NELSON MANDELA
UNIVERSITY

December 2021

Summer Graduation

Session 1

Faculty of Education

Faculty of Engineering, the Built Environment and Technology

Faculty of Health Sciences

Faculty of Science

14 DECEMBER 2021 | 10:00

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
Diversity
Ubuntu
Social justice and equality
Integrity
Environmental stewardship

Contents

Congratulatory Message

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

Today your joy is our joy too. Such a significant moment – your graduation day – must be celebrated, for it not only recognises all that you have achieved, but also focuses on all the potential and possibilities to come. It offers us great hope for the future – for you are that future.

The COVID-19 pandemic has transformed our lives – the way we work, study and live. It has changed the way we celebrate your graduation, too – but happily, we are celebrating with hybrid ceremonies: both virtually and in person.

Dr Geraldine Fraser-Moleketi
Chancellor

As a student who had to navigate your studies in unprecedented circumstances, we especially salute and applaud your achievement. It could not have been easy. We wish you all the very best for your future endeavours wherever they may take you as a proud alumnus of Nelson Mandela University.

Never stop learning. Do not let your spark of curiosity die out, for education is not only your passport to the future – but also to the future hopes of our country, our continent and is indeed a foundation for a better world, as Nelson Mandela so eloquently put it:

"Education is the most powerful weapon which you can use to change the world."

Congratulations!

Uthweso sidanga ngumsitho obaluleke kunene kwimpilo yomntu. Yinkcochoyi kuhambo lwemfundo enomsila echaza ukunxanwa kwakho, ukuzimisela, ukuzinikela, ukunyamezela kwanomsebenzi onzima. Siyayazi ukuba lo msebenzi, kumaxesha amaninzi, ayingowakho kuphela, nanjengoko uninzi luthe lwakhenketha nawe – abahlobo bakho, abahlohli bakho, abaphathi bakho, amakhankatha akho kwakunye nosapho lwakho. Babinze kuwe ngokwezimali, bakukhuthaza ukuba unyamezele, bakukhokela kwizifundo zakho, kwaye, kuyo yonke into, bakholelwa kumxakatho wakho wokuphumelela kwanokuzuza eli phupha lokuthweswa isidanga.

Namhlanje uchulumanco lwakho luchulumanco lwethu. Ilixa elibaluleke kunene – usuku lothweso sidanga – kufuneka lubhiyozelwe kuba aluqapheli nje kuphela konke othe wakuzuza kodwa likwagxila nakumandla kwanakumathuba azayo. Lisinika ithemba elikhulu kwikamva – kuba elo kamva nguwe.

Ubhubhane weCOVID-19 uziguqule iimpilo zethu – indlela esisebenza ngayo, esifunda ngayo kwanesiphila ngayo. Lo bhubhane ukwatshintshe indlela esibhiyozela ngayo uthweso zidanga lwenu – kodwa ngovuyo, sibhiyoza ngemisitho eqhutywa ngobuxhakaxhaka, umntu enxibelelene ngobuxhakaxhaka okanye eze ngobuqu.

Njengomfundi oye waqhuba izifundo zakhe ngeendlela ebezingalindelekanga, sikothulela umnqwazi ngokukhethekileyo

futhi sikuqhwabela izandla kokuzuzileyo. Akukhange kubelula.

Sikunqwenelela okuhle kodwa, kwiinzame zakho zekamva elizayo, naphi na apho ziza kuthatha zikuse khona njengobesakuba ngumfundi ozingcayo weYunivesithi iNelson Mandela.

Ungaze uyeke ukufunda. Ungavumeli intlantsi yokunxanelwa ulwazi ukuba ife, kuba imfundo ayilogwiba lekamva kuphela – koko ikwalithemba lekamva kwilizwe lethu, izwekazi lethu futhi kwanesiseko sehlabathi elingcono, nanjengokuba uNelson Mandela eyibeka ngokucacileyo:
Huntshu!

"Imfundo lelona krele lakhe lanamandla ongathi ulisebenzise ukutshintsha ihlabathi."

Gradeplegtigheid is 'n belangrike mylpaal in enigeen se lewe. Dit is die hoogtepunt van 'n akademiese reis wat u ambisie, vasberadenheid, toewyding, deursettingsvermoë en harde werk weerspieël. Ons weet dat hierdie werk dikwels nie net u eie is nie, omdat baie mense saam met u gereis het - u vriende, lektore, studieleiers, mentors en u gesin. Hulle het finansieel in u belê, u aangemoedig om te volhard, u studies gelei en bowenal geglo in u vermoë om te slaag en hierdie gradedroom te bereik. Vandag is u vreugde ook ons vreugde. So 'n belangrike oomblik - u gradedag - moet gevier word, want dit erken nie net alles wat u bereik het nie, maar fokus ook op al die potensiaal en moontlikhede wat kom. Dit bied ons groot hoop vir die toekoms - want u is die toekoms.
Die COVID-19-pandemie het ons lewens getransformeer – die manier waarop ons werk, studeer en lewe. Dit het die manier waarop ons u gradeplegtigheid vier ook verander – maar gelukkig, vier ons met hibriede seremonies, sowel virtueel as persoonlik.
As 'n student wat in ongekende omstandighede deur u studies moes gaan, salueer ons veral u prestasie. Dit kon nie maklik gewees het nie.
Ons wens u alle sterkte toe vir u pogings in die toekoms, waar hulle u ook al as 'n trotse oudstudent van Nelson Mandela Universiteit mag neem.
Moet nooit ophou leer nie. Laat u vonk van nuuskierigheid nie uitsterf nie, want onderwys is nie net u paspoort tot die toekoms nie - maar ook die toekomstige hoop van ons land en kontinent en is inderdaad 'n grondslag vir 'n beter wêreld, soos Nelson Mandela dit so welsprekend gestel het. :

'Onderwys is die kragtigste wapen waarmee u die wêreld kan verander.'

Veels geluk!

Professor Sibongile Muthwa
Vice-Chancellor

About Nelson Mandela University

Nelson Mandela University is the only university in the world to carry the name of Nelson Rolihlahla Mandela.

With this honour comes the responsibility of leading our University into a new era of transformative innovation, development and change in line with the ethos and values of our namesake.

Living the legacy of Mandela should be reflected in the way we teach, learn, do research, engage with our partners, and work, study and live as staff, students and alumni.

We are on a journey to achieve this and become the learning destination for staff and students who:

- are pioneering change agents for a better world
- are committed to creating jobs in an entrepreneurial economy
- work together across disciplines in seeking solutions and innovations to achieve quality of life and a healthy environment for all people, and
- are instilled with a deep need to serve and give back.

Fast Facts

7
CAMPUSES
NORTH, SOUTH, OCEAN SCIENCES, SECOND AVENUE (IN SUMMERSTRAND) MISSIONVALE (MISSIONVALE), BIRD STREET (CENTRAL), GEORGE (GEORGE CAMPUS ON THE GARDEN ROUTE)

481
PROGRAMMES
(FROM CERTIFICATE THROUGH TO DOCTORAL QUALIFICATIONS)

29 889
ENROLLED **STUDENTS**

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

6 INSTITUTIONAL **RESEARCH** THEMES

4 STRATEGIC **FOCUS AREAS**

- Learning and Teaching
- Research, Innovation & Internationalisation
- Transformative Engagement
- Inclusive student access for success

2 484
PERMANENT **EMPLOYEES**

3%
OF THE **STUDENTS** COME FROM

57 DIFFERENT **COUNTRIES**

Office-Bearers of the University

CHANCELLOR
DR GJ FRASER-MOLEKETI: MAdmin (UP), DPhil (hc) (Mandela University)

CHAIRPERSON OF COUNCIL
AMBASSADOR NP JANUARY-BARDILL: BA, Cert in Ed (UBL), MA (Essex University, UK), Dip HR Management (Damelin)

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 (UWC), PhD (Edu Mang, Law and Policy) (UP)

DEPUTY VICE-CHANCELLOR: LEARNING AND TEACHING
PROF CD FOXCROFT: BA, BAHons, MA, DPhil (UPE)

DEPUTY VICE-CHANCELLOR: PEOPLE AND OPERATIONS
MR LE HASHATSE: BJourn & Media, BAHons (Rhodes), MA (Edith Cowan University, Australia)

DEPUTY VICE-CHANCELLOR: RESEARCH, INNOVATION AND INTERNATIONALISATION
DR T MGWEBI: BSc, BScHons, MSc, HDipEd (Unitra); PhD(UCT); PGDeg (Tertiary Education Management) (University of Melbourne, Australia)

EXECUTIVE DIRECTOR: FINANCE
MR MONAGHAN: BCom (UPE), BComHons (UNISA), Professional Accountant (SA)

PRESIDENT OF ALUMNI ASSOCIATION
MR K BLOSE: BSc (Construction Economics), BScHons (Quantity Surveying)(NMMU)

REGISTRAR
MR EB De KOKER: BA (UCT), BAHons (UNISA), MA (Pub Admin) (University of Warwick, UK)

Executive Deans of Faculties

BUSINESS AND ECONOMIC SCIENCES
PROF HR LLOYD: BCom, BComHons, MCom, DCom (UPE)

EDUCATION
DR SF MOENG: BA, HDE, BEdHons (UPE), MSc (St Cloud State University, USA), DEd (NMMU)

ENGINEERING, THE BUILT ENVIRONMENT AND TECHNOLOGY
PROF D POTTAS (Acting): BScHons (PU CHE), PhD (RAU), MCSSA

HEALTH SCIENCES
PROF Z ZINGELA: MBChB (Natal), FCPsych (SA), MMed (UP)

HUMANITIES
PROF P MASEKO: BA, BAHons (UWC), MA, Cert in Assessor's Course (Curriculum Development and Assessment in HE), PhD, PGDip in Higher Ed (RU)

LAW
DR L BIGGS (Acting): BCom (Law), LLB (UPE), LLM (Labour Law) (cum laude), LLD (NMMU)

SCIENCE
PROF A MURONGA: BSc, UED (UNIVEN), BScHons, MSc (UCT), PhD (University of Minnesota, USA)

DEAN OF LEARNING AND TEACHING
DR P KOTA-NYATI: BA (Vista), BAHons, MA Couns Psych (UPE), DPhil (Mandela Uni)

DEAN OF STUDENTS
MR LP JACK: NDip (PMA)(EC Technikon), BTech (PM)(PET), BAPhil (US), MCom (UKZN)

Order of Proceedings

Entrance of Academic Procession

Moment of silence

Constitution of Congregation and Welcome
Dr G Fraser-Moleketi (Chancellor)

Choral performance
Nelson Mandela University Choir

Awarding of qualifications
Dr G Fraser-Moleketi (Chancellor)

Cultural Performance
Nelson Mandela University Students and Alumni

Conferring of Doctoral Degrees
Dr G Fraser-Moleketi (Chancellor)

Message of Congratulations and Dissolution of Congregation
Dr G Fraser-Moleketi (Chancellor)

National anthem
Nelson Mandela University Choir

Departure of Academic Procession

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

FACULTY OF EDUCATION

MASTER OF EDUCATION (RESEARCH)

ROBERTS, Melandré
Title of dissertation:
AN EXPLORATION OF THE EFFECTS OF EXPLORATORY TALK, FACILITATED BY CONCEPT CARTOONS, ON GRADE 7 LEARNERS' PROBLEM-SOLVING BEHAVIOUR AND CONCEPTUAL UNDERSTANDING IN MATHEMATICS
Supervisor: Dr CBA Felix

FACULTY OF ENGINEERING, THE BUILT ENVIRONMENT AND TECHNOLOGY

MASTER OF ENGINEERING IN MECHATRONICS (RESEARCH)

MPETA, Zamile Leonard
Title of dissertation:
MACHINABILITY OF 2205 DUPLEX STAINLESS STEEL

Supervisor: Prof K Abou-El-Hossein

MASTER OF INFORMATION TECHNOLOGY (RESEARCH)

MAHONGA, Sandisiwe
Title of dissertation:
GUIDELINES FOR A JOB ROLE BASED APPROACH FOR PHISHING AWARENESS IN AN ACADEMIC INSTITUTION

Supervisor: Prof M Gerber

NGADA, Okuhle - ***Cum Laude***
Title of dissertation:
APPLYING INSIGHTS FROM MACHINE LEARNING TOWARDS GUIDELINES FOR THE DETECTION OF TEXT-BASED FAKE NEWS

Supervisor: Prof BP Haskins

MASTER OF PHILOSOPHY IN INFORMATION TECHNOLOGY GOVERNANCE (COURSEWORK)

KHOZA, Sikhumbuzo Broadben
Title of treatise:
A STRATEGY TO DIGITALLY TRANSFORM LIMPOPO STATE-OWNED ENTERPRISES

Supervisor: Dr N Gcaza

MBANGO, Thembakazi
Title of treatise:
A CASE STUDY FOR AN OPERATIONAL LEVEL INFORMATION SECURITY POLICY-COMPLIANCE FRAMEWORK TO USE IN THE TYRE MANUFACTURING INDUSTRY

Supervisor: Mr D Joubert
Co-supervisor: Mr G Sarpong

MASTER OF SCIENCE IN CONSTRUCTION MANAGEMENT (RESEARCH)

MANGA, Ashvin - ***Cum Laude***
Title of dissertation:
LEVERAGING COMPUTER VISION FOR IMPROVED FACILITY MANAGEMENT

Supervisor: Mr CJ Allen

MASTER OF SCIENCE IN THE BUILT ENVIRONMENT (COURSEWORK)

CHIPATO, Estina
(Project Management)
Title of treatise:
INTEGRATION OF HEALTH AND SAFETY INTO THE PROJECT MANAGEMENT BODY OF KNOWLEDGE AND PRACTICE IN THE ZIMBABWEAN CONSTRUCTION INDUSTRY

Supervisor: Dr B Chigara
Co-supervisor: Prof JJ Smallwood

GASTILE, Nosikhumbuzo
(Construction Management)
Title of treatise:
PERFORMANCE OF CONSTRUCTION PROJECTS IN THE TRANSPORT DIRECTORATE OF THE CITY OF CAPE TOWN

Supervisor: Mr RC Cumberlege

GOUWS, Jan Jacobus
(Property Economics and Valuation)
Title of treatise:
A FRAMEWORK FOR THE OPTIMISATION OF COMMERCIAL PROPERTY INVESTMENT OPPORTUNITIES IN AFRICA

Supervisor: Prof B Botha

MABANDLA, Liziwe Cynthia
(Construction Management)
Title of treatise:
PLANNING AND SCHEDULING THE PROCESS OF GOVERNMENT SUBSIDED HOUSING PROJECTS IN THE EASTERN CAPE PROVINCE

Supervisor: Dr JP Bekker

MADYIBI, Bekani Mbongeni
(Project Management)
Title of treatise:
BUILDING INFORMATION MODELLING (BIM) UTILISATION BY THE AEC SECTOR PARTICIPANTS IN NELSON MANDELA BAY

Supervisor: Mr CJ Allen

MARALA, Thabo
(Project Management)
Title of treatise:
IMPACT AND IMPLEMENTATION OF INFRASTRUCTURE DELIVERY MANAGEMENT SYSTEM IN THE EASTERN CAPE

Supervisor: Dr AL Hefer

MEKOA, Mmamakwa Marianne
(Construction Health and Safety Management)
Title of treatise:
CONSTRUCTION HEALTH AND SAFETY NON-COMPLIANCE ON JOHANNESBURG ROADS AGENCY PROJECTS
Supervisor: Prof JJ Smallwood

MENZE, Nomveliso
(Project Management)
Title of treatise:
THE UNDERREPRESENTATION OF SEMI-SKILLED WOMEN IN BUFFALO CITY CONSTRUCTION PROJECTS
Supervisor: Prof WWM Shakantu

MOSHANYANA, Lerato
(Construction Health and Safety Management)
Title of treatise:
SUBCONTRACTORS' HEALTH AND SAFETY COMPLIANCE ON RAND WATER PROJECTS
Supervisor: Prof JJ Smallwood

MOYO, Thabani Bryne
(Project Management)
Title of treatise:
THE IMPACT OF DELAYS ON ROAD CONSTRUCTION PROJECTS IN THE KWAZULU NATAL PROVINCE
Supervisor: Mr RC Cumberlege

NTALAVANE, Yolanda
(Project Management)
Title of treatise:
THE IMPACT OF LATE COMPLETION OF CONSTRUCTION PROJECTS IN THE EASTERN CAPE PROVINCE
Supervisor: Mr RC Cumberlege

NTANJANA, Nozuko Zinzi
(Construction Management)
Title of treatise:
GREEN BUILDING AND TECHNOLOGY APPLICATIONS IN STATE OWNED BUILDINGS
Supervisor: Prof JJ Smallwood
Co-supervisor: Dr EK Simpeh

NZIMANDE, Thobile Ruth
(Property Economics and Valuation)
Title of treatise:
THE IMPACT OF VARIATION ORDERS ON THE PERFORMANCE OF CONSTRUCTION PROJECTS

Supervisor: Mr RC Cumberlege

SABETA, Panashe Geoffrey
(Project Management)
Title of treatise:
GREENING BREAKING NEW GROUND HUMAN SETTLEMENTS PROJECTS

Supervisor: Dr B Chigara

SEBOTHOMA, Dorial Refilwe
(Construction Health and Safety Management)
Title of treatise:
PUBLIC SAFETY DURING ELECTRICITY SUPPLY

Supervisor: Prof JJ Smallwood

WALLJEE, Llewellyn Paul
(Construction Health and Safety Management)
Title of treatise:
A FRAMEWORK FOR IMPROVING THE PERFORMANCE OF HEALTH AND SAFETY PRACTITIONERS IN THE CONSTRUCTION INDUSTRY

Supervisor: Prof JJ Smallwood

XAYO, Khanyiso
(Project Management)
Title of treatise:
THE LITIGATION OF CONSTRUCTION DISPUTES

Supervisor: Mr RC Cumberlege

FACULTY OF HEALTH SCIENCES

MASTER OF ARTS IN CLINICAL PSYCHOLOGY (COURSEWORK)

DU TOIT, Cobus
Title of treatise:
A SYSTEMATIC REVIEW ON THE RELATIONSHIP BETWEEN HALLUCINATIONS IN ADULTHOOD AND ADVERSE CHILDHOOD EXPERIENCES

Supervisor: Mr AR Navsaria
Co-supervisor: Mr HR Meiring

FIHLA, Vuyokazi Yolanda
Title of treatise:
EXPERIENCES OF BEING A BLACK LESBIAN WITHIN THE PORT ELIZABETH COMMUNITIES

Supervisor: Prof MB Ngcobo-Sithole

MSANI, Sinenhlanhla Bridget
Title of treatise:
EXPERIENCES OF SOMALIAN WOMEN WHO WERE VICTIMS OF XENOPHOBIC ATTACKS

Supervisor: Prof MB Ngcobo-Sithole

NTSALUBA, Luto
Title of treatise:
NOMZAMO WINIFRED ZANYIWE MADIKIZELA MANDELA: A PSYCHOBIOGRAPHY

Supervisor: Dr A Sandison

MASTER OF ARTS IN COUNSELLING PSYCHOLOGY (COURSEWORK)

MADONDO, Phindile
Title of treatise:
THE PERCEPTION AND TREATMENT OF MENTAL ILLNESS IN FOUR SUB-COMMUNITIES WITHIN THE TOWNSHIP OF HAMMANSKRAAL IN THE CITY OF PRETORIA, SOUTH AFRICA

Supervisor: Dr U De Klerk
Co-supervisor: Prof Y Ally

MASTER OF HUMAN MOVEMENT SCIENCE (RESEARCH)

KNIPP, Joshua Robert
Title of dissertation:
THE IMPACT OF MOTOR TRAINING ON THE PERCEPTUAL ANTICIPATION OF A DECEPTIVE STEP-OVER IN SOCCER

Supervisor: Mr RP Raffan

MASTER OF NURSING (COURSEWORK)

NTLEKO, Sbongile Alicia Elizabeth
(Advanced Midwifery and Neonatal Nursing Science)
Title of treatise:
EXPERIENCES OF SCHOOL GOING TEENAGE GIRLS IN THE NELSON MANDELA BAY DISTRICT REGARDING BEING AT SCHOOL FOLLOWING DELIVERY

Supervisor: Prof S James

MASTER OF NURSING (RESEARCH)

MLATSHA, Ayanda
Title of dissertation:
NURSE EDUCATORS' UNDERSTANDING OF AFRICANISING UNDERGRADUATE EDUCATION AT A NURSING EDUCATION INSTITUTION

Supervisor: Dr WH Ten Ham-Baloyi
Co-supervisor: Prof S Jardien-Baboo
Co-supervisor: Dr S Heleta

MASTER OF PHARMACY (RESEARCH)

CAMPBELL, Lauren Grace Faith
Title of dissertation:
INVESTIGATION INTO PAIN MANAGEMENT IN AFRICA WITH EMPHASIS ON OPIOIDS

Supervisor: Prof I Truter

SCHOEMAN, Maxine
Title of dissertation:
SCOPE OF AND OPPORTUNITIES FOR THE PROVISION OF PRIMARY CARE DRUG THERAPY BY PHARMACISTS IN SOUTH AFRICA

Supervisor: Prof I Truter
Co-supervisor: Mr JS du Toit

MASTER OF SOCIAL WORK (RESEARCH)

MAVIMBELA, Mzoli - ***Cum Laude***
Title of dissertation:
THE VIEWS OF AMAKRWALA ON THE MEANING OF UMQOMBOTHI AND COMMERCIAL ALCOHOL USE DURING THE INITIATION CEREMONIES

Supervisor: Dr Z Abdulla
Co-supervisor: Prof Z Soji
Co-supervisor: Prof L Ntombana

MOLETSANE, Rethabile Nightingale
Title of dissertation:
THE PERCEPTIONS OF SOCIAL WORKERS IN PORT ELIZABETH REGARDING THEIR ROLE IN DELIVERING SOCIAL SERVICES TO REFUGEES IN SOUTH AFRICA

Supervisor: Prof Z Soji
Co-supervisor: Dr N Mansvelt

TEKO, Luvuyo - ***Cum Laude***
Title of dissertation:
THE ROLE OF COMMUNITY-LED SUPPORT GROUPS IN FACILITATING RELAPSE PREVENTION TO YOUNG ADULTS WITH A SUBSTANCE USE DISORDER

Supervisor: Prof VM Goliath
Co-supervisor: Dr Z Abdulla

MASTER OF TECHNOLOGY: RADIOGRAPHY (RESEARCH)

Windvogel, Lynn
Title of dissertation:
CLINICAL INDICATIONS FOR PLAIN ABDOMINAL RADIOGRAPHIC EXAMINATIONS: KNOWLEDGE AND PRACTICES OF RADIOGRAPHERS AT PUBLIC HOSPITALS IN THE EASTERN CAPE

Supervisor: Ms R Williams
Co-supervisor: Dr WH Ten Ham-Baloyi

EDWARDS, Antoinette
Title of dissertation:
TRANSITION EXPERIENCES OF COMMUNITY SERVICE RADIOGRAPHERS IN PUBLIC HOSPITALS IN THE EASTERN CAPE

Supervisor: Dr DG Morton
Co-supervisor: Dr AD Grobler

FACULTY OF SCIENCE

MASTER OF COMMERCE (RESEARCH)

MOYO, Faith - ***Cum Laude***
(Computer Science and Information Systems)
Title of dissertation:
A DATA-DRIVEN DECISION-MAKING MODEL FOR THE THIRD-PARTY LOGISTICS INDUSTRY IN AFRICA

Supervisor: Prof BM Scholtz
Co-supervisor: Dr ME Alhassan

MASTER OF SCIENCE (RESEARCH)

DINGISWAYO, Xolisile
(Agriculture)
Title of dissertation:
PERCEPTIONS OF SMALL-SCALE VEGETABLE FARMERS ON DROUGHT MITIGATION STRATEGIES IN THE EASTERN CAPE PROVINCE

Supervisor: Dr M Khapayi

DUBE, Cleopatra Thulani
(Chemistry)
Title of dissertation:
BENEFICATION OF PYROLYSIS-DERIVED WASTE TYRE CHAR USING ALGAE AND TORREFIED WOOD FOR THE PRODUCTION OF FUEL PELLETS

Supervisor: Prof SP Hlangothi
Co-supervisor: Dr SV Shabangu
Co-supervisor: Dr H Baloyi

JOOSTE, Eileen - ***Cum Laude***
(Nature Conservation)
Title of dissertation:
A CRITICAL EXPLORATION OF ATTITUDES AND KNOWLEDGE OF FIRST-YEAR NATURAL RESOURCE MANAGEMENT STUDENTS AT NELSON MANDELA UNIVERSITY, GEORGE CAMPUS

Supervisor: Dr ABL Currie-Killick
Co-supervisor: Prof JA Clarence-Fincham

JULIE, Corianna Lauren
(Botany)
Title of dissertation:
MANGROVE RESPONSE TO WATER LEVEL CHANGES AND SEDIMENT INPUT

Supervisor: Prof JB Adams
Co-supervisor: Dr JL Raw

KEEN, Charne
(Computer Science and Information Systems)
Title of dissertation:
REAL-TIME FEEDBACK MODEL FOR SUPPORTING INDIVIDUALISED LEARNING OF PROGRAMMING STUDENTS
Supervisor: Prof CB Cilliers

KUNJWA, Thulisile
(Geology)
Title of dissertation:
THE USE OF AMBIENT SEISMIC NOISE TO INVESTIGATE INTERNAL CHANGES IN A TAILINGS STORAGE FACILITY AND TO IMAGE THE SUBSURFACE GEOLOGY IN THE CRADOCK AREA OF THE EASTERN CAPE
Supervisor: Prof CM Doucouré

MAJODINA, Siphumelele - ***Cum Laude***
(Chemistry)
Title of dissertation:
ENGINEERING NANOCATALYSTS USING MIXED METALS FOR HYDRODESULFURIZATION OF FUEL OIL
Supervisor: Dr AS Ogunlaja
Co-supervisor: Prof ZR Tshentu

MAVHUNGU, Tshilidzi
(Forestry)
Title of dissertation:
OPTIMIZING HERBICIDE-USE FOR THE KILLING OF EUCALYPT STUMPS
Supervisor: Prof KM Little

MAXAMA, Asakhile - ***Cum Laude***
(Geography)
Title of dissertation:
A SPATIAL ASSESSMENT OF RIPARIAN VEGETATION DENSITY AND IMPLICATIONS FOR STREAMBANK EROSION IN THE MGWALANA CATCHMENT, EASTERN CAPE PROVINCE, SOUTH AFRICA
Supervisor: Prof V Kakembo

MOSS, Kerry-Leigh - ***Cum Laude***
(Biological Oceanography)
Title of dissertation:
PLASTIC PARTICLE CHARACTERIZATION AND CONCENTRATIONS FOUND IN THE RIVER AND MARINE WATER ENVIRONMENT OF ALGOA BAY, SOUTH AFRICA
Supervisor: Prof MJ Roberts
Co-supervisor: Dr D Allen
Co-supervisor: Dr S Allen

NGAYEKA, Mbokazi Zizipho
(Chemistry)
Title of dissertation:
OPTIMISING THE UPTAKE OF [IRCL6]2- BY A DIAMMONIUM RESIN: HCL EFFECT AND RESIN PERFORMANCE
Supervisor: Prof ZR Tshentu
Co-supervisor: Dr P Moleko-Boyce

RAMANGOELE, Mpaballeng Alinah
(Agriculture)
Title of dissertation:
STUDIES ON SEED GERMINATION AND RESPONSE TO FERTILIZATION OF AMARANTHUS ACCESSIONS COLLECTED IN THE EASTERN CAPE PROVINCE, SOUTH AFRICA
Supervisor: Mr PR Celliers (posthumous)

SEBAKE, Tebogo Matsimela
(Geography)
Title of dissertation:
QUANTIFYING VARIABILITY OF GREENHOUSE GAS (CO2 & CH4) EMISSIONS ACROSS SELECTED SOILS AND AGRICULTURAL PRACTICES
Supervisor: Prof MJ De Wit
Co-supervisor: Prof CM Doucouré
Co-supervisor: Prof RMB Auerbach
Co-supervisor: Prof E Kotzé

SWANEPOEL, Hermanus Izak Johannes
(Nature Conservation)
Title of dissertation:
THE LANDSCAPE USE OF SMALL UNGULATES IN A FRAGMENTED LOWLAND FYNBOS AND RENOSTERVELD ECOSYSTEM
Supervisor: Prof JA Venter
Co-supervisor: Dr H Fritz
Co-supervisor: Dr LE Pardo Vargas

TANYI, Sam Tambi
(Chemistry)
Title of dissertation:
THE COST EFFECTIVE CONTINUOUS FLOW SYNTHESIS OF ANTI-BREAST CANCER DRUG: ANASTROZOLE
Supervisor: Prof P Watts

TWANI, Malibongwe - ***Cum Laude***
(Computer Science and Information Systems)
Title of dissertation:
FACTORS INFLUENCING FIRST-YEAR STUDENTS' CAREER DECISIONS TO PURSUE AN IT CAREER

Supervisor: Prof AP Calitz

MASTER OF SCIENCE IN NANOSCIENCE (COURSEWORK)

GUGA, Aluwani
Title of treatise:
SYNTHESIS AND CHARACTERIZATION OF IRON DOPED SODIUM AND POTASSIUM TITANATES USING THE PECHINI SOL-GEL METHOD

Supervisor: Dr EJ Olivier
Co-supervisor: Prof JH Neethling

MATSHIQI, Nazi
Title of treatise:
NANOCRYSTALLITES OF NIMO AND COMO FOR CATALYTIC HYDRODEVULCANIZATION OF SULFUR CURED CIS-1,4-POLYISOPRENE

Supervisor: Prof SP Hlangothi
Co-supervisor: Dr AS Ogunlaja
Co-supervisor: Prof ZR Tshentu

SCHOLTZ, Carla Chleon
Title of treatise:
OPTIMIZATION OF LIPOSOMES FOR ENHANCED STABILITY AGAINST DEGRADATION BY GASTROINTESTINAL FLUID CONTENT

Supervisor: Prof S Roux
Co-supervisor: Ms V Ntsalu

ZOSELA, Itumeleng - ***Cum Laude***
Title of treatise:
IN-VITRO EVALUATION OF BRIDELIA FERRUGINEA EXTRACT GOLD NANOPARTICLES FOR THE TREATMENT OF COLON CANCER

Supervisor: Prof S Roux
Co-supervisor: Prof H Davids

FACULTY OF SCIENCE

DOCTOR OF PHILOSOPHY

DEMBAREMBA, Tendai Olsen
(Chemistry)
Title of thesis:
COORDINATION POLYMERS FOR DENITROGENATION OF FUEL OILS

Supervisor: Prof ZR Tshentu
Co-supervisor: Dr AS Ogunlaja

DLOMO, Xolisa
(Oceanography)
Title of thesis:
OCEAN STRUCTURES AND DYNAMICS OF TWO OPEN BAYS ON THE EASTERN AGULHAS BANK

Supervisor: Prof TG Bornman
Co-supervisor: Dr WS Goschen
Co-supervisor: Prof EE Campbell

DOWNEY, Justin Michael
(Physics)
Title of thesis:
THE EFFECT OF SILICON ON PALLADIUM MIGRATION IN PYROLYTIC CARBON AND GRAPHITE

Supervisor: Prof JH Neethling
Co-supervisor: Dr JH O' Connell
Co-supervisor: Dr EJ Olivier

DOUGLAS-HENRY, Danielle Ahlers
(Physics)
Title of thesis:
MICROSTRUCTURAL CHARACTERIZATION OF SWIFTHEAVY ION (SHI) INDUCED ROTATION IN SINGLE CRYSTAL NIO

Supervisor: Dr JH O'Connell

MAGIDA, Nokuthula Ethel
(Chemistry)
Title of thesis:
EFFECT OF COAL AND MICROALGAE BIOMASS CO-FIRING ON CO2, SO2 AND NOx EMISSIONS: AN EXPERIMENTAL EVALUATION

Supervisor: Prof B Zeelie (posthumous)
Co-supervisor: Dr GM Dugmore
Co-supervisor: Dr AS Ogunlaja

MANANA, Pholani Sakhile
(Chemistry)
Title of thesis:
THE SYNTHESIS, EMPIRICAL AND THEORETICAL STUDIES OF VARIOUS (N→B) *DIARYLBORINATE ESTERS*
Supervisor: Dr R Betz

NGONGO, Sinoyolo
(Physics)
Title of thesis:
CORROSION AND HYDROGEN RESISTANT MODIFIED ZIRLO SURFACES FOR NUCLEAR FUEL CLADDING
Supervisor: Prof JH Neethling
Co-supervisor: Dr A Janse van Vuuren

REUSCH, Katharina
(Zoology)
Title of thesis:
FORAGING ECOLOGY OF KELP GULLS IN NATURAL AND ANTHROPOGENICALLY MODIFIED ENVIRONMENTS
Supervisor: Prof LC Pichegru
Co-supervisor: Dr PG Ryan

SPRONG, Kaitlin Elizabeth
(Microbiology)
Title of thesis:
UREAPLASMA SPECIES IN THE PLACENTA AND HISTOPATHOLOGY ASSOCIATED WITH PRETERM BIRTH
Supervisor: Dr S Govender
Co-supervisor: Prof CA Wright

VAN DER HOOGEN, Anthea Vivian
(Computer Science)
Title of thesis:
A *VALUE ALIGNMENT SMART CITY STAKEHOLDER MODEL*
Supervisor: Prof BM Scholtz
Co-supervisor: Prof AP Calitz

VERMEULEN, Estee Ann
(Oceanography)
Title of thesis:
APPLYING A SYSTEMS ANALYSIS APPROACH TO SUPPORT INTEGRATED OCEAN MANAGEMENT AND MARINE SPATIAL PLANNING IN ALGOA BAY, SOUTH AFRICA
Supervisor: Prof AT Lombard
Co-supervisor: Dr JK Clifford-Holmes
Co-supervisor: Dr UM Scharler

FACULTY OF EDUCATION

DOCTOR OF PHILOSOPHY: EDUCATION

MASEMBE, Edward
Title of thesis:
USING COMMUNICATIVE STRATEGIES TO FACILITATE LUGANDA LANGUAGE TEACHING AND LEARNING IN AUTHENTIC CONTEXTS

Supervisor: Prof L Athiemoolam
Co-supervisor: Prof NN Mdzanga

SIMAYI, Ayanda
Title of thesis:
A CULTURALLY RESPONSIVE STRATEGY FOR TEACHING SEXUAL CONCEPTS IN RURAL XHOSA SECONDARY SCHOOLS

Supervisor: Prof P Webb

VAN NIEKERK, Chantelle Emirina
Title of thesis:
SUPPORTIVE GUIDING PRINCIPLES FOR THE CONVERSION OF MAINSTREAM SCHOOLS INTO FULL-SERVICE SCHOOLS

Supervisor: Dr CF Pienaar

FACULTY OF ENGINEERING, THE BUILT ENVIRONMENT AND TECHNOLOGY

DOCTOR OF PHILOSOPHY IN CONSTRUCTION MANAGEMENT

JATAU, Tchad Sharon
Title of thesis:
MODELLING HOW WORKERS' SHARED PERCEPTION OF HEALTH AND SAFETY INFLUENCES SAFE WORK PERFORMANCE
Supervisor: Prof FA Emuze
Co-supervisor: Prof JJ Smallwood

DOCTOR OF PHILOSOPHY IN ENGINEERING

HATEFI, Shahrokh
(Mechatronics)
Title of thesis:
HYBRID SINGLE-POINT DIAMOND TURNING PROCESS FOR ULTRA-HIGH PRECISION OF TITANIUM ALLOY
Supervisor: Prof K Abou-El-Hossein

ODEDEYI, Peter Babatunde
(Mechatronics)
Title of thesis:
ULTRA-HIGH PRECISION MACHINING OF RAPIDLY SOLIDIFIED ALUMINIUM (RSA) ALLOYS FOR OPTICS
Supervisor: Prof K Abou-El-Hossein

FACULTY OF HEALTH SCIENCES

DOCTOR OF PHILOSOPHY

FOGARTY, Teri-Lynne
(General Health Sciences)
Title of thesis:
PHARMACY SUPPORT PERSONNEL QUALIFICATIONS AND SCOPE OF PRACTICE NEEDS: THE SOUTH AFRICAN EXPERIENCE

Supervisor: Prof SF Burton

MARSH, Sophia Emmarenzia
(General Health Sciences)
Title of thesis:
TOWARDS NATIONAL HEALTH TECHNOLOGY ASSESSMENT FOR MEDICINES IN SOUTH AFRICA: DATA REQUIREMENTS AND STATUS OF HEALTH-RELATED QUALITY OF LIFE RESEARCH

Supervisor: Prof I Truter

DOCTOR OF PHILOSOPHY (PSYCHOLOGY)

BARNWELL, Garret Christopher
Title of thesis:
A MULTIPLE CASE STUDY EXPLORATION INTO COMMUNITY MEMBERS' ECOPSYCHOLOGICAL RESPONSES TO ENVIRONMENTAL DEGRADATION IN SOUTH AFRICA

Supervisor: Prof L-A Stroud
Co-supervisor: Prof MB Watson

DOCTORAL CITATIONS

FACULTY OF SCIENCE

THE DEGREE OF DOCTOR OF PHILOSOPHY (CHEMISTRY)

TENDAI OLSEN DEMBAREMBA

Previous qualifications:

2014	Baccalaureus Scientiae	Nelson Mandela Metropolitan University
2015	Baccalaureus Scientiae Honores	Nelson Mandela Metropolitan University
2018	Magister Scientiae	Nelson Mandela University

Thesis:

COORDINATION POLYMERS FOR DENITROGENATION OF FUEL OILS

The study developed chemical strategies for improving the selectivity of coordination polymers for adsorption of nitrogen compounds from fuel oil before hydrodesulfurization. Nitrogen compounds complicate the processing, storage and usage of fuel oil. Nitrogen oxides are also emitted into the atmosphere upon combustion of fuel oil containing nitrogen compounds causing devastating effects on the environment and human health. The coordination polymers developed showed very good selectivity and adsorption capacities for basic nitrogen compounds. Further tests are now being carried out on real fuel feeds at Sasol to assess industrial applicability with the possibility of patenting the work.

Supervisor: Prof ZR Tshentu
Co-supervisor: Dr AS Ogunlaja

THE DEGREE OF DOCTOR OF PHILOSOPHY (OCEANOGRAPHY)

XOLISA DLOMO

Previous qualifications:

2012	BSc Chemistry and Ocean and Atmosphere Science	University of Cape Town
2012	BSc (Hons) Ocean and Atmosphere Science	University of Cape Town
2014	MSc Ocean and Climate Dynamics	University of Cape Town

Thesis:

OCEAN STRUCTURES AND DYNAMICS OF TWO OPEN BAYS ON THE EASTERN AGULHAS BANK

Upwelling, bay-scale currents, fronts and mixing in Algoa Bay and St Francis Bay occur over both short and long time periods. These physical ocean dynamics drive the temporal and spatial distribution of nutrients in the bays, thereby influencing primary and secondary production. Thermal gradients and fronts are driven by the wind and open ocean influences, such as the Agulhas Current, daily and seasonal variations in solar radiation, long and short period waves, air-sea fluxes, coastal trapped waves and terrestrial freshwater inflow. These phenomena are poorly understood along this part of the coastline and were the focus of this study.

Supervisor: Prof TG Bornman
Co-supervisors: Dr WS Goschen
Prof EE Campbell

THE DEGREE OF DOCTOR OF PHILOSOPHY (PHYSICS)

JUSTIN MICHAEL DOWNEY

Previous qualifications:

2006	Bachelor of Science	Nelson Mandela Metropolitan University
2007	Bachelor of Science Honours (Physics)	Nelson Mandela Metropolitan University
2009	Master of Science (Physics)	Nelson Mandela Metropolitan University

Thesis:

THE EFFECT OF SILICON ON PALLADIUM MIGRATION IN PYROLYTIC CARBON AND GRAPHITE

This thesis focuses on the evaluation of an advanced fuel particle design for high temperature, gas-cooled pebble-bed nuclear reactors (PBRs). PBRs use graphite fuel spheres filled with thousands of small fuel particles in which the uranium fuel is covered by layers of carbon and silicon carbide. To improve the performance and safety of the PBR, the release of a radioactive fission product, an isotope of silver, must be prevented. Since the fission product palladium enhances the diffusion rate of silver in silicon carbide, the advanced fuel particle uses palladium traps in the carbon layers to prevent palladium and silver from penetrating the silicon carbide layer. The results of this study indicate that silicon effectively traps palladium in graphite at 1400°C for 24 hours.

Supervisor: Prof JH Neethling
Co-supervisors: Dr JH O' Connell
Dr EJ Olivier

THE DEGREE OF DOCTOR OF PHILOSOPHY (PHYSICS)

DANIELLE AHLERS DOUGLAS-HENRY

Previous qualifications:

2015	BSc (Materials Development)	Nelson Mandela Metropolitan University
2016	BSc Honours (Physics)	Nelson Mandela Metropolitan University
2018	MSc (Physics) (*Cum Laude*)	Nelson Mandela University

Thesis:

MICROSTRUCTURAL CHARACTERIZATION OF SWIFT HEAVY ION (SHI) INDUCED ROTATION IN SINGLE CRYSTAL NiO

Since the advent of high energy heavy ion accelerators in the 1960's, the quest for a fundamental understanding of energy deposition and material relaxation in targets exposed to such irradiation has been ongoing. Recently in 2005, it was discovered that off normal high energy heavy ion irradiation causes crystal rotation in certain materials. The authors of this work had only indirect evidence of this rotation and was not able determine the microstructural processes responsible. For the current study, single crystal NiO was irradiated at 45° from normal with high energy Au ions. NiO was chosen for its highly symmetric NaCl structure, excellent radiation stability and high rotation rate during irradiation. A depth resolved study of irradiation induced crystal rotation was performed using Selected Area Electron Diffraction, Electron Backscatter Diffraction and Transmission Kikuchi Diffraction. High-Resolution Transmission Electron Microscopy was used to study the fluence dependent ion track morphology in this material. The results led to the publication of the first ever detailed description of the morphology of heavy ion tracks in NiO in both the non-overlapping and overlapping track regime. Moreover, a model was proposed to explain the observed crystal rotation in terms of the relevant crystal slip systems, low energy dislocation structures and irradiation induced stresses with direct evidence obtained through electron microscopy.

Supervisor: Dr JH O' Connell

THE DEGREE OF DOCTOR OF PHILOSOPHY (CHEMISTRY)

NOKUTHULA ETHEL MAGIDA

Previous qualifications:

2011	BScHons (Biochemistry)	University of Fort Hare
2013	MSc (Engineering Sciences, Chemical Engineering)	North-West University

Thesis:

EFFECT OF COAL AND MICROALGAE BIOMASS CO-FIRING ON CO_2, SO_2 AND NO_x EMISSIONS: AN EXPERIMENTAL EVALUATION

This doctoral study entails the understanding possible interactions occurring during co-combustion of coal and Scenedesmus microalgae (Coalgae®), with the aim of determining the effect of co-firing coal and Scenedesmus microalgae on greenhouse gases such as carbon dioxide (CO_2), sulfur dioxide (SO_2) and nitrous oxide (NO_x) emissions. Findings indicated that the interaction of microalgae slurry onto coal fines enhanced the chemical characteristics and thermal reactivity of coal, and reduced the emission levels of CO_2, SO_2 and NO_x by up to 31.4%, 15.8% and 26.1%, respectively. Moreover, the combustion efficiency increased significantly by up to 14.5% from baseline coal. The Coalgae® blends showed a synergistic effect due to different combustion characteristics of coal and Scenedesmus microalgae. The research findings suggests that Coalgae® blends can be considered as an alternative fuel in any coal driven process for energy generation and two research articles have been published from the study.

Supervisor: Prof B Zeelie (posthumous)
Co-supervisor: Dr GM Dugmore
Co-supervisor: Dr AS Ogunlaja

THE DEGREE OF DOCTOR OF PHILOSOPHY (CHEMISTRY)

PHOLANI SAKHILE MANANA

Previous qualifications:

2011	Baccalaureus of Scientiae in Medical Microbiology	University of the Free State
2012	Baccalaureus of Scientiae Honores in Chemistry	University of the Free State
2014	Magister Scientiae in Chemistry	University of the Free State

Thesis:

THE SYNTHESIS, EMPIRICAL AND THEORETICAL STUDIES OF VARIOUS (N→B) DIARYLBORINATE ESTERS

Potential artificial photosynthesis compounds were synthesised from various diarylborinate esters obtained from the condensation of borinic acid with nitrogen-containing substrates; ethanolamine, amino acids, 2-pyridylmethanol as well as 2-(ethyl amino ethanol). Structurally, characterization by means of diffraction studies based on single crystals and found to constitute chelate esters/amides featuring covalent B-O and dative N→B bonds. The (N→B) bond length was used to estimate the strength of these boron compounds stability and the determination of both the physical and-chemical properties. Furthermore, DFT calculations were performed by (B3LYP)/6-311++G(d,p), to corroborate and correlate the experimental findings, which gave a general R-squared value of 0.9978 for calculated vs experimental 13C chemical shifts.

Supervisor: Dr R Betz

THE DEGREE OF DOCTOR OF PHILOSOPHY (PHYSICS)

SINOYOLO NGONGO

Previous qualifications:

2013	Bachelor of Science (Mathematics)	Walter Sisulu University
2014	Bachelor of Science Honours (Physics)	Walter Sisulu University
2017	Master of Science in Nanoscience	Nelson Mandela Metropolitan University

Thesis:

CORROSION AND HYDROGEN RESISTANT MODIFIED ZIRLO SURFACES FOR NUCLEAR FUEL CLADDING

Nano crystalline diamond and chromium doped zirconium oxide are used in this study as surface protection of ZIRLO against corrosion and hydrogen pick up respectively. Identification of these two surface protection layers on ZIRLO was due to their mechanical and chemical properties when exposed to a nuclear reactor environment. This study was able to synthesise, characterise and test the ZIRLO modified surfaces. The results showed significant potential for resistance to corrosion and hydrogen pick up by ZIRLO.

Supervisor: Prof JH Neethling
Co-supervisor: Dr A Janse van Vuuren

THE DEGREE OF DOCTOR OF PHILOSOPHY (ZOOLOGY)

KATHARINA REUSCH

Previous qualifications:

2011	BSc (Biology)	University of Bremen, Germany
2013	MSc International Studies (Aquatic Tropical Ecology)	University of Bremen, Germany

Thesis:

FORAGING ECOLOGY OF KELP GULLS IN NATURAL AND ANTHROPOGENICALLY MODIFIED ENVIRONMENTS

Global changes, especially through the availability of anthropogenic food resources, can favour generalist species, such as the Kelp Gull, leading to increased population numbers. The aim of this thesis was to investigate the foraging ecology and health of Kelp Gulls in South Africa, from seven breeding colonies, varying in their proximity to landfills through GPS deployments, diet and stable isotope analysis, body condition indices and parasite loads. Colonies differed in their foraging movements and diet, showing a high foraging flexibility during incubation, and more specialised foraging during chick-feeding in some colonies. Kelp Gulls and their chicks were of similar health across colonies, with overall low parasite loads. This thesis showed that Kelp Gulls are winners of global change, able to exploit various foraging habitats, with seemingly little effects on their overall health during breeding, allowing them to successfully maintain their population.

Supervisor: Dr LC Pichegru
Co-supervisors: Prof PG Ryan

THE DEGREE OF DOCTOR OF PHILOSOPHY (MICROBIOLOGY)

KAITLIN ELIZABETH SPRONG

Previous qualifications:

2010	BSc	Nelson Mandela Metropolitan University
2011	BScHons	Nelson Mandela Metropolitan University
2014	MSc	Nelson Mandela Metropolitan University

Thesis:

UREAPLASMA SPECIES IN THE PLACENTA AND HISTOPATHOLOGY ASSOCIATED WITH PRETERM BIRTH

This doctoral research investigated placentas delivered from women with high-risk pregnancies in a tertiary referral hospital. The presence of Ureaplasma spp. bacteria, and distinct microbial diversity detected using Next Generation Sequencing, in the placenta was associated with preterm birth. The pathology identified by histology emphasises the need for placental histology in all preterm births. This work extends the body of knowledge within the field of ureaplasmology, the microorganisms within the placenta and factors associated with adverse pregnancy outcomes. The findings have been published nationally and internationally, while making a significant contribution in the field of histopathology, obstetrics and gynecology.

Supervisor: Dr S Govender
Co-supervisor: Prof CA Wright

THE DEGREE OF DOCTOR OF PHILOSOPHY (COMPUTER SCIENCE)

ANTHEA VIVIAN VAN DER HOOGEN

Previous qualifications:

2012	BCom (Business Management and CS)	Nelson Mandela Metropolitan University
2012	BComHons (IS and Business Management)	Nelson Mandela Metropolitan University
2014	MCom (CS and IS) (*Cum Laude*)	Nelson Mandela Metropolitan University

Thesis:

A VALUE ALIGNMENT SMART CITY STAKEHOLDER MODEL

This study addressed the challenges that prevent the creation of value for Smart City stakeholders in developing countries, specifically for the initiatives that focus on the data value chain. Therefore, a theoretical Value Alignment Smart City Stakeholder (VASCS) model was designed. The model was applied to Smart City initiatives in two case studies in the Eastern Cape Province of South Africa, namely the Nelson Mandela Bay and Buffalo City. The drivers identified for these initiatives were primarily cost reduction, data and system integration and quality assurance. The main benefits cited were provision of infrastructure, education and training and digitalisation. The challenges related to data access were a lack of access to resources, problems with service delivery, a lack of technical skills and an increasing digital and physical divide. These challenges negatively impact decision-making and service delivery to citizens. The VASCS model can be used for Smart City projects to plan related initiatives more effectively, improve value and the quality of life to all stakeholders. The research produced five publications, of which one received the Best Paper award.

Supervisor: Prof BM Scholtz
Co-supervisor: Prof AP Calitz

THE DEGREE OF DOCTOR OF PHILOSOPHY (OCEANOGRAPHY)

ESTEE ANN VERMEULEN

Previous qualifications:

2014	BSc (Ocean and Atmosphere Science and Marine Biology)	University of Cape Town
2015	BScHons (Ocean and Atmosphere Science)	University of Cape Town
2017	MSc (Physical Oceanography)	University of Cape Town

Thesis:

APPLYING A SYSTEMS ANALYSIS APPROACH TO SUPPORT MARINE SPATIAL PLANNING IN ALGOA BAY, SOUTH AFRICA

A healthy marine environment is central to the ecosystem-based management approach and is recommended for achieving sustainable development outcomes in marine spatial planning. Algoa Bay, a complex social-ecological marine space, hosts a range of marine uses that are closely interconnected with the health of the marine system. Future trajectories of marine uses and related marine sustainability goals are developing according to shifting needs of various sectors operating in the bay. The study explored these trends and the underlying feedback effects driving the change through an exploratory system dynamics model, the Algoa Marine Systems Analysis Tool, and tested the efficacy of potential management interventions under alternative scenarios to achieve long-term goals for marine sustainability.

Supervisor: Prof AT Lombard
Co-supervisors: Dr JK Clifford-Holmes
Prof UM Scharler

FACULTY OF EDUCATION

THE DEGREE OF DOCTOR OF PHILOSOPHY (EDUCATION)

EDWARD MASEMBE

Previous qualifications:

2003	Bachelor of Arts (Education)	Makerere University
2008	Master of Education	Makerere University

Thesis:

USING COMMUNICATIVE STRATEGIES TO FACILITATE LUGANDA LANGUAGE TEACHING AND LEARNING IN AUTHENTIC CONTEXTS

The purpose of the study was to explore how teachers could promote interactive teaching and learning of the Luganda language by implementing communicative strategies for enhanced learning. Through the application of a participatory action research design using the qualitative approach data were elicited from participant reflective sessions, participant observation, field reference notes and participant reflective journals. The rich accumulated data from multiple sources were analysed inductively through the implementation of a multi-layered participatory approach to data analysis. The findings indicated that through the participants' exposure to a variety of communicative strategies they were eager to implement such interactive strategies in their classes for authentic learning. Furthermore, the application of a participatory approach to learning enabled the participants to become aware of the significance of learner-centred approaches and how these could be implemented creatively and authentically as part of their praxis.

Supervisor: Prof L Athiemoolam
Co-supervisor: Prof NN Mdzanga

THE DEGREE OF DOCTOR OF PHILOSOPHY (EDUCATION)

AYANDA SIMAYI

Previous qualifications:

1989	Secondary Teachers' Diploma	Lennox Sebe Teachers' College
1997	Bachelor of Arts	University of South Africa
2002	Baccalaureus Educationis	Nelson Mandela Metropolitan University
2010	Baccalaureus Educationis Honours	Nelson Mandela Metropolitan University
2014	Master of Education	Nelson Mandela Metropolitan University

Thesis:

A CULTURALLY RESPONSIVE STRATEGY FOR TEACHING SEXUAL CONCEPTS IN RURAL XHOSA SECONDARY SCHOOLS

This study investigated issues of taboo language use by teachers when teaching topics of a sexual nature during secondary school Biology classes. A professional development strategy was framed on Ogunniyi's Contiguity Argumentation Theory and the Grade 12 Life Sciences (Biology) curriculum. A culturally structured Indigenised Teaching Strategy (ITS) was developed by the teachers and used to teach the menstrual cycle. Bakhtin's theory of heteroglossia was used to explain different Xhosa terms used for sexual concepts. The study claims that using Contiguity Argumentation Theory (CAT) and Bakhtin's explanations of heteroglossia provides an effective professional development intervention in a deeply culturally determined Xhosa community

Supervisor: Prof P Webb

THE DEGREE OF DOCTOR OF PHILOSOPHY (EDUCATION)

CHANTELLE EMIRINA VAN NIEKERK

Previous qualifications:

1997	Baccalaureus Artium (Education)	University of Port Elizabeth
2007	Advanced Certificate in Education (Remedial Education)	Nelson Mandela Metropolitan University
2009	Baccalaureus Educationis Honours	Nelson Mandela Metropolitan University
2014	Master of Education (*Cum Laude*)	Nelson Mandela Metropolitan University

Thesis:

SUPPORTIVE GUIDING PRINCIPLES FOR THE CONVERSION OF MAINSTREAM SCHOOLS INTO FULL-SERVICE SCHOOLS

This qualitative interpretive study deals with the concerns relating to the conversion of mainstream schools into full-service schools in our current inclusive educational system. It makes an innovative and pioneering contribution to the scholarly field of inclusive education by presenting guiding principles for all stakeholders involved in this conversion. The study addresses the knowledge gap regarding this conversion in the field of inclusive education. The theoretical frameworks for the study are Bronfenbrenner's eco-systemic theory and Vygotsky's constructivist theory. The findings culminate in suggested guiding principles to all stakeholders represented by the different levels and systems of the eco-systems involved in such a conversion.

Supervisor: Dr CF Pienaar

FACULTY OF ENGINEERING, THE BUILT ENVIRONMENT AND TECHNOLOGY

THE DEGREE OF DOCTOR OF PHILOSOPHY (CONSTRUCTION MANAGEMENT)

TCHAD SHARON JATAU

Previous qualifications:

2007	BTech (Quantity Surveying)	Federal University of Technology, Minna Nigeria
2012	Masters (Facility Management)	Ahmadu Bello University, Nigeria
2018	MSc (Construction Management)	University of Jos, Nigeria

Thesis:

MODELLING HOW WORKERS' SHARED PERCEPTION OF HEALTH AND SAFETY INFLUENCES SAFE WORK PERFORMANCE

The thesis elicits responses to the question: 'Can workers' shared perception of health and safety (H&S) influence their safe-work performance?' The study developed an improved safety performance model which seeks to bridge an identified knowledge gap evident in the availability of literature reports on quantitative safety climate studies conducted around the globe and a dearth of similar reports from developing countries such as sub-Sahara Africa. A comparative analysis of data collected from construction professionals from Nigeria and South Africa was adopted using an explanatory-sequential mixed-methods research design, where a total of 255 statistical data and 25 textual data were submitted. The Nordic occupational safety climate questionnaire was modified for quantitative data collection while textual data was mediated through interviews built upon the results of the questionnaire to probe and foster a better understanding of the subject and of data analysis. This was done statistically and thematically, with the model developed based on the findings. The model revealed the need for a visible safety-behaviour among top management workers and the use of appropriate methods for safety knowledge transfer among construction workers. The study also identified a gap in the absence of a safety justice system. It concludes that, the responsibility for improved H&S compliance in construction still rests on management as their H&S behaviour communicates a level of priority which workers may adopt. Recommendations include a call for collaborative interdisciplinary research from other related domains to extend a robust body of knowledge on the subject area especially relating to the health of workers.

Supervisor: Prof FA Emuze
Co-supervisor: Prof JJ Smallwood

THE DEGREE OF DOCTOR OF PHILOSOPHY IN ENGINEERING (MECHATRONICS)

SHAHROKH HATEFI

Previous qualifications:

2010	BEng (Electrical Engineering)	Islamic Azad University, Iran
2015	MEng (Mechatronics Engineering)	Islamic Azad University, Iran

Thesis:

HYBRID SINGLE-POINT DIAMOND TURNING PROCESS FOR ULTRA-HIGH-PRECISION OF TITANIUM

Single-point diamond turning (SPDT) is the leader technology for ultra-high-precision of optical products with optical surface roughness down to one nanometre. The SPDT products have a wide range of applications in different fields of industry, including biomedical, space science, military, defence, and other advanced engineering applications. However, there are limitations associated with this state-of-the-art technology. SPDT of hard-to-cut materials including titanium alloys is problematic. Titanium is a widely used material, however, it has low machinability with SPDT technology. High tool wear and optical surface roughness are major limitations in diamond turning of titanium. The purpose of this study was to design and develop a hybrid single-point diamond turning platform for cutting titanium alloys. By design and development of non-conventional machining techniques as well as on-machine metrology solutions, the outcome of the SPDT process has been improved. Applying non-conventional machining techniques can improve the machining conditions. The results of this experimental study have revealed that using non-conventional machining techniques can significantly improve the machining results in terms of the quality of optical surface generation.

Supervisor: Prof K Abou-El-Hossein

THE DEGREE OF DOCTOR OF PHILOSOPHY IN ENGINEERING (MECHATRONICS)

PETER BABATUNDE ODEDEYI

Previous qualifications:

2005	Bachelor of Engineering (Mechanical Engineering)	University of Ilorin, Ilorin Nigeria
2013	PGDip (Industrial Engineering)	University of Stellenbosch
2017	Master of Engineering (Mechatronics)	Nelson Mandela University

Thesis:

ULTRA-HIGH PRECISION MACHINING OF RAPIDLY SOLIDIFIED ALUMINIUM (RSA) ALLOYS FOR OPTICS

The purpose of this study is to carry out ultra-high precision machining on Rapidly solidified Aluminium (RSA) alloys for optics. The advancement of ultra-precision technique is one of the most adaptable machining processes in the manufacturing of very complex and high-quality surface structures for industrial, medical, aerospace and communication applications. Studies have shown that single-point diamond turning has an outstanding ability to machine high-quality optical components at a nanometric scale. However, in a responsive cutting process, the nanometric machinability of these optical components can easily be affected by several factors. Therefore, a comprehensive scientific understanding of the Nano-cutting mechanics is critical, especially in the modelling and analysis of cutting forces, surface roughness, chip formation, acoustic emission, material removal rates, and molecular dynamics simulation of the RSA alloys to bridge the gap from fundamental research to industrial applications. This study shows that RSA alloys are the materials of choice for the manufacture of optical mould inserts which yield high surface quality that can be used in electronics, military, space, communication, and medical devices.

Supervisor: Prof K Abou-El-Hossein

FACULTY OF HEALTH SCIENCES

THE DEGREE OF DOCTOR OF PHILOSOPHY (GENERAL HEALTH SCIENCES)

TERI-LYNNE FOGARTY

Previous qualifications:

1998	Bachelor of Pharmacy	University of Port Elizabeth
2002	Masters of Pharmacy	University of Port Elizabeth

Thesis:

PHARMACY SUPPORT PERSONNEL QUALIFICATIONS AND SCOPE OF PRACTICE NEEDS: THE SOUTH AFRICAN EXPERIENCE

The purpose of the study was to determine if qualifications for Pharmacy Support Personnel (PSP) in South Africa have provided the knowledge and practical skills required by the prescribed scope of practice. The study was a mixed-methods design in the pragmatic paradigm and was structured around the theoretical framework of the intended, the enacted, and the experienced curricula proposed by Billett (2006). Qualification changes should not be one dimensional; in addition to responding to changes in legislation, stakeholder needs should be considered, and the potential effects on both providers and learners should be considered. The study has provided insight into the education and training of PSP in South Africa and contributes to the development of education and training of PSP globally. With PSP training being informal in many countries around the world and needing to move to more formal training, the recommendations from this study can be used to guide regulators and training providers in the development of qualifications and curricula for PSP.

Supervisor: Prof SF Burton

THE DEGREE OF DOCTOR OF PHILOSOPHY (GENERAL HEALTH SCIENCES)

SOPHIA EMMARENZIA MARSH

Previous qualifications:

2000	Bachelor of Pharmacy	University of Port Elizabeth
2002	Master of Science	University of Port Elizabeth
2011	Master of Science	University of Birmingham

Thesis:

TOWARDS NATIONAL HEALTH TECHNOLOGY ASSESSMENT FOR MEDICINES IN SOUTH AFRICA: DATA REQUIREMENTS AND STATUS OF HEALTH-RELATED QUALITY OF LIFE RESEARCH

Recommendations were made for evidence generation activities supporting national health technology assessment (HTA) in the public health sector, focussing on health-related quality of life (HRQoL) data for cost-utility analysis (CUA). The study is the first to evaluate HRQoL as a South African research field, the existing local HRQoL data's applicability to CUA and the instruments used. The South African Guidelines for Pharmacoeconomic Submissions were deemed appropriate for full HTA. However, observational, cross-sectional studies, which are unlikely to support CUA, dominated the data and few HRQoL instruments suitable for CUA have been adequately translated into local languages. Encouragingly, most research involved South African based researchers and institutions.

Supervisor: Prof I Truter

THE DEGREE OF DOCTOR OF PHILOSOPHY (PSYCHOLOGY)

GARRET CHRISTOPHER BARNWELL

Previous qualifications:

2009	BA (Psychology)	Nelson Mandela Metropolitan University
2010	BA Hons (Psychology)	Nelson Mandela Metropolitan University
2015	Masters (Clinical Psychology)	Nelson Mandela Metropolitan University
2013	Masters (Conflict Transformation and Management)	Nelson Mandela Metropolitan University

Thesis:

A MULTIPLE CASE STUDY EXPLORATION INTO COMMUNITY MEMBERS' ECOPSYCHOLOGICAL RESPONSES TO ENVIRONMENTAL DEGRADATION IN SOUTH AFRICA

This doctoral study's aim is to explore community members' reactions and responses to different forms of environmental degradation in South Africa by analysing two case studies (Rustenburg in the North West province and Limpopo province's Vhembe District). The qualitative case studies relied on emplaced individual and focus group interviews. The findings of the study were presented in this doctoral thesis, which consisted of five peer-reviewed publications. The study demonstrated the interconnectedness between histories of colonialism, land injustices and environmental degradation that contribute to intergenerational psychological distress. In response, grassroots community organising groups play a critical role in addressing the resulting cumulative environmental harms through place-based resistance and dialogical resurgence. Moreover, the study suggests that critical psychologies have important roles to play in supporting land and environmental justice struggles.

Supervisor: Prof L-A Stroud
Co-supervisor: Prof MB Watson

Academic Dress

Special academic attire has been designed for office bearers at Nelson Mandela University to be worn at prestigious academic events like graduation.
Each outfit – from that of the Chancellor and Vice-Chancellor to those of the Executive Deans – has been meticulously selected to signify a particular office; this is a tradition that is consistent with leading universities throughout the world.
The gowns, caps and hoods of Nelson Mandela University graduates were similarly inspired and are explained in detail below.
Academic dress for graduates at Nelson Mandela University is as follows:

Doctoral Degrees

Gown: Cardinal red polyester cashmere gown with long pointed sleevespleated up with blue cord and button and lined with blue satin with 125mm facings and a blue collar.

Hood: Full shape hood in cardinal red polyester cashmere lined with faculty colour satin and edged around the cowl with 75mm faculty colour ribbon with 15mm blue ribbon overlaid central. 50mm wide straight neckband in cardinal red polyester cashmere, 25mm faculty colour ribbon in centre of neckband with 15mm blue ribbon overlaid central to faculty ribbon.

Cap: Round doctor's bonnet in black velvet with faculty colour cord and tassel.

Master's degrees

Gown: Black gown, long pointed sleeves pleated up with blue twisted double cord and button. Similar cord detail is used.

Hood: Full shape blue hood lined faculty colour satin and edged around the outside of the cowl with 75mm faculty colour with ribbon. 50mm straight neckband in blue with 25mm faculty colour ribbon centred.

Cap: Black mortarboard with blue tassel.

Postgraduate Diplomas

Gown: Black gown, long pointed sleeves pleated up with blue twisted double cord and button. Similar cord detail.

Hood: Blue simple shape hood lined silver grey satin. Straight neckband with 15mm faculty ribbon on top edge of neckband and around cowl. 15mm silver grey ribbon on bottom edge of neckband and around cowl spaced 20mm away from the faculty colour.

Cap: Black mortarboard with blue tassel.

Bachelor Honours Degrees

Gown: Black gown, long pointed sleeves pleated up with blue twisted double cord and button. Similar cord detail.

Hood: Blue simple shape hood lined silver grey satin with 50mm wide straight neckband in faculty colour. Cowl edged 75mm faculty colour ribbon on the outside. 15mm silver grey ribbon runs along the outer edge of the cowl, overlaid on faculty ribbon and on top edge of neckband.

Cap: Black mortarboard with blue tassel.

Four-Year Bachelor's Degrees (Including Bachelor of Technology Degrees)

Gown: Black gown, long pointed sleeves pleated up with blue twisted double cord and button. Similar cord detail.

Hood: Blue simple shape hood lined silver grey satin with 50mm wide straight neckband in faculty colour. Cowl edged 75mm faculty colour ribbon on the outside. Silver grey cord runs along the outer edge of the cowl, overlaid on faculty ribbon and on top edge of neckband.

Cap: Black mortarboard with blue tassel.

Three-Year Bachelor's Degrees

Gown: Black gown, long pointed sleeves pleated up with blue twisted double cord and button. Similar cord detail.

Hood: Blue simple shape hood lined with silver grey satin with 50mm wide straight neckband in faculty colour. Cowl edged 75mm faculty colour ribbon on the outside.

Cap: Black mortarboard with blue tassel.

Advanced Diploma

Gown: Black gown, long pointed sleeves pleated up with blue twisted double cord and button. Similar cord detail.

Hood: Blue simple shape hood lined with silver grey satin with 50mm wide straight neckband. 15mm faculty colour ribbon on top and bottom of neckband around cowl.

Cap: Black mortarboard with blue tassel.

Diploma

Gown: Black gown, long pointed sleeves pleated up with blue twisted double cord and button. Similar cord detail.

Hood: Blue simple shape hood with 50mm wide straight neckband. 25mm faculty colour ribbon on centre of neckband.

Cap: Black mortarboard with blue tassel.

Faculty Colours

Humanities:	Yellow
Business & Economic Sciences:	Plum
Health Sciences:	Apple green
Law:	Grey blue
Education:	Orange
Science:	Dark green
Engineering, the Built Environment and Technology:	Light blue
Business School:	Black and magenta

Messrs T. Birch & Co (Pty) Ltd and its subsidiary, Croft Magill & Watson (Pty) Ltd, have been appointed as official robe maker to the University and as contracted suppliers of choice to students for graduation academic attire.

Photos In Seconds has been appointed as the official photographer of the University.

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 recognised 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
The Alumni Relations Office is responsible for the day-to- day running of the Alumni Association, the University Shop and all matters related to alumni engagement. Primarily, we build relationships and maintain strong links with graduates, and friends of the University through events, networks, services, communication and community engagement.

The Role of Nelson Mandela University graduate
We encourage you to attend alumni engagement in person and online events, be an active alumni ambassadors of your alma mater in a variety of ways including sharing news about your achievements, sharing your expertise and skills, and supporting fundraising programmes.

Lifetime connection with Nelson Mandela University
We are proud of our alumni and we value your connection. We encourage you to stay in touch by updating your graduate profile by using the following link: **https://mandela.devman.co.za/Devman/alumni/findme/** We will keep you informed regarding University developments and alumni news through our event invitations and regular e-newsletters.

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.

More info: **T** +27 41 504 3935 **E** alumni@mandela.ac.za
Join us: Nelson Mandela University Alumni Nelson Mandela University Alumni
www.alumni.mandela.ac.za @MandelaUni

Support the University Shop
You can now shop ONLINE for all Nelson Mandela University branded clothing, corporate gifts, bags, and memorabilia! Alternatively, visit the University Shop situated at the Sanlam Student Village on University Way, Summerstrand. To Shop Online visit: **https://onlineshop.mandela.ac.za/**

More info: **T** +27 41 504 4371 **E** shop@mandela.ac.za
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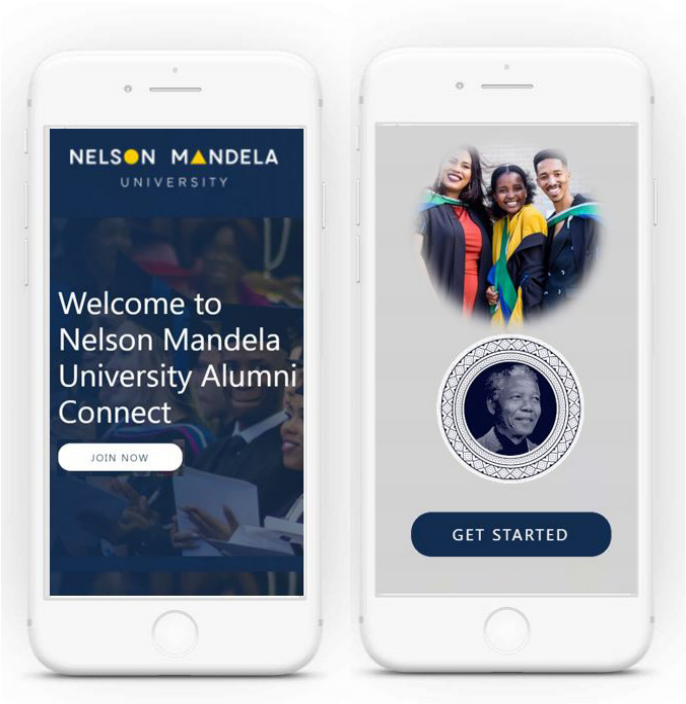
Stay connected to your alma mater! #MandelaAlumni4Life



NATIONAL ANTHEM

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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