

APRIL 2022

GRADUATION CEREMONY

Bloemfontein Campus

THURSDAY
21 APRIL 2022
14:00

Faculty of Natural and Agricultural Sciences

Bachelor's Degrees, Postgraduate Diplomas, Master's Degrees, and
Doctor of Philosophy



UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA



PROGRAMME

21 APRIL 2022 | 14:00
BLOEMFONTEIN CAMPUS

CONSTITUTION OF THE CONGREGATION

OFFICIAL WELCOME

MUSICAL ITEM

PRESENTATION OF CANDIDATES

CONGRATULATORY MESSAGE

NATIONAL ANTHEM OF SOUTH AFRICA

DISSOLUTION OF THE CONGREGATION

Due to the nature of the graduation ceremony and the number of students who will be graduating, it will not be practically possible to uphold social distancing in the venue. To ensure the protection of all individuals present on campus, the university has implemented the COVID-19 Regulations and Required Vaccination Policy, which regulates the access of staff, students, and visitors to the campuses.

By attending the graduation ceremony, you agree that the UFS may use photographs taken by the official photographer and on which you appear, for marketing purposes.

By attending the graduation ceremony, you agree that the UFS may use video footage taken by the official videographer and in which you appear, for marketing purposes.



Nkosi sikelel' iAfrika

NATIONAL ANTHEM OF SOUTH AFRICA

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 Afrika -
South Afrika.

Uit die blou van onse hemel,
Uit die diepte van ons see,
Oor ons ewige gebergtes,
Waar die kranse antwoord gee,
Sounds the call to come together,
And united we shall stand,
Let us live and strive for freedom,
In South Africa our land.

In order to maintain the dignity of the ceremony, you are requested to take note of the following:

- Please stand as the procession enters the hall
- Do not move around during the ceremony in order to take photos
- Please refrain from unacceptable actions such as whistling
- Please put your cellphone on silent so as not to disturb the proceedings
- We strive to conduct the ceremonies in a dignified manner
- Please do not leave the hall before the graduation proceedings have been concluded
- Family and friends unable to attend may watch the full graduation ceremonies through our livestream link at <http://livestream.ufs.ac.za>.

Inspiring excellence, transforming lives through quality, impact, and care.



ABOUT THE UFS

The University of the Free State (UFS) has a proud history as one of the oldest, most respected institutions of higher education in South Africa. It opened its doors in Bloemfontein in 1904 as the Grey University College, with six students in the Humanities. Today it is a **multi-campus institution**, with two diverse campuses in Bloemfontein and one in Qwaqwa in the scenic Eastern Free State, accommodating more than 40 000 students in its **seven faculties** (Economic and Management Sciences, Education, Health Sciences, the Humanities, Law, Natural and Agricultural Sciences, Theology and Religion), with an increasing number of international students and associates, and an ever-widening scope of active involvement in and contribution to its surrounding communities.



For the past **118 years**, the UFS has been delivering quality graduates who have made their mark in various sectors. What sets the institution apart is its holistic student support initiatives, enabling it to achieve some of the highest success rates in the country. Delivering students who are in high demand in the global job market, remains a top priority. An established network of industry partners and close collaboration with the public and private sectors, as well as a continuous process of transformation and curriculum renewal, dovetail to produce highly employable graduates.



UFS research efforts are driven by dedicated scholars, some of whom are **international leaders** in their fields, with industry and social impact and real-world application.

Through the principle of **engaged scholarship**, the UFS responds to societal needs, using its **scholarly and professional expertise** with an intentional public purpose and benefit.

The UFS is an institution that goes all out to provide its students and staff with an outstanding **university experience**. Anchored in a value bedrock of **social justice, respect, and caring**, the institution has managed to remain steadfastly relevant in a challenging and ever-changing national higher education landscape.

DEVELOPMENT OF THE UFS CREST OVER MORE THAN A CENTURY



1904

Up to 1935, the same coat of arms was used as the Grey College School.



1935

By 1935, with the name change to University College of the Orange Free State, the coat of arms fell into disuse, especially among students.



1947

In 1947, an agreement between management and students led to the new motto Per Fidem ad Sapientiam (Through faith to wisdom).



1950

In 1952, it was changed to In Deo Sapientiae Lux (In God is the light of wisdom). The traditional orange, white and blue, linking the UFS to the South African national colours, changed in the late 1990s.

The orange was replaced by cherry red.



2011

The academic brand - the historic University of the Free State crest that has been the symbol of the university since 1952, has evolved to embrace the aesthetic expectations of the stakeholders.

The shape of the traditional academic shield has been simplified and contemporised. Much of the symbolism of the crest remains intact, acknowledging the location of the UFS brand as one of the country's premier institutions of higher education, with a proud history of academic excellence and an ever evolving, vibrant culture.

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA



GRADUATION CEREMONY 2022

Honorary Awards | Honorary Doctorates

1950	GLP Moerdyk – DLitt (h.c.)		FP Retief – DMed (h.c.)		T (Karel) Schoeman – DLitt (h.c.)
1951	NC Havenga – LLD (h.c.)		JA Stegmann – DCom (h.c.)		YK Seedat – DMed (h.c.)
1952	Thos Blok – DEd (h.c.)	1987	WA Joubert – LLD (h.c.)		MK Seely – DSc (h.c.)
	SHS Rubidge – DSc (h.c.)		B Kok – DPhil (h.c.)		C Seerveld – DPhil (h.c.)
1955	CR Swart – LLD (h.c.)		WP Venter – DCom (h.c.)		F van Z Slabbert – DPhil (h.c.)
	CA v Niekerk – LLD (h.c.)	1988	JJN Cloete – DAdmin (h.c.)		JC Steyn – DLitt (h.c.)
1958	CPB Brink – LLD (h.c.)		FC Fensham – DLitt (h.c.)		PA Verhoef – DTh (h.c.)
	CF Visser – DEd (h.c.)		JW vd Riet – DPhil (h.c.)		L van den Heever – LLD (h.c.)
1959	DB Bosman – DLitt (h.c.)	1989	BJ Meyer – DSc (h.c.)	2005	HA Wessels – LLD (h.c.)
	SP le Roux – DScAgric (h.c.)		N van Uden – PhD (h.c.)		A du P Heyns – DMed (h.c.)
	DF Malherbe – DLitt (h.c.)	1990	MG Corbett – LLD (h.c.)		JJF Durand – DPhil (h.c.)
	GH v Rooyen – MA (h.c.)		JS Rabie – DLitt (h.c.)		JA Groenewald – DSc (h.c.)
1960	SPE Boshoff – DLitt (h.c.)	1991	SS Brand – DCom (h.c.)		WH Neuser – DTh (h.c.)
1961	T Boydell – DPhil (h.c.)		JWL de Villiers – DSc (h.c.)		M Ramos – PhD (h.c.)
1962	ES Botes – DEd (h.c.)		GT Fagan – DArch (h.c.)		SJ Terreblanche – DCom (h.c.)
	PE Rousseau – DSc (h.c.)		JH Hofmeyer – PhD (h.c.)	2006	T Moss – PhD (h.c.)
1963	EH Louw – LLD (h.c.)		E v Heerden – DLitt (h.c.)		PV Cox – PhD (h.c.)
	EN Roberts – DSc (h.c.)	1992	JP Louw – DLitt (h.c.)	2007	BJ (Bannie) Britz – DArch (h.c.)
	JGF (Kaalkop) vd Merwe – DCom (h.c.)		H Olivier – DSc (h.c.)		KPD Maphalla – PhD (h.c.)
	HF Verwoerd – DLitt et Phil (h.c.)	1993	JD Anderson – DMed (h.c.)	2008	D Ferreira – DSc (h.c.)
1966	PSZ Coetzee – DPhilTh (h.c.)		RR Arndt – DSc (h.c.)	2009	JC Look – PhD (h.c.)
	PJ du Toit – DSc (h.c.)		SJ Naudé – LLD (h.c.)		LTC Harms – LLD (h.c.)
	MS Louw – DCom (h.c.)	1994	JJ Human – DPhil (h.c.)	2010	P Gordhan – PhD (h.c.)
1967	SM Naudé – DSc (h.c.)		JA Myburgh – DMed (h.c.)		BBS Ngubane – PhD (h.c.)
	LC Steyn – LLD (h.c.)		JP vd Walt – DSc (h.c.)		AH Strydom – PhD (h.c.)
	BJ Vorster – LLD (h.c.)	1995	WA Landman – DEd (h.c.)		M Jones – PhD (h.c.)
1968	SJ Naudé – DCom (h.c.)		WL Mouton – DPhil (h.c.)	2011	D Tutu – DTh (h.c.)
1969	CW (Nellie) Swart – DPhil (h.c.)	1996	WDO Marasas – DSc (h.c.)		P Fourie – DLitt (h.c.)
	AJJ Wessels – DCom (h.c.)		NE Wiehahn – LLD (h.c.)		OG Winfrey – DEd (h.c.)
1970	GS Nienaber – DLitt (h.c.)	1997	AP Brink – DLitt (h.c.)		RWM Frater – PhD (h.c.)
	HO Mönnig – DSc (h.c.)		B Hurwitz – DPhil (h.c.)		A Sawyer – DEd (h.c.)
1971	N Diederichs – DCom (h.c.)	1998	FC Müller – DMed (h.c.)	2012	RJ Goldstone – LLD (h.c.)
	RS Verster – DPhil (h.c.)	1999	FM Claerhout – DPhil (h.c.)		ER v Heerden – DLitt (h.c.)
1972	LW Hiemstra – DPhil (h.c.)		JJF Hefer – LLD (h.c.)		M Nussbaum – DLitt (h.c.)
	PJ Meyer – DPhil (h.c.)		S Nigam – DSc (h.c.)		OW Prozesky – MD (h.c.)
1975	PJ Nienaber – DLitt (h.c.)		WL Nkuhlu – DCom (h.c.)	2013	FDJ Brand – LLD (h.c.)
	De la H de Villiers – DScAgric (h.c.)		MA Ramphela – DPhil (h.c.)	2014	ZKG Mda – DLitt (h.c.)
	GJ Stander – DSc (h.c.)		HJO van Heerden – LLD (h.c.)		ML Blum – PhD (h.c.)
1976	AJA Roux – DSc (h.c.)		FJ van der Merwe – PhD (h.c.)	2015	L Mulvey – DLitt (h.c.)
1978	SP Botha – DSc (h.c.)	2000	MH Daling – DCom (h.c.)		L Brahimi – DPhil (h.c.)
	EM van Zinderen Bakker – DSc (h.c.)		TN Liversedge – PhD (h.c.)		JM Samuel – DEd (h.c.)
	HB Thom – DEd (h.c.)		I Mahomed – LLD (h.c.)		MA Oduyoye – DTh (h.c.)
1979	FCL Bosman – DPhil (h.c.)	2001	BP Gilbertson – DCom (h.c.)	2016	JD Sacks – DEcon (h.c.)
	G Cronjé – DSocSc (h.c.)		NR Mandela – LLD (h.c.)		RJ Khoza – DEcon (h.c.)
	CJF Human – DCom (h.c.)		EC Taglauer – DSc (h.c.)		TA Manuel – DEcon (h.c.)
1980	G Boonzaier – DPhil (h.c.)	2002	BH Meyer – PhD (h.c.)		M du Preez – PhD (h.c.)
1981	PW Botha – DPhil (h.c.)		BAK Rider – LLD (h.c.)		J Samoff – DPhil (h.c.)
	B Human – DCom (h.c.)		CF Slabber – PhD (h.c.)		F Haffajee – PhD (h.c.)
	SG Shuttleworth – DSc (h.c.)		JM Stetar – DEd (h.c.)	2017	PH Holloway – DSc (h.c.)
1982	BLS Franklin – DPhil (h.c.)	2003	EWA de Corte – DEd (h.c.)		M Botha – LLD (h.c.)
	GvN Viljoen – DEd (h.c.)		HA Serebro – DPhil (h.c.)	2019	BL Fanaroff – DSc (h.c.)
1983	L Luyt – DCom (h.c.)		AG Sykes – DSc (h.c.)		J Mofokeng wa Makhetha – DLitt (h.c.)
	SF Zaaïman – DPhil (h.c.)	2004	S Badat – DPhil (h.c.)		MB Molemela – LLD (h.c.)
1984	HS Steyn – DSc (h.c.)		R Bringle – DPhil (h.c.)	2021	ZM Yacoob – LLD (h.c.)
	FR Tomlinson – DScAgric (h.c.)		J de Wet – DMus (h.c.)		SM Pityana – DPhil (h.c.)
	JH vd Berg – DMed (h.c.)		CF Fauconnier – DSc (h.c.)		RJ van Niekerk – DLitt (h.c.)
1985	L Alberts – DSc (h.c.)		GJ Gerwel – DPhil (h.c.)	2022	WK Byanyima – PhD (h.c.)
	GG Cillié – DPhil (h.c.)		WD Jonker – DTh (h.c.)		DM Davis – LLD (h.c.)
	SPD le Roux – DLitt (h.c.)		A Krog – DLitt (h.c.)		DE Moseneke – LLD (h.c.)
	A Polson – DPhilMed (h.c.)		K Mokhele – DPhil (h.c.)		AL Sachs – LLD (h.c.)
	J du P Scholtz – DPhil (h.c.)		CJC Nel (Postuum) – PhD (h.c.)		MJ Wingfield – DSc (h.c.)
1986	S Grové – DMus (h.c.)		L Quayle – DMus (h.c.)		

Shields of Honour, Council and Chancellor's Medals

1994	Prof FO Müller (Shield of Honour)	2003	Prof HC Janse van Rensburg (Council Medal)
	RE Schoombie (Shield of Honour)		Prof SA Petersen (Shield of Honour)
1995	Prof FO Müller (Chancellor's Medal)	2008	Ludo Helsen (Shield of Honour)
	RE Schoombie (Chancellor's Medal)	2009	Prof JU Grobbelaar (Council Medal)
1996	Prof S Mittman (Shield of Honour)	2010	Mrs AM Dippenaar (Chancellor's Medal)
1997	Prof M Jansens (Shield of Honour)	2014	Dr H Verster (Chancellor's Medal)
1998	Prof CJC Nel (Chancellor's Medal)	2014	Mr JL Pretorius (Chancellor's Medal)
	Prof C Swanepoel (Chancellor's Medal)	2016	Mr AD Osler (Chancellor's Medal)
1999	WJ (Hansie) Cronje (Shield of Honour)		Ms M van der Merwe (Chancellor's Medal)
	Prof David Justice (Shield of Honour)	2017	Ms JS Isaacs (Chancellor's Medal)
2000	Prof P Rosseel (Shield of Honour)	2019	Mr JF de Villiers (Chancellor's Medal)
	Prof MJ Viljoen (Chancellor's Medal)		Ms EM Oosthuizen (Council Medal)
2001	Prof PC Potgieter (Chancellor's Medal)	2022	Dr N Pearce (Chancellor's Medal)
2002	T Moss (Shield of Honour)		Mr N Janse van Rensburg (Council Medal)
	Prof CD Roode (Chancellor's Medal)		

MESSAGE FROM THE RECTOR AND VICE-CHANCELLOR

Dear Student

Welcome to the graduation ceremony of the University of the Free State (UFS).

We are especially pleased that your graduation ceremony can take place in person and in the presence of the university congregation.

Today is a memorable day and a culmination of the time you spent here at the UFS. You are not only becoming an alumnus of this great 118-year-old institution, but you are now also part of a fraternity of exceptional individuals who have graduated before you.

Congratulations to our graduands – this is a special day indeed and it is certainly heart-warming to see so many of you being conferred these well-deserved qualifications today. You should be proud of your achievements – take a moment to celebrate and acknowledge YOU.

At the same time, you would not have reached this milestone without the support of many people around you – let us also acknowledge and express gratitude to your support structures – the parents, family, friends, guardians, and lecturers who made it possible for you to be here today.

As you venture into the world, you will find yourself contemplating what your role in the world is and what kind of a world you want to live in. Sometimes the road ahead can be challenging and complex – however, remember that the skills of hard work, resilience, determination, and focus will help you forge ahead. After all, these are the skills that have helped you to achieve your UFS qualification.

Also be mindful that collective and individual responsibility is important to our success – this became very clear during the pandemic. Reach out to others, lend a helping hand wherever you can, support each other, involve yourselves in your communities, and most of all, be kind and humane. Be mindful of these in everything that you do.

Graduands, I am proud of your resilience. You are truly inspiring, and I am confident that you are well prepared to embrace the future and flourish in anything you set your mind to.

Be brave, be bold, and make a difference in this world.

Best wishes

PROF FW PETERSEN

RECTOR AND VICE-CHANCELLOR | UNIVERSITY OF THE FREE STATE

Beste Student

Welkom by die Universiteit van die Vrystaat se gradeplegtigheid.

Ons is veral bly dat jou gradeplegtigheid in persoon en in die teenwoordigheid van die universiteitsgemeenskap kan plaasvind.

Vandag is 'n onvergeetlike dag en 'n hoogtepunt van die tyd wat jy hier aan die UV deurgebring het. Jy word nie net 'n alumnus van hierdie wonderlike 118-jaar-oue instelling nie, maar jy is nou ook deel van 'n broederskap van uitsonderlike individue wat voor jou gegraduateer het.

Baie geluk aan ons graduandi – vandag is voorwaar 'n spesiale dag en dit is inderdaad hartverbydend om te sien dat hierdie welverdiende kwalifikasies aan so baie van julle toegeken word. Jy moet trots wees op jou prestasies – neem 'n oomblik om JOU te vier en erkenning te gee.

Terselfdertyd sou julle nie hierdie mylpaal bereik het sonder die ondersteuning van baie mense rondom julle nie – laat ons ook erkenning gee en ons dank uitspreek teenoor julle ondersteuningstrukture – die ouers, gesinne, vriende, voogde en dosente wat dit vir julle moontlik gemaak het om vandag hier te wees.

Waar julle die wêreld aandurf, sal julle vind dat julle dalk wonder oor wat julle rol in die wêreld is en die soort wêreld waarin julle wil leef. Die pad vorentoe kan soms uitdagend en kompleks wees – onthou egter dat die vaardighede van harde werk, veerkragtigheid, vasberadenheid en fokus julle sal help om vooruit te gaan. Dit is immers die vaardighede wat julle gehelp het om julle UV-kwalifikasies te behaal.

Dink ook daaraan dat gemeenskaplike en individuele verantwoordelikheid belangrik is vir ons sukses – dit het baie duidelik geword tydens die pandemie.



Reik uit na ander mense, sit 'n handjie by waar julle ook al kan, ondersteun mekaar, raak betrokke by julle gemeenskappe, en bowenal, wees welwillend en menslik. Hou dit in gedagte in alles wat julle doen.

Graduandi, ek is trots op julle veerkragtigheid. Julle is waarlik inspirerend, en ek is vol vertroue dat julle goed voorbereid is om die toekoms aan te gryp en te floreer in enigiets wat julle aanpak.

Wees dapper, wees sterk en maak 'n verskil in hierdie wêreld.

Beste wense

PROF FW PETERSEN

REKTOR EN VISEKANSELIER | UNIVERSITEIT VAN DIE VRYSTAAT

Moithuti ya Ratehang

Re a le amohela moketeng wa kabo ya dikgau wa University of the Free State (UFS).

Re thaba ka ho kgethehileng hore mokete wa lona wa kabo ya dikgau o tla etswa le le teng moo ka seko pela mokgopi wa yunivesithi.

Lena ke letsatsi leo le tla le hopola kamehla mme ke sehlohlolo sa nako eo o e qetileng mona UFS. Ha se feela hore le fetoha alumnus setheong sena se sehlo sa thuto se nang le dilemo tse 118, empa jwale le boela le fetola karolo mokgatlo wa batho ba hlaleletseng ka mahetla ba ile ba fumantswaha dikgau tsa yunivesithi pele ho wena.

Ditebohiso ho baithuti ba rona ba di-graduate – lena ke letsatsi le kgethehileng ka nnete mme dipelo tsa rona di thabile haholo ho bona ba bangata ba lona le fuwa mangolo a lona a tshwaneleho ao le tshwanelehang ho a fumana kajeno. O tlameha ho ikotla sefuba ka sena seo o se fihleletseng – iphe nako ya ho nahana ka mokete ona le ho IKAMOHELA.

Ka nako e tshwanang, le ne le ke ke la kgona ho fihlella mohato ona wa bohlokwa ntle le tshetso ya batho ba bangata ba le potapotileng – le leboha ditheo tse ileng tsa le tshetso – batswadi, lelapa, metswalle, bahlokomedi, le dilekthara ba ileng ba le thusa ho fihla mohatong ona kajeno.

Jwalo ka ha le tswela kantle lefatsheng, le tla iphumana le nahana ka hore seabo sa lona e tla ba sefe lefatsheng le hore na le lakatsa ho phela lefatsheng la mofuta ofe. Ka dinako tse ding tsele e larileng kapele e ka ba le diphephetso le ho rarahana – le ha ho le jwalo, hopolang hore tsebo le bogconi ba ho ikakgela ka setotswana mosebetsing, mamello tlasa maima, boikemisetsa, le ho tsepamisa dikelelo ho tla le thusa ho hatela pele. Ho phaella mona, ena ke tsebo le bogconi bo le thusitseng ho fihlella mangolo a lona a tshwaneleho mona UFS.

Le boele le hopole hore boikarabelo bo kopanetsweng le boikarabelo ba motho ka bomong ke ba bohlokwa bakeng sa katleho ya rona – sena se ile sa bonahala ka ho hlakileng nakong ya lefu la sewa. Otlolela batho ba bang letsoho la hao, ba thuse kae kapa kae ha o kgona, tshetsoanang, e bang le seabo mesebetsing ya thuso ya setjhaba metseng ya lona, mme ka hodimo ho tsena kaofela, e bang batho ba mosa le ba nang le botho. Hopolang dintho tsena nthong efe kapa efe eo le e etsang.

Ke hlile ke motlotlo ka mamello ya lona, di-graduate. Ka sebele le fana a kgothatso, mme ke kgodishele hore le malala-a-laotswa ho amohela bokamoso le ho atleha nthong efe kapa efe eo o tsepamisang mehopollo ya lona ho yona.

E bang sebate, mme le etse phapang lefatsheng lena.

Ditakaletso tse ntle

MOPROFESARA FW PETERSEN

MOREKTORO LE MOTLATSA MOKANSELIRI | YUNIVESITHI YA FREISTATA

VISION

The University of the Free State is a research-led, student-centred and regionally engaged university that contributes to development and social justice through the production of globally competitive graduates and knowledge.

MOTTO

IN VERITATE SAPIENTIAE LUX

(In Truth is the Light of Wisdom)

OFFICE BEARERS



CHANCELLOR
 Prof BF Mohale
 Professor of Practice (JBS)



RECTOR AND VICE-CHANCELLOR
 Prof FW Petersen
 PhD (SU)



CHAIR OF COUNCIL
 Mr D Noko
 HND Mechanical Engineering (UJ)



VICE-RECTOR: OPERATIONS
 Prof P Naidoo
 PhD (VISTA)



VICE-RECTOR: INSTITUTIONAL CHANGE, STRATEGIC PARTNERSHIP, AND SOCIETAL IMPACT
 Dr M Qhobela
 PhD (KSU)



VICE-RECTOR: ACADEMIC
 Dr EL van Staden
 DPhil (UJ)



VICE-RECTOR: RESEARCH, INNOVATION AND INTERNATIONALISATION
 Prof RC Witthuhn
 PhD (UFS)



EXECUTIVE DIRECTOR: STUDENT AFFAIRS
 Mr T Hlasho
 MPhil (NMU)



REGISTRAR:
 Mr NN Ntsababa
 MPA (NMU)



CAMPUS PRINCIPAL: SOUTH CAMPUS
 Dr M Madiope
 DEd (Unisa)



CAMPUS PRINCIPAL: QWAQWA CAMPUS
 Dr M Mandew
 PhD (UN)



PRESIDENT OF CONVOCATION
 Dr PD du Toit
 PhD (UFS)



PRESIDENT: INSTITUTIONAL STUDENT REPRESENTATIVE COUNCIL
 Mr S Dube

DEANS



**DEAN:
ECONOMIC AND
MANAGEMENT SCIENCES**

Prof P Burger
PhD in Economics (UFS)



**DEAN:
EDUCATION**

Prof LC Jita
PhD (MSU)



**DEAN:
HEALTH SCIENCES**

Prof GJ van Zyl
PhD (UFS)



**DEAN:
THE HUMANITIES**

Prof H Hudson
PhD (UFS)



**DEAN:
LAW**

Prof JC Mubangizi
LLD (UDW)



**DEAN:
NATURAL AND
AGRICULTURAL SCIENCES**

Prof PD Vermeulen
PhD (UFS)



**DEAN:
THEOLOGY AND RELIGION**

Prof RS Letšosa
PhD (PU/CHE)



DEAN |

PROF PD VERMEULEN

DIPLOMAS

POSTGRADUATE DIPLOMA IN DISASTER MANAGEMENT

AMATEBELLE, Clinton Ekang
GQOBA, Noloyiso
HIPPOLYTE, Rondean Claire*
KALICHARAN, Sanchay
KUBUSHI, Botlhale Roberta
KYANZA, Annie
MABOTSA, Debbie
MAKHADO, Phathutshedzo
MAKOLOMAKOE, Thuto
MALEFANE, Pontsho Lydia
MBONGWE, Silindile Zakhona
MIYEN, Tsakani Cynthia
MOLEME, Boitumelo Brenda Joy Welda
MONARE, Dithuso Confidence
MOSALA, Paul Mosala
MPOTSHANE, Silondile
MUNYAI, Ndinanyi Sedwell
MUTHAMBI, Takalani Robert
NDJAMBA, Kambinda Johannes
NDLOVU, Puleng Paul
NDLOVU, Thulisile Brenda
NIEMAND, Rozain Nicolene
ORIMOLOYE, Yewande Mary
PETERSEN, Ilona
PRETORIUS, Kyle Michael

RANCHO, Kelebogile Gratitude
RATSETHANA, Ndivhaleni Floide
SINTU, Siyachuma Sandisiwe
SIQWAYI, Zolani
THABETE, Abigail
TOWA, Nombulelo Esther

POSTGRADUATE DIPLOMA IN INTEGRATED WATER MANAGEMENT

KOROPE, Samuel Pule
KUMANG, Mojatsohle Patronella
LEFEFA, Lereko Tshebeletso
LUDIDI, Nokulunga
MABITSELA, Koena Desire
MADONSELA, Hloniphekile Ayanda*
MALESA, Phetole Louis
MALULEKE, Lloyd
MLOKOTI, Thembelihle*
MOKOBORI, Thabang Felix
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Dissertation title: IDENTIFYING A NICHE MARKET FOR LOCAL, HAND-MADE AND SOCIALLY RESPONSIBLE WOOL PRODUCTS IN SOUTH AFRICA

Supervisor: Prof H Jordaan

Co-supervisor: Dr WA Lombard

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Dissertation title: THE ROLE OF LIVELIHOOD ASSETS AND PSYCHOLOGICAL CAPITAL TOWARDS YOUTH PARTICIPATION IN AGRICULTURAL SUPPORT INITIATIVES

Supervisor: Dr JIF Henning

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Dissertation title: OPTIMAL
WATER USE AND
PRODUCTIVITY CHANGES:
EVIDENCE FROM AN
AGRICULTURAL WATER USE
OPTIMISATION MODEL

Supervisor: Prof B Grove

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Dissertation title: WATER
PRODUCTIVITY OF MALT
BARLEY UNDER DEFICIT
IRRIGATION

Supervisor: Dr JH Barnard

Co-supervisor: Dr E Van Der
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Dissertation title: INFLUENCE OF COLD STRESS ON THE YIELD AND QUALITY OF MALTING BARLEY (HORDEUM VULGARE L.)

Supervisor: Dr GM Ceronio

MASTER OF SCIENCE IN AGRICULTURE MAJORING IN AGROMETEOROLOGY

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Dissertation Title: IMPLICATIONS OF CLIMATE VARIABILITY ON RISK AVOIDANCE OF MAIZE PRODUCTION IN THE NORTH WEST PROVINCE, SOUTH AFRICA

Supervisor: Dr WA Tesfuhuney

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MASTER OF SCIENCE IN AGRICULTURE MAJORING IN ANIMAL SCIENCE

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Dissertation title: EVALUATING THE USE OF DIETARY SUPPLEMENTAL ASCORBIC ACID ON BROILER PERFORMANCE AND MEAT QUALITY CHARACTERISTICS UNDER SOUTH AFRICAN SUMMER CONDITIONS

Supervisor: Dr F de Witt

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Dissertation title: PHENOTYPIC CHARACTERISATION OF DIFFERENT RABBIT BREEDS IN SOUTH AFRICA

Supervisor: Prof. F.W.C. Nesor

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Dissertation title: APPLICATION OF BENEFICIAL SOIL AND ENDOPHYTIC MICROBES FOR THE CULTIVATION OF OPUNTIA FICUS-INDICA

Supervisor: Prof WJ Swart

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MASTER OF SCIENCE IN AGRICULTURE MAJORING IN SOIL SCIENCE

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Dissertation title: EFFECT OF SOIL TAXONOMY ON THE PREDICTION OF MAIZE (ZEA MAYS L.) YIELD POTENTIAL

Supervisor: Prof CW Van Huyssteen

Co-supervisor: Dr GM Ceronio

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Dissertation title: LONG-TERM EFFECTS OF RANGELAND CONDITION ON SOIL PROPERTIES IN SEMI-ARID SOUTH AFRICA

Supervisor: Dr E Kotze

Co-supervisor: Prof JJ Van Tol

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Dissertation title: SOIL AND GEOMORPHOLOGICAL CHARACTERISATION OF SELECTED EPHEMERAL PANS IN THE NORTHERN CAPE PROVINCE

Supervisor: Prof CW Van Huyssteen

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Dissertation title: THE WATER-ECONOMY NEXUS OF THE SOUTH AFRICAN COTTON TEXTILE VALUE CHAIN

Supervisor: Prof H Jordaan

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Dissertation title: THE ECONOMIC VALUE DERIVED FROM HEALTH PRECONDITIONED WEANED CALVES IN SOUTH AFRICA



Supervisor: Dr FA Mare

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Dissertation title:
ESTABLISHING AN ECONOMIC
SUSTAINABLE AND RISK-
EFFICIENT BACKGROUNDING
STRATEGY FOR WEANED
BONSMARA CALVES

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Dissertation title: THE
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Dissertation title: THE SEARCH
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RAY EMISSION FROM THE
CLOSE BINARY SYSTEM AR
SCORPII USING FERMI-LAT
DATA

Supervisor: Prof PJ Meintjes

Co-supervisor: Dr HJ Van
Heerden

MASTER OF SCIENCE MAJORING IN BIOCHEMISTRY

KRUGER, Michail Willie*

Dissertation title: SEMI-
RATIONAL DESIGN OF A Cu-
COORDINATION SITE IN AN OLD
YELLOW ENZYME SCAFFOLD

Supervisor: Prof DJ Opperman

Co-supervisor: Dr C Tolmie

MASTER OF SCIENCE MAJORING IN BOTANY

HLAHLA, Jeremiah Mpumelelo*

Dissertation title:
PHOTOSYNTHETIC EFFICIENCY
AND BIOCHEMICAL
RESPONSES OF VEGETABLE-
TYPE SOYBEAN CULTIVARS
UNDER DROUGHT STRESS

Supervisor: Dr MJ Moloi

Co-supervisor: Dr MS Mafa

LIATILE, Pule Clement

Dissertation title: EFFECT OF
A NATURAL BIO-STIMULANT
ON THE PHOTOSYNTHETIC
CAPACITY AND YIELD OF
SPINACH UNDER DROUGHT
STRESS

Supervisor: Dr MJ Moloi

Co-supervisor: Dr GP Potgieter

MASTER OF SCIENCE MAJORING IN BOTANY

MÜLLER, Marius

Dissertation Title:
QUANTIFICATION OF SOIL- AND
VEGETATION DEGRADATION
IN THE GOLDEN GATE
HIGHLANDS NATIONAL PARK,
FREE STATE, SOUTH AFRICA

Supervisor: Dr AC van Aardt

Co-supervisor: Prof JJ van Tol

SIBANYONI, Roslinah
Nompumelelo

Dissertation title: RUSSIAN
WHEAT APHID RESPONSES OF
WHEAT CULTIVATED UNDER
DROUGHT STRESS

Supervisor: Dr L Mohase

MASTER OF SCIENCE MAJORING IN CHEMISTRY

BEZUIDENHOUT, Zaskia *

Dissertation title: EXPLORING
NATURAL PRODUCT DIOLEFIN
COMPLEXES OF RHODIUM AND
PLATINUM

Supervisor: Prof. A. Roodt

EHLERS, Kirsten

Dissertation title:
PHYTOCHEMICAL
INVESTIGATION AND
GABAERGIC ACTIVITY OF
BOLUSANTHUS SPECIOSUS
AND ASPARAGUS LARICINUS

Supervisor: Dr. A. Wilhelm

Co-supervisor: Dr. S.L. Bonnet

JORDAAN, Rian Bryant*

Dissertation title:
IMPROVEMENT OF IRON ORE
QUALITY WITH THE SELECTIVE
REMOVAL OF ALUMINIUM AND
POTASSIUM OXIDES

Supervisor: Ms. J. Magson

Co-supervisor: Prof. W. Purcell



MASTER OF SCIENCE MAJORING IN CONSTRUCTION MANAGEMENT

NENGOVHELA, Halatedzi

Dissertation title:
IMPLEMENTATION OF
CONSTRUCTION RISK
MANAGEMENT IN MITIGATING
DELAYS AND COST OVERRUNS
IN SOUTH AFRICA

Supervisor: Prof K Kajimo-
Shakantu

Co-supervisor: Dr. F. Muleya

MASTER OF SCIENCE MAJORING IN CONSUMER SCIENCE

DLADLA, Smangele
MAPHEPHA, Francina Tebello

Dissertation title: AN
EXPLORATION OF THE
ASSOCIATION BETWEEN
THE NUTRITIONAL STATUS,
FOOD HABITS AND PHYSICAL
ACTIVITY LEVEL AMONG
ADOLESCENTS DURING
COVID-19 IN MASERU,
LESOTHO

Supervisor: Dr I Van der Merwe

MARAIS, Linda Louisa

Dissertation title: STARING OR
EATING: HOW #FOODPORN
INFLUENCES THE SOUTH
AFRICAN CONSUMER

Supervisor: Dr C Bothma

Co-supervisor: Dr I Van der
Merwe

MATLHOKO, Ketshepileone
Shiela*

Dissertation title: EFFICACY
OF ELECTROCHEMICALLY
ACTIVATED WATER
(CATHOLYTE) AS WOOL
SCOURING DETERGENT AND
ITS IMPACT ON NATURAL WOOL
DYEING

Supervisor: Dr JF Vermaas

Co-supervisor: Dr N Cronje

NAPO, Mabatebang Anna

Dissertation title: THE
RELATIONSHIP BETWEEN
URBANIZATION AND FOOD
SECURITY IN MASERU,
LESOTHO

Supervisor: Dr N Cronje

Co-supervisor: Dr I Van der
Merwe

MASTER OF SCIENCE MAJORING IN ENTOMOLOGY

WHITEHEAD, Liezl*

Dissertation title: MOLECULAR
PHYLOGENY OF SOUTH
AFRICAN *ANOPHELES*,
AEDES AND *CULEX* (DIPTERA:
CULICIDAE) BASED ON
COI, ITS2 AND 28S DNA
SEQUENCES

Supervisor: Dr VR Swart

Co-supervisor: Dr M Gryzenhout,
Ms. L. Koekemoer

MASTER OF SCIENCE MAJORING IN ENVIRONMENTAL MANAGEMENT

MOHALE, Nnyebe Esther

Dissertation title: Late
Quaternary paleoenvironmental
conditions in the central interior

of South Africa based on the
stable isotope ecology of fossil
herbivores from Kathu Pan,
Northern Cape

Supervisor: Prof D Codron

Co-Supervisor: Dr L Kolska
Horwitz

MOKHEHLE, Ntsu Mouses*

OBERHOLZER, Martha Maria*

MASTER OF SCIENCE MAJORING IN FORENSIC INTERDISCIPLINARY

VAN DER WESTHUIZEN, Lucinda

Dissertation title:
MORPHOLOGICAL AND GENE
EXPRESSION CHANGES
DURING INTRA-PUPARIAL
DEVELOPMENT IN *CHRYSOMYA*
ALBICEPS (DIPTERA:
CALLIPHORIDAE)

Supervisor: Mrs L Wessels

Co-supervisor: Dr S Brink

MASTER OF SCIENCE MAJORING IN FORENSIC SCIENCE

NGOKHA, Edward

Dissertation title:
IDENTIFICATION OF IMPURITIES
IN ILLICIT METHAMPHETAMINE
DRUGS SEIZED IN GAUTENG,
SOUTH AFRICA USING GC-MS

Supervisor: Dr EM
Mwenesongole

Co-supervisor: Prof. M. Cole



MASTER OF SCIENCE MAJORING IN GENETICS

BLOM, Elmarie

Dissertation title: GENETIC
DIVERSITY AND FITNESS
IN BOTTLENECKED
POPULATIONS: *DANIO RERIO*
AS MODEL ORGANISM

Supervisor: Prof JP Grobler

Co-supervisor: Dr WG Coetzer

Co-Supervisor: Me S Schneider

LOUW, Anke

Dissertation title: FLOWER
TRANSCRIPTOME ANALYSIS
AND MUTATION DISCOVERY
IN PIGMENTATION GENES OF
CLIVIA MINIATA

Supervisor: Dr MF Maleka

MARX, Elisma

Dissertation title: THE ANALYSIS
OF THE GENE-ENVIRONMENT
INTERACTION BETWEEN
VITAMIN D AND ITS PATHWAY
IN SOUTH AFRICAN PATIENTS
WITH MS AND NMO

Supervisor: Mrs Z Murray

Co-supervisor: Prof AA Moodley

MASTER OF SCIENCE MAJORING IN GEOHYDROLOGY

DE LANGE, Johann

Dissertation title:
GROUNDWATER OCCURRENCE
AND FLOW IN CRYSTALLINE

TERRAINS IN GA-MATLALA,
LIMPOPO PROVINCE, SOUTH
AFRICA

Supervisor: Dr YL Kotzé

HOLLOWAY, Michael Thomas*

Dissertation title:
PREFEASIBILITY STUDY
FOR MANAGED AQUIFER
RECHARGE WITHIN THE
GREATER KRUGER NATIONAL
PARK, LIMPOPO PROVINCE,
SOUTH AFRICA

Supervisor: Mr PJH Lourens

Co-supervisor: Dr SS de Lange

MAPHALA, Londolani Hope

Dissertation title: EVALUATION
OF GROUNDWATER
RECHARGE AND FLOW IN
CRYSTALLINE TERRAIN IN
THE MATLALA BATHOLITH,
LIMPOPO, SOUTH AFRICA

Supervisor: Prof FD Fourie

MOGATUSI, Itumeleng

Dissertation title:
INVESTIGATION INTO
DEPRESSURIZATION OF
HIGHWALLS AT MOGALAKWENA
MINE, LIMPOPO PROVINCE,
SOUTH AFRICA

Supervisor: Dr E Lukas

NGAKA, Theodrine Reholile
Khopotso

Dissertation title:
INVESTIGATION OF THE
HYDROGEOCHEMICAL
PROCESSES AND
GROUNDWATER QUALITY IN

THE C DRAINAGE REGION OF
SOUTH AFRICA

Supervisor: Prof M Gomo

SCHREUDER, Heinrich*

Dissertation title:
DEPRESSURISING PERCHED
AQUIFERS IN WEAK ROCKS TO
PREVENT SLOPE FAILURES IN
OPEN-PIT MINES

Supervisor: Mr PJH Lourens

STANDER, Franco

Dissertation title: EMPIRICAL
ASSESSMENT OF VERTICAL
SOLUTE MOVEMENT THROUGH
A TWO-LAYER KAROO
AQUIFER

Supervisor: Dr E Lukas

MASTER OF SCIENCE MAJORING IN GEOLOGY

MALATJI, Mafete Rudolph

Dissertation title: THE SR-
ISOTOPIC STRATIGRAPHY OF
THE LCZ-UCZ TRANSITION IN
THE WESTERN LIMB OF THE
BUSHVELD COMPLEX

Supervisor: Prof F Roelofse

Co-supervisor: Mrs J Magson

MOTAUNG, Thapelo Sidwell

Dissertation title: THE SR-
ISOTOPIC STRATIGRAPHY OF
THE EASTERN LIMB OF THE
BUSHVELD COMPLEX

Supervisor: Prof F Roelofse

Co-supervisor: Mrs J Magson

NEL, Wayne Justin*

Dissertation title: A
STRATIGRAPHIC-STRUCTURAL



INVESTIGATION OF AN AREA SOUTH OF POFADDER, NAMAQUA MOBILE BELT, SOUTH AFRICA

Supervisor: Prof WP Colliston

MASTER OF SCIENCE MAJORING IN INTEGRATED WATER MANAGEMENT

MALOVHELE, Madzanga

MASAWI, Ndomupej*

MOFOKENG, Sellwane Patricia

MASTER OF SCIENCE MAJORING IN MICROBIOLOGY

ADEDOJA, Toluwase Deborah

Dissertation title: INFLUENCE OF POLYUNSATURATED FATTY ACIDS ON FLUCONAZOLE SUSCEPTIBILITY AND CDR1 FUNCTION IN *CANDIDA AURIS*

Supervisor: Prof J Albertyn

Co-supervisor: Prof CH Pohl-Albertyn

BADENHORST, Moira

Dissertation Title: EVALUATING *CORDYCEPS MILITARIS* FOR POTENTIAL MEDICINAL APPLICATION

Supervisor: Prof BC Viljoen

MALIEHE, Maphori*

Dissertation Title: AMOEBAL PRESSURE AND *CRYPTOCOCCUS NEOFORMANS* PATHOGENESIS

Supervisor: Prof OM Sebolai

Co-supervisor: Dr OS Folorunso

MC CARLIE, Samantha Jayne*

Dissertation title: MOLECULAR INSIGHTS INTO ANTIMICROBIAL RESISTANCE OF HIGHLY RESISTANT *SERRATIA* SPECIES

Supervisor: Prof RR Bragg

Co-supervisor: Dr CE Boucher van Jaarsveld

MENDES DOS RAMOS, Séergio

Dissertation title: PRODUCTION OF A BACTERIALLY EXPRESSED TRUNCATED ROTAVIRUS VP4-NSP4 FUSION PEPTIDE

Supervisor: Prof HG O'Neill

Co-supervisor: Prof J Albertyn

MOGALE, Martha

Dissertation Title: EVALUATING *CORDYCEPS MILITARIS* FOR POTENTIAL MEDICINAL APPLICATION

Supervisor: Prof BC Viljoen

NTOI, Mathope Anna*

Dissertation title: THE INTERACTION BETWEEN AMOEBA AND *CRYPTOCOCCUS*: A POSSIBLE EXPLANATION FOR THE ACQUISITION OF *CRYPTOCOCCAL* VIRULENCE FACTORS

Supervisor: Prof OM Sebolai

Supervisor: Prof CH Pohl-Albertyn

POROTLOANE, Faith Boitumelo*

Dissertation title: THE RE-PURPOSING OF ASPIRIN AS

AN ANTI-CRYPTOCOCCUS MEDICINE

Supervisor: Prof OM Sebolai

Co-supervisor: Prof CH Pohl-Albertyn

VAN WYK, Aurelia Genevieve

Dissertation title: VIRULENCE POTENTIAL OF *CUTANEOTRICHOSPORON CYANOVORANS* AND ITS INTERACTION WITH *PSEUDOMONAS AERUGINOSA*

Supervisor: Prof CH Pohl-Albertyn

Co-supervisor: Prof J Albertyn

MASTER OF SCIENCE MAJORING IN MINERAL RESOURCE MANAGEMENT

ENSLIN, Jacoba Magrietha

KGARUME, Justice Keletso

MAPISA, Charles Tapiwa

MASTER OF SCIENCE MAJORING IN PHYSICS

MPHUTHI, Molise Jan

Dissertation title: SYNTHESIS AND CHARACTERISATION OF $Zn(1-x)S:Cux$ NANOPARTICLE THIN FILMS USING SPIN-COATING FOR ENHANCEMENT OF UV-LEDS AND SOLAR CELLS

Supervisor: Prof HC Swart

Co-supervisor: Prof JJ Terblans

ONAH, Emeka Harrison

Dissertation title: LUMINESCENCE STUDIES OF $BaSiO_3:Eu^{+2}, Ln$ ($Ln =$



Pr3+, Yb3+) PHOSPHORS FOR
CRYSTALLINE SILICON SOLAR
CELLS APPLICATIONS.

Supervisor: Prof HC Swart

Co-supervisor: Prof JJ Terblans

MASTER OF SCIENCE MAJORING IN PLANT BREEDING

SIVHADA, Ridokunda Anita

Dissertation title: INFLUENCE
OF STRIPE RUST RESISTANCE
GENES ON YIELD AND GLUTEN
PROTEIN COMPOSITION IN
BREAD WHEAT GENOTYPES

Supervisor: Prof MT
Labuschagne

Co-supervisor: Dr A Van Biljon

MASTER OF SCIENCE MAJORING IN QUANTITY SURVEYING

SWART, Filip Luther Naudé

Dissertation title: MAPPING
CONVENTIONAL QUANTITY
SURVEYING PRACTICES WITH
THE DYNAMICS OF THE SOUTH
AFRICAN CONSTRUCTION
INDUSTRY

Supervisor: Prof K Kajimo-
Shakantu

Co-supervisor: Dr A Opawole

MASTER OF SCIENCE MAJORING IN SOIL SCIENCES

SEBOKO, Kelebohile Rose

MASTER OF SCIENCE MAJORING IN STATISTICS

MAMBA, Ncamiso Faithfully

MASTER OF SCIENCE MAJORING IN ZOOLOGY

KRUGER, Aneke Xandri*

Dissertation title: REVIEW
OF THE SUPERORDER
CLADOCERA (BRANCHIOPODA)
IN THE FREE STATE PROVINCE,
SOUTH AFRICA

Supervisor: Dr C Jansen Van
Rensburg

Co-supervisor: Prof LL Van As

WEISS, Bailey Mark*

Dissertation title: BONE
MICROANATOMY OF
ANOMODONTIA (SYNAPSIDA:
THERAPSIDA) FROM THE
KAROO BASIN OF SOUTH
AFRICA

Supervisor: Dr J. Botha

Co-supervisor: Dr A. Housseye

MASTER OF SUSTAINABLE AGRICULTURE

AVIS, Bruce William

BAARTMAN, Justin

BOKABA, Modjadji Petrus

BOTHA, Johanna Celliers*

BUXEKA, Tandile Tomas

CHONCO, Aubrey Lindelani*

CINGO, Zimasa Peace

DLAMINI, Makhosazana Bridget

DLAMINI, Templar Mluleki

DLAMINI, Themba

DYEYI, Makabongwe

GREYLING, Gerhardus Stefanus*

GUMEDE, Ntokozo Fezokwakhe

JACKSON, Natasha Tamarin

JANSE VAN RENSBURG,
Lourens

KHANYILE, Samukelisiwe
Nomzamo

LANGA, Masanele

MADITO, Bonolo

MADLALA, Tricia Ncinci

MAKHAYE, Anelisa Nomcebo
Yolanda

MAQASHALALA, Xatyiswa

MBINI, Cyprian Maseko

MESO, Refilwe Joyce

MGOBHOZI, Nokuthula Lindiwe

MKHWANAZI, Khethiwe Ladyfair

MMBADI, Azwihangwisi Godwin

MONYATSI, Thapelo Constance

MOTLOUNG, Lina Ntswaki

NCAPAI, Zanele Nomzi

NDEBELE, Zwelo*

NGALO, Lulama Grace

NTSHIDE, Azola Nontombi

QUARIA, Anastácio Pedro

QWABE, Sinqobise Pre-Emanatia
Siphephile

SHANDU, Thobekile Vimbile



MASTER OF URBAN AND REGIONAL PLANNING

BOOI, Lebohang

BUTTNER, Dane Phillip

CERETTE, Gustaf

HUGO, Mareli

KRUGER, Tobia

MAKOBO, Tshepo Desmond

MAKOETJIE, Malebona Irine

MALUME, Dzivha

MASIBA, Themba Ishmael

MHOBO, Nangamso

MOILOA, Tselane

MOLOTO, Mokgadi Nthabiseng

MPHANYA, Ramapulane
Raymond

MURONGA, Khangwelo Precious

NICHOLSON, Roy Robert

NOGCINISA, Phinda

VOYI, Bathande Bongekile

ZANTSI, Anda Aviwe

DOCTORAL DEGREES

DOCTOR OF PHILOSOPHY M MAJORING IN CONSUMER SCIENCE

GERICKE, Adine

Adine Gericke was born in Piketberg, South Africa, on August 1st 1960. After matriculating she obtained the degrees BSc in Consumer Science in 1982, BSc Hons (with distinction) in 1993 and an MSc in 2001 at the University of Stellenbosch. She started her career as a Textile Scientist in the Textile industry in the Western Cape. Her career in tertiary education began as part-time lecturer at the University of the Free State in 1990. She has been a lecturer at the University of Stellenbosch for 25 years, during which time she was responsible for the development and coordination of the degree in Textile and Polymer Science.

With her thesis, titled: **THE QUANTITATIVE ASSESSMENT OF SELECTED TEXTILE PERFORMANCE PROPERTIES WITH A FOCUS ON THE POTENTIAL OF MOHAIR AS A COMPONENT**, the candidate contributes to the scholarship on the reliable measurement of the performance properties of textile fabrics. The original focus containing mohair but, with the outbreak of Covid-19 pandemic in 202, the focus shifted towards fabrics used in face masks. Here, the unknown field of the functionality of fabric face masks was explored and a new test method was developed to evaluate the filtration efficiency and comfort properties of fabrics.

Promoter: Prof HJH Steyn

Co-Promoter: Dr J Vermaas

Co-promoter: Prof M Venkataraman (TUL), Czech Republic

DOCTOR OF PHILOSOPHY MAJORING IN AGRICULTURAL ECONOMICS

VAN NIEKERK, Hermias Nieuwoudt

Hermias Nieuwoudt (Walter) was born on May 16, 1984, in Reivilo, Northern Cape Province, South Africa. He completed his secondary education in the Western Cape Province of Paarl. He matriculated at Boland Landbou High school in 2002. He



earned a BSc degree in 2006, an Honours degree in Agricultural Economics in 2007, and a Master's degree in Agricultural Economics in 2011 from the University of the Free State. In 2012, he began his career as a junior lecturer, and presently a lecturer in the Department of Agricultural Economics at the University of the Free State.

With his thesis, titled: **AN ESTIMATION OF THE DOWNSTREAM ECONOMIC IMPLICATIONS OF PREDATION IN THE SOUTH AFRICAN RED MEAT INDUSTRY**, the candidate contributes to the body of knowledge by estimating secondary economic implications and the downstream economic impact of predation in the livestock sector and red meat industry using a Social Accounting Matrix and Partial Equilibrium Model. His investigation indicates that predation has a significant impact on output, GDP, labour, tax, and income. The presence of predators influences the level and intensity of best management practices employed by the red meat industry. The findings of this study may assist the government and policymakers in developing appropriate policies and mitigation methods to reduce predation and prioritise strategies that will lessen the impact of predation. The quality of his work is confirmed by the fact that excerpts from his thesis has been published as two articles in peer-reviewed scientific journals.

Promoter: Prof Yonas T. Bahta

Co-promoter: Prof Frikkie Mare

DOCTOR OF PHILOSOPHY MAJORING IN AGRONOMY

MACHAKAIRE, Allan Tatenda Batsirai

Allan Tatenda Batsirai Machakaire was born in Harare, Zimbabwe on 25 October 1979. He matriculated at Prince Edward School in Harare in 1997. He attained a BSc (Honours) degree in Agricultural and Natural Resources from Africa University in Zimbabwe in May 2002. He later graduated with an MSc degree in Agricultural Science specialising in Agronomy at the University of Pretoria in 2013. He started his career as an Agronomist in Harare in 2002. He pursued his career as an Agronomist in South Africa in 2009. At present he is a Senior Agronomist for McCain Foods in Hawkes Bay, New Zealand.

With his thesis, titled: **RESOURCE USE EFFICIENCIES OF IRRIGATED POTATO PRODUCTION SYSTEMS IN A SEMI-ARID CLIMATE**, the candidate makes a contribution to the optimization of water and nutrient use in potato cultivation, as well as the parameterization of potato growth models. A series of interrelated studies involving detailed measurements in potato fields in South Africa using state of the art equipment was conducted to study the risk of water and nutrient losses, pollution of water bodies, and promote the ecological sustainability of potato production.

Promoter: Prof A.C. Franke

Co-promoter: Prof J.M. Steyn

MATIKITI, Anniah

Annia Matikiti was born in Mutare, Manicaland Province, Zimbabwe on 9 September 1971. She did her secondary education in Harare, Zimbabwe. She matriculated at the Tafara High School, Mabvuku, in 1989 and later attained a Higher National Diploma in Science Technology at the Harare Polytechnic College in 1995 with an Academic Excellent Award. She graduated with a BSc degree from Zimbabwe Open University (2005) and a Master of Philosophy in Agronomy at the University of Zimbabwe in 2012. She started her career as Laboratory Research Technician at the University of Zimbabwe in 1991 in Harare. In 2000, she was appointed to the Department of Crop Science as a Research Technician, and at present, she is the Senior Chief Technician/Researcher.



With her thesis, titled: **INTENSIFICATION OF COCOYAM (*COLOCASIA ESCULENTA L. SCHOTT*) PRODUCTION FOR SUSTAINABLE LIVELIHOODS IN ZIMBABWE**, the candidate contributed to the production and utilization of cocoyam for food security and sustainability in Zimbabwe. The effect of organic and inorganic fertiliser on the growth, yield and quality of two cocoyam landraces was investigated at five different sites in Zimbabwe. The results obtained can be used as guidelines for future fertiliser recommendations on cocoyam for sustainable production. A significant contribution was also made to the analysis of the chemical components of cocoyam that can benefit several industries in Zimbabwe, contributing to sustainable livelihoods.

Promoter: Dr GM Coetzer

Co-promoter: Dr J Allemann

DOCTOR OF PHILOSOPHY MAJORING IN ANIMAL SCIENCE

MPHAPHATHI, Masindi Lottus

Masindi Lottus Mphaphathi was born in Thohoyandou, Limpopo province, in 1982. He received his secondary education in Thohoyandou, where he matriculated at Tshifhena Secondary School in 2000. He obtained the Master's degree in Animal Science in 2017 and the PhD in Animal Science in 2022 at the University of the Free State. Currently he is a Researcher at the Agricultural Research Council- Animal Production, Pretoria.

With his thesis, titled: **FACTORS AFFECTING CRYOPRESERVATION OF IMMATURE AND MATURED CATTLE OOCYTES**, the candidate makes a substantial contribution to the field of Reproduction and Physiology/ Cryobiology. First, the study investigated different concentrations of permitting cryoprotectants toxicity in immature and matured oocytes. Secondly, the study investigated the survival rate of immature and matured oocytes following cryopreservation by solid surface vitrification, conventional straw vitrification and conventional slow freezing methods. The results obtained from this study after thawing or warming of oocytes will assist on developing of cryo-gene bank in South Africa. This work has been presented at three international conferences. One manuscript from his work is accepted and one is under review in an international accredited peer-review journal. Four non peer reviewed publications were published in local magazine.

Promoter: Prof TL Nedambale

Promoter: Dr HA O'Neill

DOCTOR OF PHILOSOPHY MAJORING IN CHEMISTRY

REDGARD, Shaun

Shaun Redgard was born on 9 February 1993 in Bloemfontein and matriculated from St. Andrew's School, Bloemfontein in 2011. He completed his Bachelor's degree in 2015, was the top Honours Chemistry student in 2016, obtained his Master's in Chemistry, with distinction, and captained the winning team from the UFS at the International Natural Sciences Tournament (INST) in Estonia, in 2018. During his PhD, he simultaneously pursued and completed a Postgraduate Diploma in Business Administration at Wits Business School and was recognised for leadership at the Wits Leadership Awards (2021) and was one of the GradStar Top 100 students for 2021.

With his thesis, titled: **SOLID STATE AND KINETIC STUDY OF DIOLEFIN COMPLEXES OF PLATINUM GROUP ELEMENTS**, the candidate contributes to the field of coordination chemistry of Platinum Group Metal complexes and their potential use as



CO₂ capturing/conversion catalysts. A systematic investigation of the homogeneously catalysed cycloaddition reaction of CO₂ to an epoxide was performed, with the net accumulated results from the investigation enabling the successful development of a proposed reaction scheme and rate law with four definite steps identified in the reaction, for the first time performed in such depth.

Promoter: Prof A Roodt

Co-promoter: Prof JA Venter

SWART, Marthinus Rudi

Marthinus Rudi Swart was born in East London on June 17, 1987. He received his secondary education in East London, where he matriculated from Grens High School in 2005. He obtained the degree BSc Chemistry/Physics and Biology in 2008, BSc Honores: Chemistry in 2009, the degree MSc: Chemistry with distinction in 2015 and his PhD in Chemistry in 2022 at the University of the Free State. Since 2012 he is appointed in the Department of Chemistry as an Officer: Professional Services at the University of the Free State

With his thesis, titled: **INVESTIGATION OF THE PHYSICAL PROPERTIES OF ACTIVE GRUBBS' CATALYST AND ITS INFLUENCE ON THE PRODUCT DISTRIBUTION OF THE METATHESIS REACTION**, the candidate contributes to broadening the knowledge on the electrochemical properties of the Grubbs 2nd generation catalyst. Through a systematic nuclear magnetic resonance spectroscopic study, the candidate could determine optimum conditions to maximize cross-metathesis over undesirable secondary metathesis. His investigation further extended the understanding of the influence of p-cresol as co-catalyst to Grubbs 2nd generation catalyst and offers an explanation for the observed change in selectivity from self- to cross-metathesis.

Promoter: Prof E Erasmus

Promoter: Dr C Marais

VILJOEN, Johannes Augustinus

Johannes Augustinus Viljoen was born on the 25th of January 1983 in Bloemfontein, Free State, South Africa. He matriculated at Fichardtspark High School in 2001. Thereafter, he completed a Bachelor of Science degree at the University of the Free State in 2005, majoring in Chemistry. He continued his studies in Chemistry, where he obtained his Honour's degree in 2006 and his Master's degree in Chemistry in 2009. His career as a lecturer in Forensic Science at the University of the Free State began in 2013 when he set up and designed the new Forensic Chemistry modules.

With his thesis, titled: **A CRYSTALLOGRAPHIC INVESTIGATION OF MULTIDENTATE LIGAND HAFNIUM (IV) HALIDO COMPLEXES**, the candidate investigated the solid-state and solution behaviour of novel hafnium(IV) coordination compounds containing different nitrogen- and oxygen bi- and multidentate ligand systems. This yielded valuable new data for hafnium(IV) which could be compared to zirconium(IV) to evaluate if liquid-liquid metal extraction as a separation technique is in principle feasible for industrial applications. The study produced ten new single crystal X-ray crystallographic data sets for nine novel hafnium complexes and one new zirconium complex and were published in nine articles in the international chemistry literature. It clearly illustrated that eight-coordinated hafnium(IV) -and zirconium(IV) complexes prefer the square-antiprismatic coordination geometry in the D₂-corner clipped isomeric form. Preliminary liquid-liquid extraction experiments and competition extractions of zirconium- and hafnium-oxine complexes from methanol into dichloromethane were also described, which indicated the technique to be a preliminary proof-of-concept for separation.

Promoter: Prof A. Roodt

Co-promoter: Prof H.G. Visser



DOCTOR OF PHILOSOPHY MAJORING IN CONSTRUCTION MANAGEMENT

DHLIWAYO, Ringisai Abigail

Ringisai Abigail Dhliwayo was born in Manicaland Province in Zimbabwe on 7th October 1981. She received her secondary education at Old Mutare Mission, where she matriculated at the Hartzell High School in 2000. She obtained an Honours degree in Quantity Surveying in 2005, and an MSc Construction Project Management in 2012, at the National University of Science and Technology (NUST), Zimbabwe. Her career started as a Junior Quantity Surveyor in Harare in 2006. In 2007 and 2012, she was appointed in the Department of Quantity Surveying (NUST) as a Teaching Assistant and Lecturer respectively where she is currently employed.

With her thesis, titled: **AN INTEGRATED PROCUREMENT MODEL FOR PUBLIC SECTOR PROJECTS IN ZIMBABWE**, makes a contribution to the practice of public sector procurement of building works and construction project management. Using an exploratory sequential approach, her study empirically examined the implementation of procurement procedures in a bid to formulate a model for attainment of procurement best value. While the traditional procurement system emerged as the predominant option for delivering public sector building projects, challenges, such as time and cost overruns, corruption, and poor contract management, were evident. The procurement legal framework appears to be in place, but construction industry practitioners were found to be largely unaware of the critical issues that need to be addressed by policy for the advancement of best value. An integrated building procurement model was developed to address the identified problem by integrating best value procurement activities with standard project execution phases, in an under-research area.

Promoter: Prof K Kajimo-Shakantu

DOCTOR OF PHILOSOPHY MAJORING IN DISASTER MANAGEMENT

ORIMOLOYE, Israel Ropo

Dr Israel Ropo Orimoloye was born in Ondo State, Nigeria. He obtained his bachelor's and master's degrees in meteorology and climate science from the Federal University of Technology Akure, Nigeria. He is an emerging researcher with 58 publications in accredited journals. He is a specialist in remote sensing and GIS applications, environmental and disaster risk management, and climate change. He is a registered member of many professional Associations and an associate editor in the International Journal of Climate Change Strategies and Management, Emerald Group Publishing, United Kingdom.

With thesis, titled: **SPACE-BASED INFORMATION FOR DISASTER RISK MANAGEMENT: DROUGHT DISASTER MONITORING FOR ECOSYSTEMS AND ENVIRONMENTAL CONSERVATION IN FREE STATE PROVINCE, SOUTH AFRICA**, the study appraised drought disaster events using space-based remote sensing information on drought risk management. The outcome of this study provides measures that will prevent and reduce drought disaster exposure and vulnerability; increase preparedness for response and strengthen disaster resilience in the Province. The candidate has significantly contributed to the current understanding of drought-related monitoring mechanism through space-based technology and has made impactful contribution to the policy framework and decision-making process to alleviate the impacts of droughts in the drought-stricken provinces of South Africa. Findings from this thesis were presented at international and local conferences meanwhile 11 publications in accredited and high impact journals came from this thesis.

Promoter: Prof JA Belle

Co-promoter: Prof OO Ololade



DOCTOR OF PHILOSOPHY MAJORING IN GENETICS

DU TOIT, Zelda

Zelda du Toit was born in Pretoria on the 10th of October 1988. She received her secondary education in Bloemfontein, where she matriculated at Jim Fouché High School in 2006. She obtained the degree Bachelor of Science (Genetics) in 2010, Bachelor of Science Hons (Genetics) in 2011, the degree Master of Science (Genetics) in 2014; and completed her PhD in Genetics in 2022 (all at the University of the Free State). She started her career as an Analyst in Animal Genetics in Bloemfontein in 2018, before relocating to Pretoria in 2019, where she was appointed as a Research Assistant in the Forest Molecular Genetics Group at the University of Pretoria.

With her thesis, titled: **LINKING GEOGRAPHIC ORIGIN AND MITOGENOMES OF THE GROUND PANGOLIN IN SOUTHERN AFRICA**, the candidate contributes to the conservation of pangolins in Africa. With this study, she gained a better insight of the population genetics of African pangolins in general and the Temminck's pangolin in particular. The overall results showed that the order Pholidota is clearly divided into three genera based on mitogenome data. Although Temmincks' pangolins face severe threats due to the illicit mammal trade, there is significant gene flow between different populations from diverse geographical locations, mitigating inbreeding and population bottlenecks. An understanding of the intrinsic and extrinsic factors affecting a species forms the cornerstone of any successful conservation strategy. This study provides a valuable basis for understanding the population dynamics of Temminck's and African pangolins, shedding light on species diversity and how different populations are interrelated, thus contributing to a conservation strategy for these threatened mammals.

Promoter: Prof JP Grobler

Co-promoter: Prof A Kotzé

Co-promoter: Prof DL Dalton

Co-promoter: Prof R Jansen

DOCTOR OF PHILOSOPHY MAJORING IN MICROBIAL BIOTECHNOLOGY

MOLOANTOA, Karabelo Macmillan

Karabelo Macmillan Moloantoa was born on the 04th December 1989 at Moletjie Gasemenya in Limpopo Province, RSA. He moved to Soweto in 2000 where he matriculated at Reasoma Secondary school in 2007. He enrolled for BSc degree in Medical Microbiology and Biochemistry at UFS in 2008 which he graduated for in 2010. He furthered his studies and obtained an Honours in Biochemistry at UFS in 2012. He further pursued his Masters in Microbial Biotechnology on Bioremediation technology of Acid Mine Drainage (AMD) which he obtained in 2014 with an award for the Best Dissertation in the Faculty.

With his thesis, titled: **OPTIMIZATION OF A PASSIVE DENITRIFICATION SYSTEM BY A NOVEL BACTERIAL CONSORTIUM ENRICHED FROM MINING WASTEWATERS**, the candidate contributed to the knowledge of nitrate contamination, its impacts and how it can be removed from the water. Using indigenous bacteria from the contaminated mine wastewaters, the candidate explored microbial diversities and their biochemical pathways and applied them in treating nitrate contaminated wastewaters. With multiple industries, such as mines, struggling with contamination challenges, his findings serve as a step ahead in providing a solution to remediate an already scarce resource.

Promoter: Dr E Cason

Promoter: Dr J Castillo-Hernandez

Co-promoter: Prof A Valverde



DOCTOR OF PHILOSOPHY MAJORING IN MICROBIOLOGY

MASEME, Mpeyake Jacob

Mpeyake Jacob Maseme was born on 10 January 1988 in Virginia, Free State, South Africa. He received his secondary education in Virginia, where he matriculated at Mamello High School in 2005. He obtained the degree BSc in Microbiology in 2009, MSc in Microbiology in 2014, and the PhD in Microbiology in 2022 all at the University of the Free State.

With his thesis, titled: **BIOCATALYTIC PRODUCTION OF δ -DODECALACTONE**, the candidate makes a contribution to the field of Biocatalysis, focusing on the potential use of cytochrome P450 monooxygenases (P450s) for the production of industrially important aliphatic lactones. The candidate studied the regioselectivity of several fungal P450s towards alkanes, fatty alcohols, and fatty acids. It revealed a specific omega-7 hydroxylation activity for alkanes and alcohols in a distinct group of fungal P450s. He then demonstrated that the flavour compound δ -dodecalactone can be synthesized from 1-dodecanol using the omega-7 specific fungal P450 enzymes coupled with an alcohol dehydrogenase. The results from this investigation serve as an important starting point for the development of a Biocatalytic process for the industrial production of δ -dodecalactone.

Promoter: Prof MS Smit

Co-promoter: Prof DJ Opperman

DOCTOR OF PHILOSOPHY MAJORING IN PHYSICS

ABDELREHMAN, Mogahid Hassan Mohammed

Mogahid Abdelrehman was born on 20 January 1991 in Bahri, Khartoum, Sudan. He matriculated at Alfaruq High School in 2008. He graduated and has been awarded a degree of Bachelor of Science & Education (Honours) in (Physics) from the University of Khartoum (UofK) in 2013 and a Master of Science majoring in Physics at the University of the Free State in 2018.

With his thesis, titled: **LUMINESCENCE PROPERTIES OF Gd₂O₃:Bi³⁺ CO-DOPED LN₃+ AS POWDER AND THIN FILMS PHOSPHOR FOR SOLAR CELL APPLICATION**, the candidate revealed that the combination of Bi³⁺/Er³⁺ and Yb³⁺ in the Gd₂O₃ matrix is one of the most suitable phosphors for up-conversion applications. The results indicated that the obtained phosphors might be possibly used for applications in displays, lighting and as a luminescence layer used to modify the solar spectrum with the aim of improving the efficiency of solar cells.

Promoter: Prof HC Swart

Co-promoter: Prof RE Kroon

Co-promoter: Prof A Yousif

JABRALDAR, Babiker Mohammed Jaffar

Babiker Jabraldar was born on 1 January 1989 in Madani, Um-alqra, Sudan. He received his basic and secondary education in Village 33. He obtained the Bachelor of Science & Education (Honours) degree from the University of Khartoum (Sudan) in 2013 and Master of Science in Physics with distinction from the University of the Free State (Bloemfontein) in 2019, during which received the best publication award from the South African Institute of Physics. He currently has a post-doctoral position at the University of the Witwatersrand (Johannesburg) in 2022 and is also employed as lecturer at the University of Khartoum (Sudan).

With his thesis, titled: **EFFECT OF HOST ANION OR CATION SUBSTITUTION ON THE LUMINESCENCE AND STABILITY OF LANTHANUM OXIDE-BASED PHOSPHORS DOPED WITH BISMUTH**, the candidate makes a contribution to the



physics of light emitting materials. With this contribution, he investigated the structure, stability and light emission properties of lanthanum oxide alloyed with fluorine, chlorine or bromine anions as well as yttrium and gallium cations. In this way he was able to identify new phosphor materials with improved stability or light emitting properties, thereby improving the scope of using non-toxic bismuth ions as luminescent centres in phosphors.

Promoter: Prof RE Kroon

Co-promoter: Prof HC Swart

Co-promoter: Prof HAA Seed Ahmed (University of Khartoum, Sudan)

MABUEA, Busisiwe Petunia

Busisiwe Petunia Mabuea was born on the 5th of March 1990 in Vrede, Free State. She matriculated at Intuthuko-Katleho Secondary School (Vrede) in 2007. She obtained all her qualifications from the University of the Free State; BSc in Chemistry with Physics and Biology in 2013, BSc Hons in Physics in 2014, MSc in Nanoscience in 2016 and later attained a PhD in Physics in 2021.

With her thesis, titled: **SYNTHESIS AND CHARACTERIZATION OF TRANSITION METAL CARBIDES AS ELECTROCATALYSTS FOR CLEAN HYDROGEN PRODUCTION**, the candidate successfully synthesized the transition metal carbides (Ni-WC, Co-WC, NiCo-WC, Ni-MoC, Co-MoC, NiCo-MoC, NiFe-WC and NiFe-MoC) using a carbothermal reduction method. In this study she investigated the electrochemical behaviour of the bi- and tri-metallic catalysts. The structure, size, morphology, chemical composition, chemical bonding states and electronic structure of the catalysts were also evaluated. Excellent results were obtained which proved that most of the electrocatalyst could potentially act as stable Hydrogen Evolution Reaction electrocatalysts. In addition, the study targeted the photocatalytic decomposition of Congo red dye from wastewater under simulated sunlight irradiation.

Promoter: Prof HC Swart

Co-promoter: Prof E Erasmus

DOCTOR OF PHILOSOPHY MAJORING IN PLANT BREEDING

KWEMOI, Daniel Bomet

Daniel Bomet Kwemoi was born in Uganda on 22 March 1982. He obtained a BSc Honours degree in Agriculture (Crop Science) and an MSc (Plant Breeding and Seed Systems) from Makerere University, Kampala, in 2007 and 2012, respectively. He has since worked as a maize breeder at the NATIONAL Crops Resources Research Institute, Namulonge. Daniel has released 15 new commercial maize varieties in Uganda. He is currently managing projects aimed at applying modern and optimized techniques for improvement of multiple stress-tolerance and nutritional quality of maize in Uganda. He has authored and co-authored 16 peer-reviewed publications in his career.

With his thesis, titled: **GENETIC ANALYSIS OF RESISTANCE TO MAIZE LETHAL NECROSIS WITH EMPHASIS ON STRATEGIES FOR IMPROVEMENT OF HOST RESISTANCE**, the candidate identified significant generic variation for maize lethal necrosis (MLN) resistance among inbred lines, segregating populations and testcross hybrids. Testcross analysis identified two resistant inbred lines and seven single cross testers for MLN resistance breeding. Quantitative trait loci (QTL) mapping using biparental populations led to the validation of one major recessively inherited QTL on the long arm of chromosome 6 which could potentially be used for MLN resistance breeding.

Promoter: Prof MT Labuschagne

Co-promoter: Prof L Herselman

Co-promoter: Dr M Gowda



SIWALE, Julius

Julius Siwale was born in Isoka district, Zambia, on 2 March 1962. He obtained a Diploma in Agriculture in 1985 and then joined the Extension Branch in the Ministry of Agriculture. He attained a BSc degree (Crop Science) in 1992 from the University of Zambia (UNZA) and transferred to the Zambia Agriculture Research Institute, under the same Ministry, where he worked as a wheat agronomist and breeder. With a scholarship from the Rockefeller Foundation, Julius obtained an MSc degree (Agronomy) from UNZA in 2007 and continued to work in the Wheat Research Programme. He has been the programme leader since 2008.

With his thesis, titled: **PHENOTYPIC AND NUTRITIONAL DIVERSITY OF SOUTHERN AFRICAN BAMBARA GROUNDNUT GERmplasm**, the candidate characterised a germplasm collection of 100 bambara groundnut accessions from different African countries for phenotypical, yield and nutritional characteristics in multi-location and multi-season trials. Dendrograms indicated that accessions did not group according to geographic origin, confirming that seed has been circulating between regions. Seed protein content varied between 19% and 25%. Seed iron content varied significantly, and zinc to a lesser extent, but zinc and iron bioavailability was low and should be improved through breeding. Phytic acid was the most discriminating factor between accessions in the heat maps. Sufficient genetic variation was identified in this collection to promote high yielding and highly nutritious genotypes, for production by farmers. Potential parents were also identified for future breeding efforts. This study emphasized the role this crop can play in the small-scale farmer sector to alleviate nutritional deficiency

Promoter: Prof MT Labuschagne

Co-promoter: Dr NW Mbuma

Co-promoter: Dr AS Gerrano

SWANEPOEL, Jacobus Francois

Jacobus Swanepoel graduated from the University of Pretoria with BSc (Agric) Honours (*cum laude*) in Genetics in 1996 and 2001 respectively. In 2003, he received his MSc (Agric) in Plant Breeding from the University of the Free State. He started as a plant breeder at the ARC-Institute for Tropical and Subtropical Crops in 1997. In 1999 he joined Pannar Seed as a Cucurbit breeder where he later specifically focused on Butternut Squash. In 2020 he was named as one of the 20 most influential plant breeders in Africa.

With his thesis, titled: **DEVELOPING A BREEDING STRATEGY FOR BUTTERNUT SQUASH (*CUCURBITA MOSCHATA* DUCH. EX POIR) IN SOUTH AFRICA**, the inheritance mechanisms of economically important traits and the influence of environmental factors on their expression were investigated to design effective breeding approach to improve butternut internal fruit quality, without sacrificing yield. Selection for yield characteristics in combination with dry matter content and total soluble solids, will be the most suitable approach to develop high-performance stable and desirable butternut hybrids.

Promoter: Dr R van der Merwe

Co-promoter: Dr A van Biljon

DOCTOR OF PHILOSOPHY MAJORING IN SOIL SCIENCE

MAMERA, Matthew

Matthew Mamera was born on 31 October 1988 in the city of Harare, Zimbabwe. He matriculated at Glen View High School in 2009 in agricultural sciences. He graduated with a BSc Soil Science degree in 2014, BSc Soil Science Hons (Cum Laude)



in 2015 and a Master of Soil Science in 2018. All obtained at the University of Fort Hare. He has authored five articles in international peer reviewed journals. He is currently part of The Biodiversity Company team as a soil pedology, hydropedology and environmental specialist.

With his thesis, titled: **ASSESSING POLLUTION AND MANAGING FAECAL SLUDGE THROUGH BIOCHAR APPLICATIONS IN PHUTHADITJHABA, SOUTH AFRICA**, the candidate contributes to water, sanitation and faecal contaminant management strategies using sustainable bio-adsorbents such as biochar. The study showed that biochar applications can protect water resources from pit latrine pollution and that communities in the QwaQwa area are willing to use this approach to increase water quality.

Promoter: Prof JJ van Tol

Promoter: Dr MP Aghoghovwia

DOCTOR OF PHILOSOPHY MAJORING IN STATISTICS

MAKONI, Tendai

Tendai Makoni was born on 5 November 1983 in Murewa District, Mashonaland East, Zimbabwe. He matriculated at Magomedze High School in Gutu District for his Ordinary level education in 2001 and later completed his Advanced level education at Mutendi High School, Masvingo Province in 2003. He graduated with a BSc Honours degree in Mathematics at Midlands State University (MSU) in 2009 and a Master of Science in Operations Research and Statistics at National University of Science and Technology (NUST) in 2014. His career as a lecturer began in 2012 and he rose through the ranks to become a senior lecturer at the Great Zimbabwe University.

With his thesis, titled: **STATISTICAL MODELLING OF TOURIST ARRIVALS IN ZIMBABWE: FORECASTING AND VOLATILITY**, the candidate uses quantitative statistical techniques in modelling and forecasting tourism demand and volatility in Zimbabwe. The candidate applied the Seasonal Autoregressive Integrated Moving Average, the symmetric and asymmetric volatility models and hierarchical forecasting models to the Zimbabwe tourism data. The models are popular in developed and some developing countries outside of Africa, but Africa is lagging behind in the use of statistical models in tourism forecasting. The hierarchical forecasting models are deemed the best because they allow one to identify the declining tourist arrivals category as well as other factors contributing to the decline, so that the necessary corrective measures can be taken. The availability and use of these tourism models in developing countries such as Zimbabwe helps investors, tourism stakeholders, transport, food and accommodation managers in decision making.

Promoter: Prof. D. Chikobvu

STRAUSS, Trudie

Trudie Strauss received her secondary education in Bloemfontein, where she matriculated from Sentraal High School in 2006. She obtained the degrees BCom (Actuarial Science) in 2009, BSc Hons (Mathematical Statistics) in 2010, BA Hons (German) and MSc (Mathematical Statistics) in 2012 all with distinction from the University of the Free State. The degree MA (Technology in Language Learning) was awarded to her from Stellenbosch University in 2015, and she completed the degree PhD (Mathematical Statistics) in 2021. She is currently a lecturer in the Department of Afrikaans and Dutch, German and French, at the University of the Free State.



With her thesis, titled: **INVESTIGATING THE POWER LAW BEHAVIOR OF WORD FREQUENCY DISTRIBUTIONS ACROSS LANGUAGES**, the candidate investigates the statistical nature of word frequency distributions and relates this to linguistic measures calculated from these distributions. With this contribution, she introduces a novel Bayesian framework for the analysis of word frequency distributions testing the universality and linguistic relevance of Zipf's Law across languages.

Promoter: Dr M.J. von Maltitz

Promoter: Dr S. van der Merwe

Co-Promoter: Dr D.E. Blasi

DOCTOR OF PHILOSOPHY MAJORING IN SUSTAINABLE AGRICULTURE

GARWI, Jabulani

Jabulani Garwi was born on 07 March 1984 in Chipinge District, Manicaland Province, Zimbabwe. He matriculated at Mafumise High School in 2001 and later attained a Bachelor of Arts (Hons) in Economic History with a Book Prize as the best student at the University of Zimbabwe in 2008. He earned a Master of Arts in Development Studies at the Midlands State University in 2013. He started his career as an Assistant Lecturer at the University of Zimbabwe's Economic History Department in 2009. In 2013, he joined the Government of Zimbabwe as an Analyst and rose through the ranks to become a Senior Analyst.

With his thesis, titled: **THE CONTRIBUTION OF SMALL-SCALE BEEF CATTLE FARMING TO DEVELOPMENT IN CHIPINGE RURAL DISTRICT, ZIMBABWE (2000-2018)**, the candidate makes an innovative and seminal contribution to scholarship on poverty alleviation, rural development, community development and the agrarian questions, by examining the extent to which smallholder beef farming contributes to rural household development. Using an embedded mixed-method approach with a sample of 174 farm units, the study presents the argument that smallholder beef farming projects are key pathways to sustainable rural household development in Zimbabwe.

Promoter: Prof J. Matunhu

Promoter: Dr JW Swanepoel

HEPUTE, Venaune

Venaune Hepute was born in Orumana, North-western Namibia on the 6th of December 1989. He received his primary education at the IK Tjimuhiva Combined School, Omakange and secondary education at Mureti Senior Secondary School, Opuwo. In his illustrious educational career, Venaune Hepute obtained a Diploma in Agriculture, Bachelor of Science (Agricultural Management), and recently Master of Science (Sustainable Agriculture) from University of the Free State. He started his career in 2011 as Quality Assurance Officer at MEATCO Windhoek, and later appointed as Agricultural Research Technician as the Kalimbeza Rice Project. Ministry of Agriculture, Water and Forestry where he rose to the ranks of Agricultural Scientific Officer and Chief Agricultural Technician. At present, Venaune Hepute is the Agronomic Market and Data Researcher at the Namibian Agronomic Board, Windhoek.

With his thesis, titled: **ASSESSING THE POTENTIAL OF FOOD AND FODDER CROPS CULTIVATION UNDER PERENNIAL WATER IRRIGATION CROPPING METHOD IN KUNENE REGION, NAMIBIA**, the candidate explored the alternative crop cultivation method as the ravaging effect of climate change characterized by very low to no rainfall has virtually made the conventional rain-fed crop farming a near impossibility in the Kunene Region, Namibia. The results provide important indications on the type of food and fodder crops as well as soil characteristics that can be adopted for mass production of the crops under irrigation method in Kunene, Region, which might enhance food security. The study also provides important information on the nutritional qualities of the grains and fodders harvested from the crops cultivated using irrigation farming in this study.

Promoter: Prof J Abah



MAKA, Loquitur

Loquitur Maka was born in KwaBhaca (formerly known as Mount Frere) on 23 August 1994. She received her secondary education KwaBhaca, where she matriculated at Mount Frere Senior Secondary School in 2011. She obtained her Bachelor of Agricultural Extension/Production (2015), Hons in Agricultural Extension (2016), Masters in Agricultural Extension (2017) at the University of Fort Hare and the PhD in Sustainable Agriculture (2022) at the University of the Free State. Loquitur also holds a Post-Graduate Certificate in Education from the University of South Africa. She is currently employed as an Educator at the Western Cape Department of Education and also disseminated knowledge while advocating for education through her YouTube Channel.

With her thesis, titled: **ENTREPRENEURSHIP AS A VIABLE SOLUTION TO UNEMPLOYMENT: AGRICULTURAL POSTGRADUATE STUDENTS' PERCEPTIONS**, the candidate contributes to the rising unemployment rate amongst graduates in South Africa. With this contribution, she attempts to explore the extent to which entrepreneurship can create solutions to lessen unemployment amongst South African agricultural graduates. The study recommends that entrepreneurship education needs to be incorporated on all agricultural curricula in the higher education sector as a necessary approach to instill the needed competencies in South African graduates to enhance their employability. The study has produced one article titled: "Perceptions of agricultural postgraduate students on unemployment in South Africa" with two articles currently under review.

Promotor: Prof J.A. Van Niekerk

Co-promotor: Dr Y.P. Pakela-Jezile

MOLATELA, Motlatsi Solomon

Solomon Motlatsi Molatela was born on 29 September 1979 in the district of Mafateng, Lesotho. He matriculated at Bereng High School in 1996 and later attained a Certificate in Agriculture with the Lesotho Agricultural College, which was temporarily absorbed by the National University of Lesotho Faculty of agriculture in 2000. He graduated with a Bachelor of Agriculture at the University of Fort Hare in 2003 and a Master in Sustainable Agriculture at the University of the Free State in 2010. He started his career in the Ministry of Agriculture (Department of Field Services) as an Agricultural Extension Officer in 2003 and he rose through the ranks to become a Senior Research Officer in the Department of Agricultural Research.

With his thesis, titled: **CLIMATE VARIABILITY AND CHANGE IN LESOTHO: A THREAT TO SUSTAINABLE FOOD SECURITY DUE TO CROP PESTS PROLIFERATION**, the candidate makes a contribution to the entire agricultural sector in particular crop production farmers, Extension staff and Non-Governmental Organisations dealing with crop production. With this contribution, he attempts to find a solution to the impact of climate variability and change which severely affected food security in the study area or country. The study results confirmed the threat of climate variability and change as new insect pests were experienced and pests contributed to the dwindling crop production despite government intervention and policies in place. The study allowed getting valuable perceptions about the impacts of climate variability and change on crop production as a whole and their possible result on income and food security of the farmers as hypothesized earlier.

Promoter: Dr C.J. Botha

Co-Promoter: Prof J.A. Van Niekerk

QWABE, Qinisani Nhlakanipho

Qinisani Nhlakanipho Qwabe was born on the 12th of August 1994 in the KwaDlangezwa Area, Empangeni, KwaZulu-Natal. He matriculated at Khula High School in 2011 and later attained his National Diploma in Community Extension with two Dean's



Excellence Awards at the Mangosuthu University of Technology in 2015. He graduated with a Baccalaureus Technologiae Degree in Agricultural Development and Extension at the Tshwane University of Technology in 2016 for which he was funded by NRF. In 2018, he obtained an MSc Degree in Agriculture at the Nelson Mandela University for which he held numerous scholarships. In 2021, Qinisani was awarded a Magister Technologiae Degree which he completed at the Tshwane University of Technology. His career as an academic began in 2017 when he was appointed as an associate lecturer at the Nelson Mandela University.

With his thesis, titled: **INVESTIGATING THE ROLE OF INDIGENOUS VEGETABLES ON FOOD SECURITY AND AGROBIODIVERSITY IN NORTHERN KWAZULU-NATAL, SOUTH AFRICA**, he contributes to scholarship on the advancement of socio-economic standing of rural communities. Using a mixed methods approach with a sample of 225 smallholder farmers, the study presents the argument that indigenous vegetables have a potential to play a significant role in the broader food systems and agricultural biodiversity.

Promoter: Prof E.M. Zwane

Promoter: Dr J.W. Swanepoel

SHUSHU, Gothatamang Norman Jonathan

Thesis title: FRAMEWORK TO IMPROVE THE SMALL HOLDER CONTRIBUTION TOWARDS HOUSEHOLD FOOD SECURITY IN THE NORTHERN CAPE PROVINCE, FRANCES BAARD.

Gothatamang Norman Jonathan was born in Kimberley on 18 February 1969. He matriculated at Dr EP Lekhela High School in 1990, he holds Senior Education Diploma, BA, Advanced Management Diploma, Master's Degree in Public Administration. He taught at Mogomotsi High School and from 1999 to 2009, he served as Head of Ministry in the Northern Cape Department of Education and in the Ministry of Finance and Economic Affairs. He was the MEC for Agriculture Land Reform and Rural Development from 2009 to 2019 currently serves as the Special Advisor to the Premier of the Northern Cape.

With his thesis, titled: **FRAMEWORK TO IMPROVE THE SMALL HOLDER CONTRIBUTION TOWARDS HOUSEHOLD FOOD SECURITY IN THE NORTHERN CAPE PROVINCE, FRANCES BAARD**, the candidate contributes to scholarship in Food Security through the development of a conceptual and strategic framework to improve smallholder contribution towards food security in the Frances Baard District of the Northern Cape Province. The strategic framework will guide implementation of food security strategies to enhance smallholder contribution in food security. The results from the structural equation model pointed out that private sector support together with government programs like UIF and FPS are significant factors that can contribute towards smallholder contribution to food security. The study recommends that the conceptual and strategic framework be integrated into the current policy trajectory for implementation.

Promoter: Dr J Swanepoel

Co-promoter: Prof V Mmbengwa

ZENDA, Mashford

Mashford Zenda, born in Harare, Zimbabwe, completed his Bachelor's degree in Agricultural science (Animal science and Horticulture) with 17 distinctions in 2013 at the University of South Africa. He completed a Post Grad diploma in Poverty, Land and Agrarian studies at the University of Western Cape in 2015, and Masters in Sustainable agriculture (5 distinctions) at the University of the Free State in 2018. He started his career as a field officer (Ministry of Agriculture in Zimbabwe) and was later employed in the private sector, he is a part time lecturer at a private university.



With his thesis, titled: **EXPLORING WOOL CHARACTERISTICS THAT DETERMINE WOOL PRICE IN SOUTH AFRICA**, the candidate makes a contribution to the wool industry, by indicating that wool fibre diameter, clean yield, staple length and staple strength play a significant role in the determination of the wool price for Merino wool and White wool. His contribution indicates that fleece wool has the highest average prices followed by pieces, backs, bellies and lox, for both Merino wool and White wool. Since wool fleeces consist of the largest portion of wool shorn from sheep, it is important for wool farmers to focus on producing Merino wool and White wool with low fibre diameter, high clean yield percentage, good length of the wool and a strong and healthy wool tensile strength. Some of these findings have already been presented at an international conference.

Promoter: Dr P.J. Malan

Promoter: Dr A.C. Geyer

DOCTOR OF PHILOSOPHY MAJORING IN URBAN AND REGIONAL PLANNING

CHIRISA, Innocent

Innocent Chirisa was born on 25 December 1976 in the Chikomba District Zimbabwe. He has a DPhil (Social Sciences, University of Zimbabwe), a Postgraduate Diploma from the Erasmus University, an MSc and BSc (Rural and Urban Planning, University of Zimbabwe). From 2005 he taught town planning and real estate at Harare Polytechnic College. In March 2007, he joined the University of Zimbabwe and was promoted to Full Professor in 2017. He is Dean of Social and Behavioural Sciences Faculty (UZ) and a Research Fellow of the Urban and Regional Planning Department at the UFS.

With his thesis, titled: **INFUSING DISASTER RESILIENCE THINKING AND PRACTICE INTO RURAL SETTLEMENT PLANNING, DEVELOPMENT AND MANAGEMENT IN ZIMBABWE**, the thesis contributes to the debate on the planning, development and management of rural settlements under the impact of environmental disasters induced by climate change. It suggests measures towards embedding disaster resilience thinking and practice in rural settlement planning, beginning with a general awareness of the threats facing communities, followed by deliberate actions to mitigate them. Proactive monitoring, management and control measures are required. Consequently, a collaborative approach is required between individuals, communities and government. Key actors can tap into the diversity to devise solutions at different scales of intervention, from local to international. There is a need to form solid institutions and revive ancient indigenous environmental ethics. Role players must rise above politics and local challenges towards creating consensus for wise action and improved resilience. Five papers have already been published from the thesis.

Promoter: Prof V NEL

Co-promoter: Prof J CHAKWIZIRA

DOCTOR OF PHILOSOPHY MAJORING IN WILDLIFE MANAGEMENT

BOOYENS, Paul Lodewyk

Paul Lodewyk Booyens was born in Empangeni on 12 May 1987. He received his secondary education in Sabie, where he matriculated at Sybrand van Niekerk High School in 2005. He obtained the degree B.Sc. Zoology-Botany-Tourism in 2008, the degree B.Sc. Hons. in Environmental Science in 2009 and the degree M.Sc. Environmental Science in 2011. He started his career as Game Ranch Manager and Game Breeder in Musina in 2011. At present he is the Senior Reserve Manager at a large private wildlife reserve in the Waterberg region of the Limpopo Province, South Africa.

With his thesis, titled: **THE INTRODUCTION OF CAPTIVE BRED AFRICAN LIONS (*PANTHERA LEO*) TO A PRIVATE WILDLIFE RESERVE IN LIMPOPO PROVINCE, SOUTH AFRICA**, the candidate made a valuable contribution and showed



that when introduced in a free-roaming scenario on a reserve, captive bred and reared African lions, as well as their offspring (i) formed social groups, albeit it often a single locating female with cubs; (ii) become self-sustaining by hunting successfully, without external interference or supplementation; (iii) reproduced and raised offspring to reach female sexual maturity and the dispersal of sub-adult males from natal prides; (iv) taught their offspring to hunt effectively and interact socially, enabling reproduction of the species, thereby securing a healthy and viable F2-generation, characteristic of wild managed lions; and (v) suggested that similar lions may be considered as founders for reintroduction programmes, where wild populations have disappeared or need to be augmented in specific circumstances.

Promoter: Prof H.O. de Waal

DEAN'S MEDALS

**AWARDED TO A STUDENT WHO ACHIEVED THE BEST RESULTS IN RESPECT OF A BACHELOR HONOURS
DEGREE IN THE FACULTY OF NATURAL AND AGRICULTURAL SCIENCES**


MARAMBAKUYANA, Welena Anesu

BACHELOR OF SCIENCE HONOURS MAJORING IN RISK ANALYSIS

**AWARDED TO A STUDENT WHO ACHIEVED THE BEST RESULTS IN RESPECT OF A MASTER'S DEGREE IN THE
FACULTY OF NATURAL AND AGRICULTURAL SCIENCES**

SWARTZ, Elize

MASTER OF SCIENCE MAJORING IN MATHEMATICS



THE SEANAMARENA THE TRADITIONAL BASOTHO BLANKET

The Main Procession Graduation Gowns – embroidered with rich diversity

South Africa, and the Free State in particular, has a long-standing friendship with our neighbouring country, Lesotho.

Through a shared history, we have become co-creators of our futures. For this reason, the UFS decided to incorporate our tradition with that of the Basotho in the design of our Main Procession graduation gowns.

The gowns are inspired by the Seanamarena – the traditional Basotho blanket. The different patterns on the Seanamarena indicate the status one holds in the Basotho nation or reflect the occasion being celebrated. Keeping the Seanamarena pattern in mind, we combined our traditional academic designs with that of the Basotho nation.

YOKE PATTERNS



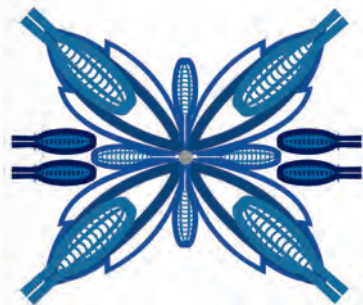
Yoke pattern for the Chancellor and Vice-Chancellor

This Seanamarena pattern is an interpretation of a design – used exclusively for the king and chiefs – which means ‘to swear by the king’. This blanket has the highest status of all Basotho blankets.



Yoke pattern for the Chairperson of the Council

This Seanamarena Victorian crest motif appeared after the visit of the Prince of Wales to Lesotho in 1925, which made a profound impression on the local people. Customers refer to this blanket as ‘lesiba’ – meaning feathers – when buying it.



Yoke pattern for the Vice-Rector

This Seanamarena Poone design symbolises good crops, wealth, and fertility. The Poone is given as a present to honour an important visitor.



Yoke pattern for Registrar

The same Seanamarena Poone design used for the Vice-Rector applies to the Registrar, with some slight design and colour alterations.

The Deans wear gowns made in the colours of the faculties, or others which indicate the office they hold.

CONGRATULATIONS FROM THE ALUMNI OFFICE

Congratulations on your graduation and best wishes for your next adventure!
We are very proud of you and your achievements.



KEEP CONNECTED

Alumni are a real measure of a university's brand, and we strive to keep you informed of the latest news about our young leaders, pioneers, and the projects emerging from the UFS. We do this through our online platforms, social media, publications like **BULT** and events such as the **Chancellor's Distinguished Alumni Awards**. We hope that you will keep connected with your alma mater by sharing your future achievements with our alumni community.

THE ALUMNI TEAM

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VOICES FROM THE FREE STATE

Voices from the Free State is a series of alumni-initiated and -led personal podcast narratives by outstanding alumni of the UFS who reflect on their experiences at the UFS, telling their stories, and explaining how their university years shaped their future and paved the way for their respective successes. Join the **Voices from the Free State** podcast series as we release a new podcast featuring a different alumnus on the first Monday of each month throughout 2021.

A CONNECTED COMMUNITY

We exist not only to keep you connected to your alma mater but

to help you stay connected to each other. We encourage engagement and networking opportunities through virtual or hybrid events, informal visits, and guest lectures. You can connect with alumni globally and reconnect with former peers through the Alumni Office.

STRENGTHENING BONDS

We value your financial contributions, your time, your skills, and your networks. Strengthen your bond with your alma mater by becoming involved in mentoring, projects, events, and initiatives aimed at creating a fulfilling student and alumni experience for fellow UFS students and alumni. For more information on impactful

projects or to donate, visit our **donations webpage**.

HERE FOR YOU

We are the Alumni Office team, and we are here for YOU. Stay connected with us via email, our **website**, or social media (**Facebook** and **LinkedIn**). Ensure that you update your details with us regularly so that we may celebrate your unfolding journey and successes with you.

To update your details

online at www.ufs.ac.za/alumni or email alumni@ufs.ac.za. Include your date of birth, cell-phone number, and full names.

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through quality, impact, and care.*



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