



Prof Busi Nkonki-Mandleni

COMMUNITY ENGAGEMENT

Professor Busi Mandleni: Director, Institute for Rural Development and Community Engagement (IRDCE)

Achievements on registered community engagement projects

Grey water treatment and recycling for non-potable reuse in the Umhlabeni informal settlement

Umhlabeni is an informal residential settlement located 10 kilometres away from MUT. The grey water treatment and recycling project is led by Dr Bakare, a senior lecturer in the Department of Mechanical Engineering. The overall aim of the project is to provide an understanding of the beneficial reuse of grey water generated by households for non-potable purposes, in order to reduce the current stress on the available freshwater supply.

A pilot plant for the treatment of grey water was designed and fabricated. The pilot plant has been used to treat grey water generated from the community and has shown to be able to treat greywater for non-potable reuse by the Umhlabeni community.

MUT waste management ambassadors

This needs an introductory sentence explaining what/who the waste management directors are. It is also not clear what the following sentence is referring to - is it the duties of the ambassadors? Responsibility towards clean environment with activities involving training and induction of MUT students by external stakeholders on the importance of waste management, awareness campaigns to communities; stakeholder engagement, commemoration of environmental days such as Arbour Day and National Coastal Clean-up. Since its inception in 2016 through 2017, there has been a development of skills in leadership, project management, planning, events co-ordination and stakeholder engagement. Senior students have also been able to transfer these skills to junior students and the same is expected for 2018.

Food security to assist a poverty-stricken rural community

In commemoration of international Mandela Day on 21 July 2017, a garden project was launched in the poverty-stricken community of Umzinto on the KwaZulu-Natal South Coast at a place called "The Mistake Farm". This was made possible by a partnership between MUT (represented by the Institute for Rural Development and Community Engagement, or IRDCE) and the Department of Agriculture within Umdoni Municipality on the KwaZulu-Natal South Coast. The Municipality presented garden tools, seedlings and information packs to the community while the IRDCE provided technical support on compost heap making and the management of plants. The harvest was sold to the nearby community by the project leaders.

Nonoti banana project

The Nonoti community lives in an isolated area that is 13km from the closest shop and school. There are no local jobs available and minibus transport is expensive. The area does, however, have good natural resources in the form of fertile soil and high rainfall. This IRDCE project uses agriculture students to teach the willing people of Nonoti to plant and care for bananas. Each homestead is geo-tagged with GPS co-ordinates and identified on a Google Earth map; then the owners are taught to plant young banana plants and to irrigate with grey water. After one year the households are to repay the favour by giving banana plants to their neighbours and so ensure the spread of banana plants in the area. The project was carried out in collaboration with Simon Fraser University (Canada). Using the Google Earth "history" function to compare the area before and after the project, it is clear that this IRDCE project has been successful. There is an ever-increasing area planted with bananas in Nonoti and the residents now have sufficient bananas to sell in other areas.

Use of technology to empower rural communities

The fourth industrial revolution has arrived and MUT is already playing a significant part in the revolution by using technology in a manner that empowers local farmers. "Agricultural subsidy for small holder farmers" is a MUT community engagement project that uses the latest drone and satellite technology to improve food security in rural areas. The project uses a drone to take images of fields and then it uses artificial intelligence (AI) to identify the exact crops that are grown and the condition of the yield. It then calculates the area of each field and uses GPS to map the co-ordinates of the field. A subsidy is then paid to the farmer based on exactly what he or she has grown. This novel and fair approach to the much needed subsidy is expected to replace the current inefficient methods. The Department of Agriculture and Rural Development is considering implementing this subsidy innovation and this would assist at least 80 000 smallholder farmers to improve food security in their families. The Department would also save money as the work of their tractors would be done by efficient entrepreneurs and so provide sustainable jobs within the community. This IRDCE innovation was noticed by the South African national space agency which named it as one of the top 10 earth observation data innovations and offered real-time satellite imagery to scale up the project.



Prof Alfred Msomi

FACULTY OF NATURAL SCIENCES

Professor Alfred Msomi, Acting Dean

The Faculty of Natural Sciences has broken new ground at MUT: two Bachelor's degree qualifications were approved in year for implementation in 2018. After years of planning and researching qualifications that will take our students into the future, our faculty has been the first to achieve this at MUT. The same applies to the registration of the first group of students enrolling for the Master's degree in Nature Conservation this year. All these are a result of hard work and the drive to become pioneers in academic programme development.

The four-year Bachelor of Health Sciences in Medical Laboratory Science, offered by the Department of Biomedical Sciences, as well as the B.Sc in Environmental Health, will articulate to a Master's Programme. These are the first professional degree qualifications for MUT.

I am very appreciative of the hard work done by the heads of department, Dr Zilungile Kwitshana, Dr Thobile Poswa and Professor Peter Small, and for the leadership they have shown to drive development in the faculty and at MUT.

I should also like to pay a special tribute to academics who excelled in teaching and learning, research and community engagement in 2017.

Faculty of Natural Sciences scoops awards

In 2017, the academics in the faculty showed their mettle in all three pillars of MUT: Teaching & Learning, Research, as well as Community Engagement.

At the **Vice-Chancellor's Teaching Excellence Awards**, Professor Peter Small of the Department of Nature Conservation received a Gold Award which included a cheque for R65 000, 2 nights' accommodation at Southern Sun in Durban, and an all-expenses-paid attendance at the 2018 HELTASA or SATN conference. Professor Small also received the Senate Award and a cheque for R50 000.

The **Best Emerging Teacher Award** went to Ms Hlengiwe Ndaba of the Department of Chemistry and to Ms Miranda Mpaka of the Dept of Biomedical Science. They each received a trophy, a cheque for R30 000, a hamper and an all-expenses-paid attendance at the 2018 HELTASA or SATN conference.

At the second **MUT Community Engagement Excellence Awards** in 2017, a number of faculty members were recognised for their achievements in the area of community engagement. Award recipients are expected to use their award money to further their community engagement activities for the benefit of MUT community and target communities.

Congratulations to the following faculty members who received awards:

Category 1: Distinguished Community Engagement Award

- 1st Place: Prof A.M. Msomi, Acting Dean (R20 000)
- 2nd Place: Ms Z. Sibaya, Department of ICT (R15 000)
- 3rd Place: Mr D. Pons, Department of Agriculture (R10 000)

Category 2: Best multidisciplinary collaborations for community development

- 2nd Place: Ms X. Mkhize, Department of Community Extension (R15 000)
- 3rd Place: Ms B. Nxasana, Department of Community Extension (R10 000)

Category 3: Best collaborations for new initiatives

- 1st Place: Mrs Mbuyisa, Department of Nature Conservation (R20 000)

At departmental and personal levels within the faculty, there were a number of other significant achievements in 2017:

- The Department of Environmental Health signed a Memorandum of Understanding (MOU) with eThekweni Health Department for the donation of equipment in order to strengthen the working relationship between the Environmental Practitioners and the MUT Environmental Health lecturers and contribute to student teaching and learning.
- Dr TT Poswa graduated with a Ph.D qualification on 8 December 2017 from the University of the Witwatersrand.