

Meluleki Zikhali

Meluleki joined the Rotation Student Programme in 2009, having completed his first degree at the National University of Science and Technology in Zimbabwe and an MSc in Plant Genetics and Crop Improvement at the University of East Anglia. Meluleki was awarded the best MSc dissertation from the John Innes Foundation for his thesis on the ground-breaking work on copy number variation in wheat vernalization gene (*Vrn-A1*) in 2009. Meluleki Used his 10 weeks Rotation PhD to complete the *Vrn-A1* copy number work which he jointly first authored with Diaz who had done work on copy number variation in the *Ppd-B1* gene. The *Vrn-A1* copy number is a reliable predictor of optimum sowing date which is applicable globally.

Meluleki published three first-author publications and a book chapter from his work with Simon Griffiths. His PhD work identified the first hexaploid wheat earliness *per se* gene *Eps-D1* (*TaELF3-D1*). He also deposited 107 fully annotated wheat genes on the Genbank database from the PhD thesis. Earliness *per se* was the unknown of the three major regulators of wheat flowering time Photoperiod (response to day length), vernalization (response to extended cold) and earliness *per se*. Meluleki's poster on the *Eps* work was voted among the top ten at the International Wheat Symposium in 2013 in Yokohama Japan. Meluleki was also seconded to be a member of the American Association for the Advancement of Science (AAAS).

Meluleki then carried out post-doctoral research at John Innes Centre with Simon Griffiths working on two novel short day response flowering genes *TaFT3-B1* a flowering promoter and *TaTOE1-B1* a flowering repressor published in *Plant Cell and Environment*. He subsequently returned to Zimbabwe to work for Seed Co Limited, the biggest African based Seed Company, operating in 17 different countries, where he set up the Molecular laboratory and pioneered marker assisted molecular breeding of cereals servicing all the Seed Co limited strategic business Units.

Meluleki commented: "The seven years I spent at the John Innes Centre were very exciting. If I were to liken it to football I would say that researching at the JIC is like playing in the world cup finals. The facilities were world class; the mentorship was equally first class. The John Innes centre is a perfect environment to achieve academic excellence."



Yiliang Ding

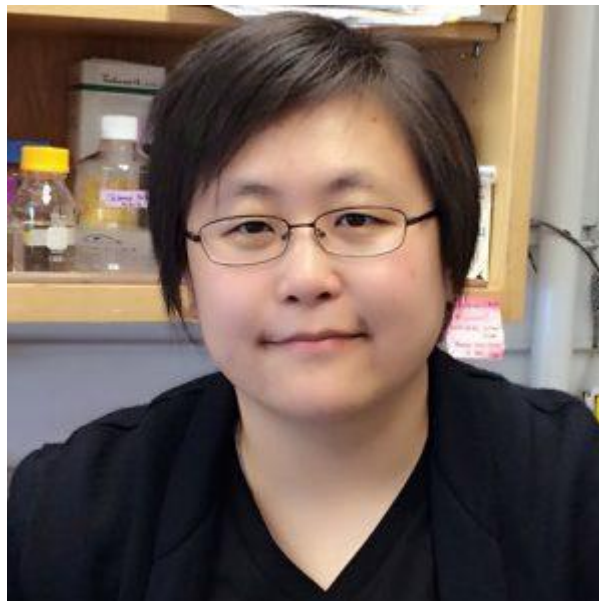
Yiliang joined the Rotation Student Programme in 2005, having completed her first degree at Shanghai Jiao Tong University, China. Her PhD focussed on signalling during nodulation. Nitrogen-

fixing nodules in legumes are complex organs that develop in response to several hormones and other signalling molecules. Yiliang discovered how abscisic acid coordinates nod factor and cytokinin during nodulation. Yiliang's studies led to a first-author publication in *Plant Cell* and a review paper.

After a brief visit to Professor David Lilley's lab at the University of Dundee, she studied RNA structure in plants at Pennsylvania State University, USA. She developed the first *in vivo* RNA structure profiling method at both the genome-wide and the individual RNA scale. This allows the study the functionality of RNA structure in living cells. These high impact studies were published in *Nature*, *Nature Communications* and *Nature Protocol*.

She was then the first Rotation Student to return to the John Innes Centre as a Project Leader, where she continues to study the role of RNA structure and functionality. Her lab continues developing new methods and platforms for studying *in vivo* RNA structure. For example, her lab released the first repository for genome-wide RNA structure probing data, *Foldatlas*.

Yiliang commented: "JIC has a very nice mentoring system. My PhD supervisor Prof. Giles Oldroyd is a great supervisor who motivated me every day and helped me develop the confidence to do scientific research. I was very lucky to also have him as my mentor when I started my own lab. He taught me how to overcome the difficulties during the transition from doing science alone to working with my team. After his departure, I was then mentored by Prof. Caroline Dean, who is another great teacher. She taught me how to develop a bigger version for my scientific research and how to sense the future direction of my research field. I feel very fortunate to work in a supportive and encouraging environment."



Frank Sainsbury

Frank joined the Rotation Student Programme in 2004, having completed his first degree at the University of Sydney, Australia. The impact of Frank's thesis research has been dramatic. It has led to the development of a non-replicating virus-derived vector that provides extremely high-level protein production in plants. The new CPMV-HT expression system for the rapid expression of high value protein components has led to the creation of Leaf Expression Systems company on the Norwich Research Park. Examples of important applications include the safe development of animal vaccines and the production of antibodies for therapeutic purposes.

Frank published 4 first-author papers, 1 patent, 2 reviews and 4 other papers from his PhD studies. Frank Sainsbury was awarded the 2009 John Innes Foundation student prize for Excellence in Scientific Research in recognition of outstanding innovations on plant-based expression systems in the laboratory of his PhD supervisor, Professor George Lomonosoff. George and Frank jointly won the BBSRC Innovator of the Year award in 2012.

His next career move was to a post-doctoral position at the University of Laval, Canada, where he continued his exciting studies on the production of high-value proteins in plants. He then returned to Australia as a University of Queensland Research Fellow, where he is investigating innovative approaches to developing novel vaccines and nano-scale therapeutic vehicles.

Frank commented: "I really enjoyed my PhD studentship at the John Innes Centre because I was given the opportunity to choose the direction of my studies through the rotation student programme and was provided with the most fantastic research support and facilities."

