

Position for an M.Sc. candidate:

Attraction and repellence of fungal volatiles to the invasive polyphagous shot hole borer (PSHB)

The Forestry and Agricultural Biotechnology Institute (FABI) is looking for an enthusiastic Masters student for an exciting project that will contribute knowledge towards understanding the behaviour of the ambrosia beetle *Euwallacea fornicatus*, which will ultimately aid in developing a control strategy for this invasive pest.

Euwallacea fornicatus, commonly known as the polyphagous shot hole borer (PSHB), is an ambrosia beetle (Coleoptera: Curculionidae: Scolytinae) that has become invasive in various countries, including Israel, the USA, South Africa, and most recently Australia. All ambrosia beetles associate with symbiotic fungi, also known as ambrosia fungi, that serve as their main food source. In many cases, ambrosia fungi produce scents thought to serve as attractants to their insect hosts. In contrast, entomopathogenic fungi that are commonly used for biological control purposes have been found to exhibit a repellent effect on some Scolytinae beetles.

The M.Sc. project will utilize volatile organic compound testing and analyses to investigate the volatiles produced by both ambrosia and entomopathogenic fungi. Behavioural studies conducted using lab reared beetles will aim to determine the attractiveness or repellence of the beetles to isolates of the different fungi both in vitro and in planta. The project will involve insect rearing, culture maintenance, chemical ecology, and behavioural assays, and may also involve greenhouse trials and field work.

Required qualifications: Honours or equivalent degree in Entomology, Microbiology, Ecology, or a related field. Demonstrated analytical/statistical abilities and writing skills. In addition, the candidate should enjoy and be comfortable working in the field and handling insects, have a strong academic background, good communication skills, and an ability to work independently.

Where: The successful candidate will be based at the Forestry and Agricultural Biotechnology Institute (FABI, www.fabinet.up.ac.za) at the University of Pretoria, where s/he will be registered in the Department of Zoology and Entomology.

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

Application Process: Email the following documents to Prof. Almuth Hammerbacher (almuth.hammerbacher@fabi.up.ac.za) and Dr. Wilma Nel (janine.nel@fabi.up.ac.za) (1) A cover letter that includes your research interests (2) CV, including your academic transcripts (tertiary only) and contact information for three references.

Please note that only short-listed candidates will be contacted.

