



GRADUATION CEREMONY 2021

COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE

TUESDAY,
11 MAY 2021

19h00

.....

PIETERMARITZBURG



UNIVERSITY OF
KWAZULU-NATAL™
INYUVESI
YAKWAZULU-NATALI

INSPIRING GREATNESS

COVID-19

On 15 March 2020, a national state of disaster was declared in South Africa in light of the COVID-19 outbreak. In keeping with the instructions of the President of the Republic of South Africa, the Honourable Cyril Ramaphosa, per a public address delivered on 23 March 2020, the Republic of South Africa was placed under lockdown from Thursday, 26 March 2020.

While the lockdown levels have been amended over time, regulations related to the current lockdown level remain in force. After due consideration of all on-going health and safety protocols, a decision was made to virtually confer all Degrees and Diplomas, and the virtual ceremonies were broadcasted between 25 and 28 May 2021. The University retained the original approved Graduation dates and programmes for record purposes.

THE UKZN TRANSFORMATION CHARTER

The University of KwaZulu-Natal ASPIRES TO BE a transformed university which:

- ◆ Heals the divisions of our nation's past, bridges racial and cultural divides, and lays the foundations for a university that is united in its diversity;
- ◆ Promotes high quality research, excellent teaching and learning, and responsible community engagement;
- ◆ Promotes African scholarship in every discipline and *uBuntu/Botho* in its organisational culture;
- ◆ Embraces socially and contextually relevant curricula that reflect the University's location in South Africa, Africa and the world;
- ◆ Recognises the importance and value of African languages as academic languages;
- ◆ Prioritises the well-being and growth of every individual student and staff member;
- ◆ Reflects race and gender representation in its management structures, personnel profile, and student population;
- ◆ Is socially cohesive and inclusive;
- ◆ Is free of discrimination on the basis of ethnicity, race, gender, class, nationality, religion, sexual orientation and disability;
- ◆ Nurtures collegiality, recognises and respects difference, and celebrates diversity;
- ◆ Reflects a new and refreshing culture of tolerance, understanding and vibrant engagement within the University community.

We therefore COMMIT ourselves to work together until the objectives set out below are manifested in our University.

OUR CHARTER

The University shall be a place where:

- ◆ Research, Teaching, Learning and Scholarship are a vocation for all
- ◆ Race and gender representation is evident in all structures
- ◆ A socially cohesive and inclusive institutional culture thrives
- ◆ Good modes of governance are enshrined
- ◆ The right to freedom of expression is guaranteed
- ◆ Advancement of the transformation agenda is the responsibility of all

THE UKZN PACT

We, the staff and students of the University of KwaZulu-Natal
agree to treat each other with respect,
to abide by the rules and regulations of the Institution
and to commit ourselves to excellence in research-led
teaching and learning.

OFFICERS

Chancellor	Professor NK Poku (Acting) BA(Hons),(Nottingham), MA(Nottingham Trent), MSc(Coventry), PhD (Nottingham Trent)
Vice-Chancellor and Principal	Professor NK Poku BA(Hons),(Nottingham), MA(Nottingham Trent), MSc(Coventry), PhD(Nottingham Trent)
Chair of Council	Dr L Moja MBChB(Natal), MMed OetG(Medunsa), MBA(UFS)
Deputy Vice-Chancellor: Research	Professor M Moshabela (Acting) MBChB (Natal), MMed (UL), MSc (LSHTM), PhD (WITS)
Deputy Vice-Chancellor: Teaching and Learning	Professor SP Songca BSc, BScHons(Unitra), MSc, PhD(London)
Deputy Vice-Chancellor and Head of College of Agriculture, Engineering and Science	Professor A Modi BScAgric(UFH), MScAgric(Natal), PhD(OSU)
Deputy Vice-Chancellor and Head of College of Health Sciences	Professor BP Ncama BCur(Unisa), MCur (Natal), PhD(UKZN), RN RM, RICN, RCHN, RDN, RNE
Deputy Vice-Chancellor and Head of College of Humanities	Professor NJ Mkhize BAHons(Natal), MA(Iowa), PhD(Natal)
Deputy Vice-Chancellor and Head of College of Law and Management Studies	Professor BW McArthur (Acting) BSc(Unisa), BA(Hons),MA(Natal), PhD(UKZN), MBL, Dip Datametrics(UNISA), HDE(Natal)
Registrar	Dr KE Cleland B(Hons) Occupational Therapy(UP), MEd(Natal), PhD(UKZN), PG Dip Law(FicJ)
President of Convocation	Mr VW Sibisi BAdmin(UKZN)

OFFICE BEARERS

COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE

Deputy Vice-Chancellor and Head of College

Professor AT Modi

BScAgric(UFH), MScAgric(Natal), PhD(OSU)

Dean and Head of School of Agricultural, Earth and Environmental Sciences

Professor FN Mudau

BSc(Univen), MScAgric(US), PhDAgric(UP), MBL(UNISA)

Dean and Head of School of Chemistry and Physics

Professor RS Robinson

BScHons, MSc, PhD(Rhodes)

Dean and Head of School of Engineering

Professor G Bright

PrEng, BScEng, MScEng, PhD(Natal), MBA(UKZN)

Dean and Head of School of Life Sciences

Professor AO Olaniran

BScHons, MSc(OAU), PhD(UKZN)

Dean and Head of School of Mathematics, Statistics and Computer Science

Professor DE North

BScHons, MSc, PhD(Natal)

Dean: College Research

Professor NA Koorbanally

BScHons, MSc, PhD(Natal)

Dean: College Teaching and Learning

Professor N Chetty

BScHons(Natal), PhD(UKZN)

ORDER OF PROCEEDINGS

The Academic Procession enters the Hall - *University Anthem* – Ihele

The Chancellor constitutes the Congregation

Welcome to Guests

Professor A Modi

Deputy Vice-Chancellor and Head of College of Agriculture, Engineering and Science

Congratulatory Remarks

Students' Representative Council

Presentation of Doctoral Graduands

Dean: College Research

Musical Interlude

Presentation of Graduands

Deans of the College

The Chancellor dissolves the Congregation

National Anthem

The Congregation is invited to join in the singing of the National Anthem

The Academic Procession leaves the Hall

Gaudeamus Igitur

KEY TO SYMBOLS

- * Degree awarded *cum laude*
- α Degree awarded *summa cum laude*
- # Diploma awarded with distinction
- Posthumous

Award of Degrees in

College of Agriculture, Engineering and Science

DOCTORAL DEGREES

Doctor of Philosophy

Belete, Yared Semahegn, *BSc(Mekelle University), MSc(JimmaU)*.....*Plant Breeding*

Thesis: Breeding Bread Wheat (Triticum aestivum L.) for Drought Tolerance in Ethiopia
Citation: The candidate developed new generation bread wheat lines which are considerably drought tolerant, high and stable yielding with farmers' preferred traits. The new breeds will enhance productivity in marginal and drought prone wheat production areas in Ethiopia. From this study four scientific papers were published in high impact journals. The study was financially supported by the Alliance for a Green Revolution in Africa.

Supervisors: Professor HA Shimelis and Professor MD Laing

Botha, Maria Magdalena, *BScDiet(UOVS), MScDiet(UOVS)*.....*Dietetics*

Thesis: The Effect of Therapeutic Feed in Management of Severe Acute Malnutrition in Children, South Africa
Citation: Hospitalised South African children with severe acute malnutrition (SAM) are treated according to a protocol developed by the World Health Organization (WHO). The study determined whether adherence to the national SAM treatment protocol, including therapeutic feeding, improves SAM treatment outcomes. Household food insecurity status and premature hospital discharge predicted poor SAM treatment outcomes, recovery and possible mortality. These findings should be considered when revising and updating SAM treatment protocols.

Supervisors: Professor FJ Veldman and Professor SM Kassier

Buzigi, Edward, *BSc(KyambogoU), MSc(Copenhagen)*.....*Human Nutrition*

Thesis: Caregiver and Child Acceptability of a Provitamin A Carotenoid, Iron and Zinc Rich Complementary Food prepared from Common Bean and Pumpkin in Uganda
Citation: A complementary food (CF), common bean pumpkin blend (BPB) rich in provitamin A carotenoids, iron and zinc was prepared from locally available common bean and pumpkin to address vitamin A, iron and zinc deficiencies prevalent among rural children in Uganda. The CF was acceptable to caregivers

and their children, indicating good potential for roll out. Four manuscripts have been published in high impact journals.

Supervisors: Dr K Pillay and Professor M Siwela

Chambers, Mark John, BSc, BScHons *Biochemistry*

Thesis: The Design and Identification of β -secretase (BACE1) Allosteric and Active site Ligands

Citation: Mark Chambers produced a large body of work in which he delineated parameters influencing the thermal stability of the Alzheimer's-relevant protein BACE1, provided the first definitive measurement of the protein's thermal stability in mammalian and bacterial cells, and devised an original screening assay through which he identified three novel BACE1 binding ligands. His work, which was recently published, offers unique perspectives that will facilitate the design of effective BACE1 inhibitors.

Supervisor: Dr R Hewer

Chivasa, Walter, BScAgricHons(UZim), MPhil(UZim), MBA(UZim) *Environmental Science*

Thesis: UAV and Field Spectrometer based Sensing for Maize (Zea Mays L.) Phenotyping Varietal Discrimination and Yield Forecasting

Citation: The Research modelled spatial land suitability for maize production using GIS and explored the use of field spectrometer and unmanned aerial vehicles (UAV) based remotely sensed data in maize monitoring. The study demonstrated the utility of remotely sensed data in maize varietal discrimination, crop disease phenotyping, and yield prediction, yielding 5 publications. This knowledge will be useful in addressing plant disease phenotyping bottlenecks in crop breeding programs.

Supervisor: Professor O Mutanga

Cozien, Ruth Jenny, BSc(UNISA), BScHons *Ecological Sciences*

Thesis: Pollinator-driven Divergence among Populations of a Self-fertilizing Lily, *Hesperantha coccinea* (Iridaceae)

Citation: The prevalence of self-fertilization in plants with ecologically specialized pollination systems is a major puzzle in biology. Ruth Cozien demonstrated that the river Lily *Hesperantha coccinea* comprises two ecotypes, locally adapted to butterfly and long-proboscid fly pollinators, respectively, yet the plants are also capable of self-fertilization. She showed that the combination of delayed selfing with adaptations for cross-pollination offers plants a "best of both worlds" evolutionary strategy.

Supervisor: Professor SD Johnson and Dr LD Harder

Davids, Rashieda, BSc(UCT), MSc(UPret), BScHons(UCT) Environmental Science

Thesis: Urban Sustainability and Social-ecological Systems: Linking Civic Ecology, Nature and Ecosystem Services for the Achievement of the SGD

Citation: Rashieda Davids' transdisciplinary PhD investigated urban sustainability challenges when accessing ecosystem services. She assessed civic ecology interventions to improve human well-being, linked these local interventions to global policy outcomes (SDGs), and applied novel tools to map the improvement in ecosystem services for incorporation into policy. For environmental management, government can effectively be supported by local communities and businesses, and this can be incorporated into policy for social impact.

Supervisor: Professor RH Slotow

Govender, Ashrenee, BSc, BScHons, MSc Genetics

Thesis: DNA Metabarcoding and Zooplankton Enhances Community-Level Analyses of Connectivity in Marine Pelagic Environment

Citation: Zooplankton are abundant and diverse marine organisms that form ecologically important communities. They are well-suited for the biomonitoring of ecosystem health and biodiversity. For her Ph.D., Govender used new molecular techniques such as DNA metabarcoding to monitor and assess marine zooplankton along the east coast of South Africa. The research carried out by Govender was timeous and cutting edge and has contributed to the growing field metabarcoding and zooplankton research.

Supervisors: Dr S Willows-Munro and Professor JC Groeneveld and Miss SP Singh

Gumede, Silindile Thobeka, BSc, BScHons, MSc Ecological Sciences

Thesis: Taxonomic, Functional and Meta-population Dynamics of the Avian Communities in selected Southern Mistbelt Forests of southern KwaZulu-Natal and the Eastern Cape, South Africa

Citation: Anthropogenic landscape transformation results in reduced natural habitats, such as forests. This is challenging specialist species in fragmented habitats and influences the composition and distribution of avian species assemblages. In her timely, multifaceted study, Gumede determined scores of functional diversity measures of avian communities present in understudied Southern Mistbelt forest patches and patch connectivity to show protection of natural forest habitat in diverse landscapes is critical for avian communities' persistence.

Supervisors: Professor CT Downs and Dr DA Ehlers Smith and Dr YC Ehlers Smith

Hamed, Mohammed Saeid Gebreel, BSc(USudan), MSc(USudan) Physics

Thesis: The Effects of Nano-composites in Bulk Heterojunction Thin-film Organic Solar Cells

Citation: Mr Hamed has investigated on the influence of various plasmonic nano-particles on the performance of thin film organic solar cell. Consequently, Mr Hamed has discovered several new experimental results that can improve our understanding

on the role of local surface plasmon resonance for efficient solar energy harvesting. Mr. Hamed has published more than eight research articles in highly reputable journals in the field.

Supervisor: Professor GT Mola

Hlanga, Nokuthula Cherry, BSc(Agric), MSc(Agric).....Crop Science

Thesis: Agro-Morphological, Nutritional and Genetic Diversity Analyses of Bambara Groundnut (*Vigna subterranean* (L.) Verdc)

Citation: The study evaluated genetic diversity in a set of South African Bambara groundnut germplasm in order to identify some basis for crop improvement. Polymorphic SSR markers were used to identify lines that would be recommended for initiating crop improvement programs. The major outcome was considerable polymorphism for discriminating the genotypes and unbiased heterozygosity, showing that the lines exhibited a considerable level of outcrossing within a range for autogamous crops.

Supervisor: Professor AT Modi

Ilori, Abiola Olawale, BScHons(OlabisiOnabanjoU), MSc(OlabisiOnabanjoU).....Physics

Thesis: Natural Radioactivity level in Soil, Crops, River Sediments, and selected Aquatic species in South Africa's Oil-producing areas.

Citation: Mr. Ilori's Ph.D. study focused on determining radionuclide concentrations in different environmental media. The study findings were unique in that they covered both agricultural and aquatic environments, identifying areas of radiation concern in both sectors. His work resulted in 4 papers in reputable international journals, and all the examiners commented on the importance and relevance of the work and results.

Supervisors: Professor N Chetty and Dr O Adeleye

Kasoma, Chapwa, BSc(UZambia), MSc(UZambia).....Plant Breeding

Thesis: Breeding Maize for Tolerance to The Fall Armyworm (*Spodoptera frugiperda*), Improved Yield and Yield-related Traits

Citation: The recent arrival of the fall armyworm (FAW) in Africa has been severely threatening maize production. Host-plant resistance has been identified as one of the most sustainable pest control options. The candidate developed new FAW resistant maize hybrids involving landrace varieties and donor parents. From this study five scientific papers were published in high impact journals. The study was financially supported by the Alliance for a Green Revolution in Africa.

Supervisors: Professor HA Shimelis and Professor MD Laing

Kowe, Pedzisa, BAHons(UZim), MEnvPolPlan(UZim), MSc(UJordan) Environmental Science

Thesis: A Spatially Explicit Approach for Analyzing the Landscape Pattern of Urban Vegetation using Remotely Sensed Data and its Impact on Urban Surface Temperature

Citation: The research developed a spatially explicit approach, based on remotely sensed data, to examine the landscape structure of urban vegetation and its impacts on the surface temperature in Harare, Zimbabwe. Spatially dispersed vegetation patches indicated low positive and negative spatial autocorrelation, whilst spatially clustered vegetation were associated with high positive spatial autocorrelation. The study showed that spatially clustered and connected vegetation produces stronger cooling effects than dispersed patches of vegetation.

Supervisor: Professor O Mutanga

Mahomed, Maqsooda, BSc, BScHons, MSc.....Hydrology

Thesis: Detection and Early Warning of Lightning and Extreme Storm events in KwaZulu-Natal, South Africa

Citation: The candidate investigated extreme weather and lightning that effects vulnerability rural communities within South Africa. A near-real time lightning warning system was developed to detect and disseminate lightning threats and alerts for rural communities to improve their safety and save lives. This study contributed towards the first-ever community lightning early warning system in South Africa and highlighted the risks of extreme weather faced by many rural communities of South Africa.

Supervisors: Dr AD Clulow and Professor MJ Savage and Professor T Mabhaudhi and Mrs KT Chetty and Dr S Strydom

Mahundi, Plaxcedia, Bachelor of Education(UZim), Master of Education(UZim) Human Nutrition

Thesis: Knowledge, Acceptance and Barriers to Optimal use of Iron Supplements amongst Pregnant Women attending Mutare City Clinic in Manicaland, Zimbabwe

Citation: Knowledge, acceptance and barriers to optimal use of iron supplements amongst pregnant women attending Mutare City Clinic in Manicaland, Zimbabwe was assessed. Pregnant women had inadequate knowledge regarding iron supplementation, but accepted that it was important. Barriers to optimal use of iron supplements included erratic supplies at healthcare centres, cultural and religious influences and side-effects associated with supplementation. A pamphlet on iron supplementation was developed for use by pregnant women.

Supervisors: Dr K Pillay and Dr NL Wiles

Mandiwana, Tshifhiwa Cynthia, Bachelor of Science(UVenda), MSc(HumNutr)(UVenda), PGDip(HlthSc)(UCT).....Human Nutrition

Thesis: The Efficacy and Related Factors of the Growth Monitoring and Promotion Programme in Clinics of the Vhembe District, South Africa

- Citation: Growth monitoring and promotion (GMP) related knowledge, perceptions and skills of nursing staff, as well as knowledge of and barriers faced by mothers utilizing the GMP programme, was determined. Nursing staff lacked programme-related knowledge and skills. Mothers were knowledgeable about the importance of GMP, but experienced barriers preventing them from optimally utilizing the services offered. Study findings should be addressed by clinics and the Department of Health in the district.
- Supervisors: Professor SM Kassier and Professor FJ Veldman
- Mkhatshwa, Musawenkosi Patson, BEd(UNISWA), MSc(UJ).....Applied Mathematics**
- Thesis: Overlapping Grid Spectral Collocation Methods for Nonlinear Differential Equations Modelling Fluid Flow Problems
- Citation: The study is concerned with the solution of nonlinear differential equations using the overlapping grid idea. The main output of the study was software code that confirm the accuracy and efficiency of using overlapping grids in different types of problems. Seven journal articles were published from the study.
- Supervisors: Professor SS Motsa and Professor P Sibanda
- Mujeyi, Angeline, BScAgricHons(UZim), MSc(UZim).....Agricultural Economics**
- Thesis: Adoption and Impact of Climate-smart Agriculture Technologies in Integrated Crop-Livestock Farming Systems
- Citation: Angeline Mujeyi looked at the potential contribution of climate climate-smart agricultural technologies in complex smallholder farming systems. Climate smart technologies required for responding to the challenges borne out of climate change. Her study findings provide guidance to development agents and policy makers on the relevant technologies to promote and of their likelihood of adoption. The study produced four journal articles, one book chapter and an international conference presentation.
- Supervisors: Professor M Mudhara and Dr MJ Mutenje
- Ncoyini-Manciya, Zoleka, BScAgric(UFH), MScAgric(UFH).....Agrometeorology**
- Thesis: Observed and Projected Climate Change Effects on Localized Drought Events: A Case Study for Sugarbelt within KwaZulu-Natal Midlands, South Africa
- Citation: The candidate investigated climate change effects on localised drought events. Most similar studies rely on one or two commonly-used drought indices. The candidate applied a total of 17 unique indices to obtain in-depth analysis and conclusions on the nature of extremes for the area of study. This study derives merit in attempting to focus on small communal farmers in terms of climate related vulnerabilities of the resource-poor farming communities.
- Supervisors: Professor MJ Savage and Dr AD Clulow and Dr S Strydom

Ncube, Keabetswe Tebogo, BTech(TUT), MSc(UNISA)..... *Genetics*

Thesis: Gene Expression Profiling of South African Indigenous Goat Breeds using RNA-Seq Technologies in Search of Genes Associated with Growth and Carcass Quality Traits

Citation: Keabetswe Ncube used customised genomics and transcriptomics strategies to exhaustively characterise the genomic mechanisms associated with growth and meat quality in goats. Her thesis explored the effects of breed type and production system and identified genes and genetic mechanisms that enable indigenous goats to produce optimally under the various environmental conditions of South Africa. Keabetswe's study findings are necessary for goat breeding and genetic improvement initiatives.

Supervisors: Dr FC Muchadeyi and Mr EF Dzomba

Ngoroyemoto, Nelson, LicenciataEdu(EnriqueJoseVaronaU), BScHons(UZim), MSc(BinduraU)..... *Botany*

Thesis: The Effect of Organic Biostimulants and the Mode of Application on the Growth and Biochemical Composition of *Amaranthus hybridus* L.

Citation: Mr Ngoroyemoto investigated *A. hybridus*, a leafy vegetable to improve the crop for introduction into commercial agriculture. Nelson's investigation included, inorganic nutrients and, five biostimulants (some together with microorganisms). Nelson through hard work and insight showed that, all five biostimulants and the interaction of microbes with a seaweed biostimulant, improved the growth of *Amaranthus*, making it suitable for human consumption. Nelson published three papers in international journals from his research.

Supervisors: Professor J Van Staden and Professor JF Finnie and Dr M Kulkarni

Nkhata, Wilson, BScAgric(UMalawi), MSc..... *Plant Breeding*

Thesis: Pre-Breeding of Common Bean (*Phaseolus vulgaris* L.) for Bean Fly (*Ophiomyia* Spp) Resistance

Citation: The bean fly is a noxious insect pest causing low productivity of common bean in Malawi. The candidate used the conventional and marker-assisted breeding methods and developed new genetic resources of common bean for bean fly resistance to release market preferred varieties. From this work the candidate published five scientific papers in high impact journals. The study was financially supported by the Alliance for a Green Revolution in Africa.

Supervisors: Professor HA Shimelis and Professor RJM Melis

Nxumalo, Omega Sibusiso, BCommunDevStud, MDevStud..... *Food Security*

Thesis: Adaptation Finance and Food Security in South Africa

Citation: His thesis examined the role of adaptation finance in enabling smallholder farming communities to cope with climate risks and build resilience to climate change. The study found that farmers adopted diverse indicators for weather prediction and forecasting, which enhanced their decisions in implementing

best adaptation strategies. Increased financing, investments and appropriate adaptation technological transfer and capacity building were fundamental in facilitating the transition to achieving resilience and food security.

Supervisor: Professor PL Mafongoya

Nyirenda, Esnat, *BSc(MzuzuU), MSc(UMalawi)*.....*Plant Breeding*

Thesis: Genetic Improvement of Pigeonpea [*Cajanus cajan* (L.) Millspaugh] for Yield, Earliness and Resistance to Fusarium Wilt (*Fusarium udum* Butler) in Malawi

Citation: The grain yield of pigeonpea is low (< 700 kg ha⁻¹) in Malawi compared with the potential yield of the crop reaching up to 2000 kg ha⁻¹. The candidate developed new breeding populations with high yield and Fusarium wilt resistance for variety development and release in Malawi. Three scientific papers were published from the study. The study was financially supported by the Alliance for a Green Revolution in Africa.

Supervisors: Professor HA Shimelis and Professor MD Laing

Ogunseye, Hammed Abiodun, *BScEduHons(LagosStateU), MSc(ULagos)*.....*Applied Mathematics*

Thesis: A Numerical Study of Heat Transfer and Entropy Generation in Powell-Eyring Nanofluid Flows

Citation: Heat transfer in nanofluid flows has important commercial and industrial applications. Entropy generation leads to energy losses that contribute to reducing system performance. The thesis is a numerical study of heat transfer and entropy generation in non-Newtonian nanofluid flows using various mathematics models. Accurate and convergent solutions were found using pseudo-spectral techniques. The results give insights as to factors with the greatest impact on fluid properties and on entropy generation.

Supervisor: Professor P Sibanda

Olaolorun, Boluwatife Modupeoluwa, *B Agric(FUNAAB), MAgric(FUNAAB)*.....*Plant Breeding*

Thesis: Breeding Wheat (*Triticum aestivum* L.) for Drought Tolerance, Improved Yield and Biomass Allocation through Chemical Mutagenesis

Citation: The productivity of wheat has stagnated in sub-Saharan Africa due to unavailability of improved cultivars, recurrent droughts and heat stress presented by global climate change. The candidate used mutation breeding techniques and created superior mutant populations with enhanced biomass allocation, drought tolerance and agronomic performance. This is the first study that reported novel mutants specifically selected for better biomass allocation as a means to improve drought tolerance in wheat.

Supervisor: Professor HA Shimelis

Olonijju, Shina Daniel, BScHons(EKSU), MSc(UCapeCoast), MSc.....Applied Mathematics

Thesis: Numerical Approximations of Fractional Differential Equations: A Chebyshev Pseudo-spectral Approach

Citation: Fractional differential operators are mathematical models of physical problems with intrinsic memory. Closed-form solutions are difficult to find, and when available, these solutions are often expressed in terms of infinite sums or complex integrals. Shina developed and tested a computationally efficient and accurate numerical method to solve complex fractional differential equations. The thesis contributes to the growing body of knowledge in efficient numerical methods for solving fractional differential equations.

Supervisors: Professor P Sibanda and Dr SP Goqo

Oluwalana, Abimbola Eniolayan, BSc(Achievers University), MSc(ULagos) Chemistry

Thesis: Synthesis, Structural, Optical and Photocatalytic Studies of Lead Sulphide and Tin Sulphide Nanoparticles from Lead(II) and Tin(II) Dithiocarbamate Complexes

Citation: Abimbola Oluwalana obtained B. Sc (Hons) in Industrial Chemistry from Achievers University Nigeria, and MSc in Inorganic Chemistry cum laude from University of Lagos, Nigeria. Her PhD research focussed on the fabrication of lead sulphide and tin sulphide nanoparticles from dithiocarbamate single source precursors. The nanoparticles showed potential as efficient photocatalysts for the removal of organic dyes from wastewater. She has published six peer-reviewed papers from the thesis.

Supervisor: Professor PA Ajibade

Pereira de Miranda, Everton Bernardo, BSc(UFRRJ), MSc(UFRRJ)..... Ecological Sciences

Thesis: Building a Conservation Strategy for the Harpy Eagle in the Amazon Forest

Citation: The harpy eagle is the Earth's largest eagle and is considered a flagship species for Amazon Forest conservation. Harpy eagles are threatened by poaching and habitat loss. As highlighted by the examiners, Miranda's study was so comprehensive in scope and transcended classic raptor biology in so many ways that it makes a valuable contribution to the raptor literature, ecological literature, and eagle conservation. Each chapter is either published or submitted.

Supervisors: Professor CT Downs and Professor CA Peres

Phiri, Nelia Nkhoma, BScAgric(UZambia), MSc(UZambia).....Plant Breeding

Thesis: Genetic Improvement of Cowpea [Vigna unguiculate (L.) Walp.] for Grain Yield and Yield Components in Zambia

Citation: Cowpea is a multi-purpose grain legume cultivated in Zambia for food security and local markets. The candidate selected breeding parents using phenotypic and high-density single nucleotide polymorphism markers. New breeding populations were developed with enhanced yield and yield components for further genetic advancement and multilocation selection for variety release and

deployment. The study was financially supported by the Alliance for a Green Revolution in Africa.

Supervisors: Professor HA Shimelis and Professor MD Laing

Rasalanavho, Muvhango, BSc(UVenda), BScHons(UVenda), MSc..... Chemistry

Thesis: Analytical and Mycochemical Studies on Selected Wild Growing Mushrooms of the Boletus, Russula, Lactarius and Termitomyces Families Distributed in KwaZulu-Natal, South Africa

Citation: Muvhango Rasalanavho evaluated the nutritional and medicinal benefits of six species of wild growing mushrooms in South Africa (*Amanita pantherine*, *Boletus edulis*, *Boletus mirabilis*, *Lactarius deliciosus*, *Russula sardonia* and *Termitomyces sagittiformis*). From the mycochemical analysis of the indigenous species, he isolated ergosterol, glycosphingolipid, oleic acid, uracil and mannitol, which demonstrated moderate antioxidant activity. His study provides a scientific basis for the traditional use of wild growing mushrooms in the country.

Supervisors: Professor SB Jonnalagadda and Professor R Moodley

Rhodes, Ruth, BSc(Agric), MSc(UCT) Soil Science

Thesis: Effect of Potassium, Nitrogen and Silicon Fertilisation on Sugarcane Growth and Quality, Nutrient Uptake Dynamics and Soil Chemistry in Two Contrasting Soils of KwaZulu-Natal, South Africa

Citation: The major nutrients required by sugarcane are potassium, nitrogen and silicon. To improve fertiliser recommendations, Ruth's field and pot experiments investigated their individual and interactive effects. Ruth found that where soil potassium is high, calcium and magnesium thresholds should be increased, and that subsoil potassium reserves should be taken into account. She also found the current soil silicon threshold value insufficient for optimum yields and recommended that it be increased.

Supervisors: Professor JC Hughes and Dr N Miles

Sanusi, Adeyemi Isaac, BTech(FederalUTech), MTech(FederalUTech) Microbiology

Thesis: Impact of NanoBiocatalysts on *Saccharomyces cerevisiae* Metabolism for Ethanol Production: Process Optimization, Kinetic Studies and Preliminary Scale-up

Citation: Isaac Adeyemi Sanusi investigated the impact of nano-size catalysts on *saccharomyces cerevisiae* metabolism for ethanol production. He developed the optimal process conditions for bioethanol production from potato wastes in the presence of nano-size catalysts. Four papers from this research have been published in the world's top journals, including *Catalysis Letters* and *Process Biochemistry*, and a book chapter. The knowledge generated will strengthen the country's manufacturing economy for biofuels from wastes.

Supervisor: Professor EB Gueguim Kana

Satekge, Thabiso Kenneth, BScAgric(UL), MScAgric(UL) Horticultural Science

Thesis: Postharvest Storage Potential of Combined Ethylene and 1-Methylcyclopropene on Banana Fruit Quality

Citation: Uneven ripening resulting from 1-methylcyclopropene (1-MCP) treatment to green bananas leads to the loss of millions of Rands during the postharvest value chain. Thabiso Satekge developed a customised protocol by strategically combining 1-MCP and ethylene as a novel postharvest treatment to preserve the quality of banana fruit. This postharvest strategy prolonged the shelf-life of fruit destined to lucrative export markets such as the Middle East and China.

Supervisor: Professor LS Magwaza

Siringo, Happy Makuru Daudi, BSc(USokoine), MSc(USokoine) Plant Breeding

Thesis: Breeding for Resistance to Rice Yellow Mottle Virus and Improved Yield in Rice (*Oryza sativa* L.) in Tanzania

Citation: Groundnut rust disease causes low yields (< 1 t/ha) in Tanzania compared to the potential yield of the crop reaching up to 2.5 t/ha. The candidate developed new breeding families with high combining ability effects for rust resistance and kernel yield. Three scientific papers were published from the study. The study was funded by the International Crops Research Institute for the Semi-Arid Tropics/ India through Tropical Legumes III project.

Supervisor: Professor HA Shimelis

Sosibo, Nondumiso Zanele, BSc, BScHons, MSc Soil Science

Thesis: Soil Carbon and Phosphorus Dynamics under Various Wheat-based Conservation Agriculture Options

Citation: Wheat yields and profitability are reduced by poor soil quality and high fertiliser costs, and conservation agriculture (CA) could be beneficial. Nondumiso found that wheat/maize rotation increased soil labile phosphorus (P) but not organic carbon (SOC) stocks relative to wheat/soyabean, under irrigation. No-tillage with straw burning under, dryland conditions, increased SOC stocks and labile P. The higher SOC fractions increased P availability and could enhance sustainability of wheat production.

Supervisors: Professor P Muchaonyerwa and Dr E Dube

Streicher, Jarryd Peter, BSc, BScHons Ecological Sciences

Thesis: Aspects of the Ecology of Three Mongoose Species along a Rural-urban Landscape Gradient of KwaZulu-Natal, South Africa

Citation: Many small carnivore species are of particular concern for conservation because of their elusive behaviour, diminutive size and crepuscular habits. There was little understanding of the ecology of mongoose species in KwaZulu-Natal. Streicher used a range of techniques to make an exceptional contribution to the knowledge gap and insight into the ecology of three species of mongooses and

how they persist across KwaZulu-Natal's anthropogenically modified habitats (farmlands and urban).

Supervisor: Professor CT Downs

Suvi, William Titus, BScAgric(USokoine), MSc(USokoine)Plant Breeding

Thesis: Breeding for Resistance to Rice Yellow Mottle Virus and Improved Yield in Rice (*Oryza sativa* L.) in Tanzania

Citation: The productivity of rice is low in Tanzania due to the rice yellow mottle virus (RYMV) disease and lack of improved varieties. The candidate selected agronomically superior and RYMV resistant breeding parents and new rice families for further evaluation and variety release in Tanzania. From this study five scientific papers were published in high impact journals. The study was financially supported by the Alliance for a Green Revolution in Africa.

Supervisors: Professor HA Shimelis and Professor MD Laing

Tamako, Nthabeleng, BSc, BScHons, MAgricFood Security

Thesis: Exploring Agricultural Knowledge Systems and Smallholder Farmers Empowerment: Implication on Household Food Security

Citation: Knowledge systems in smallholder farming are crucial to improve productivity and food security. The study found that knowledge emerged through internal and external opinion leaders from both formal and informal systems. Knowledge generation relied on farmer participation levels and on quick, accessible, reliable and relevant. The study highlights the role of knowledge leadership among farmers.

Supervisors: Professor JM Chitja and Professor M Mudhara

Tredgold, Heather Rayne, BSc, BScHons, MScMicrobiology

Thesis: Diversity of Quorum Sensing Pherotypes amongst Ecotypes of Plant-Associated *Bacillus subtilis* sensu lato Isolates

Citation: Ecotype specific quorum-sensing found amongst related bacteria is considered a significant driver of niche adaptation. Heather's research presents the first description of ecotype diversity and pherotype variation found within plant-associated *Bacillus subtilis* sensu lato strains. Several novel ecotype groupings and pherotype variants were distinguished providing evidence of unique ecotypes adapted to localised conditions. These finding have significant implications for microbial-based plant-growth promotion applications.

Supervisors: Dr R Hewer and Dr CH Hunter

Vilakazi, Bonginkosi Samuel, BSc(Agric), MSc(Agric) Soil Science

Thesis: Tillage Management Impact on Greenhouse Gas Emissions and Soil Health of a Maize Long-term Trial in KZN

Citation: Conventional tillage (CT1) had larger N₂O and CO₂ emissions than No-tillage (NT), whereas NT had higher CH₄ emissions. Greater CO₂ emissions from CT1 were attributed to increased decomposition during ploughing. While higher N₂O

emissions were due to improved soil aeration, gas diffusivity and nitrification. Effluxes were increased by higher summer temperatures and moisture. NT at 120 kg N ha⁻¹ resulted in less gas effluxes during summer, while improving soil properties.

Supervisors: Dr R Zengeni and Professor PL Mafongoya

Yobe, Collin Lazuras, *BScAgricHons(UZim), MSc(Agric)*.....*Agricultural Economics*

Thesis: Agricultural Cooperatives' Financial Efficiency, Social Efficiency and Market Choice in South Africa

Citation: Collin Yobe studied determinants of the performance of agricultural cooperatives in South Africa, focusing on their financial and social efficiency. The results show that many agricultural cooperatives in South Africa are relatively financially and socially inefficient. Determinants of these performance measures are identified and results are used to suggest interventions to address the problem. The study produced two published journal articles and one conference presentation.

Supervisors: Dr SRD Ferrer and Professor M Mudhara

MASTERS DEGREES

Master of Agricultural Management

Ntuli, Zamandlela Nokwethaba

Dissertation: An ex-ante Assessment of the Socio-Economic Impacts of Genetically Modified Sugarcane in the ILembe District of KwaZulu-Natal

Supervisor: Dr SRD Ferrer

Master of Agriculture

* **Cele, Thobani**.....*Food Security*

Dissertation: Effects of Collective Action on Market participation and Food Security among Smallholder Farmers in Msinga Local Municipality

Supervisor: Professor M Mudhara

Mudzielwana, Rudzani Vhuyelwani Angel.....*Food Security*

Dissertation: Analysing Food Security Status among Farmworkers in the Tshiombo Irrigation Scheme, Vhembe District, Limpopo Province

Supervisors: Professor PL Mafongoya and Professor M Mudhara

Ndlovu, Phiwokuhle Nqubeko.....*Food Security*

Dissertation: Factors Influencing the Level of Vegetable Value Chain Participation and Implications on Smallholder Farming and Food Security in Swayimane KwaZulu-Natal

Supervisor: Professor JM Chitja

Ngubo, Wonder Ntokozo.....*Food Security*

Dissertation: Investigating the Indigenous Postharvest Technologies and Practices used in Smallholder Farming Systems, and their Impact on Food Security: The Case of Maqongqo, Mkhambathini Local Municipality, KwaZulu-Natal

Supervisor: Professor M Mudhara

*** Thabethe, Noxolo Peacefuly**.....*Food Security*

Dissertation: Market Participation and Food Security among Smallholder Farmers in KwaZulu-Natal and Limpopo Provinces

Supervisor: Professor JM Chitja

Yende, Abela Nomfanelo Precious.....*Food Security*

Dissertation: Farmers' Perception and Adaptation to Climate Change: Case Study of Vulnerable Areas in uMhlathuze Local Municipality in KwaZulu-Natal, South Africa

Supervisors: Mr K Naidoo and Dr MSC Ngidi

Master of Science

Baverstock, Jean Dorathea.....*Environmental Science*

Dissertation: Revisiting the Dendroclimatological Potential of *Afrocarpus Falcatus*, South Africa

Supervisors: Professor TR Hill and Dr JM Hill and Dr S Woodbourne

Bull, Jordan Michael.....*Hydrology*

Dissertation: Assessing the effects of Site Preparation Treatments of Erosion Processes and Sediment Yield on a Commercial Eucalyptus Plantation - A Case Study at Two Streams, KwaZulu-Natal

Supervisors: Professor TR Hill and Professor CS Everson

Chingombe, Pretty Nyaradzo.....*Plant Breeding*

Dissertation: Efficacy of Mon89034 Bt Trait in Conferring Fall Army Worm Resistance in High Yielding Three-way and Single Cross Maize

Supervisors: Dr KS Yobo and Professor J Derera

*** Dlamini, Mandisa Noxolo**.....*Plant Breeding*

Dissertation: Combining Ability and Genotype-by-Environment Interaction Analyses among Early-to-Medium Maturing Maize Hybrids under Drought and non-Drought Environments

Supervisors: Professor J Sibiya and Dr C Musvosvi

- Dlamini, Ntethelelo**.....*Soil Science*
Dissertation: Land use Effects on Characteristics and Mineralization of Nitrogen and Phosphorus during Incubation of Humic Topsoils from Selected sites in KwaZulu-Natal, South Africa
Supervisors: Professor P Muchaonyerwa and Professor JC Hughes
- Gili, Nikilita**.....*Ecological Sciences*
Dissertation: Effect of Increased Temperature on Growth and Nutritive Value of Mesic Grasslands with and Without Woody Legume Seedling Competition
Supervisor: Dr MJ Tedder
- Grantham, Chanelle Celeste**.....*Biochemistry*
Dissertation: Recombinant Expression and Characterisation of an Inhibitor of Cysteine Peptidases (ICP) from Trypanosoma congolense and Comparison with Inhibition of trypanosome Cysteine Proteases by Cystatin Family Inhibitors
Supervisor: Professor THT Coetzer
- Gumede, Mxolisi Percyval**.....*Hydrology*
Dissertation: Water-use of Commercial Bamboo Species in KwaZulu-Natal, South Africa
Supervisors: Dr AD Clulow and Professor CS Everson
- Josiah, Kyrone Kent**.....*Ecological Sciences*
Dissertation: Aspects of the Urban Ecology of the Spotted Thick-knee (Burhinus capensis)
Supervisor: Professor CT Downs
- Khan, Mariam Bibi Hassan**.....*Microbiology*
Dissertation: Design, Implementaion and Performance Assessment of a Novel Bioreactor for Dark Fermentative Biohydrogen Production
Supervisor: Professor EB Gueguim Kana
- * Khuzwayo, Ntokozo Sibonelo**.....*Mathematics*
Dissertation: On the Geometry of Locally Conformal Kähler Manifolds
Supervisor: Professor F Massamba
- Kraai, Unathi Masiobi**.....*Ecological Sciences*
Dissertation: Utilisation of Woody Material by Cape Porcupine in Mesic Savannas
Supervisors: Dr Z Tsvuura and Dr M Kraai and Dr TJ Tjelele and Dr N Mgqatsa and Dr NR Mkhize
- Kunene, Langelihle Mbali**.....*Genetics*
Dissertation: Investigation of Coat Colour Variations in South African Nguni Cattle using High-Density SNP Genotypes
Supervisors: Mr EF Dzomba and Dr FC Muchadeyi

- Madzikane, Olwethu** *Biology*
 Dissertation: Improving the Rooting Ability of *Acacia meurnsii* cuttings through Vegetative Propagation
 Supervisors: Professor JF Finnie and Professor J Van Staden and Dr MW Bairu and Dr SL Pay
- Majola, Thembeke Faith** *Plant Pathology*
 Dissertation: The Potential of Combined Rapid Hot Water Treatment and Yeast Biocontrol for Suppressing Postharvest Avocado Anthracnose and Stem-end Rot Diseases
 Supervisors: Professor MD Laing and Mr RJ Burgdorf
- Makgolane, Thandy Ramathetje** *Genetics*
 Dissertation: Genetic Diversity of some *Moringa oleifera* Lam. Cultivars available in South Africa
 Supervisors: Dr Z Tsvuura and Dr OT Zishiri and Dr AR Ndhala
- Masemola, Makgethwa Jillie** *Agrometeorology*
 Dissertation: Assessment of Vulnerability of Cattle Farming to Climate Variability and Change in South Africa
 Supervisors: Professor MJ Savage and Dr MI Tongwane
- Mathe, Tanya** *Botany*
 Dissertation: A Phylogeny-based Comparative Study of the Phytochemical and Pharmacological Characteristics of *Croton* Species occurring in KwaZulu-Natal
 Supervisors: Dr BLG Bytebier and Professor JF Finnie and Professor J Van Staden
- Mbatha, Sethabile Khwezi** *Ecological Sciences*
 Dissertation: *Parthenium hysterophorus*. Distribution and Efficacy of Control in Hluhluwe-Imfolozi Park, Northern KwaZulu-Natal
 Supervisors: Dr MJ Tedder and Professor O Mutanga and Dr C Carbutt
- Memela, Ndumiso Adrian** *Chemistry*
 Dissertation: Modeling and Determination of the Appropriate Cathode Material to be Used in the Design of a High Capacity Li-Ion Battery
 Supervisors: Professor N Chetty and Dr S Sithebe and Dr TR Papo and Professor R Maphanga
- Mfeka, Sizamile Mbalenhle** *Biochemistry*
 Dissertation: Identification and Analysis of *Cryptosporidium* Glutathione Transferase
 Supervisor: Dr TN Khoza
- * Mphaka, Johannes** *Physics*
 Dissertation: Development of a Mathematical Model to Enable Optimal Efficiency of the Indabuko Lithium-ion Battery
 Supervisors: Professor N Chetty and Professor R Maphanga

- Msane**, Londeka Truth Thobeka *Soil Science*
 Dissertation: Comparison of Selected Extractants for Potassium Requirement Factor and Evaluating Potassium Equilibria for Soil Testing and Fertilizer Recommendations
 Supervisors: Dr N Nongqwenga and Professor P Muchaonyerwa
- Mtshali**, Precious *Statistics*
 Dissertation: Modelling Poverty in Zimbabwe based on the Demographic Health Survey Dataset using GLMs and GAMMs
 Supervisors: Professor S Ramroop and Professor HG Mwambi
- Ndlangamandla**, Qondeni *Statistics*
 Dissertation: Flexible Statistical Modelling of the Determinants of Childhood Anaemia in Tanzania and Angola
 Supervisors: Professor S Ramroop and Professor HG Mwambi
- Ngcobo**, Nondumiso Lean *Chemistry*
 Dissertation: Chiral (Imino)pyridine and (Imino)phosphine Palladium (II) Complexes: Synthesis, Molecular Structures and Applications as Catalysts in Methoxycarbonylation of Olefins
 Supervisor: Professor SO Ojwach
- * Ngwane**, Lindiwe Patricia *Physics*
 Dissertation: The Use of a Digital Camera to Measure the Luminance of Surgical Luminaires in Hospital Theatres
 Supervisors: Professor N Chetty and Dr O Adeleye
- Nyathi**, Mmeli Jeffrey Jethro *Ecological Sciences*
 Dissertation: Aspects of the Ecology of Giraffe across a Land-use Gradient in Central KwaZulu-Natal, South Africa
 Supervisors: Professor CT Downs and Mr PM Calverley
- Osman**, Islam Fawzi Mahgoub *Mathematics*
 Dissertation: Some Null Submanifolds of Indefinite Nearly Sasakian Manifolds
 Supervisor: Professor F Massamba
- Pillay**, Caleb *Plant Pathology*
 Dissertation: Biological Characterization of South African Bacteriophages Infective against *Streptococcus uberis*, a Causal Agent of Bovine Mastitis
 Supervisors: Professor MD Laing and Dr IH Basdew
- Ramlall**, Ryshan *Hydrology*
 Dissertation: Assessing the Performance of Techniques for Disaggregating Daily Rainfall for Design Flood Estimation in South Africa
 Supervisor: Professor JC Smithers

- * Rule, Matthew James**..... *Biology*
Dissertation: The Curious Case of the *Satyrium neglectum* Complex: A Taxonomic, Ecological, and Phylogenetic Study
Supervisors: Dr T Van Der Niet and Professor SD Johnson
- Sheik Oumar, Muhammad**..... *Environmental Science*
Dissertation: Assessing the Utilities of the Landsat 8 Multispectral Sensor and the MaxEnt Species Distribution Model to Monitor *Uromycladium acaciae* Damage in KwaZulu-Natal, South Africa
Supervisors: Professor O Mutanga and Dr KY Peerbhay and Dr I Germishuizen
- Shinga, Wenzile**..... *Environmental Science*
Dissertation: Estimating Critical Grassland Vegetation Moisture Parameters using Topo-climatic Variables and Remotely Sensed Data in Relation to Fire Occurrence
Supervisor: Professor O Mutanga and Dr M Sibanda
- Singh, Keanu Reeve**..... *Hydrology*
Dissertation: Detecting and Assessing the Impacts of Outlier Events and Data Availability on Design Rainfall and Flood Estimation in South Africa
Supervisors: Professor JC Smithers and Miss KA Johnson
- * Sithole, Nonkululeko**..... *Biology*
Dissertation: Differential Microbe Symbiosis and Nitrogen Source Changes Decrease Growth Carbon Costs Promoting Growth of *Vachellia nilotica* and *Leucaena leucocephala* in Nutrient Deficient Grassland and Savanna Ecosystems in KwaZulu-Natal, South Africa
Supervisors: Dr A Magadlela and Dr Z Tsvuura
- α Skhosana, Menzi**..... *Computer Science*
Dissertation: Irenbus - A Real-Time Machine Learning Based Public Transport Management System
Supervisor: Dr AE Ezugwu
- Skosana, Tebogo Lucky**..... *Plant Breeding*
Dissertation: Effect of Insect Pollinator Species Deployment and Interactions with Parental Inbred Lines in Hybrid Carrot Seed Production
Supervisors: Professor J Sibiya and Dr C Musvosvi
- Tsoeleng, Lesiba Thomas**..... *Environmental Science*
Dissertation: Efficacy of Morphological Approach in the Classification of Urban Land Covers
Supervisor: Professor JO Odindi and Dr P Mhagara
- Vambe, Trevor Constantine**..... *Computer Science*
Dissertation: A Patch-based Convolutional Neural Network for Localized MRI Brain Segmentation
Supervisors: Professor S Viriri and Dr MV Gwetu

* **Vilakazi**, Samukelisiwe Pinky *Soil Science*

Dissertation: Characterisation of Potato Waste Biochar and Effect on Carbon Dioxide Emission, Liming Potential and Availability of Primary Macro-nutrients of Two Contrasting Amended Soils

Supervisors: Professor P Muchaonyerwa and Dr NN Dube

Ziena, Luwam Weldegabir *Plant Pathology*

Dissertation: Integration of Rapid Hot Water Treatments and Biocontrol Agents to Control Postharvest Pathogens of Tomato

Supervisors: Professor MD Laing and Professor TS Workneh

Zwane, Thabile Jane *Ecological Sciences*

Dissertation: Influences of Land-use and Intensity of Use on Small Mammals in a Mesic Savanna, Pretoria, South Africa

Supervisors: Dr M Kraai and Dr Z Tsvuura and Dr TJ Tjelele

Master of Science (Dietetics)

Yegambaram, Leah Bianca

Dissertation: Anthropometric Status and Dietary Habits of Registered Nurses, Enrolled Nurses and Enrolled Nursing Auxiliaries Working at a Private Hospital in Pietermaritzburg, KwaZulu-Natal

Supervisor: Dr K Pillay

Master of Science in Agriculture

Jila, Noxolo Nokukhanya *Crop Science*

Dissertation: Water Use Efficiency of Three Common Subsistence Legume Crops in Relation to Soil type under Controlled Environment Conditions

Supervisor: Professor AT Modi

Kunene, Thobeka Gladness *Crop Science*

Dissertation: Assessing Nutritional Water Productivity of Selected African Leafy Vegetables using the Agricultural Production Systems Simulator Model

Supervisor: Professor AT Modi

Mdima, Thobile Siphosethu *Crop Science*

Dissertation: Timing of Weed Control and Harvest Date Effects on Potato Crop Field Performance and Mineral Content

Supervisor: Professor AT Modi

- * **Mngoma**, Mlungisi Fihlane *Horticultural Science*
 Dissertation: Investigating the Effect of Trellising and Stem Training Methods on the Horticultural Performance of Indeterminate Tomatoes Grown in Dome Shape Tunnels
 Supervisors: Professor LS Magwaza and Dr A Mditshwa and Professor SZ Tesfay
- * **Mthembu**, Sisanda Sibusiso Luyanda *Horticultural Science*
 Dissertation: Evaluating the Efficacy of Formulations Containing Hexanal, Moringa Leaf Extracts, and Carboxy Methylcellulose as Postharvest Treatments for Fresh Tomatoes (*Solanum lycopersicum* L.)
 Supervisors: Professor SZ Tesfay and Professor LS Magwaza and Dr A Mditshwa
- Mthembu**, Sizwe Goodman *Crop Science*
 Dissertation: Response of Potato Genotypes to Production Sites and Water Deficit Imposed at Different Growth Stages
 Supervisors: Professor AO Odindo and Professor LS Magwaza and Dr A Mditshwa
- Phungula**, Nosipho Precious *Crop Science*
 Dissertation: Artificial Soil Profile for Vegetable Production - A Potential Case of Urban Agriculture
 Supervisor: Professor AT Modi
- Shelembe**, Sihle Cyril *Crop Science*
 Dissertation: Water Use and Nutritional Water Productivity of Taro (*Colocasia esculenta* L. Schott) Landraces
 Supervisor: Professor AT Modi
- Sihlongonyane**, Sisekelo Simo *Crop Science*
 Dissertation: Vertical Hydroponic Production of Leafy Vegetables with Human-excreta-derived-materials (HEDMs) from Decentralised Sanitation Technologies
 Supervisors: Professor LS Magwaza and Professor AO Odindo and Professor CA Buckley

HONOURS DEGREES

Bachelor of Agriculture Honours

- Bane**, Nolihle Queen *Agricultural Ext And Rural Resource Mngt*
Chiwaya, Afiki Rajabo *Agricultural Ext And Rural Resource Mngt*
Colvelle, Lungile Precious *Agricultural Ext And Rural Resource Mngt*
Mbatha, Nomkhosi *Agricultural Ext And Rural Resource Mngt*
Mhlanzi, Slindile Immaculate *Agricultural Ext And Rural Resource Mngt*

Msomi, Nosipho	<i>Agricultural Ext And Rural Resource Mngt</i>
Mtungwa, Sithabile Prospect	<i>Agricultural Ext And Rural Resource Mngt</i>
Ndebele, Thalente	<i>Agricultural Ext And Rural Resource Mngt</i>
Nkomo, Sinqobelo President	<i>Agricultural Ext And Rural Resource Mngt</i>
Shange, Siyanda	<i>Agricultural Ext And Rural Resource Mngt</i>
Zondo, Hlengiwe Patricia	<i>Agricultural Ext And Rural Resource Mngt</i>
Zungu, Nontobeko	<i>Agricultural Ext And Rural Resource Mngt</i>

Bachelor of Science Honours

Arjoon, Jaryn Samuel Nikolys	<i>Computer Science</i>
Bahige, Ladis Murhula	<i>Physics</i>
Base, Yolisa Nandipha	<i>Plant Pathology</i>
Beepath, Samisha	<i>Biological Sciences</i>
Bidli, Musa	<i>Biological Sciences</i>
Bishop, Bryce Delron Carter	<i>Microbiology</i>
Cahi, Joss Alexander	<i>Hydrology</i>
* Curtis, Tanisha Michael	<i>Hydrology</i>
Dladla, Siphamandla Austen	<i>Chemistry</i>
Dlamini, Mpendulo Goodman	<i>Ecological Sciences</i>
Dlamini, Siyabonga Welcome	<i>Horticultural Science</i>
α Dubazana, Siyabonga Selby	<i>Mathematics</i>
* Enoch, Talia Nadine	<i>Environmental Science</i>
* Frost, Erin	<i>Genetics</i>
Gabuza, Sanele	<i>Statistics</i>
Gcabashe, Neliswa Happy	<i>Horticultural Science</i>
* Gcabashe, Sithembisile Lwazi	<i>Genetics</i>
* Gengan, Crystal Allison	<i>Microbiology</i>
Goodjarran, Chante Micheline	<i>Hydrology</i>
Gouws, Shaun Jesse	<i>Biological Sciences</i>
Govender, Letisha	<i>Hydrology</i>
Gumbi, Nolwazi Nosihle	<i>Chemistry</i>
Gumede, Charles Njabulo	<i>Computer Science</i>
Gunkel, Kallyn Graham Roger	<i>Biological Sciences</i>

Hlatshwayo, Sibongeleni.....	Computer Science
Hlongwane, Kwanele.....	Chemistry
Jantjies, Thandokazi.....	Statistics
* Kaulasar, Liresh.....	Computer Science
Khan, Wazeer.....	Environmental Science
Khanyase, Siyanda.....	Chemistry
* Khwela, Andiswa.....	Genetics
Kolisi, Badudule Nonelela.....	Crop Science
Kunene, Wandile Kenneth.....	Statistics
Lauchande, Vanessa Lucinda.....	Biological Sciences
Lushaba, Amanda Andiswa.....	Chemistry
Mabizela, Lindokuhle Presygod.....	Chemistry
Maduna, Nokwethemba Patience Nokuphiwa.....	Horticultural Science
Mafuleka, Sean Manqoba.....	Chemistry
* Maharaj, Shekhar Sharma.....	Chemistry
Maikoo, Pashtalia.....	Biochemistry
Majola, Nonhlelo.....	Chemistry
Makhaye, Lunga.....	Genetics
α Makurumure, Leenane Tinashe.....	Computer Science
Maseko, Mkholo Thamsanqa Hendry.....	Hydrology
Mavana, Aphiwe.....	Microbiology
Maxazana, Nolubabalo.....	Plant Pathology
Mbandlwa, Ntando.....	Mathematics
Mbuli, Sanele Archibald.....	Computer Science
Mhelembe, Talani.....	Statistics
* Mjwara, Pinky Ncomela.....	Chemistry
Mkhize, Nkosingiphile.....	Computer Science
Mkhize, Sphehile.....	Biochemistry
Mlondo, Muziwandile Nhlakanipho.....	Statistics
Mlotshwa, Noxolo Siphephelo.....	Plant Pathology
Mnyaiza, Mphumzi.....	Physics
Moloi, Thuso Samson.....	Microbiology
Moniz, Jermaine Anstey.....	Chemistry

* Moodley, Danica	<i>Chemistry</i>
Mpanza, Silindokuhle Persevearence	<i>Environmental Science</i>
Mpontshane, Minenhle Sthabile Sbusisiwe	<i>Chemistry</i>
Msweli, Malusi Trueman	<i>Physics</i>
Mthembu, Thando Lwandile	<i>Hydrology</i>
Muchaonyerwa, Knowledge Tinotenda	<i>Hydrology</i>
Mvelase, Sabathile Thandeka	<i>Chemistry</i>
Mzobe, Sindisiwe Jabu	<i>Horticultural Science</i>
Naicker, Kavisha	<i>Chemistry</i>
* Naidoo, Leanne	<i>Genetics</i>
α Naidoo, Lexia Michelle	<i>Physics</i>
* Ndabana, Ndabenhle Lungani Bandile	<i>Computer Science</i>
Ndlela, Lungelo	<i>Chemistry</i>
Ndlovu, Ziyanda Goodenough	<i>Hydrology</i>
Nerwande, Ashley Tafadzwa	<i>Genetics</i>
Ngcobo, Nkosinathi Khulekani	<i>Chemistry</i>
Ngubane, Candice Amanda Lumka	<i>Biochemistry</i>
* Njilo, Andiswa	<i>Genetics</i>
Nkabinde, Kwazikwenkosi Senzeni	<i>Ecology</i>
Nkala, Noxolo Thandolwethu	<i>Chemistry</i>
Nkosi, Sifundo Sakhile	<i>Statistics</i>
Nogwebela, Gugulethu Manase	<i>Mathematics</i>
Nsibande, Thobeka Nomfundo	<i>Hydrology</i>
Ntshangase, Senamile Nokuzotha	<i>Hydrology</i>
Ntshale, Thembelani Blessing	<i>Statistics</i>
Nxumalo, Thandeka Zanakuhle Sthabile	<i>Microbiology</i>
Nxumalo, Thembelani Nhlakanipho	<i>Environmental Science</i>
Nyawo, Siphephile Simephi	<i>Microbiology</i>
Nyawose, Amanda Nichole	<i>Environmental Science</i>
* O'Connor, Michaela Anne	<i>Biological Sciences</i>
* Pillay, Tristan Reece	<i>Environmental Science</i>
Radebe, Phumla Londeka	<i>Biochemistry</i>
Sebidi, Refentse Nthapeleng	<i>Biological Sciences</i>

Shabalala, Mzamo Melusi.....	<i>Applied Mathematics</i>
Shakoor, Suhail.....	<i>Biochemistry</i>
Singh, Chayan.....	<i>Hydrology</i>
α Singh, Nalin Prashant.....	<i>Hydrology</i>
Sithole, Mthunzi.....	<i>Statistics</i>
Thupsie, Viren.....	<i>Biological Sciences</i>
Vawda, Mohamed Ismail.....	<i>Environmental Science</i>
* Woodgate, Ryan.....	<i>Biochemistry</i>
Xaba, Mbuyiselo Ntandoyenkosi.....	<i>Applied Mathematics</i>
Xaba, Sindiswa Nomzamo.....	<i>Horticultural Science</i>
Zondi, Thandolwethu Beauty.....	<i>Biochemistry</i>
Zondo, Sindiswa.....	<i>Biological Sciences</i>
Zuma, Sbahle Naledi.....	<i>Biochemistry</i>

BACHELOR DEGREES

Bachelor of Science in Agriculture

Bhaiyat, Muhammad.....	<i>Soil Science</i>
Biyela, Msizi.....	<i>Agricultural Economics</i>
Buthelezi, Gcinokuhle.....	<i>Plant Pathology</i>
Cele, Ngesihle Nozipho.....	<i>Animal And Poultry Science</i>
Choba, Kefuwe.....	<i>Plant Pathology</i>
Dlamini, Ntsikelelo Blessing.....	<i>Plant Pathology</i>
Gulwa, Sange.....	<i>Animal And Poultry Science</i>
Hadden, Casey Christiano.....	<i>Plant Pathology</i>
Hlongwane, Fezile Bongiwu.....	<i>Animal And Poultry Science</i>
Jele, Nkosinathi.....	<i>Soil Science</i>
Jonas, Samkelo Welcome.....	<i>Agricultural Economics</i>
Khambule, Sthembile Tamiya.....	<i>Agricultural Economics</i>
Khumalo, Sithembinkosi.....	<i>Agricultural Economics</i>
Khuzwayo, Zenhlanhla Nonjabulo.....	<i>Plant Science</i>
Luthuli, Samkelisiwe Nontokozo.....	<i>Soil Science</i>

Mabaso, Mluleki Siyjabula	<i>Animal And Poultry Science</i>
Magocoba, Thobisa	<i>Plant Science</i>
Mahlaba, Njabulo Kwanda	<i>Animal And Poultry Science</i>
Mahlanza, Zizile	<i>Soil Science</i>
Mahlati, Nasiphi	<i>Animal And Poultry Science</i>
Mathenjwa, Kuhlekonke	<i>Plant Pathology</i>
Mazibuko, Noluthando Berlinda	<i>Agribusiness</i>
Mbambo, Zintle Pamela	<i>Agricultural Economics</i>
Mbatha, Nondumiso Bianca	<i>Plant Pathology</i>
Mdluli, Cebelihle Collin	<i>Soil Science</i>
Mdluli, Lungisani Thabani	<i>Plant Science</i>
Mehtar, Sulaiman Muhammed	<i>Soil Science</i>
Memela, Thembelihle	<i>Animal And Poultry Science</i>
Mhlaba, Caroline Nozipo	<i>Plant Pathology</i>
Mhlongo, Nokubongwa Sethabile	<i>Animal And Poultry Science</i>
Mkhize, Thobani	<i>Animal And Poultry Science</i>
Mncwango, Winile	<i>Agribusiness</i>
Mngomezulu, Zamaswazi Nomokuhle	<i>Agricultural Economics</i>
Molefe, ZamaLubi Khanyisile	<i>Agricultural Economics</i>
Moloi, Palesa Nlikaneng Portia	<i>Agricultural Economics</i>
Mota, Muhammad	<i>Plant Science</i>
Mshengu, S'Phamandla Blessing	<i>Animal And Poultry Science</i>
Mthembu, Siboniso Ishmael	<i>Animal And Poultry Science</i>
Mthenjane, Sanele Sambulo	<i>Animal And Poultry Science</i>
Mthethwa, Babuse Phambili Kahle	<i>Agricultural Economics</i>
Mtolo, Phindile Cynthia	<i>Agricultural Economics</i>
Mvundlela, Sivuyisiwe	<i>Plant Pathology</i>
Myeni, Simphiwe Bongumenzi	<i>Animal And Poultry Science</i>
Mzimela, Thobeka Lucretia Snonthile	<i>Plant Pathology</i>
Ndabandaba, Nothando Nosipho	<i>Plant Science</i>
Ndlovu, Khanyisani	<i>Plant Pathology</i>
Ndlovu, Ndabenhle Sibonelo	<i>Animal And Poultry Science</i>
Ndzala, Mbulelo Clinton	<i>Soil Science</i>

Ngcobo, Noluthando Nokwanda Akhona	<i>Agricultural Economics</i>
Ngcongo, Luyanda Marvellous	<i>Agribusiness</i>
Ngubane, Ndabezinhle Sizwe	<i>Agribusiness</i>
Nhlenyama, Mndeni Mzwandile	<i>Agribusiness</i>
Nkosi, Nothando Perseverence	<i>Plant Pathology</i>
Nkosi, Siphelele Msamaria	<i>Plant Pathology</i>
Nombela, Nomcebo Lucia	<i>Soil Science</i>
Ntshangase, Minenhle Penelope	<i>Soil Science</i>
Ntshinka, Avene Mbasa	<i>Agribusiness</i>
Ntuli, Yolanda Nomvula	<i>Plant Pathology</i>
Nxumalo, Thokozani Smangaliso	<i>Plant Pathology</i>
Nyawo, Patrick Lucky	<i>Agribusiness</i>
Nzimande, Hlengiwe Princess	<i>Plant Science</i>
Pele, Gloria	<i>Plant Pathology</i>
Phungula, Lonathemba	<i>Soil Science</i>
Shezi, Ayanda Masimbonge	<i>Animal And Poultry Science</i>
Sibisi, Lindokuhle	<i>Animal And Poultry Science</i>
Sithole, Asanda	<i>Plant Science</i>
Sithole, Nkonzo	<i>Soil Science</i>
Sithole, Nomusa Maria	<i>Plant Pathology</i>
Sithole, Ntombenhle	<i>Animal And Poultry Science</i>
Soko, Thabisa Isaac	<i>Animal And Poultry Science</i>
Soni, Siphelele Goodenough	<i>Agricultural Economics</i>
Tessema, Meklit Genene	<i>Agricultural Economics</i>
Thibane, Zimi	<i>Agricultural Economics</i>
Tyathula, Sibulele Billy	<i>Soil Science</i>
Vilakazi, Nomcebo	<i>Plant Pathology</i>
Xulu, Nothando	<i>Plant Science</i>
Zulu, Khulekani Innocent	<i>Agribusiness</i>
Zulu, Samukelisiwe	<i>Soil Science</i>

Bachelor of Science in Dietetics and Human Nutrition

Danke, Mncedisi Thabiso
Dlamini, Phiwayinkosi
Dlamini, Thobeka
Dlamini Mthethwa, Nosizo Mbalenhle
Essop, Raabiah
Gabela, Mcebisi Wandile
Govender, Yershnee
Khoza, Lindokuhle Michelle
Khumalo, Snenhlanhla Londiwe
Kunene, Londiwe
Maharaj, Laika
Matonzi, Khumbulani
Mazibuko, Sanelisiwe Ntombizine
Mdluli, Praise-Well Makabongwe Nomfundo
Mhlongo, Thinasonke Nomfundo
Mkhize, Mxolisi Shaun Thembelani
Mntungwa, Nqobile
Moonsamy, Emily Benadette
Mthembu, Minenhle Fanelesibonge Thembelihle
Mthembu, Nsindiso Ntwenhle Emmanuel
Myeni, Ndumiso Richman
Ndlovu, Snakhokonke Kwenzekile
Ntombela, Anele Sinenhlanhla
Phakathi, Mbali Phakamile Nompumelelo
Pillay, Theolan Tyrell
Ramsamy, Theloshni
Spies, Martinique Stella
Stegen, Carrie-Anne
Tsengwa, Zikhona
Zungu, Sthembisio Nkosinathi
Zwane, Snethemba Nontokozo Nokuphiwa

Bachelor of Agricultural Management

Dlamini, Zimisele Elvis

Gingqi, Pumza

Hadebe, Ntuthuko

Masina, Sabelo Marvin

Mbuzi, Yonelisa

Ngcongo, Thobeka

Patekile, Nomcebo

Bachelor of Agriculture

Buthelezi, Andile.....Agricultural Ext And Rural Resource Mngt

Dlomo, Saziso KwazikwenkosiAgricultural Ext And Rural Resource Mngt

Gambushe, Nomdumiso ZamaAgricultural Ext And Rural Resource Mngt

Khuzwayo, SmiloAgricultural Ext And Rural Resource Mngt

Madlala, Amanda MandisaAgricultural Ext And Rural Resource Mngt

Mjoli, Chulekazi LungiswaAgricultural Ext And Rural Resource Mngt

Mlambo, Simphiwe SamkeloAgricultural Ext And Rural Resource Mngt

Mtoti, Siphamandla Musawenkosi VukileAgricultural Ext And Rural Resource Mngt

Ndlela, Zamokuhle.....Agricultural Ext And Rural Resource Mngt

Ntombela, Thembinkosi BhekizenzoAgricultural Ext And Rural Resource Mngt

Sithole, Bongumusa AbongileAgricultural Ext And Rural Resource Mngt

Bachelor of Science

Bhagwandhin, Aathish AneshComputer Science, Physics

Bhengu, Bongane MarcusEconomics, Mathematics

Bixa, Babalo..... Computer Sc And Information Technology

Biyela, Zamagcino Environmental Science

α Botha, Jason Craig Computer Sc And Information Technology

Budhu, Shaylen..... Computer Sc And Information Technology

Buthelezi, Gugu HappinessHydrology, Soil Science

Buthelezi, Nontokoza Genetics, Microbiology

Buthelezi, Thabiso Minenhle..... Environmental Science

Cele, Lindani Siboniso	<i>Applied Mathematics, Mathematics</i>
Chamane, Samkelo Revival	<i>Computer Sc And Information Technology</i>
Chiliza, Mfundo	<i>Chemistry And Chemical Technology</i>
Chutterpaul, Shahan	<i>Chemistry And Chemical Technology</i>
David, Kyra-Jade	<i>Hydrology, Physics</i>
Dayanand, Kishav	<i>Chemistry And Chemical Technology</i>
Dhlamini, Simangele Happiness	<i>Biochemistry, Chemistry</i>
Dladla, Fanelesibonge Brightness	<i>Industrial And Applied Biotechnology</i>
Dlamini, Noluthando Sphumelele	<i>Mathematics</i>
Dlamini, Simon Mondli	<i>Environmental And Earth Sciences</i>
Dlamini, Sphumelele	<i>Genetics, Microbiology</i>
Duma, S'Phesihle Secutor	<i>Genetics, Microbiology</i>
Edwards, Samantha Nicole	<i>Industrial And Applied Biotechnology</i>
Farm, Siphosethu	<i>Biochemistry, Microbiology</i>
Foley, Waqiah Rasoolbi	<i>Computer Sc And Information Technology</i>
Freddy, Ryan Jude	<i>Chemistry, Microbiology</i>
Fumba, Asiphe Nanilethu	<i>Biochemistry, Microbiology</i>
Gazu, Landokuhle	<i>Biochemistry, Microbiology</i>
Goge, Mangaliso Nokwethemba	<i>Biochemistry, Chemistry</i>
Goso, Sisonke	<i>Biochemistry, Chemistry</i>
Govender, Priyantha	<i>Biochemistry, Microbiology</i>
Gumede, Nkonzenhle	<i>Computer Sc And Information Technology</i>
Gumede, Nomfundo Vanessa	<i>Chemistry, Mathematics</i>
Gumede, Nqobile	<i>Chemistry And Chemical Technology</i>
Gumede, S'phephelo Lungelo Given	<i>Computer Sc And Information Technology</i>
Gumede, Senzi Mbizeni	<i>Chemistry And Chemical Technology</i>
Gumede, Sinenhlanhla	<i>Crop And Horticultural Science</i>
Gwala, Noluthando	<i>Crop And Horticultural Science</i>
Hadebe, Asande	<i>Biological Sciences</i>
Hadebe, Dawn Lungile Nqobile	<i>Biochemistry, Microbiology</i>
Hlongwane, Naledi Siyandiswa Vuyiswa	<i>Biological Sciences</i>
Hlongwane, Sandiswa	<i>Geography, Hydrology</i>
Jele, Zizile Yoliswa	<i>Geography, Hydrology</i>

Jili, Ncedo	Mathematics, Physics
Khan, Aadila.....	Computer Sc And Information Technology
Khanyile, Doctor Innocent	Computer Sc And Information Technology
Khanyile, Londeka.....	Microbiology
Khanyile, Lungisani Njabulo.....	Computer Sc And Information Technology
Khanyile, Senzelumusa Sinethemba	Biochemistry, Microbiology
Khanyile, Sinethemba Zamangwane.....	Genetics, Microbiology
Khanyile, Snenhlanhla Fortunately.....	Environmental Science, Hydrology
Khumalo, Siphesihle Penelope	Biochemistry, Microbiology
Kostile, Anesipho	Biochemistry, Microbiology
Kubheka, Mcebo Sihawukele.....	Chemistry And Chemical Technology
Luthuli, Banele.....	Computer Sc And Information Technology
Luvuno, Zamukuphepha Mxolisi	Applied Mathematics, Statistics
Mabaso, Siphesihle	Applied Mathematics, Computer Science
Mabuza, Sabelo Praise-God.....	Biological Sciences
Machi, Nhlakanipho Fortunatus.....	Computer Sc And Information Technology
Maduna, Kwanele.....	Computer Sc And Information Technology
Magitshima, Lithakazi.....	Chemical Technology
Maharaj, Neyaksha.....	Biochemistry, Genetics
Maharaj, Yasteel	Biochemistry, Microbiology
Mahomed, Ismaeel.....	Computer Sc And Information Technology
Majola, Nonduduzo	Mathematics, Statistics
Majola, Thobani Prosperity	Applied Mathematics, Statistics
Majola, Xolani Mario.....	Environmental And Life Sciences
Makhubele, Makungo	Biochemistry, Microbiology
Manukuza, Funani Delisile	Plant Pathology
Maphalala, Andiswa Lungelo.....	Chemistry And Chemical Technology
Maphanga, Philani Mthokozisi	Computer Science, Physics
Masango, Sindisiwe Nqobile	Applied Mathematics, Statistics
Masango, Thobeka Charity	Applied Mathematics, Statistics
Mashwawu, Bonga.....	Environmental Science
Mathaba, Thabile Happy.....	Biochemistry, Genetics
Mathe, Slondile.....	Crop And Horticultural Science

Mathenjwa, Andile Zanele	<i>Plant Pathology</i>
Mazibuko, Anele Ayanda	<i>Biochemistry, Microbiology</i>
Mazule, Zonke	<i>Chemistry And Chemical Technology</i>
Mbambo, Phila Luyanda	<i>Genetics, Microbiology</i>
Mbanjwa, Nontethelelo	<i>Statistics</i>
Mbatha, Minenhle Nhlakanipho	<i>Environmental Science</i>
Mbatha, Nombulelo	<i>Soil Science</i>
Mbatha, Nosibusiso Ntombiyenhlanhla	<i>Applied Mathematics, Physics</i>
Mbele, Khanyisile Andiswa	<i>Microbiology, Plant Pathology</i>
Mbokazi, Noxolo Thandeka	<i>Biological Sciences</i>
Mbulawa, Lwando	<i>Computer Sc And Information Technology</i>
Mcanyana, Gugulethu Sibahlesonke Phillipine	<i>Geography, Hydrology</i>
* Mcebi, Lulama	<i>Biochemistry, Chemistry</i>
Mdladla, Sandile Andrew	<i>Environmental Science</i>
Mdletshe, Andile Nobuhle	<i>Genetics, Microbiology</i>
Mdletshe, Nondumiso Siphesihle	<i>Applied Mathematics, Statistics</i>
Mdluli, Fundiswa Pearl	<i>Applied Mathematics, Statistics</i>
Mdluli, Sibonelo	<i>Crop And Horticultural Science</i>
Memela, Zamani	<i>Crop And Horticultural Science</i>
Miya, Lungelani Hemilton	<i>Computer Sc And Information Technology</i>
Miya, Mthokozisi Charles	<i>Applied Mathematics, Statistics</i>
Mkhize, Bongani Sandile	<i>Geography, Hydrology</i>
Mkhize, Lungisani Bongukwazi	<i>Applied Mathematics, Statistics</i>
Mkhize, Simthandile Makwandiswe	<i>Biochemistry, Genetics</i>
Mkhize, Sthokozisi Petunia	<i>Environmental Science</i>
Mkhonza, Ntuthuko Gary	<i>Mathematics</i>
Mkhwanazi, Lungani	<i>Applied Mathematics, Statistics</i>
Mkhwanazi, Nhlosenhle Nqubeko	<i>Biochemistry, Microbiology</i>
Mkhwanazi, Ntandoyenkosi	<i>Computer Sc And Information Technology</i>
Mkhwanazi, Sisanda	<i>Biochemistry, Microbiology</i>
Mncwabe, Nkanyiso	<i>Computer Sc And Information Technology</i>
Mndaweni, Amanda	<i>Mathematics, Statistics</i>
Mngadi, Bongiwé	<i>Applied Mathematics, Statistics</i>

Mokoatedi, Noko	<i>Chemistry And Chemical Technology</i>
Moodley, Yerushan	<i>Hydrology, Soil Science</i>
Motau, Patricia Khotatso Lebogang	<i>Biochemistry, Genetics</i>
Mpungose, Thobeka Slindile	<i>Hydrology</i>
Mqadi, Thembakazi Nandi	<i>Genetics, Microbiology</i>
Mseleku, Nqobile	<i>Hydrology</i>
Msibi, Sthembiso Precious	<i>Chemistry And Chemical Technology</i>
Mthimunye, Thembekele Advice	<i>Environmental And Life Sciences</i>
Mtolo, Zinhle Nonhlakanipho	<i>Biochemistry, Microbiology</i>
Mtshali, Nozizwe Prudence	<i>Environmental And Earth Sciences</i>
Mtshali, Zipho Minathi Gift	<i>Crop And Horticultural Science</i>
Mususumeli, Rendani Zoleka	<i>Biological Sciences</i>
Mutupe, Nicolette	<i>Environmental And Life Sciences</i>
* Mvelase, Sanele Justice	<i>Genetics, Microbiology</i>
* Myburgh, Daniel Anton	<i>Biochemistry, Microbiology</i>
Naicker, Melinee	<i>Biochemistry, Microbiology</i>
Naidoo, Sabrina Taryn	<i>Computer Sc And Information Technology</i>
Nala, Snoxolo	<i>Statistics</i>
Ndimu, Nqobile	<i>Biochemistry, Genetics</i>
Ndlazi, Nkosinathi Doctor	<i>Biochemistry, Microbiology</i>
Ndlovu, Sandile	<i>Plant Pathology</i>
Ndlovu, Solomzi Glenn	<i>Biochemistry, Microbiology</i>
Ndlovu, Zama Nothando	<i>Biochemistry</i>
Ndubane, Anele	<i>Biochemistry, Genetics</i>
Ndwandwe, Andile Amanda	<i>Applied Mathematics, Information Systems And Technology</i>
Ndwandwe, Andile Zethembe	<i>Chemistry And Chemical Technology</i>
Nelisi, Londiwe Bulelwa	<i>Environmental And Life Sciences</i>
Nene, Kwanele Simo	<i>Biochemistry, Chemistry</i>
Nene, Nkanyiso	<i>Plant Pathology</i>
Ngcamu, Sboniso Blessing	<i>Applied Mathematics, Computer Science</i>
Ngcobo, Lindokuhle Glemorus	<i>Biochemistry, Microbiology</i>
Ngcobo, Nelisiwe Sharon	<i>Hydrology, Soil Science</i>
Ngcobo, Nomfundo Wandile	<i>Biological Sciences</i>

Ngema, Sithembile Simphiwe Zamantusi	<i>Biochemistry, Microbiology</i>
Ngubane, Nkazimulo Ayanda	<i>Applied Mathematics, Statistics</i>
Ngubane, Nozipho	<i>Biochemistry, Microbiology</i>
Ngubane, Sibonelo	<i>Crop And Horticultural Science</i>
Ngubo, Andiswa Sinezihle	<i>Genetics, Microbiology</i>
Nhlabathi, Mbalenhle Kabelo Sibongiseni	<i>Biochemistry, Chemistry</i>
Nhleko, Siphesihle Halalisani	<i>Genetics, Microbiology</i>
Nkosi, Senamile	<i>Applied Mathematics, Mathematics, Statistics</i>
Nkosi, Sithabiso Bavukile	<i>Biochemistry, Microbiology</i>
Nkwanyane, Misokuhle Palisa	<i>Biochemistry, Genetics</i>
Nomnganga, Busisiwe	<i>Biochemistry, Microbiology</i>
Nsele, Nontobeko	<i>Computer Sc And Information Technology</i>
Nthodi, Bontle	<i>Biochemistry, Microbiology</i>
Ntombela, Nomalungelo Purity	<i>Biochemistry, Genetics</i>
Ntuli, Siphesihle Thembalikayise	<i>Microbiology, Plant Pathology</i>
Nyandeni, Nkosiyethu	<i>Genetics, Microbiology</i>
Nyembe, Nomfundo Emelie	<i>Soil Science</i>
Nzima, Kwanele Thembokwakhe Sbukeleni	<i>Mathematics, Physics</i>
Nzimande, Nomfundo Ritah	<i>Crop And Horticultural Science</i>
Nzula, Sphephelo	<i>Geography</i>
Paparam, Timesh	<i>Computer Sc And Information Technology</i>
Phaahla, Lubias Mapotle	<i>Chemistry And Chemical Technology</i>
Phelako, Andile Charlot	<i>Plant Pathology</i>
Phoswa, Feziwe	<i>Biological Sciences</i>
Pillay, Akayla	<i>Biochemistry, Microbiology</i>
Radebe, Thobani Mduduzi	<i>Computer Sc And Information Technology</i>
* Rajdhew, Revana	<i>Biological Sciences</i>
* Rampersad, Vivek	<i>Computer Science, Statistics</i>
Ramphal, Akheil Umrish	<i>Computer Sc And Information Technology</i>
Ranjith, Kiara	<i>Chemistry And Chemical Technology</i>
* Reddy, Kerushan	<i>Computer Sc And Information Technology</i>
Repinga, Simphiwe Christopher	<i>Chemistry And Chemical Technology</i>
Shabalala, Cebisani Percival Mswati	<i>Industrial And Applied Biotechnology</i>

Shabalala, Nomfundo	<i>Chemistry And Chemical Technology</i>
Shaikh, Zaiba	<i>Geography, Hydrology</i>
Shale, Relebohile Prudence	<i>Genetics, Microbiology</i>
Shandu, Duduzile Thobile	<i>Biochemistry, Chemistry</i>
Shezi, Lindokuhle	<i>Chemical Technology</i>
Shezi, Nokubonga Precious	<i>Genetics, Microbiology</i>
Shoba, Sboniso Brilliant	<i>Computer Sc And Information Technology</i>
Sibisi, Nokulunga	<i>Chemistry And Chemical Technology</i>
Sikhakhane, Sinethemba Nobuhle	<i>Biochemistry, Genetics</i>
Simelane, Lindokuhle Anele	<i>Chemistry And Chemical Technology</i>
Sithebe, Noluthando Henryka	<i>Geography</i>
Sithole, Mkhombiseni Zamani	<i>Applied Mathematics, Statistics</i>
Smith, Jason Niel	<i>Biochemistry, Microbiology</i>
Somaru, Saniksha	<i>Chemistry And Chemical Technology</i>
Sosiba, Slindelo Siphosenkosi	<i>Chemistry And Chemical Technology</i>
Tessema, Daniel Genene	<i>Biochemistry, Genetics</i>
Thabethe, Nompilo	<i>Genetics, Microbiology</i>
* Thomas, Tatum Leigh	<i>Biochemistry, Microbiology</i>
Vilakazi, Lindokuhle	<i>Computer Sc And Information Technology</i>
Volsum, Toni Wilfred	<i>Biochemistry, Microbiology</i>
Xaba, Sfiso	<i>Mathematics, Statistics</i>
Xolo, Thobeka	<i>Hydrology, Soil Science</i>
Zamisa, Sthembiso Nkanyiso	<i>Environmental Science</i>
Zitha, Sphesihle Edwin	<i>Applied Mathematics, Statistics</i>
Zondi, Andile Slindile	<i>Computer Sc And Information Technology</i>
Zondi, Fezeka	<i>Biochemistry, Genetics</i>
Zondi, Khululeko	<i>Computer Sc And Information Technology</i>
Zondi, Luthando Sbondamandla	<i>Computer Sc And Information Technology</i>
Zondi, Nzuzo Innocent	<i>Computer Science, Physics</i>
Zondi, Philile Nokwazi	<i>Biochemistry, Genetics</i>
Zulu, Andile	<i>Microbiology</i>
Zulu, Zoliswa Xolelwa	<i>Plant Pathology</i>
Zuma, Lungelo	<i>Genetics, Microbiology</i>

Zungu, Gcinumuzi Michael	Microbiology
Zungu, Hloniphile Nkosazana	Microbiology

POSTGRADUATE DIPLOMAS

Postgraduate Diploma in Dietetics

Sibiya, Sinenhlanhla Blossom

Postgraduate Diploma in Food Security

- Gcolotela, Yamkela
- Gumbi, Nonkululeka Nokuphiwa
- Gwala, Sinethemba
- Jili, Zanele Pretty
- Khumalo, Nqubeko Khethukuthula
- Langa, Masanele
- Lukhele, Busile Glory
- Malinga, Blessed Simphiweyinkosi
- Mdluli, Gugulethu
- Mdunge, Siviwe Njongo Mlondi
- Mkhize, Luleko Dagracia
- Mkhonza, Lindelwa Lebokgang Precious
- Mnikathi, Nokuthula
- Ndlovu, Bongiwe Thokozile
- Nyawo, Mandisa
- Shabalala, Othaniel
- Thusi, Siyabonga Clerance
- Wanda, Simphiwe

The Graduation Ceremony

The graduation ceremony has a long history and is steeped in tradition. It dates back to the establishment of the first universities in Europe in the 12th century.

The Chancellor

“Chancellor” is an office that goes back to Roman times: the original chancellor or **cancellarius** (as the office was known), regulated access to the Roman Tribune. In medieval times, the office became associated with the heads of writing departments of the early kings. Because so few people were literate, a chancellor was necessarily learned.



This is why the heads and spokespersons of the early universities were also accorded this title. More recently the office has become largely symbolic and the executive head of a university is its vice-chancellor. One of the Chancellor's primary roles is to confer degrees at the graduation ceremonies.

Chief Justice Mogoeng Mogoeng is the third Chancellor of the University of KwaZulu-Natal.

The Mace

The University of KwaZulu-Natal Mace was designed and executed by local sculptor Mr Zamokakhwe Gumede and is carved from an indigenous wood, Drakensberg bottlebrush (**umBande**), gathered from the artist's home near Bergville.

The head of the Mace is made up of three opened book-like forms, suggestive of scholarship but also of the massive landscape forms of our province, onto each of which is placed a ruler, a pen and a pencil. These refer respectively to the scientific and computational, the text-based and the creative sides to the University's work. Below this are an encircling set of heads, representing the diverse university community. The whole is surmounted by an alighting secretary bird (iNtungunono), an elegant and active bird found throughout the province and equally at home on land or in the air. At the foot of the Mace is a hoof-like shape, giving a sense of contact with the soil of Africa.

The carrying of the mace in the procession symbolises the university's status as a degree awarding institution.

Academic Dress

The wearing of gowns by judges, ministers, teachers and scholars is an ancient and significant custom. By wearing a gown when receiving their degrees and diplomas, the graduating student participates in this long tradition and joins hands with students past and present.

The hood conveys the most amount of information with the addition of braid or coloured linings differentiating the different qualifications. The colour of the band or hood lining represents the College, each of which has its own colour.

Convocation

The Convocation of the University of KwaZulu-Natal is the statutory body consisting of all alumni and the academic staff (current and retired) of the University. On graduation, graduates and diplomates automatically become members of Convocation which is the largest stakeholder body with over 140 000 members. Convocation provides a link with graduates, past and present, and through this structure graduates have the opportunity to play a continuing role in the affairs of the University.

After being capped by the Chancellor, each graduate moves across the stage and hands the hood to the Robing officer who represents the Convocation of the University. The Robing officer places the hood upon the graduate's shoulders and, in so doing, symbolises acceptance into the Convocation of UKZN.



The University Logo

The original University Logo was officially launched on 27 February 2004 and it is a powerful visual symbol through which the University projects an image of excellence. In addition, it emphasises the University's standing and integrity within the province of KwaZulu-Natal and within the academic and business communities, at home and abroad. Above all, it provides an identity around which internal stakeholders – staff and students – unite.

The African shield symbolises the protection of our most valuable assets, namely, education, culture and, by extension, African scholarship. The globe with multi-coloured rays epitomises a rising sun, a new beginning and acts as a symbol of enlightenment.

Further, the globe represents the University as a global player, producing world-class graduates, while the multi-coloured rays embody diversity – race, culture, language – as well as social values. The book/wave/wings, which underscore the visual, represent the foundation of knowledge, the spirit of the eastern seaboard, and soaring to new heights.

the University logo represents a University that is rooted in and responsive to Africa's unique qualities, challenges, diversities and strengths, while, at the same time, nurturing and protecting African Scholarship.

On 3 June 2010 the current logo, with the isiZulu translation was approved.

UKZN Graduation Anthem: IHELE

(written and composed by
Phelelani Mnomiya)

Obani labo?
Baphi?
Ngibona beza beyikazela
Bathwel' ongiyane
Bavela kuphi na?
Obani labo?
Ongqondongqondo,
oSibakhulu
Yibo Laba
Yini na leyo
Ihele, ihele lezingwazi
zakithi
Udwendwe lwezingwele
zakithi
Nant' ihele
loNgqondongqondo
Nant' ihele loSibakhulu
Udwendwe lwezingwele
zakithi
Dedani bangene; kodwa
nathi siyeza
Dedani badlule; nathi
siyalandela
Sithi: halala, halala
Halala maqhawe esizwe
sethu
Unwel' olude, inkonzo enhle
Sithi: halala!

GAUDEAMUS IGITUR

Gaudeamus igitur, juvenes
dum sumus;
Gaudeamus igitur, juvenes
dum sumus;
Post jucundam juventutem,
post molestam senectutem,
Nos habebit humus, nos
habebit humus.
Ubi sunt qui ante nos in
mundo fuere?
Ubi sunt qui ante nos in
mundo fuere?
Vadite ad superos, transite
ad inferos,
Ubi jam fuere, ubi jam fuere.
Vita nostra brevis est, brevi
finietur;
Vita nostra brevis est, brevi
finietur;
Venit mors velociter, rapit
nos atrociter,
Nemini parcetur, nemini
parcetur.
Vivat Academia, vivat
Professores,
Vivat Academia, vivat
Professores,
Vivat membrum quodlibet,
vivat membra quaelibet,
Semper sint in flore, semper
sint in flore.

NATIONAL ANTHEM

Nkosi sikelel' iAfrika
Maluphakanyisw' uphondo
lwayo
Yizwa imithandazo yethu
Nkosi sikelela
Thina lusapholwayo.
Morena boloka
Setjhaba saheso
Ofedise dintwa
lematshwenyeho.
O se boloke, O se boloke
Setjhaba saheso
Setjhaba sa, South Afrika,
South Afrika.
Uit die blou van onse hemel
Uit die diepte van ons see
Oor ons ewige gebergtes
Waar die kranse antwoord
gee
Sounds the call to come
together
And united we shall stand
Let us live and strive for
freedom
In South Africa our land.



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