

FABIANS REFLECT ON THE APPLICATIONS OF NEXT GENERATION SEQUENCING ON THEIR RESEARCH AT NGS INFORMATION DAY

The Ion Torrent sequencing facility at the University of Pretoria held a Next Generation Sequencing (NGS) Information Day at the Plant Sciences Auditorium on 19 September. Scientists from the Health Sciences, Natural and Agricultural Sciences and Veterinary Sciences faculties use the sequencing facility. Established in 2012, the sequencing facility is managed by Nicky Olivier and Renate Zipfel. The duo hosted several researchers who touched on the application of NGS technology in their respective fields for what Mr Olivier described as a “refresher course” on NGS. Representatives from industry also showcased the latest equipment in NGS technology.



The line-up included several presenters from FABI. As the South African Research Chairs Initiative (SARChI) Chair in Fungal Genomics, Professor Brenda Wingfield reflected on the strides made in the sequencing of fungal genomes in her presentation “A decade of Fungal Genomics”. Her talk looked back on the challenges of sequencing the genome of *Fusarium circinatum* in 2009 – the first fungal genome sequenced in Africa. Dr Tuan Duong spoke of the advantages and disadvantages of using Oxford NanoPore sequencing technology, particularly the Minlon, a portable device that sequences DNA and RNA. Dr Markus Wilken discussed various factors to consider when choosing DNA isolation methods, while Dr Marike Palmer

discussed the role of NGS in resolving issues of classification in bacterial species. PhD candidate Arista Fourie highlighted how NGS is used to better understand what makes *Ceratomyxa* species pathogenic.

Dr Mushal Allam of the National Institute for Communicable Diseases revealed how NGS technology was used to track the origin of the *Listeria* outbreak in 2017. SARChI Chair in Poultry Health and Production at UP, Prof. Celia Abolnik showed that NGS was a powerful tool in responding to outbreaks of disease such as avian influenza and the important role that it plays in ensuring biosecurity. Dr Nico de Villiers of Ampath discussed NGS application in a clinical setting and Dr Riaan Rifkin of the Department of Biochemistry, Genetics and Microbiology closed the presentations by showing how NGS is used to decipher DNA from museum specimens and archaeological sites.