

ST ALBANS VISITS FABI

Prepared by Kershney Naidoo, Quentin Santana and Markus Wilken

The Forestry and Agricultural Biotechnology Institute (FABI) welcomed a group of 29 grade twelve learners to experience a slice of some of the research aspects undertaken within this institute. Arranged as a learning tour, the St Albans' Boys High pupils were greeted by Professor Brenda Wingfield, Research Manager of the DST/NRF Centre of Excellence in Tree Health Biotechnology (CTHB). Under her supervision and that of two of their school teachers, the very keen group met in the FABI boardroom where the boys were shown the FABI ten year video. Sparking much debate was the controversial topic of genetically modified organisms, which also set the tone and broke the ice between the learners and academics. After a discussion with Prof. Wingfield, the boys were treated to a snack and tea and mingled with the postgraduate students chosen to take the boys on the tour of the FABI facilities.

One of the aims of research undertaken in FABI is to seek solutions to common problems often faced by the forestry industry. Markus Wilken, Kershney Naidoo and Quentin Santana led the research orientated discussions before splitting the pupils into groups for the break-away sessions.

Kershney Naidoo, currently doing her PhD, introduced discussions in her group by showing the boys samples of different fungi collected from ordinary gardens and parks. A variety of fungal isolates from puff balls to a giant Ganoderma and bracket fungi entertained the learners. They were then shown the microscope facilities, where they were allowed to view fungal isolates under the microscope, and investigate the different fruiting structures of *Ceratocystis* species. Identification of species is essential in species descriptions and phylogenies. Having seen the actual structure microscopically, the boys questioned when they would be able to "see" DNA of those samples.

This opened the discussions for Markus Wilken, a Masters student, who was responsible for showing the boys the molecular aspects of a lab. He "wowed" them with the very expensive laboratory equipment and showed them how DNA is isolated from the different fungal species and further manipulated in order to answer particular research questions. Each boy was allowed to load a prepared agarose gel with DNA samples and after the process of electrophoresis, view the banding profile under ultra violet light. This most certainly had the learners captivated.

The last stage of the tour was driven by Quentin Santana, a PhD student, who gave the boys a tour of the DNA sequencing facility. Here, aided by Renate Zipfel, the coordinator of the facility, the learners were shown the sequencing equipment, and allowed to view profiles of different gene regions that had already been sequenced. They learnt the step wise process involved in sequencing and were shown how the dye binds to the different nucleotides and produces a signal which is then captured as a chromatogram. Overall, each session linked the vital components of scientific research as seen through the eyes of a postgraduate student.

The St Alban Boys' were privy to a tour of other research laboratories and got to experience and chat to other FABI students who were busy with their own research projects. After an exciting 4 hours' spent experiencing the scientific frontier, the pupils left FABI feeling better empowered to consider pursuing a career in the Bachelor of Science field. We hope that this tour has inspired them to further their studies at the University of Pretoria, and furthermore to continue their postgraduate studies at FABI.



The living group of St Albans Boys High. Grade 12 learners were privy to a tour of the FABI facility to experience first hand the joys of scientific research. Pictured are the 29 boys together with their school biology teachers (seated middle row); Prof. Brenda Wingfield (bottom row, middle) along side the postgraduate students Markus Wilken (Standing Back last row); Quentin Santana seated far left next to Kershney Naidoo.

Learning in action!!!



Markus Wilken showing the boys the molecular aspects in the lab.



Thoroughly entertained with the various fungal species found in surrounding gardens and parks. The puff balls seemed to be most engaging



Discussing a future in the scientific environment Kershney Naidoo explains what it takes to pursue a career in FABI.