

Talent recognised and nurtured in the Faculty of Science and Agriculture at the University of Limpopo

One of the missions of the Faculty of Science and Agriculture at the University of Limpopo is to train and develop future scientists, and this starts in the lecture room. The Faculty identifies those who have academic potential, recruits them and provides them with a platform to develop into nationally recognised researchers in their disciplines. Once identified, a few are placed under mentors by the Faculty to nurture their talent.

One of the finest of its upcoming researchers is Dr Phetole Mangena, who has achieved a lot in the short period that he has been on the academic staff of the Faculty.

Dr Mangena is a lecturer in the School of Molecular and Life Sciences, Department of Biodiversity at the University of Limpopo. He graduated with his Master of Science degree in 2015 and recently received his Doctor of Philosophy degree at this institution.

Dr Mangena joined the University of Limpopo as an undergraduate student in 2007 and in January 2017 was appointed a full-time lecturer through the Next Generation of Academics Programme (n-GAP), sponsored by the Department of Higher Education, Science and Technology. He is currently recognised as one of the most promising South African scientists and was awarded the Research Excellence Award for Next Generation Researchers by the National Research Foundation (NRF).



Dr Phetole Mangena

The Executive Dean of the Faculty, Prof Hlengani Siweya, asked Dr Mangena about his interests:

“My research interests are in the area of plant physiology, biotechnology and micropropagation of plants by tissue culture. My research deals with the development of plants showing resistance to abiotic stress, particularly drought. The conducted studies pay particular attention to the improvement of legume crops and vulnerable indigenous leafy vegetables, both under in vivo and in vitro growing conditions. I hold a strong view that, biotechnology is continuously making new grounds in agriculture, for food production purposes, as well as dealing with challenges facing the environment and our health sector.

“Therefore, I wish to also make a meaningful contribution in this regard. Especially by dedicating my time, skills and expertise on the breeding of non-transgenic and transgenic plants carrying the desirable traits like drought tolerance, salinity stress resistance and also improve the crop’s photosynthetic efficiency, nitrogen fixation ability, increased storage of proteins, carbohydrates, etc. using both conventional and modern genetic engineering techniques.”

Dr Mangena’s work has already attracted the attention of many professionals and scientists in the field. He continued: “I have been serving as a reviewer for conference series and journals like the *American Journal of Biochemistry and Biotechnology*, SciPress journals, *Biologia Plantarum*, etc, including being a reviewer for the United States-South Africa Collaboration, Joint Dimensions of Biodiversity, for major grant proposals. I have also had chapters published in **four** books:

- *Pollination in Plants;*
- *Soybean The Basis of Yield, Biomass and Productivity;*
- *Plant, Abiotic Stress and Responses to Climate Change;; and*
- *Transgenic Crops Emerging Trends and Future Perspectives.*

“One chapter is about pollination as a mechanism to enhance diversity in plants and the other three are about genetic improvement of soybean under drought

conditions. I have just authored another book chapter, “Plant Transformation: Systematic and Technological Outlook of Methods Used to Confer Tolerance to Drought Stress in Soybean (*Glycine max L.*)”, which is due for publication by Springer Nature in 2019. I am a very busy scientist, if you like: I have also published **eight** discipline-related articles and **more than three** are still under peer review.

“I am presently engaged in teaching and supervision of Honour students. My *current* research interests include in vitropolyploidisation of soybean used as a model crop to confer drought tolerance, and in-planta based *Agrobacterium tumefaciens* mediated genetic transformation. My wish, with the support of the Faculty, is to continue sharing my knowledge through teaching undergraduate and postgraduate students, supervising masters and doctoral students, as well as to complete my monograph on *in-planta* soybean transformation which will pave the way for building a team of postgraduate students and researchers who will ultimately produce the first-ever Plant Biology textbook with an African perspective”.

The Faculty has exciting research focus areas that have so far generated new knowledge in various disciplines. Prospective students and interested collaborators are invited to call the Faculty at 015 268 4807 for more information. For more on the story of Dr Mangena and his research activities, he can be contact at.

FOR MORE INFORMATION,

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