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Two MSc's in FABI on the use of CRISPR/Cas9 for pest control

Two MSc positions are available in the Forestry and Agricultural Biotechnology Institute (FABI) at the University of Pretoria.

The agricultural and forestry sectors are significant as they drive the developments on the continent. These sectors are critical for the future food security, drivers of the economy and critically linked to jobs. The single biggest threat to these sectors, other than climate change, are pests and diseases. Current control measures cannot keep pace with the increase in pests and diseases.

Powerful new genetic tools, such as gene editing using CRISPR/Cas9, are available which can be used to directly target specific areas in an insect genome. By targeting traits that affect the fitness of the organism, or the mechanism through which it causes harm, its impact could be reduced.

In the South African forestry industry the Eucalyptus snout beetle, *Gonipterus* sp. and the Pine Wood wasp, *Sirex noctilio* are important pests. Due to the time taken to develop effective control methods, such as biological control and breeding of resistant planting material, alternate methods of control are sought. Gene-editing is increasingly being used to make precise, targeted changes to the genomes of various living organisms. Candidates will apply CRISPR/Cas9 to genes involved phenotypic expression and reproduction of *Gonipterus* sp. and *Sirex noctilio*.

The candidate should be highly driven and have a background in genetics and molecular biology, ideally with experience in entomology. The candidate will work in a dynamic team as part of the Forestry and Agricultural Biotechnology Institute (FABI), which has extensive experience in the above mentioned research fields. More information on the research teams at FABI is available at www.fabinet.up.ac.za.

Interested candidates should submit a full CV and at least two reference letters to Dr. Gudrun Dittrich-Schröder (Gudrun.Dittrich@fabi.up.ac.za) by the 16 March 2020, but the search will continue until the ideal candidates are found.