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Study Opportunity for MSc and PhD studies in 2015



Ecology, Soil Ecology and Microbiology

Applications are now open for a number of MSc and PhD projects exploring the interface between Ecology and Microbiology.

Closing Date for applications:

30 August 2014

Please send a letter of application as well as your CV to:

Karin Jacobs (Microbiology)

kj@sun.ac.za

or

Shayne Jacobs (Ecology)

sjacobs@sun.ac.za

For enquiries contact:

Karin Jacobs

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Three MSc and two PhD projects are available in a collaborative project between the Department of Conservation Ecology & Entomology and Department of Microbiology at the University of Stellenbosch. The projects will explore the effect of invasion by non-native plants such as *Eucalyptus* and *Acacia* spp. on the microbial communities in fynbos soils and follow these events over time in riparian and terrestrial soils of the Western Cape. Riparian ecotones are situated at the interface between terrestrial and aquatic environments and act as regulators of material fluxes. The project will also follow the restoration of some of these sites to determine the rate of recovery after removal of invasive species in both riparian and terrestrial areas. Using the data generated, we aim to develop a set of biological indicators to predict the success of restoration events based on the microbial communities and soil properties.

The outcomes of the larger project will be both empirical data generation on plant-soil-microbe interactions within invaded landscapes that are hypothesized to occur when natural landscapes change to so-called novel ecosystems and practical in terms of biological indicators that can predict the trajectory of changes in soil microbial communities after clearing, which is important when envisaging changes. The main question of the project is: can one predict the outcome of an invasion event or restoration activity by looking at soil microbial communities? In addition, we also aim to investigate the impact of various methods of invasive alien plant management, clearing and treatment on soil function, focusing on nutrients and microbial diversity and activity, which underlie many ecosystem services associated with soil.

We are in search of suitable students to pursue MSc or PhD studies (Ecology or Microbiology) starting the beginning of 2015. We would like to appoint highly motivated students that fulfill the following criteria:

- **An appropriate previous degree in Microbiology/Molecular Biology/ Soil Science/ Conservation Ecology**
- **The ability to work independently in the field and in a team**
- **Competence in experimental design and statistics**
- **Full computer literacy**
- **Good writing and communications skills**
- **A Code 08 Drivers license is strongly recommended**

NB: Although grant-holder bursaries are available, students who apply for and receive NRF freestanding (or any similar) bursaries for 2015 will get preference.

