



Biolife Research Ltd

Catalyzing Scientific Excellence

ARTIFICIAL INTELLIGENCE ACCELERATION OF VACCINES AND DRUGS FOR AFRICA

BioLife Research Invites you to this International multi-stakeholder
Engagement Zoom Webinar on:

**Generative Artificial Intelligence (AI)-based Approaches for
Therapeutic drugs and Vaccines discoveries: Opportunities to
accelerate innovations in Africa.**

25TH SEPT 2024

04:00 PM EAT

09:00 AM EST

01:00 PM GMT

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SPEAKER BIOGRAPHIES



Prof. Wallace Bulimo

*Principal Scientist and Deputy Director,
KEMRI, Kenya*

Prof. Bulimo is a former Associate Professor of Biochemistry and Molecular Virology in the School of Medicine at the University of Nairobi and leads the respiratory pathogen surveillance program. He has broad experiences in clinical applications, training development, biomedical research, teaching and mentorship. He has mentored over 50 postgraduates at MScs and PhD levels, who have taken up strategic, scientific, research and administrative roles in Kenya and globally.

At the U.S. Army Medical Research Directorate –Africa (USAMRD-A), he oversaw activities of many clinical surveillance sites across Kenya to conduct surveillance for viral respiratory pathogens. He also serves as Principal Investigator on numerous

research protocols and coordinates activities on other protocols aimed at developing medical products and information to protect the health of communities. He is a Member of the Kenya National COVID-19 Taskforce and was appointed Team Leader of the sample handling and testing technical committee of this taskforce.

Internationally, he is a Board Member of the Advisory Board on Science Technology and Innovation (STI) Intervention For COVID-19, by African Scientific, Research and Innovation Council (ASRIC) of the Africa Union (AU). For Fourteen years, he served as a member of the United States of America (USA) Department of Defense Joint Influenza Surveillance Working Group (JISWIG).

Globally, he has established several scientific partnerships with academia and government agencies in Kenya and the United States to research infectious agents in East Africa. He conceived, established and led a vibrant program at USAMRD-A that educates, trains and guides young scientists, and more experienced colleagues, to achieve maximum scientific impact. He is an ardent champion of Biorisk management matters and is the Deputy Chair of the Biorisk Management Association of Kenya and an International Federation of Biorisk Association approved professional.



Dr. James Patrick Ochieng Odero

*Research and Relationship Manager,
Evidence Fund*

J. P. (JPR) Ochieng'-Odero is a scientist with a keen interest in the place of science, technology, and innovation (ST&I) in economic and social development, and the role of learning and knowledge sharing in capacity strengthening, especially in Africa. He graduated with a PhD in Zoology from the University of Auckland in 1989.

JPR is currently the Research and Relationship Manager (East Africa) of the Evidence Fund administered by PricewaterhouseCoopers (PwC) on behalf of the Foreign, Commonwealth & Development Office (FCDO) of the UK. He is also a

Senior Research Fellow in research and innovation at Strathmore University.

JPR has been an Independent Consultant Team Leader involved in the establishment of the Research and Innovation Systems for Africa (RISA) programme which aims to strengthen research and innovation systems more effectively in Africa also funded by FCDO.

Between 2015-2021, JPR headed the East Africa Research Fund (EARF) a funding facility managed by PwC on behalf of the DFID. Earlier, JPR was Deputy Director & Head of Scientific Programmes of the Consortium for National Health Research (CNHR), a

Kenyan-based health research grantmaking organisation. JPR was a Senior Research Scientist and head of the capacity strengthening programme of the International Centre of Insect Physiology and Ecology (ICIPE) including serving as the Network Coordinator of the African Regional Postgraduate Programme in Insect Science (ARPPIS) a training programme implemented in partnership with 34 African universities.

He was appointed (2013-2016) a Commissioner with the Commission of University Education (CUE) of Kenya. He was appointed (2015-2021) member of the Board of Trustees of the National Research Fund (NRF) as well as a member of the Governing Council of the Mater Misericordiae Hospital (2017-2021). He has published over four-dozen articles. For his national contribution to development he was awarded the Head of State Commendation (HSC) in December 2013.



Prof. Bernhards Ogutu
Scientific Team leader
Strathmore University, Kenya

Prof. Ogutu is founding President of the East African Chapter of the Association of the Clinical Research Professionals (ACRP). He is a Certified Physician Investigator (CPI) of the ACRP and a Board Registered Pediatrician of the Kenya Medical Practitioners and Dentist Board. He is also a member of the Expert Committee on Clinical Trials of the Pharmacy and Poisons Board and the Regulatory Authority of the Kenyan Ministry of Health. He was instrumental in establishing the Malaria Diagnostic Centre of Excellence at KEMRI, Kisumu. Dr. Ogutu has extensive experience in malaria research and has been involved in a number of malaria vaccine

and drug trials at the KEMRI Centres in Kisumu and Kilifi. He has published over 35 papers in peer-reviewed journals and authored two book chapters. Dr. Ogutu is actively involved in several scientific working groups in the field of malaria and clinical trials within and outside Africa.



Dr. Agnes Kiragga
Scientist and Lead of Data Science Program,
APHRC, Kenya

Dr. Kiragga leads the Data Science Program, which involves strengthening data systems and ensuring the use of Data Science, Machine Learning, and Artificial Intelligence to generate evidence for decision-making in Africa. She holds a PhD in Statistics from Makerere University, Uganda/Indiana University, USA, and completed a Post-Doctoral fellowship at Johns Hopkins University, USA. With over 20 years of experience in using and reusing large, diverse, non-conventional, and conventional data, including longitudinal population cohorts in Africa, she leads the INSPIRE network, a consortium of Longitudinal Population Cohorts in eight

African countries.

Her vision is to empower African data professionals to acquire robust skill sets to support continental-led data projects and promote responsible and ethical data sharing. She continuously advocates for the enhanced inclusion of women in data science and scientific careers.

She currently leads the Multi-country Data Science Without Borders project, which promotes data science use and leadership across African countries.



Ina Burgstaller
Co-founder and CEO
Bionabu, UK

Ina Burgstaller is the dynamic and customer-focused Co-founder & CEO of Bionabu, driven by a passion for innovation and a commitment to delivering exceptional value to clients. With over 20 years of experience in the clinical research and biopharmaceutical industry, she brings a wealth of expertise as an on-demand Independent Clinical Trial Consultant. Ina specializes in cutting-edge AI & VR patient recruitment materials, training and developing research-naïve sites, clinical trials innovation, and project management.

Ina is particularly passionate about strengthening clinical trial partnerships and research infrastructure in Low- and Middle-Income Countries. Her extensive background includes hands-on experience in managing and monitoring clinical trials across all phases (I-IV). She has worked across Europe, APAC, the Middle East, Africa, and North America, giving her a deep understanding of global regulatory requirements and best practices in clinical research.



Dr. Lia Hunter
Clinical Operations Lead,
Bionabu, UK

Dr Hunter is a seasoned Clinical Operations professional with over 20 years of experience spanning all phases of drug development, from Phase I through to post-market studies. Her expertise includes managing complex clinical trials across various therapeutic areas, including neurology, oncology, and pain. Lia has a proven track record in CRO oversight, digital system integration, and regulatory compliance. Skilled in implementing eClinical Trial systems Lia serves as a subject matter expert in clinical operations. Her experience in large pharma to small-sized biotech startups makes her adept at navigating diverse organizational environments, driving projects to successful outcomes. Recognizing the critical need for structured training in clinical trials, Lia established CGX Training to address gaps in professional development, ensuring patient safety, data integrity, and trial efficiency.



Dr. Newton Wahome
Lead AI/ML Innovations,
Newton Wahome, CEPI - Coalition for Epidemic Preparedness
Innovations, United States

Dr. Wahome currently is the AI/ML Innovations Lead at CEPI, supporting vaccine design and Disease X program. Previously, was Director of Immunoinformatics for the Biologics AI program at Exscientia, focusing on antibody design using data-driven approaches and multi-parameter optimization. Prior to that, was at GSK, as Scientific Leader in Computational Biophysics, enabling the design of viral, bacterial, and nanoparticle targets for preclinical vaccine research. He holds a: PhD in Structural Biology & Biophysics from University of Connecticut, an MSPH in Epidemiology, and postdoctoral research in Pharmaceutical Chemistry focusing on formulation & vaccine characterization.



Dr. Julia Makinde

***Lead Discovery Technology Scientist,
Benevolent AI, UK***

Julia's research interests focus on how natural and vaccine induced immune responses develop, and how this knowledge can be applied to the development of new interventions.

She is a Senior Manager Clinical Immunology and Honorary Lecturer based at the IAVI Human Immunology Laboratory.

She currently works on the ADVANCE programme, funded by the International AIDS Vaccine Initiative, which is a five-year cooperative agreement to further the progress of HIV research working with a network of researchers from around the world.



Dr. Mathew Chun

***Patent Agent
Fish & Richardson P.C., MA, USA***

Matthew Chun, Ph.D., focuses his practice on patent drafting and prosecution for mechanical, electrical, and software inventions. He also has significant experience conducting freedom to operate studies, infringement opinions, and invalidity analyses. Matthew has advised and worked with clients ranging from multinational technology companies to individual inventors in the areas of artificial intelligence/machine learning, medical devices, robotics, acoustic devices, telecommunications, signal processing, automobiles, unmanned aerial vehicles, power tools, mobile devices, Internet of Things, computer network architecture, computer hardware, and electrical system components.



About BioLife

BioLife Research Ltd. BioLife is a leading professional consultancy firm established in 2018 with a mission to catalyze scientific excellence by supporting critical components required to advance sustainable research in Africa. Based in Kenya and registered as a private limited company, BioLife has quickly become a cornerstone in the region's scientific and research community. With an extensive network of labs, researchers, and companies across Kenya, BRL is uniquely positioned to drive innovation in the healthcare sector. The company's vision is to become the premier partner in driving innovative healthcare solutions across Africa, and it is currently in the process of negotiating partnerships in additional East African countries. BioLife's commitment to leveraging cutting-edge technologies, including artificial intelligence, positions it at the forefront of the continent's efforts to address pressing healthcare challenges.

Overview of the Stakeholder Engagement

Africa remains heavily burdened by treatable and vaccine-preventable diseases. Millions of morbidity and mortality could be averted by access to affordable therapeutic drugs and vaccines. Conventional discovery processes for such products take considerably a long time. While several factors contribute to the prolonged timelines from discovery to regulatory approval of the products, approaches leveraging artificial intelligence platforms could accelerate the product discovery life cycle. It is on this basis, that BioLife is hosting a multistakeholder engagement to address the following critical questions:

1. How can AI approaches accelerate the discovery of products for prioritized diseases in Africa?
2. How can AI be applied better to manage the delivery and roll-out of vaccines in Africa?
3. What capabilities, networks, and collaborations do we require in Africa to maximize the potential of AI in product development and delivery?

Taget audience

- Research scientist in the product development fields
- Academia
- Vaccine R&D leaders
- AI and machine learning experts with interest in product development
- Policy and advocacy experts
- Research funding agencies
- Community engagement experts
- Partners and clients in the healthcare and technology sectors

Delivery

Webinar (2 hours 20 mins) with presentations, Q&A, discussions.



Detailed agenda

Generative Artificial Intelligence (AI)-Based Approaches for therapeutic drugs and vaccine discoveries: opportunities to accelerate innovations in Africa.

The engagement event is structured to provide information as well as obtain insights from stakeholders on how GenAI can be utilized to accelerate discovery of therapeutic drugs and vaccines in Africa.

Opening Session (10 mins)

- Welcome address and overview of Agenda (Head of Programs, BioLife) (5 mins)
- BioLife Research Limited introduction and Launch (Video) (5 mins)

Keynote Presentation: Evolution and advancement of artificial intelligence in biomedical research and health innovations (25 mins).

Speaker: *Prof. Wallace Bulimo, Principal Research Scientists and Deputy Director, KEMRI, Kenya*

Topics Covered:

- Review of evolution of AI tools in product discovery
- Available AI and machine learning platforms for product discovery
- Future outlook of AI application to therapeutics and vaccine R&D

Session 1: The Role of AI in Vaccine Development (35 min)

Speakers: *Dr. Newton Wahome, Lead AI/ML Innovations, CEPI*

Prof. Bernhards Ogutu, KEMRI and CREATES, Strathmore University

Topics Covered:

- AI assisted computational tools for vaccine discovery
- Current state and future trends of AI in vaccine development in Africa
- Success stories, case studies, and lessons learned from AI applications in African healthcare
- Application of AI in vaccine clinical trials
- Utilization of AI in vaccine roll out and

Session 2: AI-Driven Innovations in Therapeutic Drugs (15 mins)

Speakers: *Dr. Julia Makinde, Lead Discovery Technology Scientist, Benevolent AI*

Topics Covered:

- AI techniques in drug discovery and development
- Challenges and opportunities in applying AI for African healthcare needs



- Examples of AI-driven therapeutic drugs tailored for African populations

Session 3: Regulatory affairs considerations for AI guided product development (20 mins with Q&A)

Speaker: *Dr. Mathew Chun, Patent Lawyer, Fisch and Richardson P.C, MA USA*

Topics Covered:

- What are the required regulatory and ethical AI techniques in drug discovery and development
- Examples of regulatory frameworks enabling AI
- How to protect AI-enabled products with IP laws
- Gaps and opportunities

Session 4: AI-Driven Research Infrastructure and Training Hub Africa (15 mins)

Speaker: *Ina Burgstaller, Co-founder, Bionabu, London, UK.*

Topics Covered:

- What is the current status of AI infrastructure for biomedical and health research in Africa?
- Examples of initiatives in Africa.
- Framework for building sustainable capacity for AI-driven research infrastructure.

Session 4 : Overcoming Barriers to AI Adoption in Africa (15 mins)

Speaker: *Dr. Agnes Kiragga, Head of Data Science, APHRC, Kenya.*

Topics Covered:

- What are the immediate priorities for AI adoption in Africa?
- What are the data needs?
- Building effective collaborations between stakeholders
- Funding strategies and investment opportunities

Session 5: Final discussion (10 mins)

- Moderated Q&A on the topics covered
- Summary of key messages.

Closing Remarks (5 mins) (BioLife Team)

- Summary of Key Takeaways
- Thank You Note and Adjournment