Fellowship Feature: Dr. Deus Ishengoma
Generating Data in Australia to Support Malaria Elimination in Tanzania

A collaboration between Dr. Deus Ishengoma, Dr. Darren Creek, and Prof. Christian Doerig

Nearly 12,000 kilometers away from home, Dr. Deus Ishengoma spent eleven months with Prof. Christian Doerig and Dr. Darren Creek at Australia’s Monash University. Dr. Ishengoma, who is Principal Research Scientist and Head of the Laboratory Sciences Department at the National Institute of Medical Research in Tanzania, has dedicated much of his career to contributing to the fight against malaria in Africa.

The African continent accounted for 92% of global cases of malaria and 93% of worldwide malaria deaths in 2017. In addition to the devastating effects on health and wellbeing, malaria also costs African communities and governments at least US$12 billion annually. According to Dr. Ishengoma, Tanzania’s “enormous diversity” in human population, malaria vectors, geography, climate, socioeconomic status, and cultural factors makes the disease particularly difficult to control there. “Together, with the weakness of the health system, all of these factors have a great impact on the strategies to eliminate malaria in Tanzania,” he said.

Access to Monash University’s well-equipped laboratories provided Dr. Ishengoma with the opportunity to “focus on science.” He also established new relationships and plans for future collaborations, developed three grant proposals, published seven papers in peer-reviewed journals, and shared his learnings with his students in Tanzania.

Now back at home, Dr. Ishengoma continues to advance his research through global collaborations and train other scientists to join the battle to eliminate malaria.

Through the WIPO Re:Search fellowship program, Dr. Ishengoma learned to use sophisticated technologies—including metabolomics, proteomics, and infrared spectroscopy—to identify “signatures” of antimalarial drug resistance in patient blood samples. These findings could potentially be used to develop improved point-of-care diagnostic tests. Together, Dr. Ishengoma, Dr. Creek, and Prof. Doerig analyzed field samples collected in Tanzania to understand the causal mechanisms of drug resistance.

“ ‘A research partnership leverages skill, resources, equipment, lab space, and personnel – it’s the best joint venture,’ ” Dr. Ishengoma said. “ ‘Through international research collaborations, you are able to utilize the unique skills and experiences of each researcher. For those of us from developing countries, research partnerships are really important because our colleagues have access to advanced technology that we don’t have in our countries. In turn, we are able to share our knowledge of living and working in a disease-endemic country. And it’s by working together that we can make a difference.’”

Resistance to antimalarial medicines—which has already emerged in other parts of the world—could further threaten elimination efforts in Tanzania and across Africa. Dr. Ishengoma is committed to addressing this threat by boosting Tanzania’s capacity to detect and monitor antimalarial drug resistance. In addition to conducting research on the surveillance of resistance, he is mentoring the next generation of local scientists.