

PhD Student in Plant Functional Traits & Process-Based Modelling

University of the Witwatersrand, Johannesburg in collaboration Forestry Sector Partners

We invite applications for a **full-time funded PhD position** in a collaborative research project aimed at understanding hydraulic trait variation in forestry trees and incorporating these traits into a process-based model of plant function.

Project Overview

The overarching goal is to quantify key functional traits associated with plant hydraulic function in forestry genotypes. Data will be collected at an open-air forestry laboratory at the **University of Pretoria**, where a controlled drought experiment will take place. You will be based at **Wits in Johannesburg**.

Role & Responsibilities

As a PhD candidate, you will focus on:

- Quantifying hydraulic and functional traits (e.g., xylem vulnerability curves, leaf gas exchange)
- Operating sap flow and microclimate instrumentation
- Contributing to the logistics and data collection for drought experiments
- Processing and analyzing plant physiological datasets in R
- Contributing to model parameterization and hypothesis testing

Training Provided

You will receive training in:

- Plant hydraulics and gas-exchange physiology
- Sap flow measurement techniques
- Drought experiment design
- Data analysis and model parameterization
- Scientific writing and presentation

Candidate Profile

We seek applicants with a background in:

- **Plant biology** or **plant physiology**
- **Ecology** or **environmental sciences**
- **Biophysics** or **forestry**

While prior experience in plant hydraulics or IRGA/sap flow is beneficial, curiosity, perseverance, and attention to detail are more important.

As the position is based in South Africa, preference will be given to candidates from **South Africa or other suitably qualified candidates, who are willing to relocate**.

Funding & Duration

The PhD position is funded for **3 years**, with a stipend in line with competitive national bursary levels.

How to Apply

To apply, email a single PDF containing your cover letter, CV, contact details for two references, and academic transcripts to Prof Rob Skelton, Prof Mary Scholes, Dr Yolandi Ernst and Dr Caroline Hardy at the following email address: caroline.hardy@wits.ac.za

Application Deadline

We will start to consider applications on **31 March 2026** and will continue to consider applications until an appointment is made.

Join our innovative research program at the University of the Witwatersrand and contribute to vital research in plant hydraulics and functional traits!