



# 2024 HIV Vaccine Science Academy

6 – 9 May 2024

Akagera National Park, Rwanda

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# Introduction

## IAS Global HIV vaccine enterprise

The Global HIV Vaccine Enterprise of IAS – the International AIDS Society – aims to share knowledge, foster collaboration, enable solutions and expand support critical to the development of, and future access to, an HIV vaccine. It engages stakeholders and funders to accelerate HIV vaccine development and prepare the field for the future discovery of a safe, effective and globally accessible HIV vaccine. It does so by:

- Strengthening the HIV vaccine pipeline by encouraging diverse approaches in HIV vaccine research and advancing the HIV vaccine portfolio
- Expanding and diversifying engagement and resources by fostering interest in HIV vaccine R&D and broadening research talent within the HIV vaccine field
- Mobilizing knowledge to accelerate product development by driving opportunities to address unanswered scientific questions
- Leveraging synergies with other infectious disease research



## 2024 HIV Vaccine Science Academy

Successful HIV prevention requires increased contribution to the research efforts by those countries and regions that are hardest hit by the pandemic. Central, eastern, southern and western Africa remain the most severely affected regions, with 25.6 million adults and children living with HIV and AIDS and 660,000 new acquisitions in 2022 (UNAIDS). The need for an Africa-centric vaccine and prevention product design is further substantiated on the African continent, where researchers find the most genetically diverse HIV subtypes in the world. A safe and effective HIV vaccine would make a significant contribution to controlling the pandemic, particularly in young women, one of the most vulnerable groups that face the greatest disease burden.

The need for the contribution of multiple sectors in different countries in Africa to the development of a safe and effective HIV vaccine cannot be understated. However, it is an ongoing challenge for African researchers to conduct and lead HIV vaccine research and development (R&D). There is an undisputable benefit to supporting and empowering African researchers in their ongoing efforts to mobilize, advocate and coordinate action towards an increased role in shaping the HIV vaccine R&D agenda.

The HIV Vaccine Science Academy is designed to support participants in establishing themselves as independent researchers and team leaders in their respective host institutions, thus contributing to long-term continuity, networking and research ownership in the HIV response.

The HIV Vaccine Science Academy complements two ongoing activities of the IAS **Enterprise African Research Network (EARN)** of the Global HIV Vaccine Enterprise: the **Vaccine Enterprise Mentorship Programme** and **HIV Vaccine Advocacy Academy**. These two EARN activities provide capacity building to early- to mid-career scientists and advocates and empower them to establish themselves as independent researchers and team leaders in their host institutions on the African continent.



## Goals

The purpose of the HIV Vaccine Science Academy is to support and empower African early- to mid-career researchers ("fellows") from central, eastern, southern and western Africa and equip them to carve their paths as independent researchers and dynamic change makers in the HIV vaccine field.

The academy serves as a space where participants can interact with leading researchers in the HIV vaccine R&D field. Participants elevate their literacy in HIV vaccine research and improve their leadership skills to advance the field. Specific objectives of the academy include:

- **Training from experts:** Deliver training on state-of-the-art HIV vaccine research and development, including innovative vaccine and trial design, novel vaccine platforms and relevant leadership tools and skills (such as scientific writing).
- **Networking opportunities:** Fellows can engage with leaders in the HIV vaccine field in a retreat-type setting to build collaborations that link African scientists to global networks.
- **Collaboration with African researchers:** Fellows can establish sustainable networks across research institutions and create momentum for African-led research.

# Programme

## Monday, 6 May: Welcome and dinner

10:00 – 16:00	<b>Arrival at hotel</b>
19:00 – 20:30	<b>Welcome and dinner</b>

## Tuesday, 7 May: Foundational HIV vaccine science

This day covers foundational science topics that are crucial for understanding HIV, vaccine development and recent advancements. It also provides a platform for participants to interact, ask questions and gain a deeper understanding of the subject matter.

07:30 – 09:00	<b>Breakfast</b>	
09:00 – 09:05	<b>Welcome and overview of the programme</b>	<b>Asli Heitzer</b> , IAS
09:05 – 09:45	<b>HIV prevention R&amp;D: Where are we now and where do we go from here?</b>	<b>Vincent Muturi-Kioi</b> , IAVI, Kenya
09:45 – 10:30	<b>Why T-cells matter</b>	<b>Tomáš Hanke</b> , University of Oxford/ Kumamoto University, UK
10:30 – 11:00	<b>Break</b>	
11:00 – 11:45	<b>Latest results on bnAbs</b>	<b>Vincent Muturi-Kioi</b> , IAVI, Kenya
11:45 – 12:30	<b>The power of mRNA technology</b>	<b>Sheila Balinda</b> , MRC/UVRI & LSHTM Uganda Research Unit, Uganda
12:30 – 13:30	<b>Lunch break</b>	
13:30 – 15:00	<b>The structure of power</b>	<b>Mohammed Ali</b> , The Innovation Community, UKKenya
15:00 – 15:30	<b>Break</b>	
15:30 – 17:00	<b>Tell us about your research (7 to 8 fellows)</b>	<b>All faculty and fellows</b>
17:00 – 19:00	<b>Break</b>	
19:00 – 20:30	<b>Dinner</b>	

## Wednesday, 8 May: Innovative strategies

This day focuses on discovery medicine and why it plays a crucial role in HIV vaccine research by identifying novel targets and mechanisms that can lead to the development of effective vaccines and how it could advance vaccine candidates towards clinical trials and eventual implementation.

07:30 – 08:30	<b>Breakfast</b>	
09:00 – 10:30	<b>What is discovery medicine and why do we need it?</b>	<b>Vincent Muturi-Kioi</b> , IAVI, Kenya
10:30 – 11:00	<b>Break</b>	
11:00 – 12:30	<b>Discovery medicine: HVTN 142</b>	<b>Tomáš Hanke</b> , University of Oxford/ Kumamoto University, UK
12:30 – 13:30	<b>Lunch break</b>	
13:30 – 15:00	<b>The structure of power</b>	<b>Mohammed Ali</b> , The Innovation Community, UKKenya
15:00 – 15:30	<b>Break</b>	
15:30 – 19:00	<b>Networking activity: To be announced!</b>	<b>All faculty and fellows</b>
19:30 – 21:00	<b>Dinner</b>	

## Thursday, 9 May: HIV prevention and treatment approaches

This day explores alternative strategies in HIV prevention and treatment, encompassing viral characterization and passive immunization with bnAbs, and a critical examination of the role of vaccines amid the emergence of long-acting PrEP methods.

07:30 – 08:30	<b>Breakfast</b>	
09:00 – 09:45	<b>Viral characterization for prevention and cure strategies</b>	<b>Sheila Balinda</b> , MRC/UVRI & LSHTM Uganda Research Unit, Uganda
09:45 – 10:30	<b>bnAbs: Passive immunization</b>	<b>Vincent Muturi-Kioi</b> , IAVI, Kenya
10:30 – 11:00	<b>Break</b>	
11:00 – 12:30	<b>Tell us about your research</b> (7 to 8 fellows)	<b>All faculty and fellows</b>
12:30 – 13:30	<b>Lunch break</b>	
13:30 – 15:00	<b>The structure of power</b>	<b>Mohammed Ali</b> , The Innovation Community, UKKenya
15:00 – 15:30	<b>Break</b>	
15:30 – 17:00	<b>Panel discussion: Do we need an HIV vaccine in the era of long-acting PrEP?</b>	<b>All faculty</b>
17:00 – 19:00	<b>Break</b>	
19:00 – 20:30	<b>Dinner</b>	

# Faculty

The academy faculty comprises internationally renowned scientists who will deliver presentations on key topics in the programme and support the fellows in their HIV vaccine science literacy and learning.



**Sheila Balinda**

Medical Research Council/Uganda Virus Research Institute and London School of Hygiene & Tropical Medicine Uganda Research Unit, Uganda



**Tomáš Hanke**

University of Oxford and Kumamoto University, United Kingdom



**Vincent Muturi-Kioi**

International AIDS Vaccine Initiative (IAVI), Kenya



**Mohammed Ali**

The Innovation Community, United Kingdom

# Testimonials

These testimonials are lightly edited for clarity and style consistency and to respect people-first, non-stigmatizing language.



"As a clinical research physician at HJF Medical Research International, I play a multifaceted role supporting the US Military HIV Research Program and Emerging Infectious Disease Branch."

## Victor Anyewe

Clinical research physician, Henry Jackson Foundation Medical Research International

Country of work: Nigeria



## What is your motivation to attend the academy?

My primary motivation for attending the HIV Vaccine Science Academy is to significantly enhance my knowledge, skills and effectiveness in the field of HIV vaccine research.

Secondly, the academy provides an opportunity to engage with leading experts, other scientists and peers, thus expanding my network and potentially creating platforms for mentorship and collaborations. It promises to provide an understanding of the latest advancements, methodologies and challenges encountered in HIV vaccine research. I look forward to discussing novel vaccine candidates, emerging technologies and innovative trial designs.

I believe that the academy fosters a collaborative environment with potential to allow me to contribute more effectively to collaborative efforts in advancing HIV vaccine research and development.

## What is your current role and area of work?

As a clinical research physician at HJF Medical Research International, I play a multifaceted role supporting the US Military HIV Research Program and Emerging Infectious Disease Branch. My responsibilities include guiding grant and protocol development for clinical studies, leading the implementation of various protocols, such as the 15-year longitudinal African Cohort Study, and serving as principal investigator for the Nigeria site with a focus on potential HIV vaccine trials.

Additionally, I serve as lead site investigator for the Mpox Seroprevalence and Risk Factor Study and associate investigator for the Phase 2a Lassa virus candidate vaccine clinical trial. I coordinate meetings, oversee procurement, chair committees, lead scientific writing efforts, conduct medical history and physical examinations, and represent the organization at stakeholder meetings. My role encompasses a wide range of clinical and research responsibilities aimed at advancing HIV and infectious disease research.



"While treatment has been widely accessible for more than a decade, it is clear we cannot treat our way out of HIV."



## Rachel Chihana

Investigator, Johns Hopkins Research Project

Country of work: Malawi

### What is your motivation to attend the academy?

I am a vaccinologist and epidemiologist. I live in Malawi where I also work as an investigator on HIV vaccine trials. Malawi has an adult HIV national prevalence rate of 9%, one of the highest in the world. I strive to see an AIDS-free generation. While treatment has been widely accessible for more than a decade, it is clear we cannot treat our way out of HIV. Development of an effective global vaccine is paramount, a goal that I would like to be part of and lead in my setting. The Vaccine Academy will equip me with skills and tools to respond to local needs through developing hypotheses and designing clinical trials whose findings will ease the local burden of HIV.

I will use this as a networking platform to collaborate with fellow researchers in the region to develop research and conduct it, as well as publish. I recently worked on analytical antiretroviral treatment interruption studies, which are commonly deployed in HIV vaccine research. This is new research for the Malawian community and the research stakeholders involved. It requires more effort from researchers to convince stakeholders about the importance of this research.

I would like to share my experiences and learn from others in the region. Despite offering an attractive setting for clinical trials due to high incidence and prevalence rates of HIV, Malawi is under-represented in research. As a Malawian scientist and researcher working locally, I understand the public health challenges in my setting and appreciate the local research priorities. However, it is important to align the Malawian local research HIV agenda to that of the region.

The Vaccine Academy will provide me with a broader picture of vaccine research occurring at a regional level. It is important that Malawi participates in research through state-of-the-art HIV vaccine research and designs as we ensure that these products are safe and work in a similar way in various ethnic groups in the region. Malawians, as recipients of an investigational product, will have the advantage of protection if the product is efficacious and of early post-trial access to the product. As we introduce these advanced research designs to Malawians, it would be important to consider the socio-behavioural complexities that come with this research.

At the Vaccine Academy, I will learn from the leaders in the field and other researchers in the region and I will help my community understand the science of HIV vaccine research and dispel misconceptions, which can be a major drawback in research.

I will be able to share these research ideas with colleagues at my research institution and others and through teaching public health specialists at the Kamuzu University of Health Sciences where I am an honorary lecturer.

## What is your current role and area of work?

I work as an investigator in research happening in the HIV Vaccine Trials Network at my site. Currently, I am the local principal investigator for A5416/HVTN 806/HPTN 108, a Phase I, randomized, placebo-controlled study of the safety, antiviral and immunomodulatory activity of the broadly neutralizing antibodies (bnAbs), 3BNC117-LS-J and 10-1074-LS-J, in combination in adults on antiretroviral therapy (ART) in central, eastern, southern and western Africa during monitored analytical treatment interruption. I am also the local principal investigator for a Phase II, randomized, double-controlled study of the combination of two long-acting bnAbs at ART initiation in adults living with HIV-1 in central, eastern, southern and western Africa.

My role is to lead the teams conducting these trials and ensure that they are conducted according to standards of the international conference on Harmonization Guideline of Good Clinical Practice, Institutional Review Board and/or Ethics Committee determinations and all applicable Malawian laws and regulations for conducting research. My responsibilities include:

- o Developing study protocols
- o Leading all IRB communications and regulatory submissions until the study is approved
- o Being involved with research engagement activities with all relevant stakeholders, including communities
- o Disseminating study findings to participants and stakeholders and at international and local conferences
- o Developing and publishing manuscripts

"I am convinced that a better understanding of the HIV vaccine multi-epitope candidates is key to the development of an efficacious vaccine."

## Romeo Brice Djounda Dieffouo

PhD student, Center for Research on Emerging and Reemerging Diseases (CREMER)

Country of work: Cameroon



### What is your motivation to attend the academy?

I am interested in the study of vaccine candidates for HIV-1. I am convinced that a better understanding of the HIV vaccine multi-epitope candidates is key to the development of an efficacious vaccine. The 2024 HIV Vaccine Science Academy is a unique opportunity for me to get educated on the latest advances in this field and directly exchange with experts in the field. This will help shape my research hypothesis and priorities in the field. Moreover, it is an opportunity to network with experts and potential mentors that will help me grow in my research career.

### What is your current role and area of work?

I am currently a PhD student carrying out my research work at CREMER. My PhD research work aims to study the effects of common childhood infections on vaccine response in HIV-exposed infants during their first year of life. I am also the principal investigator in another study aimed at studying the dynamics of the immune system and latent HIV reservoir in early-treated people living with HIV.

"With my experience in HIV prevention and vaccine research, I am strategically positioned to champion the HIV vaccine, acceptability, roll out and implementation in my research institute."



## Sabdat Ekama

Research scientist and pharmacist, Nigerian Institute of Medical Research

Country of work: Nigeria

## What is your motivation to attend the academy?

I am a research scientist and consultant clinical pharmacist at the Nigerian Institute of Medical Research with a wealth of experience in clinical pharmacy and drug formulation. I have over 18 years of experience in the clinical management of people living with HIV, which has given me insight into the challenges associated with care and management of HIV and AIDS. I have a doctorate (PhD) in pharmaceuticals and pharmaceutical technology and a fellowship (FPCPharm) in clinical pharmacy. My academic background gives me the opportunity to operate a dual role in drug formulation and design, as well as offer clinical practice. I therefore operate from bench to bedside in my research practice.

I have a passion for HIV prevention research and have specialized in microbicide development. I have also been involved in vaccine preclinical studies and clinical trials. I am motivated to attend the 2024 HIV Vaccine Science Academy because of my keen interest in contributing my research efforts towards HIV prevention and eradication.

The HIV pandemic has taken its toll on central, eastern, southern and western Africa with new acquisitions taking place every year despite current HIV prevention strategies. The eventual emergence of an effective HIV vaccine after over four decades would be a significant breakthrough that I would totally embrace and work towards its acceptance and implementation.

With my experience in HIV prevention and vaccine research, I am strategically positioned to champion the HIV vaccine, acceptability, roll out and implementation in my research institute. I have a solid foundation for research and the anticipated support from my home institution, which has a good track record for the conduct of HIV research and vaccine research; this is an added advantage and motivational factor.

## What is your current role and area of work?

I am currently working on microbicide development and involved in multicentre clinical trials of COVID-19 vaccines.

"I am a fervent advocate of including children and adolescents early on in new HIV prevention, management and cure research and am interested in exploring how children are included in this research agenda."

## Samantha Fry

Paediatrician and clinical trial lead,  
Stellenbosch University/FAMCRU

Country of work: South Africa



## What is your motivation to attend the academy?

I am an alumnus of the IAS HIV Cure Academy and found that experience to be invaluable in my career growth and development. Since then, becoming more involved in HIV cure research has sparked my interest in HIV vaccines, how they work, why they work, and what immunologic and virologic impact they have, particularly on the reservoir size. As a paediatrician, I am a fervent advocate of including children and adolescents early on in new HIV prevention, management and cure research and am interested in exploring how children are included in this research agenda. Being able to attend this academy would arm me with the skills and knowledge to pioneer and lead research in this field within my environment. I am keen to further my knowledge of and involvement in HIV vaccine research and development and how this strategy would be applied clinically.

## What is your current role and area of work?

I am a paediatrician and clinical researcher at FAMCRU, a Stellenbosch University-affiliated research centre with a focus on infectious diseases, particularly HIV and TB, across the age spectrum. My primary role is principal investigator and clinical trial lead, which involves overseeing and providing clinical and logistic support to clinical and non-clinical staff for all trials conducted at FAMCRU. Integral to this role is training: protocol-specific training, general standard operating procedures training and clinical care training.

I am actively involved in trials investigating novel ART drugs and regimens, including long-acting therapeutics in adolescents and pregnant persons. I am also involved in protocol development, initiation and implementation of trials with a particular interest in HIV cure-related research. I provide support to the director of FAMCRU in dissemination of results and outcomes, both to community forums and the scientific community, through publications and conference abstract submissions.

I work closely with FAMCRU's adult and adolescent community advisory boards and the adolescents living with HIV peer support group in knowledge sharing and training. In addition, I am involved in undergraduate medical student teaching and examinations and establishing an ongoing medical education programme for investigators and other clinical staff at FAMCRU.

"I am committed to advancing the cause of vaccination, and I believe that the knowledge and insights gained from this course will propel me closer to achieving my career goals and making a positive impact on global health."



## Abdoulie E Jallow

Study coordinator, The Gambia at the London school of Hygiene & Tropical Medicine

Country of work: The Gambia

## What is your motivation to attend the academy?

Attending the 2024 HIV Vaccine Science Academy is an opportunity that resonates deeply with my career aspirations and personal motivations. I anticipate several positive outcomes from this training:

- o Broadened understanding: The training will enable me to gain a deeper insight into the entire HIV vaccine research and development, notably vaccine design and the use of relevant scientific tools and skills. This knowledge is integral to my goal of supporting The Gambia towards ending the HIV epidemic through the WHO agenda on prevention of vertical transmission.
- o Continued contribution: I am excited about the prospect of continuing to make meaningful contributions to supporting participants in establishing a sustainable network across different research institutions and creating momentum for African-led research. This includes addressing issues like stigmatization, which requires urgent attention.
- o Global impact: I believe that attending this training can have a profound influence not only on my career, but also on my institution's strategies and, potentially, national health policies. By enhancing my knowledge and skills, I aim to contribute not just locally, but also on a broader global scale to improve vaccine research and delivery. This training can provide a unique opportunity to engage and discuss with leaders in the HIV vaccine field, in a retreat-type setting, to build and facilitate collaborations in the search for an HIV vaccine.

I am deeply passionate about vaccinology, as evidenced by my extensive experience and dedication to the field. I am committed to advancing the cause of vaccination, and I believe that the knowledge and insights gained from this course will propel me closer to achieving my career goals and making a positive impact on global health.

## What is your current role and area of work?

Currently, I am actively working in the TRI-MOM project as study coordinator, focusing on the prevention of vertical transmission of HIV, syphilis and HBV in The Gambia and Burkina Faso. In this capacity, I have honed my leadership skills, overseeing all managerial and coordination aspects of studies, ensuring the highest ethical and data quality standards, and conducting community engagement activities. My responsibilities encompass every facet of the research process, from informed consent and data collection to vaccine cold chain management and sample transportation. However, my main duties are to:

- o Support the junior research coordinator and principal investigator(s) in all managerial and coordination aspects of studies, ensuring efficiency and smooth running of all field activities
- o Work towards the attainment of all study targets and timelines, including recruitment numbers and data quality
- o Take a senior role in coordinating field activities, including working with local communities and stakeholders, sensitization, recruitment, treatment of people living with HIV, and follow up and study visit scheduling as per study protocols
- o Develop and advise on field strategy for effective study conduct and ensure that the highest ethical and data quality standards are achieved
- o Proactively collaborate with the data management team to ensure high-quality data through data quality checks and data cleaning procedures
- o Manage and assign duties to the entire field team (This includes developing appropriate duty rosters (when necessary) and ensuring their adherence.)
- o Proactively collaborate with partners, such as healthcare facilities, prevention of vertical transmission units, ministries of health, the National AIDS Control Program and young Gambian mothers

"As the lead of the HIV and Infectious Diseases Molecular Virology laboratory at Kenyatta National Hospital, I have spearheaded 10 research studies as a principal investigator."

## James Kangethe

University of Nairobi and Kenyatta National Hospital

Country of work: Kenya



### What is your motivation to attend the academy?

Being a resident of eastern Africa, I have come face to face with the burden of HIV, with the highest mortalities reported due to AIDS. The development and implementation of a working HIV vaccine would serve as a long-term interventional strategy in curbing the high HIV incidental rates in central, eastern, southern and western Africa. Attending the 2024 HIV Vaccine Science Academy will go a long way to advancing and enhancing my skills in HIV vaccine research and development, notably vaccine design and the use of relevant scientific tools.

It will also serve as a good opportunity for my networking with experienced researchers in the field of HIV research, which will foster a collaborative research network and mentorship. It will be an opportunity to attract more research grant opportunities, as well as expand my scope of research. Skills gained will enhance my mentorship skills for upcoming HIV researchers at Kenyatta National Hospital and Nairobi University.

### What is your current role and area of work?

With over 13 years of dedicated service as a senior HIV research scientist at the University of Nairobi and Kenyatta National Hospital (KNH), I have been actively engaged in responding to the profound health challenges facing central, eastern, southern and western Africa. My expertise spans infectious diseases, with a particular focus on HIV care and treatment, HIV vaccines, high-risk human papillomavirus (HPV), HPV vaccination and cervical cancer. As the lead of the HIV and Infectious Diseases Molecular Virology laboratory at KNH, I have spearheaded 10 research studies as a principal investigator, four of which specifically addressed HIV-HPV and vaccination-related issues among women living with HIV in Kenya.

My commitment to public health extends to my role as the lead for HIV research training at KNH, where I coordinate HIV and prevention of vertical transmission training activities for medical and biomedical students. Additionally, my responsibilities as a research fellow at the Kenya Medical Research Institute (KEMRI) and the Kenya AIDS Vaccine Initiative (KAVI) have equipped me with a broad skill set encompassing HIV vaccine research. I am a co-investigator on a recently funded NIH grant focused on cervical cancer screening and HPV vaccination uptake among women living with HIV in Nairobi, Kenya, emphasizing the intersection of HIV and women's health.



"Having worked with HIV-1 for over 17 years but without a vaccine, new ways of doing things are needed for us to be able to develop nascent ways of vaccine research and development and move away from the business as usual that has not yielded results."



## Anne Kapaata

Postdoc scientist, MRC/UVRI & London School of Hygiene & Tropical Medicine Uganda Research Unit

Country of work: Uganda

## What is your motivation to attend the academy?

Having worked with HIV-1 for over 17 years but without a vaccine, I know that we need new ways of doing things for us to be able to develop nascent ways of vaccine research and development and move away from the business as usual that has not yielded results. This meeting provides the opportunity to be taught new techniques and ways of research and development using state-of-the-art tools and skills. Additionally, this meeting will enable me to interact with other accomplished scientists in the field of HIV-1 vaccinology from whom I can learn and establish collaborations where, together, we will be able to engage in research that will get us closer to an HIV vaccine. From this meeting, we will be able to build support groups on the African continent where the burden of HIV is most felt and cement African-led research for an HIV vaccine.

## What is your current role and area of work?

I am a postdoctoral scientist at the MRC/UVRI & LSHTM Research Unit and my expertise is in molecular virology of infectious diseases, especially HIV-1. Currently, I am investigating the use of third-generation sequencing methodologies (Oxford nanopore) to improve estimation of HIV-1 incidence in the population. The identified contemporary viruses are being used in the assessment of suitability of biomedical products against the contemporary strains of HIV-1 in India and Uganda. Here, we are using HIV-1 contemporary viruses to make infectious molecular clones and test their genotypic and phenotypic characteristics, including sensitivity to available broadly neutralizing antibodies.

Additionally, we have diversified work on vaccine development where we are proposing to develop a vaccine for the Crimean-Congo haemorrhagic fever virus (CCHFV). Specifically, I will lead to the sequencing and cloning of the CCHFV into an already developed adeno-based virus backbone. We propose to harness multiple antigenic epitopes for CCHFV in humans and animals. This research presents an effective vaccine platform that offers broad protection against highly evolving and genetically variable viruses of public health importance, like CCHFV. By incorporating multiple epitopes, our vaccine development emphasizes a comprehensive approach to CCHF prevention, aiming to protect against emerging variants.

"With the knowledge that I will gain from this opportunity, I too will be able to contribute to vaccine research at the Perinatal HIV Research Unit and add to the cadre of dedicated HIV researchers."

## Anita Marais

Programmes Officer, Perinatal HIV  
Research Unit

Country: South Africa



### What is your motivation to attend the academy?

I have a strong background in HIV prevention trials (non-vaccine) and feel it is time to gain a foothold in HIV vaccine research and enhance my current knowledge of HIV vaccines for both preventive and therapeutic avenues, as well as gain a better understanding of its molecular biology and vaccine development. The Perinatal HIV Research Unit (PHRU) has been involved in several different HIV vaccine trials and pivoted seamlessly to conduct the COVID-19 vaccine trials. I have been at the PHRU for almost seven years, and with the knowledge that I will gain from this opportunity, I too will be able to contribute to vaccine research at the PHRU and add to the cadre of dedicated HIV researchers. The benefit I receive will be passed on to the PHRU and associated vaccine researchers.

### What is your current role and area of work?

I am currently a co-principal investigator on an HIV pre-exposure prophylaxis (PrEP) clinical trial called HPTN084 for injectable cabotegravir. I have been a sub-investigator on other PrEP trials looking at new investigational HIV prevention products, as well as adolescent and adult female PrEP preference studies and behavioural HIV research among men who have sex with men and trans women. My work involves managing a research clinic staffed by 12 people, consulting with and counselling study participants, and managing adverse reactions reported.

"I have continued to pursue a career in HIV vaccine research by mentoring three HVTN Research and Mentorship Program scholars ... I am highly motivated to continue pursuing and growing my career in HIV vaccine research."



## Mitch Matoga

Principal investigator and Director of STI Research and Clinical Services, University of North Carolina Malawi

Country of work: Malawi

## What is your motivation to attend the academy?

My career in HIV vaccine research started in 2017 when our clinical research site participated in a HIV Vaccine Trials Network (HVTN) study, which assessed the efficacy of a heterologous prime/boost vaccine regimen of AD26.MOS4.HIV and aluminium phosphate adjuvanted Clade C gp140 in prevention of HIV-1 acquisition in women in central, eastern, southern and western Africa (HVTN 705/HPX2008 - IMBOKODO study). This was a multicentre, randomized, double-blind, placebo-controlled Phase 2B efficacy study and I was a co-investigator for the University of North Carolina Project Malawi clinical research site. Further, I have continued to pursue a career in HIV vaccine research by mentoring three HVTN Research and Mentorship Program (RAMP) scholars. This programme sponsors American medical students to conduct research on past or existing HVTN clinical trials to groom them into becoming the next generation of HIV vaccine researchers.

Last year, I was awarded the HVTN Scientific Leadership Development Program award, which aims to groom junior or mid-career researchers into becoming protocol chairs and co-chairs of upcoming HVTN protocols. I am highly motivated to continue pursuing and growing my career in HIV vaccine research. My motivation stems from the work I have done previously and is driven by my desire to become a renowned HIV vaccine research in the low- and middle-income world.

## What is your current role and area of work?

My current role is as a principal investigator for STI/HIV prevention research. I also serve as the Director of STI Research and Clinical Services. In this role, my main responsibilities are to provide leadership, oversight and direction of UNC Project Malawi's STI and HIV Prevention Research Program. I am also a fellow of the HIV Vaccine Trials Network Scientific Leadership Development Program aimed at grooming the next generation of HIV vaccine researchers. Lastly, I am the lead for implementation science research for my institution where I help develop and implement implementation science research projects.

"My HIV research work is focused on young key populations. I have previously completed an integrated bio-behavioural survey of HIV and sexually transmitted infections among young gay, bisexual and other men who have sex with men attending college or university in Nairobi, Kenya."

## Samuel Mwaniki

HIV and AIDS Program leader, University of Nairobi

Country of work: Kenya



### What is your motivation to attend the academy?

Attending the 2024 HIV Vaccine Science Academy will be an opportunity to achieve various goals. I hope to update my knowledge in the field of HIV prevention, including recent advances in the development of PrEP products, such as the six-month long-acting injectable lenacapavir, as well as where we are with the development of vaccine candidates, like broadly neutralizing antibodies. I also hope to acquire technical skills in the areas of clinical trial management, data analysis and scientific writing. Moreover, I look forward to gaining soft skills in packaging and pitching research ideas to different audiences.

It will also be an opportunity to network and build relationships for possible future collaborations in HIV vaccine research and development with other early- and mid-career researchers from various countries in Africa. The opportunity to meet world-renowned researchers whose work in the field of HIV I have keenly followed and greatly admired over the years is a prospect I truly cherish. Meeting these researchers in a relaxed retreat format will be an opportunity to learn from their research journeys, receive mentorship and build relationships for probable future collaborations. In summary, I look forward to a wholesome experience at the academy that is full of sharing, learning and networking with other researchers and practitioners in the field of HIV.

### What is your current role and area of work?

I lead the HIV and AIDS Program at the University of Nairobi, Kenya. It reaches approximately 60,000 students and 5,000 members of staff and entails provision of prevention, care and treatment services. I also lead teams in periodically reviewing workplace HIV and AIDS policies, preparing and implementing annual action plans, and reporting to the National Syndemic Diseases Control Council and National AIDS and STI Control Program on a quarterly basis. Moreover, I oversee the design and application of standard operating procedures for various activities in the programme and conduct routine monitoring,

evaluation and operational research as part of the quality control, assurance and improvement process.

My HIV research work is focused on young key populations. I have previously completed an integrated bio-behavioural survey of HIV and sexually transmitted infections among young gay, bisexual and other men who have sex with men attending college or university in Nairobi, Kenya. Currently, I am studying preferences for different PrEP modalities among young gay, bisexual and other men who have sex with men and trans women in three regions in Kenya, using discrete choice experiments. Findings from this work will hopefully help design public health messages that will enhance penetration of the different PrEP modalities among these young key populations.

"I am currently an immunologist on the BRILLIANT Consortium study ... Currently, we are screening for neutralizing antibodies from a pool of stored samples collected from ART-naive newly diagnosed persons to be utilized for future vaccine development assays."



## Anna Ritah Namuganga

Immunologist on the BRILLIANT Consortium study

Country of work: Uganda

### What is your motivation to attend the academy?

I am an early-career scientist and immunologist on the BRILLIANT consortium study to develop HIV immunogen screening for vaccine development and neutralizing antibodies. This academy will inform me about state-of-the-art vaccine research and current trends in vaccine development. I look forward to meeting experts and fellow African early- and mid-career scientists to create new networks for future collaboration. These collaborations could leverage existing biobanks, expertise and infrastructure to further HIV vaccine development in Africa, which is most hit by the HIV pandemic.

### What is your current role and area of work?

I am currently an immunologist on the BRILLIANT Consortium study at the Joint Clinical Research Centre and I coordinate the grant writing office. BRILLIANT stands for "BRinging Innovation to cLinical and Laboratory research to end HIV In Africa through New vaccine Technology". Currently, we are screening for neutralizing antibodies from a pool of stored samples collected from ART-naive newly diagnosed persons to be utilized for future vaccine development assays. I am part of the team creating, optimizing and implementing B- and T-cell mediated immune response, as well as genomics protocols to assess host factors affecting HIV vaccine design. I am part of the team assessing site laboratory capacity and resources toward preparedness for vaccine development activities.

"As a researcher actively engaged in the study of human restriction factors for HIV-1 acquisitions and the interplay with neutralizing antibodies from clients' autologous plasma, I recognize the importance of staying abreast of the latest developments in HIV vaccine research."

## Emmanuel Nkuwi

Postdoctoral researcher,  
Kumamoto University

Country of work: Tanzania



### What is your motivation to attend the academy?

Given the high burden of HIV-1 in Tanzania, coupled with my academic position as a lecturer at the University of Dodoma, I am motivated to attend the HIV 2024 Vaccine Academy to disseminate updated perspectives and contribute to the advancement of knowledge in the field. As a researcher actively engaged in the study of human restriction factors for HIV-1 acquisitions and the interplay with neutralizing antibodies from clients' autologous plasma, I recognize the importance of staying abreast of the latest developments in HIV vaccine research.

Attending the HIV 2024 Vaccine Academy will provide me with a unique opportunity to learn about cutting-edge approaches, emerging trends and breakthroughs in HIV vaccine development. This knowledge will not only enhance my current research endeavours, but will also allow me to bring valuable insights back to my academic role as a lecturer. By staying informed and sharing updated views with my students, I aim to contribute to the education and training of the next generation of scientists in the fields of immunology and microbiology.

Overall, my motivation to attend the HIV 2024 Vaccine Academy stems from a commitment to addressing the significant HIV-1 burden in Tanzania, promoting scientific collaboration, and fostering the dissemination of up-to-date information within both the academic and research communities.

### What is your current role and area of work?

I am currently in a postdoctoral research position at Kumamoto University in Japan, where my research is centred on human restriction factors for HIV-1 acquisitions and their interaction with neutralizing antibodies found in clients' autologous plasma. This work includes the utilization of samples obtained from individuals living with HIV or AIDS in Tanzania.

Additionally, I hold a permanent lecturer position at the University of Dodoma in Tanzania in the Department of Microbiology and Immunology. In this role, I am actively involved in teaching and supervising students on research projects related to immunology and microbes, with a specific focus on HIV-1.

"I have gained invaluable experience in conducting clinical trials, analysing immunological data, and collaborating with multidisciplinary teams. However, I recognize that an effective preventive vaccine remains the holy grail in the response to HIV and AIDS, particularly for vulnerable populations, such as infants and children."



## Nelisiwe Zikhali

PhD student, University of KwaZulu-Natal

Country of work: South Africa

## What is your motivation to attend the academy?

As a PhD student passionately committed to advancing paediatric HIV research, I am highly motivated to attend the prestigious 2024 HIV Vaccine Science Academy. This programme represents an unparalleled opportunity to expand my knowledge, hone my skills and contribute to the global effort towards developing an effective HIV vaccine. My current research in the HIV Pathogenesis Programme focuses on evaluating the potential of bnAbs as a therapeutic intervention for infants born with HIV. Through this work, I have gained invaluable experience in conducting clinical trials, analysing immunological data and collaborating with multidisciplinary teams. However, I recognize that an effective preventive vaccine remains the holy grail in the response to HIV and AIDS, particularly for vulnerable populations, such as infants and children.

Attending the academy would provide me with a comprehensive understanding of the latest advancements in HIV vaccine design, immunogen engineering and clinical trial strategies. I am eager to learn from experts, engage in thought-provoking discussions and gain insights into cutting-edge research methodologies and analytical techniques. This academy would equip me with the skills to contribute to the development of novel vaccine candidates and innovative delivery platforms tailored specifically for paediatric populations.

The HIV Vaccine Science Academy also presents an unparalleled networking opportunity. I am eager to connect with leading researchers, clinicians and advocates from around the world, fostering collaborations that could propel my research to new heights. Engaging with a diverse array of perspectives and sharing insights could spark innovative ideas and pave the way for groundbreaking discoveries in the field of paediatric HIV prevention and treatment. Attending the 2024 HIV Vaccine Science Academy aligns perfectly with my long-term career goal of becoming a leading researcher in the field of paediatric HIV and AIDS. The knowledge and skills acquired will equip me with the tools to contribute to the development of effective preventive and therapeutic strategies, ultimately improving the lives of infants and children affected by HIV.



## What is your current role and area of work?

My role involves conducting cutting-edge research in the field of paediatric HIV. Specifically, I am exploring the potential of bnAbs as a therapeutic intervention for infants born with HIV. My research focuses on evaluating the safety, efficacy and pharmacokinetics of bnAbs in infants. This involves generating pseudo viruses and testing them in different bnAbs targeting different epitopes, collecting and analysing data and collaborating with immunologists and biostatisticians.

I aim to develop novel treatment strategies that could potentially suppress viral replication, prevent disease progression and improve the overall health outcomes for infants living with HIV. My research contributes to advancing our understanding of the immune response against HIV in paediatric populations and paves the way for more effective and personalized treatment approaches. By combining rigorous scientific methods, ethical considerations and a deep commitment to improving the lives of vulnerable populations, my role as a PhD student in this programme is pivotal in the response to HIV and AIDS in children.

# Survey results

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The knowledge gained from this training is currently helping me in my day-to-day work, and it is impacting other staff within my organization as I conduct a training to inform feedback on the knowledge gained at the academy. For example, my team now has a better understanding of prevention and cure strategies. It had equipped me well for my daily health talk on HIV in clinics in rural Gambia.

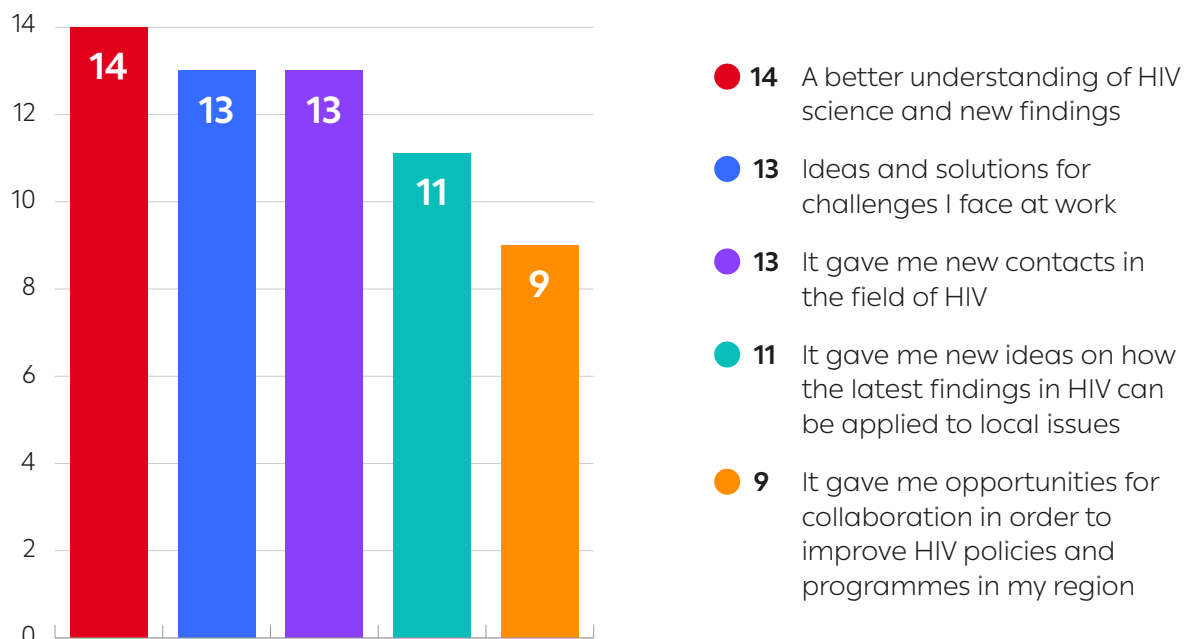
Survey respondent

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Previously, I have been unable to apply for grants related to HIV cure and vaccines, mainly because I did not know any members to team up with in my region. We do not have a virologist, immunologist, etc., at my site, and I had no idea of what bnAbs are currently in development or at what stage they are or who to link up with for that information. Now, I am confident to pursue such a challenge, knowing who to contact to team up.

Survey respondent

## What did you gain by attending this academy?



## After attending this academy:

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I will engage in the research community I work with to relay the information I gained from the academy. I will apply the leadership skills I learnt to grow the unit and improve our output.

Survey respondent

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I intend to explore further research on bnAbs, by collaborating with researchers working in that area, and look for strategies to incorporate it into my own research.

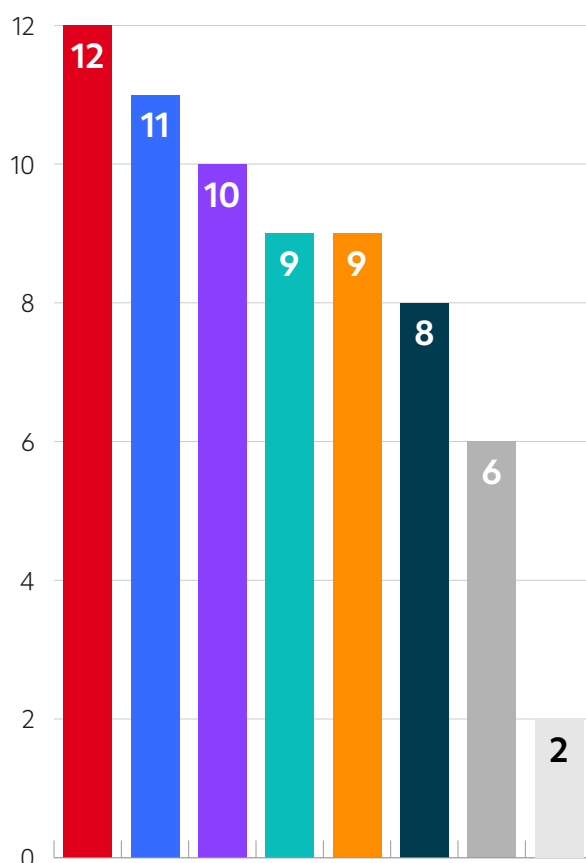
Survey respondent

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I will conduct research to assess young key populations' awareness, acceptability and willingness to participate in HIV vaccine trials.

Survey respondent

## I now intend to:



- 12 Use new knowledge gained to contribute to HIV vaccine science
- 11 Develop new collaborations or strengthen existing ones (e.g., create a partnership/network)
- 10 Improve my ability to engage communities living with or affected by HIV in my work
- 9 Improve my ability to engage in the HIV response
- 9 Refine/improve existing work/research practice or methodology
- 8 Initiate a new project, activity and/or research or scale up existing projects/programmes
- 6 Change the way I do my work/adapt my practices to the latest evidence
- 2 Other