

NELSON MANDELA  
UNIVERSITY

Autumn Graduation  
**April 2024**

Ceremony 10  
Faculty of Science

17 APRIL 2024 | 14:30



## **VISION**

To be a dynamic African university, recognised for its leadership in generating cutting-edge knowledge for a sustainable future

## **MISSION**

To offer a diverse range of life-changing education experiences for a better world

## **VALUES**

Excellence

Respect for Diversity

Ubuntu

Social justice and equality

Integrity

Sustainable stewardship





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## OUR BRAND

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### We are Nelson Mandela University

Together we are **Nelson Mandela University**. We are the only university in the world to be named after Nelson Mandela. Our iconic South African statesman, humanitarian and leader is known globally for what he achieved.

We are honoured as **Nelson Mandela University** to carry his name. In return, we honour our namesake by endeavouring to live his legacy. We honour him by using his name in full.

We are **Nelson Mandela University**.

Saam is ons **Nelson Mandela Universiteit**. Ons is die enigste universiteit ter wêreld wat na Nelson Mandela vernoem is. Ons ikoniese Suid-Afrikaanse staatsman, humanitêre figuur en leier, is wêreldwyd bekend vir wat hy bereik het.

Ons is geëerd as **Nelson Mandela Universiteit** om sy naam te dra. In ruil daarvoor, eer ons ons naamgenoot deur daarna te streef om sy nalatenskap uit te leef. Ons eer hom deur sy naam ten volle te gebruik. Ons is **Nelson Mandela Universiteit**.

Sisonke **siyiNelson Mandela University**. Siyeyona kuphela kweyunivesithi ehlabathini ethiywe ngoNelson Mandela. Isiswenye sethu nowayesakuba nguMongameli woMzantsi Afrika, onesisa nokwayinkokheli waziwa kwihlabathi jikelele ngenxa yowakuzuzayo.

Siziva siwongekile **njengeNelson Mandela University** ukuthwala igama lakhe. Ngokwembuyekezo, siphakamisela phezulu ugama wethu ngokuzama ukuphila kumzila wakhe.

Siphakamisela phezulu ngokusebenzisa igama lakhe ngokupheleleyo. **SiyiNelson Mandela University**.



## Our logo

We developed a modern, font-based logo to communicate a forward-thinking concept. With its dynamic African feel, it sets Nelson Mandela University apart from its competition. The use of the circle and the triangle in the name creates a playful feel while alluding to ingenuity and creativity - two vital ingredients for change.

The colour palette was specifically chosen to reflect the University values and to add gravitas to the logo. We opted for blue, as it symbolises heritage, strength and trustworthiness. The bright yellow was chosen to add approachability, freshness and warmth.



ELA

UNIVERSITY



## CONGRATULATORY MESSAGE

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*Dr Geraldine Fraser-Moleketi*  
Chancellor

Graduation is a significant milestone in life. It is the culmination of an academic journey that reflects your ambition, determination, commitment, perseverance, and demanding work. We know that this journey is not yours alone, as many have travelled with you. These are your friends, your lecturers, supervisors, mentors, and your family. They have invested in you financially, guided your studies and encouraged you to keep going. But above all, they have believed in your ability to succeed and achieve this graduation dream.

Today we celebrate not only what you have achieved, but what this promises going forward in terms of your potential as a graduate and alumnus of Nelson Mandela University.

Your education is your passport to the future – and the future hopes of our country and continent. Indeed, education is the foundation to a better world. Or, as Nelson Mandela so eloquently put it:

“*Education is the most powerful weapon which you can use to change the world.*”

Your joy is our joy too.

We salute and applaud your achievement and wish you every success for your future endeavours, wherever they may take you.

Congratulations!

Uthweswo zidanga ludumo olubaluleke kunene ebomini. Yinkcochoyi kuhambo lwemfundo enomsila echaza ukunxanwa kwakho, ukuzimisela, ukuzinikela, ukunyamezela kwanomsebenzi otya ixesha. Siyayazi ukuba olu hambo asilolwakho kuphela, nanjengoko uninzi luthw lwakhenketha nawe. Abo ngabahlobo bakho, abahlohli bakho, amakhankatha, abacebisi, kwakunye nosapho lwakho. Batyale imali kuwe, bekukhokela kwizifundo zakho ze bakukhuthaza ukuba uqhubeke uye phambili. Kodwa ngaphezulu konke, baye bakholelwa kumandla wakho okuphumelela nokuzuza eli phupha lothweswo sidanga.



Namhlanje sibhiyozela hayi nje othe wakuzuza, kodwa okulithemba lokuqhubekela phambili mayelana namandla owathweleyo njengothweswe isidanga kwaye ebengumfundi waseNelson Mandela University.

Imfundo yakho litikiti lakho elikukhokelela ebomini – kwaye ubomi obulithemba lelizwe nezwekazi lethu. Ngaphandle kwamathandabuzo, imfundo, sisiseko sehlabathi elingcono. Okanye, njengokuba eyibeka ngokucace gca uNelson Mandela xa esithi:

“ *Imfundo lelona krele lakhe lanamandla ongathi ulisebenzise ukutshintsha ihlabathi.* ”

Uvuyo lwakho luvuyo lwethu nathi.

Sikothulela umnqwazi kwaye sikuqhwabela izandla ngenzuzo yakho futhi sikunqwenelela impumelelo nakuso nasiphi na isigaba seenzame zobomi bakho, naphi na apho singakusa khona.

#### Huntshu!

Gradeplegtigheid is 'n belangrike mylpaal in die lewe. Dit is die hoogtepunt van 'n akademiese reis wat jou ambisie, vasberadenheid, toewyding, deursettingsvermoë en veeleisende werk weerspieël. Ons weet dat hierdie reis nie joune alleen is nie, aangesien baie mense saam met jou gereis het, jou vriende, jou lektore, toesighouers, mentors en jou familie. Hulle het finansieel in jou belê, jou studies gelei en jou aangemoedig om voort te gaan. Maar bowenal het hulle geglo in jou vermoë om sukses te behaal en hierdie droom om te gradueer te bereik.

Vandag vier ons nie net wat jy bereik het nie, maar ook dit wat dit vorentoe beloof in terme van jou potensiaal as 'n gegradueerde en alumnus van die Nelson Mandela Universiteit. Jou geleerdheid is jou paspoort na die toekoms – en die toekomshoop van ons land en kontinent. Inderdaad, onderwys is die grondslag vir 'n beter wêreld. Of soos Nelson Mandela dit so welsprekend gestel het:

“ *Onderwys is die magtigste wapen waarmee jy die wêreld kan verander.* ”

Vandag is jou vreugde ook ons vreugde.

Ons salueer en loof jou prestasie en wens jou alle sukses toe vir jou toekomstige ondernemings, waar hulle jou ook al mag neem.

Veels geluk!



*Professor Sibongile Muthwa  
Vice-Chancellor*

## OUR CHANCELLOR, VICE-CHANCELLOR AND CHAIR OF COUNCIL

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Meet **Dr Geraldine Fraser-Moleketi**, whose experience, commitment and heart for the continent's social and economic transformation are aligned with the goals of Nelson Mandela University.

Throughout her exemplary career, our Chancellor has worked for economic growth that is more sustainable. She has worked in inter-governmental structures, interacted with political leaders, business leaders and civil society, and has been involved in complex negotiations across different issues and sectors.

The titular head of our institution was previously Director of the United Nations Development Programme's (UNDP) Democratic Governance Group (DGP), based in New York, working across six regional centres in more than 100 countries.

Dr Fraser-Moleketi was Minister for Welfare and Population Development in South Africa's first democratic government and went on to serve as a member of the South African Parliament for three consecutive parliaments (1994 through September 2008).

Some of Chancellor's early achievements include participation in the multi-party negotiation process and as Deputy National Coordinator of the ANC's National Elections Commission ahead of the country's first democratic elections.

Our Chancellor serves on various boards, is a fellow of the Institute of Politics, Kennedy School of Government, at Harvard University, holds a master's degree in administration, and has received several awards, including the OP Dwivedi Public Service Award from the International Association of Schools and Institutes of Public Administration.



**Professor Sibongile Muthwa** is the Vice-Chancellor of Nelson Mandela University. Her second five-year term of office began in April this year.

Professor Muthwa holds a PhD from the School of

Oriental and African Studies, University of London, and an MSc in Development Policy and Planning from London School of Economics and Political Science. The Vice-Chancellor has enjoyed a distinguished career both in South Africa, and internationally, working in both development and public sector institutions, as well as in academia. Between 2010 and 2017 she was the Deputy Vice-Chancellor for Institutional Support, now known as People and Operations, at Nelson Mandela University.

Professor Muthwa served as the Chairperson of Universities South Africa [USAf] a membership organisation representing all South Africa's universities, that promotes and facilitates optimum conditions for universities to operate effectively and contribute to social, cultural and economic development.

She further serves on the Presidential Human Resource Development Council. Prior to joining the University, she served as Director General of the Eastern Cape Provincial Government [2004 and 2010]. Upon her return to South Africa, before joining government, she was Director of the Fort Hare Institute of Government.

She is deeply committed to gender justice, social inclusion and active democratic participation, and accordingly serves on a number of Boards and advisory structures, including from 2014 as a Commissioner of the Financial and Fiscal Commission, and served as its Deputy Chairperson from 2017-2019.

The Nelson Mandela University Council appointed **Ambassador Nozipho January-Bardill** as Chairperson of Council, the institution's highest decision-making body, in October 2017. She is currently serving her second term.

Ambassador January-Bardill's appointment as Council Chair was momentous, as she was the University's first black African female to take up the position.

She is an independent non-executive director of Mercedes Benz SA, the MTN Foundation, and two NGOs, Tshwaranang Legal Services (for women who are victims of gender-based violence) and Phenduka Literacy (for under-educated primary school pupils in Alexandra Township). In 2021 she was appointed to the

Board of Trustees of the United Nations Voluntary Fund for Technical Assistance and the Implementation of the Universal Periodic Report (UPR) in the office of the UN High Commissioner for Human Rights. Her own company Bardill and Associates advises companies on integrating race, gender and sustainable development into their business strategies and building cultures to end sexual harassment, bullying and GBV.

Ambassador January-Bardill served as SA's Ambassador to Switzerland, Lichtenstein and the Holy See as well as Deputy Director General, responsible for Human Resources and the Foreign Service Institute in the South African Department of Foreign Affairs. She was interim Chief of Staff and special advisor to UN Women and the UN Environmental Programme (UNEP) respectively.

Four years as Corporate Affairs Executive at MTN Group, the largest and most diverse mobile telecommunications company in Africa, exposed her to executive leadership in the private sector at home and on the continent, and the challenges of creating a human rights culture in business.

Ethical leadership and governance, social justice and sustainable development are central to her life and work.



# WE ARE NELSON MANDELA UNIVERSITY

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As a socially embedded African university in the service of society, we offer a range of life-changing educational experiences, impactful research and innovation, and transformative engagement.

These academic core missions are rooted in and informed by recent milestones in the University's history, such as the 2017 name change to Nelson Mandela University, the Vice-Chancellor's listening campaign, inaugural and Advancing Mandela addresses, and a transversal organisational redesign process.

We offer quality higher education to nearly 32 000 students across seven campuses, making us the largest university in the Eastern and Southern Cape.

## What we offer

Nelson Mandela University is a comprehensive university that offers both general formative and professionally orientated academic programmes from certificate to doctoral level.

We have a strong track record in both fundamental and applied research, working extensively in partnership with business, industry, government, and civil society. The institution has 500 study programmes across

seven faculties that are internationally recognised and accredited by the relevant professional bodies. State-of-the-art IT services include WiFi connectivity across all campuses and in numerous off-campus facilities, as well as advanced technological resources and digital aids geared to effective in-person and blended modes of learning and teaching.

Along with a first-class academic education, Nelson Mandela University provides students with a vibrant student life beyond the classroom.

## Our campuses

Our seven campuses have a large, ever-increasing footprint, with six in Gqeberha and one in George.

Of these, four are in Summerstrand, one in Bird Street in Central, and one in Missionvale. Our North and South campuses in Summerstrand are located on an 840-hectare private nature reserve.

Our George Campus is on the Garden Route, midway between Nelson Mandela Bay and Cape Town. Set at the foot of the Outeniqua Mountains, our "sustainability" campus is where our ecological footprint meets business acumen for a sustainable future.



## FAST FACTS

**7** **CAMPUSES**  
 North, South, Ocean Sciences, Second Avenue  
 (in Summerstrand) Missionvale (Missionvale), Bird  
 Street (Central), George (George Campus in the  
 Garden Route)



**404**  
**PROGRAMMES**

with headcount enrolments for 2024 thus far (19 March 2024)

**7** **FACULTIES**  
 (Business and Economic Sciences;  
 Education; Engineering, the Built  
 Environment and Technology; Health  
 Sciences; Humanities; Law and Science)



**32 178**  
**HEADCOUNT ENROLMENTS**

**6** **INSTITUTIONAL  
 RESEARCH  
 THEMES**

**2 436**  
**PERMANENT EMPLOYEES**



**STRATEGIC FOCUS AREAS**

  
**640**  
**INTERNATIONAL  
 STUDENTS**



**39**  
**DIFFERENT  
 COUNTRIES**

## REASONS TO BE PROUD

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Various ground-breaking projects, awards and achievements have given Nelson Mandela University and its staff and students reason to be proud, some of which are included below:

### *Winning designs*

Architecture student **Luzuko Funda** won the annual national 2022 Corobrik Student Architecture Awards. He is the fourth winner from Mandela University over the past five years, keeping the tradition strong.



### *Spreading the Mandela brand*

Social media is positively extending and entrenching the Mandela University brand as confirmed by the University's success as a winner of the **International Digital Communication Awards**.

Sharing the joys of this year's Autumn Graduation season, the institution's Communication and Marketing department substantially exposed the Mandela University brand into Africa and internationally to win the small budget campaign category.

Its social media posts were displayed over 15.5 million times to users (up by 112%) and generated over 1.9 million engagements (up by 348%) compared with 2022. Its video views grew by 678% to over 4.1 million.

Three of its Facebook videos had over 1.5 million impressions, with one reaching 4.7 million impressions and over 900 000 engagements, while one on Instagram had over a million impressions.

## **Science achievers**

**Professor Janine Adams** (left image) and doctoral student **Carla Dodd** (right image) both received recognition for their groundbreaking water research at the South African Women in Science Awards ceremony.

Professor Adams, who holds the DSI/NRF Research Chair for Shallow Water Ecosystems and is deputy director for the Institute for Coastal and Marine Research, is the winner of the DSI Distinguished Woman Researcher in Natural Science and Engineering.

Carla, a doctoral student in Geosciences, was awarded the DSI-Ndoni Mcunu Fellowship: Doctoral Award for her pioneering research on groundwater resources.



## **A medical school making a difference**

Our programme to train MBChB graduates in Gqeberha is the first and only medical school in the western part of the province. Intentionally anchored in Missionvale to engender urban renewal and regeneration, it is set to make a tangible contribution

to building capacity for accessible healthcare service delivery through its emphasis on primary health care.



## **Ocean Sciences: Growing the blue economy**

Nelson Mandela University has embraced the United Nations declaration of the Decade of Ocean Science for Sustainable Development from 2021 to 2030.

With South Africa's coastline spanning approximately 3000km and bordered by three oceans, the University is perfectly placed to contribute to and benefit from this blue decade.

Nelson Mandela University has developed a range of ocean sciences education and training, research, innovation and engagement programmes to support the blue economy nationally and on the African continent. Nelson Mandela University was ranked as the top institution in South Africa for UN Sustainable Development Goal Four: Life Below Water in 2022.



Our overarching ocean sciences strategy is underpinned by the following objectives:

- Advancing inter- and transdisciplinary synergies to promote learning, teaching, research, innovation and engagement “where art meets science”
- Promoting social, economic, and environmental sustainability
- Developing and maintaining mutually beneficial and collaborative partnerships with civil society, industry, government, and other postschool educational institutions nationally and internationally
- Positioning the University to be a destination of choice for ocean sciences nationally and on the African continent.

[See more on Ocean Sciences at Mandela.](#)

### ***Ocean Sciences awards***

Nelson Mandela University has won five national and international infrastructure awards for the new extensions to its Ocean Sciences Campus in Summerstrand.

The University’s new triple-storey E Block with its aesthetically appealing, dedicated research spaces, specialised laboratories and signature dive tank, received high praise from judges in four competitions recently.

Infrastructure services and space optimisation deputy director Graham Gouws said as the only higher education institution in SA with a dedicated ocean sciences campus, Mandela University was home to a range of ocean sciences education and training, research, innovation and engagement programmes.

“These awards speak to our commitment to advance our scientific contribution to ocean sciences globally by developing fit-for-purpose spaces that meet this need,” Gouws said.

The new R54m wing built from department of education funding is part of the University’s commitment to the United Nations’ sustainability development goals relating to the sea.





## ***State-of-the-art Science Centre***

The University's new Science Centre, on its Ocean Sciences Campus, will serve as a dynamic education hub catering to learners, students, scholars, academics and the wider public.

The state-of-the-art Centre, which was officially launched by the Minister of Higher Education and Training Professor Bonginkosi Emmanuel Nzimande on 15 March this year, was established as an expression of Nelson Mandela University's commitment as an engaged institution.

The R54-million building, funded by the Department of Higher Education and Training's Infrastructure Efficiency Grant, is dedicated to using its resources, platforms, students, and staff in pursuit of building a learning society that embraces social justice.

In short, the University is set on making science accessible to the public. It's here, in what is the most sophisticated digital dome of its kind in the country to date, that scientists will share complex concepts with the public, engage in discussions

and host interactive exhibitions and conferences. The centrepiece, a 15-metre digital dome/auditorium, offers a unique immersive space for learning and visualising spatial models in an engaging and entertaining format. It is akin to an IMAX theatre, but on a grander scale, fully enveloping the viewer.

School learners who visit will enjoy a comprehensive tour, including a fully immersive show featuring videos showcasing topics such as life underwater or the potential for life in outer space.

## ***Pioneering inclusive education with coding programme for the digital age***

Mandela University is at the forefront of inclusive education and coding through its pioneering initiative, the Tangible Africa programme, which began in 2017 as a mobile app developed at the institution.

Computer Science student Byron Batteson's honours project has morphed into today's programme that transforming the educational landscape by empowering disadvantaged students to take up successful careers in coding.

In today's increasingly digital world, coding plays a central role in our lives, with the demand for online solutions, applications, and digital innovations skyrocketing. As the digital age advances, the role of software developers in shaping our future becomes indispensable.

Professor Jean Greyling, Head of the Department of Computing Sciences at Nelson Mandela University and the Tangible Africa Programme Founder, says: "While technologies like ChatGPT and AI are enhancing productivity, they will never replace the problem-solving abilities of skilled software developers."

He says software development is essential for a nation's innovation capacity, with many South African software companies exporting their products to Europe and America.

However, South Africa faces several challenges in promoting coding education. Over 16 000 schools lack computer labs, and many of the existing labs are non-functional. The shortage of qualified coding teachers compounds the issue, and there is a diminishing pool of matric learners with strong mathematical abilities - a critical prerequisite for coding.

Mandela University, through its Tangible Africa Programme, is addressing these challenges head-on. Launched in 2017, this initiative uses innovative methods to teach coding concepts, even in settings without access to computers, the internet, or electricity. Learners work collaboratively, solving challenges using physical puzzle pieces, thereby developing critical problem-solving skills.

The Tangible Africa Programme focuses on specific domains such as game poaching (RANGERS) and marine themes (BOATS), making coding education more engaging and accessible to diverse groups of students. New domains that will be introduced soon will be soccer and Formula 1 racing.

To date over 30000 teachers and other facilitators have been trained across Africa, and now also Europe. More than 100 000 learners benefitted from the programme, thanks to the collaboration with the Leva Foundation to address educational gaps and foster job creation and entrepreneurship.

"We are changing the African narrative. A product made in Africa for Africa is now being used in Africa and beyond," says Prof Greyling.



## OUR HISTORY

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The former institution was formed in 2005 as a result of the merging of the PE Technikon, the University of Port Elizabeth and the Port Elizabeth campus of Vista University (Vista PE).

The PE Technikon has its roots in the country's oldest art school, the PE Art School founded in 1882; the University of Port Elizabeth (UPE), the country's first dual-medium residential university, came into being on 31 January 1964; and the Port Elizabeth campus of Vista University, which opened up access to higher education for disadvantaged students.

The union of these institutions was part of countrywide restructuring of higher education, intended to deliver

a more equitable and efficient system to meet the needs of South Africa, the continent and the world in the 21st century. Founded on more than a century of quality higher education, Nelson Mandela University nurtures innovation, fosters creativity, embraces technology and develops people to meet the challenges of tomorrow.

Today, Nelson Mandela University is the only university in the world to carry the name of Nelson Rolihlahla Mandela, is a sought-after educational destination and the most diverse university in South Africa.

A full history of the institution is available on our website, along with insights into our namesake.



# Office-Bearers of the University

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## **CHANCELLOR**

Dr GJ Fraser-Moleketi: MAdmin (*Cum Laude*) (UP), DPhil (*honoris causa*) (Nelson Mandela University), DPhil (*honoris causa*) (NWU)

## **CHAIRPERSON OF COUNCIL**

Ambassador NP January-Bardill: BA, Cert in Ed (UBL), MA (Essex University, UK), Dip HR Management (Damelin) Doctor of Laws (*honoris causa*) (Glasgow Caledonian University)

## **VICE-CHANCELLOR**

Prof SW Muthwa: BA (SW) (Fort Hare), BA (SW) Hons (Wits), MSc, PhD (London University, UK)

## **DEPUTY VICE-CHANCELLOR: ENGAGEMENT AND TRANSFORMATION**

Prof A Keet: BA, HDE, BEd, MEd (*Cum Laude*) (UWC), PhD (Edu Manag, Law and Policy) (UP)

## **DEPUTY VICE-CHANCELLOR: LEARNING AND TEACHING**

Dr SF Moeng: BA, HDE, BEdHons (UPE), MSc (St Cloud State University, USA), DEd (NMMU)

## **DEPUTY VICE-CHANCELLOR: PEOPLE AND OPERATIONS**

Mr LP Jack: NDip (PMA) (EC Technikon), BTech (PM) (PET), BAPhil (US), MCom (UKZN)

## **DEPUTY VICE-CHANCELLOR: RESEARCH, INNOVATION AND INTERNATIONALISATION**

Prof HR Lloyd (Acting): BCom (UPE), BComHons (UPE), MCom (UPE), DCom (UPE)

## **DEAN OF STUDENTS**

Dr BK Sebake (Acting): NDip (PM) (TUT), BTech (PM) (UNISA), MTech (PM) (TUT), D (PA) (Monitoring and Evaluation) (TUT)

## **EXECUTIVE DIRECTOR: FINANCE**

Mr MR Monaghan: BCom (UPE), BComHons (UNISA), Professional Accountant (SA)

## **REGISTRAR**

Mr EB De Koker: BA (UCT), BAHons (UNISA), MA (Pub Admin) (University of Warwick, UK)

## **PRESIDENT OF ALUMNI ASSOCIATION**

Mr S Hlwatika: LLB (NMMU), PGDip (Labour Law Practice), LLM (Labour Law) (Nelson Mandela University)

# Executive Deans of Faculties

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## **BUSINESS AND ECONOMIC SCIENCES**

Prof MR Mey (Acting): NH Dip (Mgt Prac) (PET), BCom (UPE), BCom Hons (UNISA), MTech (PET), DTech (HRM) (NMMU), MIPM, RPP

## **EDUCATION**

Prof HH Sathorar (Acting): BCom, HDE (*Cum Laude*), BEd Hons (*Cum Laude*) (UPE), MBA (*Cum Laude*) (NMMU), PhD (Nelson Mandela University)

## **ENGINEERING, THE BUILT ENVIRONMENT AND TECHNOLOGY**

Prof M Sheldon: BTech BA, DEng (Chemical Engineering) (CPUT), Pr Tech Eng

## **HEALTH SCIENCES**

Prof Z Zingela: MBChB (Natal), FCPsych (SA), MMed (UP), PhD Psychology (Nelson Mandela University)

## **HUMANITIES**

Prof P Maseko: BA, BAHons (UWC), MA, PhD, PGDip in Higher Ed (RU)

## **LAW**

Dr L Biggs: BCom (Law), LLB (UPE), LLM (Labour Law) (*Cum Laude*), LLD (NMMU)

## **SCIENCE**

Prof ZR Tshentu (Acting): BScHons (UPE), MSc (UPE), PhD (NMMU)

## **DEAN OF LEARNING AND TEACHING**

Dr P Kota-Nyati: BA (Vista), BAHons, MA Couns Psych (UPE), DPhil (Nelson Mandela University)

# Order of Proceedings

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## **Entrance of Academic Procession**

## **Moment of Silence**

## **Constitution of Congregation and Welcome**

Vice-Chancellor

## **Choral Item**

Nelson Mandela University Choir

## **Awarding of Qualifications**

Vice-Chancellor

## **Conferring of Doctoral Degrees**

Vice-Chancellor

## **Message of Congratulations and Dissolution of Congregation**

Vice-Chancellor

## **National Anthem**

(The congregation is requested to stand for the singing of the National Anthem)

## **Departure of Academic Procession**

(The congregation is requested to remain standing until the academic procession has left the hall)

\* The words *Cum Laude* indicate that the diploma or degree is awarded with distinction to the candidate/s

## **FACULTY OF SCIENCE**

### **DIPLOMA IN AGRICULTURAL MANAGEMENT**

BOPI, Lisakanya  
DAVEY, Kyle  
DLAMINI, Yamkela  
HLUNGWANE, Thamsanqa Colbin  
JOHN, Mzoxolo  
MAGXAGXA, Zilungile  
MAHAMBA, Sbabalo  
MAJAMBE, Bulela  
MALIYAKHE, Esethu  
MALUNGA, Thembalihle  
MATOLENGWE, Ikhona  
MAVUNDLA, Sphephelo Njabulo  
MENGCANE, Azola  
MLAMBO, Angel Noxolo  
MOSHITWA, Legwadi Mmathapelo  
MPHAFI, Manyane  
MPHAHLELE, Tirelo  
MQOQI, Sive  
MROQOZA, Sanele  
MSOTYANA, Sinovuyo Mhlali  
MSWELI, Samukelisiwe  
MTEMBU, Lonwabo  
MTHETHO, Zandile  
MTSHOTSHISA, Onaso  
NDABENI, Lonwabo Sinokuhle  
NDWANDWA, Ongezile  
NGUBANE, Andisumoyomuhle Ntombizengcebo  
NKONQA, Balungile  
NYANISO, Sqhamo  
RAMABULANA, Livhuwani  
RESHA, Vuyo  
SHONGWE, Njabulo  
SIBUYA, Nonduduzo  
VAN BILJON, Johan André  
ZENYA, Ayabonga

### **DIPLOMA IN ANALYTICAL CHEMISTRY**

BALOYI, Rifuwo Fortune  
GUDE, Sikhona  
HLOMA, Alicia Zandile  
JARA, Sipehelele  
KHABINGESI, Esona  
KHOZA, Thembi Tinyiko  
KITCHEN, Odwa  
MALI, Chulumanco  
MASOKA, Inga Sanelisiwe  
MOLOKO, Koketso Charmaine  
NAMA, Pilani  
NGWENYA, Nokulunga  
NJAJULA, Apehelele  
NQUMA, Zukhanye

QOKOSE, Yamkela  
SIKO, Sizukise  
SIPINGO, Mbasa  
SITHOLE, Apehelele  
STAMPER, Sibabalwe  
VINJWA, Moeketsi  
WAITE, Kendre

### **DIPLOMA IN CHEMICAL PROCESS TECHNOLOGY**

JUSSON, Giovanni  
LEKGOATHI, Jessica  
MDLULI, Andiswa

### **CUM LAUDE**

MOSIKILI, Jerry  
MOTLHAPING, Natasjha Kegomoditswe

### **DIPLOMA IN GAME RANCH MANAGEMENT**

CRONJE, Johan  
EKSTEEN, Ruben Brink  
ESTERHUIZEN, Carla  
FRANCIS, Nicholas Robert  
LOMBARD, Nico  
MOSIPA, Kgalalelo  
NGENO, Amanda  
NGOMANE, Sthembiso  
NGUMLA, Liyabona  
NJANI, Yamkela  
NKHUNA, Grace Gontse  
PRETORIUS, Luke Ray  
PRINCE, Gabriella Duscha  
REDHEAD, Hayden Redhead  
SGWABE, Ayabulela Ntombikayise  
VAN DER MERWE, Johannes

### **DIPLOMA IN POLYMER TECHNOLOGY**

BASSON, Hank Joseph  
MAGQABI, Luvo  
MATSHA, Neliswa  
SIWISA, Lutho

### **ADVANCED DIPLOMA IN AGRICULTURAL MANAGEMENT**

BOMELA, Sivuyile  
BUWA, Sesethu  
DLUDLA, Nunekazi  
MAAKE, Thabile Mokgadi  
MKHWAMBI, Anathi  
MLUNGUZA, Lithe-Thaa  
MSOMI, Londeka Hlengiwe  
NOGWAVU, Thandokazi

NTSENDWANA, Lulutho

### **ADVANCED DIPLOMA IN ANALYTICAL CHEMISTRY**

LE ROUX, Cuwan Juadean  
NTSHEYIYA, Baxolise  
NZIMENI, Anele

### **ADVANCED DIPLOMA IN GAME RANCH MANAGEMENT**

BREEDT, Suede  
MBIYOZO, Ophola Likhona  
PALOS, Christopher Demetri  
RAMUPFUMEDZI, Mulalo  
RAPHIRI, Kamogelo

### **BACHELOR OF SCIENCE**

BASSETT, Pierre Ivan  
BHANI, Apelele  
BIRCH, Joshua  
BITTERHOUT, Olwethu Mike  
BLIGNAUT, Venessa  
BOOI, Kamvelihle  
BOOLSEN, Ilze  
BOOYSEN, Tammi  
BROOKS, Junaid  
CEBANI, Siviwe Ridge  
CHEMALY, Sean Alicia  
CHERERA, Amos Tendai  
DA SILVA FERREIRA, Steve Antonio  
DE BEER, Bianca  
DE LANGE, Ankia  
DE LANGE, Erik Albert  
DOWELANI, Khumbelo Shaun  
DU PREEZ, Jade Kimberley  
DUNA, Sinegugu Thina  
DWYER, Cameron Nicolas  
FON, Mofor Achiri Anyim  
FORTUNE, Bethany  
GALLANT, Courtney Candice  
GAMBU, Sibusiso Jeffry  
GLUCK, Nicole  
GOUS, Simone  
GOUWS, Keanu  
GREAVES, Joel  
GROENEWALDT, Jaime-Lee  
HAUPT, Danielle  
IVERSON, Jeff Graeme  
JACOBS, Aimee  
KALIPA, Simamkele  
KOM, Thabasande Asathabile  
LAUBSCHER, Lunen  
LE GRANGE, Dylan Mark

LUKHWARENI, Achibold Thanyani  
MACAKATI, Lwando  
MADIKANE, Hlumelo  
MAGADA, Athenkosi  
MAMPHWE, Lavhelesani Theodore  
MASOABI, Matseliso Florina  
MATISO, Malibongwe Mthawelanga  
MAYOLI, Simamkele  
MBAMBELA, Pamela  
MDLOKODLA, Sisipho  
MENERA, Leslie  
MLOZANA, Yibanathi  
MNYAMANA, Sindile  
MODISE, Remoneilwe Hope  
MOLOSI, Dimpho Kebaabetswe  
MOOLMAN, Reinier Dewald  
MPETA, Lilitha Chuleza  
MPETSHENI, Bongile  
MPHELA, Makgogo  
MPOFU, Mpho Mihle  
MURGER, Mai-Linh  
MVAMBI, Vuyolwetu  
NDLUNGWANE, Esethu  
NEL, Sidney-Shae  
NEMAHUNGUNI, Rendani Hope  
NKADIMENG, Lethabo Paulinah  
NOMANKONYANA, Anati Pamela  
OMARJEE, Shandre Ashlee  
OOSTHUIZEN, Johannes Gerhardus  
PAGE, Joshua  
PERILS, Kiara Camryn  
PETER, Sibulele  
PHIRI, Mitchell  
PLAATJIES, Tazlynn Danielle  
RAMONYADIWA, Tshepang  
RERANI, Munzhedzi  
RHEEDER, Carolyn  
ROBERTS, Jessica  
RWAXA, Nkululeko  
SANDI, Aphiwe  
SESING, Keitumetse Gabonthone  
SIDONDI, Buchule  
SOFUTHE, Athobe  
STOLK, Mariska  
SUBBARAMONEY, Veroshen  
TALJAARD, Belinda  
THOMAS, Zoë  
TIBENDA, Jolyne Kokubanza  
TOM, Phumelele  
TWAYISE, Xola  
VAN DER WAT, Jenice  
VAN DER WATT, Anje  
VAN DYK, Rika  
VAN ROOYEN, Erin  
VAN ROOYEN, Ruan  
VAVA, Anathi



VOLINYE, Aseza  
VOLKWYN, Ashton Kayla  
VORSTER, Daniel Gareth  
WATKINS, Caitlin Leigh  
WATKINS, Heath Richard  
YALO, Feziwe  
ZONDI, Luthando

**CUM LAUDE**

MENENDEZ BOLIO, Maria Anunziata  
THERON, Ashley Jade  
WAGNER-WELSH, Tamaryn

**BACHELOR OF ARTS HONOURS IN GEOGRAPHY**

MBELE, Kuhlekonke

**BACHELOR OF COMMERCE HONOURS (COMPUTER SCIENCE AND INFORMATION SYSTEMS)**

MTHEMBU, Sithuliswa Mpendulo  
PALACIOS-RICALDI, Maria Teresa Limay  
RASHETLE, Kgopotso Lawnde

**BACHELOR OF COMMERCE HONOURS (INFORMATION SYSTEMS AND BUSINESS MANAGEMENT)**

**CUM LAUDE**

FANG, Yu-Qing

**BACHELOR OF SCIENCE HONOURS IN BIOCHEMISTRY**

CONWAY, Emma-Jade  
JACOBS, Carmen  
OOSTHUYSEN, Chenaè  
UZODIMMA, Ada Rita

**CUM LAUDE**

BOOYSEN, Lauren Allison  
HARRIS, Finn Mae

**BACHELOR OF SCIENCE HONOURS IN BOTANY**

DAVIDS, Shabeer  
DE CONING, Lyle  
MANZINI, Kuhle  
MANZIYA, Mila  
OWNHOUSE, Cassidi  
RASALANAVHO, Tshianeo  
UNGERER, Jonathan Luke

**CUM LAUDE**

LIBERTY, Margeaux Elizabeth  
TEIFEL, Jennifer

**BACHELOR OF SCIENCE HONOURS IN CHEMISTRY**

FRIEND, Maryke  
GROBBELAAR, Mari  
JOSEPHS, Shane Charles  
KOTA, Siphosethu  
MAHLAKA, Ndiphiwe  
NDEVU, Sinovuyo  
RAMAKATSA, Kedibone Francina  
TAFENI, Lindelani

**CUM LAUDE**

BOTHA, Karla  
ELS, Liesl  
TUCK, Reece Leighton

**BACHELOR OF SCIENCE HONOURS IN COMPUTER SCIENCE AND INFORMATION SYSTEMS**

ANDREWS, Sherwin Ruben  
ERASMUS, Dean  
NGCASANE, Simamkele  
PERRY, Keegan Kyle  
VOCKERODT, Timothy John

**CUM LAUDE**

MTILENI, Tlangelani  
MUSEMESI, Tadiwanashe Gilton

**BACHELOR OF SCIENCE HONOURS IN ENVIRONMENTAL GEOGRAPHY**

BOOYSEN, Jemma Abigail  
MNDawe, Kenny Johnson  
MUNZHELELE, Lufuno  
NTSHIBA, Ongama Mhlahi  
NYERE, Nicole Tadiwanashe  
ODAYAR, Luneshri  
PUTYE, Sinovuyo  
TSHELOANE, Aobakwe Abigail

**BACHELOR OF SCIENCE HONOURS IN FORMULATION SCIENCE**

MAZIBUKO, Nelisiwe Ignatia  
MBATHA, Phiwokuhle Nothando

**BACHELOR OF SCIENCE HONOURS IN  
GEOGRAPHICAL INFORMATION SYSTEMS**

MC CABE, Jeremiah  
MPHEPHU, Konanani Innocent  
VUMAZONKE, Avukonke

**BACHELOR OF SCIENCE HONOURS IN  
GEOLOGY**

BOTHA, Meaghan Cathrine  
DAVIDS, Nathanael  
KALIMASHE, Qhama  
MASHABA, Silingene  
MOJAKI, Thabang Ofentse  
MUNYAI, Tshilidzi

**BACHELOR OF SCIENCE HONOURS IN  
MATHEMATICAL STATISTICS**

DLAVU, Momelezi  
JEZI, Aphelele  
MTHETHO, Maria  
RUBUSHE, Bathandwa

**BACHELOR OF SCIENCE HONOURS IN  
MATHEMATICS**

***CUM LAUDE***

HILL, Derick Gerald  
SCHULTZ, Heinrich Kleyn

**BACHELOR OF SCIENCE HONOURS IN  
MICROBIOLOGY**

BOSHOFF, Done Nicole  
FERREIRA, Bridget  
GREGORIOU, Nicholas

**BACHELOR OF SCIENCE HONOURS IN  
PHYSICS**

NAIDOO, Sameshveran Vernu

***CUM LAUDE***

BADENHORST, Madeleine Monique

**BACHELOR OF SCIENCE HONOURS IN  
PHYSIOLOGY**

BOUCHAREB, Djamila  
JOHNSON, Lerise Marion  
KHOSA, Vutomi Hazel  
KULATI, Hlumelo  
MBUMBULWANA, Anele Onica  
MULAUDZI, Tsumbedzo Primerose

**BACHELOR OF SCIENCE HONOURS IN  
ZOOLOGY**

FERRARIS, Natalie  
MATTHEWS, Ruth Elsie  
VAN WYNGAARDT, Bronwyn

***CUM LAUDE***

VERSTER, Minyonne

## MASTER OF COMMERCE (RESEARCH)

MABIZA, Priviledge  
(Computer Science and Information Systems)

Title of dissertation:  
A COMPARISON OF IMPLEMENTATION PLATFORMS FOR THE VISUALISATION OF ANIMAL FAMILY TREES

Supervisor: Dr AV van der Hoogen  
Co-supervisor: Prof AP Calitz

---

TALJAARD, Isabelle  
(Computer Science and Information Systems)

Title of dissertation:  
A PROCESS FOR INTEGRATED FITNESS AND MENSTRUAL CYCLE DATA VISUALISATIONS

Supervisor: Prof BM Scholtz

---

## MASTER OF SCIENCE (RESEARCH)

ACKERDIEN, Shiraz - **Cum Laude**  
(Physiology)

Title of dissertation:  
IL-4/IL-13 DIRECTED MICROGLIAL ACTIVATION AND DIFFERENTIATION IN RESPONSE TO LPS-INDUCED NEUROINFLAMMATION

Supervisor: Dr DC Ajonijebu  
Co-supervisor: Prof GB Dealtry

---

ADAM, Muhammad Ameen - **Cum Laude**  
(Chemistry)

Title of dissertation:  
INVESTIGATION OF THE HOST POTENTIAL OF COMPOUNDS DERIVED FROM TARTARIC ACID, SUCCINIC ACID AND 1,4-CYCLOHEXANEDIOIC ACID

Supervisor: Prof B Barton

---

BOTHA, Bouwer - **Cum Laude**  
(Computer Science and Information Systems)

Title of dissertation:  
SELF-ATTENTIVE VISION IN EVOLUTIONARY ROBOTICS

Supervisor: Prof MC Du Plessis

---

BOTHA, Susanna Gertruida  
(Physiology)

Title of dissertation:  
AN IN VITRO EVALUATION OF THE ANTI-BREAST CANCER ACTIVITY OF NIGELLA SATIVA EXTRACTS AND ITS BIOACTIVE COMPOUND IN COMBINATION WITH CURCUMIN

Supervisor: Prof H Davids  
Co-supervisor: Dr M Pereira

---

CUTHBERTSON, Jarryd Pierre - **Cum Laude**

(Chemistry)

Title of dissertation:

*THE INVESTIGATION OF THE SYNTHESIS AND CHARACTERISATION OF SPIRO-ORTHO-CARBONATES AND HETEROCYCLIC ORTHO-CARBONATES*

Supervisor: Dr R Betz

---

DAVIS, Kristen - **Cum Laude**

(Zoology)

Title of dissertation:

*THE CAMDEBOO-MOUNTAIN ZEBRA MEGA-RESERVE AS AN OPPORTUNITY TO PROTECT VIABLE POPULATIONS OF MEDIUM- TO LARGE-SIZED MAMMALS*

Supervisor: Prof GIH Kerley

---

DREYER, Nicola Bondi - **Cum Laude**

(Zoology)

Title of dissertation:

*THE DEMOGRAPHIC-SPECIFIC PREY PREFERENCES OF LIONS AND CHEETAHS, AND POTENTIAL IMPACTS ON PREY POPULATIONS*

Supervisor: Prof GIH Kerley

Co-supervisor: Dr L Minnie

---

EVERS, Emma Else Maria - **Cum Laude**

(Zoology)

Title of dissertation:

*EVALUATING ELEPHANT, LOXODONTA AFRICANA, SPACE-USE AND ELEPHANT-LINKED VEGETATION CHANGE IN LIWONDE NATIONAL PARK. MALAWI*

Supervisor: Prof GIH Kerley

Co-supervisor: Dr A Gaylard

---

FANG, Bobby

(Computer Science and Information Systems)

Title of dissertation:

*AUGMENTING THE MOORE-PENROSE GENERALISED INVERSE TO TRAIN NEURAL NETWORKS*

Supervisor: Prof MC Du Plessis

---

FORBES, Ryan Edward - **Cum Laude**

(Zoology)

Title of dissertation:

*LION AND LEOPARD DIET AND DISPERSAL IN HUMAN-DOMINATED LANDSCAPES*

Supervisor: Prof GIH Kerley

Co-supervisor: Dr K Everatt

Co-supervisor: Prof G Sprong

---

HALVEY, Andrew Lloyd

(Botany)

Title of dissertation:

*ELEPHANT IMPACTS ON PLANT DIVERSITY AND STRUCTURE IN THE SHAMWARI PRIVATE GAME RESERVE*

Supervisor: Prof EE Campbell

Co-supervisor: Dr JW O'Brien

---

HIBBERS, Ilze

*(Computer Science and Information Systems)*

Title of dissertation:

*A MODEL FOR MEASURING AND PREDICTING STRESS FOR SOFTWARE DEVELOPERS USING VITAL SIGNS AND ACTIVITIES*

Supervisor: Prof JL Wesson

---

HUNT, Kristen Louise

*(Botany)*

Title of dissertation:

*EXPLORING THE ROLE OF HERBIVORY IN ALBANY SUBTROPICAL THICKET RESTORATION*

Supervisor: Prof AJ Potts

Co-supervisor: Dr M Landman

---

JACOBS, Ashleigh - **Cum Laude**

*(Physiology)*

Title of dissertation:

*COMPARATIVE STUDY OF THE EFFECT OF ILOPROST ON NEUROINFLAMMATORY CHANGES IN C8-B4 MICROGLIAL CELLS AND MURINE MODEL OF TRYPANOSOMIASIS*

Supervisor: Dr DC Ajonijebu

Co-supervisor: Prof GB Dealtry

---

KOTZE, Tyla - **Cum Laude**

*(Chemistry)*

Title of dissertation:

*PREPARATION AND INVESTIGATION OF COUMARIN-BASED CHEMOSENSORS TOWARDS SENSING OF IONS USING UV STUDIES IN AQUEOUS SYSTEMS.*

Supervisor: Dr N Mama

---

MAGAYA, Aphiwe

*(Mathematical Statistics)*

Title of dissertation:

*STATISTICAL LEARNING METHODS FOR PHOTOVOLTAIC ENERGY OUTPUT PREDICTION*

Supervisor: Dr CM Clohessy

Co-supervisor: Dr WJ Brettenny

---

MALGRAFF, Maxine

*(Computer Science and Information Systems)*

Title of dissertation:

*A METHODOLOGY FOR MODERNISING LEGACY WEB APPLICATIONS*

Supervisor: Prof AP Calitz

Co-supervisor: Prof BM Scholtz

---

MAQHUBELA, Akhona

*(Geology)*

Title of dissertation:

*DEVELOPMENT OF A NUMERICAL GEOHYDROLOGICAL MODEL FOR A FRACTURED ROCK AQUIFER IN THE KAROO. NEAR SUTHERLAND. SOUTH AFRICA*

Supervisor: Dr G Mahed

---

MOKGOHLOA, Mathule Collen - **Cum Laude**

(Chemistry)

Title of dissertation:

DEVELOPMENT OF THE ZIRCONIUM-BASED METAL-ORGANIC FRAMEWORK UIO-66 FOR ADSORPTION-MEDIATED ELECTROCHEMICAL SENSING OF ORGANONITROGEN COMPOUNDS IN FUELS

Supervisor: Dr AS Ogunlaja

---

MUTUBUKI, Arnold - **Cum Laude**

(Physics)

Title of dissertation:

DEVELOPMENT OF TiO<sub>2</sub> NANOSTRUCTURES WITH A MODIFIED ENERGY BAND GAP FOR HYDROGEN EXTRACTION

Supervisor: Prof JR Botha

Co-supervisor: Dr NJ Suliali

---

MYBURGH, Lisa - **Cum Laude**

(Chemistry)

Title of dissertation:

SYNTHESIS AND APPLICATIONS OF NOVEL COUMARIN-BASED CHEMOSENSORS FOR THE DETECTION OF METAL IONS USING UV-VISIBLE SPECTROSCOPY

Supervisor: Dr N Mama

---

NDOTO, Asiphe

(Botany)

Title of dissertation:

COMPARING STABLE ISOTOPE RATIOS AND METAL CONCENTRATIONS BETWEEN COMPONENTS OF THE BENTHIC FOOD WEB: A CASE STUDY OF THE SWARTKOPS ESTUARY, SOUTH AFRICA

Supervisor: Dr LRD Human

Co-supervisor: Dr GM Rishworth

Co-supervisor: Dr A Ndhlovu

---

NTSONDWA, Asithandile

(Botany)

Title of dissertation:

RECONSTRUCTING THE FIRE HISTORY AND PALAEOENVIRONMENT AT THYSPUNT, SOUTHERN CAPE COAST, EASTERN CAPE

Supervisor: Dr LJ Quick

Co-supervisor: Dr S Manzano

Co-supervisor: Prof MS Humphries

---

NYAWENI, Fundile Sindy

(Applied Mathematics)

Title of dissertation:

MATHEMATICAL MODELLING OF THE TUMOUR TREATMENT WITH CHEMOTHERAPY

Supervisor: Dr W Mbava

---

PULLEN, Luchian Charton Morne

(Physics)

Title of dissertation:

DISLOCATION IMAGING IN AISI316L STAINLESS STEELS USING ELECTRON CHANNELLING CONTRAST IMAGING

Supervisor: Dr JE Westraadt

Co-supervisor: Dr VNT Vilane

---

RAMUHOVHI, Dakalo Ndivhuwo Stella

*(Geography)*

Title of dissertation:

QUANTIFYING THE IMPACT OF THE SPATIO-TEMPORAL VARIABILITY OF LAND USE/LAND COVER ON SURFACE RUN-OFF GENERATION AND GROUNDWATER RECHARGE IN THE LUVUVHU RIVER CATCHMENT AREA AS A STUDY AREA

Supervisor: Dr HW Britz

---

ROODT, Roelof Petrus

*(Physics)*

Title of dissertation:

PHOTOLUMINESCENCE AND ELECTROLUMINESCENCE IMAGING OF PV DEVICES

Supervisor: Prof EE van Dyk

Co-supervisor: Dr JL Crozier-McClelland

Co-supervisor: Dr RM Dix-Peek

---

RUDOLPH, Carlen

*(Biochemistry)*

Title of dissertation:

THE EFFECTS OF SELECTED SAMPLES ON THE BIO-STIMULATORY CAPACITY AND ANTI-AGING EFFECTS OF RED LIGHT ON HUMAN SKIN CELLS

Supervisor: Prof M van de Venter

Co-supervisor: Dr TC Koekemoer

---

TISSINK, Kade Devan - **Cum Laude**

*(Computer Science and Information Systems)*

Title of dissertation:

AUGMENTING ENCODER-DECODER NETWORKS FOR FIRST-ORDER LOGIC FORMULA PARSING USING ATTENTION POINTER MECHANISMS

Supervisor: Prof MC Du Plessis

---

TSEDU, Rinae

*(Geography)*

Title of dissertation:

EVALUATION OF ROAD SURFACE DISTRESSES USING GPS AND GIS TECHNIQUES: A CASE STUDY OF THE CITY OF JOHANNESBURG. SOUTH AFRICA

Supervisor: Dr HW Britz

---

VORGERS, Jarryd Allister - **Cum Laude**

*(Chemistry)*

Title of dissertation:

THE HOST POTENTIAL OF WHEEL-AND-AXLE POLYAROMATIC COMPOUNDS

Supervisor: Prof B Barton

---

WALKER, Tegan - **Cum Laude**

*(Zoology)*

Title of dissertation:

TROPHIC ECOLOGY AND BREEDING SUCCESS OF BROWN SKUAS (CATHARACTA ANTARCTICA)

Supervisor: Dr MA Connan

Co-supervisor: Prof PA Pistorius

Co-supervisor: Prof PG Ryan

---

WILLIAMS, Aarifah  
(Geology)

Title of dissertation:

*SPATIOTEMPORAL RECHARGE DETERMINATION IN RESPONSE TO EPISODIC RAINFALL EVENTS WITHIN THE CENTRAL KAROO, SOUTH AFRICA*

Supervisor: Dr G Mahed

---

**MASTER OF SCIENCE IN NANOSCIENCE (COURSEWORK)**

MUDAU, Rendani Julian

Title of treatise:

*PHOTOCATALYTIC REDUCTION OF CO<sub>2</sub> INTO GREEN FUELS ON MICROSPHERICAL NANOCOMPOSITES COMPRISING OF CDS, TiO<sub>2</sub>, ZNF<sub>2</sub>O<sub>4</sub> SEMICONDUCTORS AND HETEROJUNCTIONS*

Supervisor: Dr AS Ogunlaja  
Co-supervisor: Dr AT Gordon

---

NGWATO, Anacia - **Cum Laude**

Title of treatise:

*INVESTIGATING THE ANTI-INFLAMMATORY EFFECT OF BLUEBERRY-AUNP ON MICROGLIAL CELLS AND OBESE RAT BRAINS*

Supervisor: Prof S Roux  
Co-supervisor: Dr DC Ajonijebu

---



**DOCTOR OF PHILOSOPHY**

DODD, Carla

*(Geology)*

Title of thesis:

*THE ALGOA BAY REGION GROUNDWATER CYCLE-LINKING SOURCE TO COAST*

Supervisor: Dr GM Rishworth  
Co-supervisor: Dr HC Cawthra  
Co-supervisor: Prof G Massmann

---

HAMUKOSHI, Simeon Shiweda

*(Chemistry)*

Title of thesis:

*SYNTHESIS AND APPLICATIONS OF HYDROXYLFUNCTIONALIZED CHEMOSENSORS FOR SELECTIVE DETECTION OF IONS IN AQUEOUS SYSTEMS*

Supervisor: Dr N Mama  
Co-supervisor: Prof V Uahengo

---

MABUTO, Manuela Elisa Manuel Amone

*(Botany)*

Title of thesis:

*SEAGRASSES IN MOZAMBIQUE: DISTRIBUTION, PEOPLE'S PERCEPTIONS AND RESTORATION BEST PRACTICE*

Supervisor: Prof JB Adams  
Co-supervisor: Prof S Bandeira  
Co-supervisor: Prof J Hollander

---

MATHE, Francis Matota

*(Chemistry)*

Title of thesis:

*THE ON-DEMAND CONTINUOUS FLOW GENERATION, SEPARATION, AND UTILIZATION OF MONOSILANE GAS, A FEEDSTOCK FOR SOLAR-GRADE SILICON*

Supervisor: Prof P Watts

---

MOYO, Mcquillan

*(Chemistry)*

Title of thesis:

*SYNTHESIS OF GATIFLOXACIN, AN IMPORTANT FLOROQUINOLONE ANTIBIOTIC USING CONTINUOUS FLOW TECHNOLOGY*

Supervisor: Prof P Watts

---

SENEKAL, Ulrich

*(Chemistry)*

Title of thesis:

*INVESTIGATION OF FOUR ROOF-SHAPED HOST COMPOUNDS FOR THEIR SEPARATION POTENTIAL OF MIXTURES OF GUEST ISOMERS AND RELATED COMPOUNDS*

Supervisor: Prof B Barton

---

WHALE, Alyssa Morgan

*(Computer Science)*

Title of thesis:

*A TOOLKIT FOR SUCCESSFUL WORKPLACE LEARNING ANALYTICS AT SOFTWARE VENDORS*

Supervisor: Prof BM Scholtz

---

## DOCTORAL CITATIONS

# THE DEGREE OF DOCTOR OF PHILOSOPHY (GEOLOGY)

**CARLA DODD**

**Previous qualifications:**

2017 BSc (Environmental Sciences)  
2018 BSc (Hons) Geology (*Cum Laude*)  
2020 MSc (Geology) (*Cum Laude*)

Nelson Mandela Metropolitan University  
Nelson Mandela University  
Nelson Mandela University



**Thesis:**

*THE ALGOA BAY REGION GROUNDWATER CYCLE – LINKING SOURCE TO COAST*

This thesis investigated the hydrogeochemical complexity of the Algoa Bay Water Supply region, with a focus on coastal groundwater-fed microbialite ecosystems. It provides the first local water meteoric line for this drought-stricken region of the Eastern Cape. It shows that groundwater quality is lithologically and spatially varied, with coastal spring discharge reflecting a mixed origin. Coastal microbialites buffer aquifer discharge contaminated by wastewater. This study was presented at local and international conferences, its peer-reviewed literature was published and received two prestigious awards: NRF Research Excellence Award for Next Generation Researchers and DSI South African Women in Science Award: Ndoni Mncunu Fellowship.

Supervisor: Dr GM Rishworth  
Co-supervisor(s): Dr HC Cawthra  
Prof G Massmann

# THE DEGREE OF DOCTOR OF PHILOSOPHY (CHEMISTRY)

**SIMEON SHIWEDA HAMUKOSHI**

## Previous qualifications:

2015	Bachelor of Science (Hons) Chemistry and Geology	University of Namibia
2018	Bachelor of Science (Hons) Organic Chemistry	Nelson Mandela University
2020	Master of Science Organic Chemistry	Nelson Mandela University
2021	BSc (Hons) Water Utilization and Environmental Engineering	University of Pretoria



## Thesis:

*SYNTHESIS AND APPLICATION OF HYDROXYL FUNCTIONALIZED CHEMOSENSORS FOR SELECTIVE DETECTION OF IONS IN AQUEOUS SYSTEMS*

In this study, ten (10) hydroxyl-containing compounds were successfully synthesized and used as chemosensors for the selective detection of ionic species. These novel compounds were modified with various functional groups which formed part of the binding sites where an analyte could interact during complexation. The oxime-based chemosensor exhibited remarkable selectivities for copper (II) and cyanate ions with distinct fluorescence enhancement. On the other hand, coumarin-based and quinoline-based chemosensors displayed unique absorption properties in the presence of iron (II) and mercury (II) ions respectively.

Furthermore, naphthalene-based chemosensors demonstrated distinctive absorption behaviors in the presence of certain cationic species. Lastly, molecular modeling and pH studies

were conducted to understand the binding mechanisms between these compounds and the preferred analytes. The results obtained from this work have been published in three International Journals with two more manuscripts currently in preparation.

Supervisor: Dr N Mama  
Co-supervisor: Prof V Uahengo

# THE DEGREE OF DOCTOR OF PHILOSOPHY (BOTANY)

**MANUELA ELISA MANUEL AMONE MABUTO**

## **Previous qualifications:**

2007	Bachelors in Biology Teaching	Universidade Pedagógica de Moçambique
2009	Honours in Biology Teaching	Universidade Pedagógica de Moçambique
2017	Masters in Aquatic Biology and Coastal Ecosystems	Universidade Eduardo Mondlane



## **Thesis:**

*SEAGRASSES IN MOZAMBIQUE: DISTRIBUTION, PEOPLE'S PERCEPTIONS AND RESTORATION BEST PRACTICE*

Dr Mabuto completed a novel high-quality thesis contributing to global knowledge on the restoration and conservation of seagrasses. Seagrasses as a socio-ecological system were investigated in southern Mozambique. The studied communities identified engagement as a fundamental component of successful seagrass restoration. Important milestones and research achievements were the use of Unmanned Aerial Vehicles (UAVs), combined with other change detection and machine-learning methods to map seagrasses and inform management interventions. The research reports on the continued decline of seagrass area that has severe implications for ecosystem services such as fisheries. Best practices for seagrass restoration were recommended and the findings has been published in high impact journals.

Supervisor: Prof JB Adams  
Co-supervisor(s): Prof S Bandeira  
Prof J Hollander

# THE DEGREE OF DOCTOR OF PHILOSOPHY (CHEMISTRY)

## FRANCIS MATOTA MATHE

### Previous qualifications:

2015	BSc (Chemistry and Physics)	Nelson Mandela Metropolitan University
2016	BSc (Hons) Formulation Science ( <i>Cum Laude</i> )	Nelson Mandela Metropolitan University
2017	MSc Chemistry	Nelson Mandela University



### Thesis:

*THE ON-DEMAND CONTINUOUS FLOW GENERATION, SEPARATION, AND UTILIZATION OF MONOSILANE GAS, A FEEDSTOCK FOR SOLAR-GRADE SILICON*

The purpose of this study was to convert South African natural resources into added value materials. In this project, reactors were developed to efficiently convert raw silicon, via a series of continuous flow modules, into highly toxic and explosive monosilane gas. This was further converted into photovoltaic grade Si for use in solar cells. Currently South Africa (SA) exports the raw silicon to Germany for beneficiation. However, when SA needs the material, it subsequently costs 20 times the price to buy back. Hence this sophisticated approach will hopefully enable SA to gain access to lower cost solar cells; given the major energy crisis that is currently being experienced, this is a significant project and an industrial partner is already interested in commercialisation of technology which has been patented worldwide.

Supervisor: Prof P Watts

# THE DEGREE OF DOCTOR OF PHILOSOPHY (CHEMISTRY)

## MCQUILLAN MOYO

### Previous qualifications

2013	BSc (Biochemistry, Chemistry and Microbiology)	Nelson Mandela Metropolitan University
2014	BSc (Hons) Formulation Science ( <i>Cum Laude</i> )	Nelson Mandela Metropolitan University
2016	MSc (Chemistry) (Research)	Nelson Mandela University



### Thesis:

*SYNTHESIS OF GATIFLOXACIN, AN IMPORTANT FLUOROQUINOLONE ANTIBIOTIC USING CONTINUOUS FLOW TECHNOLOGY*

Approximately 90% of the active pharmaceutical ingredients (APIs) found in drugs, such as the widely needed antibiotics used in sub-Saharan Africa, are imported primarily from India, China, and Europe. To decrease reliance and enhance accessibility to critical medications in Africa, this study leveraged state-of-the-art technology surpassing conventional methods. The synthesis of gatifloxacin, originally conducted in a batch setup, underwent transformation through the application of continuous flow technology, offering an advanced and future-proofed process. The research established a more efficient multi-step continuous flow approach for synthesising gatifloxacin, surpassing the effectiveness of existing batch methods and providing an opportunity for local production on the continent.

Supervisor: Prof P Watts



# THE DEGREE OF DOCTOR OF PHILOSOPHY (CHEMISTRY)

## ULRICH SENEKAL

### Previous qualifications:

2017	BSc (Biological Sciences)	Nelson Mandela Metropolitan University
2017	BSc (Hons) Chemistry ( <i>Cum Laude</i> )	Nelson Mandela University
2019	Master of Science (Chemistry) ( <i>Cum Laude</i> )	Nelson Mandela University



### Thesis:

*INVESTIGATION OF FOUR ROOF-SHAPED HOST COMPOUNDS FOR THEIR SEPARATION POTENTIAL OF MIXTURES OF GUEST ISOMERS AND RELATED COMPOUNDS*

This study explored the potential use of organic host compounds for separations of isomeric guest mixtures. Mixtures of isomers are extremely difficult to separate by conventional fractional distillations because each component boils at near-identical temperatures. Distillations are thus extremely costly in energy and economic terms. For a sustainable future, alternative separatory tools are required. This study successfully demonstrated that industrially relevant chemical mixtures may be separated by these host compounds using supramolecular chemistry strategies. This work therefore offers an alternative and greener separation strategy for these mixtures. As a result, eight articles were published in international high impact factor journals.

Supervisor: Prof B Barton

# THE DEGREE OF DOCTOR OF PHILOSOPHY (COMPUTER SCIENCE)

## ALYSSA MORGAN WHALE

### Previous qualifications:

2013	BCom: Information Systems and Business Management	Nelson Mandela Metropolitan University
2014	BCom (Hons): Information Systems and Business Management	Nelson Mandela Metropolitan University
2016	MCom: Computer Science and Information Systems ( <i>Cum Laude</i> )	Nelson Mandela Metropolitan University



### Thesis:

#### *A TOOLKIT FOR SUCCESSFUL WORKPLACE LEARNING ANALYTICS AT SOFTWARE VENDORS*

This study developed and evaluated the Workplace Learning Analytics (WLA) Toolkit, which can be used for successful WLA at software vendors. The real-world context was a global software vendor, ERPCo, struggling to successfully implement WLA in their company. The study iteratively collected qualitative data using a document analysis of ERPCo company documents and several focus group discussions with stakeholders from ERPCo. The data was analysed using the qualitative content analysis method to derive the as-is and to-be situations at ERPCo and to develop and evaluate the proposed toolkit. The DeLone and McLean's Information Systems Success Model theory guided the understanding of the factors influencing the success of WLA. These factors formed the foundation of the toolkit. The WLA toolkit can be used by practitioners to guide the

planning and implementation of WLA in organisations and to increase the success thereof. Researchers in the field of learning in the workplace can use the WLA toolkit to better understand the required components and factors for successful WLA at software vendors.

Supervisor: Prof BM Scholtz

# Congratulatory Message from the Alumni Association

## Congratulations on your academic achievement!

Welcome to the Nelson Mandela University family. You are now a Nelson Mandela University alumna/us.

We would like to take this opportunity to introduce you to the Nelson Mandela University Alumni Association.

Once you have obtained your Nelson Mandela University certificate, diploma or degree you become an alumna/ us of the University and a member of the Nelson Mandela University Alumni Association.

The Association is approved by the University Council as a structure of the University. The Association supports and enhances the realisation of the University's vision and mission through maintaining and expanding positive relationships with its members.

## The Role of the Alumni Association Office

Primarily, the ARO builds relationships and maintain strong links with graduates, parents, friends and supporters of the University through events, newsletters, social media, the alumni and friends magazine *Thetha* and services.

## The Role of Nelson Mandela University graduate

We encourage you to attend the alumni engagement events, be an active alumni ambassador, support your alma mater in a variety of ways including sharing news, expertise, skills, and contributions in cash and kind. For more information regarding University projects you can support please visit the University giving page <https://mandela.ac.za/giving-to-mandela-university>

## Mandela Alumni Connect – the online alumni networking platform

Join the Mandela Alumni Connect community - to stay in touch with fellow alumni, get informed about events, career guidance, mentorship initiatives and expand your network. Register on <https://alumni.connect.mandela.ac.za/> Visit our website and follow or connect to our social media channels for more information regarding our alumni digital networking platform. At any given time, when you happen to be on Campus, we welcome your visit to the Alumni Relations Centre on North Campus in Gqeberha (formerly Port Elizabeth).

More info: T +27 41 504 3935 E [alumni@mandela.ac.za](mailto:alumni@mandela.ac.za)

Join us: [f](#) Nelson Mandela University Alumni [in](#) Nelson Mandela University Alumni

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<https://alumni.connect.mandela.ac.za/>



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## Photographer details

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The official photographer for the Nelson Mandela University graduation ceremony is Gordon Harris Photographic. Photographs will be taken of every graduate as he or she is being presented by the Executive Dean of the Faculty and when being hooded by the Registrar. A demarcated area will be used to take family photographs, please follow directional signage. Please refer to the enclosed photograph order form.

**NOTE: NO OTHER PHOTOGRAPHERS WILL BE ALLOWED IN THE HALL.**

***NB: THE TAKING OF ALL PHOTOGRAPHS (INSIDE AND OUTSIDE THE HALL) IS A PRIVATE TRANSACTION BETWEEN EACH CANDIDATE AND THE PHOTOGRAPHER CONCERNED. THE UNIVERSITY ACCEPTS NO RESPONSIBILITY FOR THE QUALITY OF THE PHOTOGRAPHS.***

# NATIONAL ANTHEM

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*Nkosi Sikelel'i-Afrika,  
Maluphakanyisw'uphondo lwayo,  
Yizwa imithandazo yethu,  
Nkosi Sikelela, thina lusapho lwayo.*

*Morena boloka setjhaba sa heso,  
O fedise dintwa le matshwenyeho.  
O se boloke, O se boloke setjhaba sa heso,  
Setjhaba sa South Africa.*

*South Africa.*

*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.*







**Change the World**

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