IDM INSTITUTE FOR DISEASE MODELING

Fall 2022 Symposium

OCTOBER 28, 2022 | 8AM–5PM

BILL & MELINDA GATES FOUNDATION, SEATTLE, WA

SAVE THE DATE

IDM Spring 2023 Symposium
May 2023
IDMOD.org

BILL & MELINDA GATES *foundation*

On behalf of the entire team at the Institute for Disease Modeling at the Bill & Melinda Gates Foundation, welcome to our IDM Fall 2022 Symposium. We are delighted to once again be hosting a modeling symposium after missing the past few years due to COVID.

IDM is now an embedded team within the Bill & Melinda Gates Foundation's Global Health Division, composed of scientists, engineers, and others, all working together to support global efforts focused on achieving permanent improvements in health, eradicating certain infectious diseases, advancing child and maternal health, improving primary health care, and advancing progress on other key health and development goals.

The past few years have underscored the importance of disease measurement and monitoring, improved data and modeling, and collaborative links within the scientific community, as well as the necessity of embedding data and modeling efforts within organizations closest to the work.

This Symposium provides an opportunity to reunite as a community, to discuss lessons learned over the past few years, and to dive into important and timely topics on environmental surveillance, nutrition and vulnerability, vaccine coverage, molecular surveillance, and more. We recognize the varied partnerships that are driving these areas forward, and each of these topics underscores how essential collaboration is for making progress in global health. Thank you for participation and attendance, and we are delighted you are here.

Philip Welkhoff
Director, IDM / Malaria, Bill & Melinda Gates Foundation

AGENDA

8:00 - 8:10 AM
opening remarks

8:10 - 10:05 AM

SESSION 1:
Environmental Surveillance: Modeling, Validation and Cost Effectiveness

SESSION 2:
Exploring the Role of Nutrition in Understanding Vulnerability

10:20 - 12:00 PM

SESSION 3:
Exploring Questions of Underimmunization, Zero Dose, and Vaccine Coverage

SESSION 4:
Perspectives on Genomic Surveillance in the Context of Global Health

12:00 - 1:15 PM
lunch / *ClinEpiDB demo*

1:15 - 2:45 PM

DEMONSTRATION:
Introducing Starsim: Tools for Modeling COVID, HPV and Family Planning

3:00 - 4:00 PM

PANEL DISCUSSION:
Data Collection & Analysis in Global Health

4:15 - 5:00 PM

KEYNOTE:
Catherine Kyobutungi, APHRC

5:00 - 5:15 PM
closing remarks;
reception to follow in the Discovery Center

SESSION 1

Environmental Surveillance: Modeling, Validation and Cost Effectiveness

Assessing Wastewater Surveillance as a Leading Indicator of SARS-CoV-2 Waves in South Africa
Juliet Pulliam, Director, SACEMA

Evaluating the Potential Cost Effectiveness of Wastewater Based Environmental Surveillance to Predict Peaks of SARS-CoV-2 in Blantyre, Malawi
G. Lucky Ngwira, KUHES & MLW

The Role of Time-Varying Viral Shedding in Modeling Environmental Surveillance for Public Health: Revisiting the 2013 Poliovirus Outbreak in Israel
Andrew Brouwer, Univ. of Michigan Ann Arbor

Lightning Talks

When Case Reporting Becomes Untenable: Can Sewer Networks Tell Us Where COVID-19 Transmission Occurs?
Andrew Wang, Emory University

Using ES to Evaluate Effectiveness of a New Polio Vaccine
Arie Voorman, Principal Research Scientist, IDM, BMGF

NTD Endgame Project: Building a Toolkit to Help Make Strategic Decision Making
Aysu Uygur, Strategy Officer, Malaria/NTD, BMGF

⊛KEYNOTE

Catherine Kyobutungi
Exec. Director APHRC

ABOUT CATHERINE KYOBUTUNGI
Dr. Catherine Kyobutungi is the Executive Director of the African Population and Health Research Center (APHRC). She was formerly the Center's Director of Research and has served APHRC in several leadership roles over the past 15 years, having joined as a post-doctoral fellow in 2006. She holds a Ph.D. in Epidemiology and a Master of Science in Community Health and Health Management from the University of Heidelberg. Prior to her graduate studies, Catherine studied medicine at Makerere University, Kampala, after which she worked as a medical officer in Western Uganda for three years.

MODELING TOOLS DEMO

1:15 - 2:45pm   Whidbey / Camano Rooms

Introducing Starsim: Tools for Modeling COVID, HPV and Family Planning

- HPVsim - Jamie Cohen, IDM - BMGF
    - Robyn Stuart, Independent Contractor
- FPsim - Michelle O'Brien, IDM - BMGF
- Covasim - Cliff Kerr, IDM - BMGF

PANEL DISCUSSION

3:00 - 4:00pm   Whidbey / Camano Rooms

Data Collection & Analysis in Global Health Through the Lens of Genomics

- Steve Kroiss, IDM - BMGF
- Jenn Gardy, Malaria - BMGF
- Sarah Volkman, Harvard T.H. Chan School of Public Health
- Damaris Matoke-Muhia, PAMCA

SESSION 2

Exploring the Role of Nutrition in Understanding Vulnerability

Improving Immunization Coverage and Child Health Through Integration and Nutrition-Based Interventions
Navideh Noori, Research Scientist, IDM, BMGF

Updating Our Approach to the Community-Based Management of Acute Malnutrition
Indi Trehan, University of Washington

Modeling the Intergenerational Effects of Key Nutrition Interventions
Mandana Arabi, VP Global Technical Services, Nutrition International

Lightning Talks

Incorporating Mental Health into the EMOD-HIV model
Daniel T. Citron, NYU Grossman School of Medicine

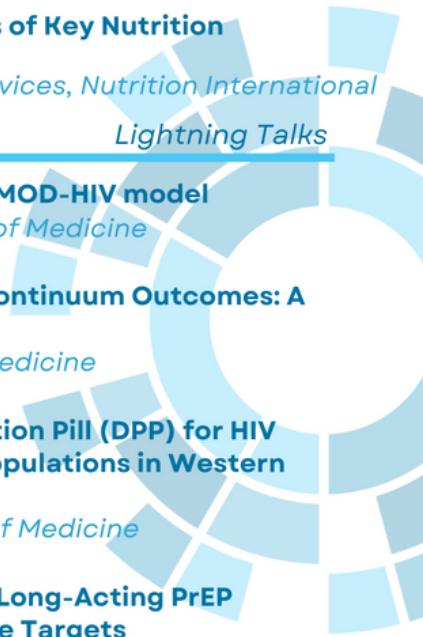**Impact of Mental Health on HIV Care Continuum Outcomes: A Systematic Review and Meta-Analysis**
Frey Assefa, NYU Grossman School of Medicine

Cost-Effectiveness of the Dual Prevention Pill (DPP) for HIV and Contraception Across Different Populations in Western Kenya and South Africa
Masabho Milali, NYU Grossman School of Medicine

The Cost-Effectiveness and Impact of Long-Acting PrEP Introduction on Reaching HIV Incidence Targets
David Kaftan, NYU Grossman School of Medicine

SESSION 3

Exploring Questions of Underimmunization, Zero Dose and Vaccine Coverage

Building a Modeling Platform to Inform Vaccination Uptake Strategies Incorporating the "Who", "What", and "Why"
Katherine Rosenfeld, Research Scientist, IDM, BMGF
Roy Burstein, Sr. Research Scientist, IDM, BMGF

Zero Dose Children: A Global Perspective of Distribution and Inequalities
Aluisio Barros, International Center for Equity in Health

Exemplars in Vaccine Delivery: Understanding Drivers of Coverage in Senegal and Zambia
Patrick Liu, Gates Ventures

Lightning Talks

Race Against Time: Estimating the Impact of Vietnam's COVID-19 Vaccination Program
Nhon Ho, Pasteur Institute in Ho Chi Minh City, Vietnam
Linh Tran, Pasteur Institute in Ho Chi Minh City, Vietnam

Harnessing Machine Learning in Decision Support and Understanding
Sekou Remy, IBM Research - Africa

SESSION 4

Perspectives on Genomic Surveillance in the Context of Global Health

Tracking Polio Outbreaks with Nextstrain
Steve Kroiss, Sr. Research Scientist, IDM, BMGF
Kate Battle, Sr. Research Scientist, IDM, BMGF

Molecular Disease Surveillance in Senegal
Mouhamad Sy, CIGASS

An All-In-One Laboratory System for Clinical Diagnostics, Precision Public Health and Pandemic Prevention (The AMPHEUS Project)
David Bosnall, University of Oxford

Lightning Talks

Reflections on the Role of Pathogen Genomics - Lessons from SARS-COV-2 and HIV in Botswana
Sikhulile Moyo, Laboratory Directov, Research Assoc. Botswana Harvard AIDS Institute Partnership

Gender Inclusivity in Data Collection and Management in the Control of Vector-Borne Diseases
Damaris Matoke-Muhia, PAMCA

PRB Harnesses the Power of Data to Drive Sustainable Change in Adolescent, Maternal and Reproductive Health
Gorrety Parmu, Population Reference Bureau