



## Position for M.Sc. candidate: Pathogenicity of *Fusarium* spp. on pine seedlings and determining causal agents of post-planting mortality

An M.Sc. position is available within the Tree Protection Cooperative Programme (TPCP) at the Forestry and Agricultural Biotechnology Institute (FABI) of the University of Pretoria. The TPCP is an interdisciplinary programme focused on research on pests and pathogens of plantation trees and is considered one of the strongest research programmes in the world working on tree health.

*Pinus* species and their hybrids are widely planted throughout the country for various products including structural timber, mining poles, pulp and paper, and cellulose, and are an important part of South Africa's forestry industry that is responsible for nearly 10% of the agricultural Gross Domestic Product (GDP) and contributes over R38 billion to the country's economy. The sustainability and productivity of pine plantations are threatened by fungal pathogens and insect pests that can cause mortality of seedlings in the nurseries, and affect the survival of seedlings after planting. To inform knowledge-based decisions to manage pests and pathogens in the nursery and field, an understanding of the primary causal agent/s of mortality is needed.

*Fusarium circinatum* is a well-known pathogen of pine seedlings in the nurseries, but the role of other *Fusarium* spp. that are being increasingly isolated from diseased plants, is not certain. It is also unknown whether asymptomatic seedlings introduce *F. circinatum* into the field, causing tree mortality after planting. The role of other pathogens, such as *Diplodia sapinea*, and insect pests, such as *Pissodes* spp., in tree mortality post planting also requires further investigation.

This project aims to assess the pathogenicity of *Fusarium* spp. on pine seedlings via inoculation trials and to determine the causal agent of post planting mortality through field surveys and various diagnostic methods.

**Required qualifications:** Honours or equivalent degree, in Plant Pathology, Microbiology, Entomology, or a related field; demonstrated analytical/statistical abilities and writing skills; ability to work independently and as part of a team; self-driven; good communication skills. Drivers licence is essential, and the applicant must be capable and willing to do field work.

**Where:** The successful candidate will be based at the Forestry and Agricultural Biotechnology Institute (FABI, <u>www.fabinet.up.ac.za</u>), University of Pretoria, with field work in the southern Cape (George – Knynsa). The project is set to begin in early 2024.

**Compensation:** A full scholarship is offered for a two-year period.

**Application Process:** Email the following documents to Prof Irene Barnes (<u>irene.barnes@fabi.up.ac.za</u>) and Prof. Brett Hurley (<u>brett.hurley@fabi.up.ac.za</u>): (1) A cover letter that includes your research interests (2) CV with full academic record and including contact information for three references; (3) copy of drivers licence. The first round of selection will take place on the **1st December 2023**. Applications, currently open, will remain so until successful candidates have been found. Please note that unsuccessful applicants will not be contacted.

