

## Postdoctoral Position available in FABI

**Background:** Our ability to characterize biological diversity using molecular DNA barcode sequences has expanded in recent years due to advancements in next-generation sequencing technologies and bioinformatics. These technologies have transformed our perspective on the extent and drivers of biological diversity across almost all parts of the Earth and on the inside and outside of all biological and non-biological structures. These techniques also hold the promise to improve our ability to transform diagnostics. However, a key limitation of these techniques has been to identify organisms at the species level. This limitation arises from the fact that current tools use relatively short pieces of DNA barcodes, which often cannot provide enough information for species-level resolution, especially when dealing with unknown diversity. On the other hand, available molecular diagnostic tools that can provide species and strain level detection typically target one or a few species and are not practical for whole community analyses. For next-generation diagnostics, our goal must be to detect and identify communities down to the species level, in a high throughput, rapid, and robust way.

**Position:** We seek to hire a postdoctoral research Fellow to develop a novel tool for species-level identification of fungi from environmental samples. The intended approach will be through target capture and/or amplification of previously used and newly identified target regions, followed by high throughput sequencing and bioinformatics analyses. The developed tool and pipeline will be benchmarked on a panel of the most important agricultural, food-associated and forestry fungal pathogens, including species of biosecurity relevance. The candidate will work with a team of researchers with expertise in fungal systematics, fungal genomics, and bioinformatics at the Forestry and Agricultural Biotechnology Institute (FABI) at the University of Pretoria.

### Required Qualifications:

- PhD in bioinformatics, molecular biology, or a closely related field
- Experience in NGS data analyses and bioinformatic pipelines
- Proficiency in coding in R, Python, and other programming languages will be advantageous
- Demonstrated research and writing skills
- Ability to work independently and as part of a team
- A good track of publication record

### Responsibilities:

- Contributing to the design of the study, data generation, and analyses
- Writing reports and publications from the outcomes of the project
- Co-supervising postgraduate students
- Engagement and support of related research projects
- Presenting results at professional and stakeholder meetings

**Compensation:** The compensation package for this position is very competitive and is dependent on experience.

**Duration:** 24 months, full-time initial appointment with the possibility of extension, conditional on satisfactory performance (evaluated annually) and the availability of funds.

**Application Review:** Review of applicants will commence on 5 August 2024 and continue until a suitable candidate is identified.

**Preferred Start Date:** As soon as possible.

**Application Process:** Email to Prof Bernard Slippers ([bernard.slippers@fabi.up.ac.za](mailto:bernard.slippers@fabi.up.ac.za)), Prof Tuan Duong ([tuan.duong@fabi.up.ac.za](mailto:tuan.duong@fabi.up.ac.za)) or prof Cobus Visagie ([cobus.visagie@fabi.up.ac.za](mailto:cobus.visagie@fabi.up.ac.za)) with 1) a cover letter highlighting your research, analytical and writing experience; 2) Curriculum Vitae; 3) representative publications, and; 4) contact information for three referees.

