

OLIVER R. TAMBO AFRICA RESEARCH CHAIR FOR VIRAL EPIDEMICS

Developing innovative One Health approaches through science and technology driven by genomics, molecular biology and analytical epidemiology in order to improve the risk management of viral epidemics in Africa.



Introduction

On 27 October 2017, the South African Government commemorated what would have been the 100th birthday of Oliver Kaizana Reginald Tambo by establishing the OR Tambo African Research Chairs Initiative (ORTARChI). OR Tambo was one of the South Africa's most important revolutionary leaders and the longest serving president of the ruling African National Congress (ANC), leading it from 1967 to 1991. ORTARChI is an initiative of the South African Department of Science and Innovation (DSI) and its entity, the National Research Foundation (NRF), in partnership with the Oliver & Adelaide Tambo Foundation, Canada's International Development Research Centre (IDRC), and seven councils of the Science Granting Councils Initiative in Sub-Saharan Africa, including the Tanzania Commission for Science and Technology (COSTECH). ORTARChI is an innovative, value-adding, and strategic initiative which is driven by a deep belief in inclusivity, competitiveness, and the desire to champion scientific excellence on our beloved continent. Ten host institutions and individual holders of research chairs across seven African countries were selected after a rigorous review process. The research chairs undertake world-class research in priority areas in order to contribute to producing knowledge and advancing research skills in alignment with the African Union's Agenda 2063 and the Science, Technology, and Innovation Strategy for Africa (STISA-2024) and with the development needs of national governments.

The OR Tambo Africa Research Chair at the SACIDS Foundation for One Health at the Sokoine University of Agriculture, whose chairholder is Professor Gerald Misinzo focuses on Viral Epidemics aiming at developing innovative approaches through science and technology driven by genomics

and analytical epidemiology in order to improve the risk management of viral epidemics in Africa. The Research Chair focuses on viral epidemics of animal and public health relevance including antimicrobial resistance. With the recent advances in technology, it is possible to rapidly detect infectious diseases at source (community level), thanks to exploitation of the power of genomics and bioinformatics, nanotechnology, novel information technologies for the capture, analysis and modelling of data and field deployable portable nucleic acid amplification and sequencing devices. Through the early detection of an infectious disease outbreak, a small outbreak can potentially be contained at the local level, thereby reducing adverse impacts. For this reason, early detection offers a cost-effective means for infectious disease management. Genomic information offers the opportunity for the management of infectious diseases and viral epidemics, such as description of the source of pathogens and contact tracing, precise diagnosis of infection, describe transmission patterns, describe new strains of pathogens, advance our understanding of host-pathogen interactions, helps our understanding of infectious disease pathogenesis and immune response and may help guide the development of vaccine candidates and genomic-based diagnostics, and treatment strategies. This Research Chair is intended to contribute to community-level One Health security. The chair is integrated into the SACIDS Foundation for One Health, a regional programme founded in 2008 by universities and national research institutions in five Member States of SADC, hosted at the Sokoine University of Agriculture (SUA). It will impact society by contributing to the SUA Corporate Strategic Plan 2021-2026, Tanzania Poverty Reduction and Growth Strategy Paper (PRSP) and Tanzania Development Vision 2025, Africa Union's

Agenda 2063 (The Africa We Want) and the United Nations Sustainable Development Goals i.e., SDG 1 (No Poverty), 2 (Zero Hunger), 3 (Good Health and Well-Being), 4. (Quality Education), 5 (Gender Equality), 10 (Reduced Inequalities), 13 (Climate Action), 14 (Life Below Water) and 17 (Partnership for the goals).

This brochure presents the profiles of the OR Tambo Africa Research Chair for Viral Epidemics team and students under the mentorship of the Research Chairholder, Professor Gerald Misinzo. These students are registered in different departments of Sokoine University of Agriculture, and they are carrying out their research in different areas related to the Research Chair in collaboration with International Partner Institutions.

1. THE OR TAMBO AFRICA RESEARCH CHAIR FOR VIRAL EPIDEMICS TEAM



OR Tambo Africa Research
Chairholder

Biography: Professor Gerald Misinzo is a veterinary graduate from Sokoine University of Agriculture (SUA) and holder of a Ph.D. in Virology from the University of Ghent, Belgium (2007). A professor of virology, leading specialist in pathogen genomics of the SACIDS Foundation for One Health, an institute of SUA, and leader of the World Bank-designated SACIDS Africa Centre of Excellence for Infectious Diseases of Humans and Animals in Eastern and Southern Africa. He is the Oliver R Tambo Africa Research Chairholder for Viral Epidemics.

Professor Misinzo was a member of the Special COVID-19 Committee appointed by Her Excellency Samia Suluhu Hassan, the President of the United Republic of Tanzania. He is a member of the Tanzania National Immunization Technical Advisory Group (NITAG) and the Vigilance Technical Advisory Committee (VTAC) of the Tanzania Ministry of Health. He is the Vice President of the Panel for the State of Laboratory Biosafety and Biosecurity in the Southern African Development Community (SADC) Region of the Academy of Science of South Africa (ASSAf) and a member of the Tanzania National Biosafety Committee. He is a member of the PPR

Global Research and Expertise Network (PPR-GREN) for the global eradication of peste des petits ruminants.

His research interests are on viral infectious diseases of humans and animals with a focus, in humans: respiratory infections and acute febrile illnesses, and in animals on transboundary animal diseases that affect livelihoods and food security. He employs genomics and metagenomics to study pathogen molecular epidemiology, host-pathogen interactions and diagnostics development. To date, he has mentored two postdocs, 20 PhDs, and over 52 MSc/MPhil.

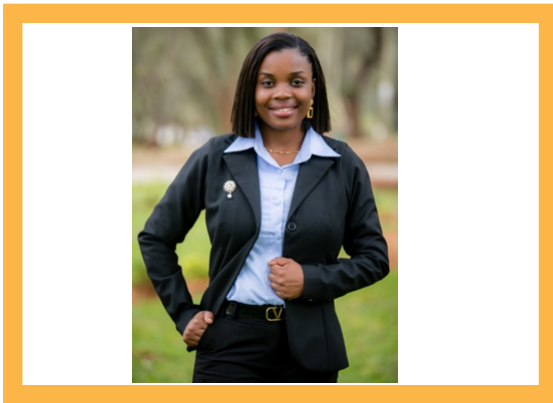
On own merit and as coordinator of the SACIDS Foundation for One Health, Professor Misinzo is a recipient of the Sokoine University of Agriculture Vice Chancellor's Award for best researcher at the University in attracting research funds, for two consecutive years, 2020 and 2021.



Dr. Jean Nepomuscene Hakizimana,
Postdoctoral Research Fellow in
Virology under the OR Tambo Africa
Research Chair

Biography: Dr. Hakizimana is currently a Postdoctoral Research Fellow in Virology under the OR Tambo Africa Research Chair for Viral Epidemics, hosted at the SACIDS Foundation for One Health (SACIDS) of the Sokoine University of Agriculture (SUA). He is mentored by Professor Gerald Misinzo. Dr. Hakizimana graduated with a Ph.D. in Veterinary Medicine (2021) from SUA under the fellowship from the Regional Scholarship and Innovation Fund of the Partnership for skills in Applied Sciences, Engineering and Technology (RSIF-PASET), an MSc in Veterinary Epidemiology (2015) and a BSc in Veterinary Medicine (2013) both from the Inter-States School of Veterinary Sciences and Medicine (EISMV), Cheikh Anta Diop University in Senegal. He was the first Ph.D. student from the first cohort of RSIF-PASET to defend his doctoral thesis and among the first two graduates who graduated within 3 years and 6 months since registration. While pursuing his Ph.D., He secured a grant from the International Foundation for Science (IFS, Sweden) to support his Ph.D. work, which was undertaken in countries of Eastern and Southern Africa. After the outstanding implementation of the first phase of the IFS project, Dr. Hakizimana was awarded with a second phase of funding in September 2022. Recently, He has also been awarded

the RSIF Junior Investigator Research Award (JIRA). During his Ph.D., He published four manuscripts as first author and co-authored two manuscripts in international peer-reviewed journals indexed at PubMed (<https://pubmed.ncbi.nlm.nih.gov/?term=hakizimana+jn&sort=pubdate>). His research interests are on the genomic epidemiology of viral diseases that threaten health, food security and livelihood. In his research, He uses next-generation sequencing (NGS) technologies and associated bioinformatics to provide insights into the transmission dynamics of viral diseases, the linkages of viral genetic structure and antigenic diversity by elucidating the mechanisms by which viruses alter themselves to avoid the hosts' immune response. His postdoctoral fellowship at SACIDS Foundation for One Health focuses on pathogens genomics surveillance through viral genomics and bioinformatics analysis of genomics data obtained from next- and third-generation sequencing of viral pathogens.



Ms. Ester Kasisi Adamson, Personal Research Assistant to the OR Tambo Africa Research Chair

Biography: Ms Ester Kasisi is an ambitious and devoted laboratory scientist with more than five years of working experience. Her areas of expertise and interests include molecular biology, cell culture, virology, and public health. She is a holder of a BSc in Biotechnology and Laboratory Sciences and Masters of Philosophy (MPhil) in Virology both from Sokoine University of Agriculture in Tanzania. She has conducted extensive research and experiments on viruses, which increased her passion for virology. She is currently working as a Personal Research Assistant to the OR Tambo Africa Research Chair for Viral Epidemics hosted at the SACIDS Foundation for One Health, an institute of the Sokoine University of Agriculture. This Research Chair aims at developing innovative One Health approaches through science and technology driven by genomics, molecular biology and analytical epidemiology in order to improve the risk management of transboundary viral epidemics of short-cycle animal stocks. Through this Research Chair, she looks forward to advancing her scientific knowledge and understanding of viruses. As a scientist, she is passionate about using her skills and expertise to empower women and control viral epidemics. She believes that science has the power to transform the world, but too often, women are underrepresented in the field. That's why she is dedicated to mentoring and

supporting women who are interested in pursuing careers in science. Ms Kasisi believes that by providing women with the tools and resources they need to succeed, we can help create a more equitable and just society. Ultimately, her goal is to use science as a force for good in the world. Whether it's by empowering women, controlling viral epidemics, or addressing other pressing issues facing our society, she is committed to making a positive impact through her work as a scientist. She believes that with dedication, hard work, and collaboration, we can create a better world for ourselves and future generations.

2. STUDENTS MENTORED BY RESEARCH CHAIRHOLDER, PROFESSOR GERALD MISINZO



Emmanuel George Kifaro

Registering University: Sokoine University of Agriculture

Department: Veterinary Microbiology, Parasitology, and Biotechnology

International Partner Institution: Korea Institute of Science and Technology

Research Title: Development of Microparticles-based RNA Separation and Detection Method for Selected RNA Viruses from Non-Invasive Animal Matrices

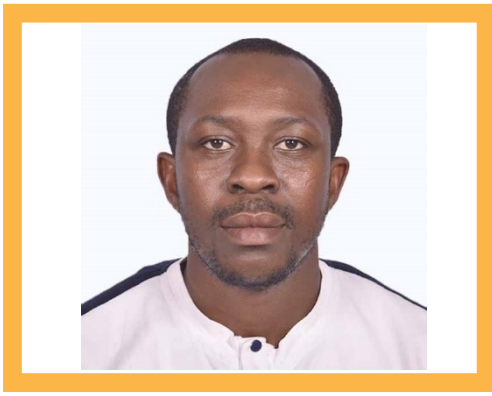
Supervisors and their affiliation institutions: Professor Gerald Misinzo (SUA), Professor Sang Kyung Kim (Korea Institute of Science and Technology)

Date of registration: 01/10/2018

Registration Number: PVM/E/2018/0098

Biography: Mr Emmanuel George Kifaro is an Assistant Lecturer of Molecular Biology at the Department of Microbiology, Parasitology, and Biotechnology, College of Veterinary Medicine and Biomedical Sciences (CVMBS), Sokoine University of Agriculture (SUA), Tanzania. His Ph.D. project aimed at utilizing hydrogel microparticles for direct viral RNA capture,

amplification, and detection from non-invasive animal matrices (saliva and stool) without prior purification of nucleic acids. In his research, he uses a combination of cutting-edge technologies including thermal energy, microparticles, microfluidics, and real-time PCR. The project is expected to bring in a simple RNA preparation method for field/semi-field application, to enhance the surveillance activities of infectious diseases. Kifaro holds a BSc in Biotechnology and laboratory Sciences and an MSc in One Health Molecular Biology both from the Sokoine University of Agriculture. His research interests include simple RNA preparation methods, designing and application of field deployable genomic-based diagnostic assays, and molecular epidemiology of viral infections. Previously, He worked as a laboratory scientist and head of section (molecular biology) at the clinical laboratory of the Kilimanjaro Christian Medical Centre (KCMC) leading to its Accreditation (ISO15189:2012) by the Clinical laboratory standards institute (CLSI) in 2015. He has 11 peer-reviewed publications from different studies related to infectious diseases.



Charlie Amoia

Registering University: Sokoine University of Agriculture

Department: Veterinary Microbiology, Parasitology and Biotechnology

International Partner Institution: Virginia Polytechnic Institute and State University

Research Title: Development of a DNA vaccine for the control of Newcastle disease genotype VII in Africa

Supervisors and their affiliation institutions: Professor Gerald Misinzo (Sokoine University of Agriculture (SUA)), Dr Augustino Chengula (SUA), Dr James Weger-Lucarelli (Virginia Tech), Professor Muhammad Munir (Lancaster University).

Date of registration: 13/07/2020

Registration Number: PVM/D/2020/0003

Biography: Mr Charlie Amoia is a Ph.D. candidate registered at the Department of Veterinary Microbiology, Parasitology, and Biotechnology, College of Veterinary Medicine and Biomedical Sciences at the Sokoine University of Agriculture. He is under the fellowship from the Regional Scholarship and Innovation Fund (RSIF) of the Partnership for Skills in Applied Sciences, Engineering, and Technology (PASET). His Ph.D. research aims at generating a genotype-matched DNA vaccine that is more immunogenic for genotype VII of the Newcastle disease virus (NDV) and more stable than live-attenuated

vaccines (LAVs) commonly used in Africa. During this study, a test-ready genotype VII NDV DNA vaccine adjuvanted with interferon lambda (IL-28b) will be developed, and its effects on immunogenicity in chickens evaluated against commercially available LAVs. Mr Amoia holds a BSc in Natural Science, and MSc in Animal Health and Production both from Nangui Abrogoua University, Ivory Coast, and a Professional Master in Quality-Security-Environment Management from Polytechnic School of Cheikh Anta Diop University, Senegal. Amoia is the founder of the start-up "Africa Animal Vaccine" (AAVac), which was among the winners of the UM6P Explorer Fall2021 organized by the Mohammed VI Polytechnic University (UM6, Morocco) for several months for the training in entrepreneurial education, mentoring, and start-up creation. He is currently working on finalizing his start-up project.



Damaris Felistus Mulwa

Registering University: Sokoine University of Agriculture

Department: Mathematics and Statistics

International Partner Institution: International Livestock Research Institute (ILRI)

Research Title: Modelling and Assessing the Impact of Rift Valley Fever on Food Security in Kenya

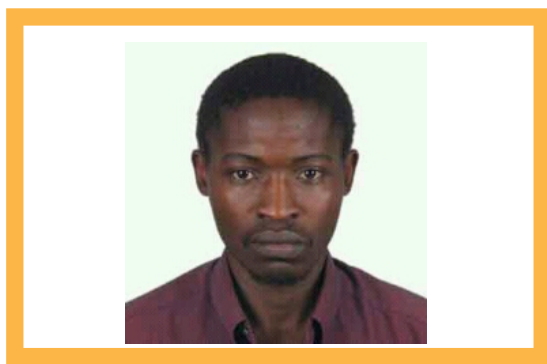
Supervisors and their affiliation institutions: Professor Gerald Misinzo (SUA), Professor Benedicto Kazuzuru (SUA), Dr Bernard Bett (ILRI), Dr. Kissa Kulwa (SUA)

Date of registration: 26/07/2021

Registration Number: PHM/D/2021/0002

Biography: Ms Damaris Felistus Mulwa is a Ph.D. candidate registered at the Department of Mathematics and Statistics at Sokoine University of Agriculture under the fellowship from the Regional Scholarship and Innovation Fund (RSIF) of the Partnership for Skills in Applied Sciences, Engineering, and Technology (PASET). She holds a BSc in Mathematics (Pure Mathematics and Statistics options) from the Jomo Kenyatta University of Agriculture and Technology (JKUAT), Kenya in 2015, and an MSc in Applied Statistics from the same University in 2018. Her Ph.D. research aims at modelling and assessing the impact of Rift Valley fever

(RVF) on food security in Kenya. Using Machine Learning Techniques, her Ph.D. work is expected to produce a reliable Statistical model to classify and predict RVF signs in order to issue alerts in good time for improved RVF prediction and outbreak management. Her research interests are disease modeling, analysis, and predictions. Previously, she held the position of Research Intern at the AIB capital in Nairobi, Kenya, Data Analyst Supervisor for World Vision, Kenya, Teaching Assistant at JKUAT, Assistant project manager for the mango project hosted by JKUAT in collaboration with UN Women and the Rockefeller Foundation and Assistant Lecturer in the department of Statistics and Actuarial Sciences at JKUAT. She has published 3 papers in international peer-reviewed scientific journals.



Julius Joseph Mwanandota

Registering University: Sokoine University of agriculture

Department: Veterinary Microbiology, Parasitology and Biotechnology

International Partner Institution: International Livestock Research Institute (ILRI)

Research Title: Genomic surveillance of Bluetongue and Peste des Petit Ruminant in Tanzania

Supervisors and their affiliation institutions: Professor Gerald Misinzo (SUA), Dr. Augustino Chengula (SUA)

Date of registration: 23/02/2020

Registration Number: PVM/D/2020/0009

Biography: Mr Julius Mwanandota is the head of the Protozoology and Serology section at the Tanzania Veterinary Laboratory Agency (TVLA). His Ph.D. project aims at investigating the spatiotemporal diversity of Bluetongue (BT) and Peste des petit ruminants (PPR) viruses in sheep and goats in Tanzania. In his research activities, cutting-edge technologies are used, including advanced molecular techniques for viral diagnosis, next-generation sequencing, and associated bioinformatics analysis. His work is expected to provide improved insight into the genetic diversity and transmission dynamics of BT and PPR viruses in Tanzania. This information is necessary for an integrated approach toward respiratory

diseases control and eradication. The approach will help in establishing a framework for successful animal production models through effective prevention, control, and possible eradication of these viral diseases. Mwanandota holds an MSc in Applied Microbiology (Virology option) obtained in 2013 from Sokoine University of Agriculture through a scholarship offered by the government of Tanzania and a Bachelor of Veterinary Medicine obtained in 2003 from the same university. He started his working career as a veterinary surgeon in a veterinary clinic (OLEM Veterinary Centre), and later He joined TVLA as a veterinary research officer. In the past, He has also served as the training Manager at Livestock Training Institute (LITA) in Temeke. He has published four papers in international peer-reviewed journals.



Leonildo dos Anjos Viagem

Registering University: Sokoine University of Agriculture

Department: Animal, Aquaculture and Range Science

International Partner Institution: University of São Paulo, Brazil

Research Title: Gut Microbiome and Genes Involved in Food Taste of the Mozambique tilapia (*Oreochromis mossambicus*)

Supervisors and their affiliation institutions: Professor Gerald Misinzo (SUA), Dr. Cyrus Rumisha (SUA), Professor Bruno da Silva Cerozi (University of São Paulo)

Date of registration: 21/06/2022

Registration Number: PAS/D/2022/0002

Biography: Mr Leonildo Viagem is a Ph.D. candidate in Animal Science at Sokoine University of Agriculture-Tanzania under the fellowship from the Regional Scholarship and Innovation Fund (RSIF) of the Partnership for Skills in Applied Sciences, Engineering, and Technology (PASET). He holds an MSc in Molecular and Microbial Biology from the University of Algarve-Portugal and a BSc in Marine Biology from the Eduardo Mondlane University-Mozambique. His research interests are in metagenomics and nutritional genomics applied to aquaculture. His Ph.D. project aims at investigating the association between the gut microbiota and genes involved in food taste and their

contribution to the feeding efficiency of Mozambique tilapia. In this research, metagenomics and nutritional genomics approaches will be used to improve the palatability of plant-based diets used to feed tilapia. In his research, he has used next-generation sequencing technologies (NGS) to provide information on the composition and function of the microbiota of the digestive tract of vertebrates and invertebrates with an interest in aquaculture and the evolution of genes related to nutrition. This information is relevant to the sustainable production of aquatic organisms. He is currently an assistant lecturer at Rovuma University in Mozambique.



Konan Ange-Sylvestre Goli

Registering University: Sokoine University of Agriculture

Department: Veterinary Microbiology, Parasitology, and Biotechnology

International Partner Institution: -

Research Title: Epidemiology and risk factors associated with the transmission of peste des petits ruminants in Savannah district, Côte d'Ivoire

Supervisors and their affiliation institutions: Professor Gerald Misinzo (SUA), Dr. Augustino Chengula (SUA)

Date of registration: 30/09/2022

Registration Number: PVM/D/2022/0004

Biography: Mr Konan Goli is a Ph.D. candidate registered in the department of Veterinary Microbiology, Parasitology, and Biotechnology at Sokoine University of Agriculture under the fellowship from the Regional Scholarship and Innovation Fund (RSIF) of the Partnership for Skills in Applied Sciences, Engineering, and Technology (PASET). His Ph.D. project aims at improving our understanding of the epidemiology and risk factors associated with the transmission of PPR in the Savannah District of Ivory Coast. Advanced serological and molecular techniques will be used for PPR diagnosis followed by next-generation sequencing and bioinformatics analysis. In addition, small ruminants' movements network analysis and domestic pigs' experiment will be performed to understand the PPR transmission dynamics.

This study is expected to provide information for the establishment of PPR control strategies and contribute to the global eradication of PPR. Goli holds an MSc degree in Valorisation and Sustainable Management of Animal Resources from the National agronomic institute of Tunisia, Tunisia, an MSc degree in Zootechnical Engineering, and a BSc degree in Zootechny from the Peleforo Gon Coulibaly university, Ivory Coast. He has written three dissertations, conducted plant trials for deworming chickens and domestic pigs, and seroepidemiological studies for the diagnosis of animal diseases, including PPR, Toxoplasmosis, Brucellosis, Hepatitis, Cysticercosis, and Anthrax. Coprological, hematological, Competitive enzyme-linked immunosorbent assay (ELISA-C), Rapid diagnostic test (RDT), and statistical analyses were performed during these studies. Previously, Mr Goli has been a laboratory assistant, contract lecturer, and consultant in animal production and health.



Faith Njeri Njeru

Registering University: Sokoine University of Agriculture

Department: Veterinary Microbiology, Parasitology, and Biotechnology

International Partner Institution: Ghent University, Belgium

Research Title: Innovative application of nanobody for the control of maize lethal necrosis

Supervisors and their affiliation institutions: Professor Gerald Misinzo (SUA), Professor Jan Gettemans (Ghent University), Professor Geert Haesaert (Ghent University), Professor Kris Audenaert (Ghent University)

Date of registration: 20/07/2020

Registration Number: PVM/D/2020/0005

Biography: Ms Faith Njeru is a Ph.D. candidate registered in the department of Veterinary Microbiology, Parasitology and Biotechnology at Sokoine University of Agriculture under the fellowship from the Regional Scholarship and Innovation Fund (RSIF) of the Partnership for Skills in Applied Sciences, Engineering, and Technology (PASET). Her Ph.D. project aims at exploring the innovative application of nanobodies for the control of maize lethal necrosis. In her research, She uses molecular biology techniques and biotechnology to develop novel diagnostic kits for sensitive and specific detection of plant diseases for their effective

management. She focuses on plant health and the development of resistant varieties. In addition, she uses novel antibodies known as nanobodies for application in crop protection studies. Ms Njeru holds an MSc. in molecular biology from KU Leuven, Belgium, and a BSc. in Biochemistry from Nairobi University in Kenya. Previously, she has worked at the International Maize and Wheat Improvement Centre (CIMMYT) in several capacities including the use of molecular biology tools for breeding, the use of serological tools for epidemiological and pathology studies. She has also been involved in a managerial position to oversee the management of the seed health laboratory at CIMMYT. She is passionate about translating science from the laboratory to the market for the benefit of society.



Mohammed Usman Sajo

Registering University: Sokoine University of Agriculture

Department: Veterinary Medicine and Public Health

International Partner Institution: -

Research Title: Comparative Study of the Genomic Variability of Newcastle Disease Virus Strains from Nigeria and Development of an Effective Genotype-Matched Vaccine

Supervisors and their affiliation institutions: Professor Gerald Misinzo (SUA),

Date of registration: 06/03/2023

Registration Number: SUA/DPRTC/A/15232

Biography: Mr Osman Sajo is a Ph.D. candidate registered in the department of Veterinary Medicine and Public Health at Sokoine University of Agriculture under the fellowship from the Regional Scholarship and Innovation Fund (RSIF) of the Partnership for Skills in Applied Sciences, Engineering, and Technology (PASET). His Ph.D. research aims at investigating the association between the Newcastle disease virus (NDV) vaccine and field strains in Nigeria and developing an effective genotype-matched vaccine against the circulating strains. Cutting-edge molecular technics for disease diagnostic, including conventional and real-time polymerase chain reactions, cell culture, FACs, immunohistochemistry, and in vivo animal

experiments will be used during the implementation of his Ph.D. research. This study is expected to provide more insights into the NDV genetic diversity in Nigeria and produce a genotype-matched vaccine candidate for NDV. Sajo graduated from the faculty of Veterinary Medicine with distinction in 2015. This gave him the opportunity to be awarded in 2017 the prestigious African Union Full Scholarship for his master's degree. Previously, Mr Sajo worked with IMC, FAO, LABOCEL, and Tahir Farms in various roles. Presently, He is a lecturer at the University of Maiduguri in Nigeria. He is also a clinician at UMVTH. Having decided to be among global researchers in epidemiology and vaccinology with the aim of providing more efficient ways of controlling TADs, Mr Sajo became interested in infectious disease epidemiology, bioinformatics, disease modelling, immunotherapeutics, and public health.



Faith Paul Mdetele

more insight into the genetic diversity and transmission dynamics of the African swine fever virus at the wildlife livestock interface in Tanzania for improved risk management. Mdetele holds a BSc in Biotechnology and Laboratory Science and her research interest is in virology.

Registering University: Sokoine University of Agriculture

Department: Veterinary Microbiology, Parasitology and Biotechnology

International Partner Institution: -

Research Title: Investigation of African Swine Fever Virus in *Ornithodoros* Ticks Found in Warthog Burrows: a Case of Mikumi National Park

Supervisors and their affiliation institutions: Professor Gerald Misinzo (SUA), Dr. Emma Peter Njau (SUA)

Date of registration: 26/11/2021

Registration Number: MOH/D/2021/0013

Biography: Ms Faith Mdetele is a candidate for an MSc in One Health Molecular Biology registered at the department of Veterinary, Microbiology, Parasitology, and Biotechnology, College of Veterinary Medicine and Biomedical Sciences of the Sokoine University of Agriculture. Her MSc research aims at investigating the African swine fever virus in *Ornithodoros* ticks found in warthog burrows focusing on Mikumi National Park. Advanced molecular techniques including polymerase chain reaction (PCR), sequencing and bioinformatics analysis will be used during the implementation of this research. This study is expected to provide



Baraka Boniface Byarugaba

Registering University: Sokoine University of Agriculture

Department: Veterinary Microbiology, Parasitology, and Biotechnology

International Partner Institution: -

Research Title: Mosquitoes Abundance and Transmission Indices of Dengue Virus in Ilala District, Tanzania.

Supervisors and their affiliation institutions: Professor Gerald Misinzo (SUA)

Date of registration: 20/11/2019

Registration Number: MMB/D/2019/0005

Biography: Mr Byarugaba is a passionate postgraduate student pursuing an MSc in Applied Microbiology. He is registered at the department of Veterinary, Microbiology, Parasitology, and Biotechnology, College of Veterinary Medicine, and Biomedical Sciences of the Sokoine University of Agriculture. His work aims at investigating the mosquitoes abundance and transmission dynamics of Dengue in Tanzania. In his research, advanced molecular techniques including polymerase chain reaction and sequencing are used for the diagnosis of Dengue in mosquitoes and to determine Dengue virus genetic variation, respectively. Having completed his undergraduate degree in 2017, He discovered his fascination with the world of

microbiology and decided to pursue his postgraduate studies in this field. His research interests are in infectious diseases and He is always eager to gain new knowledge on them, especially how they can be controlled effectively. Apart from his academic pursuits, Byarugaba is also actively involved in volunteering in academic service programs where He assists undergraduate students in research with a broader desire to make a positive impact on society through his work. He hopes to pursue a Ph.D. to continue contributing to the field of microbiology after completing his MSc.



Isaya Musa Kibasa

Registering University: Sokoine University of Agriculture

Department: Department of Veterinary Microbiology, Parasitology, And Biotechnology

International Partner Institution: -

Research Title: Epidemiology of Newcastle Disease in Backyard Chickens Rearing System in Iringa Rural District, Tanzania

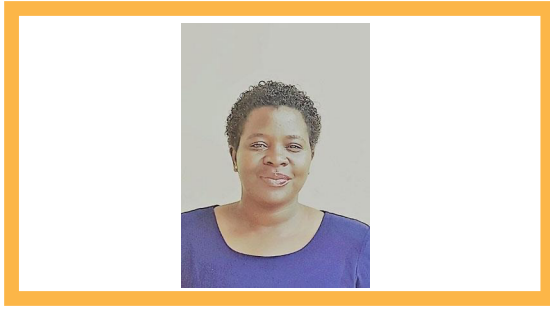
Supervisors and their affiliation institutions: Professor Gerald Misinzo (SUA), Dr. Augustino Chengula (SUA)

Date of registration: 27/11/2018

Registration Number: MOH/D/2018/0018

Biography: Mr Isaya Kibasa is a Veterinary Officer at the Ministry of Livestock and Fisheries based at Southern Eastern Zonal Veterinary Center, Mtwara. He holds a BSc in Veterinary Medicine (2015) and an MSc in One Health Molecular Biology (2021). He was registered in the department of Veterinary, Microbiology, Parasitology, and Biotechnology, College of Veterinary Medicine, and Biomedical Sciences of the Sokoine University of Agriculture. The aim of his MSc research was to assess the knowledge, attitude, and practices of backyard chickens' keepers on Newcastle disease as well as molecular epidemiology of the Newcastle disease virus (NDV) responsible for outbreaks in backyard chickens in Iringa region of Tanzania.

Reverse transcription polymerase chain reaction and sequencing were used for NDV diagnosis and determining NDV genetic variation, respectively, while a pre-tested questionnaire was used to assess farmers' knowledge and practices regarding NDV transmission. The study confirmed the circulation of NDV genotype VII in backyard chickens in Iringa and the transboundary nature of NDV circulating in Tanzania. Mr Kibasa research interests are on the Newcastle disease virus focusing on molecular characterization in backyard chickens which is helpful in detecting viral evolution and updating the Newcastle disease vaccines.



Sima Ernest Rugarabamu

Registering University: Sokoine University of agriculture

Department: Veterinary Microbiology, Parasitology and Biotechnology

Research Title: The prevalence, distribution and risk of viral haemorrhagic fevers in Tanzania

Supervisors and their affiliation institutions: Prof Gerald Misinzo (Sokoine University of Agriculture, Tanzania), Dr Leonard E.G Mboera (SACIDS Foundation for One Health, Tanzania) Prof Julius J. Lutwama (Uganda Virus Research Institute, Uganda) and Prof Janusz Paweska (National Institute for Communicable Diseases, South Africa)

Date of registration: 09/11/2017

Registration Number: PVM/D/2017/0090

Biography: Sima Rugarabamu holds a Master of Science degree in Medical Microbiology and Immunology from Muhimbili University of Health and Allied Sciences (MUHAS). She worked with Muhimbili National Hospital and Muhimbili University since 2009 up to now in reporting microbiology cases and teaching in her daily activities. Her PhD research at Sokoine University of Agriculture investigated The Prevalence Distribution and Risk of Viral Haemorrhagic fevers(VHF) in Tanzania. In particular, the research has made significant contributions to the epidemiology and diagnosis of VHF. Her research insight is

expected to contribute to better detection of viral hemorrhagic fevers in Tanzania, including the use of field-deployable genomic surveillance of VHF circulating in Tanzania to allow for rapid epidemiological and clinical detection of a pathogen to confirm infection. She has received numerous academic achievement awards and is a registered member of the Tanzanian Medical Association. She has 22 papers published in international peer-reviewed journals and continues to explore her passion in teaching, training and research.