

7<sup>th</sup>  
YEAR

# Celebrate **LAB**<sup>®</sup> West Africa Conference 2021

Laboratory Professionals Annual Meeting

**Combating Emerging and  
Re-emerging Infections through  
Standardization of Laboratory  
Practice Across West Africa**

## PROGRAM BOOKLET

Hosted by:



Co-hosted by:



**AKAI HOUSE  
CLINIC**



**April 21-22, 2021**

**Swiss Spirit Alisa Hotel,  
North Ridge, Accra, Ghana**

# Welcome



Dear CLWA 2021,

Welcome and thank you for your attendance. This year's conference makes me reflect on how much of all lives have changed in just one year...for some even more than a year. I think of preparation for CLWA in March 2020. We were just shy of the realization that the world was about to get caught in a collective paradigm shift. Merriam Dictionary defines paradigm shift as an important change that happens when the usual way of thinking about or doing something is replaced by a new and different way. This discovery will bring about a paradigm shift in our understanding of evolution. A paradigm shift brings about the evolution of things, where the collective encompasses a whole. Whole societies, whole communities, whole systems, whole processes, whole access to resources, whole diagnostic environments, whole regulatory environments, so on and so forth. We are now all a part of a paradigm shift whether it is immediately recognized or not. How should laboratory personnel maneuver it or fit in?

I hope that CLWA's 2021 Conference Ambassadors and Speakers will show you, as part of the frontline, ways that laboratory professionals across West Africa could be part of the greater solution to enhance laboratory quality and improve diagnostics in the region as we move through the paradigm shift. Clinical laboratory science plays multiple roles in finding solutions to how West Africa approaches emerging infectious agents. More so, it puts additional emphasizes on the need for quality assurance and standards across West Africa. Clinical laboratory scientists can either choose to ride the wave of this evolutionary shift or take the opportunity to go beyond immediate needs. In choosing to go beyond immediate needs:

1. **Get scientific!!** Lean more on critical thinking skills. Your knowledge and skills are valuable to clinicians, regulatory leaders, and your lab colleagues. During the current pandemic, lab science personnel have delved further into the science of biotechnology. With 700+ attendees in each CLWA webinar series, it showed that laboratory personnel across West Africa were hungry for more knowledge. They delved into discussions on verification of molecular tools, approval of kits, and quality control of reagents. Sometimes, in the absence of manufactured reagents in West Africa, where possible, lab personnel had to rely on knowledge in science to test and make up batches of basic reagents. This required more documentation and feedback from peers to hone good decision-making skills. With sessions like "Balancing COVID-19 Pandemic Response while protecting public health gains in lab diagnosis of HIV, TB, and Malaria" and the session focused on roles of lab personnel, we can truly explore how to move through this difficult time.
2. **Help Ourselves!!** In other words, be more self-reliant. Scientists around West Africa found ways to drive innovation in laboratory science. In countries like Ghana, Liberia, and Senegal, scientists stepped forth to foster the development of new laboratory products for Africa, by Africans. Lab professionals leaned more heavily on peer-to-peer reviews and regulatory systems to validate laboratory science. As front liners, we tightened up on biosafety and how we approach work routinely. We must bear down more and demand that better laboratory management be included in budgets. We must demand that all tools necessary for preparedness be part of budget line items routinely and not only during an emergency. We must help ourselves in ensuring a maintained supply chain, PPE's, maintenance, and continued upgrading of skills. As laboratory professionals, we cannot afford to just ride the wave of this paradigm shift. We must partner with the regulators to work hand-in-hand to create and strengthen standards. We must lean in on accreditation of labs and ensure more quality in laboratories across West Africa for better health outcomes. This also means "Exploring collaborative opportunities for Biotech-pharmaceutical Entrepreneurships and Manufacturing in West Africa" and "From Donor Dependency to African Self-Sufficiency in Laboratory Medicine".
3. **Continuous Improvements!** We must invest in ourselves—our greatest asset. As individuals, we must be willing to invest in our learning experiences. Our attendance at conferences, webinars, continuing education, etc. must be driven personally. If we cannot see the value in spending the time and the fees out of our own pockets to ensure professional growth, who will? As laboratory personnel, we have a huge responsibility in society as a whole, as we have seen over and over again when faced with emerging threats. We have to see no boundaries in the value of our skills and expertise, be willing to go beyond to improve our benchside techniques, apply skills to the research environment, assist in publishing data, gaining specific expertise as microbiologists, hematologists, biotechnologist, etc. We also need to review "Epi Surveillance, Outbreak Prevention and Laboratory Challenges in Covid-19 Era in West Africa" as well as ensuring "Accreditation for Public Health Laboratories – Meeting International Standards".
4. **Bring along clinicians, legislators and regulators, to be the Advocates for Change!** They are the critical decision-makers who can ensure prioritizing laboratory science brings upward trends in healthcare outcomes, response to emerging threats, medical technology, as well as economic development across W. Africa!

# Welcome



## **ADDRESS DELIVERED BY DR. ABU ABUDU RAHAMANI, PRESIDENT OF THE GHANA ASSOCIATION OF MEDICAL LABORATORY SCIENTISTS ON THE OCCASION OF THE 7TH CELEBRATELAB® WEST AFRICA 2021 CONFERENCE AT THE SWISS SPIRIT ALISA HOTEL FROM 20TH – 22ND APRIL, 2021**

Mr. Chairman, the Director-General of Ghana Health Service, the Director, Technical Coordination Ministry of Health, Distinguished Guests, Fellow Laboratorians, the Media, Ladies and Gentlemen, it is an honour to welcome you on behalf of the entire Medical Laboratory Science fraternity in Ghana, to the 7th CelebrateLAB® West Africa 2021 Conference being hosted at the Swiss Spirit Alisa Hotel from the 21st – 22nd April, 2021. Around the world, the 15th of April every year, Medical Laboratory Science practice is marked as International Biomedical Laboratory Science Day (IBLS day). The theme for this year "Testing Times - Biomedical Laboratory Scientists' Role in the Covid-19 Pandemic" is not very different from our theme for this conference. It is important as medical laboratorians to celebrate our efforts in combating Covid-19 with the limited medical laboratory facilities in our Sub Region. We can say we have fought a good fight. Let us be proud of ourselves.

Mr. Chairman, we in Ghana are delighted to host for the first time, a conference of Medical Laboratory practitioners from across the West African sub-region on the CelebrateLAB® platform. The theme for the conference, "Combating Emerging and Re-Emerging Infections through Standardization of Laboratory Practice across West Africa" offers us the platform to harness the opportunities of our future practice as medical laboratorians in the fight against future pandemics. Let me thank the partners, the Ghana Health Service, Africabio Enterprise, Inc., organizers of CelebrateLAB® West Africa 2021 for the great opportunity offered to bring together stakeholders in the Medical Laboratory space to deliberate on the theme for the occasion.

Again, Mr. Chairman, let me cease this opportunity to thank the Government of Ghana and the Ministry of Health in particular for the stringent steps taken, for the first time in a long while, to invest heavily in the Medical Laboratory Sub-Sector. In addition, we commend Private Sector for partnering government to establish and commission the first ever, Ghana Infectious Diseases Centre (GIDC) and wish to call on government to accelerate the replication of Infectious Diseases Centres across the country

Mr. Chairman, the Covid-19 pandemic has been devastating, however, it has created opportunities for the practice of medical laboratory science in the West African sub-region. The pandemic has exposed our laboratory systems for improvement. The experiences of the early stages of the pandemic in Africa is a wakeup call to all of us. The need for standardization, internationalization and harmonization of training and practice of the science of our profession across the region, has become more important than ever. The threat of infections has revealed the weak links in our health sector across our various countries. The Covid-19 experience is an opportunity for our respective governments to pay more attention to the health sector and particularly the medical laboratory sub-sector.

As major stakeholders in the health sector, the time and stage is set for us to take a second look at our future existence and our contribution to the diagnosis and management of infectious diseases. There is a need to expand training of our professionals and also harmonize curriculum of training Institutions recommended by the West African Health Organization (WAHO). There is also the need to lay emphasis on Specialist Medical Laboratory Science training. One of the strong pillars to be considered for combating future infectious diseases is the West African Postgraduate College of Medical Laboratory Science (WAPCMLS). It is in our collective interest to have the College fully established, more especially in our various countries to train the next generation of specialists for our sub-region.

Mr. Chairman, I believe strongly that there is an urgent need to have our laboratories accredited to ISO 15189:2012 International standards. The Covid-19 pandemic has laid bare the importance of having laboratories produce accurate, reliable and timely results for clinical and public health purposes. We have to lead the way to have our laboratories accredited to these standards. This will increase the confidence of our clients in our services and lead to better health outcomes.

As we deliberate on the future of our practice in the sub-region, let us find ways of creating opportunities out of the current challenges. Let us leave this conference with a roadmap aimed at collaborating in areas of capacity building in our sub-region.

We as a host professional body are open to collaborations with our sister professional bodies and other health institutions to advance our practice as we deliberate on the future.

Please feel free to experience the friendly Ghanaian hospitality, as we deliberate on the future regarding handling of infections and pandemics. I wish you a peaceful stay in Accra. To our virtual participants, we invite you to visit our beautiful country soon to experience the Ghanaian hospitality.

Thank you.



# Welcome

## AKAI HOUSE CLINIC

Welcome to the 7th annual CelebrateLAB® West Africa Conference. The theme “Combating Emerging and Re-Emerging Infections Through Standardization of Laboratory Practice Across West Africa.” has been strongly highlighted as the world continues to grapple with the COVID-19 pandemic, one year on. It is our belief that this conference will serve as a platform for laboratory personnel across West Africa to collaborate, share ideas, reach consensus and ultimately develop standardized approaches to combating the infections that affect this subregion.

The COVID-19 pandemic has brought the brilliant work and efforts of laboratory professionals to the fore. We wish to recognize their tireless contribution to ensuring the accurate diagnosis and management of COVID-19 cases, often with some measure of personal risk, to ultimately assure the general health of the population.

We are encouraged by the participation of various regulatory and professional bodies representing multiple West African nations. Their involvement bolsters our belief that disease control cannot be effectively addressed without a multifaceted approach including laboratories, standards and practices agencies, drug administration authorities, public and private health facilities, accreditation bodies and professional councils.

Akai House Clinic wishes to thank the organizers, fellow sponsors, agencies, guest speakers and panelists of the 2021 CelebrateLAB® West Africa Conference, without whose excellent contributions this conference would not be possible.

To all 2021 CelebrateLAB® 2021 participants, we wish you productive and meaningful participation and hope that this conference, as the title indicates, will further yield an effective regional approach to laboratory practices.



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## **WELCOME ADDRESS BY DR. PATRICK KUMA-ABOAGYE, DIRECTOR GENERAL OF GHANA HEALTH SERVICE AT THE OPENING CEREMONY OF CELEBRATELAB WEST AFRICA 2021 CONFERENCE AT THE ALISA HOTEL IN ACCRA, GHANA ON 21ST APRIL, 2021**

Hon. Kwaku Agyeman-Manu, the Minister of Health for Ghana; Dr. Francis Kasolo, the WHO Resident Representative, Ghana; Dr. Yenew Kebede Tebeje, Head of Division, Laboratory Networks and Systems, Africa CDC; the Organizing Partners; Laboratorians; Distinguished Guests, Ladies and Gentlemen. It is an honour to welcome you on behalf of the Ghana Health Service to Accra and to this timely event, CelebrateLAB West Africa 2021 Conference, scheduled to take place from 21st to 22nd. I also extend a warm welcome to our virtual participants.

The service is delighted of your choice of Ghana to host this important conference at a time when our sub region, like the rest of the world, is going through difficult times as we battle a global pandemic.

The theme for the conference, “Combating emerging and re-emerging infections through standardization of laboratory practice across West Africa.” is very timely, not only because of the current pandemic, but also the opportunity that the outbreak of the disease provides us to take another look at our health systems as region and find ways of working together to strengthen them.

The government of Ghana and the Ghana Health Service recognise the important role of the medical laboratory science profession in diagnosis, treatment, disease surveillance and control.

At the onset of the Covid-19 pandemic, many feared if the West Africa sub region, and for that matter Ghana, could cope with the diagnosis and treatment of the disease. I think we can say with certainty that Ghana has done well in managing the outbreak, thanks to the excellent leadership spearheaded by the President of our nation, Nana Addo-Dankwah Akuffo Addo, the Hon Minister for Health and the goodwill and support from development partners, as well as our gallant health workers and citizenry as a whole.

Not only did we get it right from the very beginning of the Covid-19 pandemic, we have also used the opportunity to improve on the country's laboratory systems and its capacity to provide diagnostic support for current and future outbreak of infections. My administration is committed to continuously improving upon our existing laboratory structures to meet the needs of our health system.

Infectious diseases move across borders due to porous borders and globalization. It is therefore important that we strengthen collaboration across our region to ensure the safety of our citizens and to improve health outcomes, hence my decision to commend highly, the organizers and stakeholders of laboratory profession in the subregion, for putting together such timely and educative conference. Indeed, promoting the spirit of corporation and collaboration within and between health professional groups is best approach to assuring the citizens of our sub region and beyond, the health security they need.

As a service, we are proud to co-host the conference and we look forward to receiving the outcome of your deliberations at the end of the conference for consideration.

I wish you a fruitful conference. Akwaba! Vous êtes les bienvenus. Enjoy your stay.

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## **SPEECH BY THE MINISTER FOR HEALTH HONOURABLE KWAKU AGYEMANG-MANU, AT THE FORMAL OPENING OF THE CELEBRATELAB WEST AFRICA 2021 CONFERENCE HELD AT THE SWISS SPIRIT ALISA HOTEL FROM 21ST – 22ND APRIL, 2021**

Dr. Francis Kasolo, Resident Representative of the WHO, Ghana and Chairman for the occasion; Kwabena Boadu Oku-Afari, Chief Director of the Ministry of Health; Dr. Patrick Kuma-Aboagye, Director General, Ghana Health Service; Dr. Yenew Kebede Tebeje, Head of Division, Laboratory Networks and Systems, Africa CDC; the Organizing Partners; Laboratorians; Ms. Candace Eastman, CEO of Africabio Enterprises, Inc., organizers of CelebrateLAB West Africa, Ambassadors, Distinguished Guests; Ladies and Gentlemen, All Protocol duly observed.

It is my esteemed privilege to welcome all laboratory professionals and stakeholders of the medical laboratory industry in the West Africa Sub Region to Accra, Ghana, to celebrate the 2021 medical laboratory week.

I am told this is the first time such a conference is being hosted in our Ghana. Your overarching theme for this year's event, "Combating emerging and re-emerging infections through standardization of laboratory practice across West Africa", has been appropriately chosen to reflect the times we are in. I commend the organizers for the insight and reflection that went into your choice of theme. It is my hope that this conference will generate innovative ideas and strategies on diagnosis to help address the myriad of health care challenges confronting our sub-region and populations.

Mr. Chairman, the outbreak of Covid 19 Pandemic has brought to the fore the vulnerabilities of our individual health systems in the sub-region and has therefore highlighted the need for collaboration and corporation through experience-sharing for better health outcomes for our populations. It is no secret that movement of our peoples across borders is a common feature of our lives and that outbreak of disease within any country places all others in the region at risk. It is therefore important for health professionals and industry stakeholders like you continue to partner Government in order to realize the health goals of the individual countries and our sub region.

The innovation to create a platform for laboratory professionals, international organizations and stakeholders in the laboratory industry is therefore commendable and should be encouraged as it underpins the very principles of ECOWAS. We must therefore be each other's keeper.

The critical contributions of medical laboratory services to the provision of quality healthcare to our citizens has been copiously acknowledged as evidenced by several resolutions which have been made by comity of Ministers of Health within the Subregion and West Africa Health Organisation (WAHO). In addition, appropriate resolutions aimed at strengthening the gaps in the laboratory systems and sector have also been adopted for implementation as a way of recognizing the laboratory services in the mainstream of quality health delivery and not a peripheral and dispensable service.

Government is committed to ensuring that the critical resources, including a competent and well-motivated and trained workforce is available in our sub-region in order to address the current and future pandemics. Government will continue to support the training of highly-skilled and adequate numbers of professionals for quality health delivery.

We have demonstrated our commitment to supporting workers in these difficult times with many incentives to health workers during the pandemic in order motivate them to play their vital role as frontline warriors of healthcare systems, especially in this Pandemic.

The Covid-19 pandemic has certainly increased government's expenditure and in addition, negatively

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affected revenue generation efforts of government due to the low productivity resulting from the partial lockdown and restrictions in 2020 of the epicentres of Ghana. Similar actions have been taken by other countries in the sub region which has led to decline in economic activity and growth. In order to return our national economies to full activity and growth, the Government of Ghana is currently rolling out a plan to vaccinate over 20 million Ghanaians to slow down the spread of the virus while enforcing Covid 19 protocols. The president of Ghana. H.E Nana Addo Dankwa Akufo-Addo has commissioned a team of experts to work on developing facilities for vaccine production in the country in order to ensure a more sustainable Vaccine supply.

Even though the pandemic has brought about challenges in our efforts in meeting the budgetary demands of our country, government continues to invest in the health sector. Government has launched the agenda 111 aimed at providing hospitals across all new districts and regions in the country. This initiative is unprecedented. It is by far one of the highest investments in the health sector. The project when completed, will not only serve the health needs of our people but also provide avenue for employment of health professionals who will man these facilities.

To ensure that our public health preparedness meet the global standards for disease control and prevention, government has partnered with the private sector to establish the Ghana Infectious Disease Center. Plans are far advance to replicate the centers in the middle and northern sector of our country. For us the covid-19 pandemic has just accelerated the vision of the government to improve upon the existing health infrastructure.

Mr Chairman, let me reiterate the commitment of Government and my Ministry to continue our agenda of instituting and implementing the right regulatory and policy environment need to facilitate the provision of the quality laboratory services and Universal Health Care to our citizens.

I wish to once again congratulate the organizers for putting together this conference and choosing Accra, Ghana as your . I will await your official Resolutions of the conference deliberations.

On this note I officially declare the CelebrateLAB West Africa 2021 Conference duly open.

I wish you a fruitful conference.

Thank you.



## Ambassadors

### **Dr. Dennis Adu-Gyasi**

Dr. Dennis Adu-Gyasi is a Consultant Medical Laboratory Scientist, Health Research expert, Immunologist, Infectious Disease expert. He is also a test method validation and QC/QA expert as well as a WHO SLMTA trainer. He has a PhD in Immunology from the Kwame Nkrumah University of Science and Technology (KNUST), an MSc in Infectious Disease from the University of London /London School of Hygiene and Tropical Medicine, UK.

He is currently the acting Laboratory Manager at the Seth Owusu-Agyei Medical Laboratory, Kintampo Health Research Center, Brong Ahafo, Ghana. Dr. Adu-Gyasi provides professional expertise, consultancy services, and advice on laboratory systems strengthening with respect to diagnostic capacity, facilitation, training, and staff capacity building. Dr. Adu-Gyasi also provides consultancy in quality assurance, development, and review of policy and program guidelines to the Government of Ghana through the Ghana Health Service and the Professional Body for Medical Laboratory Practice in Ghana, Ghana Association of Medical Laboratory Scientists.

### **Air Commodore Edward Abayomi Akinwale (Rtd)**

Air Commodore Edward Abayomi Akinwale (Rtd) is a Fellow Member of the Medical Laboratory Science Council of Nigeria. He holds a Master's degree in Biochemistry, a Master's degree in Public Administration, and PhD in Haematology. He is a Certified Laboratory Auditor of the African Society for Laboratory Medicine. He was commissioned into the Nigerian Air Force (NAF) in December 1985 and rose to the rank of Air Commodore in December 2009. He voluntarily retired from the NAF in October 2015. During his tour of duty in the NAF, he commanded most of the medical laboratories in the Service. He is the author of the book titled 'A Guide for Unlocking SLIPTA Checklist and ISO 15189' - A preparation tool for 5-star performance towards international accreditation of medical laboratories. After retiring from the Nigerian Air Force, he has been working with the Henry Jackson Foundation, US Military HIV Research Program Nigeria as the Laboratory Quality Assurance Manager overseeing the research laboratories across West Africa.

### **Kwame Asante**

Kwame Asante, an ASCP-certified Medical Laboratory Scientist, received his undergraduate degree in 2000 in Virginia, U.S.A. Since graduating, he worked as a Generalist in several clinical laboratories in departments such as Hematology, Clinical Chemistry, Blood Bank, and Microbiology. In 2005, he joined the Georgia Public Health Laboratory in Atlanta, Georgia where he was part of the Immunology Department and the Bioterrorism Unit that performed testing on suspected white powder for anthrax. Later, he was the Science Lead and Program Manager for the BioWatch surveillance program across the U.S. With his Master's in Business Administration, Kwame Asante joined the Clinical and Laboratory Standards Institute in 2016 as a Program Manager overseeing Quality Management Systems activities in Kenya, Tanzania and Zambia. In 2018, he joined the Association of Public Health Laboratories and relocated to Ghana as Technical Lead to support PEPFAR and GHSA funded activities. Kwame is currently pursuing a Master's in Public Health.

### **Dr. Ignatius Nchor Abowini Awinibuno**

Dr. Ignatius Nchor Abowini Awinibuno is an experienced Medical Laboratory Scientist with over 20 years of expertise in Chemical Pathology and currently the Supervisor for the Chemical Pathology Department of the Korle Teaching Hospital in charge of day-to-day operations of the department. He is a Deputy Chief Medical Laboratory Scientist at the same hospital. He holds a BSc. Medical Laboratory Science, MPhil. Chemical Pathology from the Kwame Nkrumah University of Science and Technology (KNUST), a Doctor of Medical Laboratory from the University for Development Studies (UDS), and Master of Business Administration (Corporate Governance) from the University of Professional Studies (UPS). He is also a Fellow of the West African Postgraduate College of Medical Laboratory Science.

Dr. Awinibuno is the current Chairman of the Council of Presidents of the Ghana Federation of Allied Health

## Ambassadors

### **Dr. Ignatius Nchor Abowini Awinibuno - cont'd**

Professions. He played a pivotal role in advocating for financial clearance for over 3,400 unemployed medical laboratory professionals to be employed. He showed leadership in the formation of Societies of the Association, including Society of Medical Laboratory Managers Ghana, Labpreneurs Network and Medical Laboratory Professional Workers Union. He was also instrumental in advocating for the inclusion of laboratory professionals in Hospital Management Committees, advocating for the formation of the Allied Health Professions Council Board. He led the advocacy for the inclusion of Allied Health professionals in governing boards of all teaching hospitals in the country. He is the CEO of WLMRCX Health Laboratory Services & Consult. Dr. Awinibuno is the immediate past President of the Ghana Association of Medical Laboratory Scientists (GAMLS) and a former Financial Secretary of the Association.

He is a part-time lecturer in Chemical Pathology and Quality Assurance at the Narh-Bita College, School of Allied Health Sciences, and School for Development Studies. He is also a facilitator and presenter at seminars and conferences on Quality Management Systems, Leadership, and Ethics. He currently serves on the Ministerial Committee for Logistics and Commodities set to manage commodities for Ghana's fight against the COVID-19 pandemic.

### **Dr. Nene Salamata Bah**

Nene Salamata Bah is a Senior Lab Technologist at the National Service of Occupational Medicine, Guinea. She holds a master's degree in Medical Biology from Gamal Abdel Nasser University, Conakry, Guinea.

### **Dr. Laud Anthony Basing**

Dr. Laud Anthony Basing is Medical Laboratory Scientist, Engineer, Innovator and Entrepreneur. He is a lecturer at the Department of Medical Diagnostics, KNUST and the Founder and CEO of Incas diagnostics. He is also the Executive Director of Incas Impact Foundation. Dr. Basing is a 2016 Mandela Washington Fellow in the Business and Entrepreneurship track and was previously, the Chairman of the Linkages Committee of the West and Central African Regional Advisory Board for the fellowship. He is a member of American Society for Microbiology (ASM)'s Young Leaders Circle, and the former ASM Young Ambassador to Ghana. He is the former Vice Curator of the Kumasi hub of the Global Shapers Community, a former President of the Young African Leaders' Network-Ghana and a member of the Alliance for Young Entrepreneurs Ghana. On the professional front in Medical Laboratory Practice, he is a former regional executive of the Ghana Association of Medical Laboratory Scientists (GAMLS) having been the Secretary of the Komfo Anokye Teaching Hospital (KATH) Chapter, Ashanti Regional Secretary and Financial Secretary, and Ashanti Regional Vice Chairman. Laud Anthony is the first Ghanaian to have been nominated for the Innovation Prize for Africa, a prestigious award aimed at strengthening African innovation ecosystems through supporting a culture of innovation and competitiveness, whilst spurring growth of innovative, market-driven African solutions to African challenges.

### **Bolay, Fatorma K. (Ph.D.) - (Deceased - March 20, 2021)**

Bolay, Fatorma K., Director, Liberia Institute for Biomedical Research (LIBR). He holds a Doctor of Philosophy-Immunology and Infectious Disease. (Medical Entomology) The Johns Hopkins University, School Hygiene and Public health, Baltimore MD. USA. He holds a certificate in Epidemiology from the Summer Graduate program, Johns Hopkins University School of Hygiene and Public Health, Baltimore MD. USA, M.Sc. – Parasitology, University of Bridgeport, Bridgeport, CT., USA and a B.Sc. General Science, Cuttington University College, Liberia. Dr. Bolay is the Chairman, National Research Ethics Board, Republic of Liberia. He is a member of Society for Invertebrate Pathology, Entomological Society of America, Helminthological society of Washington and American Public health Association. Dr. Bolay's Doctoral Thesis PUBLICATIONS: Biological control and Fauna Assessment of Anopheles gambiae. Vector of malaria Breeding in Rice Field in Liberia, West Africa



## **Prof Alexander Yaw Debrah**

Professor Alexander Yaw Debrah is an Associate Professor of Parasitology and Global Health at the Department of Medical Diagnostics and the Dean of Faculty of Allied Health Sciences at the Kwame Nkrumah University of Science and Technology (KNUST) in Ghana. He holds a Master's in Clinical Microbiology and PhD in Medical Parasitology. He became a lecturer at the Faculty of Allied Health Sciences at KNUST in 2007, where he teaches Medical Parasitology at the Medical School and the Faculty of Allied Health Sciences. He has held a number of positions at the KNUST, including Head of Department amongst other positions.

Prof. Debrah is a research scientist and has over 50 publications in peer reviewed journals. He has received several international awards including American Society of Tropical Medicine and Hygiene (ASTMH) Travel Award in 2007, a nomination by VW Foundation of Germany to attend a forum of Nobel laureates and young promising scientists in Lindau, Germany in 2010, the prestigious bi-annual main prize of the German Paul-Ehrlich-Society for anti-infective therapy ("PEG") in 2013. He has also won both Junior and Senior fellowships of European Foundation Initiative on Neglected Tropical Diseases (EFINTD) and EDCTP Senior fellowship award (2020). He has several ongoing research activities sponsored by Bill and Melinda Gates Foundation, European Commission, European Foundation Initiative on Neglected Tropical Diseases (EFINTD), and EDCTP among others.

He has held a number of international positions including being a member and co-Chair of the planning committee of Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) of the American Society of Microbiology from 2014-2016. He was the first African to hold this position since the formation of ICAAC about 60 years ago. Prof. Debrah has research collaborations with many international universities including the University of Bonn, Bernhard Nocht Institute of Hamburg, Liverpool School of Tropical Medicine, University of Edinburgh, Case Western Reserve University of Cleveland, and the University of Buea in Cameroon among others.

## **John B. Dogba**

John B. Dogba is currently the Director of the National Public Health Reference Laboratory in Liberia with the National Public Health Institute of Liberia (NPHIL). He is a PhD Candidate at the University of Ibadan in the Faculty of Veterinary Medicine / Department of Veterinary Public Health and Preventive Medicine. He is also a part-time Lecturer at the University of Liberia in the Department of Biology on the Clinical Medical Sciences Pathway. He has more than 17 years of experience as a Laboratory Scientist, Public Health Specialist, and researcher. He has experience working with the government of Liberia at the Ministry of Health (MoH) Liberia (National Diagnostics Unit Congo Town, Liberia, as National Quality Manager and Director); The National Public Health Institute of Liberia and International NGO's including the UN (Mentor Initiative (PMI/USAID), Global Fund, MSH (USAID), DAI (USAID) and WHO. His research work covers MDR-TB, Lassa fever, Laboratory System Strengthening, One Health and Infectious Diseases in Liberia. His research focuses on the evaluation of GeneXpert for integrated testing for infectious diseases including TB, Ebola, Antimicrobial Resistant Surveillance, One Health and Viral Hemorrhagic Fever monitoring in Liberia. He has several publications spanning Lassa fever, Tuberculosis, Rabies, infectious diseases, and laboratory systems in Liberia. He is the champion for One Health in Liberia.

## **Candace Eastman**

Candace B. Eastman, CEO and Founder of Africabio Enterprises Inc., began her professional career as a bench scientist and worked in all areas of the clinical laboratory. She also worked as a bench scientist for biotechnology companies before taking on more managerial roles in quality management systems. She focused the majority of the last 20 years of her profession in business development. She built strategic relationships with firms whose products were at various phases of clinical development in the U.S, as well as building experience in W. Africa. She holds an MBA with a concentration in strategic management from Johns Hopkins University.

At the Biotechnology Industry Organization (BIO) in the U.S, she worked alongside the Midwest Investor Network to showcase economic development efforts to companies in other parts of the country, which resulted in



## **Candace Eastman - cont'd**

a fertile ground for new life science investment opportunities in Mid-America. She assisted in starting up BIO Ventures for Global Health. In W. Africa, she's worked in various leadership positions in Liberia's Ministry of Health (MoH) and Commerce. As the Director of the National Diagnostic Unit of MoH, she spearheaded the creation of the first strategy and national policy. As Liberia's Deputy Minister of Commerce and Industry, she created avenues for trade mainstreaming and led the development of Liberia's export strategy of agricultural products. As Founder of Africabio Enterprises, her diverse range of experience has allowed for its growth and expansion through opportunities in developing a diversified company with a core technical focus in laboratory systems strengthening and horizontal services in organization and leadership development. Now in its 7th year, Ms. Eastman's experience in business planning, organizational development, financial analysis, and creating opportunities for business-to-business partnerships positively impacts the bottom line of Africabio Enterprises, Inc. She is also the co-founder of CelebrateLAB®, a regional W. African event for laboratory professionals.

## **Blessing Ekanem**

Blessing Ekanem is an enthusiastic and expert Medical Laboratory Scientist. She received her Bachelor of Science degree (B.Sc.) in Medical Microbiology from the University of Calabar, Associate of Medical Laboratory Science (AMLS) from Federal School of Medical Laboratory Science Jos University Teaching Hospital and Master's in Public Health from the University of Nigeria (UNN) Enugu campus. She is currently working as Laboratory Technical Officer with World Health Organization (WHO) Nigeria. She has contributed immensely to the strengthening of laboratory capacity to rapidly respond to the COVID-19 pandemic. Ms. Blessing Ekanem through the trust and confidence from the Nigerian Center for Disease Control championed the training of health care workers on proper collection, packaging and transport of COVID-19 samples for diagnosis of SARS CoV-2 which contributed to the success achieved in the response. She had previously served as a Laboratory Technical Advisor with WHO Liberia where she collaborated with MOH, NPHIL and partners to establish in country testing capacity for HIV Early Infant Diagnosis (EID) and scaled up testing-integrated testing for HIV Viral load, TB and EID, and supported establishment of more laboratory capacity for AMR. Before joining the development NGO, Ms. Blessing had the privilege of working as a Laboratory Manager as well as Deputy in TB reference and research Labs.

## **Dr. Kassaye Tekie Desta (MSc, MPH & PhD)**

Dr. Kassaye Tekie Desta is a Senior Laboratory Scientist and certified public health professional with 18 years of technical and managerial experience in diagnostic laboratories, pharmaceutical quality control laboratories, hospital management, and health science colleges. Kassaye holds an MSc degree in Medical Microbiology from Addis Ababa University, Faculty of Medicine, Master of Public Health (MPH) and PhD in Health Science from the University of South Africa. From 2009 to 2011, he worked as a national quality assurance manager for the Ethiopian Public Health Institute (EPHI); former Ethiopian Research and Nutrition Research Institute (EHNRI) seconded by CHAI Ethiopia. From 2011 to 2017, he worked for Clinton Health Access Initiative (CHAI) Liberia and Ethiopia as a Laboratory Specialist. From 2011 to 2017, he provided the necessary support for the completion of several in-service trainings in HIV point of care testing, HIV 1 DNA PCR for Early Infant Diagnosis and Viral load testing in Ethiopia and Liberia as well as several laboratory quality management system trainings. Kassaye led the Initiation of the first HIV molecular test at the national reference laboratory of Liberia and the first MTB/RIF GeneXpert testing in Liberia.

## **Sarah Kwao**

Sarah Kwao is the Quality Manager of the Pathology Division of the 37 Military Hospital. She was employed by the Ministry of Defense to serve at the military hospital as a Medical Laboratory Scientist after her one-year national service at the same institution. By dint of hard work, she rose through the ranks and was appointed to serve on the quality steering committee as logistics officer of the Pathology Division of the Military Hospital in 2012. She diligently combined this appointment with service as the Deputy Head of the Chemical Pathology

## **Sarah Kwao - cont'd**

Department until July 2018 when she was appointed to fill the role of her former boss as the Quality Manager. She was also nominated in August 2014 to serve as the Laboratory Officer of the Ghanaian Medical Contingent 11, a United Nations' level II hospital in Cote d'Ivoire (UNOCI-GHANMED 11). She is also the laboratory's representative of the National Aids Control Program (NACP) in the hospital and a member of the Joint West African Research Group constituted by the US Naval Research Unit 3 (JWARG/NAMRU 3)" She brings on board a 14-year working experience as a Laboratory Scientist.

## **Ellen Munemo**

Ellen Munemo is trained as a medical laboratory scientist at the University of Zimbabwe. Ellen is a very experienced technical expert in laboratory system strengthening as she is an all-rounder in the medical laboratory field. She is a medical microbiologist with more than 20 years of progressive experience and a proven record of significant, successful contribution in the public health laboratory field. She spearheaded the setting up of the TB culture laboratory at the National Microbiology Reference Laboratory in Harare, Zimbabwe (2010), and served as a TB laboratory consultant for the WHO-AFRO Region from 2013 – 2017. She has vast experience in the implementation of laboratory quality management system based on ISO15189 and implementation of the SLIPTA/SLMTA program. Ellen was heading the National Microbiology Reference Laboratory when they attained ISO15189 accreditation in 2017. She worked with with a CDC funded project under the University of Massachusetts, Academic Consortium Combating Ebola in Liberia (ACCEL), that was instrumental in the introduction of the SLMTA program in Liberia. She also has experience in project management and leadership development.

Ellen has vast experience which she acquired through exposure to working on diverse roles that involved leadership and strategy development, monitoring and evaluation, risk management, resource management, budgets, grant application and contract management. Ellen has worked in Zimbabwe, Botswana and Liberia and with her TB work, she has provided consultancy to Ghana, Ethiopia, South Sudan, Gambia, Mozambique, Botswana and Namibia.

## **Dr. Dougbeh Christopher Nyan**

Dr. Dougbeh Christopher Nyan is a Liberian medical doctor, biomedical research scientist, inventor and social activist. He earned his medical degree in human medicine from the Medizinische Fakultät (Charité) der Humboldt-Universität zu Berlin in Germany. Dr. Nyan has expertise in infectious disease research. He was trained and worked as scientist at the US National Institutes of Health, the University of Pennsylvania School of Medicine, and the US Food and Drug Administration (FDA) in the USA. He is the inventor of the US-patented rapid multiplex pathogens diagnostic test that detects and simultaneously identifies multiple infections in less than an hour. The "Nyan-Test" is rapid, portable, affordable and easy to use in many settings. During the 2014 Ebola epidemic in West Africa, Dr. Nyan testified before the US Congress and provided a road map to ending the Ebola outbreak as well as proposed the establishment of the African Center for Disease Control and National Public Health Institutes in the African regions. He has published in peer-reviewed scientific journals including "Nature" (Scientific Reports), "Clinical Infectious Diseases" and the "International Journal of Infectious Disease." He is the winner of the 2017 African Innovation Special Prize for Social Impact and Lifetime Achievement Award in Science Research in Medicine from the Ward Educational Fund. Dr. Nyan currently serves as Chief Medical and Scientific Officer of Shufflex Biomed, a diagnostic start-up company that develops testing kits for infectious diseases. He is a member of the International Society for Infectious Diseases (ISID), the European Society of Clinical Microbiology and Infectious Diseases (ESCMID), and the American Association for the Advancement of the Sciences (AAAS). Dr. Nyan is currently active in the fight against the COVID-19 pandemic in the US and Africa as Member of the Maryland Medical Reserve Corps and the Diaspora COVID-19 Pandemic Focus Group.



## **Dr. Adrian Oddoye**

Dr. Adrian Oddoye is the Founder and Medical Director of Akai House Clinic. A General Practitioner with over 20 years of practice, Dr. Oddoye is a proponent of preventive medicine and community health. He is a Trustee of the University of Ghana College of Health Sciences and a member of the Ghana Medical Association, the University of Ghana Alumni Association, the Society of Private Medical and Dental Practitioners as well as the International Panel Physicians Association.

Dr. Oddoye has been the US Embassy Post Medical Adviser since 1996, and is a panel physician for the US Embassy, Canadian High Commission and Australian High Commission. Dr. Oddoye has served as the KLMAir France Consulting Physician for over 10 years and has consulted both on the ground and in-flight. He is the current president of the Ghana Club, a social club dedicated to preserving the cultural and social history of Ghana.

## **Dr. Alexander Martin-Odoom (Ph.D., MSc, BSc)**

Dr. Alexander Martin-Odoom is a Senior Lecturer at the School of Biomedical & Allied Health Sciences, University of Ghana, teaching Virology to Undergraduate and Postgraduate students and training Medical Laboratory Scientists for the health sector. He is the President of the Association of Private Medical Laboratories, Ghana. He is the Board Chairman of Quadushah Medical Diagnostic Centre Ltd in Tema and the Board Chairman of Hamagen Molecular Laboratory Consult Ltd in Tema. He is a member of the National Laboratory Network for COVID-19 PCR Testing (working on the National Quality Assessment Programme for COVID-19 Testing). He is the Medical Coordinator of Baobab Medical Centre, Biriwa- an Amicus Onlus Project (Not-for-Profit Organization). He is a Member of the Examination Committee and External Assessor for the National Board for Professional and Technicians Examinations (NABPTEx)-Health Sciences Committee. He is a Consultant Clinical Virologist/Medical Laboratory Scientist. He has oversight responsibilities in satellite laboratories in 3 hospitals in the Greater Accra Region. He has several publications in peer reviewed journals on research interest spread across viruses causing major human diseases. He has more than 25 years of experience in medical laboratory sciences practice in hospitals, clinics, and independent medical laboratories.

## **Dr. Adeola Olanrewaju Oluboyo**

Dr. Adeola Oluboyo is a Lecturer, Researcher, and Scientist. She has PhD in Medical Laboratory Science (Immunology). Her area of specialization is Chemical Pathology (Clinical chemistry). She is a fellow member of the Medical Laboratory Science Council of Nigeria (MLSCN) with more than 20 years' experience in teaching and laboratory services in Nigeria with a proven track record of research in both communicable and non-communicable diseases with special interest in HIV/AIDS, Malaria, Cancer, Hypertension, and Diabetes. She has a passion for training, mentoring and providing support in the form of consultancy services to young researchers. She has been actively involved in clinical laboratory operations, management, teaching, mentoring, and clinical research. She has served in several capacities as a public speaker, coordinator, and Head of the Department. She also has a passion for women and children's health and participates in voluntary and free health services for people in various communities.

## **Dr. David Agyapong Opore**

Dr. David Agyapong Opore holds a BSc Second Class Upper Degree from Kwame Nkrumah University of Science and Technology (KNUST), a Medical Doctor's degree from Moscow Institute of Medicine, a Master of Public Health from University of Ghana, a MSc Medical Microbiology degree from London School of Hygiene and Tropical Medicine (LSHTM), and a diploma DLSHTM (Diploma London School of Hygiene and Tropical Medicine) also from LSHTM. He is a Senior Public Health Specialist and a Fellow at the Ghana College of Physicians and Surgeons. He worked in several hospitals as a Medical Officer notably are Komfo Anokye Teaching hospital, Atebubu Government hospital and Sunyani Municipal and Regional Hospitals. He served as the District Director of Health Services in Atebubu District and Sunyani Municipal Health Directorate.



## **MLS William Addo Mills-Pappoe**

William Addo Mills-Pappoe is an experienced Medical Laboratory Scientist who has been in active service for 30 years, during which he has held several positions. He is currently a Chief Medical Laboratory Scientist and Head of Clinical Laboratory Unit, Institutional Care Division, Ghana Health Service. MLS Mills-Pappoe is an accredited Auditor of African Society for Laboratory Medicine (ASLM). He was Regional Biomedical Scientist, in the Volta Region, Ghana for 12 years. He holds MSc Haematology from University of Westminster, London, a certificate in Health Administration and Management (HAMS) from GIMPA, and a certificate in Strategic Management for Public Health Laboratory Systems from George Washington University in the USA, and in Clinical Laboratory Technology from Tokyo, Japan

Mills-Pappoe has undertaken research in several areas including the "Role of Glutathione in Defence Against Nitrosative Stress in Erythrocytes (2004)", "Implementation of Human Leucocyte Antigen (HLA) Testing in Ghana (2003)", "Rate of Reticulocyte Count in Ghanaian Adult Sickle Patients in the Steady State (1998)", "Laboratory-based Nationwide Surveillance of Antimicrobial Resistance in Ghana (2015)", "Assessing Diagnostic Capacity and Laboratory Services in Ghana (2016)", and "Proficiency testing for malaria microscopic diagnosis: two years of implementation in Ghana."

## **Dr. Abu Abudu Rahamani**

Dr. Abu Abudu Rahamani is a seasoned laboratory professional with expertise in Clinical Microbiology. He has more than 20 years of practical experience, during which he has held several positions. He is a Deputy Chief Medical Laboratory Scientist currently working as a Regional Medical Laboratory Scientist with the Ghana Health Service in the Upper East Region. He is an Assistant Lecturer at the Bolgatanga Technical University. He holds a BSc. in Medical Laboratory Science from the University of Ghana, Mphil from the Kwame Nkrumah University of Science and Technology (KNUST), and a Doctor of Medical Laboratory from the University for Development Studies (UDS). He is a Foundation Fellow of the West African Postgraduate College of Medical Laboratory Science.

Dr. Rahamani is the current President of the Ghana Association of Medical Laboratory Scientists (GAMLS) and Board Chairman of the Medical Laboratory Cooperative Credit Union. He is a leading member of the Labpreneurs Network, a platform for Entrepreneurs of the Association. He was a former Regional Chairman for the Upper East Regional Branch of GAMLS and former vice president of the Ghana Association of Biomedical Laboratory Scientist. Dr. Rahamani is an ambassador for CelebrateLAB West Africa Conference.

## **Haja Dr. Isatta M. Wurie**

Dr. Isatta Mamyiye Wurie is an Associate Professor at the Department of Chemical Pathology and Laboratory Sciences, Faculty of Basic Medical Sciences, College of Medicine and Allied Health Sciences. She holds an MSc. Modules Virology from the Liverpool John Moore University and a Post Graduate Module Intensive Epidemiology and Medical Statistics from the London School of Hygiene and Tropical Medicine (LSHTM). Dr. Wurie also possesses a Post Graduate Certificate in Biomedical Science from the University of Westminster, where she majored in Clinical Chemistry (Chemical Pathology) and Biology of Diseases. She also holds IBMS Certificate of Expert Practice (CEP) and a collaborative Doctor of Philosophy (PhD) in Viral Epidemiology from the University of Portsmouth and the LSHTM.

She is currently the Vice Chair of the Medical Research Council, Sierra Leone, a Fellow of the Institute of Biomedical Science in UK and the ECOWAS Regional Medical Laboratory Quality Auditor. She co-chairs the National Laboratory Technical Working Group and the Scientific and Technical Advisory Group for Emergencies in Sierra Leone. In addition to being a member of the WHO Regional 5-man Expert Technical Working Stream, she serves as a member of Sierra Leone's Scientific and Ethical Review Committee, a member of the African Society for Laboratory Science, a Board Member of the Directors of African Society for Laboratory Medicine (ASLM) as well as a member of PREVAC-UP External Advisory Board: The Partnership for Research on Ebola Vaccinations-extended Follow-up and Clinical Research Capacity Building Build-up. She also played instrumental and enviable roles which resulted in the establishment of accreditation systems (SLMTA) in Sierra Leone and the Molecular Unit in Central Public Health Reference Laboratory in Sierra Leone.

**Session 1**

- 7:00 a.m. - 12:00 pm. - **Registration**
- 7:00 a.m.- 8:00 a.m. - **Breakfast / Poster Session**
- 8:00 a.m. - 9:10 a.m. - **Welcome**  
**Opening Statement**
- 9:10 a.m. - 10:15 a.m. - **Opening Plenary** -  
Combating Emerging and Re-Emerging Infections Through Standardization of Laboratory Practice Across West Africa
- 10:30 a.m. - 11:45 a.m. - **Balancing COVID-19 Pandemic Response While Protecting Public Health Gains in Laboratory Diagnosis of HIV, TB, and Malaria**
- 11:45a.m. - 12:45p.m. - **Lunch**
- 12:45 p.m. - 2:00p.m. - **Testing Times - Biomedical Laboratory Scientists Roles in the COVID-19 Pandemic**
- 2:00 p.m. - 3:15 p.m. -
- 3:30 p.m. - 4:45 p.m. - **From Donor Dependency to African Self-Sufficiency in Laboratory Medicine**

**Session 2**

- 10:30 a.m. - 11:45 a.m. - **Accreditation for Public Health Laboratories - Meeting International Standards**
- 11:45a.m. - 12:45p.m. - **Lunch**
- 12:45 p.m. - 2:00p.m. - **Quality Health Services - Quality Management and Quality Assurance**
- 2:00 p.m. - 3:15 p.m. - **Exploring Collaborative Opportunities for Biotech-pharmaceutical Entrepreneurships and Manufacturing in West Africa**
- 3:30 p.m. - 4:45 p.m. - **Case Study: COVID-19- Strengthening Diagnostic Systems- Uganda**

**Session 1**

- 7:00 a.m. - 12:00 pm. - **Registration**
- 7:00 a.m.- 8:00 a.m. - **Breakfast / Poster Session**
- 8:00 a.m. - 9:00 a.m. - **Welcome**  
**Opening Statement**
- 9:00 a.m. - 10:15 a.m. - **Opening Plenary** - Epi-Surveillance, Outbreak Prevention, and Laboratory Challenges in COVID-19 Era in West Africa
- 10:30 a.m. - 11:45 a.m. - Achieving International Standards in the Management of Laboratory in West Africa
- 11:45a.m. - 12:45p.m. - **Lunch**
- 12:45p.m. - 2:00p.m. - Biological and Hazardous Waste Management in the Era of COVID-19
- 2:00 p.m. - 3:15 p.m. - Implementation of Standards for Medical Laboratories in West Africa - Requirements for Quality and Competence
- 3:30 p.m. - 4:45 p.m. - Global Health Security and Clinical Best Practices in West Africa

**Session 2**

- 10:30 a.m. - 11:45 a.m. - Clinicians Perspectives on Challenges in COVID-19 Diagnostics
- 11:45a.m. - 12:45p.m. - **Lunch**
- 12:45p.m. - 2:00p.m. - SLIPTA Update
- 2:00 p.m. - 3:15 p.m. - From Research and Development to Commercialization of Emerging Technologies in West Africa
- 3:30 p.m. - 4:45 p.m. - Creating and Sustaining the value Chain in the Healthcare Industry

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## **HOST**

Africabio Enterprises Inc.

## **CO-HOST**

Ghana Association of Medical Laboratory Scientists

Akai House Clinic

Ghana Health Service

## **EXECUTIVE**

Akai House Clinic

## **LEADER**

DCL Laboratory Products Ltd.

A Global Healthcare Public Foundation

## **INSTITUTIONS OF CONFERENCE AMBASSADORS**

- Africabio Enterprises Inc.
- Shufflex Biomed, LLC (USA & Liberia)
- Henry M. Jackson Foundation for the Advancement of Military Medicine (HJF), Nigeria
- Kintampo Health Research Centre (KHRC)
- University of Sierra Leone
- Korle Bu Teaching Hospital, Ghana
- Ghana Association of Medical Laboratory Scientists (GAMLS)
- World Health Organization (WHO), Nigeria
- Infectious Disease Detection and Surveillance (IDDS), Liberia
- Association of Public Health Laboratories (APHL), Ghana
- National Service of Occupational Medicine, Guinea
- 37 Military Hospital, Ghana
- Ghana Health Services
- Akai House Clinic, Ghana
- Kwame Nkrumah University of Science and Technology (KNUST), Ghana
- Afe Babalola University, Nigeria
- Association of Private Medical Laboratories, Ghana
- National Public Health Institute of Liberia
- Incas Diagnostics, Ghana

# Agenda

## Day 1 - April 21, 2021

6:30 AM - 7:00 AM	Arrival of participants & Ambassadors on site/ Registration	-	Conference Hosts
7:00 AM - 8:00 AM	Breakfast Onsite/ Poster Session	-	Alisa Hotel
8:00 AM - 8:05 AM	Participants seating	-	Conference Hosts / Organizing Committee
	Online platform opens for participants to join	-	Conference Hosts / Organizing Committee
8:05 AM - 8:10 AM	Arrival & Procession of Invited Guest & Dignitaries	-	Organizing Committee / Protocol Team
8:10 AM - 8:15 AM	Chairman's Opening Remark	-	Dr. Francis Kasolo, Resident Representative, World Health Orgnaization, Ghana
8:15 AM - 8:20 AM	Introduction of Guest Speakers & Invited Guests/ Dignitaries	-	Dr. Dennis Adu-Gyasi, Principal Medical Laboratory Scientist/research Fellow Kintampo Health Research Centre (KHRC)
8:20 AM - 8:25 AM	Welcome Address by host	-	Dr. Patrick Kuma-Aboagye, Director General, Ghana Health Services
8:25 AM - 8:30 AM	Address by Organizing Committee Chairperson	-	Candace Eastman, CEO, Africabio Enterprises Inc.
8:30 AM - 8:35 AM	Address by Organizing Partner	-	Dr. Abu Abudu Rahamani, President, Ghana Association of Medical Laboratory Scientists (GAMLS)
8:35 AM - 8:40 AM	Acknowledgement/Introduction of CL Ambassadors	-	Air Commodore Edward A. Akinwale (Rtd), Laboratory Quality Assurance Manager, Henry Jackson Foundation for the Advancement of Military Medicine , Nigeria
8:40 AM - 8:45 AM	Guest Speaker	-	Haja Dr. Isatta M. Wurie, Senior Lecturer and Coordinator, College of Medicine and Allied Health Sciences, University of Sierra Leone
8:45 AM - 8:50 AM	Guest Speaker	-	Prof James Damen, President, Association of Medical Laboratory Scientists of Nigeria
8:50 AM - 8:55 AM	Guest Speaker	-	Beatrice van der Puije, Program Manager, African Society for Laboratory Medicine
8:55 AM - 9:00 AM	Keynote Speaker	-	Dr. Talkmore Maruta, Senior Biosafety and Biosecurity Office, Africa Centres for Disease Control and Prevention, Lusaka, Zambia
9:00 AM - 9:05 AM	Special Guest of Honor	-	Hon. Kwaku Agyeman-Manu, Minister of Health, Minsitry of Health of Ghana
9:05 AM - 9:10 AM	Acknowledgment of Sponsors	-	Dr. Dennis Adu-Gyasi, Principal Medical Laboratory Scientist / Research Fellow, Kintampo Health Research Centre (KHRC)

*Sponsored By: Akai House Clinic*

9:10 AM -  
10:15 AM

- Opening Plenary - Combating Emerging and Re-emerging Infections through Standardization of Laboratory Practice Across West Africa**
- Panelists** - *Dr. Adrian Oddoye*, Founder and Medical Director, Akai House Clinic  
*Prof. Alex Dodoo*, Chief Executive Officer, Ghana Standards Authority  
*Prof. James Damen*, President, Association of Medical Laboratory Scientists of Nigeria  
*Dr. Peter Clement*, Country Representative, World Health Organization, Liberia  
*Dr. Abu Abudu Rahamani*, President, Ghana Association of Medical Laboratory Scientists (GAMLS)
- Moderator** - **Haja Dr. Isatta M. Wurie**, Senior Lecturer and Coordinator, College of Medicine and Allied Health Sciences, University of Sierra Leone

10:15 AM -  
10:30 AM

**BREAK**

10:30 AM -  
11:45 AM

**CONCURRENT WORKSHOPS**

*Sponsored By: HJF / JWARG*

- Session 1** - **"Balancing COVID-19 Pandemic Response while Protecting Public Health Gains in Laboratory Diagnosis of HIV, TB, and Malaria"**
- Panelists** - *Ellen Munemo*, Team Lead, Infectious Disease Detection and Surveillance (IDDS)  
*MLS William Addo Mills-Pappoe*, Head & Chief Medical Laboratory Scientist, Clinical Laboratory Unit, Institutional Care Division, Ghana Health Services  
*MLS Alexander Asamoah*, Diagnostic Focal Person, National Malaria Control Program, Ghana Health Service  
*MLS Felix Sorvor*, Head, Laboratory and Diagnostic Unit, National TB Control Programme
- Moderator** - **Dr. Adeola Oluboyo**, Professor for Clinical Chemistry, Department of MLS, Afe Babalola University
- Session 2** - **Accreditation for Public Health Laboratories – Meeting International Standards**
- Panelists** - *Raymond Fatchu*, Accreditation Consultant, 37 Military Hospital/ASLM  
*Dr. Abu Abudu Rahamani*, President, Ghana Association of Medical Laboratory Scientists (GAMLS)  
*Dr. Gifty Boateng*, Head, National Public Health and Reference Lab, Ghana Health Service  
*Sarah Kwao*, Quality Manager, 37 Military Hospital
- Moderator** - **Air Commodore Edward A. Akinwale (Rtd)**, Laboratory Quality Assurance Manager, Henry M. Jackson Foundation for the Advancement of Military Medicine (HJF), Nigeria

10:30 AM -  
11:45 AM



11:45 AM -  
12:45 PM

## LUNCH/ POSTER SESSION

*Sponsored By: Akai House Clinic*

### CONCURRENT WORKSHOPS

*Sponsored By: Ghana Association of Medical Laboratory Scientists*

12:45 PM -  
2:00 PM

**Session 1** - **Testing Times - Biomedical Laboratory Scientists Roles in the Covid-19 Pandemic**

**Panelists** - **MLS Bernard Nkrumah**, Leas Laboratory Technical Advisor, US CDC, GHS Laboratory Program

**Dr. Gifty Boateng**, Head, National Public Health and Reference Lab, Ghana Health Service

**Dr. Anthony Laud Basing**, Consultant Medical Laboratory Scientist, Lecturer, Kwame Nkrumah University of Science and Technology, CEO of Incas Diagnostics, KNUST, Incas Diagnostics

**MLS Felix Sorvor**, Head, Laboratory and Diagnostic Unit, National TB Control Programme

**Moderator** - **Dr. Dennis Adu-Gyasi**, Principal Medical Laboratory Scientist/research Fellow, Kintampo Health Research Centre (KHRC)

12:45 PM -  
2:00 PM

**Session 2** - **"Quality Health Services - Quality Management and Quality Assurance"**

**Panelists** - **Dr. Ignatius A. N. Awinibuno**, Manager, Chemical Pathology Unit, Korle Bu Teaching Hospital

**Hon. Dr. Prince Sodoke Amuzu**, District Chief Executive, Akatsi North District Assembly

**Beatrice van der Puije**, Program Manager, African Society for Laboratory Medicine

**MLS Alexander Asamoah**, Diagnostic Focal Person, National Malaria Control Program, Ghana Health Service

**Prof James Damen**, President, Association of Medical Laboratory Scientists of Nigeria

**Moderator** - **Dr. Adeola Oluboyo**, Professor for Clinical Chemistry, Department of MLS, Afe Babalola University

*Sponsored By: Shufflex Biomed, LLC*

2:00 PM -  
3:15 PM

**Session 1** - **Exploring Collaborative Opportunities for Biotech-pharmaceutical Entrepreneurships and Manufacturing in West Africa**

**Panelists** - **Dr. Anthony Laud Basing**, Consultant Medical Laboratory Scientist, Lecturer, Kwame Nkrumah University of Science and Technology, CEO of Incas Diagnostics, KNUST, Incas Diagnostics

**Candace B. Eastman**, CEO, Africabio Enterprises, Inc.

**Joseph Crayton**, Managing General Partner, Gemini Capital Partners

**Moderator** - **Dr. Dougbeh Chris Nyan**, Chief Executive & Scientific Officer, Shufflex Biomed, LLC (USA & Liberia)

3:15 PM -  
3:30 PM

**BREAK**

*Sponsored By: Africabio Enterprises, Inc.*

**CONCURRENT WORKSHOPS**

*Sponsored By: A Global Healthcare Public Foundation (AGHPF)*

3:30 PM -  
4:45 PM

**Session 1**

- **"From Donor Dependency to African Self-Sufficiency in Laboratory Medicine"**

**Panelists**

- **Dr. Dougbeh Chris Nyan**, Chief Executive & Scientist Officer, Shufflex Biomed, LLC (USA & Liberia)

**Beatrice van der Puije**, Program Manager, African Society for Laboratory Medicine

**Haja Dr. Isatta M. Wurie**, Senior Lecturer and Coordinator, College of Medicine and Allied Health Sciences, University of Sierra Leone

**Moderator**

- **Kwame Asante**, Laboratory Technical Specialist, Association of Public Health Laboratories (APHL)

3:30 PM -  
4:45 PM

**Session 2**

- **Case Study: COVID-19- Strengthening Diagnostic Systems- Uganda**

**Presenter**

- **Prof. Kilian Songwe**, President/Regional Director-Africa, A Global Healthcare Public Foundation

# Agenda

## Day 2 - April 22, 2021

6:30 AM - 7:00 AM	Arrival of participants & Ambassadors on site/ Registration	-	Conference Hosts
7:00 AM - 8:00 AM	Breakfast Onsite / Poster Session	-	Alisa Hotel
8:00 AM - 8:05 AM	Participants seating	-	Conference Hosts /Organizing Committee
	Online platform opens for participants to join	-	Conference Hosts /Organizing Committee
8:05 AM - 8:10 AM	Sponsors Advert	-	Production
8:10 AM - 8:15 AM	Welcome Address by Organizing Partner	-	Dr. Ignatius A. N. Awinibuno, Manager, Chemical Pathology Unit, Korle Bu Teaching Hospital
8:15 AM - 8:20 AM	Opening Remarks	-	Dr. Adrian Oddoye, General Practitioner, Akai House Clinic
8:20 AM - 8:25 AM	Opening Remarks	-	Dr. Fatma Soud, Senior Adviser for Global Health Security Agenda, USAID Liberia
8:25 AM - 8:30 AM	Opening Remarks	-	Dr. Dougbeh Chris Nyan, Chief Executive & Scientist Officer, Shufflex Biomed, LLC (USA & Liberia)
8:30 AM - 8:35 AM	Guest Speaker	-	Kwabena Boadu Oku-Afari, The Chief Director, Ministry of Health, Ghana
8:35AM - 8:45 AM	Sponsors Advert	-	Production
8:45 AM - 9:00 AM	Certification of Conference Attendees	-	



*Sponsored By: Africabio Enterprises, Inc.*

9:00 AM -  
10:15 AM

- Opening Plenary - Epi-Surveillance, Outbreak Prevention, and Laboratory Challenges in COVID-19 Era in West Africa**
- Panelists** - *MLS William Addo Mills-Pappoe*, Head & Chief Medical Laboratory Scientist, Clinical Laboratory Unit, Institutional Care Division, Ghana Health Services
- Dr. Abu Abudu Rahamani*, President, Ghana Association of Medical Laboratory Scientists (GAMLS)
- Eric Karikari Boateng*, Head of Laboratory, Food and Drug Authority
- Dr. Dougbah Chris Nyan*, Chief Executive & Scientist Officer, Shufflex Biomed, LLC (USA & Liberia)
- Moderator** - **Air Commodore Edward A. Akinwale (Rtd)**, Laboratory Quality Assurance Manager, Henry M. Jackson Foundation for the Advancement of Military Medicine (HJF), Nigeria

10:15 AM -  
10:30 AM

**BREAK**

**CONCURRENT WORKSHOPS**

10:30 AM -  
11:45 AM

- Session 1** - **Achieving International Standards in the Management of Laboratory in West Africa**
- Panelists** - *Air Commodore Edward A. Akinwale (Rtd)*, Laboratory Quality Assurance Manager, Henry M. Jackson Foundation for the Advancement of Military Medicine (HJF), Nigeria
- Eric Karikari Boateng*, Head of Laboratory, Food and Drug Authority
- Prof. Kilian Songwe*, President/Regional Director-Africa, A Global Healthcare Public Foundation
- Prof. Alex Dodoo*, Chief Executive Officer, Ghana Standards Authority
- Moderator** - *Hon. Dr. Prince Sodoke Amuzu*, District Chief Executive, Akatsi North District Assesmbly

*Sponsored By: Akai House Clinic*

10:30 AM -  
11:45 AM

- Session 2** - **Clinicians Perspectives on Challenges in COVID-19 Diagnostics**
- Panelists** - *Dr. Adrian Oddoye*, General Practitioner, Akai House Clinic
- Dr. Harold Ayetey*, Senior Lecturer and Consultant Internist/Cardiologist, University of Cape Coast School of Medical Sciences and Cape Coast Teaching Hospital

11:45 AM -  
12:45 PM

## LUNCH/ / POSTER SESSION

*Sponsored By: HJF / JWARG*

## CONCURRENT WORKSHOPS

*Sponsored By: Ghana Association of Medical Laboratory Scientists*

12:45 PM -  
2:00 PM

**Session 1** - **Biological and Hazardous Waste Management in the Era of COVID-19**

**Panelists** *Philippe Chebu*, Molecular Scientist, APIN, Nigeria

*Prof. Marycelin Baba*, Medical Virology and Immunology, University of Maiduguri, Borno State, Nigeria

*Dr. Talkmore Maruta*, Senior Biosafety and Biosecurity Office, Africa Centres for Disease Control and Prevention, Lusaka, Zambia

*Dr. Toyosi Y. Raheem*, Research Fellow, Molecular Biology & Biotechnology Department; Head, Clinical Diagnostic Laboratory, Nigerian Institute of Medical Research

*Moderator* - *Blessing Ekanem*, National Professional Officer Laboratory, World Health Organization (WHO), Nigeria

12:45 PM -  
2:00 PM

**Session 2** - **SLIPTA Update**

**Presenters** - *Raymond Fatchu*, Accreditation Consultant, 37 Military Hospital/ASLM

*Dr. Samuel Kwame Opoku*, Chemical Pathologist

*Sponsored By: INCAS Diagnostics*

2:00 PM -  
3:15 PM

**Session 1** - **Implementation of Standards For Medical Laboratories In West Africa-Requirements For Quality And Competence**

**Panelists** - *Dr. Alexander Martin-Odoom*, President, Association of Private Medical Laboratories

*Prof. Alex Dodoo*, Chief Executive Officer, Ghana Standards Authority

*Dr. Samuel Opoku*, Register, Allied Health Professions Council

*Mustapha Tawiah Kumah, Esq*, Chief Director, Ghana National Accreditation Services

*Prof. James Damen*, President, Association of Medical Laboratory Scientists of Nigeria

*Moderator* - *Prof. Samuel Antwi-Baffour*, Head of Department Medical Laboratory Sciences, University of Ghana

*Sponsored By: INCAS Diagnostics*

2:00 PM -  
3:15 PM

**Session 2** - **"From Research and Development to Commercialization of Emerging Technologies"**

**Panelists** - **Dr. Anthony Laud Basing**, Consultant Medical Laboratory Scientist, Lecturer, Kwame Nkrumah University of Science and Technology, CEO of Incas Diagnostics, KNUST, Incas Diagnostics

**Dr. Michael Owusu**, Lecturer, Kwame Nkrumah University of Science and Technology

**Eric Karikari Boateng**, Food and Drugs Authority

**Dr. Winston Soboyejo**, Senior Vice President and Provost, Worcester Polytechnic Institute (WPI)

**Moderator** - **Prof. Alexander Yaw Debrah**, Dean, Faculty of Allied Health Sciences, Kwame Nkrumah University of Science and Technology (KNUST)

3:15 PM -  
3:30 PM

**BREAK**

**CONCURRENT WORKSHOPS**

3:30 PM -  
4:45 PM

**Session 1** - **"Global Health Security and Clinical Best Practices in West Africa"**

**Panelists** - **Dr. Talkmore Maruta**, Senior Biosafety and Biosecurity Office, Africa Centres for Disease Control and Prevention, Lusaka, Zambia

**Dr. Kassaye Tekie**, Diagnostic Network Advisor, Infectious Disease Detection and Surveillance (IDDS)

**Dr. Senait Kebede**, Adjunct Associate Professor, Global Health, Emory University, Founder & president, International Health Consultancy, LLC, Emory University

**Prof. Kilian Songwe**, President/Regional Director - Africa, A Global Healthcare Public Foundation

**Moderator** - **Ellen Munemo**, Team Lead, Infectious Disease Detection and Surveillance (IDDS)

*Sponsored By: Africabio Enterprises, Inc.*

3:30 PM -  
4:45 PM

**Session 2** - **"Creating and Sustaining the Value Chain in the Healthcare Industry"**

**Panelists** - **Dr. Anthony Laud Basing**, Consultant Medical Laboratory Scientist, Lecturer, Kwame Nkrumah University of Science and Technology, CEO of Incas Diagnostics, KNUST, Incas Diagnostics

**Haja Dr. Isatta M. Wurie**, Senior Lecturer and Coordinator, College of Medicine and Allied Health Sciences, University of Sierra Leone

**Dr. Dougbeh Chris Nyan**, Chief Executive & Scientific Officer, Shufflex Biomed, LLC (USA & Liberia)

**Hiba Khoury**, Vice Chair, Healthcare Federation of Liberia

**Kermii Mitch Gopeya**, Project Administrator, Africabio Enterprises Inc.

**Blessing Ekanem**, National Professional Officer Laboratory, World Health Organization (WHO), Nigeria

**Moderator** - **Michael Owusu Danquah**, Sales and Applications Specialist, DCL Laboratory Products, Ghana.



CLOSING CEREMONY

- 5:00 PM - **Company Presentation** - Shufflex Biomed, Incas Diagnostics and Worcester Polytechnic Institute
- Remarks** - *Clarine S. Vaughn*, Vice President / COO, Africabio Enterprises Inc.
- Remarks** - *Dr. Abu Abudu Rahamani*, President, Ghana Association Medical Laboratory Scientists (GAMLS)
- Closing Address by co-host** - *Dr. Patrick Kuma-Aboagye*, Director General, Ghana Health Service

Photographs & Media Interviews

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## Abstract

**Title:** Antimicrobial Susceptibility Testing Pattern from November 2017 to May 2019 at Jackson Fiah Doe Hospital Tappita Laboratory, Lower Nimba County

J. David Sayee<sup>1\*\*</sup> - [sayeedavidclement2017@gmail.com](mailto:sayeedavidclement2017@gmail.com)

Alexander T. Sampson<sup>1</sup> – [sampson88.as@gmail.com](mailto:sampson88.as@gmail.com)

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### Affiliations

<sup>1</sup>Jackson Fiah Doe Memorial Regional Referral Hospital Laboratory

<sup>2</sup>Academic Consortium Combatting Ebola in Liberia

**Background:** Jackson F. Doe Hospital Laboratory conducted bacteriology testing in November 2017 to May 2019. This was after the Academic Consortium Combatting Ebola in Liberia trained seven (7) staff on Bacteriology testing by culture methods. Since then, our Lab has performed 87 antimicrobials susceptibility test on cultured of 229 samples with 112 positive cases isolated. The aim of this study is to establish antibiogram for *Staphylococcus spp*, *Pseudomonas aeruginosa* and *Escherichia Coli* being the most prevalence bacteria at the hospital.

**Method:** Antimicrobial susceptibility testing were performed on isolated organisms utilizing the Kirby Bauer (Disk Diffusion) method and results reported according to the guidelines of the Clinical Laboratory Standards Institute (CLSI) and standards of the World Health Organization (WHO).

**Results:** The study has proven that Gentamicin, Oxacillin, Chloramphenicol, Tetracycline, Ciprofloxacin, Ofloxacin and Levofloxacin were the most infective antibiotics used against *Staphylococcus spp*, *Pseudomonas aeruginosa* and *Escherichia Coli* in the management of patients who suffer illness as a result of these organisms.

**Conclusion:** The study has pointed out the most effective antibiotics for *Staphylococcus spp*, *Pseudomonas aeruginosa* and *Escherichia Coli*. However, there is a need to monitor the trends of antimicrobial resistance over a longer period to provide a sufficient evidence based data for national public health intervention.

## Abstract

**Title:** The Current State of Medical Mycology Laboratory Practice in Ghana: Preliminary Data from a FIKI Ghana and GMMG Survey

**Authors:** Bright Ocansey<sup>1</sup>, Stephen Eduful<sup>2\*\*</sup>, Edmund Ato Dadzie<sup>3</sup>, Rita Oladele<sup>4</sup>, Arunaloke Chakrabarti<sup>5</sup>, Malcolm Richardson<sup>1</sup>, Japheth Opintan<sup>6</sup>, Francis Codjoe<sup>2</sup>

**Affiliations:**

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<sup>2</sup>Department of Medical Laboratory Sciences, School of Biomedical and Allied Health Sciences, University of Ghana, Accra, Ghana ([steduful@gmail.com](mailto:steduful@gmail.com), [fscodjoe@chs.edu.gh](mailto:fscodjoe@chs.edu.gh))

<sup>3</sup>Laboratory Department, Rabito (Dermatology) Clinics, Ghana ([atodadziegh@gmail.com](mailto:atodadziegh@gmail.com))

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<sup>6</sup>Department of Medical Microbiology, University of Ghana Medical School, Accra, Ghana ([japh\\_opintan@yahoo.com](mailto:japh_opintan@yahoo.com))

**Background:** Invasive fungal infections lack pathognomonic features, making diagnosis a challenge. Combination of conventional methods with recent non-culture assays ensures rapid and accurate diagnosis. Data on availability of these techniques and assays as well as training of laboratory personnel in fungal diagnostics in Ghana are unknown.

**Method:** An online questionnaire was administered to various laboratory facilities across the country on the equipment, human resource and available techniques and assays.

**Results:** Between July 2020 and February 2021, we received 11 responses out of 15 questionnaires administered. Participating institutions were from the Greater Accra (7), Volta (1), Ashanti (1), Upper East (1) and Central (1) regions representing all geographical zones of Ghana. Distribution of these institutions; public tertiary (4), secondary (3 public and 3 private) and private medical laboratory (1). Only 4/11 laboratories had a designated bench or room for mycology while 4/11 had no BSLII hood. Personnel from 63% of centres have not received any additional training in mycological techniques post-qualification. Most labs (7/11) received less than 10 samples per week for fungal investigations. Dermatological samples were the most common (11/11) and rarely blood (2/11) for cryptococcal antigen (CrAg) testing (1/2) and culture (2/2), CSF (5/11) for Indian ink (4/5) and CrAg (1/5) or biopsy (1/11). Direct microscopy was performed with KOH (11/11) and Indian ink (4/11). Fungal culture was available in two tertiary hospitals and the private medical laboratory. Antifungal susceptibility testing was only available in the private laboratory for yeasts with fluconazole using the disc diffusion. No laboratory performed antigen-antibody, molecular or therapeutic drug monitoring tests. The private laboratory outsourced their CrAg to its partner lab in South Africa.

**Conclusions:** This survey highlights significant gaps in laboratory diagnostics, training, and clinical suspicion of fungal infections. This emphasizes the need for efforts to increase awareness, diagnostic capacity and training.



## Abstract

**Title:** Improving Diagnosis in Health Care Through Efficient Medical Laboratory Practices - A Focal Point on Management of Diabetes Mellitus

**Author:**

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**Phone Number:** 08037884755

**Affiliation:**

\*<sup>1</sup>Department of Biochemistry/ Forensic Science, Faculty of Science, Nigeria Police Academy, Wudil Kano State.

**Abstract**

Getting the right diagnosis is a key aspect of Diabetic care. The diagnostic process is a complex collaborative activity that is anchored by laboratory investigative findings. Diabetes, having multiplier effects on health, requires empirical investigations, of which laboratory investigations add-on the doctors' investigation as the later cannot stand-alone. The researcher focused on altered biochemical parameters, in tissue derangements sequel to Diabetes and how laboratory findings polish the informed decisions made in diagnosis and treatment of Diabetes is the significance. Data extractions were pooled from laboratory test on Diabetic patients over a period of four years in three standard hospital laboratories viz general hospital in Kubwa, Bwari and Nyanya. The subset of the extracted data on diabetes from the three laboratories were analyzed. The findings from the data subset, revealed abnormally elevated Serum glucose (glycosylated and non glycosylated), moderate elevations of aminotransferases, electrolytes, abnormal elevations of creatinine, uric acid, urea. Urinalyses showed increased concentration of protein, glucose, ketones. These findings were of immense contribution on the informed health decisions for Diabetic patients. On how the results guided the treatment of the Diabetes were analyzed.

**Key words:**

Diabetes, diagnosis, laboratories, informed decision, biochemical parameters

## Abstract

### **Selenium and Zinc supplements attenuate HCC among recovered Hepatitis C Obese population in Middle Belt Nigeria.**

**Author:**

Olaleye Olajuyin.

**Affiliations:**

Federal Medical Center, P.M.B 102004, Hospital road, Wadata, Makurdi, Benue State Nigeria.

olajuyine@gmail.com

**Background:**

With trends emanating from most Nigeria cancers registry, Hepatitis C virus has continue to cause serious damage on the liver hepatocytes with little information on its associated importance with liver hepatocellular carcinoma. However, the public health significance of vital trace elements in suppressing the replication and multiplication of positive anti-HCV antibodies which could speed up the rate of recovery in Hepatitis C Obese patients in combination with other therapy have not been explored much.

**Method:** Supplement composition containing 15mg and 70mcg was provided daily for 6 months to 25 patients (experimental group) and the other 25 patients (control group) who are not willing to take the supplement. Liver related biochemical parameters and serum level of zinc and selenium were evaluated before and after supplement administration.

**Results:** During the six month intervention and follow up, the blood selenium concentration and zinc activity of the subjects in the experimental group were increased and had significant difference as compared with those of the control group ( $P < 0.01$ ). Almost all the control group subjects had prolonged Prothrombin time and was associated with increase risk of developing HCC in univariate (hazard ratio [HR] =2.6; 95% [CI] 1.3-8.4;  $p = .04$ ) and multivariable analysis (HR=3.1; 95%CI=1.6-9.7;  $P = .02$ ) and low platelet count (HR=1.9; 95%CI=1.2-2.1;  $P < .02$ ) were significantly associated with increased risk of developing HCC in multivariable analysis. Alpha fetoprotein in control group was statistically significantly higher than the experimental group ( $p = .03$ ). Same statistical trend was observed in serum ALP and ALT in the same manner ( $p = .04$  and  $p = .02$ )

**Conclusion:** The results confirm that the supplements administered to the experimental populations might be effective in the prevention of liver cancer and the findings further suggest that selenium and polaprezinc exert great anti-inflammatory effect and tumorigenesis prevention on the liver of HCV-related CLD patients with favourable liver enzymes outcome.

## Speaker Biographies

**Asamoah, Alexander** is a Fellow of the West African Postgraduate College of Medical Laboratory Science (FWAPCMLS -Medical Laboratory Management/ Leadership) and Diagnostic Focal Person at the National Malaria Control Program of Ghana Health Service. He is a Medical Laboratory Scientist and Field Epidemiologist with expertise in Malaria epidemiology, parasite dynamics and test principles, operation and limitations, procurement as well as quality assurance. He is a national supervisor for Malaria lab Trainings and Supervisions and the lead coordinator for the Malaria Diagnostic Refresher Trainings and National Competency Assessment I Malaria Microscopy.

**Professor Antwi-Baffour, Samuel (BSc, MSc and PhD)**, is a professor of Biomedical Sciences and the Head of the Department of Medical Laboratory Sciences, School of Biomedical Sciences, College of Health Sciences, University of Ghana with over 24 years of medical laboratory practice and teaching experience. He holds a Bachelor of Science degree (hons) and Master's degree in Biomedical Science and a Doctor of Philosophy degree in Immunology all from London Metropolitan University, London, UK. From 2007 – 2011, he worked as a Specialist Biomedical Scientist at the Northwick Park Hospital in Harrow, UK where he performed various laboratory analyses in Haematology and Blood Transfusion Sciences. He also served as a lecturer at London Metropolitan University during his PhD studies. In November 2013, he was a visiting researcher at the Centre for Medical Parasitology (CMP), University of Copenhagen, Denmark under the Building Stronger Universities (BSU) initiative. He was also a visiting Scholar/Researcher at the Department of Biology, Indiana University, Bloomington, Indiana, USA under the Indiana University/University of Ghana Research Fellowship Grant. Prof. Antwi-Baffour is an adjunct lecturer in different universities both in Ghana and outside Ghana, he is a member of various scientific associations including the American Association of Immunologist and serve as a reviewer for different peer review journals. He has expertise in different laboratory techniques including cytogenetics, flow cytometry and mass spectrometry.

**Prof. Baba, Marycelin** is a Professor of Medical Virology with University of Miduguri, Nigeria. She is a practicing Medical Laboratory Scientist for more than 30 years. She holds a Bsc in Microbiology (Ahmadu Bello University, Zaria, Nigeria), MSc in Virology (1992) and PhD in Virology (2005) at University of Ibadan, Nigeria. She has a Master's degree in Health Planning and Management ((MHPPM). After a one-year conversion course, she became an Associate Member of Medical Laboratory Science Council of Nigeria (AMLSCN). She started the Department of Medical Laboratory Science as the only staff and Head in 2004 and in 2012, she has graduated 4 sets of Professionals in Medical Laboratory Science with over 30 staff. She was the pioneer Technical Supervisor of National Polio Laboratory, Maiduguri in 1999 and in 2006, she was elevated to the position of a Director. She is actively involved in the Polio eradication program. Marycelin Baba's research interest is viral epidemiology and molecular epidemiology of viruses of public health importance in Nigeria. Beside Polio eradication, she is actively involved in the diagnosis of arbovirus infections/viral haemorrhagic fevers. In October 2016, she joined the services of WHO/AFRO as the Technical Officer, Environmental Surveillance. She has over 80 peer-reviewed journal articles either as a lead or co-authors. She also has many presentations in International conferences. Her dream is to eradicate wild polio virus transmission globally and to 'wage war' against arboviruses which hides under malaria to cause havoc due to lack of appropriate, affordable, available and accessible diagnostic tools in Africa.

**Dr. Boateng, Gifty** graduated from the University of Ghana, Legon with a PhD in Public Health and a Certificate in Field Epidemiology and Laboratory Training. She also received her Bsc In Biological Sciences from the Kwame Nkrumah University of Science and Technology (KNUST). She currently works for the Ghana Health Service as the Head of NPHRL and Coordinator of Public Health Labs. From 2005 to 2020, she was a Biomedical Scientist at the Nation Public Health and Reference Lab. During that time, she assisted with laboratory investigations in Microbiology, Molecular Biology, and Serology in Measles/Rubella, Yellow fever and HIV.



## Speaker Biographies

**Chebu, Philippe** is currently a Medical Laboratory Scientist. He received his AIMLS from Jos University Teaching Hospital in 2000. In 2002, he received his FIMLS from National Veterinary Research Institute Vom, then received his MSc three years later from Ambros Alli University, Edo Medical Laboratory Sciences for Medical Microbiology. In 2012, Philippe became a Member of the African Society for Laboratory Medicine as well as a Member for the American Society for Microbiology. He has been published in several peer-reviewed journals including “Short Communication: Transmitted HIV Drug Resistance in Antiretroviral-Naïve Pregnant Women in North Central Nigeria (2014).” Philippe Chebu was the Technical Advisor (Molecular Diagnostics) for APIN Public Health Initiatives, a Medical Laboratory Scientist for APIN Centre, Jos University Teaching Hospital in Nigeria. He was also a Technical Advisor on COVID-19 National Reference Laboratory at the Nigeria Centre for Disease Control.

**Crayton, Joseph** is an experienced senior finance executive and banker with more than 26 years in banking, management, venture finance, entrepreneurship and consulting in the U.S. and West Africa. As Managing General Partner of Gemini Capital Partners, Mr. Crayton spearheads deal sourcing and portfolio management. Prior to Gemini Capital, Mr. Crayton was a co-founder of Square 1 Bank, a premier venture bank operating across the U.S., where he was the Managing Director Technology Banking, Eastern U.S. Prior to Square 1 Bank, Mr. Crayton was Vice President Venture Banking with Comerica Bank’s Technology and Life Sciences Group and with Imperial Bank’s Emerging Growth Division. In addition to his banking career, Mr. Crayton has provided advisory services to the Liberian government in several areas of finance and financial policy. He has also seeded and invested in several companies including Libango Holdings, Garson Steel, and participated in several other ventures and non-profit activities. He holds a MBA from the University of Maryland, Robert H. Smith School of Business and a BA in Economics from the San Francisco State University.

**Prof. Damen, James Garba (PhD, FWAPCMLS, FMLSCN, MASCB, KSM)**, is a Professor of Medical Microbiology and Head, Medical Laboratory Science, Faculty of Health Sciences and Technology, College of Health Sciences, University of Jos. He worked in Jos University Teaching Hospital and rose to the rank of Principal Medical Laboratory Scientists before taking up an appointment with the University. James holds an MSc. Degree in Medical Microbiology from University of Jos Faculty of Medical Sciences, Nigeria, a Doctorate degree in Medical Parasitology from Abubakar Tafawa Balewa University Bauchi, Nigeria. He is a Fellow, West African Postgraduate College of Medical Laboratory Science, Fellow, Medical Laboratory Science Council of Nigeria, member of American Society of Cell Biology, and a Member of Knight of St. Mulumba, Nigeria.

He has experience working in an accredited molecular biology Laboratory. He conducted a lot of research on HIV, Tuberculosis and malaria. He has served as a consultant to many international and national organizations such as United Agency for International Development (USAID) on HIV strategic implementation, The Carter center Nigeria on training malaria microscopists and quality assurance, US DOD, Malaria consortium. Prof. James has facilitated several quality management trainings and was appointed into the Covid -19 research team by his state Governor.

He is the National President, Association of Medical Laboratory Scientists of Nigeria.

**Fatchu, Raymond Donbezier** is a laboratory professional with over 9 years of rich experience in health improvement processes, project management, organization management, relationship management, monitoring and evaluation with demonstrable expertise in identifying gaps, opportunities for improvement; and describing appropriate strategies for gap resolutions. He holds a MSc in Public Health Monitoring and Evaluation from the University of Ghana, Legon and a BSC Medical Laboratory Technology from the Kwame Nkrumah University of Science and Technology, Kumasi. He has worked with several organizations such as Global Health Systems Solutions (GHSS), Partnership for Healthcare Improvement (PHI), Integrated Quality Laboratory Systems (IQLS) and the African Society for Laboratory Medicine (ASLM) in the field of

## Speaker Biographies

### **Fatchu, Raymond Donbezier - cont'd**

laboratory quality systems strengthening. He successfully led the first public sector medical laboratory in Ghana to ISO15189. He has trained many laboratory quality managers, laboratory managers and laboratory staff on ISO 15189, internal auditing, laboratory safety, quality management systems (QMS) among others and has conducted several laboratory assessments in public and private sectors in Ghana.

**Dr. Kebede, Senait (MD (PED), MPH)** is a global health professional who brings over 25 years of experience in clinical, academic and public health practice. She has been working at international and bilateral organizations including WHO, UNICEF, UNAIDS, World Bank, CDC, and USAID with focus on Maternal and child health, HIV/TB, Disease Surveillance and Response and quality of care. Among her assignment and roles include: WHO inter-country medical officer for Integrated Management of Childhood Illnesses (IMCI) in Southern Africa; WHO regional coordinator for 3 by 5 (WHO initiative on increasing access to Anti-Retroviral Treatment (ART)); Investment and efficiency advisor for UNAIDS; and Adolescent Health & HIV specialist with UNICEF in Uganda.

Dr. Kebede is working on a collaborative venture between CDC and WHO/AFRO, she coauthored the Laboratory Networking Guideline for IDSR. She has led and participated in multiple technical assistance missions for planning, policy, programming as well as training and development of WHO guidelines. Currently, Dr Kebede is an Adjunct Associate Professor, Global Health, Rollins School of Public Health, Emory University, where she also served as lead instructor for Antimicrobial Resistance and faculty for Clinical Community of Practice COVID- 19, Africa CDC/IWD/Emory. Dr Kebede also guest lectures at Georgia State University and is a contributor for HIV eCourse at Mayo Clinic, School of Continuous Professional Development. Dr Kebede is a member of various global technical working groups including WHO TBTEAM - HIV/TB expert, WHO child and adolescent TB working group; and Independent Technical Expert Mechanism (PCITEM) for the WHO's Pandemic Influenza Preparedness (PIP) Framework Secretariat. She is also a Co-chair of the PSE sub-group with Child Health Task Force. Dr. Kebede received her MD from Addis Ababa University in Ethiopia with specialty in pediatrics. She also holds an MPH from Johns Hopkins University (JHU), USA. Dr Kebede is also Gates Strategic Leadership fellow for Reproductive Health, JHU and Certified (PMI) in Project Management.

**Khoury, Hiba Marwan** is CEO of Clinilab. She holds a Bachelor's degree in Clinical Laboratory Science and a Master' degree in Business Management from the American University of Science and Technology, Beirut, Lebanon. She has worked in different departments in the Laboratory. She worked in major hospitals in Lebanon and became the Laboratory supervisor after finishing her MS. Some of these hospitals are des soeurs du Rosair and Mount Lebanon hospital. The year 2015 when she came back to Liberia, the idea of opening a private laboratory came to mind. By the year 2016, the idea became a reality and Clinilab was opened. It opened first as a laboratory then extended to an OPD clinic in 2018. Clinilab also engaged in sales of medical equipment and is a representative of major brands like Philips, Carestream, Planmed and much more.

**Kumah, Mustapha Tawiah (MPHIL, BSC. LEAD AUDITOR- QSHE)** is the interim Director General of the Ghana National Accreditation Service (GhaNAS), the National Accreditation Body for Ghana. He has over 26 years working experience in conformity assessment, including testing inspection and certification. He is a certified Lead Auditor in Quality, Health, Safety and Environmental Management Systems. He holds an MPhil degree in Chemistry with specialization in Analytical/Inorganic Chemistry from the University of Ghana, Legon. From 1995 –2018 he worked with the Ghana Standards Authority at various capacities including laboratory analyst, head of Technical Coordination Services, Director of Standards, Director of Certification and Deputy Director General for Conformity Assessment Services. Mustapha is currently the one charged with the responsibility of establishing the structures and systems for a National Accreditation Body in Ghana.



## Speaker Biographies

**Dr. Maruta, Talkmore** is a Public Health Medical Laboratory Scientist with a BSc (Hons) Degree in Medical Laboratory Sciences, Masters in Public Health (MPH), Business Administration (MBA) and PhD in Public Health. He has regional and international experience in laboratory system strengthening, disease surveillance and epidemic response. His experience spans the Africa, Caribbean and South East Asia Regions where he has closely worked with over 30 Ministries of Health while working with renowned organizations like Clinton Health Access Initiative, Foundation, Foundation for Innovative New Diagnostics, African Society for Laboratory Medicine and the East Central and Southern Africa Health Community. His work in the region was recognized at the ASLM 2012 Conference with a Distinguished Leadership” award and the “Best Employee” award in the World Bank supported Southern Africa TB Health Systems Strengthening (SATBHSS) project in 2019. At Africa Centres for Disease Control, Dr Maruta coordinate the Africa CDC Regional Biosafety and Biosecurity Initiative whose goal is to strengthen the biosecurity and biosafety systems of African Union Member States to comply with international regulations including the International Health Regulations (IHR 2005), Biological Weapons Convention (BWC), and United Nations Security Council Resolution (UNSCR) 1540 and the GHSA action packages (APP3).

**Nkrumah, Bernard (MPH, MPHIL)** is a public health expert with over 10 years’ experience in managing public health programs, developing and implementing public health policies and strategic plans, initiating and overseeing quality management systems and data management programs, systems level interventions, and research and implementation science for both communicable and non-communicable diseases. He has spearheaded many programs and interventions aimed at improving the quality of laboratory systems in Ghana. He played a key role in the development of Ghana’s first National Laboratory Policy, Strategic Plan and Accreditation Policy. He led the implementation of the first ever large-scale quality management system improvement program in Ghana where regional hospital laboratories and selected teaching hospitals and research centers were involved. He masterminded the implementation of various laboratory information systems, a proficiency testing program for HIV rapid testing using the dried tube specimen, the development and implementation of Ghana’s first Viral Load Scale Up Plan and Implementation Policy and the Viral Load Data Management System. Through his leadership and advocacy, many laboratories in Ghana have benefited in various ways such as obtaining equipment, capacity building and improvement projects. He currently serves as the Lead Laboratory Technical Advisor for the US CDC Division of Global Health Protection in Ghana to provide support the current COVID-19 pandemic. He plays a key role in national committees, technical working groups, and the national public health laboratory system.

**Dr. Opoku, Samuel Kwame (FWAPCMLS, PMP)** is a laboratory, Business and Project Management professional with over 15 years’ experience in Business Development, Project Management, Key Accounts Management and Key Opinion Leader management. He holds a PhD in Chemical Pathology, from the Kwame Nkrumah University of Science and Technology, (KNUST) Kumasi and a BSc in Medical Laboratory from the same university. He is a Foundation Fellow of the West African Postgraduate College of Medical Laboratory Science (WAPCMLS) and a certified Project Management Professional (PMP) with the Project Management Institute (PMI). He has worked with several organizations including Alliance Global, The Trust Hospital (Accra), Ghana Cocoa Board and Becton Dickinson (West Africa) in the field of Pre-analytical laboratory phase Quality improvement, combating Antimicrobial Resistance (AMR) and improvement in Tuberculosis Liquid culture detection.

**Dr. Owusu, Michael** is a Lecturer and Researcher at the Department of Medical Diagnostics, Faculty of Allied Health Sciences, KNUST and the Kumasi Centre for Collaborative Research into Tropical Medicine. He has 14 years of experience in clinical laboratory science and research. He completed his PhD in 2014 through a collaboration between the Kwame Nkrumah University of Science and Technology and the University of Bonn Medical Centre, Germany. He has also studied epidemiology, public health and research communication through the African Programme for Advanced Epidemiology Training (APARET) and the Africa Research



## Speaker Biographies

### **Dr. Owusu, Michael - cont'd**

Excellence Fund (AREF). He also has basic knowledge in medical statistics and interactive programming languages. From 2008-2017, he worked as a Biomedical Scientist at the Komfo Anokye Teaching Hospital, where he supported the microbiology department in routine bacteriological investigations. His major area of research is viral zoonosis. As part of his PhD, he studied the role of human coronaviruses in causing acute respiratory illness among children. He has also conducted advanced research in bat and livestock coronaviruses and human-bat interactions as a proxy to viral zoonosis. He is now being funded by the European and Developing Countries Clinical Trial Partnership (EDCTP) to study the interplay between viral-bacterial coinfections and how this influences disease in Africa children. He has published several manuscripts in emerging viruses and bacteria organisms. His career goal is to lead research into public health related diseases in Africa and other developing countries.

**van der Puije, Beatrice** is a Laboratory professional, with background in Immunology and Microbiology. 15 years as Public Health and Laboratory Systems Strengthening professional, working at country and regional level for various organizations including US Centres for Disease Control and Prevention, US Naval Medical Research Unit, Clinical and Laboratory Standards Institute (CLSI), Partnership for Healthcare Improvement (PHI) and Integrated Quality Laboratory Services (IQLS). Master Trainer in Quality Management Systems (QMS) and certified Auditor for Laboratory Quality Standards.

Currently working as a Program Manager with the African Society for Laboratory Medicine (ASLM) managing regional projects under PEPFAR and the Fleming Fund to strengthen diagnosis and management of people living with HIV and TB and AMR surveillance across 22 countries in sub-Saharan Africa.

**Dr. Raheem, Toyosi Y. (MSc, PhD, FMLSCN, FWAPCMLS, FAMLSN, Cert Immunol.)** is a Research Fellow/Medical Laboratory Scientist at the Molecular Biology & Biotechnology Department of Nigerian Institute of Medical Research (NIMR), Yaba-Lagos, Nigeria. He attended School of Medical Laboratory Science, University College Hospital, Ibadan, Nigeria where he graduated in 1988. He holds Master and PhD degrees in Medical Microbiology from Olabisi Onabanjo University, Ogun State, Nigeria and a Certificate in Immunology from College of Medicine, University of Ibadan, Nigeria. He is a Fellow of Medical Laboratory Science Council of Nigeria and a Foundation Fellow of West African Postgraduate College of Medical Laboratory Science where he is currently an ex-officio member of the Nigerian Chapter and a member of the Bacteriology Faculty. Dr Raheem worked in some private health institutions in Nigeria before he joined NIMR in 1996. He worked astutely for ten years (2006-2016) at the National TB Reference Laboratory of the Institute as Laboratory Supervisor before his current positions in the Institute. He currently heads the Clinical Diagnostic Laboratory of the Institute. He is a member of the Committee for the Establishment of Biorepository Laboratory/Bio-Bank and also a member of the Institutional Review Board (Health Research Ethics Committee) at the Nigerian Institute of Medical Research. Currently, Dr Raheem is a member of the Governing Board of Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria; Member, MLSCN External Quality Assessment Advisory Committee, and member, Accreditation Advisory Committee of Nigerian National Accreditation Service (NiNAS). Dr TY Raheem served meritoriously as the National President of Association of Medical Laboratory Scientists of Nigeria (AMLSN) between 2014 and 2017. His area of research interest includes mechanisms of antimicrobial drug resistance especially in Mycobacterium tuberculosis and other priority bacterial and fungal pathogens in respiratory infections. He is a member of Sandia National Laboratories' West African Trainers Network / Trainers Development Program on Bio-risk Management.

## Speaker Biographies

**Dr. Soboyejo, Winston “Wole”** received his BSc in mechanical engineering from King’s College London in 1985. He then went on to receive a PhD in materials science from Cambridge University in 1988. After four years of working in the industry as a Research Scientist for McDonnell Douglas (1988-1992) and as a Principal Research Engineer for the Edison Welding Institute (1992), he joined the Department of Materials Science and Engineering at Ohio State University, where he was an Assistant Professor between 1992 and 1996, and an Associate Professor between 1996 and 1999. From 1997 to 1998, Soboyejo spent a sabbatical year as a Visiting Martin Luther King Associate Professor in the Department of Mechanical Engineering and the Department of Materials Science and Engineering at MIT. He transferred to Princeton University in 1999 as a Professor of Mechanical and Aerospace Engineering and a Professor of Materials Science in the Princeton Institute of Science and Technology of Materials (PRISM). At Princeton, he was part of a team that developed a patented process for the fabrication of Organic Light Emitting Devices (licensed by Samsung). He also developed: magnetic nanoparticles for the detection and treatment of cancer; ceramic water filters for the removal of bacteria, viruses and chemical contaminants from water, and biomedical devices for applications in dentistry and the treatment of cardiovascular diseases. In 2011, he was appointed as Vice President for Academics, Research and Innovation at the African University of Science and Technology (AUST) in Abuja, Nigeria. He then served as President and Provost of AUST between 2012 and 2014. Soboyejo returned to Princeton between 2014 and 2016, before moving to the Worcester Polytechnic Institute (WPI) as the Bernard M. Gordon Dean of Engineering (2016-2018). Since September of 2018, he has served as the Senior Vice President and Provost at WPI. He is one of the co-founders of Ilera Biomedical, which is a company that is trying to develop commercial solutions to African health challenges.

**Prof. Songwe, Kilian (BSc, MSBA & MPH)** is a management consultant with particular interest in Public Health Diagnostic Quality Management Systems and a certified Project Management Professional (PMP) with over 25 years of technical and managerial experience in managing operations in public health, diagnostic and research laboratories (Oncology) and Quality Systems.

He is the Founder and President of the AG Group (AGHPF & AGQC) a management consulting group that focuses on implementing and certifying organizations to ISO standards and regional and internationally recognized standards. On the African continent (15 countries) he has supported over 25 medical laboratories to attain accreditation and implemented quality improvement measures in over 150 reference, national, regional and subnational hospital facilities. Previously, Kilian served as Vice President of Operations at Panacea Pharmaceuticals overseeing a wide portfolio of business activities and prior as Clinical Director overseeing R&D and making presentations on IND to the US FDA. He has served as a consultant to WHO-Afro supporting laboratory systems strengthening and most recently assessing laboratories in Uganda for COVID testing and decentralization. He also supported the Global Fund through the ASLM building management systems for a number of governments on the African continent. He has provided technical assistance to US Centers for Disease Control and Prevention both at HQ and in-country offices in Africa. Kilian is currently a member of the National COVID-19 Task Force in Uganda supporting the country on the Laboratory pillar. He holds a Bachelor of Science (BSc) degree- Medical Laboratory Technology, Cum Laude, from the University of the District of Columbia, a Master of Science in Business Administration (MSBA) degree, Strayer University in Washington DC and a Master of Public Health (MPH) majoring in International Health Policy and Programs Development from The George Washington University, Washington DC.

**Sorvor, Felix Kodzo Besah** is a Medical Laboratory Consultant and a foundation member of the West African Postgraduate College of Medical Laboratory Science. He is a Medical Laboratory Scientist with good skills and professional knowledge in Medical Microbiology, Haematology and Blood Transfusion Science, Chemical Pathology and Histopathology. He has a proven history of leadership and mentorship and teaching skills to impart knowledge to junior colleagues either as interns or students on attachment and as a part-time lecturer. He holds a Master of Philosophy in Chemical Pathology from the Kwame Nkrumah University of Science and Technology and a Bachelor of Science in Medical Laboratory from the University of Ghana.

## Speaker Biographies

**Dr. Soud, Fatma** is a Senior Advisor of the Global Health Security Agenda with the United States Agency for International Development (USAID) providing technical expertise to prevent, detect and respond to infectious disease threats in priority countries. She has over 30 years of clinical health, epidemiology, research and technical practice in HIV/AIDS, maternal/newborn health, and other infectious and non-infectious diseases. Dr. Soud's career has included project management with financial oversight of multi-million-dollar budgets while ensuring organizational objectives are met. She has collaborated, coordinated, and provided guidance to heads of government, non-government, public, private institutions, worked with leads of international organizations such as the World Health Organization, UNICEF, World Bank and FAO to improve health systems. Dr. Soud proudly maintains that her career envelops being a mother of two great men and a grandson. She holds a doctorate in behavioral sciences from the University of Florida, a post-doctorate in epidemiology at the Centers for Disease Control and Prevention – Atlanta, Georgia as well as nursing and midwifery degrees.

**Weathers, Pamela J. (B.S., Ph.D.)** is a Professor in the Biology and Biotechnology Department at Worcester Polytechnic Institute with a joint appointment in Biomedical Engineering. She received her Ph.D. from Michigan State University Plant Research Lab in 1974 and has >50 yrs experience working on plants, roots, algae, and bioreactor development. She is an internationally recognized expert on *Artemisia annua* and artemisinin, having worked with the plant and its phytochemicals including the antimalarial drug, artemisinin, for >25 years. She is a Fellow of AAAS and SIVB, won many research and entrepreneurial awards, given many national and international presentations, reviews manuscripts for many journals and proposals for many national and international funding agencies. She is an Associate Editor of three journals. Her lab was the first to genetically transform *A. annua*. As of 2021 she has >125 peer-reviewed papers; about a third focus on bioreactors and half on artemisinin or *A. annua*. She also has 3 patents (2 more pending). Her Google H-index is 44, her i10 is 91, with nearly 6,000 citations. She spearheaded the edible *A. annua* concept for treating covid-19, malaria, TB and other diseases and has led all research to date on the project to establish proof-of-concept. She has supervised >20 MS and 16 PhD students and more than 80 undergraduate projects with about half of all theses and projects related to artemisinin/*Artemisia*. For >30 yrs she has managed a multidisciplinary research lab that has consisted of a mix of visiting scientists, postdocs, graduate and undergraduate students in engineering, biology and biochemistry. She has hosted Fulbright Fellows and visiting international students in her lab. Besides teaching 2 courses a year, she has obtained significant funding from NSF, NASA, NIH, USDA, and the private sector for her research and students. She has also consulted to the Biotechnology Industry since the mid-1980s.





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