

# End-of-year Graduation Ceremony Bloemfontein Campus 2017

Master's and Doctoral Degrees in all Faculties

Thursday 7 December 2017  
14:30



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

# Programme

7 December 2017 | 14:30



Callie Human  
Bloemfontein Campus



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

## CONSTITUTION OF THE CONGREGATION

Chancellor

## WELCOME AND WORD OF THANKS

Vice-Rector: Research

## SPEAKER

Dr Imtiaz Sooliman, Director of Gift of the Givers

## MUSIC ITEM

Paradise Road

Music and lyrics by Patrick van Blerk and Fransua Roos

Sung by Lucy Sehloho and accompanied by Angelo Mockie and Wayne Louw

## PRESENTATION OF RECIPIENTS OF QUALIFICATIONS

Deans of the Faculties of Economic and Management Sciences, Education, Health Sciences, Law, Natural and Agricultural Sciences, the Humanities, and Theology and Religion

## CONFERMENT OF DEGREES

Chancellor

## CONGRATULATORY MESSAGE

Chancellor

## NATIONAL ANTHEM OF SOUTH AFRICA

Led by Dr Matildie Thom Wium and accompanied by the Graduation Instrumental Ensemble under direction of Joanita Erasmus-Alt

## DISSOLUTION OF THE CONGREGATION

Chancellor



# National Anthem of South Africa



Nkosi sikelel' iAfrika  
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.

## Please note:

### Order arrangements during the ceremony:

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 proceedings.
- We strive to conduct the ceremonies in a dignified manner. Please do not leave the hall before the graduation proceedings have been concluded.

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## List of candidates receiving degrees, diplomas and certificates

Degrees, diplomas, and certificates of candidates who are unable to attend the graduation ceremony will be conferred in absentia.

An \* next to a name indicates that the degree, diploma or certificate is awarded with distinction.

# Message from the Rector and Vice-Chancellor



**PROF FW PETERSEN**  
Rector and Vice-Chancellor

Dear Student

The journey to graduation – like the journey of life – contains many challenges, setbacks, even failures. This often asks for courage, commitment, and no small amount of support from friends, family, supervisors, and strangers.

Today is the culmination of years of studying towards your chosen qualification and one of the most memorable days of your time as a student at the University of the Free State (UFS).

There is nothing more fulfilling than walking across the stage and being capped, knowing that you have achieved what you set out to do in your academic career. Congratulations on this fine achievement.

As a university recognised for academic excellence and quality education, we are proud to confer this degree upon you during a time when the entire South African higher-education sector is experiencing exceptional challenges. As a university, we are committed to responding to those challenges in a manner that is not only fair and just, but will assist in strengthening this sector for the betterment of the country.

The university takes pride in you as our graduate and we hope that you are equally pleased to join a special community of alumni that is 113 years old, and that you will keep in touch with the UFS. With this shared sense of achievement, it is hoped that you had a challenging and enriching learning experience at Kopsies; that you learnt about confidence, the ability to express your opinions, the value of human dignity, and the significance of democracy. The UFS is, after all, a place that inspires excellence and transforms lives.



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

# Graduation Ceremony 2017

## HONORARY AWARDS | HONORARY DOCTORATES

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

## SHIELDS OF HONOUR, COUNCIL AND CHANCELLOR'S MEDALS

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



# Office Bearers



**DR K MOKHELE**  
PhD (UCD, USA)  
CHANCELLOR



**MR W LOUW**  
MEng (CIVIL)(SU)  
CHAIR OF THE COUNCIL



**PROF FW PETERSEN**  
PhD (SU)  
RECTOR AND VICE-CHANCELLOR



**PROF ML LANGE**  
PhD (Wits)  
VICE-RECTOR: ACADEMIC



**PROF NI MORGAN**  
MSc (Cornell)  
ACTING VICE-RECTOR: INSTITUTIONAL CHANGE,  
STUDENT AFFAIRS AND  
COMMUNITY ENGAGEMENT



**PROF P NAIDOO**  
PhD (VISTA)  
VICE-RECTOR: OPERATIONS



**PROF RC WITTHUHN**  
PhD (UFS)  
VICE-RECTOR: RESEARCH



**PROF D COETZEE**  
PhD (UFS)  
PRINCIPAL: SOUTH CAMPUS



**DR MJG VINGER**  
PhD (UJ)  
REGISTRAR: GOVERNANCE AND POLICY



**MR TI MANCHU**  
MA (UFS)  
ACTING PRINCIPAL: QWAQWA CAMPUS



**DR K LAZENBY**  
PhD (UP)  
REGISTRAR: SYSTEMS AND  
ADMINISTRATION



**PROF JU GROBBELAAR**  
DSc (UFS)  
PRESIDENT OF THE CONVOCATION

# Deans



**PROF HJ KROUKAMP**  
DPhil (UPE)  
DEAN



ECONOMIC AND  
MANAGEMENT SCIENCES  
EKONOMIESE EN  
BESTUURSWETENSKAPPE  
UFS·UV



**PROF LC JITA**  
PhD (MSU)  
DEAN



EDUCATION  
OPVOEDKUNDE  
UFS·UV



**PROF GJ VAN ZYL**  
PhD (UFS)  
DEAN



HEALTH SCIENCES  
GESONDHEIDSWETENSKAPPE  
UFS·UV



**PROF H HUDSON**  
PhD (UFS)  
ACTING DEAN



HUMANITIES  
GESTESWETENSKAPPE  
UFS·UV



**PROF CMA NICHOLSON**  
LLD (UNISA)  
DEAN



LAW  
REGSGELEERDHEID  
UFS·UV



**PROF PD VERMEULEN**  
PhD (UFS)  
DEAN



NATURAL AND  
AGRICULTURAL SCIENCES  
NATUUR- EN  
LANDBOUWETENSKAPPE  
UFS·UV



**PROF SD SNYMAN**  
DD (PRET)  
DEAN



THEOLOGY AND RELIGION  
TEOLOGIE EN RELIGIE  
UFS·UV

## MASTER'S DEGREES

### MASTER OF ADMINISTRATION

TWALA, Chitja Mogurhoff  
THE ROLE OF PUBLIC ADMINISTRATION AND MANAGEMENT IN  
STRENGTHENING DEMOCRACY IN SOUTH AFRICA: A HISTORICAL  
PERSPECTIVE  
Supervisor: Prof L Lues

### MASTER OF BUSINESS ADMINISTRATION

CHELE, Machabeli Nandi  
CLOETE, Lorinda  
FOURIE, Johannes Hendrik  
GARZOUZIE, Edmon  
JACOBS, Pieter Daniel  
KILIAN, Hermanus Lukas  
MOFOLO, Tsepiso Ephraim  
MOHAPI, Khiba Calvin  
NDOBO, Phumelela Mziwakhe  
PAMA, Masebatso Mariastella  
SEDIA, Lineo Jeanett  
SEEDAT, Mohammed Reeza  
SELLO, Teboho Obed  
VAN ZYL, Frederik Wilhelm

### MASTER OF COMMERCE WITH SPECIALISATION IN ADVANCED BUSINESS

MOSS, Tsaletseng Martina

### MASTER OF DEVELOPMENT STUDIES

NDHLOVU, Nyangu Chimwemwe  
SHORTEN, Susan Philomena  
SHUMBA, Shamiso  
SIBIYA, Sibusisiwe Xolile Portia  
WANGU, Evelyne

HERBST, Suzanne \*  
THE SOCIO-ECONOMIC DYNAMICS OF THE BIOPROSPECTING  
REGULATORY FRAMEWORK IN THE NATURAL INGREDIENTS  
SECTOR  
Supervisor: Dr S Cawood

### MASTER OF PUBLIC ADMINISTRATION

MOKOENA, Motsamai Paulus



# Faculty of Education

DEAN: PROF LC JITA



EDUCATION  
OPVOEDKUNDE  
UFS·UV

## DOCTORAL DEGREES

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN CURRICULUM STUDIES

**MSIMANGA**, Mothofela Richard

Mothofela Richard Msimanga was born in Intabazwe, Harrismith, on 15 December 1974. He started his schooling at Sentebale Primary School in Intabazwe and matriculated at the Harrismith Senior Secondary School in 1992. He obtained a Secondary Teachers' Diploma with distinction in 1995, a Further Diploma in Education (cum laude) in 1998, a Bachelor of Commerce in 2002, a Bachelor of Commerce Honours (Business Management) in 2005, a Bachelor of Education Honours (Teaching and Learning) in 2008, and a Master of Education (Didactics) in 2015. He started his career as a teacher at Iphondle Secondary School. He was appointed as Head of Department and later as Deputy Principal at Kgethatsebo-Khethulwazi School. He served as a subject advisor in the Thabo Mofutsanyana Education District for ten years. He lectured at the University of Zululand in the Department of Curriculum Studies, and is currently lecturing at the University of Johannesburg. He is married to Nonhlanhla Dinah Msimanga.

With his thesis, **TEACH AND ASSESS: A STRATEGY FOR EFFECTIVE TEACHING AND LEARNING IN ECONOMIC AND MANAGEMENT SCIENCES**, the candidate makes a contribution to the constructive alignment of teaching, learning and assessment practices in Economic and Management Sciences. With this contribution, he proposes the movement of assessment from the periphery, where it is seen as an add-on to become an integral aspect in teaching. The study makes a unique contribution by developing a non-existent strategy for effective teaching and learning in Economic and Management Sciences. The proposed strategy attempts to find the solution to integrating assessment into the teaching and learning process in order to achieve effective teaching and learning in Economic and Management Sciences. The proposed strategy attempts to avoid overburdening learners with schoolwork and an increase in teachers' workload.

**Promoter:** Prof DJ Hlalele

**Co-Promoter:** Dr MD Tshelane

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN HIGHER EDUCATION STUDIES

**MTAWA**, Ntimi Nikusuma

Ntimi N Mtawa was born in Ileje, Tanzania, on 29 December 1984. He obtained a Bachelor of Education Degree in 2009 and an Honours Degree (Bachelor of Arts in Development Studies) from the University of the Western Cape in 2010. With an interest in higher education and development, he enrolled for the Higher Education Master's in Africa (HEMA) in 2012, which he obtained cum laude in 2014. He joined the University of the Free State Centre for Research on Higher Education and Development (CRHED) in 2014 to pursue his PhD. Ntimi is passionate about university-community (society) relationships, with a specific focus on issues of social justice, citizenship, and public good professionals.

With his thesis, **EXPLORING THE ROLE OF SERVICE-LEARNING IN HUMAN DEVELOPMENT: PERSPECTIVES OF STAFF, STUDENTS AND COMMUNITY MEMBERS**, the candidate makes an original and significant contribution to critical scholarship on the role of higher education in advancing human development. The data gathered in this study, using multiple methods and sources, shows that service-learning (SL) has the potential to enhance capabilities and promote human development values for students, lecturers, and community members. This thesis illuminates the conundrums and tensions surrounding SL, particularly when it is implemented in the context of extreme poverty and inequalities which is characteristic of South Africa. The findings highlight that while SL is unlikely to dismantle deep structural inequalities, it can enable us to address some of the numerous remediable injustices in our communities and broader society. In this thesis, the candidate proposes a human development and capabilities informed framework for SL design, implementation, and outcomes, which is useful for policy and practice that strives to make SL more inclusive, empowering, and equitable.

**Promoter:** Prof MG Wilson-Strydom

**Co-Promoter:** Prof MJ Walker

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN PSYCHOLOGY OF EDUCATION

**CHIDARIKIRE**, Munyaradzi

Chidarikire Munyaradzi was born in Masvingo, Zimbabwe on 09 August 1978. He received his secondary education in Masvingo, Zimbabwe, where he matriculated at Ndarama High School in 1996. He obtained the degree Bachelor of Science in Counselling Hons in 2010, a Master's degree in Educational Psychology with merit in 2014 and the PhD in Psychology of Education in 2016, all at the University of the Free State. He started his career as a teacher in Masvingo in 2006 and at present he is a lecturer at Phumelela College. He is married to Jane and the couple has a son and two daughters.

With his thesis, **A PEER COUNSELLING STRATEGY FOR ALLEVIATING DRUG ABUSE IN ZIMBABWEAN RURAL LEARNING ECOLOGIES**, the candidate makes a contribution towards alleviating the phenomenon of drug abuse by focusing on adolescent learners in rural areas of Zimbabwe.

Driven by personal experience where some of his next of kin were devastated by drugs, the candidate explores peers as assets in alleviating the problem. With his contribution, he illuminates the important role that peers could play by means of focused and ongoing learning and enablement. Through this investigation, the candidate proposes to find solutions using peers as local assets. The study further indicates that communities facing particular problems are best suited to finding solutions to their own problems.

**Promoter:** Prof DJ Hlalele

**Co-Promoter:** Dr MF Tlali

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN PSYCHOLOGY OF EDUCATION

**MATENTJIE, Tshepiso**

Tshepiso Matentjie was born in Mamelodi, a township east of Pretoria, on 31 August 1974. She received her secondary education in Mamelodi, where she matriculated at Vlakfontein Technical School in 1991. She obtained the degree BSocSc majoring in Psychology and Sociology in 1995, as well as an Honours Degree in Psychology in 1996 at the University of Cape Town. She attained her first Master's Degree, MPhil in Higher Education, cum laude from the University of Stellenbosch in 2005. Her second Master's Degree, MEd in Educational Psychology, was obtained in 2007 at the University of Pretoria. She started her career as a student counsellor and academic development practitioner in 1997 at the then Technikon SA, which later merged with UNISA. She is a registered educational psychologist in private practice. She is also the sole director of Matentjie Consulting Services. She is married to Christopher Molefe and the couple has two children, Tshimega and Molemo Molefe.

With her thesis, **THE EDUCATIONAL MOTIVATIONS AND STRATEGIES OF BLACK MIDDLE-CLASS PARENTS IN PREDOMINANTLY WHITE SCHOOLS IN POST-APARTHEID SOUTH AFRICA**, the candidate makes a contribution to understanding how black middle-class parents in white-dominant schools utilise their agency in pursuit of quality education for their children in the post-apartheid era. Specifically, the study interrogates the ways in which these black parents handle critical racial incidents that affect their children in post-apartheid schools. It therefore also examines the extent to which racial integration has succeeded in white-dominant schools where black parents constitute a racial minority. Drawing on clinical interviews with 19 black parents, the research focuses on Parental Agency to explore the psychological processes involved in parental decision-making and the intersections of race, class, and ethnicity in making those decisions. Furthermore, the research offers a straddling of disciplines seldom undertaken in other studies on black middle-class parents. The personal interests and motives of each parent are explored, as well as how their actions are consistent with or contradictory to those of other parents. Finally, this study examines how parental decision positions them in their ability and effectiveness in advocating for their children when critical racial incidents, which affect their children, occur within these schools. The findings indicate that complex patterns of inclusion/exclusion are not simply a result of school actions on black parents and their children; it is also a consequence of the active decisions made, or not made, by parents within white-dominant schools.

**Promoter:** Prof JD Jansen

## MASTER'S DEGREES

### MASTER OF ARTS IN HIGHER EDUCATION STUDIES

**SEOKA, Mirriam**

**NEL, Christoffel Cornelius**

IMPROVING CULTURAL INTELLIGENCE OF EDUCATION STUDENTS THROUGH AN EDUCATION MODULE

**Supervisor:** Dr L Jacobs

**STOFIE, Caroline Letshego Keamogetswe**

THE RELATIONSHIP BETWEEN LEARNING MOTIVATION AND ACADEMIC ACHIEVEMENT AMONG 2ND YEAR PHYSICS STUDENTS

**Supervisor:** Prof VN Teise

**VANNESTE, Lien**

THE CONTRIBUTION OF THE INSTITUTE FOR RECONCILIATION AND SOCIAL JUSTICE TO TRANSFORMATION AT THE UNIVERSITY OF THE FREE STATE

**Supervisor:** Dr WN Nel

### MASTER OF EDUCATION WITH SPECIALISATION IN CURRICULUM STUDIES

**DU TOIT, Henriëtte**

THE METACOGNITIVE AWARENESS OF PRE-SERVICE MATHEMATICS TEACHERS AT A HIGHER EDUCATION INSTITUTION

**Supervisor:** Dr K Junqueira

**Co-Supervisors:** Dr DS du Toit and Prof MG Mahlomaholo

**METSING, Regina Mamzwandile**

**MOKOTJO, Lindiwe Gloria**

AN ACTIVE LEARNING STRATEGY FOR ADDRESSING DYSCALCULIA IN A MATHEMATICS CLASSROOM

**Supervisor:** Prof D Hlalele

**Co-Supervisor:** Dr MS Mosia

### MASTER OF EDUCATION WITH SPECIALISATION IN EDUCATION MANAGEMENT

**GUMBI, Eric Buhle**

TOWARDS A SAFE AND SECURE LEARNING ENVIRONMENT: A CASE STUDY OF A SELECTED SCHOOL IN NEWCASTLE

**Supervisor:** Prof MM Nkoane

# Faculty of Education



EDUCATION  
OPVOEDKUNDE  
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DEAN: PROF LC JITA

**LETHOLE, Lieketseng Gloria**

A DISTRIBUTED LEADERSHIP COMMUNICATION STRATEGY FOR IMPROVED LEARNER ACADEMIC PERFORMANCE

**Supervisor:** Dr J Palmer

**MASONDO, Nombuso Charity**

THE EFFECTIVENESS OF PRINCIPALS IN IMPLEMENTING INCLUSIVE EDUCATION: AN UBUNTU APPROACH

**Supervisor:** Prof MG Mahlomaholo

**Co-Supervisor:** Dr M Tshelane

**MTHETHWA, Nompumelelo Rebecca**

ENHANCING THE ROLE OF FEMALE PRINCIPALS AS CURRICULUM MANAGERS

**Supervisor:** Prof MG Mahomaholo

**Co-Supervisor:** Dr CT Tsotetsi

**MASTER OF EDUCATION WITH SPECIALISATION IN POLICY STUDIES AND GOVERNANCE IN EDUCATION**

**RAKOLOBE, Kelello Alicia**

THE REALITIES REGARDING THE IMPLEMENTATION OF THE LESOTHO EDUCATION SECTOR HIV AND AIDS POLICY 2012

**Supervisor:** Dr KL Teise

**MASTER OF EDUCATION WITH SPECIALISATION IN PSYCHOLOGY OF EDUCATION**

**CHAKA, John Ngwanya**

A CRITICAL ANALYSIS OF SEXUALITY EDUCATION IN SCHOOLS BEYOND THE DISCIPLINARY BOUNDARIES OF LIFE ORIENTATION

**Supervisor:** Dr C Beyers

**Co-Supervisor:** Mr EH Swanepoel

**COETZEE, Marna Mareta \***

DIE VERBAND TUSSEN SELFKONSEP, MOTIVERING EN ENGELS TWEETAALPRESTASIE ONDER GRAAD 10- EN 11-LEERDERS IN DIE NOORD-KAAP

**Supervisor:** Prof A van Staden

**Co-Supervisor:** Dr Z Swanepoel

**KHASIPE, Thootse Claudia**

SCAFFOLDING 'READING FOR MEANING' EXPERIENCES FOR HIGH SCHOOL ENGLISH LANGUAGE LEARNERS TO IMPROVE PERFORMANCE

**Supervisor:** Dr JN Ramohai

**Co-Supervisor:** Prof D Hlalele





DEAN: PROF GJ VAN ZYL

## DOCTORAL DEGREES

### DOCTOR OF MEDICINE WITH SPECIALISATION IN PAEDIATRICS

**BROWN, Stephen Cunningham**

Stephen Brown was born in Middelburg (Cape) on 4 June 1959. He received his secondary education in Bloemfontein, where he matriculated at Grey College in 1977. He obtained the degree MB ChB (cum laude) in 1983, and MMed in 1991 (cum laude) at the University of the Free State. He started his career as medical officer in Zebediela in 1986. In 1991, he was appointed in the Department of Paediatrics and Child Health as specialist paediatrician. At present he is a senior lecturer, principal specialist, and head of Paediatric Cardiology on the joint staff establishment of the Free State Department of Health and the UFS. He is married to Hermien and the couple has two sons and one daughter.

With his thesis, **THE TREATMENT OF STRUCTURAL CARDIAC DISEASE BY PERCUTANEOUS INTERVENTION**, the candidate makes a contribution to interventional structural and congenital cardiology. With this contribution, he demonstrates his involvement in the development of percutaneous therapies in South Africa and advances in the field of paediatric cardiology. The results of this investigation show that it is important to learn from experiences, past and present, in order to reduce mortality and morbidity and continuously apply and develop new techniques to improve care of congenital heart disease in children globally.

**Promoter:** Prof FE Smit

**Co-Promoter:** Prof M Gewillig

**Co-Promoter:** Prof H Kotze

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN HEALTH PROFESSIONS EDUCATION

**DU PREEZ, Minnet**

Minnet du Preez, daughter of Donnie and Katy Thomas, was born in Odendaalsrus on 16 October 1983. She matriculated at Riebeeckstad High School in 2001. She obtained her BSc Consumer Sciences Degree in 2004, B Consumer Sciences Hons (with distinction) in 2005, and Master's Degree in Consumer Sciences in 2008 at the North-West University. She started her career as a junior lecturer at the North-West University's Potchefstroom Campus in 2006, and married Jacques du Preez, in 2009. The couple moved to Ladybrand, where Minnet worked as a teacher for two years. In 2011, she was appointed as a lecturer at the North-West University, and at present she is the subject chair for the Department of Consumer Sciences.

With her thesis, **A FRAMEWORK FOR EMPLOYABILITY SKILLS OF CONSUMER SCIENCE GRADUATES**, the candidate makes a contribution to the field of Consumer Sciences with a novel framework describing the various employability skills that Consumer Sciences employers require from employees. This study identified 11 essential employability skills that are valued by South African Consumer Sciences employers, and goes on to describe how these skills can be attained by Consumer Sciences students during their undergraduate training. The framework goes on to highlight how a combination of academic and extra-curricular activities play a role in attaining these essential skills, and that lecturers and students play a vital role in this process. Through the implementation of this framework, lecturers in Consumer Sciences may enhance their students' employability skills, helping them to become highly sought-after graduates entering the workplace. This outcome is mutually beneficial to universities, that will deliver more employable graduates, as well as the Consumer Sciences industry that requires highly skilled employees.

**Promoter:** Dr LJ van der Merwe

**Co-Promoter:** Dr SB Kruger

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN HUMAN MOLECULAR BIOLOGY

**VERMEULEN, Jan-G**

Jan-G Vermeulen was born in Bloemfontein on 21 March 1984. He received his secondary education in Bloemfontein, where he matriculated at the Sentraal Secondary School in 2002. He obtained his BSc degree in 2007, BScHons in 2008, and MMedSc (with distinction) in 2012 at the University of the Free State. He is currently busy with his post-doctoral study in the Department of Microbial, Biochemical, and Food Biotechnology at the University of the Free State.

With this thesis, **PREPARATION AND IN VITRO CHARACTERISATION OF AN ANTI-TISSUE FACTOR SINGLE CHAIN VARIABLE FRAGMENT**, the candidate explores the potential inhibiting tissue factor as a novel approach to antithrombotic therapy. He utilised phage display technology to select antibody fragments which inhibit the function of human tissue factor. He improved the production of functional antibody by using *in vitro* refolding and cold shock expression methods. The protein structure, as well as the inhibition mechanism, were characterised by means of *in silico* modelling. The improved expression of a functional antibody fragment enabled the expressing of single chain variable fragments successfully. This study ultimately opens up several different pathways to study tissue factor inhibition *in vivo*.

**Promoter:** Prof SM Meiring

**Co-Promoter:** Prof E van Heerden and Prof FJ Burt

# Faculty of Health Sciences



HEALTH SCIENCES  
GESONDHEIDSWETENSKAPPE  
UFS·UV

DEAN: PROF GJ VAN ZYL

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN MEDICAL PHYSICS

**ODERINDE, Oluwaseyi Michael**

Oluwaseyi Michael Oderinde was born in Ado Ekiti, Ekiti State, Nigeria, on 4 January 1987. He received his secondary school education in Nigeria, where he matriculated at Christ's School Ado Ekiti in 2003. He obtained his BScHons degree in Physics at the University of Ado Ekiti in 2010, claiming several merit awards, and his MSc degree in Radiation Physics with distinction in 2014 at the University of Ibadan, Nigeria. Currently, he is a post-doctoral research fellow in the Department of Medical Physics, University of the Free State. He is married to Damilola Ruth and the couple has a son.

With his thesis: **SENSITIVITY ANALYSIS OF THE INTEGRAL QUALITY MONITORING SYSTEM® FOR RADIOTHERAPY VERIFICATION USING MONTE CARLO SIMULATION**, the promovendus makes a significant contribution in establishing radiation physics properties for a prototype dose monitoring system for which the Department of Medical Physics acts as a beta test site; the only such site in the southern hemisphere. His work demonstrated the ability of this equipment to detect small radiation field alterations during cancer treatment, making it a promising tool for future beam monitoring during radiation treatment. From this research, two articles have been published in two accredited international peer-reviewed journals. In addition, the promovendus presented his research at both international and national conferences, and four abstracts were subsequently published in an accredited international journal.

**Promoter:** Dr FCP du Plessis

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN MEDICAL PHYSICS

**VAN EEDEN, Déte**

Déte van Eeden was born in Bloemfontein on 23 September 1986. She received her secondary education at C & N Oranje Girls' School, where she matriculated in 2004. She obtained the degree BMedSc in 2008, BMedScHons in 2009, and completed her Postgraduate Diploma as an intern Medical Physicist in 2011. She obtained the MMedSc (Medical Physics) degree from the UFS in 2014, and received the Dean's Medal for the best master's degree student in the Faculty of Health Sciences. She is married to Johan van Eeden and they have a daughter and a son.

With her thesis: **FEASIBILITY OF TISSUE DIFFERENTIATION WITH MULTI-ENERGY COMPUTED TOMOGRAPHY: A MONTE CARLO BREAST PHANTOM STUDY**, the promovenda makes a valuable contribution towards small cancer lesion detection in the breast. Her work demonstrated the functionality of using multi-energy X-ray beams to obtain image information that can, in principle, be used in optimisation procedures to yield the best image. This technique is more reliable compared to dual-energy computed tomography (CT) imaging and demonstrated that lesions could be identified in a breast model. It also demonstrated the potential of using dedicated CT machines for certain breast-screening tests to detect early cancer lesions. This work already resulted in the publication of an article in the European Journal of Medical Physics.

**Promoter:** Dr FCP du Plessis

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN NURSING

**PHILLIPS, Maria Jacoba Johanna**

Maria Phillips was born in Bloemfontein on 15 November 1963. She received her secondary education in Bloemfontein, where she matriculated at the Sand du Plessis High School in 1981. She obtained the degree BSocSc (Nursing) in 1984, BSocScHons (Nursing) in 1986, and the degree MSocSci (Nursing) with distinction in 2006 at the UFS. She started her career as a trauma and critical care nurse in Pretoria in 1992. In 2004, she was appointed in the School of Nursing, and at present she is a lecturer at the UFS. She is married to Patrick Phillips and the couple has one daughter.

With her thesis, **TRANSFORMATIVE LEARNING EXPERIENCES OF NURSE EDUCATORS IMPLEMENTING HIGH-FIDELITY SIMULATION: AN INTERPRETATIVE PHENOMENOLOGICAL ANALYSIS**, the promovenda contributes meaningfully to the theory of nurse educators' learning when implementing high-fidelity simulation for the first time. The study found that the nurse educators experienced a deep transformative process similar to that described by Jack Mezirow's transformative learning theory. This research describes the disruptive effect of technology on the educators while adopting a new teaching and learning strategy. A framework was compiled, explaining the process of transformative learning within this context. This thesis is timely, considering that high-fidelity simulation is increasingly being incorporated into nursing curricula on the African continent. In addition, the promovenda was congratulated on her use of Interpretative Phenomenological Analysis as an innovative methodology within this domain.

**Promoter:** Dr L van Rhyen

**Co-Promoter:** Dr DE van Jaarsveld



DEAN: PROF GJ VAN ZYL

## MASTER'S DEGREES

### MASTER OF HEALTH PROFESSIONS EDUCATION

**VAN SCHALKWYK**, Marizaan  
CONTINUOUS PROFESSIONAL DEVELOPMENT  
ECHOCARDIOGRAPHY TRAINING IN SOUTH AFRICA  
Supervisor: Dr C van Wyk

### MASTER OF MEDICAL SCIENCE WITH SPECIALISATION IN VIROLOGY

**DAMANE**, Deborah Rethabile  
PREPARATION OF RECOMBINANT ANTIGEN FOR SEROLOGICAL  
DETECTION OF AFRICAN HANTAVIRUSES  
Supervisor: Prof FJ Burt

### MASTER OF MEDICAL SCIENCE WITH SPECIALISATION IN MEDICAL PHYSICS

**SETILO**, Itumeleng Edward  
CHARACTERIZATION OF SMALL MEGAVOLTAGE PHOTON BEAMS  
FOR RADIOTHERAPY  
Supervisor: Dr FCP du Plessis

### MASTER OF MEDICINE IN ANAESTHESIOLOGY

**PROCTER**, Nicholas James

### MASTER OF MEDICINE IN CARDIOTHORACIC SURGERY

**FOURIE**, Rentia

### MASTER OF MEDICINE IN FORENSIC MEDICINE

**FERREIRA**, Ignatius Stephanus

### MASTER OF MEDICINE IN NEUROLOGY

**SIDDI GANIE**, Naazim

### MASTER OF MEDICINE IN OBSTETRICS AND GYNAECOLOGY

**LEROKO**, Thabang Raymond

### MASTER OF MEDICINE IN RADIATION ONCOLOGY

**SCHOEMAN**, Elizabeth Maria

### MASTER OF MEDICINE IN PAEDIATRICS

**WEIDEMAN**, Izanne

### MASTER OF MEDICINE IN PLASTIC SURGERY

**CHOKOE**, Mmattlou Lloyd

### MASTER OF MEDICINE IN SURGERY

**BUHEL**, Otto Charl

### MASTER OF MEDICINE IN UROLOGY

**DE JAGER**, Antonie Johannes

### MASTER OF OCCUPATIONAL THERAPY

**DU PLOOY**, Maritha \*  
SENSORY INTEGRATION DIFFICULTIES AND DYSFUNCTIONS IN  
CHILDREN WITH FETAL ALCOHOL SPECTRUM DISORDERS  
Supervisor: Ms A van Jaarsveld  
Co-Supervisor: Ms E Janse van Rensburg

**VAN DER MERWE**, Chanette  
PERSONALITY CHARACTERISTICS, PERCEPTION OF PAIN AND THE  
ATTAINMENT OF SELF-CARE IN PATIENTS WITH SPINAL FUSION  
Supervisor: Ms R Hough

### MASTER OF SCIENCE IN PHYSIOTHERAPY

**JANSE VAN RENSBURG**, Alida Maria (with specialisation in Clinical  
Sport Physiotherapy)  
A STUDY TO IDENTIFY THE PHYSIOTHERAPY REFERRAL  
PRACTICES OF SOUTH AFRICAN MEDICAL PRACTITIONERS IN  
BLOEMFONTEIN FOR MUSCULOSKELETAL PATIENTS  
Supervisor: Dr RY Barnes

### MASTER OF SOCIAL SCIENCES IN NURSING

**MODIKOE**, Mahlodi Martha  
ORAL HEALTH-RELATED KNOWLEDGE, ATTITUDE AND PRACTICES  
[KAP] OF ADULT PATIENTS IN THE MANGAUNG METROPOLITAN  
MUNICIPALITY, SOUTH AFRICA  
Supervisor: Dr M Reid

**MOTHOBI**, Nancy Nomthandazo  
EXPERIENCES OF STUDENT NURSES IN THE NORTHERN CAPE  
REGARDING THEIR CLINICAL ACCOMPANIMENT  
Supervisor: Dr L van Rhyn  
Co-Supervisor: Ms MR Mpeli

**MOTSEKE**, Ntombodidi Mary  
PATIENT EXPERIENCES OF MULTI DRUG RESISTANT TB TREATMENT  
IN TWO DIFFERENT SETTINGS IN THE FREE STATE PROVINCE  
Supervisor: Dr I Venter



# Faculty of Law

DEAN: PROF CMA NICHOLSON



## HONORARY DOCTORATE

### BOTHA, Marius

Although financial planning in South Africa is still in its formative years, the industry has altered unequivocally due to the dedication of a handful of individuals. Chief among them is Marius Botha, who has shaped the industry and sculpted financial planning into an independent profession.

Botha played a fundamental role in the establishment and growth of the School of Financial Planning Law at the University of the Free State – the leading education institution in financial planning in South Africa. He was also instrumental in compiling the curriculum and structure of the Postgraduate Diploma in Financial Planning offered by the school. This was the first full qualification of its kind offered in South Africa and positioned the institution at the forefront of financial planning education. Four other institutions have introduced the postgraduate diploma, modelled on the same learning outcomes and frameworks as developed by the School of Financial Planning Law under the guidance of Botha.

Although Botha has not been employed by a higher education institution on a full-time permanent basis, he provided guidance to most institutions offering postgraduate qualifications in financial planning. Few certified financial planning professionals in Southern Africa were not trained by him.

At present, he is the principal moderator and trainer for the Professional Competency Examination, an examination that needs to be successfully completed in order to become a Certified Financial Planning Professional. He is also a presenter at the annual refresher workshops presented by the Financial Planning Institute of South Africa, covering technical matters related to retirement, estate planning and tax matters. He advised the South African Revenue Services on the drafting of tax legislation. Additionally, he assisted a number of regulatory boards and influenced the amendment and improvement of industry regulations.

Since 1994, Botha has been editing the quarterly LexisNexis *Insurance and Tax Journal*, which is the most influential electronic financial planning journal. Botha has also authored and co-authored four books that are used from first-year level to the highest levels of financial planning and financial planning law education. Included in this list are *The South African Financial Planning Handbook*, *Fundamentals of Financial Planning*, and *Financial Calculations and Worksheets*.

Financial service providers such as Standard Bank, ABSA, Sanlam, Old Mutual, Alexander Forbes and Allan Gray rely on him to provide staff training and consulting on financial planning and financial planning legislation.

In 2006, Botha received a special award for excellent service in recognition of his service to the School of Financial Planning Law at the University of the Free State. In 2015, he received the Harry Brew Award for his outstanding contribution and impact on the financial planning industry, education and the development of Certified Financial Planning professionals.

**The University of the Free State is honoured to confer the degree of LLD (honoris causa) on Marius Botha.**

## DOCTOR OF LAWS WITH SPECIALISATION IN PRIVATE LAW

### VAN ZYL, Rika

Rika van Zyl was born in Bloemfontein on 24 December 1984. She received her secondary education in Bloemfontein, where she matriculated at the C & N Oranje Girls' High School in 2003. She obtained an LLB Degree in 2007, the Postgraduate Diploma in Financial Planning in 2008, and an LLM Degree in 2013. She started her career as research assistant at the Faculty of Law in 2008. In 2010, she was appointed in a permanent position at the School of Financial Planning, where she is currently a lecturer. She is married to Johan van Zyl and the couple has a baby daughter, Lara.

With her thesis, **DIE INVLOED VAN DIE *STIPULATIO ALTERI* OP DIE *INTER VIVOS* TRUST IN DIE SUID-AFRIKAANSE REG: VOORGESTELDE OPLOSSINGS VIR BETER REGULERING**, the candidate investigates the problematic characterisation of the South African *inter vivos* trust as a species of a contract for the benefit of a third party (*stipulatio alteri*). By means of a legal-historical and comparative analysis, coupled with an in-depth examination of almost two centuries of South African case law, the candidate propagates a 'pure' conceptualisation of the *stipulatio alteri* that forms the cornerstone of her proposals for the improved regulation of the *inter vivos* trust. In so doing, she not only identifies a 'historical fault line' that has contributed to the current unsatisfactory legal position, but also proffers a number of solutions to correct it. One of her external examiners remarked that "[t]here certainly has not been as thorough an examination [of these issues] in South African legal literature to date. As such, the thesis makes an exceptional contribution to the knowledge base and insight into the law of trusts as a legal discipline".

Promoter: Prof BS Smith

## MASTER'S DEGREES

### MASTER OF LAWS WITH SPECIALISATION IN CRIMINAL AND MEDICAL LAW

VENTER, Sonja

### MASTER OF LAWS WITH SPECIALISATION IN ENVIRONMENTAL LAW

DES ORMEAUX, Tara

### MASTER OF LAWS WITH SPECIALISATION IN MERCANTILE LAW

MZIWAKE, Lunga Samuel

### MASTER OF LAWS WITH SPECIALISATION IN INTERNATIONAL ECONOMIC LAW

FOUCHE, Deon

### MASTER OF LAWS WITH SPECIALISATION IN LAW OF BUSINESS ENTITIES

KHARA, Donald Kabelo

### MASTER OF LAWS WITH SPECIALISATION IN PRIVATE LAW

CRONJÉ, Jan-Hendrik

### MASTER OF LAWS WITH SPECIALISATION IN PUBLIC LAW

MOEKOA, Moru Andries

# Faculty of Natural and Agricultural Sciences

DEAN: PROF PD VERMEULEN



## HONORARY DOCTORATE

### HOLLOWAY, Paul Howard

Professor Paul Howard Holloway is an internationally acclaimed expert in the science and technology of surfaces, thin films, and nanoparticles as well as the application of thin films and nanostructures as electronic, optoelectronic, and photonic materials and devices. Professor Holloway is a Distinguished Professor Emeritus and the Ellis D Verink Jr. Professor Emeritus of Materials Science and Engineering at the University of Florida, Gainesville, where he has mentored 56 PhD students and 50 Master of Science students.

He has hosted several visits by numerous foreign faculties to the University of Florida, including five visiting faculties from the University of the Free State, which led to the establishment of phosphor research in the Department of Physics at the University of the Free State.

Professor Holloway was elected Fellow of the American Vacuum Society in 1993, and was made an Honorary Member in 1997. He received a medal from the University of Helsinki in 1995 for Excellence in Electroluminescent Materials, and received the Albert Nerken Award from the American Vacuum Society in 1999. He was elected a Fellow of ASM International in 2000, and in the same year was named a Distinguished Professor at the University of Florida, where he was announced College Teacher of the Year, and received Professional Excellence Programme and Doctoral Dissertation Advisor/Mentoring awards. Professor Holloway was named the Teacher-Scholar of the Year for the University of Florida in 2009, the highest honour bestowed on faculty at the university. He received a Lifetime Achievement Award for Outstanding Research and Advancement of Science of Luminescent Materials from the Society for Information Display (SID) in 2010, and was honoured together with his wife through two endowed awards, namely the Paul Holloway Young Investigator Award at the American Vacuum Society, and the Bette and Paul Holloway Award in the Department of Materials Science and Engineering at the University of Florida.

He has served as national President of the American Vacuum Society, and is active in the Materials Research Society, the American Society for Metals (ASM), the Materials Society, and the American Society for Testing and Materials. He is also Chief Scientist for NanoPhotonics Inc., a start-up company commercialising solution-processed quantum-dot light-emitting devices for displays. In addition to publishing over 330 refereed papers and proceedings and 12 book chapters, editing six books and being awarded 14 patents, his work has been cited over 11 000 times. Professor Holloway serves on the editorial boards of *Thin Solid Films*, *Recent Patents on Material Science*, and the *Indian Journal of Materials Science*.

The University of the Free State considers it a privilege and an honour to confer the degree DSc (honoris causa) on Professor Paul Howard Holloway.

## DOCTORAL DEGREES IN AGRICULTURAL SCIENCES

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN AGRICULTURAL ECONOMICS

#### JOUBERT, Jan Christoffel Nel

Christo Joubert was born in Modimolle on 2 October 1970. He received his secondary education in Polokwane, where he matriculated at the HTS Tom Naude in 1988. He obtained the degree BSc Agricultural Economics in 1997, Hons in 2001, the degree MSc (Real Estate) in 2007, and MBA in 2009. He started his career as business manager at Outspan International in 1997 in Pretoria. He worked for Standard Bank from 1998 to 2003; for QuatroCon, a grain portfolio company, from 2003 to 2005; for Senwes from 2005 to 2007; for Absa from 2007 to 2009; and is presently employed as a manager of Agro Food Chains at the National Agricultural Marketing Council.

With his thesis, **A QUANTITATIVE AND QUALITATIVE ANALYSIS OF THE SOUTH AFRICAN BROILER INDUSTRY**, the candidate makes a contribution to the agricultural sector. In this contribution, he analyses the South African broiler value chain and determines the impact of the industry on the South African economy at various levels, by using different economic models. The candidate also proposes several initiatives for the industry to render it more viable and sustainable. This methodological contribution lays the foundation for the future assessment of other agricultural sectors in South Africa, and informs policy makers on the socioeconomic and economic impacts of the industry on the South African economy.

Promoter: Prof BJ Willemse

Co-Promoter: Dr DB Strýdom

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN ANIMAL NUTRITION

#### DE WITT, Foch-Henri

Foch-Henri de Witt was born in Jacobsdal on 24 March 1979. He received his secondary education in Jacobsdal, where he matriculated at the Agricultural High School in 1997. He obtained the degree Baccalaureus Agriculturae with distinction in 2001, the degree Baccalaureus Scientiae



Agriculturae (Hons) with distinction in 2004, the degree Magister Scientiae in Agriculture in 2006, and the PhD in Animal Nutrition in 2017 at the University of the Free State. He started his career as junior lecturer in the Department of Animal, Wildlife and Grassland Sciences at the University of the Free State, where he is currently a lecturer. He is married to Nicolene and the couple has one son and one daughter.

With his thesis, **DIETARY LIPID COMPOSITION AND POULTRY QUALITY – A PARADIGM SHIFT TOWARDS  $\omega$ -9 FATTY ACIDS**, the candidate demonstrated the benefits of adding lipids that are rich in saturated omega 3, 6, and 9 fatty acids to basal poultry diets. Hen and cockerel fertility, production efficiency, physiochemical, nutritional, and sensory quality traits, health properties, and the oxidative stability of poultry products were investigated. His findings on the beneficial effects of omega 9 fatty acids were especially novel and opened a new field of thought and insight in terms of dietary fatty acid supplementation for poultry. The candidate's independent way of thinking and his ability to link the entire value chain from 'conception to consumption', using complex biochemical, statistical, nutritional, and animal science principles, is highly commendable. This research makes a valuable contribution to the poultry industry. Several congress contributions and peer-reviewed articles have been produced from this research, and more are underway.

Promoter: Prof A Hugo

Co-Promoter: Prof V Muchenje

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN DISASTER MANAGEMENT

FENTA, Muluken Mekuyie

Muluken Mekuyie Fenta was born in Bichena, East Gojjam, Ethiopia, on 6 February 1983. He received his secondary education in Bichena, where he matriculated at the Belay Zelek High School in 2004. He obtained his BSc in Animal, Rangeland and Wildlife Sciences in 2008 at Mekelle University, Ethiopia, and a Master's in Livestock Production at Hawassa University, Ethiopia, in 2012. He started his career in 2008 as assistant lecturer, and is since 2012 a lecturer at Hawassa University. He is married to Desta Mulu and the couple has one daughter.

With his thesis, **UNDERSTANDING RESILIENCE PATHWAYS TO CLIMATE CHANGE IN A CHANGING RANGELAND ENVIRONMENT AMONGST PASTORAL SOCIETIES OF AFAR REGION, ETHIOPIA**, the candidate makes a contribution to the long-term climate resilience of pastoralists. He used a modified community-resilience framework and an integrated approach, which combined social, economic, and environmental indicators. A two-stage factor analysis was used to measure climate resilience of pastoralists. He made three important findings. Firstly, he revealed that indigenous early-warning systems and informal safety nets were the most important components of pastoralists' resilience. Hence, there is a need to empower informal institutions and integrate indigenous early-warning systems into formal warning systems. Secondly, he showed a substantial loss of grassland due to proliferation of *Prosopis juliflora* and the allocation of rangeland to commercial crop farming administered by the state, thus threatening the livelihood of Afar pastoralists. He highlighted the need to establish a policy for controlling *Prosopis juliflora* and to give pastoralists full rights to their grazing land. His third major finding suggested that decision makers should focus on long-term strategic livelihood interventions, specifically water-related interventions, by enhancing irrigation crop farming rather than providing emergency relief. His research provided a significant contribution to the management of the pastoralist systems in all African countries, not only in Ethiopia. Five draft articles have been sent to accredited peer-review journals and are currently under review.

Promoter: Prof A Jordaan

Co-Promoter: Dr Y Melka

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN DISASTER MANAGEMENT

NCUBE, Alice

Alice Ncube was born in Gwanda in Zimbabwe on 25 July 1965. She received her secondary education in Bulawayo, where she matriculated at Eveline Girls High School in 1985. She obtained a Bachelor's Degree in 1988 from the University of Zimbabwe, Master's in Disaster Management in 2009, and a Postgraduate Diploma in Gender Studies in 2010 from the University of the Free State. She started her career as a high school teacher and curriculum developer in the Zimbabwe Ministry of Education. She moved to South Africa in 2008 to join the University of the Free State as a short-course coordinator and junior lecturer at DiMTEC, and is presently a lecturer in DiMTEC. She is the mother of two daughters, Nomvelo and Nosipho Sithole, and a son, Ilathi Sithole.

With her thesis, **THE SOCIO-ECONOMIC COPING AND ADAPTATION MECHANISMS EMPLOYED BY AFRICAN MIGRANT WOMEN IN SOUTH AFRICA**, the candidate assesses the socio-economic coping and adaptation mechanisms employed by African migrant women in South Africa, using a sustainable livelihood framework. Most studies focus on the South-North flow. This study focuses on South-South flow and the value of the study lies in the inclusion of cultural and political capitals into a sustainable livelihood framework. With this contribution, the candidate suggests that African migrant women arrive in South Africa equipped with certain resilience capabilities and that they take advantage of the favourable socio-economic environment in South Africa to nurture and enhance their resilience capabilities to cope and adapt. This study generated knowledge regarding factors impacting on coping and adaptation mechanisms of women migrants in relation to community capitals. The candidate's findings were already presented at the National University of Public Service in Hungary. Four articles have been submitted to accredited journals.

Promoter: Prof AJ Jordaan

Co-Promoter: Dr YT Bahta

# Faculty of Natural and Agricultural Sciences

DEAN: PROF PD VERMEULEN



## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN MOLECULAR PLANT BREEDING

MARÉ, Ansori

Ansori Maré (née du Plessis) was born in Jagersfontein on 1 June 1987. She received her secondary education in Jacobsdal, where she matriculated at the Landboudal High School in 2006. She obtained the following degrees: BSc (Genetics) in 2009, BScHons (Genetics) in 2010, and MScAgric (Plant Breeding) with distinction in 2013 at the University of the Free State. She is currently appointed as post-doctoral fellow in the Department of Plant Sciences at the University of the Free State. She is married to Frikkie Maré.

With her thesis, **DEVELOPMENT OF WHEAT LINES WITH COMPLEX RESISTANCE TO RUSTS AND FUSARIUM HEAD BLIGHT**, the candidate makes a valuable contribution to breeding wheat lines with combined resistance to wheat rusts and Fusarium head blight (FHB), using marker-assisted selection (MAS). Offspring from the pre-breeding programme was evaluated for the presence of six rust- and three FHB-resistance genes/quantitative trait loci (QTL). Selected pre-breeding lines were also used to optimise and apply the doubled haploid technique to develop lines with fixed genotypes. Phenotypic expression of the rust- and FHB-resistance genes/QTL was evaluated through greenhouse inoculation and quantitative-polymerase chain reaction (qPCR) analysis to determine fungal gene accumulation in experimental lines. Good correlations were obtained between phenotypic evaluations, qPCR and MAS for both rust- and FHB-resistance evaluations. Valuable pre-breeding wheat lines with combined rust and FHB resistance have been developed that can be used in future disease-resistance breeding programmes, both nationally and internationally.

Promoter: Prof L Herselman

Co-Promoter: Dr WHP Boshoff

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN PLANT BREEDING

MANJERU, Pepukai

Pepukai Manjeru was born in the Zaka district of Zimbabwe on 17 December 1976. He received his secondary education in the same district, where he did his Ordinary level and Advanced level at St Anthony High School in 1994 and 1996 respectively. He obtained the degrees BScHons (Crop Science) in 2000 and MSc (Crop Science) in 2004 from the University of Zimbabwe. He started his career as a teacher in 2000, and in 2003 he was appointed as Research Officer at the Agronomy Research Institute in Zimbabwe. At present, he is a lecturer in the Department of Agronomy at the Midlands State University in Zimbabwe. He is married to Jane Tafadzwa Manjeru and the couple has two sons and one daughter.

With his thesis, **THE INFLUENCE OF ABIOTIC STRESS ON CIMMYT PROVITAMIN A ELITE MAIZE GERMPLASM**, the candidate makes a contribution to the alleviation of vitamin A deficiency, which is rampant in sub-Saharan Africa, causing blindness and other health problems. Orange maize with high levels of **β-carotene** (pro-vitamin A) has been developed, but mostly lacks abiotic stress tolerance. In this study, pro-vitamin A inbred lines and yellow drought-tolerant inbred testers were crossed. The hybrids were evaluated in Zimbabwe under optimum conditions, drought stress, combined drought and heat stress, and low nitrogen and phosphorous stress, for two seasons. Beta-carotene concentration was positively correlated with grain yield. Heritability for **β-carotene** was high under optimal and stress conditions, and combining ability analysis suggested that its genetic control was additive rather than dominant. High-yielding and stable hybrids with high levels of **β-carotene** were identified, which will be considered for commercial release in the region to help alleviate vitamin A deficiency.

Promoter: Prof MT Labuschagne

Co-Promoters: Dr A van Biljon and Dr J MacRobert

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN SUSTAINABLE AGRICULTURE

SWANEPOEL, Jan Willem

Jan W Swanepoel was born in Smithfield on 2 November 1979, and grew up on a farm in the Rouxville district. He received his secondary education in Aliwal North, where he matriculated at Aliwal North High School in 1997. He obtained the degree BAgric in 2001, BScAgricHons in 2003, MScAgric in 2006, and an MBA degree in 2014. He started his career in agriculture in 2008, where-after he entered the business arena in management positions in various organisations. He owns a franchise in the private further education and training sector, and does part-time consultation work. In 2016, he joined the Centre for Sustainable Agriculture at the University of the Free State as lecturer. He is married to Karen, a physiotherapist, and the couple has one daughter, Jana.

With his thesis, **ANALYSING URBAN HOUSEHOLD FOOD SECURITY IN THE CAPE TOWN METROPOLE OF SOUTH AFRICA, WITH REFERENCE TO THE ROLE OF URBAN AGRICULTURE**, the candidate contributes to the development of indicators for measuring food security and the quantification of the impact that urban agriculture has concerning food security in this area. With this contribution, he attempts to clarify contrasting assumptions regarding the contribution of urban agriculture towards food security, as well as standardising the ambiguous and inconsistent food security measurement tools. The results of this research are an enormous contribution to the knowledge base and insight into the field of agriculture,

with particular reference to food security and urban agriculture. This study delivered three published papers in scientific journals, with a further two papers submitted for approval. It has also been delivered at two international and two national conferences.

**Promoter:** Dr J van Niekerk

**Co-Promoters:** Prof J van Rooyen and Prof L D'Haese

## DOCTORAL DEGREES IN BUILDING SCIENCES

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN URBAN AND REGIONAL PLANNING

**MELORE**, Tamirat Wangore

TW Melore was born in Durame in Ethiopia on 11 November 1981. He received his secondary education in Hossana, where he matriculated from the Wachemo Comprehensive Secondary High School in 1999. He obtained the degree BA in Urban Management in 2008, the degree MA in Urban Management with distinction in 2009, both at the Ethiopian Civil Service University. He started his career as a lecturer and researcher in Addis Ababa in 2008. In 2008, he was appointed in the Department of Urban Management at the Ethiopian Civil Service University. He is married to Saba Ersebo and the couple has a son and a daughter.

With his thesis, **IMPROVING THE RESILIENCE OF INFORMAL SETTLEMENTS IN MOUNTAINOUS REGIONS OF AFRICA: COMPARATIVE CASE STUDIES IN QWAQWA, SOUTH AFRICA AND KONSO IN SOUTHERN ETHIOPIA**, the candidate investigated the climate-change resilience capacity of informal settlements in mountainous landscapes of Africa. This thesis makes an important contribution to understanding and planning for resilience in montane areas, which have received less attention than coastal regions in climate-change research. The candidate took a pragmatic systems approach as the methodological and analytical framework to the research, and included an African indigenous knowledge system that encourages local solutions for local problems. In his analysis, he applied critical aspects of the principles of resilience, and local assets and capitals to evaluate the current levels of resilience in the two areas. Based on his findings, he recommends adopting hybridised indigenous and scientific knowledge systems within a flexible resilience planning approach to address the challenge of climate change in montane areas.

**Promoter:** Prof V Nel

**Co-Promoter:** Prof H Worku

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN URBAN AND REGIONAL PLANNING

**ROBERTSON**, Raynita Nashlene

Raynita Robertson was born in Cape Town on 7 November 1974. She received her secondary education in Ravensmead, where she matriculated in 1993. She obtained her BA (General) Degree in 1996, Honours in Geography in 1997, and M (Phil) Development Planning in the year 2003 from Stellenbosch University. Raynita's town and regional planning career started in the year 2000, when she began working at Dennis Moss Partnership in Stellenbosch for 4 years. Between 2004 and 2007, she worked with USAID, South Africa. Since 2007, she has been working for the Western Cape Provincial Department of Human Settlements as a deputy director for Planning. Raynita has a seven-year-old daughter, Noa Robertson.

In her thesis, **PLANNING FOR AFFORDABLE HOUSING THROUGH INCLUSIONARY HOUSING AGAINST THE APARTHEID SPATIAL LANDSCAPE IN THE WESTERN CAPE PROVINCE, SOUTH AFRICA**, the candidate investigates more effective means of planning for integrated and sustainable human settlements through the development of affordable and inclusionary housing by addressing the problems created in the apartheid landscape. She considers the understanding and perceptions of professionals and town planners in relation to sustainable settlements, and inclusionary housing vis-à-vis case studies from Birmingham (USA) and Cape Town. This investigation demonstrates that there are inconsistencies in the understanding, implementation, and evaluation of the definitions of key concepts, i.e., integrated and sustainable settlements, affordability and inclusionary housing. Thus, despite the good intention of policies, they cannot create an enabling environment to plan and develop inclusionary housing. The Cape Town case studies established that more must be done to provide affordable housing which is inclusive and sustainable. Hence, a greater onus rests on town and regional planners to be innovative in developing sustainable settlements.

**Promoter:** Prof VJ Nel

## DOCTORAL DEGREES IN NATURAL SCIENCES

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN ASTROPHYSICS

**MARITZ**, Jacques Michael

Jacques Michael Maritz was born on 4 July 1989 in Bloemfontein, and matriculated from Jim Fouché High School in 2007. He completed his BSc Degree (Physics, Applied Mathematics) in 2010, and the BScHons Degree (Physics) in 2011, both with distinction, at the University of the Free State (UFS). He obtained an MSc Degree in Physics with specialisation in Astrophysics in 2014, also with distinction, and the PhD Degree in Astrophysics



# Faculty of Natural and Agricultural Sciences

DEAN: PROF PD VERMEULEN



in 2017, both at the UFS. He is currently lecturing Signal Theory and Electro-technical Engineering in the Department of Engineering Sciences at the UFS, and focuses on the development of the data analytics, modelling, and measurement requirements associated with greener buildings. Jacques is married to Elizabeth, who has a PhD in Mathematics and is a fashion designer by profession.

With his thesis, **ORIGIN OF PULSAR TIMING NOISE: POSSIBLE CORRELATIONS BETWEEN PULSAR SPIN-DOWN RATES AND MAGNETOSPHERIC PROCESSES**, the candidate makes a fundamental contribution to pulsar timing studies. This study opens up possibilities to use the properties of the pulsed emission from radio pulsars to search for low-frequency gravitational waves from merging supermassive black holes, utilising the sensitivity of the future Square Kilometre Array (SKA) radio telescope that is currently under construction. To achieve this, all magnetospheric contributions towards the pulsed emission should be identified in order to recognise the weak low-amplitude gravitational wave signatures. He utilises a 30-year data set of the radio pulsar PSR J1326-5859 and discovered mode-switching and polarisation swings in the pulsed emission, i.e. when the pulsed emission and polarisation of the radio beam changes significantly over a period of time. He developed a method to detect and display the polarisation mode switching through phase-resolved polarisation vector maps. He further showed convincingly that both the mode switching and 180-degree polarisation swings can be explained by a viscous fossil gas disc surrounding the pulsar that intercepts and reflects the radio beam during a period when it is close to the pulsar. He also investigates how computer machine learning techniques can be utilised in the future to identify mode switching and polarisation swings in pulsar data. This study will act as a road map for future pulsar timing studies in the SKA era. The candidate presented his results at several international and national conferences, with several peer-reviewed conference papers already published.

**Promoter:** Prof PJ Meintjes

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN BIOCHEMISTRY

**SCHABORT**, Willem Petrus Du Toit

Du Toit Schabort was born in Bloemfontein on 10 July 1982. He received his secondary education in Bloemfontein, where he matriculated at the Sand du Plessis High School in 2000. He obtained the degree BSc in Molecular and Cellular Biology in 2004, BScHons in 2004, and the degree MSc (Biochemistry) with distinction in 2007, all at Stellenbosch University. He started his career as junior lecturer at the University of the Free State in 2010, and in 2016 he was appointed as senior bioinformatics scientist at Roche Sequencing Solutions, Cape Town, where he is still employed.

With his thesis, **A COMBINED SYSTEMS BIOLOGY AND GENOMICS APPROACH TO THE STUDY OF METABOLISM IN KLUYVEROMYCES MARXIANUS**, the candidate reports on the metabolic characterisation of an industrially-important yeast. He used several state-of-the-art computational approaches for the analysis of next generation sequencing data based on RNA-seq differential transcriptomics. This facilitated a better understanding of the cell metabolism through a detailed reconstruction of the metabolic network, including the transcriptional regulatory network. By combining a unique set of computer programs, the candidate developed bioinformatics software that could be applied to other investigations. In the words of the external assessors, the candidate has shown how modern omics data can be mined to produce a wealth of new knowledge and to generate new scientific hypotheses. Also, to quote: "this thesis is undoubtedly original, novel and rich in critical thinking". Two papers from this thesis have been published in a high-ranking international journal.

**Promoter:** Prof JC du Preez

**Co-Promoter:** Prof SG Kilian

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN CHEMISTRY

**GOSTYNSKI**, Roxanne

Roxanne Gostynski (née Freitag) was born in Sasolburg on 22 March 1988. She received her secondary education in Vaalpark, Sasolburg, where she matriculated at Vaalpark High School in 2006. She obtained the degree BSc Chemistry in 2010, BScHons in Chemistry (2010), and the degree MSc (Chemistry) with distinction (2012) at the University of the Free State. She started her career as a scientist in training in Sasolburg in 2016, and in the same year she was appointed in the Group Technology department. She is married to Konrad Gostynski.

With her thesis, **COMPUTATIONAL AND CHARACTERIZATION STUDIES OF HOMOGENEOUS AND HETEROGENEOUS TRIS(BETA-DIKETONATO) COMPLEXES WITH CATALYTIC APPLICATIONS**, the candidate makes a significant contribution to the design of manganese tris(beta-diketonate) and metal (tris-acetonate) complexes as heterogeneous catalysts during industrial processes. She successfully anchored a large series of these complexes onto a two-dimensional (2-D) Si-wafer and various three-dimensional (3-D) solid supports. These catalysts were fully characterised. Catalytic testing of selected catalysts during a model catalytic reaction for the industrial preparation of polyurethane showed good turnover frequencies. Clear trends were obtained between catalytic activities, energies calculated by means of computational chemistry, and other empirical parameters, which can be used in the design of new catalysts with specific properties.

**Promoter:** Prof J Conradie

**Co-Promoter:** Dr E Erasmus

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN CHEMISTRY

JOUBERT, Christiaan Coenraad

Chris Joubert was born in Bloemfontein on 30 January 1986. He also received his secondary education in this city, and matriculated at Fichardt Park High School in 2004. He obtained a BSc Degree (Chemistry and Physics) in 2008, a BScHons in Chemistry in 2009, and an MSc in Chemistry (cum laude) in 2011. Chris is an avid mountaineer. His mountaineering expeditions included scaling Mont Blanc (4 800 m) in the French Alps. At present, he is performing geological mapping and surveying for Mohokare Mining in Lesotho.

In his thesis, **SYNTHESIS OF FERROCENYL  $\beta$ -DIKETONES, COMPLEXATION WITH COPPER(I) AND COPPER(II), ELECTROCHEMISTRY AND IMMOBILIZATION ON SILICON WAFERS IN FIXED Cu:Fe RATIOS AS MODEL CATALYST**, the candidate describes optimised methods of binding copper and iron bimetallic catalytic species to flat modified silicon surfaces. Industrially, heterogeneous catalysts are supported on porous three-dimensional supports; however, the difficulty of accessing small pores containing catalytic particles by means of analytic methods substantially complicates mechanistic studies. By utilising X-ray photoelectron spectroscopic methods and flat, two-dimensional silicon support systems, the candidate could identify iron carbides as reactive species in the Fischer-Tropsch process of synthesising liquid fuels from carbon monoxide and hydrogen gas. Copper was shown to play a key role as co-catalyst in this important industrial process. He also built an attenuated total reflectance Fourier transform infrared cell. This cell enabled him to monitor reactions on the surface of a modified silicon single crystal utilising infrared light. To date, three publications have emanated from this study.

Promoter: Prof JC Swarts

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN COMPUTER SCIENCE AND INFORMATICS

POTGIETER, Pieter Henri

Pieter Potgieter was born in Ventersburg and matriculated at the local high school in 1980. He obtained the degrees BSc (1984) and BScHons (Computer Science) (1986) at the University of the Free State. In 2002, he obtained the MTech (IT) Degree at the Free State Technikon (currently the Central University of Technology (CUT)). After two years in the South African Defence Force, he started his career as a programmer at Iscor in Pretoria. His teaching career started with his appointment as a teacher in Mathematics and Computer Studies at Hentie Cilliers High School in Virginia. In 1993, he was appointed as lecturer in the Department of Information Technology at the Free State Technikon (currently CUT). He is married to Anna-Marie and the couple has three children: Ansu-Maré, Edbert, and Hanré.

In this thesis, **USING EYE-TRACKING TO ASSESS THE APPLICATION OF DIVISIBILITY RULES WHEN DIVIDING A MULTI-DIGIT DIVIDEND BY A SINGLE DIGIT DIVISOR**, the candidate considers the merit and feasibility of using eye tracking to assess how well primary school learners understand and apply divisibility rules. The candidate discusses current recognised problems in the attainment levels of Mathematics education in South Africa, and identifies a particular problem, namely learners' level of understanding of divisibility rules. The candidate developed a model that strongly predicts that, depending on the divisor that must be evaluated, learners have to look at specific digits in a number in order to solve a problem, and this inspection behaviour should reveal whether or not learners are applying the divisibility rule correctly. The candidate proved that eye tracking has the potential to provide an online, objective measure of establishing whether children understand the underlying rules in a manner that cannot be revealed simply from test performance and verbal reports.

Promoter: Prof PJ Blignaut

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN GEOHYDROLOGY

NGOIE, Mbayo Sage

Sage Ngoie was born in Kolwezi on 5 May 1985. He received his secondary education in Kolwezi, where he matriculated at the Institute Ukweli in 2004. He obtained a degree in Geology in 2007, and a Master's Degree in Geotechnical and Hydrogeological Sciences in 2009, both from the University of Lubumbashi in the Democratic Republic of the Congo. He started his career as a junior lecturer at the University of Lubumbashi in 2009, and one year later he was hired to work as a hydrogeological engineer in Kolwezi for an affiliate company of Glencore. In 2012, he joined Tenke Fungurume Mining, an affiliate company of Freeport McMoran, as a hydrogeological engineer and groundwater modeller. He currently teaches at the University of Kolwezi.

With his thesis, **DEVELOPMENT OF ARTIFICIAL NEURAL NETWORK FOR MINE DEWATERING PREDICTIONS**, the candidate makes a significant contribution to the field of geohydrology. The candidate's research shows that neural networks can be successfully applied to predict aquifer responses during mine dewatering operations in the absence of comprehensive geohydrological datasets. The value of this research lies in the fact that many African mines operate in data-scarce environments where conventional methods of modelling the groundwater response are faring poorly.

Promoter: Dr FD Fourie

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## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN MICROBIOLOGY (VETERINARY BIOTECHNOLOGY)

VAN DER WESTHUIZEN, Wouter André

Wouter André van der Westhuizen was born in Bloemfontein on 3 October 1985. He received his secondary education in Bloemfontein, where he matriculated at Jim Fouché High School in 2004. He obtained the degree BSc Microbiology (cum laude) in 2007, for which he was awarded as the best Microbiology student in his class, BScHons in Microbiology (cum laude) in 2008, the degree MSc Microbiology (Veterinary Biotechnology) in 2010, and the PhD in Microbiology (Veterinary Biotechnology) in 2017 at the University of the Free State. He is currently a postdoctoral researcher in the Department of Microbial, Biochemical and Food Biotechnology.

With his thesis, **EXPRESSION OF AVIAN PATHOGENIC ESCHERICHIA COLI (APEC) VIRULENCE FACTORS, ISS AND HLYF, AS POTENTIAL SUB-UNIT VACCINE CANDIDATES**, the candidate contributes to efforts for the control of bacterial diseases in poultry in the impending post-antibiotic era through the development of novel sub-unit vaccines. With this contribution, he attempts to clone and express important virulence factors of Avian Pathogenic *E. coli*. The expression of the full-length *iss* gene proved to be difficult, so he developed a truncated version of the gene which is easy to express. He demonstrated that this truncated gene could produce an immune response in chickens and that the antibodies produced, reacted with the antigen from the full gene. The results of this investigation serve as an indication of the value that this type of intervention holds for the attempt to find a solution to the problem of preventing infection in poultry with Avian pathogenic *E. coli* strains in a post-antibiotic era.

Promoter: Prof RR Bragg

Co-Promoters: Dr CE Boucher and Dr CW Theron

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN PHYSICS

MOKOENA, Puseletso Pricilla

Puseletso Pricilla Mokoena was born in Qwaqwa on 22 November 1988. She received her secondary education from Mohato Secondary School in Namoha, where she matriculated in December 2006. She obtained her BSc (Chemistry/Physics and Biology) in December 2010, BScHons (Physics) in December 2011, and MSc (Physics) with distinctions in March 2014, all from the University of the Free State. She has been employed as an assistant researcher in the Centre for Microscopy at the University of the Free State since 2013.

With her thesis: **UPCONVERSION OF INFRARED TO VISIBLE LIGHT IN RARE-EARTHS DOPED PHOSPHATE PHOSPHORS FOR PHOTODYNAMIC THERAPY APPLICATION**, the candidate makes a contribution to the application of biocompatible light-emitting nanomaterials in the treatment of cancer. With this contribution, she attempts to demonstrate that up-converted red emission from ytterbium and erbium co-activated phosphate host lattices have sufficient energy to generate reactive oxygen species that are capable of destroying tumours of Michigan Cancer Foundation-7 or MCF-7 cells by multifunction mechanisms. The results of this investigation serve as an indication of the value this type of intervention holds for the attempt to find permanent and painless treatments for cancer. She has presented her data at local and international conferences, published two articles in internationally-accredited journals, and has won awards for the best presentations and best publications at the South African Institute of Physics conferences.

Promoter: Prof OM Ntwaeaborwa

Co-Promoter: Prof HC Swart

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN PHYSICS

YAN, Xin Liang

Xin Liang Yan was born in Zhanjiang, China, on 23 September 1986. He received his secondary education in Zhanjiang, where he matriculated at the Zhanjiang City Experimental High School in 2005. He obtained the degree BSc (Physics) with distinction in 2009 at the Zhanjiang Normal University (Zhanjiang, China) and the degree MSc (Material Physics and Chemistry) with distinction in 2012 at the Shantou University (Shantou, China). He is married to Lin Ying Li.

With his thesis: **THEORETICAL AND EXPERIMENTAL INVESTIGATION ON SURFACE SEGREGATION OF CU-NI(S) BULK AND THIN FILM ALLOYS**, he made a valuable contribution to Solid State Physics. He systematically investigated surface segregation in the bulk crystals and thin-film Ni-Cu alloys by modelling the segregation process theoretically and also measuring it experimentally. He determined the surface-segregation parameters of Cu and S segregating from a ternary Ni-Cu(S) alloy. The candidate also performed a series of experiments to investigate the size effect of thin film and its influence on surface segregation. For this investigation, he developed a new method (MRI model) to determine the inter-diffusion parameters, utilising AES depth profiling. This new method can characterise the diffusion length with a resolution of a few nanometres. He used this new method and characterised sputtering-induced surface roughness, showing that different gases and sputtering energies strongly affected the depth resolution. This research has already resulted in six articles in international top-rated scientific journals, with three more publications under review, and three contributions at international and three at national conferences. Xin Liang Yan also obtained the awards for Best Publication and Best Poster from the South Africa Institute of Physics.

Promoter: Prof JJ Terblans

Co-Promoter: Prof HC Swart

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN POLYMER SCIENCE

**MASIANGOAKO**, Dorine Geneth

Dorine Geneth Masiangoako was born in Koster on 18 January 1973 as the fourth daughter of the late Kerileng Rose and Ngaka Elias Dikobe. She matriculated from Mphe Bana High School, Koster, in 1993. She obtained her BSc (Chemistry and Microbiology) Degree in 1998 and BScHons (Chemistry) Degree in 2000 from Potchefstroom University. She obtained her MSc (Polymer Science) Degree in 2006 at the University of the Free State. She started her career at the University of the Free State as a junior lecturer in 2002. In 2006, she was promoted to lecturer at the same institution. In 2010, she was appointed in the Department of Chemistry at the University of Pretoria as a Chemistry lecturer and coordinator of the four-year programme. She is married to Tshepo Masiangoako and the couple has two daughters, Boikgantso (11) and Tshegetso (4).

With her thesis, **PREPARATION AND CHARACTERIZATION OF POLYMER BLEND/WOOD POWDER COMPOSITES**, the candidate makes a contribution to the field of polymer composites. She compared the use of polypropylene and maleic anhydride-grafted polypropylene blended with different polyethylenes as polymer matrices, and she used cheap and environmentally friendly wood powder as filler. The morphologies of the different blend composites, as well as the effect of the filler content on the properties of the polymer-blend composites, were studied by using a variety of characterisation techniques. There were small differences between the properties of polypropylene and maleic anhydride-grafted polypropylene, but the interaction between the maleic anhydride-grafted polypropylene and the wood powder had a significant influence on the properties of these composites. This influence was observed especially during an in-depth investigation of the melting and crystallisation behaviour of the respective components in the different blend composites. The candidate published five papers in international journals from her research, and the results of her work will contribute towards finding solutions for the worldwide problem of plastics waste.

**Promoter:** Prof AS Luyt

**Co-Promoter:** Dr EH G Langner

## MASTER'S DEGREES IN AGRICULTURAL SCIENCES

### MASTER OF DISASTER MANAGEMENT

CALENI, Jacob Sipiwe  
LUBANGA, Samkelisiwe  
NANGOLO, Asser Inekela  
PULLIAN, Naven Kasenthire  
TSABEDZE, Qinisile Samkelisiwe

### MASTER OF ENVIRONMENTAL MANAGEMENT

HAIMENE, Erasmus Panduleni  
KAMBURONA, Jolanda Uakaa  
MDHLULI, Herold Thabani  
NKO, Constance Lieketseng  
PANTSHWA, Ati Owetu  
SIBISI, Mandisa Pamela  
SITHOLE, Amanda Nompumelelo

### MASTER OF SCIENCE WITH SPECIALISATION IN AGRICULTURAL ECONOMICS

NKHUOA, Phoka Gerald  
WATER FOOTPRINT ASSESSMENT OF MAIZE AND ASSOCIATED  
BROILER PRODUCTION IN SOUTH AFRICA  
**Supervisor:** Dr H Jordaan  
**Co-Supervisor:** Dr N Matthews

### MASTER OF SCIENCE WITH SPECIALISATION IN AGRICULTURAL MANAGEMENT

GADISI, Mikovhe  
THE IMPACT OF GOVERNMENT SUPPORT ON THE WELFARE OF  
LOW AND MIDDLE INCOME HOUSEHOLDS IN LIMPOPO PROVINCE  
**Supervisor:** Dr AA Ogundeji  
**Co-Supervisor:** Mr E Owusu-Sekyere

## MASTER OF SCIENCE WITH SPECIALISATION IN ANIMAL BREEDING

NGAYO, Mawande  
FACTORS AFFECTING PRODUCTIVE LIFE AND FERTILITY IN NGUNI  
COWS  
**Supervisor:** Dr M Fair  
**Co-Supervisors:** Prof FWC Neser and Prof MM Scholtz

### MASTER OF SUSTAINABLE AGRICULTURE

KHOTSA, Koketso Violet

## MASTER'S DEGREES IN NATURAL SCIENCES

### MASTER OF SCIENCE WITH SPECIALISATION IN ACTUARIAL SCIENCE

SCHELTEMA, Jaundré  
EXOTIC EQUITY DERIVATIVES: A COMPARISON OF PRICING MODELS  
AND METHODS WITH STOCHASTIC VOLATILITY AND INTEREST  
RATES  
**Supervisor:** Mr J-P Venter

### MASTER OF SCIENCE WITH SPECIALISATION IN CHEMISTRY

TAOANA, Thato Nteboheng  
STRUCTURAL AND MECHANISTIC STUDY ON RHODIUM  
ACETYLACETONATE DERIVATIVES  
**Supervisor:** Dr JA Venter  
**Co-Supervisor:** Dr L Twigge

VILAKAZI, Amanda Qinisile  
HYDROMETALLURGICAL BENEFICIATION ILMENITE  
**Supervisor:** Prof W Purcell  
**Co-supervisor:** Dr M Nete and Dr JA Venter



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## MASTER OF SCIENCE WITH SPECIALISATION IN FORENSIC GENETICS

**MOKOMA**, Polo Mapaballo

NATIONAL DNA DATABASE OF SOUTH AFRICA: PUBLIC PERCEPTION AND IMPLICATIONS OF SECONDARY DNA TRANSFER

**Supervisor:** Dr K Ehlers

**Co-Supervisors:** Mrs L Wessels and Dr C Hancock

## MASTER OF SCIENCE WITH SPECIALISATION IN GEOHYDROLOGY

**MOLEME**, Malefa Florence \*

EVOLUTION OF FLUID ELECTRICAL CONDUCTIVITY (FEC) BOREHOLE PROFILES ASSOCIATED WITH A CONTAMINANT PLUME IN A HORIZONTAL SINGLE-PLANE FRACTURED- ROCK AQUIFER SYSTEM

**Supervisor:** Dr M Gomo

**MPELWANE**, Ayabonga

IMPACT OF UNDERGROUND COAL GASIFICATION ON THE GROUNDWATER ENVIRONMENT IN SOUTH AFRICA

**Supervisor:** Mr SS de Lange

**NTWAEABORWA**, Gaonkile Molly

ACID-BASE POTENTIAL CHARACTERISATION IN THE SOUTHERN HIGHVELD COALFIELD OF MPUMALANGA

**Supervisor:** Dr L-M Deyssel

## MASTER OF SCIENCE WITH SPECIALISATION IN GEOLOGY

**LEHLOENYA**, Pelele Bernard

CHEMICAL AND ISOTOPIC VARIATIONS IN PLAGIOCLASE ACROSS THE TRANSITION BETWEEN THE MAIN AND UPPER ZONES, WESTERN BUSHVELD COMPLEX

**Supervisor:** Dr F Roelofse

**MATHEE**, Hendrik Lukas Marthinus \*

STRUCTURAL-STRATIGRAPHIC INVESTIGATION OF AN AREA NEAR KAKAMAS AND ENVIRONS, NAMAQUA MOBILE BELT, SOUTH AFRICA

**Supervisor:** Prof WP Colliston

## MASTER OF SCIENCE WITH SPECIALISATION IN MICROBIAL BIOTECHNOLOGY

**MLANDU**, Cumisa Manzikazi \*

EXPLORING HORIZONTAL GENE TRANSFER AND PHAGE INFECTIONS IN A SOUTH AFRICAN DEEP SUBSURFACE BACTERIAL POPULATION

**Supervisor:** Dr ED Cason

**Co-Supervisor:** Prof E van Heerden

## MASTER OF SCIENCE WITH SPECIALISATION IN PLANT BREEDING

**MASHAMBA**, Nthabiseng Takalani \*

FACTORS CONTRIBUTING TO SODIUM DODECYL SULPHATE (SDS) SEDIMENTATION IN IRRIGATION WHEAT

**Supervisor:** Dr A van Biljon

**Co-Supervisors:** Prof MT Labuschagne and Dr BS Wentzel

## MEDALS

### CHANCELLOR'S MEDAL

AWARDED TO AN INDIVIDUAL FOR OUTSTANDING SERVICE OR ACHIEVEMENT AT LOCAL, NATIONAL OR INTERNATIONAL LEVEL, OR FOR SERVICE TO THE COMMUNITY OR THE UNIVERSITY

Ms Joyene S Isaacs

## DOCTORAL DEGREES

### DOCTOR OF PHILOSOPHY IN MUSIC

FRONEMAN, Anchen

Anchen Froneman was born in Winburg on 18 January 1980. She matriculated from Staatspresident Swart High School in Brandfort in 1998. In 1999, she obtained an Associate qualification in Cecchetti Classical Ballet and became a member of the International Society of Teachers of Dancing. She obtained the BMus Degree with distinction in 2004, BMusHons in 2006, and her MMus in 2009, all at the University of the Free State. Anchen commenced her career as Officer: Professional Services at the former Department of Music, University of the Free State in 2006, and was appointed as lecturer in the Odeion School of Music in 2016.

With her thesis, **THE APPLICATION OF LABAN/BARTENIEFF MOVEMENT STUDIES TOWARDS AN INTEGRATED EMBODIED PIANO PERFORMANCE**, the candidate makes a valuable contribution to piano performance practices from both somatic and embodied perspectives. Besides clarifying the nature of piano performances and contextualising bodily movement in the performance process, she conducted an empirical investigation into the influence of Laban/Bartenieff Movement Studies (LBMS) on the performance abilities of undergraduate piano performance students. The thick descriptions generated from multiple case studies, data analysis, and triangulation, revealed improvements within specific musical and bodily movement parameters related to a LBMS intervention. Through this research, the candidate has demonstrated the importance of somatic work within piano performance settings. She convincingly argues for the use of LBMS towards enhancing technical functionality, as well as serving expressive musical intent. More importantly, the identified emerging themes in this study demonstrate how LBMS may facilitate the integration of the physical, mental, and expressive aspects of performance that could possibly enhance the embodied nature of piano performance.

Promoter: Dr AMF de Villiers

Co-Promoter: Prof MMS Munro

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN AFRICA STUDIES

GARNETT, Helen Janet

Helen Garnett read Town and Country Planning at the University of Manchester and graduated with a first-class Master's Degree in 2005. Following the completion of her undergraduate studies, Helen worked in a variety of roles in the British planning sector. She moved to Bloemfontein in 2013, and commenced work on her PhD thesis shortly thereafter. Helen has now returned to the UK, where she lives and works in Kent as an urban planner.

With her thesis, **KNOWLEDGE TRANSFER AND BRITISH EXPERTISE IN ZAMBIAN URBAN PLANNING**, the candidate makes a contribution to a variety of literatures, not least those concerning the historiography of colonial and postcolonial urban planning in Zambia, neo-colonialism in Southern Africa, the practices and processes of British decolonisation, and the role of international organisations in post-colonial development programmes. Based on archival research in Zambia and Britain, and interviews conducted with planning professionals in both locations, her thesis traces the potency of British colonial ideas regarding urban planning and land usage through to the postcolonial period. More than this, her thesis takes important strides in further mapping the mechanics and complexities of knowledge transfer in the global south. It is her remarkable achievement to have produced a thesis that is both empirically rich and conceptually focused.

Promoter: Dr K Law

Co-Promoter: Prof I Phimister

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN AFRICA STUDIES

NDAKARIPA, Musiwaro

Musiwaro Ndakaripa was born in Harare on 5 January 1983. He received his secondary education in Masvingo, where he matriculated at Chitsa High School in 2002. In 2006 and 2008, he obtained a Bachelor of Arts Honours in History and a Master of Arts in History respectively, at the University of Zimbabwe in Harare. Between 2009 and 2012, he was a History lecturer at the University of Zimbabwe.

With his thesis, **STATE, CIVIL SOCIETY AND THE POLITICS OF ECONOMIC INDIGENISATION IN ZIMBABWE, 1980 TO 2016**, the candidate makes a contribution to the Zimbabwean historiography. Using a broad civil society conceptual framework, his thesis examines the relations between the state and interest groups concerned with economic indigenisation in Zimbabwe from 1980 to 2016. During this period, the state maintained that the indigenisation policy addresses colonial injustices by facilitating the entry of indigenous people, mainly blacks, into the mainstream economy. The Zimbabwean state's interactions with business associations and trade unions on matters of proto-indigenisation are explained using Antonio Gramsci's theory of hegemony, which advances that governments use both 'persuasion' and 'coercion' to dominate social groups. Furthermore, the complex

# Faculty of the Humanities



## ACTING DEAN: PROF H HUDSON

relations between the state, indigenous and established interest groups on indigenisation are explained within the context of neoliberalism. Indigenous interest groups feared that neoliberal economic reforms would benefit large white and foreign enterprises only, and demanded a stronger role for black entrepreneurs.

**Promoter:** Prof I Phimister

**Co-Promoters:** Dr R Pilosof and Dr C Twala

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN COMMUNICATION SCIENCE

**DE LANGE, Lucrezea**

Lucrezea de Lange was born in Bloemfontein on 26 May 1966. She received her secondary education in Pietermaritzburg, where she matriculated at Voortrekker High School. She obtained the degree BA Physical Education in 1988, followed by a Higher Education Diploma from Unisa in 1994. In 2003, she completed her BA Honours in Communication Science with distinction. Her Master's Degree focused on the management of change through communication. She obtained both her Honours and Master's degrees at the University of the Free State. She started her career as teacher at Academia High School in Brandfort. She joined the University of the Free State in 2002 as residence manager, and was appointed as lecturer in the Department of Communication Science at the UFS in 2008.

With her thesis, **A LEADERSHIP COMMUNICATION VALUE CHAIN MODEL**, the candidate makes a valuable contribution to the previously neglected field of Leadership Communication. In this study, emphasis was placed on understanding leadership communication from an existentialist perspective, as this entails a constructive interpersonal relationship between 'leader' and 'follower'. It was evident that the fields of leadership and communication largely existed separate from each other. With the proposed leadership communication value-chain model, the worlds of business and communication are brought closer together to indicate how effective leadership communication should be applied to impact the organisational bottom line. Both external examiners commended the candidate on the quality of this thesis. She has read five conference papers at national and international conferences, published one article in an academic journal, and submitted another two articles related to this research.

**Promoter:** Dr D Mulder

**Co-Promoter:** Prof JC de Wet

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN PHILOSOPHY

**PITTAWAY, David Anthony**

David Pittaway hails from Port Elizabeth, and was head student of his high school in 2000. In 2001, David discovered a plethora of intriguing, perplexing, eye-opening ideas and critical theories during his first year at the University of Port Elizabeth. By 2004, he obtained an Honours Degree in Philosophy and English. He discontinued his Postgraduate Certificate in Education studies, and made a career change to teach various subjects in the Humanities at Varsity College Port Elizabeth, during which time he finished an MA in Philosophy at Nelson Mandela Metropolitan University. He taught in the Humanities in Britain from 2008 until his return to South Africa in 2012, and has since taught Philosophy to first-year students at the Nelson Mandela University, while researching and writing his doctoral study.

In his thesis, **BROADENING THE CONTEXT OF THE ECOLOGICAL CRISIS: FEATURING THE ORPHIC AND THE PROMETHEAN**, the candidate demonstrated that there is a global ecological crisis, stemming directly from specific human activities. He investigated 'attitudinal drivers' behind these activities, finding Christianity, science, technology, capitalism, and to a lesser degree, democracy, to be central. He also identified aspects of different critical theories to show how social change is prevented in a 'Promethean' context dominated by these 'attitudinal drivers'. He provided alternative 'Orphic' theories that reveal markedly different attitudes towards nature, attitudes with beneficial consequences for the way human beings think and act ecologically. David explored the 12 permaculture principles and specific permaculture practices as examples of a 'manifestation' of the Orphic attitude. Finally, he showed that 'philosophy in the present' as depicted by Badiou and Žižek, and 'philosophy as a way of life' as formulated by Pierre Hadot, are notably aligned with the Orphic attitude, and poised against the Promethean attitude. The study is a welcome contribution to a field urgently in need of exploration.

**Promoter:** Prof B Olivier

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN POLITICAL SCIENCE

**MAHLAKENG, Mahlakeng Khosi**

Mahlakeng Khosi Mahlakeng is a Lesotho citizen. He was born in Maseru, Lesotho, on 9 July 1990. He received his secondary education in Tweespruit in the Free State, where he matriculated at Unicom High School in 2007. He holds a Bachelor's Degree in Governance and Political Transformation (2011); an Honours Degree in Political Science: International Relations (2013); and a Master's Degree in Political Science (2015). In addition, he was awarded as the 'Best Honours Student in Political Studies and Governance' in 2012 at the University of the Free State. He was appointed as a student assistant in the Department of Political Studies and Governance in 2012 at the University of the Free State in Bloemfontein. From 2012 to 2017, he

was appointed as a junior lecturer in the Department of Political Studies and Governance. He is married to Malefu Constance Mosia and they have a son, Naleli Mahlakeng.

**AN ANALYSIS OF REGIME CAPACITY AND A NASCENT ENVIRONMENTAL CONFLICT IN THE ORANGE-SENQU, THE NILE AND THE NIGER RIVER BASINS.** In this thesis, the candidate analyses the hydropolitical landscape of African transboundary river basins which have been affected by water scarcity. The analysis of hydropolitics is referred to here as the politics of water. Such hydropolitics is a function of two variables: the rate of change in the hydrologic system and the institutional capacity to absorb that change. The focus of this study is on water as a potential source of conflict and examines three case studies: the Orange-Senqu, the Nile, and the Niger River basins. The purpose of this study is to determine, through Homer-Dixon's environmental scarcity theory, the impact and effects of environmental scarcity in contributing to environmental conflicts in these basins. In addition, it uses regime theory to look at how regimes can mediate a nascent environmental conflict in these river basins. The study notes that while environmental changes may play a role in setting the stage for conflict, the causal relationship is highly complex and the role of regimes is crucial in the emergence of conflict.

Promoter: Prof H Solomon

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN PSYCHOLOGY

CARTER, Mariska

Mariska Carter was born in Welkom on 24 May 1987. She received her secondary education in Bloemfontein and matriculated at Eunice High School in 2005. She obtained the degree BSc Human Life Sciences (2008) at Stellenbosch University, and her Honours and a Master's Degree in Clinical Psychology (with distinction) in 2009 and 2012 respectively, at the University of the Free State. She started her career as a clinical psychologist, working at the Free State Psychiatric Complex during her internship, and Far East Rand Hospital for her community service year. Since 2014, she has been working in private practice in Bloemfontein. She enjoys interacting with students, and is actively involved in teaching and facilitation at tertiary institutions. She is married to Richard Carter.

With her thesis, **THE ROLE OF ATTACHMENT IN THE RELATIONSHIP BETWEEN PERCEIVED PARENTING DIMENSIONS AND BULLYING AMONG PREADOLESCENTS**, the promovenda makes a contribution to the field of preadolescent bullying. There is limited research investigating the interaction between parenting behaviour and the parent-child attachment relationship in the emergence of bullying behaviour. With this contribution, she attempts to determine whether significant relationships exist between perceived parenting dimensions (acceptance, firm control, and psychological control) and different types of bullying perpetration and victimisation behaviours (physical, verbal, social-relational, and cyber). The findings indicate that, regardless of the levels of parental acceptance, preadolescents with lower-quality parent-child attachment were more frequently involved in verbal bullying perpetration than preadolescents with high-quality parent-child attachment. This study serves as an indication that facilitating the development of appropriate parenting skills and enhancing the quality of the parent-child attachment relationship is significant in the attempt to find a solution to the problem of bullying in primary schools.

Promoter: Dr R van der Watt

Co-Promoter: Prof KGF Esterhuysen

## DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN PSYCHOLOGY

COETSEE, Engela Elizabeth

Engela Elize Coetsee was born on 15 October 1980 in Bloemfontein. She received her secondary education at the C & N Oranje Girls High School, Bloemfontein. In 2001, she obtained her BSocSc Degree at the University of the Free State, followed by an Honours Degree in Psychology in 2002. She completed her Postgraduate Diploma in Higher Education in 2003, with History and Counselling as her major subjects. In 2007, she obtained a Master's Degree in Psycho-Education, and in 2009 she completed her Master's Degree in Clinical Psychology at the University of the Free State. After her degree, she started working in the field of Psychology at the Botshabelo District Hospital. In 2014, she started a private practice, where she is working as a Clinical Psychology consultant up until this day.

With her thesis, **JOHN WAYNE GACY: A PSYCHOBIOGRAPHY OF THE CLOWN KILLER**, the candidate makes a significant contribution to (a) understanding the psychic mechanisms involved in the functioning of serial killers through the lens of developmental and forensic psychology; (b) the psychosocial developmental trajectory of the renowned serial killer, John Wayne Gacy (known as the 'Killer Clown'); and (c) the further development of academic psychobiographical design and methodology within the international arena of psychohistorical research. With this contribution, the candidate succeeded in psychologically uncovering and reconstructing primitive psychic underpinnings in the personality functioning of Gacy by using the Schahriar Syndrome Model. In addition, the candidate used psychosocial developmental theory and a psychosocial-historical matrix to illuminate the trajectory regarding the personality development of Gacy as serial killer. The findings of this study illustrate the role that psychological mechanisms, such as a sense of omnipotence, sadistic fantasies, ritualised performance, dehumanisation, and symbiotic merger, played in the psychic functioning of Gacy as serial killer. Furthermore, the findings indicate the significant role that traumatic life events and ego maladaptation played in predisposing and precipitating Gacy's development into that of a serial killer. Overall, the findings of this longitudinal life-history case study serve as an indication of the significant value and relevance that psychobiographical developmental trajectory studies play in better understanding the psychic functioning of serial killers within their psychosocial and historical contexts.

Promoter: Prof JP Fouche



# Faculty of the Humanities

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## MASTER'S DEGREES

### MASTER OF ARTS IN CLINICAL PSYCHOLOGY

VALA, Sanisha

### MASTER OF ARTS IN FINE ARTS

SPANGENBERG, Frances Elizabeth  
ART GALLERY AND ABATTOIR: ANIMAL AND HUMAN ABSENCE  
AND PRESENCE IN IMAGES  
**Supervisor:** Ms J Allen-Spies  
**Co-Supervisor:** Prof ES Human

### MASTER OF ARTS IN GENDER STUDIES

BAKARE, Batsirai  
MUZAWAZI, Abigail

### MASTER OF ARTS WITH SPECIALISATION IN AFRIKAANS AND DUTCH

KEYSER, Gini \*  
DIE TEORETIESE BEGRONDING VIR DIE ONTWERP VAN 'N  
NAGRAADSE TOETS VAN AKADEMIESE GELETTERDHEID IN  
AFRIKAANS  
**Supervisor:** Prof AJ Weideman

### MASTER OF ARTS WITH SPECIALISATION IN ENGLISH

PRIDGEON, Sarah Josie  
A WOMAN'S PILGRIMAGE TO HERSELF THROUGH THE MOTHER  
COMPLEX: A JUNGIAN READING OF SELECTED WORKS BY SYLVIA  
PLATH  
**Supervisor:** Dr M Brooks  
**Co-Supervisor:** Ms M Lovisa

### MASTER OF ARTS WITH SPECIALISATION IN PSYCHOLOGY

VAN HEERDEN, Rian Esli  
THE PERSON PERCEPTION OF THE STYLE OF ASSERTIVENESS  
IN A SOUTH AFRICAN CORPORATE ENVIRONMENT  
**Supervisor:** Dr RBI Beukes  
**Co-Supervisor:** Prof KGF Esterhuyse

### MASTER OF ARTS WITH SPECIALISATION IN SOCIOLOGY

CAMPBELL, Chesney Lu-Anne \*  
WOMEN AND THEIR PERCEPTIONS OF FOOD AND FOOD  
CONSUMPTION RELATIVE TO THEIR SELF-IMAGE AND IDENTITY  
**Supervisor:** Dr K de Wet

MACHERE, Mosilo Mina  
LIVED EXPERIENCES OF PREGNANT WOMEN ON ANTIRETROVIRAL  
TREATMENT  
**Supervisor:** Dr K de Wet

### MASTER OF GOVERNANCE AND POLITICAL TRANSFORMATION

DICHABE, Boipelo Divine  
NCUBE, Bhekithemba Derrick  
ZWENI, Nandipha

### MASTER OF SOCIAL WORK

MOKONE, Sylvia Maphenya  
MOLEFE, Leticia Gloria Bontleeng



## DOCTORAL DEGREES

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN CHURCH HISTORY AND POLITY

**VILJOEN**, Antonie Phillippus

Antonie Phillippus Viljoen was born in Naboomspruit, as it was then known, on 24 June 1954. He matriculated in 1972 at the Hans Strijdom High School in the same town. In 1976 he obtained his BA Degree and in 1979 a BD Degree at the University of Pretoria. In 2009, he received an MTh Degree from the University of the Free State. The candidate has a strong bond with the Dutch Reformed Church. This bond developed through his membership over many years, and as a minister of the church. In 2006, as a friend of young people in training, he became the principal of Sonop Christelike Tehuis, a residence for Tukkies students where he himself spent six years as a student.

With his thesis, **DIE ROL VAN DIE NG KERK IN SONOP CHRISTELIKE TEHUIS 1916-2016**, the candidate concentrates on a question and theme in which he has a strong interest: the history of Sonop Christelike Tehuis at the University of Pretoria as a residence under the auspices of the Dutch Reformed Church. From an impartial church-historical point of view, he analyses the fact that the Dutch Reformed Church considered it necessary to establish a men's residence such as Sonop, the influence of this residence's connection with the church on the character and organisation of the residence, and the impact of a place such as Sonop on the Dutch Reformed Church and South African society. Although the candidate works as an analytical church historian, his intensive knowledge of Sonop is also evident in his work. He concludes his investigation with a positive view on the future of Sonop at a transformed University of Pretoria.

**Promoter:** Prof PJ Strauss

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN PRACTICAL THEOLOGY

**SCHOEMAN**, Sarel Jacobus

Sarel Jacobus Schoeman was born in Klerksdorp on 10 January 1967. He received his secondary education in Klerksdorp, where he matriculated at Wesvalia High in 1984. He obtained the degree BA(Th) in 1987 (cum laude) and the degree BD in 1990 (cum laude) from the University of Pretoria. He started his career as minister in the Dutch Reformed congregation of Culembecck (Roodepoort) in 1992. In 2000, he was called to the Constantiaakruin congregation (Roodepoort) where he serves at present. He is married to Beatie and they have one daughter, Anja.

With his thesis, **THE FORMATION OF LIVED FAITH IN CHILDREN: A PARTNERSHIP BETWEEN CONGREGATION AND HOME**, the candidate makes a contribution towards a more practice-oriented understanding of the relationship between congregation and parent in the effective formation of a lived faith in their young. With this contribution, he attempts to explain, by means of a qualitative analysis using focus group interviews in three diverse congregations, a model to discern the challenges in this partnership. It appears that parents are, as a rule, not included in the plans and activities that congregations launch for their young. The results of this investigation invite a creative imagination to be unlocked if parents and their congregation should re-establish their symbiotic relationship. The proposed intervention model encourages a conversation concerning family ministry, the strategies for faith formation within a congregation, and the commitment to an active partnership between both.

**Promoter:** Prof WJ Schoeman

### DOCTOR OF PHILOSOPHY WITH SPECIALISATION IN RELIGION STUDIES

**MOKOTSO**, Isaac Rasebate

Isaac Rasebate Mokotso was born on 12 September 1969 at Thaba-Tseka in Lesotho. He matriculated at Paray High School, Thaba-Tseka, in 1984. In 1994, he went to the College of the Transfiguration, Grahamstown, in preparation for ordained ministry in the Anglican Church of Southern Africa. He obtained a Diploma in Theology in 1996 and was ordained to the priesthood in 1997. In 2000, he joined the National University of Lesotho and graduated with a BA Degree in Theology and History in 2003. He enrolled for an MA in Theology in 2004, and completed it in the same year. In 2010, he enrolled for and completed the PGDE. He is currently a Religious Education lecturer in the Faculty of Education at the National University of Lesotho.

With the thesis, entitled **RELIGIOUS PLURALISM FOR INCLUSIVE EDUCATION IN LESOTHO SECONDARY SCHOOLS**, the candidate utilised empirical qualitative phenomenology to determine reasons for the continued exclusive provision of a Christian religious education in Lesotho secondary schools, irrespective of compelling circumstances for pluralistic religious education in Lesotho. These include the candidate's argument that Lesotho is a co-signer of numerous international declarations, conventions, and recommendations that advocate for the promotion of inclusive education.

# Faculty of Theology and Religion

DEAN: PROF SD SNYMAN



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Furthermore, Lesotho is no longer a homogenous country, and is obligated (as a democratic state) to espouse liberal knowledge, which includes pluralistic religious education. The study made a huge contribution, since it has brought to the attention of scholars and policy makers the importance of religious pluralism as a tool to promote inclusive education policies and programmes. The study has also identified factors that hampered the successful implementation of religious pluralism, including people's misconceptions about inclusive education, the paternalistic approach to religious education, and general religious illiteracy observed in the country.

Promoter: Prof L Ntombana

## MASTER'S DEGREES


### MASTER OF THEOLOGY WITH SPECIALISATION IN SPIRITUALITY

JOOSTE, Johannes Marthinus \*

MARITZ, Petrus Francois

VAN WYK, Carel Petrus \*





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.

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