

MWP – Young Researcher Abstract 2026

Project title: From Fungal Genomes to Forest Resilience	
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Abstract (approx. 200 words): Fungi are key components of forest ecosystems, but fungal diseases inevitably emerge when trees are planted outside of their natural habitat. My research focuses on fungi that affect forest health globally. By analysing fungal genes and genomes, I investigate where fungi originate, how they evolve and spread, and potential mechanisms they use to cause disease. These molecular insights are critical for understanding fungal lifestyles, strengthening biosurveillance and managing diseases. My vision is to build the scientific capacity needed for rapid, genomics-informed responses to forest diseases. This is particularly relevant in the Southern Hemisphere, a hotspot for invasive forest pathogens, but often less studied than Northern Hemisphere counterparts. Although generating genomic data has become relatively accessible, the expertise required to analyse and apply these data remains limited in many developing countries, including my own. Through training opportunities, I want to expand researchers' ability to apply genomic approaches to detect, characterise and monitor pathogens before outbreaks escalate. The growing impact of invasive fungal pathogens on native Southern Hemisphere trees highlights the urgency of this work. By combining genomic tools, global collaboration and local capacity building, we can better protect forest resources, biodiversity and the forest-based industries that depend on them.	
Key words: Comparative genomics, invasive species, pathogens, populations, taxonomy, tree health	