

## OFFICERS

<b>Chancellor</b>	Dr RJ Khoza BA(Hons) (UNIN), MA(Lancaster), Eng D(Warwick), LLD <i>Honoris Causa</i> (RU), DEcon <i>Honoris Causa</i> (UFS), LLD <i>Honoris Causa</i> (Warwick), CDSA
<b>Vice-Chancellor and Principal</b>	Professor NK Poku BA(Hons)(Nottingham), MA(Nottingham Trent), MSc(Coventry), PhD(Nottingham Trent)
<b>Chair of Council</b>	Dr L Moja MBChB(Natal), MMed OetG(Medunsa), MBA(UFS)
<b>Deputy Vice-Chancellor: Research</b>	Professor M Moshabela MBChB (Natal), MMed (UL), MSc (LSHTM), PhD(WITS)
<b>Deputy Vice-Chancellor: Teaching and Learning</b>	Professor SP Songca BSc, BScHons(Unitra), MSc, PhD(London)
<b>Deputy Vice-Chancellor and Head of College of Agriculture, Engineering and Science</b>	Professor FN Mudau (Acting) BScAgric(Univen), MScAgric(US), PhDAgric(UP, MBL (GSBL-UNISA)
<b>Deputy Vice-Chancellor and Head of College of Health Sciences</b>	Professor BP Ncama BCur(Unisa), MCur (Natal), PhD(UKZN), RN RM, RICN, RCHN, RDN, RNE
<b>Deputy Vice-Chancellor and Head of College of Humanities</b>	Professor NJ Mkhize BAHons(Natal), MA(Iowa), PhD(Natal)
<b>Deputy Vice-Chancellor and Head of College of Law and Management Studies</b>	Professor M Reddi (Acting) BA(Law)(UDW), LLB(UDW), LLM(UKZN), LLD(UDW)
<b>Registrar</b>	Dr KE Cleland B(Hons) Occupational Therapy(UP), MEd(Natal), PhD(UKZN), PG Dip Law(FICJ)
<b>President of Convocation</b>	Dr QL Mlita BSc Medical Science, BSc(Hons)(UNIZUL), MBChB(UKZN)

## OFFICE BEARERS

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COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE

**Acting Deputy Vice-Chancellor and Head of College**

**Professor FN Mudau**

BScAgric(Univen), MScAgric(US), PhDAgric(UP), MBL(GSBL-UNISA)

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

**Professor J Sibiya**

BScAgricHons(Zimbabwe), MS(OSU), PhD(UKZN)

**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 S Viriri**

BSc, MSc(Havana), PhD(UKZN)

**Dean: College Research**

**Professor NA Koorbanally**

BScHons, MSc, PhD(Natal)

**Dean: College Teaching and Learning**

**Professor N Chetty**

BScHons(Natal), PhD(UKZN)

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# ORDER OF PROCEEDINGS

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

**The Chancellor constitutes the Congregation**

**Welcome to Guests**

**Professor FN Mudau**

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

**Congratulatory Remarks**

Students' Representative Council

**Presentation of Doctoral Graduands**

College Dean: Research

**Presentation of Graduands**

Deans and Heads of School in the College

**The Chancellor dissolves the Congregation**

**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 the College of Agriculture, Engineering and Science

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## DOCTORAL DEGREES

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### Doctor of Philosophy

**Adebayo**, Johnson Abidemi, *BScHons(Ullorin), MSc(Ullorin)* .....*Agricultural Ext And Rural*

Thesis: Investigating the Role of Women in Agricultural Extension Advisory Services in KwaZulu-Natal, South Africa: Current-Status, Challenges, and Prospects

Citation: Adebayo's study in KZN, South Africa, found that women's massive contributions to agriculture are not only obscured, but systematically denied through institutionalised bias. Compounded by the fact that women farmers prefer support from female advisors who also face the same bias, Adebayo asserts the need to expose, challenge and change the status quo. Doing so will benefit the agri-food system and contribute to realising the ever-elusive goal of food security.

Supervisor: Professor SH Worth

**Adedeji**, Michael Adepelumi, *BSc(ULagos), MSc(Glasgow)* .....*Physics*

Thesis: The Effect of Metal Sulfides on Hole and Electron Transport Buffer Layers in Organic Photovoltaic: Experimental and Numerical Device Simulation

Citation: Mr Adedeji has conducted various investigations on the effect of metal nano-particles on the power conversion efficiency of thin film organic solar cells. The investigator has discovered new evidences on the positive impact of the metal nano-particles on the charge transport processes of the solar cells. Mr Adedeji has published his findings in four research articles in various international referred scientific journals.

Supervisor: Professor GT Mola

**Ayalew**, Kassahun Aber, *BSc(AddisAbabaU), MSc(AddisAbabaU), MPubHlth(UCT)*.....*Statistics*

Thesis: Flexible Bayesian Hierarchical Spatial Modelling in Disease Mapping

Citation: Ayalew developed and evaluated flexible skew-normal and distribution-free spatial models for modelling non-normal multivariable spatial data. Using simulation studies and an application to estimate HIV prevalence and HIV treatment coverage in South Africa, he found that the proposed non-normal

spatial models performed better in estimating the spatial patterns than the normal spatial distributions. This research offers spatial statistical methods to use when the spatial data exhibit non-normal distributions.

Supervisor: Professor SOM Manda

**Bakhite**, Mohammed Abdalla Elgorashi, *BScHons(UKhartoum), MSc(UKhartoum)*.....*Crop Science*

Thesis: Evaluating Seed Quality and Performance of Low and High Phytic Acid Maize (*Zea mays* . L) under Varying Phosphorus Rates and Water Regimes in Dryland Conditions

Citation: Bakhite hypothesized that the low phytic acid content of tropical maize varieties will negatively affect seed quality because of low phosphorus content and cations needed to provide energy for seed germination. He tested the effect of external phosphorus application on germination and vigour. The study found that when applied to low phytic acid maize seeds, phosphorus fertilizer improved germination and vigour to levels comparable to commercial hybrid maize varieties.

Supervisors: Professor AO Odindo and Professor LS Magwaza

**Barry**, Kristy-Lyn, *BSc, BScHons(ChemTech), MSc*..... *Chemistry*

Thesis: Cytotoxic and Mechanistic Studies of Novel Phenanthroline-derived Oxovanadium(IV) Complexes

Citation: Mrs Barry synthesised a range of novel compounds based on the transition metal vanadium. These metal-based compounds were designed to bind and cleave DNA in tumour cells, arresting cell growth. The metallodrugs are particularly effective against triple-negative breast cancer, which currently has a high mortality rate and is a prevalent form of breast cancer in Sub-Saharan Africa. This research offers a novel approach to the treatment of cancer.

Supervisors: Professor MP Akerman and Professor OQ Munro

**Butler**, Hannah Claire, *BSc, BScHons*..... *Botany*

Thesis: The Role of Mutualisms in the Evolution of Flower and Fruit Traits in the Haemanthinae (Amaryllidaceae)

Citation: Interactions with animals are critical for reproduction of most plant species. Hannah Butler demonstrated that floral evolution in South African plant species belonging to the sub-tribe Haemanthinae (Amaryllidaceae) can be explained by adaptation to butterfly and bird pollinators. She also showed that these species have a novel mechanism of seed dispersal involving either monkeys or birds. Her work made important advances in the field of plant reproductive biology

Supervisor: Professor SD Johnson

**Chauke, Ephraim, BScHons(MidStateU), MSc(NatUoSc& Tech) ..... Biochemistry**

Thesis: *Theileria parva* Papain-like Cysteine Proteases as Targets for East Coast Fever Drug and Vaccine Development

Citation: Challenges with the infection and treatment East Coast fever vaccine and increasing drug resistance prompted Ephraim Chauke to identify cysteine protease vaccine and drug targets in *Theileria parva* using bioinformatics. He was the first to publish the characterisation of proteolytically active ThpCP and demonstrate its possible role in the parasite food vacuole and host lymphocyte cytoplasm. He used molecular docking to identify drug-like molecules and immunoinformatics to design a vaccine

Supervisor: Professor THT Coetzer

**Gaston, Rugiranka Tony, BSc, BScHons, MSc..... Statistics**

Thesis: Statistical Modelling on Childhood Anaemia, Malaria and Stunting in Malawi, Lesotho, and Burundi

Citation: This statistical research represents a remarkable achievement in complex modeling, offering fresh perspectives on measuring childhood anaemia, malaria, and stunting in Malawi, Lesotho, and Burundi. It displays mastery of both classical and modern statistical theories, with a focus on joint and multivariate modelling of intricate real-world processes. The author's five articles in international journals, with two more under review, testify to their exceptional skills and significant contributions to the field.

Supervisors: Professor S Ramroop and Dr F Habyarimana

**Hlatshwayo, Simphiwe Innocentia, BAgricMgt, BAgricMgtHons, MAgric..... Food Security**

Thesis: Impact of Crop Productivity and Market Participation on Rural Households' Food and Nutrition Security Status: The Case of Mpumalanga and Limpopo Provinces, South Africa

Citation: Ms Hlatshwayo's study found that participation in crop production and access to the market improve household food and nutrition security status. Ms Hlatshwayo asserts that encouraging more households, particularly women and youth, to be involved in agriculture is essential to improve food and nutrition outcomes. While Ms Hlatshwayo published four papers in reputable international journals from her PhD, working with her supervisor she also co-authored eight more papers during her PhD.

Supervisors: Mr MK Ngidi, Professor T Mabhaudhi, Professor AT Modi and Dr TO Ojo

**Hlongwane, Nompilo Lucia, BTech(TUT), MTech(TFS) ..... Genetics**

Thesis: Genome-wide Characterization of South African Pig Breeds

Citation: Nompilo Hlongwane's PhD is the first comprehensive genomics study on the characteristics of all major pig breeds of South Africa using high throughput SNP genotypes. The study evaluated African Wild Boar, warthog, Bush pig and

domestic pig breeds' genetic structures, divergence, impact of selection pressures and levels of introgression between the groups. Published in a top Genetics journal, the thesis adds information on indigenous pig genetic resources of Southern Africa.

Supervisors: Dr EF Dzomba and Dr FC Muchadeyi

**Horan, Robyn**, *BSc, BScHons, MSc* ..... *Hydrology*

Thesis: Development and Assessment of an Integrated Large-Scale Hydrological Modelling Tool for Water Resources Management in The Cauvery Catchment, India

Citation: Robyn further developed an integrated large-scale hydrological model to improve water resource assessments in the highly heterogeneous and data-scarce Cauvery Catchment in India. Her results show that a large-scale, data-light water resources model can provide accurate simulations of the impacts of small-scale runoff harvesting interventions and that an ensemble of remotely sensed rainfall datasets can be used to estimate catchment rainfall when in-situ rainfall gauges are not available.

Supervisor: Professor JC Smithers

**Hussien, Musa Alnour Musa**, *BSc(OIU), MSc(USudan)* ..... *Physics*

Thesis: Modelling of Quantum Phase Transitions in Dirac Materials

Citation: Congratulations to Mr. Musa Alnour Musa Hussien, whose PhD research on "Modelling of quantum phase transitions in Dirac materials" has made significant contributions to the field of condensed matter physics. His research has advanced our understanding of topological materials, with potential applications in quantum computing and spintronics. He has inspired his peers by presenting his findings at conferences and publishing in high-impact journals, demonstrating strong dedication to advancing scientific knowledge.

Supervisor: Dr AM Ukpong

**Kaseke, Forbes**, *BSc, BScHons, MSc* ..... *Statistics*

Thesis: Financial Modelling of Cryptocurrency: A Case Study of Bitcoin, Ethereum and Dogecoin in Comparison with JSE Stock Returns

Citation: The research constitutes a noteworthy advancement in statistical research, particularly in financial modelling of Bitcoin, Ethereum, and Dogecoin. The application of sophisticated statistical models, including ARCH, GARCH, and Extreme Value Theory, delivers insightful comparisons of these cryptocurrencies with conventional financial assets. The student's publications, comprising two articles in reputable journals and two undergoing review, demonstrate their exceptional proficiency in statistics and significant contributions to the field of stylized facts comparison.

Supervisors: Professor S Ramroop and Professor HG Mwambi



**Khulu, Mthobisi Christian, BSc, BScHons, MSc** ..... *Statistics*

**Thesis:** Statistical Study on Childhood Malnutrition and Anaemia in Angola, Malawi and Senegal

**Citation:** This dissertation is a significant contribution to the statistical modeling of childhood anaemia and malnutrition in Angola, Malawi, and Senegal. It seamlessly integrates classical and modern statistical theories, demonstrating mastery of joint and multivariate modelling of complex real-world processes. The work evaluates sophisticated statistical approaches, leading to novel insights into anemia and malnutrition measurement. The author's exceptional skills are reflected in five publications in recognized journals, with two more submitted.

**Supervisors:** Professor S Ramroop and Dr F Habyarimana

**Kumah, Robert Tetey, BScHons(UGhana), MSc** ..... *Chemistry*

**Thesis:** Carboxamide Ruthenium(II) and Manganese(II) Complexes: Structural, Kinetic and Mechanistic Studies in the Transfer Hydrogenation of Ketones

**Citation:** Robert Tetey Kumah obtained his BSc(Hons) and MSc (Chemistry) degrees from the University of Ghana and University of KwaZulu-Natal respectively. His PhD thesis entailed manipulation of multinuclear ruthenium complexes towards catalytic transfer hydrogenation of ketones. The scientific contribution of the thesis is manifested from the quality of publications and the examiners' comment, "the thesis is a valuable addition to the existing body of knowledge for the current catalysis community."

**Supervisor:** Professor SO Ojwach

**Kunene, Philisiwe Nganaki, BSc, BScHons, MSc** ..... *Chemistry*

**Thesis:** Assessment of Antiretroviral Drugs Uptake by Vegetables from Contaminated Soil and their Adsorption by Exfoliated Graphite in River and Wastewater

**Citation:** The scarcity of water has promoted the usage of effluent water to irrigate crops which can affect crops and human health. Philisiwe's case study revealed that antiretroviral drugs can be taken up from soil irrigated with contaminated water then bio-accumulate and bio-translocate to roots, stem, leaves, and vegetable fruits. These findings indicate the potential unintentional consumption of antiretrovirals by consumers and eventually their resistant by the human body.

**Supervisor:** Dr PN Mahlambi

**Mafunga, Wadzanai Penlope, BScHonsAgric(UZim), MSc** ..... *Agricultural Economics*

**Thesis:** An *Ex Ante* Assessment of the Farm-Level Impacts of Further Developing Sugarcane Biorefineries in the South African Context

**Citation:** Wadzanai Mafunga used mathematical programming techniques to compile a partial equilibrium economic model of sugarcane productions systems and a representative sugarcane mill in South Africa. Her analysis investigated the

importance of farm-level responses to sugarcane biorefinery investments. Findings indicate that sugarcane producers' decisions are responsive to the cane payments system used, which has implications for the supply of feedstock for sugarcane biorefineries, and the economic viability of sugarcane biorefinery investments.

Supervisors: Professor SRD Ferrer, Professor A Stark and Mr MRAR Kohler

**Makhubedu**, Irvin Thabo, *BSc(UVenda), BSchons(UVenda), MTech(TUT), MSc(Agric) ....Crop Science*

Thesis: Quantification of Symbiotic Nitrogen Fixation in Agroforestry Systems

Citation: Thabo evaluated the influence of pruning and management of fresh prunings on biological nitrogen fixation of *Sesbania sesban* and *Cajanus cajan*. The study revealed that pruning shoots of leguminous woody species frequently, or at low heights, decreases rates of biological nitrogen fixation. Furthermore, retaining nitrogen-rich prunings on the soil surface increases soil nitrogen availability, reducing nitrogen fixation rates. The findings are important for developing agroforestry management guidelines for smallholder farmers.

Supervisors: Professor PL Mafongoya and Professor PF Scogings

**Makori**, David Masereti, *BSchons(JKUAT), MSc(JKUAT).....Geography*

Thesis: Use of Geospatial Techniques to Improve Bee Farming and Bee Health Across Four Main Agroecological Zones in Kenya

Citation: Amid augmented climate change and anthropogenic influence, apiculture value has increased. Bee products provide supplemental income to farmers in rural SSA and are incentives for conservation. This study improved bee-health using geospatial techniques. It developed first-ever stingless-bees' and bee-pests' spatial prediction models in Kenya, and pioneered development of models for mapping flowering plants (bee food substrate). The results were availed globally through scientific articles published in reputable peer reviewed journals.

Supervisors: Professor O Mutanga and Professor JO Odindi

**Malepfane**, Ntwanano Moirah, *BSc(Agric), MSc(Agric).....Soil Science*

Thesis: Effects of Land Use and Site on Soil Carbon Stocks, Pools and Carbon Dioxide Emission in Humic Soils

Citation: Ntwanano Moirah Malepfane determined effects of land use on stocks and fractions of organic carbon (OC) and CO<sub>2</sub> emissions of some humic soils in KwaZulu-Natal. She found that cropping lowered OC and its labile fractions, largely in the top 20 cm, while profile C stocks and mineral associated C were not affected. Cropped humic soils produced up to 30 % higher CO<sub>2</sub> emissions than under forest and pasture in summer.

Supervisor: Professor P Muchaonyerwa

**Mandizvo, Takudzwa, BScHons(CUT), MSc(Agric).....Crop Science**

Thesis: Assessing Variability in Yield Performance and Nutritional Quality of Citron Watermelon (*Citrullus lanatus* var. *citroides* (L. H. Bailey) Mansf. ex Greb.) Genotypes under Drought Conditions

Citation: Takudzwa Mandizvo sought to understand how local indigenous crops such as citron watermelon tolerate drought conditions, further exacerbated by increased weather variability due to climate change. The study established wide variability among citron watermelon landraces with regard to root system architecture. The knowledge gained is useful in developing integrated cropping systems leading to increased crop diversification, increased productivity, and mitigating effects of weather variability due to climate change.

Supervisors: Professor AO Odindo and Mr J Mashilo

**Manqe, Nomthandazo Samantha, BSocSc, BScHons, MSc.....Ecological Sciences**

Thesis: Aspects of the Use of Vultures in Traditional Medicine in KwaZulu-Natal, South Africa, and Conservation Implications

Citation: Ms Manqe investigated factors influencing the use of vultures in traditional medicine in KwaZulu-Natal, with an emphasis on the conservation implications for this threatened raptor guild. In particular, she assessed local perceptions and attitudes towards vultures in communities near protected areas, aspects of the illegal hunting and trade of vultures, and ethnomedicinal use of vultures by traditional health practitioners. This multifaceted social ecology study makes important contributions to vulture conservation.

Supervisors: Professor CT Downs and Dr SAJ Selier

**Matarira, Dadirai, BScEd(BinduraU), BScHons(UNISA), MSc.....Environmental Science**

Thesis: Integrating Texture Analysis and Innovative Modelling Approaches for Capturing Morphological Diversities and Dynamics of Informal Settlements in Durban Metropolitan Area, South Africa

Citation: Knowledge of informal settlements' spatial information is vital in addressing the growing urban poverty and ensuring sustainable cities. The study exploited diverse cutting-edge mapping techniques in order to accurately map informal settlements in Durban Metropolitan area, South Africa. The findings are useful in the creation of knowledge repositories for devising management approaches aimed at tackling issues to do with urban planning, poverty reduction, environmental protection and urban risk management.

Supervisors: Professor O Mutanga and Professor UM Naidu

**Mathenjwa**, Gciniwe Sindiswa, *BSc(Wits), BScHons(Wits), MSc(Wits)*..... *Chemistry*

**Thesis:** Targeting the Tumour Extracellular Environment through Rational Modification of the SNX Class of HSP90 Inhibitors

**Citation:** HSP90 is a valuable target for cancer therapy. Unfortunately, targeting intracellular HSP90 is not a viable chemotherapeutic approach, mainly limited by the compensatory HSR induction and HSP70 overexpression. A library of compounds with sulfonate and phosphonate substituents were synthesised. This approach should limit cell penetration and ensure that the molecules are extracellular. This approach was effective and nanomolar toxicity against a cervical cancer cell line was recorded.

**Supervisors:** Professor MP Akerman, Dr ML Bode and Professor OQ Munro

**Mbangi**, Awonke, *BScAgric(UFH), MSc(Agric)*.....*Soil Science*

**Thesis:** Rethinking Soil Test-Crop Response Calibrations Philosophy and Practice

**Citation:** "Rethinking Soil Test-Crop Response Calibrations Philosophy and Practice", investigated an alternative methodology to index phosphorus and potassium potential in the soil. The alternative method found requirement factors to be a superior index of nutrient potential in soil test-crop response studies. Maize, mustard and cowpea were used as test crops.

**Supervisors:** Dr N Nongqwenga and Professor T Mabhaudhi

**Mkhonza**, Nontokoza Pertunia, *BSc, BScHons, MSc* .....*Soil Science*

**Thesis:** Soil Carbon and Phosphorus Fractions and Microbial Activity in Sandy Loam Humic Soil under Contrasting Sugarcane Harvest Systems

**Citation:** Nontokoza Pertunia Mkhonza determined effects of green cane harvesting relative to pre-harvest burning on soil organic carbon (SOC), phosphorus (P), and microbial activity in sandy loam humic soils. She found that green cane increased SOC stocks, aggregate stability, SOC in macro- and micro-aggregate and decreased mineral associated C. All P fractions, microbial biomass, and activity of enzymes associated with C and P cycling, were also increased under green cane.

**Supervisor:** Professor P Muchaonyerwa

**Mngadi**, Mthembeni, *BSc, BScHons, MSc* .....*Environmental Science*

**Thesis:** Quantifying Ecosystem Services within a Reforested Urban Landscape using Remote Sensing in eThekweni Region of KwaZulu-Natal, South Africa

**Citation:** This study adopted remotely sensed dataset to determine the value of reforested urban landscape to sequester atmospheric carbon. Results indicated that reforestation contributes considerably to atmospheric carbon uptake and the adoption of freely available optical sensors can be used to effectively quantify

vegetation related regulatory ecosystem services. These findings are valuable for monitoring and managing reforested ecosystems, including planning for larger-scale reforestation projects to increase urban carbon sequestration capacity.

Supervisors: Professor JO Odindi and Professor O Mutanga

**Mongalo**, Nkoana Ishmael, *BSc(UVenda), BScHons(UVenda), MSc(UNIZUL)*..... *Botany*

Thesis: Isolation and Characterization of Bioactive Compounds from Six South African Medicinal Plants used in the Treatment of Sexually Transmitted and Related Infections

Citation: Mr Mongalo obtained his MSc from University of Venda. He worked at a number of Institutions of Higher Learning and then enrolled for a PhD at University of KwaZulu-Natal, Pietermaritzburg. He investigated six important South African medicinal plants that are extensively used to treat sexually transmitted diseases. His findings were substantial and verified that the plants that are traditionally used are indeed effective and can be upscaled into Natural Remedies.

Supervisors: Professor J Van Staden, Professor JF Finnie and Dr LJ Mcgaw

**Mosola**, Napo Nathnael, *BSc(ULesotho), BScHons(UJ), MSc*..... *Computer Science*

Thesis: Post-Quantum Cloud Security and Data Exchange using Artificial Intelligence

Citation: Recent developments in Quantum Computing have meant that encryption systems that are based on the use of prime numbers are redundant. This thesis belongs to the field of post-quantum cryptography and explores the design of encryption systems using machine learning and Artificial Intelligence. The applications considered in the thesis included Cloud data storage, a no-keys encryption protocol, and radio and optical product authentication using unclonable ciphers and new generation smartphones.

Supervisors: Professor JM Blackledge and Dr JV Fonou Dombeu

**Mosomtai**, Gladys Jebiwot, *BScHons(KU), MSc(Dedan Kimathi University of Technology)*..... *Environmental Science*

Thesis: Landscape Ecology of Coffee Pests in Smallholdings: Influence of Landscape Fragmentation, Farming Systems and a Warming Climate in Murang'a County, Kenya

Citation: Coffee production systems have simplified landscapes typified by biodiversity loss, excessive pesticides, and increased pests and disease incidences. Using remote sensing techniques, this study improved knowledge on the nexus between landscape ecology and smallholder coffee farming by generating optimal ecological conditions for pests in Kenya. The study underscores the urgency to shift coffee production systems towards climate-smart options that increase resilience to climate change and improved pest control.

Supervisors: Professor JO Odindi and Professor O Mutanga

**Mudzielwana**, Rudzani Vhuyelwani Angel, *BScAgric(UL), MAgric..... Agricultural Ext And Rural Resource Mngt*

Thesis: Towards Developing a Pluralistic Agricultural Extension System: The Case of Vhembe District of Limpopo Province, South Africa

Citation: The study evaluated the potential of plural extension systems as an alternative to normal public extension systems. Access to credit, public extension, feedback, transparency and accountability by extension service providers positively influenced the smallholder farmers' performance. The study recommends the collaboration among public and private stakeholders, researchers, extension officers and rural development agencies to implement cost effective pluralistic extension systems which meet smallholder farmers' needs.

Supervisor: Professor PL Mafongoya

**Mugiyo**, Hillary, *BScHons(UZim), MSc(UZim).....Crop Science*

Thesis: Crop Suitability Mapping for Underutilized Crops in South Africa

Citation: Hillary worked on the Crop suitability of underutilised crops in South Africa, which are important to future food and nutrition security and diversifying food systems under climate change. His research identified suitable areas for underutilised crop production in South Africa under climate change.

Supervisors: Professor T Mabhaudhi, Miss VGP Chimonyo and Mr RP Kunz

**Muringai**, Rodney Tatenda, *BSocSc, PGDip(FoodSecur), MAgric..... Food Security*

Thesis: Climate Change and Variability Effects on Inland Fisheries: Lake Kariba, Zimbabwe

Citation: Rodney Muringai's PhD study sought to investigate the effects of climate change on inland fisheries. Key study findings indicate that fishery resources are sensitive to changing climate, and increased extreme weather events have devastating impacts on fisher's assets. This study has published four research papers in renowned DHET-accredited international journals. The study recommends that fisheries managers design and implement location-specific and holistic strategies to enhance climate change adaptation.

Supervisors: Professor PL Mafongoya and Dr RT Lottering

**Mutari**, Bruce, *BScAgric Hons(UZim), MScAgric(UFH)..... Plant Breeding*

Thesis: Improving Dry Beans (*Phaseolus vulgaris* L.) of Middle American Gene Pool for Canning and Nutritional Quality Traits, and Drought Tolerance in Zimbabwe

Citation: Bruce combined classical genetic approaches with molecular markers to investigate the impact of drought stress on navy beans. Stable drought tolerant genotypes possessing desirable micronutrient density, superior canning and nutritional quality were identified. Further, molecular markers with potential for use in marker-

assisted breeding for drought tolerance were identified. Five research articles have been published in international peer-reviewed, high-impact journals. Funding was provided by the Swiss Agency for Development and Cooperation.

Supervisor: Professor J Sibiya

**Ndhlovu, Nqobile Truelove, BSc(UNIZUL), BScHons, MSc..... Biological Sciences**

Thesis: The Role of Secondary Metabolites in Protecting Lichens from Climate Change-induced Stress

Citation: Lichen secondary metabolites play a great diversity of roles in lichen biology. In her thesis, Nqobile showed that even unpigmented substances can increase the tolerance of lichen photobionts to photoinhibition. Some lichens produced pigmented pigments such as melanins, and these appear to work together with other biochemical means of photoprotection such as non-photochemical quenching. Whether pigmented or unpigmented, lichen substances play important roles in photoprotection.

Supervisor: Professor RP Beckett

**Ndwabu, Sinayo, BSc(Wits), BSc Hons(UFH), MSc..... Chemistry**

Thesis: Comparison of Extraction Methods Efficiency for the Extraction of Polycyclic Aromatic Hydrocarbons and Phenolics in Water Matrices, Sludge and Sediment: Sources of Origin and Ecological Risk Assessment

Citation: The discharge of wastewater treatment plants sludge into the landfills lead to accumulation of micropollutants which can affect the environment and human health. Sinayo's study showed that the soil from Darvil sludgeland is highly contaminated with polycyclic aromatic hydrocarbons and phenols. The suggested high potential carcinogenic risk through dermal exposure for adults and children indicate the importance of applying National Environmental Management Waste Act regulations to ensure government spheres compliance.

Supervisor: Dr PN Mahlambi

**Ntombela, Lindokuhle Charles, BSc, BScHons, MSc..... Physics**

Thesis: Design and Fabrication of Tissue-like Phantoms for Use in Biomedical Imaging

Citation: Lindokuhle Ntombela explored the potential of (cheap and readily available) slime materials as a primary medium for fabricating phantoms with reproducible, stable optical and mechanical properties as diseased and healthy biological tissue. The developed phantom tissues provide quick evaluation and standardisation of medical devices and procedures. He has published two papers, with a third under review. Reviewers commented on the high quality of work and its importance in biophysical applications.

Supervisors: Professor N Chetty and Dr O Adeleye

**Omonijo**, Adejumoke Oluwatosin, *BScHons(OAU), MSc(OAU)*.....*Zoology*

**Thesis:** Status of Research on Two Parasitic Zoonoses (Toxoplasmosis and Toxocariosis) in Sub-Saharan Africa and their Prevalence in Selected Rural Communities of KwaZulu-Natal Province of South Africa using Free-Range Chickens as a Case Study

**Citation:** Dependent on socio-cultural preferences, meat and viscera from free-range chickens are often eaten raw or undercooked in resource-poor communities in South Africa. This poses the risk of transmission of *Toxoplasma gondii* and *Toxocara* spp from chickens to humans. This study showed the presence of *Toxocara* spp in meat and viscera of chickens and lack of awareness by households of the role of free-range chickens in zoonoses transmission.

**Supervisor:** Professor S Mukaratirwa

**Royimani**, Lwando, *BSocSc, BScHons, MSc* .....*Environmental Science*

**Thesis:** Determination of Autumn Senescence in Subtropical Sourveld Grasslands, KwaZulu-Natal, South Africa, based on Remote Sensing Techniques: An Approach towards Forage Quality and Quantity Assessment

**Citation:** Autumn grass senescence is one of the key determinants of forage quality and quantity in grassland ecosystems. Using the readily available multispectral remote sensing sensors with improved resolutions, this study successfully estimated the onset and environmental drivers of autumn grassland senescence as well as the magnitude of decline in forage productivity. The findings are important for communal rangeland farmers who need to make timely decisions on rangeland management.

**Supervisors:** Professor O Mutanga, Professor RH Slotow and Dr SC Nkuna

**Salisbury**, Frances, *BSc(Agric), PGDip(Mgt), PGCert(Ed), MScEng* .....*Animal Science*

**Thesis:** A Model of Calcium and Phosphorus Growth in Broilers

**Citation:** To grow strong bones, broiler chickens need to be fed the correct amounts of calcium and phosphorus. Some plant chemicals interfere with how much phosphorus the chicken can extract from the feed, making the interactions between these nutrients complex and difficult to understand. Frances Salisbury's theoretical work has helped to unravel these interactions, and in doing so will make the mineral nutrition of broiler chickens more successful.

**Supervisor:** Professor RM Gous

**Simelane**, Kwanele Siyabonga, *BSc(UNISWA), MSc(Hebrew University Of Jerusalem), MScAgric (Hebrew University Of Jerusalem)* .....*Food Security*

**Thesis:** The Status of Food and Nutrition Security Policies and Institutional Framework in Eswatini

**Citation:** Simelane's study in eSwatini study found substantial disconnections, duplication and inefficacy in the country's pursuit of food and nutrition security (FNS)–highlighting



the critical need for soundly coordinated policy design, implementation and review if there is ever to be any hope of sustainable progress toward FNS. He developed a coordination framework including a high-level statutory body dedicated to ensuring effective FNS policy giving primacy to the welfare of all Swazis.

Supervisor: Professor SH Worth

**Sun, Enhui**, *BSc(AnhuiU), MSc(Nanjing Agric Univ)* .....*Ecological Sciences*

Thesis: Evaluation of Lanthanum/Iron Oxide Amended Formable Biochar for Phosphorous and Nitrogen Removal in Wastewater: Preparation, Mechanism, and Application

Citation: Ms Sun developed and characterized a novel granular biochar composite for efficient adsorption of phosphorous and nitrogen pollutants from wastewater. Straw biochar was formulated with montmorillonite clay and impregnated with lanthanum/ferric oxide to form a porous biochar product with improved adsorption capacity, retention ability and increased tensile strength compared to conventional biochar products. This work presents a promising new approach to applying biochar technologies to wastewater treatment processes.

Supervisors: Dr CH Hunter and Professor L Yang

**van de Water, Antoinette**, *BBA(HRotterdam), MArt(Miami)* .....*Biological Sciences*

Thesis: Aligning Elephant Conservation with Societal Aspirations

Citation: Antoinette investigated how elephants are valued and perceived by a wide range of stakeholders, and why current conservation approaches fail. She developed an alternative roadmap for conservation that realises beneficial outcomes for elephants, people and the environment. The frameworks she developed can be used in strategies that promote animal well-being and range expansion, while simultaneously empowering local communities and enhancing local economies. The work has already improved conservation policies.

Supervisor: Professor RH Slotow

**Wang, Zichen**, *BSc(Yangzhou University), MAgric(Yangzhou University)* .....*Ecological Sciences*

Thesis: Effects of Biogas Slurry on *Capsicum* spp. Growth and Control of Soil-pathogens

Citation: In a groundbreaking research, the candidate investigated the potential for biogas slurry, a byproduct of livestock and poultry farms, to be used as a soil pretreatment for continuous cropping in protected land. Through simulation and field experiments, they found that biogas slurry effectively promoted *Capsicum* spp. growth and controlled soil-borne diseases. This innovative approach addresses the efficient utilization of biogas slurry, and contributes to sustainable agricultural practices and greener environment.

Supervisors: Professor EB Gueguim Kana and Professor AO Olaniran

**Wanga, Maliata Athon, *BTech(PolyTecNamibia), MScAgric(KindaiU)*.....*Crop Science***

**Thesis:** Genetic Enhancement of Sorghum for Yield-related Traits and Drought Tolerance through Induced Mutagenesis

**Citation:** This study led to the development of drought-tolerant sorghum varieties through demand-led and mutation breeding techniques. The candidate developed new mutant lines with high yields adapted to Namibia's drought-prone environments. From this work, the candidate published five scientific papers in high-impact journals. The joint Food and Agricultural Organisation (FAO)/International Atomic Energy Agency (IAEA) and the Government of Namibia supported the study financially.

**Supervisor:** Professor HA Shimelis

**Yakubu, Abdulaziz Tunde, *BScHons(Ullorin), MSc*.....*Physics***

**Thesis:** A Study on the Atmospheric and Environmental Impacts of Aerosol, Cloud and Precipitation Interaction

**Citation:** In mitigating the challenge posed by climate change, Abdulaziz's thesis tried to understand the physical science of aerosol emission, cloud formation and rainfall events and how they influence changes in our environments, especially those resulting in extreme situations like drought. His research produced two publications, one providing a scientific explanation of the cause of drought and flooding and the second presenting a rainfall prediction model using a machine learning algorithm.

**Supervisor:** Professor N Chetty

**Zama, Naledi Zola, *BSc, BScHons, MSc*.....*Grassland Science***

**Thesis:** Responses of a South African Mesic Grassland to Long-term Nutrient Enrichment and Cessation of Nutrient Enrichment

**Citation:** Naledi Zama's research was based on a 70-year nutrient addition experiment on local grasslands. Nutrient addition, while increasing grassland productivity, negatively impacted species composition, richness and diversity of grasslands while also stunting nodulation and nutrient use efficiency in legumes. The work contextualizes impacts of nitrogen deposition and nutrient accumulations, with implications for management and restoration of grasslands.

**Supervisors:** Professor KP Kirkman, Dr MJ Tedder, Dr A Magadlela and Dr NR Mkhize

**Zwane, Zanele Rebecca, *BSc, BScHons, MSc*.....*Plant Pathology***

**Thesis:** A Study on Avocado Sunblotch Viroid (ASBVd) with a Focus on Symptomless Carrier Trees

**Citation:** Zanele's research on Avocado sunblotch viroid describes a method to accurately detect the pathogen even in infected symptomless plants. The role of pollinating bees in the transmission of the viroid is described. These findings will contribute

to the body of knowledge on avocado sunblotch and to the effective and sustainable control/management of a pathogen affecting an important export crop for South Africa.

Supervisors: Dr AEC Jooste and Professor A Gubba

## MASTERS DEGREES

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### Master of Agriculture

**Mthethwa**, Khethiwe Naledi ..... *Agricultural Ext And Rural Resource Mngt*

Dissertation: The Determinants of Adoption of Climate Smart Agricultural (CSA) Practices and its Effects on Smallholder Maize Farmer's Welfare

Supervisor: Dr MSC Ngidi

**Ndebele**, Thalente ..... *Agricultural Ext And Rural Resource Mngt*

Dissertation: From Niche to Mainstream: Creating a Policy Environment for the Proliferation of Non-staple Whole Grains in South Africa

Supervisors: Dr MSC Ngidi and Professor T Mabhaudhi

### Master of Agriculture in Food Security

**Gumede**, Noluthando..... *Food Security*

Dissertation: Understanding the Effect of Nutritional Knowledge, Dietary Intake, Physical Activity and Assessing the Anthropometric Measurements of Dlangezwa High-School Learner's

Supervisor: Mr K Naidoo

**Ndwalane**, Sinethemba Zakhona..... *Food Security*

Dissertation: Assessment of Entrepreneurial Risk and Water Quality in Urban Agriculture

Supervisor: Professor JM Chitja

**Peacock**, Sibongiseni..... *Food Security*

Dissertation: Investigating the Impact of the National Red Meat Development Programme in Improving Household Food Security and the Perception of Farmers on Grass Biodiversity in uMzimkhulu Local Municipality, KwaZulu-Natal

Supervisor: Mr K Naidoo

- Zabuloni**, Byamungu Lincoln ..... *Food Security*  
 Dissertation: The Assessment and Determinants of Household Food Security Status in the uMzumbe Local Municipality, KwaZulu-Natal  
 Supervisors: Professor M Mudhara and Professor JM Chitja

## Master of Science

- Bhagwandeem**, Tejal ..... *Genetics*  
 Dissertation: The Thioredoxin Redox Charge as a Measure of Cell Redox Homeostasis in *Schizosaccharomyces pombe*  
 Supervisor: Dr CS Pillay

- Boodhoo**, Akira ..... *Biochemistry*  
 Dissertation: The Isolation and Characterisation of Proteases from *Euphorbia tirucalli*, *E. triangularis* and *Carica papaya* Latex  
 Supervisor: Professor THT Coetzer

- Diadla**, Siphamandla Austen ..... *Chemistry*  
 Dissertation: Synthesis of Non-natural Amino Acids as Covalent Inhibitors for Protein-Protein Interactions  
 Supervisor: Dr S Sithebe

- Govender**, Mackyla Karen ..... *Environmental Science*  
 Dissertation: Investigating the Potential of an Unsupervised Random Forest Image Classification Approach with Hyperspectral Imagery and Derived Image Texture to Detect *S. Mauritianum* in a Commercial Forest Plantation  
 Supervisors: Dr RT Lottering and Dr KY Peerbhaya

- Gwala**, Oscar Zwelithini ..... *Geography*  
 Dissertation: Examining Socio-Ecological Changes Associated with Coal Mining on Adjacent Communities in KwaSomkhele, KwaZulu-Natal, South Africa  
 Supervisor: Dr AP Nel

- \* **James**, Claudette Njabulo ..... *Ecological Sciences*  
 Dissertation: The Prevalence and Implications of Non-native Wild Boar *Sus scrofa* in KwaZulu-Natal, South Africa  
 Supervisor: Professor CT Downs

**Jansen, Cally Julia** ..... *Biology*

Dissertation: The Importance of Sunbirds as Pollinators of the Southern African Plants *Alberta magna* and *Streptocarpus dunnii*

Supervisors: Professor SD Johnson and Dr RJ Cozien

**Kgaphola, Motsoko Juniet**.....*Environmental Science*

Dissertation: Assessing Land Degradation Through Land Use/Land Cover Change and Socio Ecological Analysis in the Rural Semi-arid Area of the Greater Sekhukhune District Municipality, South Africa

Supervisors: Professor A Ramoelo, Professor JO Odindi, Dr J Mwenge Kahinda and Mr AR Seetal

**Khumalo, Ayanda Cynthia** .....*Geography*

Dissertation: The Social Geographies of School-Related Gender-Based Violence on Children's School Journeys in Rural KwaZulu-Natal

Supervisors: Mr ND Ngidi and Dr Z Essack

\* **Laltha, Miles** .....*Microbiology*

Dissertation: Development of Innovative Pretreatments for Simultaneous Saccharification and Citric Acid Production from Banana Pseudostem: Bioprocess Optimization and Kinetic Assessment

Supervisors: Professor EB Gueguim Kana and Dr Y Sukai

**Majola, Nonhlelo**..... *Chemistry*

Dissertation: One-Pot, Multicomponent Oxidative Synthesis of 2,4,5-Trisubstituted Imidazoles from Internal Alkenes Using an I<sub>2</sub>/DMSO System

Supervisor: Dr V Jeena

**Makwati, Nolutho**.....*Ecological Sciences*

Dissertation: Aardvark and People: Can a Shy Species be Widely Known in a Localised Area

Supervisors: Dr M Kraai and Dr Z Tsvuura

**Malevu, Nonkanyiso**..... *Plant Pathology*

Dissertation: Biocontrol Agents in Combination with *Moringa oleifera* Extract from Integrated Control of *Botrytis cinerea* of Tomato

Supervisors: Dr NC Mbili and Professor LS Magwaza

**Maniram, Annika**.....*Geography*

Dissertation: The Impacts of Drought on the Rural Communities of Msinga in Kwa-Zulu Natal, South Africa.

Supervisors: Dr RT Lottering and Dr S Sewell

- Manqana, Lonwabo**.....*Soil Science*  
 Dissertation: Farm Typology and Spatial Variability of Selected Soil Fertility Parameters on Selected Small-holder Farms in KwaZulu-Natal Province, South Africa  
 Supervisors: Dr NN Dube and Professor P Muchaonyerwa
- \* **Masango, Nothile Clementine**.....*Computer Science*  
 Dissertation: Blockchain-based Security Model for Efficient Data Transmission and Storage in Cloudlet Network Resource Environment  
 Supervisor: Professor AE Ezugwu
- \* **Masenyama, Anita**.....*Environmental Science*  
 Dissertation: Prospects of Remote Sensing Water-Related Ecosystem Services of Grass in Communal Rangelands of South Africa  
 Supervisor: Professor O Mutanga
- Masikane, Mbuyiseni**.....*Statistics*  
 Dissertation: Modeling Poverty and its Determinants in Ethiopian Households  
 Supervisors: Professor S Ramroop, Professor SF Melesse and Dr F Habyarimana
- Mbambo, Nhlakanipho Brian**.....*Plant Breeding*  
 Dissertation: Characterisation of Sorghum Genotypes for Water Use Efficiency and Soil Carbon Sequestration  
 Supervisor: Professor HA Shimelis
- Mjwara, Pinky Ncomela** ..... *Chemistry*  
 Dissertation: Synthesis, Characterization and Substitution Reaction Studies of Pyridyl *N*, *N'*-Bidentate Palladium(II) Complexes. A Kinetic and Mechanistic Study  
 Supervisors: Dr S Sithebe and Dr TR Papo
- Mthembu, Thando Lwandile**.....*Hydrology*  
 Dissertation: Assessing the Water Productivity of Sweet Potato (*Ipomoea batatas* (L.) Lam.)  
 Supervisors: Mr RP Kunz and Professor T Mabhaudhi
- Mva, Luhlumelo** ..... *Entomology*  
 Dissertation: Spatio-temporal Patterns of Hover Fly (Diptera: Syrphidae) Diversity across Three Habitat Types in KwaZulu-Natal, South Africa  
 Supervisor: Professor T Van Der Niet

- Naidoo, Kivana**..... *Hydrology*  
Dissertation: Evaluation of Soil Moisture Estimates from Satellite-based and Reanalysis Products over Two Network Regions  
Supervisors: Ms KT Chetty and Dr S Gokool
- Ndlovu, Nkanyiso Linda**..... *Physics*  
Dissertation: Synthesis and Characterization of Magnetic Iron Oxide Nanoparticles  
Supervisor: Dr CJ Masina
- Ngomane, Nkosinathi Chris**..... *Chemistry*  
Dissertation: Determination of Neonicotinoid Insecticides in Water, Soil and Sediment Samples: Acute and Chronic Risk Assessment  
Supervisor: Dr PN Mahlambi
- Ntuli, Nontando Percevierance** ..... *Microbiology*  
Dissertation: Isolation and Characterization of Bacteriophages from Wastewater as Potential Biocontrol Agents for *Escherichia coli*  
Supervisor: Professor S Schmidt
- Ramjeawon, Bhavana Roshenlal** ..... *Biochemistry*  
Dissertation: Recombinant Expression and Enzymatic Characterisation of *Trypanosoma vivax* Cathepsin L-like Protease ( *Tvi* CATL) for Single Chain Variable Fragment Antibody Production  
Supervisor: Professor THT Coetzer
- Ramjeawon, Sarisha Rajen** ..... *Environmental Science*  
Dissertation: Mapping Rainfall Variability in South Africa's Commercial Forest Regions using Competent Ensemble Statistical Interpolation Techniques  
Supervisors: Dr KY Peerbhay and Dr RT Lottering
- Reddy, Salona Sathaiaseelen**..... *Environmental Science*  
Dissertation: Holocene Reconstruction of Vegetation and Fire History at South Lake Futululu, Northern KwaZulu-Natal  
Supervisor: Professor JM Hill
- Sibeko, Nomacusi Sibonganjalo Lindiwe**..... *Biochemistry*  
Dissertation: Investigation of the Interaction between Antiretroviral Drugs and the Mucosal Microbiome in African Women  
Supervisors: Dr PP Gumbi and Professor THT Coetzer

- Sibisi, Nokulunga Nompilo**..... *Plant Pathology*  
 Dissertation: Management of *Aspergillus flavus* Link Infections in Groundnut using Bacterial Endophytes as Biological Control Agents  
 Supervisors: Professor KS Yobo and Professor MD Laing
- αSooklall, Ameeth** .....*Computer Science*  
 Dissertation: Application of ELECTRE Algorithms in Ontology Selection  
 Supervisor: Dr JV Fonou Dombeu
- Sukhdeo, Trisha** .....*Hydrology*  
 Dissertation: The Evaluation and Quantification of the Drought Propagation Process using Satellite Earth Observation Products  
 Supervisors: Ms KT Chetty and Dr S Gokool
- van Zwieten, Sam Falcon** ..... *Genetics*  
 Dissertation: Phylogenetic Diversity, Host Specificity and Geographic Distribution of Avian Malaria in Africa  
 Supervisor: Professor S Willows-Munro
- \*Vawda, Mohamed Ismail**.....*Environmental Science*  
 Dissertation: Predicting Inter-seasonal Aboveground Grass Biomass using Sentinel-2 MSI and Machine Learning in the Umngeni Catchment, KwaZulu-Natal, South Africa  
 Supervisors: Dr RT Lottering and Professor O Mutanga
- \*Wei, Yanna** .....*Biochemistry*  
 Dissertation: Quantitative Detection and Inactivation of *Mycoplasma hyopneumoniae*  
 Supervisor: Dr TN Khoza
- Xolo, Thabiso** ..... *Chemistry*  
 Dissertation: Synthesis and the Application of Molecularly Imprinted Polymers as Solid-Phase Extraction and Dispersive Solid-Phase Extraction Sorbents in the Extraction of Antiretroviral Drugs in Water  
 Supervisor: Dr PN Mahlambi

## Master of Science in Agriculture

- Jembere, Lawrence** .....*Animal Science*  
 Dissertation: Prediction of Milk Yield using Visual Images of Cows Through Deep Learning  
 Supervisor: Professor M Chimonyo



- Kaula**, Aphiwe Thenjiwe ..... *Agricultural Economics*  
 Dissertation: Water Energy Food Nexus: Trade-Offs in the Use of Water and Energy for Food and Nutrition Security among Smallholder Farmers in KwaZulu-Natal  
 Supervisors: Professor M Mudhara and Dr A Senzanje
- Khumalo**, Sinenhlanhla Sinethemba..... *Animal Science*  
 Dissertation: Larvicidal and Egg Hatch Inhibition Activities of Leaves and Bark of *Strychnos spinose* Lam. against Gastro-intestinal Nematodes of Goats  
 Supervisor: Professor M Chimonyo
- Mahlaba**, Nomasonto Julia..... *Horticultural Science*  
 Dissertation: Maturity Indexing of Selected Golden Kiwifruits Cultivars  
 Supervisor: Professor SZ Tesfay
- Makebe**, Anela ..... *Animal Science*  
 Dissertation: Effect of Balanced Dietary Protein on the Physio-chemical Quality and Sensory Attributes of Rabbit Meat from New Zealand White and Californian rabbits  
 Supervisor: Dr ZT Rani
- Makhanya**, Lindani Sandile ..... *Animal Science*  
 Dissertation: Effects of Ambient Temperatures on Growth Performance and Behaviour of Chickens  
 Supervisor: Professor M Chimonyo
- Mangena**, Khungeka ..... *Crop Science*  
 Dissertation: Dormancy Breaking Methods and Priming Techniques to Improve Seed Germination in *Gynandropsis gynandra* (L.) Briq syn *Cleome gynandra* L. (Cleomaceae)  
 Supervisor: Professor AO Odindo
- Masango**, Banele Silver ..... *Agricultural Economics*  
 Dissertation: Entrepreneurial Qualities of the Rural Youth and the Role of Youth Development Agencies to Agripreneurship Development: Empirical Evidence from KwaZulu-Natal, South Africa  
 Supervisor: Professor EW Zegeye
- Mathe**, Ntuthuko Cyprian..... *Animal Science*  
 Dissertation: The Impact of Quarrying Activities and Communal Perceptions towards the Environmental and Animal Welfare in the Ashburton Community Located in KZN Province, South Africa  
 Supervisors: Dr ZT Rani and Dr NR Mkhize

**Mathika, Zenande** ..... *Animal Science*

Dissertation: Response of Growing Rabbits in Growth Performance and Carcass Composition to Balanced Dietary Protein

Supervisor: Dr ZT Rani

\* **Soni, Sipehele Goodenough**..... *Agricultural Economics*

Dissertation: An Evaluation of the Factors that Influence Households' Participation and Perceptions of the Tree and Ecological Restoration in the eThekweni District, South Africa

Supervisors: Professor M Mudhara and Professor T Mabhaudhi

**Thibane, Zimi** ..... *Agricultural Economics*

Dissertation: Economic and Market Analysis of Smallholder Farmers' Broiler Production in the Amatole District Municipality, Eastern Cape, South Africa

Supervisors: Dr L Mdoda and Professor M Mudhara

**Zwane, Sibonelo**..... *Agribusiness*

Dissertation: Competitiveness Analysis of the South African Avocado Value Chain

Supervisor: Professor SRD Ferrer

## Master of Science in Human Nutrition

**Mthombeni, Nokulunga**..... *Human Nutrition*

Dissertation: Migration of Metal Ions into Food from the Use of Artisanal Cookware: A South African Case Study

Supervisors: Professor SM Kassier, Dr A Bissessur and Dr RA Street

## HONOURS DEGREES

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### Bachelor of Agricultural Management Honours

**Patekile, Nomcebo**

## Bachelor of Agriculture Honours

<b>Buthelezi</b> , Njabulo Elson .....	<i>Agricultural Ext And Rural Resource Mngt</i>
<b>Dihole</b> , Thandokuhle Eve .....	<i>Agricultural Ext And Rural Resource Mngt</i>
<b>Mbhele</b> , Siphumelelo Andile.....	<i>Agricultural Ext And Rural Resource Mngt</i>
<b>Ndlovu</b> , Singobile Kholeka .....	<i>Agricultural Ext And Rural Resource Mngt</i>
<b>Sibiya</b> , Noxolo Precious.....	<i>Agricultural Ext And Rural Resource Mngt</i>

## Bachelor of Science Honours

<b>Abraham</b> , Hermon Yosief .....	<i>Biochemistry</i>
<b>Ali</b> , Admiya Colisile.....	<i>Hydrology</i>
<b>Dhlamini</b> , Siphamandla.....	<i>Statistics</i>
<b>Dlamini</b> , Phakamani Comfort .....	<i>Chemistry</i>
<b>Dudeni</b> , Bonga Ronaldo.....	<i>Applied Mathematics</i>
<b>Gobey</b> , Caitlyn Emòjene.....	<i>Microbiology</i>
<b>Goosen</b> , Brooklyn Broey .....	<i>Biochemistry</i>
$\alpha$ <b>Goudemond</b> , Alexander Maxwell .....	<i>Computer Science</i>
<b>Govender</b> , Kyle Trenton .....	<i>Biological Sciences</i>
<b>Gumede</b> , Njabulo.....	<i>Biological Sciences</i>
* <b>Ishwanthlal</b> , Sumeith .....	<i>Computer Science</i>
<b>Jili</b> , Thabile.....	<i>Chemistry</i>
<b>Kanniah</b> , Merisha .....	<i>Microbiology</i>
<b>Khoza</b> , Khethukuthula Petronella Mallecia.....	<i>Chemistry</i>
<b>Khumalo</b> , Zama .....	<i>Statistics</i>
$\alpha$ <b>Lake</b> , Simon Vernon.....	<i>Hydrology</i>
<b>Mabena</b> , Sifiso Zwelakhe Melusi.....	<i>Crop And Horticultural Science</i>
<b>Magoso</b> , Siboniso.....	<i>Biological Sciences</i>
<b>Maharaj</b> , Rahul Jaichund.....	<i>Physics</i>
<b>Maharaj</b> , Shavishka .....	<i>Genetics</i>
<b>Manqele</b> , Thubelihle Wonderboy .....	<i>Hydrology</i>
<b>Maphalala</b> , Sipiwe Jeffry.....	<i>Computer Science</i>
<b>Mayeza</b> , Fezeka.....	<i>Biological Sciences</i>
* <b>Mazibuko</b> , Ayanda Sindiswa .....	<i>Hydrology</i>
<b>Mazibuko</b> , Siyabonga Lindokuhle Ashley.....	<i>Statistics</i>
<b>Mbatha</b> , Yenziwe Sinenhlanhla .....	<i>Statistics</i>
<b>Mkhize</b> , Lindani Kusasaletu.....	<i>Plant Pathology</i>
<b>Mkhize</b> , Sphesihle Emmanuel.....	<i>Mathematics</i>
<b>Mkhize</b> , Zamakhabazela Nosihle .....	<i>Hydrology</i>
<b>Mlangeni</b> , Simphiwe Primrose .....	<i>Statistics</i>
<b>Mncube</b> , Nkosingiphile Sanelisiwe .....	<i>Statistics</i>

* <b>Mngomezulu</b> , Mangaliso Moses.....	<i>Computer Science</i>
<b>Moodley</b> , Saira Faheema .....	<i>Applied Mathematics</i>
<b>Motau</b> , Patricia Khothatso Lebogang.....	<i>Biochemistry</i>
<b>Motaung</b> , Thato Setjhaba .....	<i>Applied Mathematics</i>
<b>Mpisi</b> , Ntandazo Samkelo.....	<i>Applied Mathematics</i>
<b>Mthethwa</b> , Tshengisile .....	<i>Chemistry</i>
<b>Mthombeni</b> , Anele .....	<i>Statistics</i>
<b>Mupfumi</b> , Tinotenda Angel .....	<i>Genetics</i>
<b>Naidu</b> , Talia.....	<i>Microbiology</i>
<b>Ndebele</b> , Lethukuthula Phathakahle.....	<i>Applied Mathematics</i>
<b>Ndlela</b> , Nokubongwa Buhle .....	<i>Statistics</i>
<b>Ndlovu</b> , Alwande.....	<i>Applied Mathematics</i>
<b>Ndlovu</b> , Themba lethu Nsikelelo.....	<i>Mathematics</i>
<b>Nene</b> , Nkanyiso .....	<i>Plant Pathology</i>
<b>Ngcobo</b> , Lwazi Knowledge Khulekani.....	<i>Statistics</i>
<b>Nkabinde</b> , Mcusi Sibongukwanda .....	<i>Biological Sciences</i>
<b>Nkwelo</b> , Siyolise Mongezeleli.....	<i>Biochemistry</i>
* <b>Ntombela</b> , Onesipho .....	<i>Mathematics</i>
<b>Ntshangase</b> , Mhlengi .....	<i>Chemistry</i>
<b>Pillay</b> , Shannyn Jade.....	<i>Hydrology</i>
<b>Robana</b> , Ntsikelelo.....	<i>Biological Sciences</i>
<b>Shabalala</b> , Phephisile Nomvula .....	<i>Applied Mathematics</i>
<b>Sibiya</b> , Andile Mmeli Kelvin .....	<i>Applied Mathematics</i>
<b>Smith</b> , Simone .....	<i>Environmental Science</i>
<b>Sookdhew</b> , Rishaylin.....	<i>Biochemistry</i>
* <b>Tenza</b> , Njabulo Junior Godzilla .....	<i>Statistics</i>
<b>Thabethe</b> , Nompilo .....	<i>Genetics</i>
<b>Twaha</b> , Precious Nokuphiwa .....	<i>Statistics</i>
<b>Xaba</b> , Lubabalo .....	<i>Chemistry</i>
<b>Xaba</b> , Phethele .....	<i>Biological Sciences</i>
* <b>Yacoob</b> , Ameera .....	<i>Hydrology</i>
<b>Zikhali</b> , Zamantungwa Prosperity.....	<i>Genetics</i>
<b>Zulu</b> , Delisile Fortunate .....	<i>Chemistry</i>
* <b>Zuma</b> , Ntuthuko Trueman .....	<i>Mathematics</i>
<b>Zuma</b> , Sfundo .....	<i>Applied Mathematics</i>
<b>Zungu</b> , Mhlengi Nsikelelo .....	<i>Statistics</i>

## Bachelor of Science Honours in Environmental Science

<b>Dlamini</b> , Celuxolo Michal .....	<i>Environmental Science</i>
<b>Mncwabe</b> , Ntuthuko Prosperous.....	<i>Environmental Science</i>

<b>Mthiyane, Sfundu</b> .....	<i>Environmental Science</i>
<b>Ngcongco, Lindiwe Thulile Pertunia</b> .....	<i>Environmental Science</i>
<b>Omarjee, Zahra</b> .....	<i>Environmental Science</i>
<b>Shangase, Siphindile Sybil</b> .....	<i>Environmental Science</i>

## BACHELOR DEGREES

---

### Bachelor of Science in Agriculture

<b>Bassa, Suhail</b> .....	<i>Animal And Poultry Science</i>
<b>Bombiso, Anela</b> .....	<i>Agricultural Economics</i>
<b>Dladla, Lwazi</b> .....	<i>Agricultural Economics</i>
<b>Dlamini, Neliswa Petunia</b> .....	<i>Plant Pathology</i>
<b>Dlamini, Samukelisiwe</b> .....	<i>Animal And Poultry Science</i>
<b>Dlamini, Xolisile Ntombizandile Mirriam</b> .....	<i>Agricultural Economics</i>
<b>Dube, Felicia Zanele</b> .....	<i>Agricultural Economics</i>
<b>Dumakude, Buhle Trustworthy</b> .....	<i>Plant Pathology</i>
<b>Gina, Thobani Lungisani</b> .....	<i>Animal And Poultry Science</i>
<b>Gumbi, Zenzele Limitias</b> .....	<i>Animal And Poultry Science</i>
<b>Hlongwane, Sanelisiwe Imaculate</b> .....	<i>Animal And Poultry Science</i>
<b>Jiyane, Nothando Nosipho</b> .....	<i>Animal And Poultry Science</i>
<b>Jula, Phindile Princess</b> .....	<i>Plant Pathology, Soil Science</i>
<b>Khumalo, Sinikiwe Precious</b> .....	<i>Agps (Crop Science)</i>
<b>Khusi, Sanelisiwe Innocentia</b> .....	<i>Soil Science</i>
<b>Kola, Nonsikelelo</b> .....	<i>Animal And Poultry Science</i>
<b>Madlala, Siyanda Brian</b> .....	<i>Plant Pathology</i>
<b>Madonsela, Lihle Prisca</b> .....	<i>Agribusiness</i>
<b>Maduna, Mdumiseni</b> .....	<i>Plant Pathology</i>
<b>Majajubana, Simamkele</b> .....	<i>Agricultural Economics</i>
<b>Makhonza, Nobuhle Precious</b> .....	<i>Soil Science</i>
<b>Mazibuko, Sanelisiwe</b> .....	<i>Animal And Poultry Science</i>
<b>Mazibuko, Zekhethelo Sinikeziwe</b> .....	<i>Agricultural Economics</i>
<b>Mbedu, Nokwanda</b> .....	<i>Plant Pathology</i>
<b>Mbense, Andiswa Zibongele</b> .....	<i>Animal And Poultry Science</i>
<b>Mbutho, Sanelisiwe Anele</b> .....	<i>Plant Pathology</i>
<b>Mbuyazi, Mandisa Gugu</b> .....	<i>Animal And Poultry Science</i>
<b>Mdluli, Sibusile Pshycology</b> .....	<i>Plant Pathology</i>
<b>Mhlongo, Phakamani Simanga</b> .....	<i>Plant Pathology</i>
<b>Mkhungo, Zoliswa Nontsindiso</b> .....	<i>Agribusiness</i>

<b>Mkhwanazi</b> , Ntokozo .....	<i>Plant Pathology</i>
<b>Mndaba</b> , Noluvo.....	<i>Animal And Poultry Science</i>
<b>Mnqayi</b> , Siyanda Thabani .....	<i>Animal And Poultry Science</i>
<b>Msomi</b> , Nokwanda.....	<i>Animal And Poultry Science</i>
<b>Mtshali</b> , Sifiso Innocent.....	<i>Agricultural Economics</i>
<b>Naidoo</b> , Elisha Kian .....	<i>Soil Science</i>
<b>Naidoo</b> , Kelansha Lisa.....	<i>Soil Science</i>
<b>Ndaba</b> , Lindokuhle Mlamuli .....	<i>Agricultural Economics</i>
<b>Ndlovu</b> , Nomvelo .....	<i>Soil Science</i>
<b>Ndlovu</b> , Xolile.....	<i>Plant Pathology</i>
<b>Ngcobo</b> , Thabiso Nhlanhla.....	<i>Agricultural Economics</i>
<b>Ngema</b> , Nkosiyapha Innocent .....	<i>Soil Science</i>
<b>Ngubane</b> , Londeka .....	<i>Agribusiness</i>
<b>Nhleko</b> , Bongumusa Princess.....	<i>Animal And Poultry Science</i>
<b>Nogemane</b> , Athinkosi.....	<i>Plant Pathology</i>
<b>Nongcula</b> , Sizo Athi.....	<i>Agricultural Economics</i>
<b>Ntshingila</b> , Nomaswazi Nokulunga.....	<i>Plant Pathology</i>
<b>Ramasray</b> , Simonne .....	<i>Soil Science</i>
<b>Sekhobo</b> , Limpho Pamela.....	<i>Agricultural Economics</i>
<b>Shandu</b> , Ayanda Lucky .....	<i>Soil Science</i>
<b>Sibiya</b> , Phelelani .....	<i>Agricultural Economics</i>
<b>Sithole</b> , Nolusizo Lethimpilo .....	<i>Plant Pathology</i>
<b>Sithole</b> , Nosihle.....	<i>Plant Pathology</i>
<b>Sithole</b> , Zuziwe .....	<i>Soil Science</i>

## **Bachelor of Science in Agriculture in Agricultural Plant Sciences**

<b>Mbhamali</b> , Xolani Siphamandla.....	<i>Plant Science</i>
<b>Zondo</b> , Simiso Enock.....	<i>Plant Science</i>

## **Bachelor of Science in Agriculture in Animal and Poultry Science**

<b>Macingwane</b> , Thulani.....	<i>Animal And Poultry Science</i>
<b>Mfekayi</b> , Nduduzo Gift.....	<i>Animal And Poultry Science</i>
<b>Mkhize</b> , S'boniso .....	<i>Animal And Poultry Science</i>
<b>Phipps</b> , Robyn Lee.....	<i>Animal And Poultry Science</i>
<b>Sithole</b> , Andile Makhosi.....	<i>Animal And Poultry Science</i>
<b>Tabu</b> , Bongekile Queeneth .....	<i>Animal And Poultry Science</i>

**Bachelor of Science in Dietetics and Human Nutrition**

**Bhengu**, Nokukhanya Lindelwa  
**Buthelezi**, Pearl Siphindile  
**Cebekhulu**, Londiwe Ncediswa  
**Chaya**, Tasmiyah  
**Goba**, Phindile Sweetness  
**Govender**, Ashlyn  
**Gumede**, Bongumenzi Fisokuhle  
**Hlongwana**, Zamangwane  
**Jangaza**, Nokwanda Lihle  
**Khaba**, Sthabile Nosipho  
**Khanyile**, Sabelo Mduduzi  
**Malinga**, Nkazimulo  
**Maluleke**, Wally Ntshuxeko  
**Maphumulo**, Nokwanda  
**Matlena**, Xoliswa Sinenhlaha  
**Mazibuko**, Bongumenzi Innocent  
**Mdluli**, Nkanyiso Michael  
**Mduba**, Nkosazana Nokulunga  
**Mkhize**, Noluthando Emmaculate  
**Mohanlal**, Alisha  
**Moola**, Naseerah Zaid  
**Mzimela**, Thulisile  
**Ndebele**, Ayanda Nzuzo  
**Ndwandwe**, Sabelo  
**Ngcobo**, Andiswa Lungelo  
**Ngema**, Phethile Pretty  
**Ngubane**, Malibongwe Velekhaya  
**Ngubane**, Singathile Nokuthula  
**Nkosi**, Welile Princess  
**Siyaya**, Sinethemba Londiwe  
\* **Stewart**, Julia Alexandra  
**Vilakazi**, Kholeka Mandisa  
**Xaba**, Saneliswa Isiphile  
**Zuma**, Zanele

## Bachelor of Agricultural Management

**Dilinga**, Emihle  
**Nkosi**, Sanele Given  
**Nxumalo**, Siphesihle Nokwanda

## Bachelor of Agriculture

**Chonco**, Sibusisiwe ..... *Agricultural Ext And Rural Resource Mngt*  
**Mpontshane**, Sholiphi Londiwe ..... *Agricultural Ext And Rural Resource Mngt*

## Bachelor of Agriculture in Agricultural Extension and Rural Resource Management

**Bengu**, Bandile Lastborn ..... *Agricultural Ext And Rural Resource Mngt*  
**Khanyile**, Amanda ..... *Agricultural Ext And Rural Resource Mngt*  
**Masango**, Thando ..... *Agricultural Ext And Rural Resource Mngt*  
**Mbelu**, Andile Bongumusa ..... *Agricultural Ext And Rural Resource Mngt*  
**Mchunu**, Princess Nolwazi Sindiswa ..... *Agricultural Ext And Rural Resource Mngt*  
**Mhlongo**, Sindisiwe ..... *Agricultural Ext And Rural Resource Mngt*  
**Molefe**, Noluthando ..... *Agricultural Ext And Rural Resource Mngt*  
**Msani**, Sisanda ..... *Agricultural Ext And Rural Resource Mngt*  
**Mthalane**, Sbhongokuhle Norman ..... *Agricultural Ext And Rural Resource Mngt*  
**Ndawonde**, Cebo Bongumusa ..... *Agricultural Ext And Rural Resource Mngt*  
**Ngcobo**, Mpumeleli Nkosinathi ..... *Agricultural Ext And Rural Resource Mngt*  
**Ngema**, Neliswa ..... *Agricultural Ext And Rural Resource Mngt*  
**Qwabe**, Sibongakonke Nhlakanipho ..... *Agricultural Ext And Rural Resource Mngt*

## Bachelor of Science

**Anwar**, Masooda ..... *Industrial And Applied Biotechnology*  
**Baijoo**, Akshay Dhamen ..... *Computer Science, Mathematics*  
**Brent**, Casey Elizabeth ..... *Microbiology*  
**Buthelezi**, Lindiswa ..... *Biological Sciences*  
**Buthelezi**, Mthobisi Sthelo ..... *Computer Sc And Information Technology*  
**Buthelezi**, Nhlanzeko Travor ..... *Biological Sciences*



<b>Chamane</b> , Zamachube Marcia.....	<i>Applied Mathematics, Computer Science</i>
α <b>Cira</b> , Sikwethembile Sphephelo.....	<i>Data Science</i>
<b>Dladla</b> , Lindeliwe Scinconaria.....	<i>Biochemistry, Microbiology</i>
<b>Dladla</b> , Mluleki Excellence.....	<i>Computer Sc And Information Technology</i>
<b>Dlamini</b> , Simphiwe Ntombikhona.....	<i>Biological Sciences</i>
<b>Dlamini</b> , Thabile.....	<i>Biochemistry, Chemistry</i>
<b>Dunge</b> , Kwenzakufani.....	<i>Hydrology, Soil Science</i>
α <b>Ebrahim</b> , Tasmiyyah.....	<i>Biochemistry, Microbiology</i>
<b>Garib</b> , Shanel.....	<i>Applied Mathematics, Computer Science</i>
<b>Gasa</b> , Kwanda.....	<i>Genetics, Microbiology</i>
<b>Gumede</b> , Nelisiwe.....	<i>Genetics, Microbiology</i>
<b>Gumede</b> , Thobile Prosperity.....	<i>Biochemistry, Chemistry</i>
<b>Gwala</b> , Survivor Ndalwenhle.....	<i>Biological Sciences</i>
<b>Hlongwane</b> , Hlelolwenkosi Andiswa.....	<i>Biological Sciences</i>
<b>Hlope</b> , Sinenhlanhla.....	<i>Applied Mathematics, Computer Science</i>
<b>Hurku</b> , Ryan.....	<i>Computer Sc And Information Technology</i>
<b>Inderparsad</b> , Dristi.....	<i>Industrial And Applied Biotechnology</i>
<b>Khan</b> , Jauhar.....	<i>Hydrology, Soil Science</i>
<b>Khathi</b> , Sanele Nandiswa.....	<i>Biology, Genetics</i>
<b>Khoza</b> , Fanelesibonge Praisegod.....	<i>Mathematics, Physics</i>
<b>Khoza</b> , Sisanda Thandiwe.....	<i>Microbiology, Plant Pathology</i>
<b>Khuzwayo</b> , Sinakhokonke Msizi.....	<i>Mathematics, Statistics</i>
<b>Khuzwayo</b> , Thandeka Nomlindo.....	<i>Biology, Genetics</i>
<b>Khwela</b> , Ntokozo.....	<i>Genetics, Microbiology</i>
<b>Mabuza</b> , Londiwe Xolile.....	<i>Microbiology, Plant Pathology</i>
<b>Madikizela</b> , Noxolo.....	<i>Computer Sc And Information Technology</i>
<b>Magubane</b> , Samkelo Siyanda.....	<i>Biochemistry, Microbiology</i>
<b>Magubane</b> , Thembelani Nkanyiso.....	<i>Biochemistry, Genetics</i>
α <b>Maharaj</b> , Sahil.....	<i>Computer Sc And Information Technology</i>
<b>Mahase</b> , Rorisang.....	<i>Microbiology, Plant Pathology</i>
<b>Mahaye</b> , Amanda Nompumelelo.....	<i>Biochemistry, Genetics</i>
<b>Mahlinza</b> , Pinky Nomshado.....	<i>Computer Sc And Information Technology</i>
<b>Makhaye</b> , Thenjiwe Nonkululeko.....	<i>Plant Pathology</i>
<b>Malinga</b> , Minenhle Pretty.....	<i>Biochemistry, Microbiology</i>
<b>Mamyala</b> , Motswapuleng Shantel.....	<i>Applied Mathematics, Mathematics</i>
<b>Manqele</b> , Mbhasobhi Khayelihle.....	<i>Applied Mathematics, Physics</i>
<b>Maphalala</b> , Ntuthuko Phillip.....	<i>Computer Sc And Information Technology</i>
<b>Maphisa</b> , Malibongwe Mpilo.....	<i>Computer Sc And Information Technology</i>
<b>Mashele</b> , Jeffrey.....	<i>Computer Sc And Information Technology</i>
<b>Masuku</b> , Sifiso Sipehelele.....	<i>Computer Sc And Information Technology</i>
<b>Mavundla</b> , Senzo.....	<i>Applied Mathematics, Physics</i>
<b>Mayise</b> , Yamkela Lindokuhle.....	<i>Data Science</i>

<b>Mazibuko</b> , Nokuphiwe Masesi .....	<i>Biological Sciences</i>
<b>Mbambo</b> , Nontuthuzelo .....	<i>Computer Sc And Information Technology</i>
<b>Mbanjwa</b> , Nomfundo Portentia .....	<i>Genetics, Microbiology</i>
<b>Mbatha</b> , Kwanele Qinisela.....	<i>Biology, Genetics</i>
<b>Mbatha</b> , Nothile Bukile .....	<i>Genetics, Microbiology</i>
<b>Mbodi</b> , Vukosi.....	<i>Genetics</i>
<b>Mchunu</b> , Sinethemba .....	<i>Crop And Horticultural Science</i>
<b>Mchunu</b> , Yoliswa Nqobile.....	<i>Biological Sciences</i>
<b>Mciza</b> , Jabulani.....	<i>Computer Sc And Information Technology</i>
<b>Meyiwa</b> , Nosipho .....	<i>Biochemistry, Microbiology</i>
<b>Mgabhi</b> , Nelisiwe Khanyisile.....	<i>Biochemistry, Genetics</i>
<b>Mhlanga</b> , Zandile.....	<i>Computer Sc And Information Technology</i>
<b>Mkhasibe</b> , Vusani.....	<i>Biochemistry, Genetics</i>
* <b>Mkhize</b> , Sanelisiwe.....	<i>Computer Sc And Information Technology</i>
<b>Mlangeni</b> , Lindani Percival.....	<i>Industrial And Applied Biotechnology</i>
<b>Mnisi</b> , Siyamthanda Gift.....	<i>Applied Mathematics, Statistics</i>
<b>Mpontshane</b> , Khalipha Siyethaba.....	<i>Applied Mathematics, Statistics</i>
<b>Msele</b> , Kwanele .....	<i>Biological Sciences</i>
<b>Msibi</b> , Nhlanhla Welcome.....	<i>Applied Mathematics, Statistics</i>
<b>Mthiyane</b> , Anele Noxolo .....	<i>Genetics, Microbiology</i>
<b>Myeni</b> , Nothile Jenia.....	<i>Microbiology, Plant Pathology</i>
<b>Naidoo</b> , Shaun.....	<i>Chemistry, Mathematics</i>
<b>Naiker</b> , Diyaksha.....	<i>Chemistry, Microbiology</i>
<b>Ndlela</b> , Makhosazana Ignatia.....	<i>Biochemistry, Chemistry</i>
<b>Ndlovu</b> , Sphamandla .....	<i>Biochemistry, Chemistry</i>
<b>Ndlovu</b> , Thandoluhle .....	<i>Computer Science, Statistics</i>
<b>Nduli</b> , Sinenhlanhla Sithembile.....	<i>Microbiology, Plant Pathology</i>
<b>Ngcobo</b> , Professor Manqoba.....	<i>Computer Sc And Information Technology</i>
<b>Ngcongo</b> , Bahle Fundile.....	<i>Biology, Genetics</i>
<b>Ngubane</b> , Thabiso Maxwell .....	<i>Hydrology, Soil Science</i>
<b>Ngubane</b> , Vuyo Sinethemba Pretty .....	<i>Biochemistry, Microbiology</i>
<b>Ngwenya</b> , Steven Mandla .....	<i>Data Science</i>
<b>Nkosi</b> , Bonisiwe Promise.....	<i>Genetics, Microbiology</i>
<b>Nkosi</b> , Thabani Emmanuel .....	<i>Computer Science, Statistics</i>
<b>Ntanzi</b> , Sakhiseni.....	<i>Computer Sc And Information Technology</i>
<b>Nxumalo</b> , Mnelisi Sandile.....	<i>Computer Sc And Information Technology</i>
<b>Nxumalo</b> , Mnqobi.....	<i>Soil Science</i>
<b>Nxumalo</b> , Nothando .....	<i>Biochemistry, Chemistry</i>
<b>Nyawose</b> , Siyanda Zuko.....	<i>Computer Sc And Information Technology</i>
<b>Nyide</b> , Slindile Londiwe.....	<i>Data Science</i>
<b>Nzuza</b> , Sibonelo Andile.....	<i>Biochemistry, Microbiology</i>
<b>Nzuza</b> , Sthandiwe Nothando .....	<i>Environmental Science</i>

<b>Phungula</b> , Sphephelo Tshelihle .....	<i>Biochemistry, Chemistry</i>
<b>Pillay</b> , Kylan.....	<i>Hydrology, Soil Science</i>
<b>Pilson</b> , Siphivokuhle Sharmaine .....	<i>Industrial And Applied Biotechnology</i>
<b>Radebe</b> , Siyanda Sthembele .....	<i>Computer Science, Statistics</i>
<b>Ramnath</b> , Peyton David.....	<i>Data Science</i>
α <b>Rampersad</b> , Sirisha .....	<i>Biochemistry, Microbiology</i>
<b>Reddy</b> , Nathan Dante.....	<i>Chemistry And Chemical Technology</i>
<b>Sambo</b> , Sydney Lethukuthula.....	<i>Applied Mathematics, Statistics</i>
<b>Sappor</b> , Raelene Belinda.....	<i>Biology, Genetics</i>
<b>Shandu</b> , Zoleka.....	<i>Plant Pathology</i>
<b>Shezi</b> , Nhlakanipho Mfundo.....	<i>Biochemistry</i>
<b>Shoyisa</b> , Mthobisi Lindokuhle .....	<i>Genetics, Plant Pathology</i>
<b>Sibeko</b> , Vuyolwethu .....	<i>Industrial And Applied Biotechnology</i>
<b>Sibiya</b> , Nkosingiphile Aroll.....	<i>Microbiology, Plant Pathology</i>
<b>Sikhakhane</b> , Sphamandla.....	<i>Applied Mathematics, Statistics</i>
<b>Simakade</b> , Asakhe .....	<i>Biological Sciences</i>
<b>Simelane</b> , Sukoluhle .....	<i>Biological Sciences</i>
<b>Singh</b> , Thariq.....	<i>Computer Sc And Information Technology</i>
<b>Sithole</b> , Philiswa Lethukukhanya Nomakhwezi .....	<i>Biochemistry, Microbiology</i>
<b>Sithole</b> , Samukelisiwe.....	<i>Genetics, Microbiology</i>
<b>Sokhela</b> , Phethagani Sowuzwile .....	<i>Biochemistry, Chemistry</i>
<b>Thusi</b> , Khotsofalang Thabo Nhlakanipho.....	<i>Industrial And Applied Biotechnology</i>
<b>Worth</b> , Anderson.....	<i>Computer Science, Physics</i>
<b>Zikhali</b> , Sandiso Maria .....	<i>Biochemistry, Genetics</i>
<b>Zikhali</b> , Zolile Simangele .....	<i>Biological Sciences</i>
<b>Zondi</b> , Amanda Siphokazi .....	<i>Genetics, Microbiology</i>
<b>Zulu</b> , Ndabuko Velemseni.....	<i>Genetics, Microbiology</i>

## Bachelor of Science in Chemistry and Chemical Technology

<b>Gwala</b> , Sithabile Nomcebo.....	<i>Chemistry And Chemical Technology</i>
<b>Karrim</b> , Aqeel.....	<i>Chemistry And Chemical Technology</i>
<b>Khumalo</b> , Buhle Sphehile .....	<i>Chemistry And Chemical Technology</i>
<b>Mabaso</b> , Linda.....	<i>Chemistry And Chemical Technology</i>
<b>Madlala</b> , Ayanda.....	<i>Chemistry And Chemical Technology</i>
<b>Magongo</b> , Mhlonishwa Njabulo .....	<i>Chemistry And Chemical Technology</i>
<b>Magqira</b> , Bavuyile .....	<i>Chemistry And Chemical Technology</i>
<b>Mayeza</b> , Khanyisani.....	<i>Chemistry And Chemical Technology</i>
<b>Mbatha</b> , Thandeka Sibuko.....	<i>Chemistry And Chemical Technology</i>
<b>Mvelase</b> , Nontuthuko.....	<i>Chemistry And Chemical Technology</i>

<b>Nompu</b> , Emihle.....	<i>Chemistry And Chemical Technology</i>
<b>Nzama</b> , Nokwazi Londeka.....	<i>Chemistry And Chemical Technology</i>
<b>Seeth</b> , Sajhana.....	<i>Chemistry And Chemical Technology</i>
<b>Sithole</b> , Sithandile Ruth.....	<i>Chemistry And Chemical Technology</i>
<b>Sundaram</b> , Zoë Caitlin Lauren.....	<i>Chemistry And Chemical Technology</i>

## Bachelor of Science in Computer Science and Information Technology

* <b>Benya</b> , Sanele Nsindiso.....	<i>Computer Sc And Information Technology</i>
* <b>Bhamjee</b> , Ihsaan.....	<i>Computer Sc And Information Technology</i>
<b>Buthelezi</b> , Sizwe Ayanda.....	<i>Computer Sc And Information Technology</i>
<b>Dhayaram</b> , Darshan.....	<i>Computer Sc And Information Technology</i>
<b>Dladla</b> , Thulane.....	<i>Computer Sc And Information Technology</i>
<b>Govender</b> , Joao Tyrell Shaw.....	<i>Computer Sc And Information Technology</i>
* <b>Govender</b> , Keyur Heroshin.....	<i>Computer Sc And Information Technology</i>
<b>Khan</b> , Mohammed Husnain.....	<i>Computer Sc And Information Technology</i>
<b>Kheswa</b> , Amukelani.....	<i>Computer Sc And Information Technology</i>
<b>Mkhize</b> , Khonzinkosi.....	<i>Computer Sc And Information Technology</i>
<b>Mkhwanazi</b> , Cebo Gcinumthetho.....	<i>Computer Sc And Information Technology</i>
<b>Mtungwa</b> , Lethokuhle Nongcebo.....	<i>Computer Sc And Information Technology</i>
<b>Molefe</b> , Senzo Siphamandla.....	<i>Computer Sc And Information Technology</i>
α <b>Moodley</b> , Mohammed Wahed.....	<i>Computer Sc And Information Technology</i>
α <b>Mthethwa</b> , Sakhile Wiseman Njabulo.....	<i>Computer Sc And Information Technology</i>
α <b>Narainsamy</b> , Shealtiel Joash.....	<i>Computer Sc And Information Technology</i>
* <b>Ndlela</b> , Thandazani Sicelo.....	<i>Computer Sc And Information Technology</i>
<b>Nelson</b> , Jayden Alain.....	<i>Computer Sc And Information Technology</i>
<b>Nene</b> , Mesuli Mduduzi.....	<i>Computer Sc And Information Technology</i>
<b>Ngwenya</b> , Mondli Simangaliso.....	<i>Computer Sc And Information Technology</i>
<b>Pillay</b> , Jayden Eric.....	<i>Computer Sc And Information Technology</i>
* <b>Shozi</b> , Zamokuhle.....	<i>Computer Sc And Information Technology</i>
<b>Sivnannan</b> , Aakil.....	<i>Computer Sc And Information Technology</i>

## Bachelor of Science in Crop and Horticultural Science

<b>Bhengu</b> , Nqobile Victoria.....	<i>Crop And Horticultural Science</i>
<b>Choma</b> , Nokuphila Obakeng.....	<i>Crop And Horticultural Science</i>
* <b>Khumalo</b> , Mpilwenhle Charity.....	<i>Crop And Horticultural Science</i>
<b>Maseko</b> , Noluthando Nontsikelelo.....	<i>Crop And Horticultural Science</i>

<b>Mbamali</b> , Sithembile Hloniphile.....	<i>Crop And Horticultural Science</i>
<b>Mkhize</b> , Londeka.....	<i>Crop And Horticultural Science</i>
<b>Mthethwa</b> , Thabiso .....	<i>Crop And Horticultural Science</i>
<b>Mzizi</b> , Thembelani.....	<i>Crop And Horticultural Science</i>
<b>Sosibo</b> , Sibusile Emmaculate .....	<i>Crop And Horticultural Science</i>
<b>Zondo</b> , Sakhile.....	<i>Crop And Horticultural Science</i>

## **Bachelor of Science in Environmental Science**

<b>Hadebe</b> , Sibongakonke Buyisile Happiness.....	<i>Environmental Science</i>
<b>Mkize</b> , Siyanda Clinton.....	<i>Environmental Science</i>
<b>Mlambo</b> , Bheka Maxwell .....	<i>Environmental Science</i>
<b>Mzwazwa</b> , Sinothando Amahle .....	<i>Environmental Science</i>
<b>Ntola</b> , Mbaso Alizwa.....	<i>Environmental Science</i>

## **POSTGRADUATE DIPLOMA**

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### **Postgraduate Diploma in Food Security**

<b>Chetty</b> , Evania
<b>Mncwango</b> , Simphiwe
<b>Mtetwa</b> , Minenhle Nompumelelo
<b>Nogwanya</b> , Siphamandla
<b>Zangqa</b> , Babalwa Queen

# 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 12<sup>th</sup> 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.

Dr RJ Khoza is the fourth 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.