

FABIANS CELEBRATE TWO PRESTIGE SEMINARS IN ONE WEEK

Two FABIans earned the title “Dr” last week after successfully defending their PhD theses and fulfilling all the requirements for a PhD degree. Drs Margot Otto and Collins Tanui presented their prestige seminars on 1 March and 2 March respectively, bringing the number of Ph.D. degrees completed at FABI in 2018 to six so far.

Margot’s seminar summarised her study titled “Bacterial canker of cherry trees: Insight into pathogen biology and epidemiology”, which focused on canker diseases of *Prunus avium* and *P. africana*. Proff Teresa Coutinho and Jolanda Roux, as well as Dr Yolanda Petersen of ARC-Infruited in Stellenbosch, supervised the study. Her external examiners were Prof Dawn Arnold of the University of the West of England and Dr Virginia Stockwell of Oregon State University, with Prof Noelani van den Berg as internal examiner.



Margot Otto

The microbial community associated with the primary causal agent of bacterial canker, *Pseudomonas syringae* pv. *syringae* was characterised by both culture dependent and independent methods and found to not contribute to disease development. Sequencing of the whole genomes of two Pss strains pathogenic to cherry and comparing these to other *P. syringae* genomes from other stone fruit gave valuable insight into the pathogen’s virulence and its epiphytic life cycle. Margot also conducted a disease survey of canker-like symptoms on *P. africana* in three regions. Though few were affected by canker-like symptoms, none of these isolates were shown to be pathogenic.

Collins presented his study "*Pectobacterium brasiliense*: Genes involved in ecological fitness and virulence mechanisms during potato tuber infection" which focused on the bacterial pathogen *Pectobacterium carotovorum* subsp. *brasiliense* 1692 (*Pcb* 1692) infecting potatoes. His supervisor, Prof Lucy Moleleki praised his diligence and positive attitude throughout this study. His external examiners were Prof Rob Jackson of Reading University, Prof Amy Charkowski of Colorado State University and Prof Teresa Coutinho of the University of Pretoria as internal examiner.



Collins Tanui (right) receives a certificate from FABI Director Prof. Bernard Slippers after his prestige seminar

Transcriptome profiling analysis revealed that during in planta infection, *Pcb* 1692 significantly differentially expressed genes involved in ecological fitness and virulence factors, such as chemotaxis, iron acquisition, plant cell wall degrading enzymes and genes shown to be involved in competition. The study also investigated the role of ferric uptake regulator (FUR) proteins in virulence. Collins's study identified possible ecological fitness and virulence mechanisms employed by *Pcb* 1692 strain to successfully colonise and cause disease during in planta infection.