

FABIANS CELEBRATE ARISTA FOURIE'S PRESTIGE SEMINAR – THE EIGHTH IN 2019

FABI congratulates Arista Fourie who fulfilled all the requirements for a PhD degree, the eighth FABlan to reach this milestone in 2019. Arista successfully defended her thesis on 15 July, shortly after presenting her prestige seminar in the presence of her colleagues, friends and family. Her seminar was titled “A genomic approach towards understanding host specificity and pathogenicity in two *Ceratocystis* species”. She completed this study under the primary supervision of Dr Irene Barnes, and co-supervision of Dr Magriet van der Nest, Professor Mike Wingfield and Prof. Brenda Wingfield. Her external examiners included Prof. Maria Alves Ferreira from Universidade Federal de Lavras in Brazil and Prof. Dominik Begerow from Ruhr-Universität Bochum, Germany. Prof. Dave Berger was the internal examiner.



Arista investigated the genetic factors that influence host specificity and pathogenicity in *Ceratocystis fimbriata* and *C. manginecans* by crossing the two species and investigating how these traits were inherited in the offspring. Though the two pathogens are closely

related, *C. fimbriata* infects only *Ipomoea batatas* while *C. manginecans* causes cankers and wilting on *Mangifera indica*, *Acacia mangium* and other hosts, but is not pathogenic to *I. batatas*. In this study, Arista produced the first linkage map for *Ceratocystis* species. She found that host specificity was a multigene trait. She also identified candidate genes responsible for mycelial growth as well as genes associated with aggressiveness of the two species to different hosts.

She explained that the outcomes of her study were important to tree health because they can assist in disease resistance breeding, through the selection of aggressive fungal strains for screening, identifying corresponding resistance genes in hosts as well as the genetic modification of host plants. Dr Barnes congratulated Arista on having already published seven articles and described her as one of the “great, up-and-coming young scientist”. She is the first student to complete a PhD with Dr Barnes as a primary supervisor.