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UCT researchers part of major global effort to fight fungal infections

Researchers at the University of Cape Town (UCT) are playing a key role in a major international collaboration that has been awarded £4.5 million (approximately R100 million) to advance understanding of fungal diseases that claim around 2.5 million lives each year.

The funding, awarded by the Wellcome Trust, will support the Mycology Bioimaging Initiative (MBI) in a global effort to develop cutting-edge tools that allow scientists to visualise how dangerous fungal pathogens grow, spread, and cause disease.

The MBI is an international collaboration focused on developing and sharing advanced bioimaging tools to better understand fungal pathogens. The initiative brings together researchers from UCT, the University of Exeter and the University of Edinburgh, combining expertise in imaging, infection biology, and data science to address critical gaps in fungal disease research.

Fungal infections affect an estimated 6.5 million people annually, with the greatest burden in low- and middle-income countries. Despite their impact, fungal pathogens remain poorly understood, limiting progress in diagnostics and treatment.

At UCT, Professor Jennifer Hoving from the Institute of Infectious Disease and Molecular Medicine (IDM) and Professor Rachael Dangarembizi from the Neuroscience Institute will lead efforts to advance bioimaging technologies and apply them to pathogens of high clinical importance.

Professor Hoving said the initiative represents a critical step in strengthening research capacity in regions most affected by fungal disease.

"Using advanced technologies embedded in our local context, while being globally connected, helps to ensure that expertise and technologies remain within the regions most impacted by disease. This approach reduces delays in diagnosis, guides more effective treatment strategies, and ultimately improves health outcomes for vulnerable populations," she said.

The IDM team will focus, in part, on *Emergomyces*, a fungal pathogen first identified in South Africa in 2013 that is now recognised as causing widespread infection and death if left untreated.

Professor Dangarembizi will lead work to better understand how infection by *Cryptococcus neoformans*, causes brain damage.

"This funding from the Wellcome Trust enables us to establish advanced bioimaging platforms and molecular tools that will accelerate fungal research in Africa. With these technologies, we can interrogate disease mechanisms with unprecedented resolution, revealing how fungal pathogens spread through and disrupt the brain during infection," she explained.

In addition to technology development, the MBI will invest in training and knowledge exchange through workshops and researcher exchanges, with a strong focus on building bioimaging expertise across Africa.

By combining global collaboration with local research capacity, the initiative will accelerate understanding of fungal disease progression and improve outcomes for vulnerable populations worldwide.

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