DR. BATSIRAI MABVAKURE

INVESTIGATING THE ROLE OF MIGRATION AND MORBIDITY IN THE TRANSMISSION OF HIV IN SUB-SAHARAN AFRICA (JOHN HOPKINS)
JAMES GEAR FELLOW: 2019

The James Gear International Fellowship has been very instrumental in shaping my career

I was honored with the 2019 James Gear International Fellowship by the Poliomyelitis Research Foundation, which supported me as I embarked on a post-doctoral training opportunity at the Johns Hopkins School of Medicine in Baltimore, USA. My post-doctoral research was centered on leveraging molecular evolution methods in population studies to trace the origins of epidemics and unravel transmission networks, paving the way for informed intervention strategies.

During the post-doctoral training, I actively contributed to a project funded by the Bill and Melinda Gates Foundation through the PANGEA-HIV consortium. This project explored the intricate HIV transmission networks in a geographical region that was disproportionally affected by the HIV epidemic in Uganda. The study provided crucial insights into why HIV transmissions persisted despite ongoing intervention efforts. I also provided expertise to various other research endeavors, including the investigation of Hepatitis C transmissions within the HPTN 078 cohort in the United States, the reviewing of molecular evolution articles for the Johns Hopkins Novel Coronavirus Research Compendium (NCRC), and molecular epidemiology studies of SARS-CoV-2 in Uruguay.

During the height of the SARS-CoV-2 pandemic, I joined the Michigan Department of Health and Human Services, where I played a pivotal role in developing bioinformatics pipelines for the analysis of SARS-CoV-2 molecular data and associated metadata. I established automated bioinformatics pipelines, facilitating the mapping of numerous SARS-CoV-2 sequences, their subsequent analysis and their global sharing with other researchers. These analyses led to the identification of several epidemiologically significant initial cases of SARS-CoV-2 variants in Michigan, bolstering efforts to control their spread. Additionally, I automated bioinformatics

pipelines for the analysis of foodborne and sexually transmitted bacterial infections. Most importantly, I established databases for the documentation and tracking of infectious diseases that were characterized through bioinformatics analysis in the laboratory. I was honored with the Coin of Excellence from the State of Michigan and the Public Health Administration for my contributions to the SARS-CoV-2 response team.

Following my employment at the Michigan Department of Health and Human Services, I joined the Department of Metabolism and Nutritional Programming at the Van Andel Research Institute as a Bioinformatics Research Scientist. The research group focused on investigating host biological responses to disease models, with a particular emphasis on cancer. I acquired various epigenetics bioinformatics approaches that enabled me to contribute to laboratory studies involving mice models.

Presently, I hold the position of Assistant Professor (Research-track) at Georgetown University's Lombardi Comprehensive Cancer Center. In this role, I apply my bioinformatics training to population-based cancer studies to unravel the biological underpinnings of cancer disparities, both in the United States and globally. The James Gear International Fellowship has been very instrumental in shaping my career, providing me invaluable opportunities for international collaboration and advanced training that have significantly enriched my contributions to the fields of molecular epidemiology and population studies, in both infectious and non-infectious diseases.