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UCT awarded two of the four new critical health research units

Two of the four newly-launched South African Medical Research Council (SAMRC) Extramural Research Units (EMUs) to develop critical health research have been awarded to the University of Cape Town (UCT). The units, led by top African researchers, will strengthen the country's health systems and counter diseases and pandemics such as COVID-19.

UCT's Professor Ntobeko Ntusi is the director of SAMRC/UCT Intersection of Noncommunicable Diseases and Infectious Diseases Unit. His colleague, Professor Colet Dandara, is the director of SAMRC/UCT Platform for Pharmacogenomics Research and Translation Unit.

At the launch in Johannesburg on recently, SAMRC president and chief executive officer, Professor Glenda Gray, said the deadly COVID-19 pandemic had highlighted the crucial role of research and development in the health sector.

Professor Ntusi's SAMRC/UCT Intersection of Non-communicable Diseases and Infectious Diseases Unit will enhance the understanding and management of the interaction between endemic infections such as SARS-CoV-2, HIV and tuberculosis, and non-communicable diseases such as heart failure, hypertension, diabetes mellitus, obesity, cancer, and mental health.

Speaking at the launch, Ntusi, who is the head of the [Department of Medicine](#) at UCT and Groote Schuur Hospital, said that non-communicable diseases and infections often co-exist in individuals and manifest in intricate ways. An example is heart failure and hypertension in those with COVID-19.

However, the approach to understanding the managing of this complex nexus has been siloed, he said. This has limited opportunities to study the interaction of non-communicable diseases and infections and siloed approaches to research and clinical practices.

"We must have a systematic approach," said Ntusi. "This will allow us not only to better understand mechanisms of disease but will ultimately lead to better management of individuals that suffer from both, particularly those in low- and middle-income countries."

He added: "The EMU will drive a new area of scholarship, generate new knowledge and a new generation of scientists and associations that will improve the health of those who suffer from these significant public health conditions."

The new initiative will also bring together scientists from fields as diverse as imaging, basic science, immunology, public health and clinical disciplines.

"My hope is that this will give us the ability to leverage all this expertise to create much greater impact in terms of the work we do."

Professor Dandara's SAMRC/UCT Platform for Pharmacogenomics Research and Translation Unit will identify inherited genetic variations, epigenetic changes and the microbial profiles associated with interindividual differences in the ways patients respond to therapeutic treatment. This includes herbal medicine.

The effects of pharmacogenomics, the intersection of genetics and pharmacology, play a large role in therapeutics, Dandara said at the launch. Dandara heads the UCT Pharmacogenomics and Drug Metabolism Research Group (PharmGx).

Patients may present the same conditions and symptoms but underlying genetic data means they show differential responses to the same treatment. This means that a drug produced in one part of the world does not work in the same way in another part of the world. Drug studies on African populations and those of non-African origin in Europe, for example, had demonstrated this.

"We are interested in screening the specific genomes that affect drug responses. We must study this to prevent toxic effects and drug inefficacy in certain populations," Dandara said.

Dandara said that pharmacogenomics could be used to tailor medications for specific populations. In the future, pre-emptive, one-off testing could become routine among patients. This could dramatically reduce their chances of adverse reactions to prescribed medications.

For this to become a reality, however, many more pharmacogenes in African populations must be characterised. Here capacity building is key, he said.

Story by Helen Swingler, UCT News



Prof Colet Dandara (left) and Prof Ntobeko Ntusi, the directors of the two new SAMRC/UCT Extramural Research Units.

Photo: South African Medical Research Council

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