PhD studentship position in Microbiology/Environmental sciences – North-West University, Potchefstroom, South Africa

A three-year PhD studentship position in microbiology/environmental sciences is available in the Microbiology and Agricultural Biotechnology research group under the Unit for Environmental Sciences and Management (UESM), North-West University, Potchefstroom, South Africa. The successful candidate will be expected to work on the project sponsored by the United States of America’s National Science Foundation (NSF) and the National Research Foundation (NRF) of South Africa. It is a Joint Research Programme on Dimensions of Biodiversity.

The position commences 1 April 2021 or as soon as possible thereafter.

Description of scientific environment
The research focus of the unit supports the optimal utilisation of natural resources within the limitations of ecosystem resilience. To ensure long-term relevance, the UESM seeks a balance between fundamental and applied, market-oriented research. The research work that will be conducted will involve both wet and dry laboratory activities.

The PhD studentship position will be under the supervision of Prof Rasheed Adeleke.

The overall aim of the project is to investigate how bacteria that live inside the cells of fungi may shape the biology, evolution, biodiversity and function of these fungi.

Project description
The goal of this collaborative work is to investigate how endosymbiotic bacteria contribute to ecological community assembly and evolutionary diversification of early-divergent fungi in the phylum Mucoromycota,— research with important practical applications for industry, sustainable agriculture and preventing food spoilage. The project will focus on three groups of fungi in the Mucoromycota lineage and bacteria that live inside their cells, called endosymbionts.

In the course of the project, our team will sample fungi from comparable Mediterranean-type biomes and desert biomes across the U.S. and South Africa. We will then take samples into the lab and use DNA to identify Mucoromycota fungi and their bacterial symbionts. This information will help to investigate each bacterium’s role in evolutionary diversification and Mucoromycota community structuring.
We are seeking a highly motivated individual who is enthusiastic about the opportunity to develop his/her skills in an international research environment, where different disciplines work closely together to obtain a holistic understanding of microbe-plant interactions in the soil environment.

**Job description**
The selected candidate is expected to:

- **Spend time in the laboratories of Profs Adeleke and Pawlowska at North-West University in South Africa and Cornell University, USA**
- Participate in the dissemination of research at both international and national conferences and in interdisciplinary research and publish in international peer-reviewed journals

**Qualification requirements**
- A MSc degree in microbiology, bioinformatics, microbial genomics, computational biology, molecular biology, or related fields
- A well-written motivation for the area of research
- Excellent written and spoken English

**Key criteria for the assessment of candidates**
Special importance will be attached to applicants having the following professional and personal qualifications:

- Basic understanding of microbial ecology
- Documented experience analyzing metagenomic datasets
- Knowledge of multivariate statistics and handling multi-omics data, including metatranscriptomics

**Contact:** Professor Rasheed Adeleke, email: Rasheed.adeleke@nwu.ac.za

**Please include**
- Curriculum vitae
- Certificates (Master degree or equivalent)
- Description of MSc research
- Complete publication list
- Contact information for three reference persons

**The deadline for applications is 25th January 2021 at 23:59 GMT +2.**