Modulating the vaginal microbiome: Considerations for formulations

- *Lenine Liebenberg, Stellenbosch University*

Exploring the impact of genital inflammation on infection risk and biomedical breakthroughs

Panel discussion:

- Moderators: *Mark Barone; Sharon Achilles, Bill & Melinda Gates Foundation*

Panelists:

- *Elizabeth Bukusi, University of Washington & University of Nairobi/ Aga Khan U*

- *Kenneth Ngunjiri, Jomo Kenyatta University of Agriculture and Technology & University of Washington*

- *Craig Hendrix, Johns Hopkins University*

- *Caroline Mitchell, Massachusetts General Hospital*

- *Lenine Liebenberg, Stellenbosch University*

- *Mark Barone; Sharon Achilles, Bill & Melinda Gates Foundation*

Closing remarks

4:30 pm – 6:30 pm

Joint session: Innovations in Reproductive Health Technologies for Advancement of Global Health / Advancing Drug Discovery for Global Health (Track Room E3, Hall E, Centre des Expositions)

Between you and me: The reproductive tract at the interface of contraceptive innovation

Session Chairs: *Stephen Ward; Sharon Achilles, Bill & Melinda Gates Foundation*

- *Stephen Ward; Sharon Achilles, Bill & Melinda Gates Foundation*
Moderator intro
- *Abidemi Junaid, The Wyss Institute*
Tissue-on-a-chip models of reproductive function
- *Yong Wang, Washington University (pre-recorded presentation)*
Uterine peristalsis, gamete transport, and implications for reproductive health
- *Sissy Wamaitha, University of California, Los Angeles*
Development and characterization of mouse and human ovarian follicle organoid systems
- *Jeff Lee, University of Toronto*
Nanobodies to block the Juno-IZUMO1 complex in fertilization

TUESDAY, 10 OCTOBER

1:00 pm – 3:00 pm

Joint session: Innovations in Reproductive Health Technologies for Advancement of Global Health / Applying a Translational Lens to Global Health (Track Room E3, Hall E, Centre des Expositions)

Bridging biomes for better pregnancy outcomes

Session Chairs: *Vanessa Ridaaura; Jennifer Gardiner, Bill & Melinda Gates Foundation*

- *Jennifer Gardiner, Bill & Melinda Gates Foundation*
Welcome & introduction
- *Doug Kwon, Harvard Medical School, Ragon Institute*
Impact of the female genital tract mucosal environment on reproductive outcomes
- *Yasmine Belkaid, National Institute of Health*
Microbiome control of host immunity
- *Elizabeth Costello, Stanford University*
Postpartum dynamics of the human vaginal ecosystem
- *Latecia Celine Toe, Ghent University / Institut de Recherche en Sciences de la Santé*
Implementing cutting-edge research in a developing context: Challenges, opportunities and lessons learned
- *Fyezah Jehan, Aga Khan University*
Microbiome — targeted measures to improve pregnancy outcomes — results from the Mumta trial

Panel:

- Moderator: *Vanessa Ridaaura, Bill & Melinda Gates Foundation*
- *Ana Maldonado-Contreras, University of Massachusetts Chan Medical School*
- *S. M. Tafsir Hasan, International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)*
- *Moses Obimbo Madadi, University of Nairobi*
- *Jo-Ann Passmore, University of Cape Town*

Discussion

- All speakers and panelists

- *Vanessa Ridaura; Jennifer Gardiner, Bill & Melinda Gates Foundation*

Closing remarks

3:30 pm – 5:30 pm

Joint session: Innovations in Reproductive Health Technologies for Advancement of Global Health / Applying a Translational Lens to Global Health (Track Room E3, Hall E, Centre des Expositions)

HPV at your cervix: HPV termination

Session Chairs: *Haina Shin; Gary Means, Bill & Melinda Gates Foundation*

- *Haina Shin; Gary Means, Bill & Melinda Gates Foundation*

Welcome

- *Nelly R. Mugo, University of Washington; Kenya Medical Research Institute*

Introductions

- *Margaret Stanley, University of Cambridge*

Therapeutic HPV vaccines — The immune challenges (pre-recorded)

- *Nelly R. Mugo, University of Washington; Kenya Medical Research Institute*

Incidence and persistence of HPV in Kenyan girls around the time of first sexual intercourse

- *Lyle McKinnon, University of Manitoba*

Mucosal predictors of HPV clearance in a Kenyan cohort

- *Mark Davis, Stanford University*

Broad T cell receptor repertoire analysis to identify key T cell specificities and functions in HPV

- *Doug Kwon, Harvard Medical School, Ragon Institute*

Mapping of CD8+ T cell epitopes association with HPV clearance in the FRESH cohort

- *Gaurav Gaiha, Harvard Medical School, Ragon Institute*

Development of CD8+ T cell-based Therapeutic HPV Vaccines

Q&A

- All speakers

- *Haina Shin; Gary Means, Bill & Melinda Gates Foundation*

Closing remarks

WEDNESDAY, 11 OCTOBER

10:45 am – 12:45 pm

Innovations in Reproductive Health Technologies for Advancement of Global Health (Track Room C2, Hall C, Centre des Expositions)

HPV at your cervix: HPV diagnostics

Session Chairs: *Sharon Achilles; Jill Ray; Celina Schocken,*

Bill & Melinda Gates Foundation

- *Sharon Achilles, Bill & Melinda Gates Foundation*

Introduction

- *Partha Basu, International Agency for Research on Cancer*

Introducing and scaling up HPV Diagnostics in LMICs

- *Lynette Denny, University of Cape Town*

HPV diagnostics and the fight against cervical cancer

- *B. Scott Ferguson, Aptitude Medical Systems*
Lessons learned from COVID diagnostics and how we can apply this to HPV and STI diagnostics
- *Groesbeck Parham, University of North Carolina, Zambia*
How true POC assays will be used for HPV screening: Regulatory, guidelines, program integration, training and lessons from South Africa

Q&A with speakers

Panel discussion:

- Moderator: *Gina Ogilvie, University of British Columbia*
- *Chemtai Mungo, University North Carolina School of Medicine*
- *Maribel Almonte, World Health Organization*
- *Rakiya Saidu, University of Cape Town*
- *Partha Basu, International Agency for Research on Cancer*
- *Sharon Achilles, Bill & Melinda Gates Foundation*

Closing

APPENDIX J

Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs

Track Organizers: *Bill & Melinda Gates Foundation; Grand Challenges Network Partners*

ABSTRACT

The COVID pandemic, specifically the public health response to it, reinforced our conviction that even the most cutting-edge science relies on functioning local ecosystems to have an impact on people's lives. The programmatic track hosted by the Global Partnerships & Grand Challenges team and partners at the 2023 Grand Challenges Annual Meeting will bring together experts to discuss how best to continue momentum of the last 20 years of the Grand Challenges program, and continue to strengthen the R&D and innovation ecosystem so countries can directly participate in Research & Development.

Session Abstracts:

African voices on the vision for African science

This session will bring together the fourteen Calestous Juma Science Leadership Fellows, and thought leaders from across the African continent, to discuss some of the most promising and exciting outcomes of African-led scientific initiatives in recent years and share visions for a truly productive ecosystem in which every stakeholder in African science can thrive. The session will showcase African-led innovation in multiple spheres that has occurred in the face of familiar roadblocks and work towards harnessing energy to overcome what are now generally tolerated hurdles. A key ingredient of the R&D ecosystem that will be explored in this session is directing African leadership in science, technology, and innovation to overcome surmountable impediments towards sustained productive outcomes in Africa.

Mobilizing R&D Investments from Africa for Africa

Many African scientists depend on external funding for research and development (R&D) efforts. A dearth of clear national R&D priorities and strategies, a lack of an economic policy framework that links progress to R&D, and poor uptake of research results in decision making, are some of the key reasons for the limited engagement of governments in R&D efforts leading to the continued and unsustainable over-dependence on external funding for R&D in most of Africa. In the recent years, however, there have been concerted efforts to encourage domestic funding from African governments which in turn allows countries and their researchers to tackle priority issues relevant to the local people. Direct budgets into funding platforms such as the National Research Innovation Funds or National Grand Challenges (GC) models are examples of mechanisms through which governments have been able to invest in support of national R&D efforts. However, governments have the potential to do more in support of domestic R&D such as providing the right environment and platform for private sector engagement to unlock funding. These very nuanced methods of government support are often not visible, not encouraged, and are difficult to track for impact.

This session will feature successful case studies of countries' participation in their own R&D to demonstrate how governments are critical components to strong and conducive R&D ecosystems, sustainable science-driven economies, and improved uptake of innovations for impact.

Advancing Africa-led and Africa-owned platforms to increase the number of African universities and research institutions directly participating in their own research & development, to accelerate innovation adoption

In recent years, there has been an increasing emphasis placed on achieving meaningful representation of African institutions in research partnerships. African Population and Health Research Center (APHRC) is working in partnership with the Bill & Melinda Gates Foundation on initiatives including “Catalyze Impact via African-led Implementation Research” to actively facilitate a more influential role for African institutions in shaping Africa’s R&D landscape. This work builds on various institution strengthening efforts led in partnership with the Gates Foundation, including those led by the foundation’s Global Partnerships & Grand Challenges Team, the session co-lead.

This session will shed light on the strategic investment that focuses on bolstering Africa-led platforms, aiming to advance research and innovation throughout the continent. During this session, panelists will discuss the design and creation of a continent-wide research matching platform and delve into efforts to increase visibility of African research institutions and researchers. Examples of research to evidence prototypes that actively bridge the gap between generators of health research outputs and end-users who rely on this vital information will also be showcased. By promoting collaboration, sharing insights, and exchanging best practices, this session aims to inspire actors in Africa’s research and innovation landscape in Africa to cultivate a more informed decision-making process that positively impacts people’s lives.

Understanding African governments contributions towards competitive R&D ecosystems

The 21st century provides an opportunity for Africa’s developmental challenges to be championed and addressed by African scientists who understand the local needs and landscape and can create relevant, acceptable innovative solutions. This opportunity requires robust scientific infrastructure and a critical mass of experts co-built by African governments and global funding partners.

African governments support growth of R&D ecosystems through various ways including: monetary funding, creation of research infrastructure, scholarships and training opportunities for early-to-mid career researchers, salaries for support/administrative staff, environment, policy frameworks for cross-border public-private partnerships and coordination, and setting of strategic national priorities. These important contributions however are invisible to many because globally recognized, regionally developed tools that speak to the African context and that allow African governments and research institutions to track their direct contribution to the R&D ecosystem are missing.

This session will highlight the impact of African government contributions to R&D by exploring various investment models and leveraging the attendees’ combined experiences in utilization of government supported ecosystems to tell their success stories. The role of appropriate African government R&D investment tracking mechanisms will also be explored.

Partnerships: Lessons from 20 years of the Grand Challenges model (Joint session with Looking Ahead to the Next 20 Years: Sharing Learnings and Best Practices for Grand Challenge Implementation and Partnership)

Grand Challenges is a network and platform where diverse stakeholders — public and private, South and North, funders, policymakers and innovators — can work together on equal footing to solve global challenges. In the 20 years since it first launched, GC has helped more partners recognize the promise of supporting bold new solutions in global health and development. GC programs are now run in over a dozen countries & regions, including India, Brazil, South Africa, Ethiopia, Senegal and a pan-African program. By focusing on seeding funds, nurturing ideas, and growing impact, GC programs are putting systems in place to bolster local scientists and scientific infrastructure. Worldwide, over 3,600 GC grants have been made to investigators in over 115 countries, and results of early grants have demonstrated the real-life impact of investing in innovation. The key ingredient of the R&D ecosystem that will be explored in this session is partnerships.

This session will offer a deep dive into the Grand Challenges model and network, in three parts:

- Part I: Who we are and what we have done over the past 20 years
 - Part II: Where the GC Network is headed in the next 20 years
 - Part III: How to get involved in the GC Network
-

MONDAY, 9 OCTOBER

2:00 pm – 4:00 pm

Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs (Track Room E1, Hall E, Centre des Expositions)

African voices on the vision for African science

Session Chair: *Brendan Thomason, Bill & Melinda Gates Foundation*

- *Kedest Tesfagiorgis, Bill & Melinda Gates Foundation*
Welcome remarks
- *Abdoulaye Djimde, Pathogens genomic Diversity Network Africa*
Introductory remarks

Spotlight talks:

- *Patrick Awuah, Ashesi University*
- *Kelly Chibale, University of Cape Town*
- *Rachel Chikwamba, Council for Scientific and Industrial Research*
- *Annetee Nakimuli, Makerere University*

Fireside chat:

- *Seye Abimbola, University of Sydney, Australia*
- *Mainga Hamaluba, KEMRI-Wellcome Trust Research Programme*

Panel moderator: *Iruka Okeke, University of Ibadan*

Panelists:

- *Ify Aniebo, Health Strategy and Delivery Foundation*
- *Yaw Bediako, Yemaachi Biotech*
- *Tumani Corrah, Africa Research Excellence Fund*
- *Tariro Makadzange, Charles River Medical Group*
- *Nicki Tiffin, South African National Bioinformatics Institute, University of the Western Cape*
Closing remarks

4:30 pm – 6:30 pm

Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs (Track Room E1, Hall E, Centre des Expositions)

Mobilizing R&D Investments from Africa for Africa

Session Chair: *Jenn Maroa, Bill & Melinda Gates Foundation*

- *Jenn Maroa, Bill & Melinda Gates Foundation*
Welcome remarks
- *Thomas Kariuki, Science for Africa Foundation*
Background and panel moderator

Panel:

- *Madalitso Kambauwa-Wirima, Minister of Education, Malawi*
- *Amon Murwira, Minister of Higher and Tertiary Education, Science and Technology Development, Zimbabwe*
- *Oulimata Sarr, Minister of Economy, Planning and Cooperation, Senegal*
- Moderator: *Juliette Mutheu-Asego, Science for Africa Foundation*

Panel:

- *Patrick Amoth, Ministry of Health, Kenya*
 - *Glaudina Loots, Department of Science and Innovation, South Africa*
 - *Ayele Teshome, State Minister, Ethiopia*
 - Panel moderator: *Shinghai Grace Machingaidze, Africa Centres for Disease Control and Prevention*
 - *Moses Aloba, Grand Challenges Africa*
National Grand Challenges — A model for building local innovations for local challenges
 - *Nardos Bekele-Thomas, African Union Development Agency-NEPAD*
Closing remarks
-

TUESDAY, 10 OCTOBER

1:00 pm – 3:00 pm

Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs (Track Room E1, Hall E, Centre des Expositions)

Advancing Africa-led and Africa-owned platforms to increase the number of African universities and research institutions directly participating in their own research & development, to accelerate innovation adoption
Session Chair: *Evelyn Gitau, African Population Health and Research Center*

- *Evelyn Gitau, African Population and Health Research Center*
Welcome and introduction
- *Nosa Orobaton, Bill & Melinda Gates Foundation*
Advancing African research landscape to accelerate the adoption and scale of impact-oriented innovations
- *Ahmed Ogwell Ouma, Africa Centres for Disease Control and Prevention*
Data-driven solutions for Africa's health challenges

Fireside chat:

- *Patrick Amoth, Director General, Ministry of Health, Kenya*
- *Catherine Kyobutungi, African Population and Health Research Center*

Panel moderator: *Evelyn Gitau, African Population and Health Research Center*

Panelists:

- *Zameer Brey, Bill & Melinda Gates Foundation*
- *Jennifer Sargent, Nature Journal*
- *Abas Hassen Yesuf, Ministry of Health, Ethiopia*
- *Catherine Kyobutungi, African Population Health and Research Center*
Closing remarks

3:30 pm – 5:30 pm

Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs (Track Room E1, Hall E, Centre des Expositions)

Understanding African governments contributions towards competitive R&D
Session Chair: *Juliette Mutheu-Asego, Science for Africa Foundation*

- *Aggrey Ambali, African Union Development Agency-NEPAD*
The African R&D investment landscape, the case of East Africa

Fireside chat:

- *Gordon Awandare, University of Ghana*
- *Sam Kinyanjui, KEMRI-Wellcome Trust Programme*

- Juliette Mutheu-Asego, Science for Africa Foundation
Audience interactive

Panel moderator: Moses Aloba, Grand Challenges Africa

- Akin Abayomi, Minister of Health, Lagos State Nigeria
- Thumbi Ndungu, SANTHE, DELTAS Africa
- Dixon Chibanda, AMARI, DELTSA Africa
- Nicki Tiffin, South African National Bioinformatics Institute, University of the Western Cape
- Isabella Oyier, KEMRI-Wellcome Trust
- Thomas Kariuki, Science for Africa Foundation
Closing remarks

WEDNESDAY, 11 OCTOBER

10:45 am – 12:45 pm

Joint Session: Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs / Looking Ahead to the Next 20 Years: Sharing Learnings and Best Practices for Grand Challenge Implementation and Partnership

(Track Room E1, Hall E, Centre des Expositions)

Partnerships: Lessons from 20 years of the Grand Challenges model

Session Chairs: *Grand Challenges Network Partners*

- Brendan Thomason, Bill & Melinda Gates Foundation
Welcome & introduction

Panel: Looking back and looking ahead — The Grand Challenges journey

Panel moderator: Moses Aloba, Grand Challenges Africa

- Shirshendu Mukherjee, Grand Challenges India
- Claude Pirmez, Grand Challenges Brazil
- Zoleka Ngcete, Grand Challenges South Africa

- Karlee Silver, Grand Challenges Canada

Interactive discussion

- Jenn Maroa, Bill & Melinda Gates Foundation

Closing remarks

APPENDIX K

Looking Ahead to the Next 20 Years: Sharing Learnings and Best Practices for Grand Challenge Implementation and Partnership

Track Organizers: *Grand Challenges Canada; United States Agency for International Development*

ABSTRACT

Featuring reflections and lessons learned from more than a decade implementing Grand Challenges, USAID and Grand Challenges Canada (GCC) will explore how the Grand Challenge model can continue to evolve to better address tough development and humanitarian problems. Join us for targeted, practitioner-focused conversations about future Grand Challenge topics, localization, scale and sustainability, climate and health, partnerships, and strengthening ecosystems as we prepare for the next twenty years of Grand Challenges.

Session Abstracts:

New approaches to support power shifting and localization

Grand Challenges network partners along with other aligned donors including those in the International Development Innovation Alliance (IDIA) are working to share best practices and new ways to better support demand of innovation at the local level and support new ways of power shifting. In this session, we will explore ways partners have been working together in new ways and through new modalities to support initiatives that include all voices for better priority setting and funding allocation and investment.

Scaling Innovation: Exploring Public and Private Pathways

20 years of supporting innovations across the globe has generated many lessons on scaling and sustaining impact. In this session, hear from successful innovators who will share their experiences and insights on scaling social enterprises to reach underserved communities. The session will also highlight ways that GC partners are exploring to overcome barriers to scale by better understanding demand from public actors and multilateral organizations. Case studies and stories will explore those pursuing commercial pathways to scale and sustainability, as well as unique approaches to securing government buy-in and partnerships.

Partnerships: Lessons from 20 years of the Grand Challenges model (Joint session with Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs)

Grand Challenges is a network and platform where diverse stakeholders — public and private, South and North, funders, policymakers and innovators — can work together on equal footing to solve global challenges. In the 20 years since it first launched, GC has helped more partners recognize the promise of supporting bold new solutions in global health and development. GC programs are now run in over a dozen countries & regions, including India, Brazil, South Africa, Ethiopia, Senegal, and a pan-African program. By focusing on seeding funds, nurturing ideas, and growing impact, GC programs are putting systems in place to bolster local scientists and scientific infrastructure. Worldwide, over 3,600 GC grants have been made to investigators in over 115 countries, and results of early grants have demonstrated the real-life impact of investing in innovation. The key ingredient of the R&D ecosystem that will be explored in this session is partnerships.

This session will offer a deep dive into the Grand Challenges model and network, in three parts:

- Part I: Who we are and what we have done over the past 20 years
- Part II: Where the GC Network is headed in the next 20 years
- Part III: How to get involved in the GC Network

MONDAY, 9 OCTOBER

4:30 pm – 6:30 pm

Looking Ahead to the Next 20 Years: Sharing Learnings and Best Practices for Grand Challenge Implementation and Partnership

(Track Room C2, Hall C, Centre des Expositions)

New approaches to support power shifting and localization

Session Chair: *Ngozi Erundu-Manyonganise, Global Institute for Disease Elimination (GLIDE)*

- *Ngozi Erundu-Manyonganise, Global Institute for Disease Elimination (GLIDE)*

Introduction

Partner Spotlight: Ghana country innovation platform

- *Chioma Ogbozor, AMP Health*
- *Alberta Biritwum-Nyarko, Ghana Health Service*

Innovator spotlight:

- *Driuni Jakani, Youth Empowerment and Development Aid (YEDA)*
- *Elikplim Asilevi, Safisana*

Panel: Sharing and learning about different approaches to power shifting and localization

Moderator: *Ngozi Erundu-Manyonganise, Global Institute for Disease Elimination (GLIDE)*

Panelists:

- *Kenneth Simiyu, United States Agency for International Development*
- *Mohini Bhavsar, Grand Challenges Canada*
- *Jite Phido, Results for Development*

Roundtable Discussion

- *Moderator: Jite Phido, Results for Development*

TUESDAY, 10 OCTOBER

3:30 pm – 5:30 pm

Looking Ahead to the Next 20 Years: Sharing Learnings and Best Practices for Grand Challenge Implementation and Partnership

(Track Room D2, Hall D, Centre des Expositions)

Scaling innovation: Exploring public and private pathways

Session Chair: *Leeat Gellis, Grand Challenges Canada*

- *Leeat Gellis, Grand Challenges Canada*
- *Adetunji Eleso, Grand Challenges Canada*
- *James Kanyange, Makueni County, Kenya*
- *Moredreck Chibi, W.H.O. Regional Office for Africa*
- *Nandita Kotwal, Sanivation*
- *Job Makoyo, Jacaranda*
- *Tendai Gotori, Spark Health Africa*
- *Nelson Gitonga, Insight Health Advisors*

- Bernard Olayo, *Hewa Tele*
- Abigail Aruna, *Clean Team*
- Vishwajeet Kumar, *CEL Ventures*
- Iffat Zafar, *Sehat Kahani*
- Simon Ndoria, *Grand Challenges Africa*

WEDNESDAY, 11 OCTOBER

10:45 am – 12:45 pm

Joint session: Looking Ahead to the Next 20 Years: Sharing Learnings and Best Practices for Grand Challenge Implementation and Partnership / Key Ingredients for R&D Ecosystems and Accelerating Innovation in LMICs

(Track Room E1, Hall E, Centre des Expositions)

Partnerships: Lessons from 20 years of the Grand Challenges model

Session Chairs: *Grand Challenges Network Partners*

- Brendan Thomason, *Bill & Melinda Gates Foundation*
Welcome & Introduction

Panel: Looking back and looking ahead — The Grand Challenges journey

Panel moderator: *Moses Aloba, Grand Challenges Africa*

- Shirshendu Mukherjee, *Grand Challenges India*
- Claude Pirmez, *Grand Challenges Brazil*
- Zoleka Ngcete, *Grand Challenges South Africa*

- Karlee Silver, *Grand Challenges Canada*

Interactive discussion

- Jenn Maroa, *Bill & Melinda Gates Foundation*

Closing remarks

APPENDIX L

Malaria: Innovation for Eradication

Track Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

Despite being a preventable and treatable disease, approximately 247M malaria cases are diagnosed each year — 95% of these in sub-Saharan Africa. The sharp decline in global malaria incidence seen during the 2000–2015 period has stalled, and while the world appears on track for achieving the WHO Global Technical Strategy for Malaria’s elimination-related goals by 2030, it is clear that we will miss the mark on the targets of 90% reductions in both cases and deaths relative to 2015 baseline levels. Against a backdrop of a rapidly growing African population, widespread resistance to certain insecticides, emerging resistance to selected antimalarials, the threat posed by the invasive urban malaria vector *A. stephensi*, and a changing climate, the global malaria community has to come to realize that without increased funding, improved health systems, and new transformative tools, our current toolbox of malaria interventions will be insufficient to achieve eradication.

This track will explore some of the innovations that may kick-start a new era in the fight against malaria. In partnership with the Global Health Discovery & Collaboratory and Vaccines & Biologics for Global Health tracks, speakers will introduce new transformative tools expected to come to market in the near future. Longer sessions in this track will explore how innovative approaches to delivery will help us to use our current tools more effectively and to accelerate the uptake of new tools, as well as how viewing malaria through new lenses, including those of gender, climate, and African leadership, is a necessary step towards eradication.

Recent advancement in malarial drug discovery pipeline (Joint Session with Advancing Drug Discovery for Global Health)

Safe, effective, and affordable treatment of uncomplicated malaria remains one of the key pillars for eradication. This session showcases the remarkable recent progress in antimalarial drug discovery. During this session, we will sample two programs that delivered novel anti-*P. falciparum* compounds as possible single dose cure with high barrier for resistance, even as potential monthly chemoprevention modality. We will also hear efforts in the screening and lead optimization against *P. vivax* liver hypnozoite for radical cure, and in uncovering the mode of action (MoA) insights into the imidazolopiperazine scaffold. The application of artificial intelligence (AI) and machine learning (ML) in generating bispecific antimalarials will also be highlighted to offer directions for bespoke polypharmacology. Collectively, these talks provide a good overview of the cutting-edge research and discovery processes in the fight against malaria.

Accelerating the evaluation of malaria interventions in Africa (Joint session with Global Health Discovery Collaboratory: Enabling a Global Health R&D Network and Vaccine and Biologics Innovations for Global Health)

There has been significant progress in malaria vaccine development. However, difficult challenges must be overcome to achieve highly efficacious vaccines that elicit lasting immunity in endemic populations. Controlled human malaria infection (CHMI) models have proven to be highly effective in studying markers of natural immunity as well as vaccine efficacy. Longitudinal cohort studies have likewise provided key insights into susceptibility, biomarkers of naturally acquired immunity, and the impact of interventions. Improved understanding of mechanisms and targets of immunity, as well as robust, readily deployable assays will be crucial to advance next generation vaccine candidates.

This session will highlight recent progress in advancing our understanding of natural- and vaccine-induced immunity, and critical gaps that remain to be filled.

Monoclonal antibodies for prevention of malaria **(Joint session with Vaccine & Biologics for Global Health)**

Monoclonal antibodies (mAbs) have tremendous potential for preventing and eradicating malaria. Recent clinical trials of mAbs targeting *P. falciparum* sporozoites have demonstrated safety and efficacy in preventing malaria infection in adults and children in endemic regions in Africa, and additional clinical studies with a new candidate are underway. Significant efforts in the field have also produced a diverse portfolio of therapeutic mAb candidates which target other stages of the parasite life cycle, and which could be used to prevent malaria disease and/or contribute to eradication by preventing human-to-mosquito transmission. Insights gained from structural studies and development of innovative platform technologies to improve mAb potency and reduce the cost will be critical for making these highly efficacious molecules affordable in low- and middle-income countries and achieving the full impact in the fight against malaria.

Reaching at-risk populations: Improving delivery & implementation

The current malaria toolbox includes interventions such as bednets, indoor residual spraying, chemoprevention, the RTS,S vaccine, and effective case management (access to diagnosis and treatment), and it is expected to expand to include newer interventions in the coming years, such as monoclonal antibodies for seasonal malaria chemoprevention and ATSBs for vector control. Real-world effectiveness of these tools is typically well below efficacy observed in trials, largely due to challenges in operationalizing these interventions and ensuring high coverage of at-risk populations. This session will explore new approaches to addressing some of these challenges, including the need for R&D programs to acknowledge delivery issues early in the product development process.

Through new lenses: malaria eradication in a broader context

While an expanded toolset and improved intervention delivery are poised to make an impact on the fight against malaria, new tools and approaches must be situated in the context of the broader health system and other factors that influence their rollout and uptake. This session will explore some of the newer lenses through which malaria eradication is being viewed and how factors including gender, climate, and African leadership will impact malaria control efforts.

MONDAY, 9 OCTOBER

2:00 pm – 4:00 pm

Joint session: Malaria: Innovation for Eradication / Advancing Drug Discovery for Global Health

(Track Room A1, Hall A, Centre des Expositions)

Recent advancement in malarial drug discovery pipeline

Session Chairs: *Gang Liu; Janice Culpepper, Bill & Melinda Gates Foundation*

- *Gang Liu; Janice Culpepper, Bill & Melinda Gates Foundation*
Moderator intro
- *Thierry Diagana, Novartis Global Health Unit*
The discovery of INE963
- *Steven Maher, University of Georgia (pre-recorded presentation)*
Radical cure discovery against *Pv* liver hypnozoite
- *Elizabeth Winzeler, University of California, San Diego*
The journey of MoA interrogation on imidazolopiperazines
- *Thorsten Nowak, Exscientia*
Bispecific antimalarials using AI
- *Yan Xia, Global Health Drug Discovery Institute (GHDDI)*
Discovery of an irresistible series of antimalarial

Panelists:

- *Beatriz Baragana, Drug Discovery Unit University of Dundee*
- *James Duffy, Medicines for Malaria Venture*

2:00 pm – 4:00 pm

**Joint session: Malaria: Innovation for Eradication /
Global Health Discovery Collaboratory: Enabling a Global Health
R&D Network / Vaccine and Biologics Innovations for Global Health**

(Track Room B1, Hall B, Centre des Expositions)

Accelerating the evaluation of malaria interventions in Africa

Session Chairs: *Melissa Kapulu, KEMRI; Hedda Wardemann,
Bill & Melinda Gates Foundation*

- *Melissa Kapulu, KEMRI*
Leveraging CHMI in Kenyan healthy adults to accelerate vaccine development
- *James Beeson, Burnet Institute*
Deciphering correlates and mechanisms of immunity to advance current and next generation vaccines
- *Faith Osier, Imperial College London*
IgG Fc-mediated mechanisms of immunity against malaria
- *Isaac Ssewanyana, Uganda National Health Laboratory Services*
Immune regulation and innate immune adaptation
- *Lucas Otieno, USAMRD-A*
Evaluation of efficacy and immunogenicity of a delayed, fractional dose of RTS,S/AS01E malaria vaccine in *Plasmodium falciparum*-infected (Pf) and uninfected adults in Kenya

4:30 pm – 6:30 pm

**Joint session: Malaria: Innovation for Eradication /
Vaccine and Biologics Innovations for Global Health**

(Track Room B1, Hall B, Centre des Expositions)

Monoclonal antibodies for prevention of malaria

Session Chairs: *Kassoum Kayentao, University of Bamako (USTTB);
Jacqueline Kirchner, Bill & Melinda Gates Foundation*

- *Kassoum Kayentao, University of Bamako (USTTB)*
Clinical development of anti-CSP monoclonal antibody L9LS for prevention of *P. falciparum* malaria
- *Scott Miller, Gates Medical Research Institute*
MAM01: Clinical development of a potent anti-CSP monoclonal antibody for prevention of *P. falciparum* malaria
- *Ian Wilson, The Scripps Research Institute*
Antibody recognition of *P. falciparum* CSP: Optimizing function through structural insights
- *Simon Draper, University of Oxford*
Identification of potent monoclonal antibodies for prevention of *P. falciparum* malaria: Targeting the merozoite
- *Matthijs Jore, Radboud University Medical Center*
Identification of potent transmission-blocking monoclonal antibodies for eradication of *P. falciparum* malaria

TUESDAY, 10 OCTOBER

1:00 pm – 3:00 pm

Malaria: Innovation for Eradication

(Track Room C1, Hall C, Centre des Expositions)

Reaching at-risk populations: Improving delivery & implementation

Session Chairs: *Seynude Jean-Fortune Dagnon; Jennifer Gardy, Bill & Melinda Gates Foundation*

- *Abdisalan Noor, Harvard School of Public Health*
Improving delivery & implementation with data-driven planning:
Sub-national tailoring of malaria interventions
- *Olivia Ngou, Impact Sante Afrique*
Improving delivery & implementation through engaging civil society
- *Pradipta Kundu, eGOV*
Improving delivery & implementation by leveraging digital platforms
and digitization

Interactive panel:

- Innovative delivery: Finding creative solutions

WEDNESDAY, 11 OCTOBER

10:45 am – 12:45 pm

Malaria: Innovation for Eradication

(Track Room D2, Hall D, Centre des Expositions)

Through new lenses: Malaria eradication in a broader context

Session Chair: *Jennifer Gardy, Bill & Melinda Gates Foundation*

- *Daniel Ngamije, World Health Organization*
Malaria through the lens of African leadership
- *Deborah Atobrah, University of Ghana*
Malaria through the lens of gender
- *Corine Karema, Quality & Equity Healthcare (Kigali, Rwanda)*
Malaria through the lens of women's leadership
- *Susan Rumisha, Malaria Atlas Project*
Malaria through the lens of climate

APPENDIX M

The Road Ahead: Opportunities for HIV Prevention and Cure

Track Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

To accelerate the reduction of HIV incidence, a comprehensive approach addressing prevention, testing, treatment, reduction in stigma and curative interventions, is crucial. In this track we will focus on sharing advancements in research and development, for novel interventions such as long-acting antiretrovirals (LA-ARVs), & biologics, as well as vaccines that can potentially transform HIV prevention. The developed innovations could have broader applications in global health. We will highlight ongoing research efforts for HIV “cure” to improve the lives of people living with HIV. It is important to implement these opportunities together, ensuring accessibility and tailoring interventions to specific contexts and populations. This holistic approach maximizes the impact, reducing HIV incidence, and strengthening healthcare systems for the well-being of affected communities.

Session Abstracts:

Tackling viral diversity: bNAbs in prevention and cure of HIV

Broadly neutralizing antibodies hold potential for the use in prevention of HIV infection, treatment of HIV and onward transmission. However, a significant barrier is the extensive HIV viral diversity. The evolution of HIV is driven by immune pressure. In this session we will dissect discoveries in our understanding of HIV viral diversity, particularly in the Congo Basin where the virus first emerged, and examine some of the newly discovered highly potent antibodies that show therapeutic potential. We will also explore emerging technologies and platforms that may significantly increase the potency of these antibodies, enabling production of antibody therapies that could be used globally.

Advancing long-acting anti-retrovirals for HIV prevention: Implementation, research & development

Long-Acting ARVs (LA-ARVs) are revolutionizing HIV prevention strategies, providing individuals with options. This session aims to shed light on the progress made thus far. We will outline our strategic approach to introducing such novel products; and provide insights into planned implementation studies with CAB-LA. Additionally, we will delve into innovative clinical designs and the incorporation of novel endpoints in late-stage clinical trials. The discussion will encompass the current advancements in long-acting HIV prevention drugs and the ongoing studies that aim to assess user preferences.

Optimism in the face of challenge: Strategies for HIV vaccines — Humoral, cellular & integrated immune response: Part one & part two

As HIV vaccine R&D progresses through its fifth decade, we are well-poised to leverage new technologies and current understanding of immunological principles to conquer the challenges that have confronted HIV vaccine development. This session will highlight: 1) recent advances in our understanding of how to utilize our atomic level understanding of the interactions of the HIV envelope glycoprotein with broadly neutralizing antibodies (bnAb) to develop vaccine approaches that target the bnAb epitope specific precursor B cells that might eventually lead to the development of broadly neutralizing antibodies; 2) novel approaches to elicit protective T cell immune responses to limit or prevent viral escape; and 3) integrated vaccine approaches that shed light on how multiple immune mechanisms might be harnessed for an effective HIV vaccine approach.

Bringing HIV curative interventions to Africa

The BMGF HIV Frontiers Program seeks to accelerate curative interventions for HIV and the path to enable these. This session will highlight voices across Africa who are leading on the clinical and research fronts, driving coordination across organizations, and bringing critical perspectives to the field. A panel discussion of critical barriers to accelerate the delivery of safe, effective, durable, and affordable curative interventions to Africa will be an important part of this session.

MONDAY, 9 OCTOBER

2:00 pm – 4:00 pm

The Road Ahead: Opportunities for HIV Prevention and Cure

(Track Room D1, Hall D, Centre des Expositions)

Tackling viral diversity: bNAbs in prevention and cure of HIV

Session Chairs: *Fenwick Craig, Lausanne University Hospital;*

Bongiwe Ndlovu, University of KwaZulu-Natal

- *Marcel Tongo, Center of Research for Emerging and Re-Emerging Diseases (CREMER)*
Genetic and molecular characterization of HIV-1 group M diversity in Cameroon, the origin of the epidemic: Implication for vaccine and cure development
- *Florian Klein, University Hospital of Cologne*
Requirements for HIV bNAbs in clinical practice
- *Arif Jetha, The Hospital for Sick Children*
Avid and multi-specific bnAb combinations on the multabody for improved activity against HIV-1
- *Sai Luo, Tsinghua University*
Humanized antibody discovery using a single VH-rearranging mouse model
- *Devi SenGupta, Gilead*
Approaches to utilizing bNAbs for HIV treatment and cure to inform prevention

4:30 pm – 6:30 pm

The Road Ahead: Opportunities for HIV Prevention and Cure

(Track Room D1, Hall D, Centre des Expositions)

Advancing long-acting anti-retrovirals for HIV prevention:

Implementation, research & development

Session Chairs: *Nina Russell, Bill & Melinda Gates Foundation;*

Brenda Gati Mirembe, Makerere University — Johns Hopkins University Research Collaboration

- *Shirley Chen, Bill & Melinda Gates Foundation*
The journey to launch long-acting ARVs for PrEP
- *Friday Saidi, UNC Project-Malawi*
Using implementation science to accelerate a path to scale for injectable PrEP in Malawi
- *Veronica Miller, University of California, Berkeley — School of Public Health*
Adapting HIV prevention trial designs to a changing landscape
- *Alex Kintu, Gilead*
The lenacapavir for PrEP program
- *Susan Chuck, Merck*
Merck's program for HIV prevention

- Irene Mukui, Kenya Research and Training Center, University of Washington;
Brenda Gati Mirembe, Makerere University — Johns Hopkins University
Research Collaboration
The INSIGHT cohort among women in southern and East Africa:
PrEP uptake and use, STIs and HIV incidence'

TUESDAY, 10 OCTOBER

1:00 pm – 3:00 pm

The Road Ahead: Opportunities for HIV Prevention and Cure

(Track Room D1, Hall D, Centre des Expositions)

Optimism in the face of challenge: Strategies for HIV vaccines —
humoral, cellular & integrated immune response: Part one

Session Chairs: *Thumbi Ndung'u, African Health Research Institute; Penny Moore, Wits University and National Institute of Communicable Disease*

- *Marit Van Gils, Amsterdam University Medical Center*
Overview of vaccine approaches to elicit HIV bNAbs and promising data
with multi-specific trimeric germline targeting immunogens
- *Eunice Nduati, Kemri-Wellcome Trust Research Programme*
Germline-targeting nanoparticle vaccine to elicit VRC01 broadly
neutralizing antibody B cell precursors: Extending efforts in the
African continent
- *Wilton Williams, Duke University*
Vaccine induction of HIV-1 neutralizing B cell clonal lineages in humans
- *Bali Pulendran, Stanford University*
Integrated organ immunity

3:30 pm – 5:30 pm

The Road Ahead: Opportunities for HIV Prevention and Cure

(Track Room D1, Hall D, Centre des Expositions)

Optimism in the face of challenge: Strategies for HIV vaccines —
humoral, cellular & integrated immune response: Part two

Session Chairs: *Kondwani Jambo, Malawi Liverpool Wellcome Programme;
One Dintwe, Cape Town HVTN Immunology Laboratory*

- *David Masopust, University of Minnesota*
Memory CD8 T cell longevity and immune surveillance strategies
- *Gaurav Gaiha, Harvard Medical School, Ragon Institute*
Development of CD8+ T cell-based therapeutic HPV vaccines
- *Zaza Ndhlovu, Africa Health Research Institute*
Understanding CD8+ T cell-mediated HIV control (subtypes A and C) in
eastern and southern Africa: Emphasis on dominant networked epitopes and
HLA class I alleles
- *Rachel Rutishauser, University of San Francisco*
Defining “ideal” features of vaccine-elicited HIV-specific CD8+ T cells:
Lessons from HIV cure studies
- *Devi SenGupta, Gilead*
Therapeutic HIV vaccine strategies with potential to inform
prophylactic vaccines

WEDNESDAY, 11 OCTOBER

10:45 am – 12:45 pm

The Road Ahead: Opportunities for HIV Prevention and Cure

(Track Room D1, Hall D, Centre des Expositions)

Bringing HIV curative interventions to Africa

Session Chairs: *Heather Ann Brauer, Bill & Melinda Gates Foundation;*
Tariro Makadzange, CRMG Mutala, Stanford University

- *Thumbi Ndung'u, Africa Health Research Institute*
HIV cure research in low and middle-income countries
- *Krista Dong, Ragon Institute of MGH, Harvard and MIT / FRESH Cohort*
Ready, go! What we have learned from launching a first-in-Africa HIV cure trial at FRESH
- *Wadzanai Samaneka, University of Zimbabwe*
Cure studies with anti-HIV broadly neutralizing antibodies in Sub-Saharan African countries
- *Moses Supercharger, Joint Adherent Brothers and Sisters against AIDS (JABASA)*
Engaging community while developing gene therapy and other curative interventions
- *Izukanji Sikazwe, Centre for Infectious Disease Research in Zambia*
Expanding African leadership for HIV cure initiatives

APPENDIX N

Sickle Cell Disease: Global Burden and Therapeutic Opportunities

Track Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

Session Abstract:

Sickle cell disease: Global burden and therapeutic opportunities (Joint session with Advancing Drug Discovery for Global Health)

Understand the global burden of sickle cell disease, and the challenges and opportunities in developing curative therapies to reach patients across the Global South.

TUESDAY, 10 OCTOBER

1:00 pm – 3:00 pm

Joint Session: Sickle Cell Disease: Global Burden and Therapeutic Opportunities / Advancing Drug Discovery for Global Health

(Track Room A1, Hall A, Centre des Expositions)

Sickle cell disease: Global burden and therapeutic opportunities

Session Chairs: *Emily Turner, Bill & Melinda Gates Foundation;*
Françoise Baylis, Dalhousie University

- *Leon Tshilolo Muepu Malaika, Le Centre de Formation et d'Appui sanitaire, DRC*
Sickle cell disease in Sub-Saharan Africa, a public health priority: Burden, challenges, and strategies
- *Solomon Fiifi Ofori-Acquah, University of Ghana*
Sickle cell disease in Africa: Progress made in disease management and opportunities in advancing genomic interventions
- *Emmanuel Balandya, Muhimbili University of Health and Allied Sciences (MUHAS), Tanzania*
Partnerships for advocacy, training, care, and research for sickle cell disease in Africa: The SickleInAfrica Consortium
- *Obiageli Nnodu, Centre of Excellence for Sickle Cell Disease Research and Training University of Abuja*
Expansion of access to evidence based interventions in SSA as a foundation for novel and curative therapies
- *Daima Bukini, Muhimbili University of Health and Allied Sciences (MUHAS)*
The establishment of sickle cell disease advanced therapy program at MUHAS
- *Jennifer Adair, Fred Hutchinson Cancer Center*
The Global Gene Therapy Initiative (GGTI): Translating cures for a global sickle cell population

APPENDIX 0

Vaccine and Biologics Innovations for Global Health

Track Organizer: *Bill & Melinda Gates Foundation*

ABSTRACT

The Vaccines and Biologics track will emphasize collaborations and interventions in Global Health vaccines and biologics. New tools and strategies are imperative to reducing the burden of infectious disease and leading causes of mortality in developing countries. The track will focus on four topics: 1) Accelerating the evaluation of malaria interventions in Africa; 2) monoclonal antibodies for prevention of malaria; 3) vaccines for global health; and 4) enhancing African vaccine manufacturing. Track sessions will highlight clinical trials in Africa, pre-clinical interventions, and forward-looking innovations. Round table discussions in select sessions will provide a forum for discussing global research collaborations and partnerships in Africa.

Session Abstracts

Accelerating the evaluation of malaria interventions in Africa

(Joint session with Global Health Discovery Collaboratory: Enabling a Global Health R&D Network and Malaria: Innovation for Eradication)

There has been significant progress in malaria vaccine development. However, difficult challenges must be overcome to achieve highly efficacious vaccines that elicit lasting immunity in endemic populations. Controlled human malaria infection (CHMI) models have proven to be highly effective in studying markers of natural immunity as well as vaccine efficacy. Longitudinal cohort studies have likewise provided key insights into susceptibility, biomarkers of naturally acquired immunity, and the impact of interventions. Improved understanding of mechanisms and targets of immunity, as well as robust, readily deployable assays will be crucial to advance next generation vaccine candidates. This session will highlight recent progress in advancing our understanding of natural- and vaccine-induced immunity, and critical gaps that remain to be filled.

Monoclonal antibodies for prevention of malaria

(Joint session with Malaria: Innovation for Eradication)

Monoclonal antibodies (mAbs) have tremendous potential for preventing and eradicating malaria. Recent clinical trials of mAbs targeting *P. falciparum* sporozoites have demonstrated safety and efficacy in preventing malaria infection in adults and children in endemic regions in Africa, and additional clinical studies with a new candidate are underway. Significant efforts in the field have also produced a diverse portfolio of therapeutic mAb candidates which target other stages of the parasite life cycle, and which could be used to prevent malaria disease and/or contribute to eradication by preventing human-to-mosquito transmission. Insights gained from structural studies and development of innovative platform technologies to improve mAb potency and reduce the cost will be critical for making these highly efficacious molecules affordable in low- and middle-income countries and achieving the full impact in the fight against malaria.

Vaccines for global health

Vaccines have been transformative countermeasures against infectious disease. This session will discuss approaches to malaria vaccines needed to meet the goal of malaria eradication. Modeling estimates of post-intervention effects of malaria anti-infective interventions are critical to understand malaria elimination dynamics in combination with innovative immune response analyses to further improve vaccination strategies. The recent clinical development activities of malaria vaccines like

R21/Matrix M and RTSS/AS01 will be highlighted. Bolstering of the malaria vaccine pipeline by novel immunogen designs and vaccines targeting distinct stages of the malaria parasite life cycle are paths to elimination tools that have received significant attention. Furthermore, vaccine platforms and antigen presentation approaches will need to be characterized and tailored for the effective induction of humoral and cellular responses by malaria vaccines and to address other Global Health vaccine targets.

Enhancing African vaccine manufacturing through technology and training (Joint session with Vaccine Development/Enhancing African Vaccine Manufacturing Through Technology and Training)

The pandemic highlighted inequalities in accessing lifesaving vaccines and biologics and the means to produce supplied. Diversified vaccine manufacturing is an important element of ensuring supply of affordable, high-quality vaccines for those who live in low- and middle-income countries (LMICs). Vaccine manufacturers have operated for decades on the continent of Africa. However, access to new products and new technologies is required to enable such manufacturers to contribute to the bigger effort across the continent. In addition, a larger skilled workforce is needed to realize these opportunities. This session will provide an overview of manufacturing investments on the African continent covering both product-specific tech transfer activities and workforce development training programs. The session will begin with an overview of these activities and will end with a moderated panel discussion capturing insights from stakeholders who will share their considerations and lessons learned for an expanding vaccine ecosystem.

MONDAY, 9 OCTOBER

2:00 pm – 4:00 pm

Joint session: Vaccine and Biologics Innovations for Global Health / Global Health Discovery Collaboratory: Enabling a Global Health R&D Network / Malaria: Innovation for Eradication

(Track Room B1, Hall B, Centre des Expositions)

Accelerating the evaluation of malaria interventions in Africa

Session Chairs: *Melissa Kapulu, KEMRI; Hedda Wardemann,
Bill & Melinda Gates Foundation*

- *Melissa Kapulu, KEMRI*
Leveraging CHMI in Kenyan healthy adults to accelerate vaccine development
- *James Beeson, Burnet Institute*
Deciphering correlates and mechanisms of immunity to advance current and next generation vaccines
- *Faith Osier, Imperial College London*
IgG Fc-mediated mechanisms of immunity against malaria
- *Isaac Ssewanyana, Uganda National Health Laboratory Services*
Immune regulation and innate immune adaptation
- *Lucas Otieno, USAMRD-A*
Evaluation of efficacy and immunogenicity of a delayed, fractional dose of RTS,S/AS01E malaria vaccine in *Plasmodium falciparum*-infected and uninfected adults in Kenya

4:30 pm – 6:30 pm

**Joint session: Vaccine and Biologics Innovations for Global Health /
Malaria: Innovation for Eradication**

(Track Room B1, Hall B, Centre des Expositions)

Monoclonal antibodies for prevention of malaria

Session Chairs: *Kassoum Kayentao, University of Bamako (USTTB);*

Jacqueline Kirchner, Bill & Melinda Gates Foundation

- *Kassoum Kayentao, University of Bamako (USTTB)*
Clinical development of anti-CSP monoclonal antibody L9LS for prevention of *P. falciparum* malaria
- *Scott Miller, Gates Medical Research Institute*
MAM01: clinical development of a potent anti-CSP monoclonal antibody for prevention of *P. falciparum* malaria
- *Ian Wilson, The Scripps Research Institute*
Antibody recognition of *P. falciparum* CSP: Optimizing function through structural insights
- *Simon Draper, University of Oxford*
Identification of potent monoclonal antibodies for prevention of *P. falciparum* malaria: targeting the merozoite
- *Matthijs Jore, Radboud University Medical Center*
Identification of potent transmission-blocking monoclonal antibodies for eradication of *P. falciparum* malaria

TUESDAY, 10 OCTOBER

1:00 pm – 3:00 pm

Vaccine and Biologics Innovations for Global Health

(Track Room B1, Hall B, Centre des Expositions)

Vaccines for global health

Session Chairs: *Faith Osier, Imperial College London; Holger Kanzler,*

Bill & Melinda Gates Foundation

- *Mehreen Datto, The Jenner Institute, University of Oxford and the NIHR Oxford Biomedical Research Centre*
R21/MM vaccine clinical data
- *Melissa Penny, Swiss Tropical and Public Health Institute*
Modelling next-gen malaria vaccines for elimination
- *Jean-Philippe Julien, The Hospital for Sick Children*
Structure-guided design of high-potency anti-infection and transmission-blocking malaria vaccines
- *Ali Ellebedy, Washington University School of Medicine in St. Louis*
B cell responses to vaccination: Lessons from the SARS-CoV-2 pandemic
- *Magnus Hoffmann, California Institute of Technology*
EABR nanoparticles as a platform technology for hybrid mRNA vaccine development and implications for malaria vaccines

WEDNESDAY, 11 OCTOBER

10:45 am – 12:45 pm

Joint session: Vaccine and Biologics Innovations for Global Health / Enhancing African Vaccine Manufacturing Through Technology and Training (Track Room B1, Hall B, Centre des Expositions)

Enhancing African vaccine manufacturing through technology and training

Session Chairs: *Marie-Angélique Sène, Institut Pasteur de Dakar;*

Julia Kuhn, Bill & Melinda Gates Foundation

- *Marie-Angélique Sène, Institut Pasteur de Dakar*
Advanced vaccine bioprocessing lab: Building the ecosystem for acceleration and intensification of vaccine production
- *Ebrahim Mohammed, Biovac*
Oral cholera vaccine project: Building end to end vaccine development and manufacturing capacity in Africa
- *Himant Maharaj, Aspen Pharmacare*
Overview of capabilities and serum vaccine project
- *Héla Kallel, Quantoom Biosciences*
Realising the potential of mRNA for health in Africa
- *Santosh Ramchuran, Council for Scientific and Industrial Research*
African bio-manufacturing workforce training program
- *Marianne Munene, KEMRI-Wellcome Trust Research Programme*
Nurturing African talent for vaccine manufacturing

Panel moderator: *David Robinson, Bill & Melinda Gates Foundation*

Panelists:

- *Akhona Tshangela, Africa CDC*
- *Simone Blayer, PATH*
- *Frauke Uekermann, Clinton Health Access Initiative*

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