

# Graduation Ceremonies

# 25 March - 28 March

# Gradeplegtighede

25 Maart - 28 Maart





### Our vision 2040

Stellenbosch University will be Africa's leading research-intensive university, globally recognised as excellent, inclusive and innovative, where we advance knowledge in service of society.

### Our mission

Stellenbosch University is a research-intensive university, where we attract outstanding students, employ talented staff and provide a world-class environment; a place connected to the world, while enriching and transforming local, continental and global communities.

# Umbono Wethu 2040

IYunivesithi yaseStellenbosch iya kuba yiyunivesithi egxininisa kuphando nekhokelayo eAfrika, neyamkelwa kwihlabathi lonke njengegqwesileyo, equkayo neyenza inguqulelo ezintsha, nalapho ulwazi olusiqhubela phambili lunika iinkonzo kuluntu.

# Ubizo lwethu

IYunivesithi yaseStellenbosch yiyunivesithi egxininise kuphando nalapho sitsala abafundi abagqwesileyo, siqesha abasebenzi abanesiphiwo kwaye sibonelela ngemeko ekwinqanaba lehlabathi; indawo eqhagamshelana nehlabathi, ngeli lixa ityebisa ngophuhliso kwaye iguqula uluntu lwendawo, elizwekazi nolwehlabathi.

### Ons visie 2040

Die Universiteit Stellenbosch sal Afrika se voorste navorsingsintensiewe universiteit wees wat wêreldwyd as uitnemend, inklusief en innoverend erken word en waar ons kennis tot diens van die samelewing bevorder.

### Ons missie

Die Universiteit Stellenbosch is 'n navorsings-intensiewe universiteit wat uitmuntende studente lok, talentvolle personeel aanstel en 'n wêreldklasomgewing bied; 'n plek wat met die wêreld verbind is en gemeenskappe plaaslik, op die vasteland en in die res van die wêreld verryk en transformeer.



### **Retired Justice | Oudregter Edwin Cameron** Chancellor | Kanselier

# Dear member of the Stellenbosch University community

# It is an honour and a privilege for me to bring you this message.

The year 2023 had its difficulties. But amidst many challenges, our students graduating this week have succeeded – and this says great things about their future and ours!

We are enormously proud of the cascade of hard-won degrees, diplomas and certificates that we are conferring at these ceremonies.

Students and staff – each one of you have played a critical part in ensuring that Stellenbosch University and its people continue to flourish.

And without the support that loving friends and family have willingly given, many students would not be here today – so, to them, too, a heartfelt thank you.

A special word of appreciation to our generous donors and sponsors, too, for helping to keep our graduands going.

#### To each and every graduand:

May the elation you feel today develop in time into something even more valuable – a rich sense of duty and responsibility. Your new status means you can use the knowledge, skills and networks from your studies to make our country, our continent and the rest of the world a better place.

More than ever, we need you to make enriching and empowering choices to help shape society and make a definable difference in your community.

I wish you joy, success and fulfilment in the next phase of your life's journey. And remember – once a Matie, always a Matie!

#### Retired Justice Edwin Cameron Chancellor

#### Geagte lid van die Universiteit Stellenboschgemeenskap

# Dit is vir my 'n eer en 'n voorreg om hierdie boodskap met jou te deel.

Ondanks talle uitdagings in 2023 het ons studente wat vandeesweek gradueer, sukses behaal – en dit spreek boekdele oor hul en ons toekoms!

Ons is ongelooflik trots daarop om die menigte grade, diplomas en sertifikate waarvoor so lank so hard gewerk is, by hierdie plegtighede te kan toeken.

Studente en personeellede – elkeen van julle het 'n uiters belangrike rol gespeel om te verseker dat die Universiteit Stellenbosch bly floreer.

En sonder die ondersteuning wat geliefde familie en vriende so onvoorwaardelik bied, sou talle studente nie vandag hier gewees het nie – so, ons sê uit ons hart uit ook dankie aan julle.

Ook 'n besondere woord van waardering ook aan ons ruimhartige donateurs en borge wat ons studente aan die gang gehou het.

#### Aan elke graduandus:

Mag die vreugde wat jy vandag voel, met die verloop van tyd in iets nog waardevoller ontwikkel – 'n ryke sin van plig en verantwoordelikheid. Jou nuwe status beteken jy kan nou die kennis, vaardighede en netwerke van jou studentejare by die Universiteit Stellenbosch gebruik om ons land, ons vasteland en die res van die wêreld 'n beter plek te maak.

Meer as te ooit te vore het ons nodig dat jy verrykende en bemagtigende keuses maak om die samelewing te help vorm en 'n wesenlike verskil in jou gemeenskap te maak.

Ek wens jou vreugde, sukses en vervulling toe in die volgende fase van jou lewensreis. En onthou – eenmaal 'n Matie, altyd 'n Matie!

#### Oudregter Edwin Cameron Kanselier



#### **Prof Wim de Villiers**

Rector and Vice-Chancellor | Rektor en Visekanselier

#### Dear Matie graduand

Firstly, congratulations! The main goal of enrolling at university is to graduate, and today you are achieving that. This must be celebrated – so, well done to you and everyone who has championed you along the way.

Secondly, your qualification from Stellenbosch University (SU) will open doors for you, no matter where you are in the world. We have a good reputation locally and globally, aided by the fact that our graduates make a strong impact wherever they go.

In 2020 and 2021, when the coronavirus pandemic posed a major threat, our objective was simple: to complete the academic year successfully. Thanks to the agility and can-do spirit of our people, we managed to surpass this objective and actually thrive.

In 2022 and 2023, we were able to go even further, pursuing renewal in learning and teaching, new networks and partnerships in the rest of Africa and elsewhere, as well as digitalisation. Our staff and students showed that SU nurtures and advances innovation.

We are also making good progress on our transformation journey to ensure that SU is a place where everyone feels welcome and at home.

I know the lessons that you have learnt here will stand you in good stead, and I hope you will continue to live by SU's values – equity, compassion, accountability, respect and excellence.

We would like you to stay in touch and be part of your alma mater's future through our global alumni network. Please visit <u>www.matiesconnect.com</u>, where you will be able to maintain ties with your University friends, view job offers and find mentors and networking opportunities – all in one place. SU will always be your academic home, and participating in alumni activities will enhance your professional development going forward.

Good luck with your next steps!

Until we meet again,

Prof Wim de Villiers Rector and Vice-Chancellor

#### Beste Matie-graduandus

Eerstens, baie geluk! Jy het universiteit toe gekom om 'n gesogte kwalifikasie te verwerf, en vandag bereik jy hierdie doelwit. Dit moet gevier word – so, welgedaan aan jou en elkeen wat jou op hierdie reis ondersteun het.

Tweedens bevestig ek dat jou kwalifikasie van die Universiteit Stellenbosch (US) oral ter wêreld vir jou deure gaan open. Ons het 'n goeie reputasie – plaaslik en internasionaal – wat bevorder word deur die feit dat ons gegradueerdes 'n sterk impak maak waar hulle ook al gaan.

In 2020 en 2021, toe die koronaviruspandemie 'n groot bedreiging ingehou het, was ons doelwit gewoon om die akademiese jaar suksesvol te voltooi. Ek is bly om te kan sê ons het daarin geslaag, danksy ons mense se veerkragtigheid en deursettingsvermoë.

In 2022 en 2023 kon ons verder gaan – met vernuwing in leer en onderrig, nuwe netwerke en vennootskappe in die res van Afrika en elders, en digitalisering. Ons personeel en studente het bewys dat die US innovasie kweek en bevorder.

Ons maak ook goeie vordering op ons transformasiereis om te verseker dat die US 'n plek is waar almal welkom en tuis voel.

Ek weet die lesse wat jy hier geleer het, sal jou handig te pas kom, en ek hoop jy sal voortgaan om die US se waardes – billikheid, deernis, verantwoordbaarheid, respek en uitnemendheid – uit te leef.

Ons wil graag hê jy moet in aanraking bly en deel word van die US se toekoms deur middel van ons globale alumni-netwerk. Besoek gerus www.matiesconnect.com, waar jy jou bande met jou Universiteitsvriende kan behou, werksgeleenthede kan sien en mentors en netwerkgeleenthede kan vind. Die US sal altyd jou akademiese tuiste bly, en deelname aan alumni-aktiwiteite hou voordele vir jou professionele ontwikkeling in.

Alle voorspoed vir die toekoms!

Tot weersiens,

#### Prof Wim de Villiers Rektor en Visekanselier

#### Chancellor | Kanselier

Retired Justice E Cameron, BAHons, LLD hc (Stell), LLB, BCL, MA, DCL hc (Oxford), LLD hc (King's College, London), LLD hc (Witw), LLD hc (St Andrews), LLD hc (Sussex)

Chairperson of Council | Voorsitter van die Raad Dr NF Newton-King, BA LLB, LLM, LLD (hc) (Stell)

Rector and Vice-Chancellor | Rektor en Visekanselier Prof WJS de Villiers, MB, ChB, MMed (Int), FCP (SA), DPhil, MHCM

Chief Operating Officer | Uitvoerende Bedryfshoof Prof SA du Plessis, BComHons, MPhil, PhD

Deputy Vice-Chancellor (Social Impact, Transformation and Personnel) Viserektor (Sosiale Impak, Transformasie en Personeel) Prof NN Koopman, BA, MTh, DTh

Deputy Vice-Chancellor (Learning and Teaching) | Viserektor (Leer en Onderrig) Prof D Ramjugernath, BScEng, PhD, MASSAf, FAAS, FSAAE

Deputy Vice-Chancellor (Research, Innovation and Postgraduate Studies) Viserektor (Navorsing, Innovasie en Nagraadse Studies) Prof S Moyo, BSc, BScHons, MSc, MTEM, PhD

Deputy Vice-Chancellor (Strategy, Global and Corporate Affairs) Viserektor (Strategie, Globale en Korporatiewe Sake) Prof HC Klopper, BCur, MCur, PhD, MBA, FAAN, MASSAf

**Registrar | Registrateur** Dr P Retief, MA, DLitt

DIT Relief, MR, DEIL

Deans | Dekane Arts and Social Sciences | Lettere en Sosiale Wetenskappe Prof AJ Leysens, MA, DPhil

Science | Natuurwetenskappe Prof L Warnich, MSc, PhD

AgriSciences | AgriWetenskappe Prof D Brink, BScHons, MScAgric, PhD

Education | Opvoedkunde Prof MR Madiba, DLitt et Phil

Law | Regsgeleerdheid Prof N Smit, BLC, LLB, LLD

Economic and Management Sciences | Ekonomiese en Bestuurswetenskappe Prof ID Woolard, BSc, BAHons, PhD

Engineering | Ingenieurswese Prof JL van Niekerk, MEng, PhD, EMBA

Medicine and Health Sciences | Geneeskunde en Gesondheidswetenskappe Prof EM Muller, MBChB, MRCS (Ed), FCS (SA), MMed, FACS, PhD

Military Science | Krygskunde Prof MS Tshehla, MSc, PhD

Theology | Teologie Prof RW Nel, BA, BTh, MTh, DTh

#### Always a Matie

Congratulations and welcome to the Stellenbosch University alumni network! Your graduation is a momentous occasion and marks the beginning of your continued relationship with your alma mater. The Alumni Office is your lifelong connection to the University. Be sure to join fellow graduates after your faculty graduation ceremony for an exciting networking champagne celebration at the Alumni Clubhouse located at Die Stal, where we will toast your future success. Walk across from Coetzenburg to Die Stal with family and friends to celebrate your graduation!

There are many ways to stay connected. Please update your latest contact details via <u>alumni@sun.ac.za</u> in order for us to continue to keep in touch with you

#### Homecoming and Family Weekend

The University's Homecoming and Family Weekend takes place from Thursday 12 September to Saturday 14 September 2024 on the Stellenbosch campus. Information is available on www.matiesalumni.com.

#### Join Maties Connect

Our <u>www.matiesconnect.com</u> platform will help you increase your professional network, find a job opportunity, advertise your business, search for a mentor, reach out to alumni, and keep up to date on what's happening at your alma mater.

#### Be part of an Alumni Chapter

he University's Development and Alumni Relations team establish alumni chapters both locally and internationally to connect alumni in specific regions with one another through regular networking and social events - both online and in person. For more information on how to join or to volunteer and participate in a chapter, send an e-mail to alumnihubs@sun.ac.za.

#### I-Matie ngalo Lonk' ixesha

Sivuyisana nawe kwaye wamkelekile kusapho olungabo babesakufunda kwiYunivesithi yaseStellenbosch! Ukuthweswa kwakho isidanga lixesha apha elakha labaluleka, kwaye likwalixesha eliphawula ukuqalisa kwakho ubudlelwane obuqhubekayo kunye nale yunivesithi owawusakufunda kuyo. IOfisi yabo Babesakuba Ngabafundi Apha yiyo ekunxulumanisa neYunivesithi ubomi bakho bonke. Emva komsitho wothwesozidanga wefakhalthi yakho, qinisekisa ukuba uhlangana nabanye oogxa bakho abaphumeleleyo kumbhiyozo weshampeyini omyoli wokwakha ubuhlobo phaya kwiAlumni Clubhouse eseDie Stal, apho siya kukuthi jize khona ngeminqweno emihle yempumelelo kwixesha elizayo. Wela ukusuka eCoetzenburg ukuya eDie Stal uthe chu ngcembe nezalamane nabahlobo ukuya kubhiyozela ukuthweswa kwakho isidanga!

Zininzi iindlela zokuhlala uqhagamshelekile. Sicela uthumele inkcukhaca zakho ku alumni@sun.ac.za ukuze siqhagamshelane nawe.

#### IMpelaveki yoBuyelekhaya ubekunye noSapho

IMpelaveki yoBuyelekhaya ubekunye noSapho eyenzelwe abo babesakufunda apha yenzeka ukusuka ngoLwesine umhla we-12 kwinyanga yoMsintsi ukuya kutsho ngoMgqibelo umhla we-14 kweyoMsintsi 2024 kwikhampasi yaseStellenbosch. Iingcombolo ezithe vetshe zifumaneka ku- www.matiesalumni.com.

#### Joyina i-Maties Connect

lqonga lethu le- <u>www.matiesconnect.com</u> liza kukunceda ekwandiseni inani leengcali onxibelelana nazo, ukufumana amathuba omsebenzi, ukwazisa ishishini lakho, ukufuna umcebisi onamava, ekufikeleleni kwabanye ababefunda apha nasekubeni uhlale usazi ngokwenzekayo ngale yunivesithi owawusakufunda kuyo.

#### Yiba yinxalenye yeQela labo baBesakuba ngaBafundi balapha

Iqela loPhuhliso nezoNxibelelwano lwabo baBesakuba ngaBafundi balapha lisungula amaqela abo babesakuba ngabafundi apha netshapta zawo naza kuzinza kweli lizwe nakwamanye amazwe ukuze kunxibelelwane ngabo babesakuba ngabafundi apha abakwiingingqi ezithile oko kusenziwa ngokunxibelelana rhoqo nangendibano zasekuhlaleni nge-intanethi nangobuso ngobuso. Ukuba ufuna iinkcukacha ezithe vetshe malunga nendlela yokujoyina okanye yokuvolontiya nokuthatha inxaxheba kwiqela okanye itshapta ehlabathini, thumela i-imeyili ku alumnihubs@sun.ac.za.

#### Altyd 'n Matie

Geluk en welkom in die Universiteit Stellenbosch se alumni-familie! Jou gradeplegtigheid is 'n belangrike mylpaal, en ook die begin van jou voortgesette verbintenis met jou alma mater. Die Alumni-kantoor is jou lewenslange skakel met die Universiteit. Sluit gerus ná jou fakulteit se gradeplegtigheid by jou mede-graduandi aan vir 'n opwindende netwerkgeleentheid by die Alumni-klubhuis in Die Stal, waar ons 'n glasie sjampanje op julle toekomstige sukses sal klink. Stap sommer saam met familie en vriende van Coetzenburg af oor na Die Stal toe om jou graduering te vier!

Daar is vele maniere om in kontak te bly. Kontak ons by alumni@sun.ac.za om jou jongste kontakbesonderhede by te werk.

#### Tuiskoms-en-Familienaweek

Die Universiteit se Tuiskoms-en-Familienaweek vir alumni vind vanaf Donderdag 12 September tot Saterdag 14 September 2024 op die Stellenboschkampus plaas. Inligting is by www.matiesalumni.com beskikbaar.

#### Sluit aan by Maties Connect

Ons <u>www.matiesconnect.com</u> -platform sal jou help om jou professionele netwerk uit te brei, 'n werkgeleentheid te vind, jou besigheid te adverteer, vir 'n mentor te soek, alumni te kontak, en op die hoogte van gebeure by jou alma mater te bly.

#### Wees deel van 'n Alumni-tak

Die Universiteit se Ontwikkeling en Alumnibetrekkinge-span vestig plaaslike en internasionale alumni-takke om alumni in spesifieke streke met mekaar in verbinding te bring deur gereelde netwerk- en sosiale geleenthede aan te bied – aanlyn en in persoon. Vir meer inligting oor hoe om aan te sluit, as vrywilliger op te tree en wêreldwyd aan 'n tak deel te neem, stuur 'n e-pos aan alumnihubs@sun.ac.za.

#### 1. 25 March | Maart 2024 (13:00)

3.

#### Faculty of Arts and Social Sciences (Group 1) | Fakulteit Lettere en Sosiale Wetenskappe (Groep 1)

9

19

BA (Development and Environment); BA (Human Resource Management); BA (Humanities); BA (International Studies); BA (Political, Philosophical and Economic Studies); BA (Social Dynamics); BA (Socio-Informatics); BA (Sport Science); PGDip (Social Science Methods); PGDip (Transdisciplinary Health and Development Studies); PGDip (Applied Ethics); PGDip (Disaster Risk Studies and Development); PGDip (Knowledge and Information Systems Management); PGDip (Monitoring and Eval); PGDip (Research Management and Administration); BInfoHons; BA Hons (Geography and Environmental Studies); BA Hons (Geographical Information Systems); BA Hons (History); BA Hons (International Studies); BA Hons (Philosophy); BA Hons (Political Science); BA Hons (Psychology); BA Hons (Social Anthropology); BA Hons (Sociology); M (Urban and Regional Planning); MPhil (Applied Ethics); MPhil (Decision-Making and Knowledge Dynamics); MPhil (Disaster Risk Science and Development); MPhil (Information and Knowledge Management); MPhil (Monitoring and Evaluation Methods); MPhil (Public Mental Health); MPhil (Science and Technology Studies); MPhil (Transdisciplinary Health and Development Studies); MPhil (Urban and Regional Science); MA (Clinical Psychology); MA (Geographical Information Systems); MA (Geography and Environmental Studies); MA (History); MA (International Studies); MA (Philosophy); MA (Political Science); MA (Psychology); MA (Public Sociology and Anthropology); MA (Socio-Informatics); MA (Sociology); MA (Social Anthropology); MA (Social Science Methods); PhD (Applied Ethics); PhD (Decision-Making and Knowledge Dynamics); PhD (Evaluation Studies); PhD (Geography and Environmental Studies A); PhD (History); PhD (Philosophy); PhD (Political Science); PhD (Psychology); PhD (Science and Technology Studies); PhD (Social Anthropology); PhD (Social Science Methods); PhD (Socio-Informatics); PhD (Sociology); PhD (Urban and Regional Planning); PhD (Urban and Regional Science)

Doctoral Qualifications   Doktorale Kwalifikasies	11
Other Qualifications   Ander Kwalifikasies	15
25 March   Maart 2024 (17:00)	

#### Faculty of Arts and Social Sciences (Group 2) | Fakulteit Lettere en Sosiale Wetenskappe (Groep 2)

Higher Certificate (Music); Dip (Practical Music Studies); Advanced Diploma (Practical Music); B Social Work; BA (Drama and Theatre Studies); BA (Visual Arts); BA (Language and Culture); BA (Law); B Music; BA (Music); PGDip (Second-Language Studies); PGDip (Technology of Language Learning); PGDip (Intercultural Communication); PGDip (Film Music); PGDip (Music Technology); BMusHons; BA Hons (African Languages); BA Hons (African Languages for Professional Contexts); BA Hons (Afrikaans and Dutch); BA Hons (Ancient Cultures); BA Hons (Ancient Languages); BA Hons (Chinese); BA Hons (Drama and Theatre Studies); BA Hons (English Studies); BA Hons (French); BA Hons (General Linguistics); BA Hons (German); BA Hons (Journalism); BA Hons (Music); BA Hons (Translation); BA Hons (Language Practice); BA Hons (Visual Arts Illustration); BA Hons (Visual Studies); M (Social Work); MMus; MPhil (Film Music); MPhil (Music Technology); MA (African Languages); MA (African Languages for Professional Contexts); MA (Afrikaans and Dutch); MA (Ancient Cultures); MA (Ancient Languages); MA (Creative Writing); MA (Drama and Theatre Studies); MA (English Studies); MA (French); MA (General Linguistics); MA (German); MA (Intercultural Communication); MA (Second Language Studies); MA (Journalism); MA (Lexicography; MA (Translation); MA (Technology of Language Learning); MA (Visual Arts); MA (Visual Arts) (Art Education); MA (Visual Studies; PhD (African Languages); PhD (Afrikaans and Dutch); PhD (Ancient Cultures); PhD (Ancient Languages); PhD (Comparative Literature); PhD (Drama and Theatre Studies); PhD (English Studies); PhD (French); PhD (General Linguistics); PhD (German); PhD (Journalism); PhD (Lexicography); PhD (Music); PhD (Social Work); PhD (Translation); PhD (Visual Arts)

Doctoral Qualifications   Doktorale Kwalifikasies		
Other Qualifications   Ander Kwalifikasies	24	
26 March   Maart 2024 (09:00)		
Faculty of Medicine and Health Sciences   Fakulteit Geneeskunde en Gesondheidswetenskappe	27	
Doctoral Qualifications   Doktorale Kwalifikasies	29	
Other Qualifications   Ander Kwalifikasies	35	

4.	26 March   Maart 2024 (13:00)	
	Faculty of Science   Fakulteit Natuurwetenskappe	39
	Doctoral Qualifications   Doktorale Kwalifikasies	41
	Other Qualifications   Ander Kwalifikasies	49
5.	26 March   Maarth 2024 (17:00)	
	Faculty of AgriSciences   Fakulteit AgriWetenskappe	53
	Doctoral Qualifications   Doktorale Kwalifikasies	55
	Other Qualifications   Ander Kwalifikasies	59
6.	27 March   Maart 2024 (09:00)	
	Faculty of Economic and Management Sciences (Group 1)   Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 1)	61

BCom (Industrial Psychology); BCom (International Business); BCom (Law); BCom (Management Sciences); BCom (Mathematical Sciences); BCom; PGDip (Marketing); PGDip (HIV/AIDS Management); PGDip (Strategic Human Resource Management); PGDip (Transport and Logistics); BCom Hons (Business Management); BCom Hons (Financial Risk Management); BCom Hons (Human Resources Management); BCom Hons (Industrial Psychology); BCom Hons (Logistics Management); BCom Hons (Mathematical Statistics); BCom Hons (Operations Research); BCom Hons (Statistics); BCom Hons (Transport Economics); MPhil (HIV/AIDS Management); MCom (Business Management); MCom (Financial Risk Management); MCom (Human Resources Management); MCom (Industrial Psychology); MCom (Logistics Management); MCom (Mathematical Statistics); MCom (Operational Research); MCom (Quantitative Management); MCom (Statistics); MCom (Transport Economics); PhD (Business Management); PhD (HIV/AIDS Management); PhD (Industrial Psychology); PhD (Logistics); PhD (Logistics Management); PhD (Mathematical Statistics); PhD (Industrial Psychology); PhD (Logistics); PhD (Logistics Management); PhD (Mathematical Statistics); PhD (Transport Economics); PhD (Statistics) PhD (Statistics)

Honorary Doctorate   Eredoktorsgraad	63
Leonard Wantchekon	
Doctoral Qualifications   Doktorale Kwalifikasies	64
Other Qualifications   Ander Kwalifikasies	65
27 March   Maart 2024 (13:00)	
Faculty of Economic and Management Sciences (Group 2)   Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 2)	69
B Accounting; BCom (Actuarial Sciences); BCom (Economic Sciences); BCom (Financial Accounting); BCom (Management Accounting); PGDip (Accounting); PGDip (Actuarial Science); BComHons (Actuarial Science); BComHons (Economics); BComHons (Management Accounting); BAccHons; MAcc; MCom (Actuarial Science); MCom (Computer Auditing); MCom (Economics); PhD (Accounting); PhD (Agricultural Economics); PhD (Economics)	
Honorary Doctorate   Eredoktorsgraad	71
James Robinson	
Doctoral Qualifications   Doktorale Kwalifikasies	72
Other Qualifications   Ander Kwalifikasies	73

7.

#### 8. 27 March | Maart 2024 (17:00)

#### Faculty of Economic and Management Sciences (Group 3) | Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 3)

Diploma in Public Accountability; Advanced Diploma in Public Accountability; Dip (Sustainable Development); Advanced Diploma in Sustainable Development; PGDip (Business Management and Administration); PGDip (Development Finance); PGDip (Environmental Man); PGDip (Financial Planning); PGDip (Futures Studies); PGDip (Leadership Development); PGDip (Project Management); PGDip (Public Financial Management); PGDip (Sustainable Development); B in Public Admin Hons; BComHons (Public and Development Management); MPA; MPhil (Development Finance); MPhil (Environmental Management); MPhil (Futures Studies); MPhil (Management Coaching); MPhil (Leadership Coaching); MPhil (Sustainable Development Planning and Management); MCom (Public and Development Management); MBA, PhD (Business Management and Administration); PhD (Development Finance); PhD (Public and Development Management); PhD (Sustainable Development Planning and Management)

	Doctoral Qualifications   Doktorale Kwalifikasies	79
	Other Qualifications   Ander Kwalifikasies	80
9.	28 March   Maart 2024 (09:00)	
	Faculty of Law   Fakulteit Regsgeleerdheid	87
	Doctoral Qualifications   Doktorale Kwalifikasies	89
	Other Qualifications   Ander Kwalifikasies	90
	Faculty of Military Science   Fakulteit Krygskunde	92
	Other Qualifications   Ander Kwalifikasies	92
10.	28 March   Maart 2024 (13:00)	
	Faculty of Engineering   Fakulteit Ingenieurswese	93
	Doctoral Qualification   Doktorale Kwalifikasie	95
	Other Qualifications   Ander Kwalifikasies	102
11.	28 March   Maart 2024 (17:00)	
	Faculty of Education   Fakulteit Opvoedkunde	105
	Doctoral Qualifications   Doktorale Kwalifikasies	107
	Other Qualifications   Ander Kwalifikasies	108
	Faculty of Theology   Fakulteit Teologie	110
	Doctoral Qualifications   Doktorale Kwalifikasies	110
	Other Qualifications   Ander Kwalifikasies	113
2	National anthem   Nasionale volkslied	114

77

forward together sonke siya phambili saam vorentoe



### Faculty of Arts and Social Sciences (Group 1) 25 March 2024 | 13:00

### Fakulteit Lettere en Sosiale Wetenskappe (Groep 1)

25 Maart 2024 | 13:00

### Programme

Please stand	1.	Entrance of academic procession into the hall.
Please stand	2.	Playing of the National Anthem.
Please sit	З.	Congregation formally constituted by the Chancellor.
	4.	Welcome by the Chancellor.
	5.	Presentation of candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Chancellor.
	6.	Closing by the Chancellor.
Please stand	7.	The academic procession leaves the stage.

### Program

Staan asseblief	1.	Akademiese prosessie kom die saal binne.
Staan asseblief	2.	Speel van die Nasionale volkslied.
Sit asseblief	З.	Formele konstituering deur die Kanselier.
	4.	Verwelkoming deur die Kanselier.
	5.	Voorstelling van kandidate wat kwalifikasies ontvang deur die dekaan van die fakulteit en toekenning van kwalifikasies deur die Kanselier.
	6.	Sluiting deur die Kanselier.
Staan asseblief	7.	Akademiese prosessie verlaat die verhoog.

### Faculty of Arts and Social Sciences (Group 1) Fakulteit Lettere en Sosiale Wetenskappe (Groep 1)

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

#### DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

ABATI, Omomayowa Olawale (Political Science)

#### Beyond #NotTooYoungToRun: party candidacy, parliamentary representation and legislative effectiveness of young politicians in Nigeria's Fourth Republic

This study examines the effect of Nigeria's Age Reduction Law on young politicians' representation through party candidacy and their legislative effectiveness in national and subnational parliaments. It finds that while the reform resulted in an increase in young party candidates, political parties' unwillingness to nominate large numbers of young candidates reduces the effect of the reform on youth representation in national and subnational parliaments. The research concludes that young people are politically competitive and interested in pursuing party candidacy. Party selection bias also recognises electorally competitive young aspirants. However, being a young legislator reduces the chance of legislative effectiveness.

Supervisor: Prof C Schulz-Herzenberg

BERGEMANN, Karl Jason (History)

# The runaways: a study of enslaved, apprenticed and indentured labour flight at the Cape in the emancipation era, 1830–42

This study delves into the centuries-long 'tradition' of desertion among enslaved, apprenticed and indentured labourers at the Cape during the pivotal 1830s emancipations. Employing quantitative and qualitative analyses of runaway advertisements from the *Government Gazette* and *De Zuid Afrikaan*, it constructs nuanced narratives of lower-hierarchy labourers by examining variables such as demography, skills and advertiser intentions. The research highlights a shift towards 'assimilation marronage', where escapees blend into colonial society instead of fleeing it, challenging conventional understandings of escape by focusing on their motivations, identities, and the dynamics of their flight and assimilation.

Supervisor: Prof J Fourie Co-supervisors: Drs K Ekama, L Mitchell (external) **CHRIST**, Sven Igor (Geography and Environmental Studies)

# The influence of topographical variability on wildfire occurence and propagation

Wildfires are of increasing concern. Despite their disruptive nature, these naturally occurring phenomena are crucial for the sustainability of certain ecosystems. This research underscores the integral role of topography in understanding wildfires. It charts a roadmap for future research, emphasising the importance of high-quality validation data, a more comprehensive mapping of fire refugia, and an acknowledgement of the influence of human activity on fire regimes. By building on the methodologies and insights presented, an opportunity exists to advance sustainable wildfire management solutions that benefit ecosystems and human communities.

Supervisor: Prof HM de Klerk

DLAKAVU, Simamkele Blossom (Political Science)

#### Fighting against erasure: the One in Nine Campaign and feminist movement building against sexual violence

This study explores the feminist political response to Jacob Zuma's 2006 rape trial in South Africa, focusing on the One in Nine Campaign's efforts to challenge the sexual violence crisis and forge feminist political solidarities. Employing new social movement and African feminist theories, it analyses the One in Nine Campaign's strategies and actions through qualitative methodologies, archival research as well as interviews. The research highlights the One in Nine campaign's role in promoting an intersectional feminist agenda, and its influence on new feminist movements. It also engages erasures of the One in Nine Campaign's work since the Zuma rape trial.

Supervisor: Prof A Gouws

#### Germans in South Africa during and in the aftermath of World War II: the dynamics and contradictions of internment, 1939–1948

During World War II (1939–1945), 3 285 men of German extraction from South West Africa (Namibia) and South Africa suspected of pro-Nazi leanings were interned in camps. The outbreak of the war raised spectres of dissidence in both white and black society, and the decision to intern Germans was a cautionary measure. This research examines the complexities of the criteria for incarceration and the underlying pressures. Moreover, the varied and changing dimensions of camp life and the broad range of experiences are analysed. It concludes with an evaluation of the efficacy and ramifications of the system.

Supervisor: Prof AM Grundlingh

HOLMES-WATTS, Tania Natasha (Science and Technology Studies)

#### A comparative, multilevel investigation into research productivity of South African academics in different university contexts: an interpretivist approach

This study investigates inequalities in the nationally mandated research function at two universities – one historically disadvantaged and the other historically advantaged – to determine the conditions necessary to improve research performance despite institutional differences in terms of historical background and contextual realities. Multilevel data collection and analysis are conducted, using both primary and secondary sources. By examining the findings through a phenomenological lens, various management and behavioural theories on which the research relies are supported, refuted or extended. The research also delivers a power-dynamic model that offers new insights into improving university research performance at South African public universities.

Supervisor: Prof J Botha Co-supervisors: Prof JD Jansen, Dr CA Waltersc

#### KAYSTER, Anziske Florenza (History)

# The complexities of heritage production in a South African community from the 1900s to the present: Graaff-Reinet, a case study

This study analyses the trajectory and contested nature of history and heritage in the context of changing political imperatives in a prominent Karoo town over time. It sheds light on various dissonant elements in the process, and how these came to a head in the post- apartheid period. The difficulties of recalibrating and repurposing a congealed set of heritage assumptions in a town divided by race and class are explained, and the impact of cross-cutting influences is evaluated. Underpinning this discourse are a range of opinions and apt historical examples.

Supervisor: Prof AM Grundlingh

#### KOTZÉ , Landi (Political Science)

#### Menstrual politics in the Dwarsrivier Valley, South Africa: a mixed-methods exploration

Globally, there is almost no empirical research on menstrual politics. In South Africa, the Sanitary Dignity Framework is the primary policy mechanism to moderate social determinants of health. This study of women in the Dwarsrivier Valley presents empirical evidence to frame policy and the development of implementation mechanisms for the promotion of sanitary dignity. It finds that age, gender, and a lack of knowledge about menstruation hinder women's capability to achieve sanitary dignity, while education and cultural values promote sanitary dignity. The study identifies critical pathways towards greater resilience for women, and the successful implementation of menstrual policy.

*Supervisor:* Prof PP Fourie *Co-supervisor:* Dr C Steenekamp

LEKENA, Liile Lerato (Science and Technology Studies)

#### The use of institutional research outputs by university managers: an embedded case study of a university in South Africa

This study explores the utilisation of institutional research in decision-making at a South African university. Guided by Caplan's Two-Communities Theory, it considers the dynamics of research utilisation in higher education management. The research investigates the complex and multilevel interactions between decision-makers (deans and other academic leaders) and institutional researchers, and illustrates the role of faculty managers as intermediaries. It offers insights into evidence-based practice that seeks systematic and rigorous approaches to problem-solving, enabling managers to make informed decisions based on the best available evidence. This is particularly relevant since universities locally and globally are confronted with major and ongoing challenges

Supervisor: Prof J Botha Co-supervisor: Prof HE Prozesky

#### Improving cognitive development in children exposed to alcohol in utero: a feasibility RCT for a computer-based cognitive training programme in Saldanha Bay

South Africa has the highest prevalence of foetal alcohol spectrum disorder globally. Brought on by alcohol exposure during pregnancy, the disorder is a leading cause of neurodevelopmental delays, and few opportunities for remediation are available in resource-poor areas. This study evaluates the feasibility of using a computer-based cognitive training programme to improve the cognitive development of children exposed to alcohol in utero. A tablet-based cognitive training game is developed and evaluated among children aged 4 to 6, recruited through preschools in Saldanha Bay. The 11-month intervention shows that using a cognitive training game in this context is feasible.

Supervisor: Prof MR Tomlinson

MASHINGAUTA, Aisha Hatina (History)

#### Power and hunger: the state, farmers, and the Grain Marketing Board in Zimbabwe c. 1980–2017

This study uses the Grain Marketing Board (GMB) as a lens to explore the anthropogenic nature of hunger in Zimbabwe from independence in 1980 until 2017, when Robert Mugabe's regime ended. It argues that government used the GMB, as a parastatal, to achieve certain political, personal and economic goals. In the main, the research contends that the GMB was captured by the ruling party and individual politicians for political expediency. Although the country experienced natural disasters from time to time, the study shows how the state capture of the GMB exacerbated – and sometimes was the sole cause of – food insecurity.

Supervisor: Prof SS Swart

MOYO, Vuyisile Precious (Sociology)

#### Rural farmers' adaptive and transformative capacity in response to climate change and small-scale mining in rural Gwanda, Zimbabwe, 1980–2021

This study examines the dual effect of climate change and artisanal small-scale illegal mining on the livelihoods of rural farmers in Gwanda, Zimbabwe. It finds that this double shock has eroded the natural, social, physical, human and financial capital of farmers, undermining their adaptive and transformative capacities to mitigate the effect on their livelihoods. Moreover, artisanal mining brought other social ills, which have led to a breakdown in the social capital in communities and networks of support. Coupled with poor governance of the natural environment, this is leading to a form of 'slow violence' that is systematically eroding the livelihoods of rural farmers.

Supervisor: Prof LPT Heinecken

#### MUGUTI, Teverayi (History)

#### A history of border control and trade relations between Zimbabwe and Zambia, 1963–2017

This study analyses how the Zimbabwean state controlled the movement of people, goods and services across its northern border with Zambia during war and peace, under colonialism, and in the post-colony. This helps us understand not only the power of the state, but how its citizens survived a barrage of setbacks: isolation, war, famine, drought and economic crisis. The research demonstrates the significance of the border in shaping state-to-state interaction between the two countries. In addition, it shows how ordinary people in a typical borderland area have negotiated state border security policy over time, in both quotidian and extraordinary circumstances.

Supervisor: Prof SS Swart

#### NOOR MAHOMED , Aqeela (Psychology)

#### Understanding the needs and experiences of family caregivers of individuals with dementia in Soweto, a South African township

This study, conducted in Soweto, South Africa, delves into the experiences of family caregivers for dementia patients, highlighting the intricate interplay of individual, sociocultural and contextual factors. It underscores the necessity for multifaceted intervention strategies, advocating for policy reforms and systemic restructuring. It also stresses the importance of leveraging existing community resources, such as memory clinics, to bolster support and enhance the quality of care for affected families. Overall, the study emphasises the imperative of addressing the complex needs of caregivers in the unique social landscapes of South African townships.

Supervisor: Prof C Pretorius

#### SHABA, Jabulani (History)

#### Women in mining worlds: a socio-environmental history of women in artisanal gold mining in Zimbabwe, with specific reference to Mazowe district, c. 1932 to 2021

This study examines the socio-environmental history of women in artisanal gold mining in Mazowe, Zimbabwe, between 1932 and 2021. Challenging existing scholarship, which emphasises politics, patronage and illegality in this sector, the research pioneers a new historiographical turn, reconstructing the stories of women in mining settlements within the broader context of survival and resilience. It analyses how these women deployed local technologies, explains their networks, and shows how they tapped into the ritual world to expand their business enterprises while negotiating the toxic mining landscape. As such, the study contributes to scholarship on mining labour and gendered resource politics in Southern Africa.

Supervisor: Prof SS Swart

#### STEVENS, Marion Lynn (Political Science)

### A policy analysis: from population control to the construction of sexual and reproductive health post-apartheid, 1994–2021

This study analyses how policy on sexual and reproductive health has been constructed as problematic post-apartheid, and how this has led to reproductive justice, or the lack thereof. It is informed by qualitative, constructionist/interpretivist orientations, with document reviews and interviews. In particular, Bacchi's 'What's the problem represented to be?' approach and Harding's feminist standpoint theory are used. The South African environment is contested, with interwoven, connected and juxtaposing dominant and marginalised framings and silences on sexual and reproductive health and rights. Incoherence masks retrogressive forms of contemporary population control with moral judgements that assign blame for social and environmental ills.

Supervisor: Prof A Gouws

ULEDI, Peter (History)

### Environmental policing in the Tribal Trust Lands and African peasant responses in Zimbabwe, c. 1960–2005

This study examines the African peasantry's responses to environmental policing in the Tribal Trust Lands in Zimbabwe in the period 1960 to 2005. It demonstrates how the colonial state, white settler state and postcolonial state used environmental policies to control, win over and ultimately marginalise peasants. The research shows how environmental policies restricted the growth of peasant agriculture and affected their access to water, forests and fecund land. Yet it also demonstrates that peasant agency was central in environmental policy changes, as successive states still needed some cooperation from rural farmers, who resisted policies with which they disagreed.

Supervisor: Prof SS Swart

### Faculty of Arts and Social Sciences (Group 1) Fakulteit Lettere en Sosiale Wetenskappe (Groep 1)

#### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

#### Master of Arts Magister in die Lettere en Wysbegeerte

Ayford, Jaime-Lee Rachelle (Sociology) Bam. Connor (Psychology) Banda, Takudzwa Vincent (Socio-Informatics) (cum laude) Blake, Lee (Clinical Psychology) Chiware, Doreen Makandipei (Public Sociology and Anthropology) Churu, Matida Vimbai (Socio-Informatics) Da Silva, Gabrielle Keja (Political Science) Du Plessis, Adrienne Zendrea (Public Sociology and Anthropology) Enos, Nina Nana-Ama Adorable (Political Science) Geldenhuis, Demi (Psychology) (cum laude) Heyl, Isabelle Christina (Socio-Informatics) (cum laude) Jenkins, Daniel (Psychology) Kao, Shih-Chien (Sociology) (cum laude) Luden, Michael (Psychology) (cum laude) Machangane, Kitso Mumsie (Clinical Psychology) Makardoij, Seema (Psychology) Mamoepa, Bohlale Mashaa (Political Science) Marais, Danielle Jayne (Political Science) (cum laude) Marthinus, Arlene Judith (Psychology) (cum laude) Masondo, Nonduduzo Sinenhlahla Nokuthobeka (International Studies) Matyobeni, Nomawethu (Clinical Psychology) Meyers, Terri-Leigh (Public Sociology and Anthropology) Mubaiwa, Unopachido Akwande (Psychology) (cum laude) October, Caitlin Daniele (Psychology) (cum laude) Scholtz, Anrine (Political Science) Sedick, Rayhaana (Sociology) Shibambu, Lesego Simphiwe (Sociology) Smith, Matthew James (Psychology) Ukabhai, Prajna (Psychology) (cum laude) Van Straten, Christina Martina (Public Sociology and Anthropology) Van Zyl, Marion (Geography and Environmental Studies A) Venter, Zander (Psychology) Weppelman, Kaylon Jasmine (Psychology) Young, Emily Jane (Geography and Environmental Studies A) Master of Philosophy

#### Master of Philosophy Magister in die Wysbegeerte

- Amutenya, Klaudia Kiinge (Monitoring and Evaluation Methods)
- Barry, Joshua Nicholas Aiden (Urban and Regional Science)
- Beneke, Neno Amurie (Disaster Risk Science and Development)

Bobo, Vimbai (Monitoring and Evaluation Methods) Brown, Lizhan Trizelle (Monitoring and Evaluation Methods)

Chiota, Laura Vongai (Monitoring and Evaluation Methods) Colborne, Meryl-Lynne (Monitoring and Evaluation Methods) (cum laude) Cwayi, Siphumeze (Monitoring and Evaluation Methods) Diza, Rose (Monitoring and Evaluation Methods) Honeycomb, Neil (Monitoring and Evaluation Methods) (cum laude) Joseph, Cameron Albert (Applied Ethics) (cum laude) Khosa, Maambele Reginah (Science and Technology Studies) Leslie, Timothy David (Monitoring and Evaluation Methods) Mahalelo, Rebanyana Meme (Information and Knowledge Management) (cum laude) Manyuru, Georgina Angela (Monitoring and Evaluation Methods) Maritz, Magdalena Susanna (Science and Technology Studies) (cum laude) Mhlongo, Ntombizethu Hlobisile (Monitoring and **Evaluation Methods**) Mose, Yolanda (Monitoring and Evaluation Methods) Mothupi, Natefo Tsholanang (Monitoring and Evaluation Methods) Mpala, Ceridwen Sandy (Monitoring and Evaluation Methods) (cum laude) Mphahlele, Kamogelo Maditsi (Monitoring and Evaluation Methods) Muchara, Binganidzo (Monitoring and Evaluation Methods) Mulasikwanda, Mutafela Kawana (Monitoring and **Evaluation Methods**) Munyayi, Rennie (Monitoring and Evaluation Methods) Muridzo, Phillemon Dudzai (Monitoring and Evaluation Methods) (cum laude) Mvalo, Makhwenkwe George (Science and Technology Studies) Nyoni, Lindiwe Judith (Science and Technology Studies) Sithole, Zanele (Monitoring and Evaluation Methods) Sono, Tshimologo Topo (Information and Knowledge Management) Thimende, Samuel Thinyemba (Monitoring and **Evaluation Methods**) Tizora, Rumbidza Evelyn Eniah (Monitoring and **Evaluation Methods**) Ushe, Tafara (Transdisciplinary Health and Development Studies)

#### Master of Urban and Regional Planning Magister in Stads- en Streeksbeplanning

Daniels, Ryan Shaun (Urban and Regional Planning) *(cum laude)* 

Gazi, Nontuthuzelo Jacqueline (Urban and Regional Planning)

Libunyu, Edzani (Urban and Regional Planning) Malebo, Edgardale Tumelo (Urban and Regional Planning) Skipp, Kayla (Urban and Regional Planning)

#### Bachelor of Arts Honours Honneurs-Baccalaureus in die Lettere en Wysbegeerte

Backman-Daniels, Abigail Iris (Philosophy) (cum laude) Daiber, Toma (Philosophy) De Freitas, Alexia Julia (Social Anthropology) Nkgudi, Lebogang Valencia (Geography and Environmental Studies) Nkosi, Sihle (Psychology) Schwegmann, Tayla Ann (Political Science) (cum laude) Sidube, Ntombizanele Arbiter (History) Swart, Phillip Bernard Marais (Philosophy) Van Zijl, Berno (Philosophy) (cum laude) Visser, Chrislea (Social Anthropology)

#### Bachelor of Informatics Honours Honneurs Baccalaureus in Informatika

Carsten, Lise Mari

#### Postgraduate Diploma in Research Management and Administration Nagraadse Diploma in Navorsingsbestuur en Administrasie

Isaacs, Moegamat Omar Matlawe, Malesela Alfred Rossouw, Izel Maryka Smith, Anelisa

#### Postgraduate Diploma in Knowledge and Information Systems Management Nagraadse Diploma in Kennis- en Inligtingstelselbestuur

Amakali, Frans Tulinanye Mekondjo Matsumunyane, Molupe Andreas Monnaakhuti, Gothusang Motupu, Kenanalo Tame, Mzoxolo Maxwell Zilwa, Reuben Motshwari

#### Postgraduate Diploma in Monitoring and Evaluation Nagraadse Diploma in Monitering en Evaluering

Domela, Semangele Islam, Amne Hamid Kamanyane, Kentse Didintle Kelembe, Magnificent Sibongile Langa, Patricia Mabela, Mashudu Mary Maboeane, Serau David Mamatsharaga, Mulanda Mavunganidze, Zira Mavunganidze Mmolotsane, Obakeng Gift Mokitimi, Ntlisi Masetei Mundoza, Nomthadazo Neethling, Jeanette Erika (cum laude) Njongo, Thandokuhle Mholi Ntoi, Makhongoana Esther Ntsonyana, Memory Matseko Ofei, Sibongile (cum laude) Ramoeletsi, Thato Clement Schael, Denise Marie Simelane, Celenkosini Hopewell Tsehlana, Lisebo Zeka, Flora Nomantombazana Zibengwa, Enock

#### Bachelor of Arts Baccalaureus in die Lettere en Wysbegeerte

Abrahams, Ubaid Alexander, Chad Allchin, Luc Thomas Baba, Latoya Thembisa Barbier, Michaela Barnard, Armand Daniel Bartis, Maximillion Edward Bartlett, Timothy James Baxter, Chad Brady Baylis, Jaimee Elizabeth Becker, Frederick Berry, Kayla Bester, Zanei Blythe, Daniela Christine Bonnema, Dirk Anthony Boshoff, Ethan Robert Bowman, Patrick Brink. Emma Broomhall, Leila Francesca Brune, Megan Burnett, Sarah-Lee Cele. Quasarmod Amanda Chinamora, Russell Tinashe Coetzer. Jacob Jordan Davie, Tayler Nicola De Lange, Mario Dhlamini, Wandile Innocent Di Pietro, Gabriella Dickson, Chante Donnell, Catherine Emily Dyosi, Lilitha Inga Esterhuizen, Sarah Catherine Farguhar, Jordan Ross Feni, Asiphe Nicholas Fester. Jade Fowler, Olivia Ann Frahm. Nicolas Derek Gleeson, Nicholas Patrick Gordon, Tiffanv Gresse, Twané Groenewald, Danéle Gumede, Bayanda Mykyla Sizakele Hall. Erin Haller. Tristan Hanzen, Morne Hass. Katia Alexandra Holton, Jocelyn Phoebe

Innes, Gabriella Cachelle Mary Jamba, Sinokuhle Jasper, Britney Amore Jeffery, Chelsea Jillian Jones, Luke Fenton Keet, Cara Eugenie Kotze, Mianco Lamont, Lucinda Alexandra Ledwaba, Makhado Lindstrom, Amy Lombaard, Wilna Louw, Lindiwe Charmaine Maartens, Zannerie Majiet, Raheeq Majova, Zonke Maritz, Tyrone Farren Maseko, Sbonelo Massvn. Ross Matthews, James Ivan Mhlabeni, Awonke Middleton, Kelly Mizrahi, Adam Jacob Mkhize, Asemahle Sphesihle Nothando Mouton, Jeanne Alexandra Moyo, Idayi Vuyelwa Mutenda, Tariro Lebogang Ndebele, Bernice Kwandokuhle Nel. Lilian Ngubelanga, Lindelwa Babalwa Ngxikwe, Thandile Oosthuizen, Neena Parker, Jodie Pentz. Mila Pistorius, Hayley Kerry Prins, Karla Rabie, Kayleigh Jenna Relling, Liam Reygaard, Walida Blanche Revnolds, Josie Anne Richter, Jenna Colinette Roberts, Emma Inger Roberts, Georgia Rodrigues, Dario Daniel Roux, Shanae Smit, Carleigh-René Smit, Thomas Calldo Smythe, Clyde Hendley Snyder, Arron Leslie Sonti, Qhama Stadler, Karla Marianne Sullivan, Tyla Theron, Révin Samantha Thompson, Kelly Katherine Truter, Jared Van der Heyde, Joshua Carl Van Drimmelen, Katharina Tanya Van Loggerenberg, Kayla Van Niekerk, Joseph Verhoog, Behfinney Cohllene Von Weichardt. Beth Linda Welman, Alissa Whitton, Anna Marlene Norma

Wilhelm, Renee Williams, Nina Nicola Willie, Sanelisiwe Wilson, Enrique Cecil Edridge Winter, Yani forward together sonke siya phambili saam vorentoe



### Faculty of Arts and Social Sciences (Group 2) 25 March 2024 | 17:00

### Fakulteit Lettere en Sosiale Wetenskappe (Groep 2)

25 Maart 2024 | 17:00

### Programme

Please stand	1.	Entrance of academic procession into the hall.
Please stand	2.	Playing of the National Anthem.
Please sit	З.	Congregation formally constituted by the Vice-Chancellor.
	4.	Welcome by the Vice-Chancellor.
	5.	Presentation of candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Vice-Chancellor.
	6.	Closing by the Vice-Chancellor.
Please stand	7.	The academic procession leaves the stage.

### Program

Staan asseblief	1.	Akademiese prosessie kom die saal binne.
Staan asseblief	2.	Speel van die Nasionale volkslied.
Sit asseblief	З.	Formele konstituering deur die Visekanselier.
	4.	Verwelkoming deur die Visekanselier.
	5.	Voorstelling van kandidate wat kwalifikasies ontvang deur die dekaan van die fakulteit en toekenning van kwalifikasies deur die Visekanselier.
	6.	Sluiting deur die Visekanselier.
Staan asseblief	7.	Akademiese prosessie verlaat die verhoog.

### Faculty of Arts and Social Sciences (Group 2) Fakulteit Lettere en Sosiale Wetenskappe (Groep 2)

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

#### DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

#### DE VILLIERS, Stephanie (English Studies)

### Madness and gender in contemporary diasporic life writing and fiction

This study presents a theoretical triangulation of gender, migration and diaspora in relation to a literary critical reading of how madness is portrayed in two contemporary life writing texts and four novels that map diasporic journeys from Nigeria, Iran, South Korea and China, encompassing the variables of migration and emigration. It examines the authors' experiments with metaphor, language and form to convey the fractured interior worlds of the protagonists and their embodied, gendered experiences of mental distress caused by an overwhelming sense of displacement and alienation, which disrupts their own and their families' lives.

Supervisor: Dr J Ellis

DIAGO, Niccoh (Social Work)

### The rights of child-headed households to care and protection: reflections of role players on social service delivery

This study explores role-players' reflections on delivering social services to uphold the rights of children in child-headed households to care and protection. Data is collected from social workers and their managers. Findings reveal that child-headed households cannot be regarded as a protective measure, as they are often not in children's best interest, and many such children's rights are infringed upon. Current legislation must be revised for children living in child-headed households to be considered children in need of care and protection, as per section 150(1) of South Africa's Children's Act.

Supervisor: Dr M Strydom

DUBE, Nhlanhla (English Studies)

# The city that billows smoke: a spatial reading of Bulawayo in prose fiction

This study engages the fictions of the Zimbabwean city Bulawayo, specifically after the country's 'lost decade' of the 1990s. Bulawayo literatures of the 2000s and onwards demonstrate the uniqueness of their historical and geographical location. By reading literary depictions of recent and presentday Bulawayo, the study explores how literature both reflects and shapes urban space. It argues that attentiveness to the material and representational particularities of cities enables nuanced readings of African urbanisms, and that Bulawayo, a city that has been all too often marginalised, has a vital role to play in Zimbabwean life and literature.

Supervisor: Dr ME Jones Co-supervisor: Dr NJ Bangeni

#### FERREIRA, Natasha (Ancient Languages)

## Euripides and the poetics of victimhood: an analysis of *Hecuba* and *Troades*

This study investigates the poetics of victimhood in Euripides' *Hecuba* and *Trojan Women*. Employing insights from victimology, it explores how the plays manage to portray characters that would plausibly elicit acknowledgment of their claims to victimhood. It is proposed that epithets of misery are used to signal claims of undeserved suffering. The *Hecuba* foregrounds the main character's victimhood in both suffering and avenging modes, warning the ancient audience against neglecting their values. The *Trojan Women*, on the other hand, presents the despair of the vanquished and the ineffectiveness of rational argument, placing the burden of recognising unjust suffering on the audience themselves.

Supervisor: Prof PR Bosman

# A cognitive linguistics model for New Testament discourse analysis and its application to selected Lukan parables

This study offers a critical discussion – with illustrative application to passages from the Gospel of Luke – of historical and current approaches to discourse analysis in studies of the Greek New Testament to obtain a comprehensive understanding of the discourse analysis enterprise. It then presents a cognitive model for discourse analysis based on recent developments in linguistics and illustrates the value of this approach by applying it to the same corpus. The research demonstrates the unique contribution to understanding discourse offered by each approach, and advocates for comprehensiveness in discourse analysis as a scientific endeavour in the study of ancient Greek texts.

Supervisor: Prof PR Bosman

FRAZIER, Jeffrey Brent (Lexicography)

#### A corpus-based theory and lexicographic process for the inclusion of neologisms, archaisms and foreign loanwords in lexicons of Q'eqchi' Mayan

Minority languages often have an acute need for the natural processes of lexicogenesis to be supplemented with programmes of planned neology to supply these languages with the vocabulary necessary to function in the modern world. This study formulates a lexicographic model for the systematic inclusion, exclusion and qualification of a variety of lexical items, with a focus on neologisms, archaisms and loanwords in Q'eqchi', a member of the Mayan language family. It illustrates how principles of cognitive linguistics and lexicographic theory can be used to produce better lexicographic data and an improved lexicographic process to advance indigenous language lexicography.

Supervisor: Prof RH Gouws

GOLLOM, Ingrid (Music)

#### South African concert pianists: an overview, 1900–1989

This study provides an overview of the history of the South African piano concert tradition from its beginnings in the colonial era up to the country's transition to democracy. Based on meticulous and critical examination of the available source material, it is the first major study of performing musicians and music performance to have been conducted in South Africa and fills an important gap in our music historiography. As such, it breaks new ground and will serve as a model for all subsequent studies of this kind.

Supervisor: Prof W Lüdemann

#### HUMAN, Melanie (Social Work )

#### A biopsychosocial perspective on social work intervention to address emotional poverty of older persons in residential facilities

Older persons often experience emotional poverty, a condition where a person lacks the basic needs for a minimum standard of wellbeing. Through interviews with older persons and social workers, this study explores how emotional poverty in older persons in residential facilities can be addressed from a biopsychosocial perspective. Findings indicate that most older persons in residential facilities experience emotional poverty. The research also confirms that social workers play a vital part in enhancing the wellbeing of older persons, and that their important role in service rendering to older persons should not be underestimated.

Supervisor: Dr I Slabbert

#### MEIRING, Jacoba Johanna (Visual Arts)

#### Re-imagining learning and teaching art: exploring embodied mark-making with Foundation Phase student teachers at Cape Peninsula University of Technology

Prescriptive methodologies – where outcomes are regarded as more important than process – are generally normalised in Foundation Phase Visual Art classrooms. This research implements embodied arts-based practices in the curriculum of student teachers to disrupt the product–process divide in Foundation Phase Visual Art education. Findings indicate that prescriptive methodologies may be addressed by shifting the focus away from the assessment of content, skills and aesthetics, to including sensory intelligence in terms of how student teachers relate to content in full body– mind awareness. A conceptual framework is developed to facilitate the incorporation of embodied arts-based praxis in art education curricula.

Supervisor: Prof E Costandius Co-supervisor: Dr K Perold-Bull

#### OCHOTI, Fred Orina (Journalism)

#### Kenya print media performance and the social construction of identity: Raila Odinga in the *Nation* and *The Standard* newspapers (1997–2017)

This study examines the discursive construction of a prominent politician, Raila Odinga, in two newspapers over two decades to indicate the performance of Kenya print media in the consolidation of democracy. Drawing on cultural studies, discourse theory and critical political economy theory, the research focuses on how the newspapers positioned themselves in relation to Odinga's shifting political stances on ethnicity, political connectedness and media ownership. Through critical discourse analysis and interviews, the study finds that as Odinga shifted political formations and held different positions, the newspaper discourses about him intersected and, at other times, diverged with different interests.

Supervisor: Prof GJ Botma

# Reconfiguring motherhood: maternal temporality in the work of four South African visual artists

This study examines how four South African women artists visually frame motherhood by reconceptualising maternal subjectivity through their own experiences of pregnancy, birth and mothering. It explores the maternal body's ability to disrupt conventional experiences of time through confrontations with unpredictable, distressing or even violent corporeal encounters that unravel the constancy and stability of linear, sequential temporality, thus exposing the asynchronous embodied experiences of maternal subjects. The artworks investigated in the study resituate the morphology of the maternal subject and offer politically inflected polytemporal accounts of mothering that affirm the complexities of maternal becoming.

*Supervisor:* Prof L van Robbroeck *Co-supervisor:* Prof S Viljoen

STRUWIG, Mieke (Music)

# An intellectual history of institutionalised music studies in South Africa

This study provides the first history of institutionalised musical thought in South Africa by mapping the music departments, journals, societies, protagonists and significant scholarly initiatives formative of South African musical thought in the 20<sup>th</sup> century. What emerges is a disciplinarity of musical thought with its foundations in practical tuition and European aesthetic ideals, which over time sought legitimacy as an irrevocably South African intellectual project. That project reflected the patterns and limitations of a scholarly and intellectual agenda developed under the epistemological violences of colonialism and apartheid, even as it began to theorise ways out of these impasses in the 1980s.

Supervisor: Dr C Venter

### Faculty of Arts and Social Sciences (Group 2) Fakulteit Lettere en Sosiale Wetenskappe (Groep 2)

#### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

#### Master of Arts Magister in die Lettere en Wysbegeerte

Arries, Levern Althea (General Linguistics) Botes, Christan Nancy (English Studies) Chisoko, Shilika (English Studies) (cum laude) Coetsee, Carmen (General Linguistics) (cum laude) Coetzee, Akira (Ancient Cultures) Cross, Dominique Ann (Ancient Cultures) Cullen, Sarah (General Linguistics) De Wee, Nicolene Catherine De Wee (Journalism) Du Toit, Simone (General Linguistics) (cum laude) Gallie, Tamsyn Keisha (General Linguistics) George, Nonzwakazi (African Languages) Goedhart, Jeani Margje (Ancient Cultures) (cum laude) Gouws, Monig Esti (Drama and Theatre Studies) Griffiths, Marelize (Ancient Cultures) Hathorn, Mieke (Intercultural Communication) Hlatshwayo, Ruby Phindile (African Languages) Kamper, Femia (Ancient Cultures) Mbingo, Seluliwe Felicia (English Studies) Meads, Carolyn (Translation) (cum laude) Meyer, Iola Elizabeth (Intercultural Communication) (cum laude) Ngumbela, Unathi (General Linguistics) O'Connor, Peter Eduard (Ancient Cultures) Perold, Jana (Visual Studies) (cum laude) Pinyana, Ndlelantle (Journalism) Rousseau, Jo-Anne (General Linguistics) Sogiba, Asiphe (Translation) Stassen, Heidie (Ancient Cultures) Swart, Mareli (Translation) (cum laude) Troost, Josephine Jay (English Studies) (cum laude)

#### Master of Social Work Magister in Maatskaplike Werk

Andrews, Lynn Shanon Burger, Jessica Catherine Collins, Fredlien Litiesha Muller, Wendy Johanelene *(cum laude)* Nel, Tamsin Leigh Songore, Irene Shumirai *(cum laude)* 

#### Master of Music Magister in die Musiek

De Jager, Jacobus Josephus (*cum laude*) Engelbrecht, Johan Cornèl (*cum laude*) Geldenhuys, Lara (*cum laude*) Heath, Lyudmyla Malan, Eon (*cum laude*) Reyneke, Amalia (*cum laude*) Segal, Sandra Renecia Steingaszner, Severian Geza Stevens, Joshua Van Niekerk, Karla *(cum laude)* 

#### Master of Arts in Visual Arts Magister in die Lettere en Wysbegeerte in Visuele Kunste

Brincat, Aldo *(cum laude)* Chowney, Zoë Alexandra De la Rey, Adriaan *(cum laude)* Dreyer, Jordyn Ashley *(cum laude)* Kehle, Chiedza Henrietta Khan, Mariambibi *(cum laude)* Weetman, Tamara Anne *(cum laude)* 

#### Bachelor of Arts Honours Honneurs-Baccalaureus in die Lettere en Wysbegeerte

Adams, Jodi-Mari (Journalism) Andrew, Charlton Clive (Afrikaans and Dutch) Backman-Daniels, Abigail Iris (Ancient Cultures) (cum laude) Bailey, Keziah Monisha (Journalism) Barnard, Marlé-Zanne (Afrikaans and Dutch) (cum laude) Benjamin, Cameron (Afrikaans and Dutch) Botha, Tasmin Leigh (Visual Studies) Bracken, Joseph Evan (Journalism) Cloete, Amy Kayleen (Journalism) Cooper, Dylan (Chinese) Cox, Jordan Linette (Chinese) (cum laude) Cox, Samantha (Chinese) (cum laude) Daniels, Thameenah (Journalism) De Villiers, Jan-Hendrik Theuns (Journalism) Engelbrecht, Simone (Translation) Esau, Farranique Daniellë (Drama and Theatre Studies) Fouche, Martha-Mila (Ancient Cultures) Frieslaar, Greta Kari (Chinese) (cum laude) Grauso, Elsabe (Translation) Grobbelaar, Michelle Rene (Journalism) Hatch, Benjamin Ryan (Ancient Cultures) Heyns, Janie Nicole (Visual Studies) Holing, Jess (Journalism) (cum laude) Kemp, D'angelo Xavier (Afrikaans and Dutch) Kincaid, Talia Jade (Journalism) (cum laude) Kirk, Kaela Stephanie (Chinese) (cum laude) Laskey, Linda Maude (Translation) Lewis, Claudia Whanita (Afrikaans and Dutch) Meyer, Jacoba Wilhelmina (Afrikaans and Dutch) Minnie, Stephanus Benjamin (Ancient Cultures) Ndlela, Nika (African Languages) Ngamlana, Lukhanyo (African Languages) (cum laude) Paulus, Sebastian Phillip (Journalism) Peterson, Sibahle (African Languages)

Petzer, Skye Breeze (Chinese) (cum laude) Pieters, Liza-May (Journalism) Plaatjies, Donique (Afrikaans and Dutch) Roodt, Daniel (Journalism) (cum laude) Scott, Genna Leigh (Visual Studies) (cum laude) Smallberg, Antonia Elizabeth (Ancient Languages) (cum laude) Solomon, Emma Jeanne (Journalism) Stander, Simone Isabeau (Visual Studies) Strumpher, Simone (Afrikaans and Dutch) Terblanche, Stefani (Journalism) Theron, Andries Johan Le Roux (Drama and Theatre Studies) Theron, Hannah Mary (Journalism) Thompson, Lisa (Visual Studies) Van der Merwe, Kara (Journalism) Van Heerden, Naomi Corné (Afrikaans and Dutch) Van Helsdingen, Anri (Journalism) Venter, Xia Monique (Ancient Cultures) Voorma, Liam (Journalism) Wiid, Karmen (English Studies) (cum laude) Zaranyika, Tapiwanashe (Journalism)

#### Bachelor of Music Honours Honneurs-Baccalaureus in die Musiek

Beukes, Joane (cum laude) Chung, Sung Jun Jaftha, Liam (cum laude) Kenned, Darryn Kruger, Micha'ell Petrus (cum laude) Nel, Bianca Anna-Marie Thompson, Karen Yvonne Tokota, Likhona (cum laude)

#### Bachelor of Arts Honours in Visual Arts Illustration Honneurs-Baccalaureus in die Lettere en Wysbegeerte in Visuele Kunste Illustrasie

Du Toit, Helaina Green, Ashleigh Dawn Jordaan, Micaela Kaitlyn *(cum laude)* Marshall, Emma Rose *(cum laude)* Mostert, Wessel Steyl, Andrea *(cum laude)* Wentzel, Janna

#### Post Graduate Diploma in Music Technology Nagraadse Diploma in Musiektegnologie

Everson, Gerainn Joseph Aubrey

#### Bachelor of Arts Baccalaureus in die Lettere en Wysbegeerte

Adams, Carnia Layla Arnolds, Aaishah Ashbury, Imaan Bestelink, Graham Brink, Maria Brown, Cavill Candice Bruce, Catherine Anne Burnell, Tristan Daniel Butler, Caroline Alice Cloete, Henrietta Jacolene Coetzee, Raeecha Janap Coleman, Rachel Denise Cotterrell, Amy Jillian Dauncey, Havana (cum laude) De Bruyn, Tayla De Haas, Hannah Eva De Lange, Lane Februarie, Roceshia Joanne Lihle Fisk, Chloe Sophie-Mae Gaskin, Carla Shannon Gossayn, Salimé Adri Greeff, Chane Jacobs, Alyssa Vianca Jarvie, Olivia Jane Kelly, Alexandra Jade Klass. Aiden Maurice Koekemoer, Sunè-Mari Loxton, Bronwyn Jenevive Malan, Andri Mdeli, Sibongile Nelani, Lusanele Richards, Anni Hildrene Roux, Courtney Nicola Schwarze, Kai Anton Jorg Sparks, Andrew James Walsh Steinhobel, Kaylin Ray Steyn, Carla Van der Merwe, Mieke Venter, Inge Eunice Waterboer, Adri-Jo Waterboer Wyeth, Megan Kaylynn

#### Bachelor of Social Work Baccalaureus in Maatskaplike Werk

Augustine, Chelsea Amber Botha, Theunis Daniel Hendriks, Chaleeta Mazeen Wessels, Deidré

#### Bachelor of Music Baccalaureus in die Musiek

Botes, Dawid Schalk

#### Diploma in Practical Music Diploma in Praktiese Musiek

George, Zico Joshua John

**Higher Certificate in Music Hoër Sertifikaat in Musiek** De Jager, Larize Rosalie forward together sonke siya phambili saam vorentoe



### Faculty of Medicine and Health Sciences

26 March 2024 | 09:00

### Fakulteit Geneeskunde en Gesondheidswetenskappe

26 Maart 2024 | 09:00

### Programme

Please stand	1.	Entrance of academic procession into the hall.
Please stand	2.	Playing of the National Anthem.
Please sit	З.	Congregation formally constituted by the Chancellor.
	4.	Welcome by the Chancellor.
	5.	Presentation of candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Chancellor.
	6.	Closing by the Chancellor.
Please stand	7.	The academic procession leaves the stage

### Program

Staan asseblief	1.	Akademiese prosessie kom die saal binne.
Staan asseblief	2.	Speel van die Nasionale volkslied.
Sit asseblief	З.	Formele konstituering deur die Kanselier.
	4.	Verwelkoming deur die Kanselier.
	5.	Voorstelling van kandidate wat kwalifikasies ontvang deur die dekaan van die fakulteit en toekenning van kwalifikasies deur die Kanselier.
	6.	Sluiting deur die Kanselier.
Staan asseblief	7.	Akademiese prosessie verlaat die verhoog.

### Faculty of Medicine and Health Sciences Fakulteit Geneeskunde en Gesondheidswetenskappe

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

#### DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

AGYEI, Frank Bediako (Nursing Science)

# Parent-Adolescent sexual and reproductive health information communication in Ghana

Following a systematic review, two published articles and two submitted articles, this study offers evidence of the value of parent–adolescent sexual and reproductive health information communication (SRH IC) interventions. It also explores SRH IC interventions that motivate adolescents and parents to effectively communicate in low-to-middle-income countries. It emerges that when parents and adolescents have appropriate SRH information and communication skills, and are motivated, adolescents will engage in the appropriate behaviour to navigate the complexities of the adolescent period. Consequently, the SRH IC intervention called Daraja is adapted into the culturally sensitive intervention **&**twene for implementation in the Ghanaian context.

*Supervisor:* Prof DKM Kaura *Co-supervisor:* Dr J Bell

ARNOLD, Sarah Leigh (Sport Science)

### A biomechanically informed approach to rehabilitation of unilateral transtibial amputees

This study investigates a biomechanically informed rehabilitation approach for unilateral transtibial amputees, aiming to enhance their functional outcomes and overall quality of life. The research explores personal experiences, rehabilitation methods employed by healthcare professionals and muscle synergy to understand coordinated muscle activation during specific movements. Combining questionnaire results and biomechanical evaluations, the study reveals amputees' challenges and identifies recommended exercises. Results show significant differences in balance conditions and muscle activation on the individual's affected and unaffected sides. This emphasises the potential for tailored rehabilitation programmes to optimise exercise outcomes, improve wellbeing and elevate quality of life for those with limb loss.

*Supervisor:* Prof RE Venter *Co-supervisors:* Drs L Grobler, L-A Furlong (external) CHARUMBIRA, Maria Yvonne (Physiotherapy)

#### Towards strengthening of rehabilitation at primary care: exploring the needs and perspectives regarding rehabilitation services in two South African and Zimbabwean settings

This study explores the type and impact of functioning problems in adults, the associated rehabilitation service needs, and practices that may strengthen primary care rehabilitation in low-resource settings. Three studies are conducted, employing different methodologies. Findings show that patients attending primary healthcare in South Africa and Zimbabwe have a high but under-recognised need for rehabilitation. The primary healthcare system falls short in its ability to identify, manage and support the rehabilitation needs of people with functioning problems. Achieving transformation in primary care rehabilitation in these countries will require an all-sector and whole-ofsociety approach.

Supervisor: Prof Q Louw Co-supervisor: Dr K Berner

DE VOS, Corné (Paediatrics)

# A bio-psycho-social follow-up model for children born with oesophageal atresia

This study underscores the importance of a comprehensive biopsychosocial follow-up model for patients born with oesophageal atresia (OA). Long-term clinical follow-up is as important as neonatal perioperative outcomes. The research highlights the need for a comprehensive feeding history, nutritional status check, examination for gastrointestinal and respiratory symptoms as well as a complete clinical examination. Previously neglected psychosocial factors, including assessment of the patient's quality of life and parents' emotional wellbeing, should also be incorporated. OA-specific support groups play a vital role in the emotional wellbeing of families affected by this disease and should be integrated into the multidisciplinary team.

*Supervisor:* Prof P Goussard *Co-supervisors:* Profs D Sidler, L van Wyk

#### DWYER-LEONARD, Rebecca Ann (Molecular Biology)

#### The application of immunological biomarkers and enhanced pathogen detection for the epidemiological characterisation of bovine tuberculosis in African rhinoceros

This research improves our understanding of the epidemiology of *Mycobacterium bovis* infection in African rhinoceros. The study includes a literature review and determination of prevalence and risk factors for *M. bovis* infection in the Kruger National Park rhinoceros population. Additional experiments are performed to assess the impact of field conditions on blood-based assays. Direct detection of mycobacteria in nasal swabs from rhinoceros is used to assess potential infectiousness. The findings contribute new knowledge on significant pathogens affecting the health and conservation of African rhinoceros and serve as a basis for future management strategies.

Supervisor: Prof MA Miller Co-supervisors: Drs WJ Goosen, C Witte

HANSEN, Anthea Kay (Health Professions Education)

#### A student perspective on social responsiveness within undergraduate medical education: an exploratory case study in a South African higher education institution

This study makes a significant contribution to knowledge through its deep insights into what is needed to anchor social justice within medical curricula. The study is positioned within the field of Health Professions Education and focuses specifically on the understandings and experiences of undergraduate medical students regarding what, within their MBChB curriculum, influenced them to become socially responsive. The research foregrounds the importance of the relationship between the educator and the student and makes a telling contribution to scholarship within HPE by offering insights, from a student perspective, to inform curriculum development, renewal and implementation. The study further offers a theoretical framework for socially responsive curricula, as well as insights into the identified knowledge gap in relation to implementing social justice principles in medical curricula.

Supervisor: Prof C Jacobs Co-supervisor: Prof S van Schalkwyk HUSSAN, Raeesa Hoosen (Molecular Biology)

#### Investigation of the antimycobacterial activity of fungal endophytes and their magnetic dendrimer-stabilised nanoparticles against mycobacteria

This study investigates the fungal endophyte metabolites on magnetic dendrimer-stabilised nanoparticles (DSNPs) for antimycobacterial activity. Fungal isolates from fynbos families are tested against *Mycobacterium tuberculosis* and *Mycobacterium smegmatis*. Specific metabolites, notably from *Penicillium* and *Cadophora* species, show antimycobacterial properties. DSNPs inhibit Msmeg mc2155 and Mtb H37Rv, while functionalisation with metabolites enhances intracellular activity. The properties of the nanoparticles significantly influence their antimycobacterial effects, suggesting the potential for modifying nanoparticles to improve antimycobacterial outcomes.

Supervisor: Prof V Mavumengwana Co-supervisors: Prof A Loxton, Dr R Malgas-Enus

KEMP, Freda (Sportwetenskap)

#### Posisiespesifieke aktiwiteitsprofiele van hoëvlak- Suid-Afrikaanse netbalspelers tydens oefening en wedstryde

Netbal is deesdae 'n fisies veeleisende sport wat uiteenlopende eise stel aan spelers in verskillende posisies. Na onlangse professionalisering is die eise van mededingende netbal selfs hoër, maar literatuur oor die aktiwiteitsprofiele van spelers gedurende wedstryde en oefensessies is beperk. Hierdie studie onderneem 'n omvattende ondersoek na posisiespesifieke aktiwiteitsprofiele gedurende wedstryde deur data van spelers by internasionale en nasionale kompetisies te versamel. Drie spesifieke spelergroeperings word op grond van spesifieke parameters uitgewys. Hoër eise word aan internasionale spelers gestel, veral wat spelerlading betref. Resultate kan tot optimale seisoenvoorbereiding en oefeninge bydra, wat spelers se prestasie kan verbeter en beseringsrisiko kan verlaag.

Promotor: Prof RE Venter

#### KITCHIN, Natasha (Psychiatry)

# Insights into foetal alcohol spectrum disorder (FASD): the role of the microbiome

South Africa has the highest prevalence of foetal alcohol spectrum disorders (FASD) worldwide. This study is the first to investigate the association between alcohol use and the gut microbiome during pregnancy, and between the maternal and infant gut microbiome and the development of FASD. It is also the first to investigate the role that the vaginal microbiome plays in the development of FASD. Relative abundances of certain maternal and infant gut microbial taxa were found to be associated with infant FASD diagnosis. Identifying the underlying microbial mechanisms contributing to the aetiology and course of FASD may guide future therapeutic interventions.

Supervisor: Prof SMJ Hemmings Co-supervisors: Prof S Seedat, Dr J Womersley

#### Infectiousness of TB patients and factors associated with the airborne survival of *Mycobacterium tuberculosis*: Tuberculosis Infectiousness and TrANsmission (TITAN)

This study addresses knowledge gaps relating to tuberculosis (TB) disease caused by *Mycobacterium tuberculosis* (Mtb). It investigates the effectiveness of different face coverings in reducing infectious Mtb aerosols in TB patients and finds that both conventional and non-conventional face coverings are effective. The study challenges the assumption that non-coughing patients are non-infectious, revealing that breathing produces infectious aerosols. It also provides evidence that anti-TB drugs reduce infectiousness after two weeks of treatment. In addition, a novel Sampler for In Vitro Aerosol (SIVA) is introduced to improve our understanding of Mtb aerobiology, marking a significant advancement in the field

*Supervisor:* Prof GDV Theron *Co-supervisors:* Drs R Venter, H Mishra

MASIYE, Francis Damiano (Clinical and Research Ethics)

#### Stakeholder views on current policies on consent and future use of biological samples and data collected in biomedical studies in Malawi and South Africa

Recent developments such as genomic research have introduced new ethical issues regarding informed consent in low-income and middle-income countries, especially the use of broad consent for the collection and future use of biological samples and data. This study explores the views of key stakeholders in Malawi and South Africa on different informed consent models, their opinions on future use of samples and data, and related policy positions. The research reveals that most participants in Malawi and South Africa prefer non-specific forms of consent (broad or tiered consent) in the collection of biological samples and data for future research.

Supervisor: Prof S Rennie (external) Co-supervisors: Profs K Moodley, W Jaoko (external) MOTADI, Selekane Ananias (Nutritional Sciences)

# Efficacy of consumption of *Cucurbita moschata* (butternut) seed paste in improving zinc and iron status in preschool children

Following a multiple-method approach, this research examines *Cucurbita moschata* seeds for their efficacy in improving zinc and iron status in preschool children in South Africa. The feeding trial, which was done over six months, reveals that the addition of the seeds to the diets of young children has a positive effect on the children's weight-for-age and weight-for-height. It also improves their nutrition status in terms of enhanced levels of serum iron, transferrin saturation, ferritin and zinc. The inclusion of seeds in the diets of rural children could be a cost-effective and sustainable approach to improve micronutrient and health status.

Supervisor: Prof XG Mbhenyane Co-supervisor: Prof J Freeland-Graves (external)

MULAKU, Mercy Namuma (Public Health)

### Pre-treatment loss to follow-up in adults with pulmonary tuberculosis in Kenya: contributing factors and evidencebased interventions

Pre-treatment loss to follow-up is one of the factors that has been shown to contribute substantially to patient losses in the tuberculosis care cascade, with subsequent high community transmission and mortality rates. Using evidence synthesis and primary studies, this research assesses the scope of pre-treatment loss to follow-up in adults with pulmonary tuberculosis in Kenya, as well as factors and strategies to reduce it. A high proportion of adults with pulmonary tuberculosis experienced pre-treatment loss to follow-up with factors related to the patients, healthcare workers and healthcare system contributing to it. Intervention strategies call for using people-centred approaches.

Supervisor: Prof TN Young Co-supervisors: Prof E Ochodo, Dr KR Steingart (external) MUNANSANGU, Brian Simapulasi Moono (Molecular Biology)

### Immune metabolic profile of innate and adaptive cells in *Mycobacterium tuberculosis* infection

This study evaluates selected metabolic parameters relating to innate and adaptive immune cell subsets from the blood and bronchoalveolar lavage (BAL) of individuals with various clinical outcomes following *Mycobacterium tuberculosis* (Mtb) exposure. Results show that myeloid-derived suppressor cells (MDSC) and CD14 monocytes from patients with active tuberculosis (TB) disease are glycolytic. When challenged with virulent Mtb, however, they switch to utilise mitochondrial oxidative-phosphorylation and engage in fatty-acid oxidation, depending on substrate availability. Levels of several MDSCrelated soluble immunometabolic mediators decrease in both serum and BAL only after completion of standard treatment. Targeting the metabolic activity of immune cells is a promising adjunct TB treatment strategy.

Supervisor: Prof N du Plessis-Burger Co-supervisors: Profs CP Kenyon, AG Loxton

#### NDLANGALAVU, Gcobisa (Molecular Biology)

#### Diagnostic accuracy of novel sputum and non-sputumbased tuberculosis diagnostics in HIV-positive patients initiating anti-retroviral therapy

Diagnosing tuberculosis, the single biggest infectious cause of death in the world, is challenging, especially in high-risk people with early-stage disease, such as people newly diagnosed with HIV who are initiating antiretroviral therapy. This study addresses key knowledge gaps by evaluating different tuberculosis tests using sputum and minimally invasive non-sputum specimens. Results show that pointof-care blood-based C-reactive protein testing is feasible and a better triage than the World Health Organisation's recommended four-symptom screen. These findings contribute to global guidelines for improving tuberculosis testing in people living with HIV.

*Supervisor:* Prof GDV Theron *Co-supervisor:* Dr BWP Reeve

**OMRAWO**, Charlene (Psychiatry)

### Personality and problematic usage of the internet (PUI), with reference to impulsivity and compulsivity

Rates of problematic usage of the internet (PUI) are rapidly increasing, and are of global concern. This study identifies risk and protective factors that may be useful in PUI prevention. Using the Big Five personality model, the research finds that the low 'conscientiousness' trait may be predisposing, and that the 'undercontrolled' personality type may be most vulnerable to PUI. The 'overcontrolled' type appears to be a protective factor. PUI severity across personality types is influenced by openness to experience. Based on these findings, a new theoretical framework is proposed to clarify the role of personality in PUI.

Supervisor: Prof C Lochner Co-supervisors: Profs SR Chamberlain (external), DJ Stein (external) **OSORO**, Caroline Bonareri (Epidemiology)

### Strengthening evidence-to-policy pathways to improve management of malaria in pregnancy

Malaria remains a significant public health challenge, with the most vulnerable populations being children under five years and pregnant women. Using both primary research and evidence synthesis, this study assesses the impact of antifolate resistance on the effectiveness of malaria treatment in pregnancy. It also establishes healthcare providers' knowledge and perceptions in managing malaria in pregnancy and explores how scientific evidence is transformed into policy in sub-Saharan Africa.

Supervisor: Prof TN Young Co-supervisors: Profs E Ochodo, F ter Kuile (external)

PITT, Catherine Emma (Health Sciences – Rehabilitation)

#### A case study exploring community inclusion of adults with intellectual disabilities who participate in/attend protective workshops in Cape Town

This study explores the community aspirations and opportunities of persons with intellectual disabilities (ID) attending protective workshops in Cape Town. Data collection methods were simplified to suit the participants' needs. The findings reveal the ways in which the participants aspire to be included in their communities, and the opportunities they currently have. Rarely documented in literature, these findings challenge the common stereotypes about persons with ID. Based on the results, a support model is proposed as an important framework to promote the rights of persons with ID to be included in their communities and in research.

Supervisor: Prof M Geiger Co-supervisors: Dr C Kahonde, Prof G Mji

RASEKHALA, Alpheus (Nutritional Sciences)

### The development of guidelines to manage burnout and stress of dietitians and nutritionists in the workplace

To help manage burnout and stress of dietitians and nutritionists in the workplace, this study develops guidelines with 14 themes, grouped into individual, organisational and relationship core domains. The research establishes that South African dietitians and nutritionists are moderately burnt out, slightly job-satisfied, and moderately stressed. Addressing stress and burnout can improve the workplace and the quality of care delivered to clients. Understanding the relationship between job satisfaction and the work environment will allow organisational management to focus on improving structures that could empower individuals and increase performance. The guidelines are recommended for adoption by workplaces with dietitians and nutritionists.

Supervisor: Prof XG Mbhenyane Co-supervisor: Prof R Blaauw SMIT, Jacobus Petrus Johannes (Orthopaedic Surgery)

### A retrospective review of the paediatric orthopaedic outreach services for central South Africa from 1997 to 2016

This study provides insight into the practices, challenges, constraints and needs of specialist orthopaedic outreach in central South Africa over the period 1997 to 2016. The population in this remote geographic region often experiences social exclusion from service delivery. Outreach service delivery over the two decades is scrutinised in terms of presentation patterns of paediatric orthopaedic conditions, severity of disease, and management endpoints. The research also reflects on the interdependence of outreach services and smaller health institutions, making recommendations to overcome social exclusion of populations in these remote locations.

Supervisor: Prof MC Burger Co-supervisor: Prof J du Toit

SOWDEN, Marwyn (Nutritional Sciences)

### The role of a multi-strain probiotic in very-low-birth-weight premature infants

The development of the intestinal innate immune system starts in the foetus and then matures in the neonate after birth. The preterm neonate is vulnerable to short-term illnesses, such as hospital-acquired bloodstream infection, necrosing enterocolitis, and growth failure. This research focuses on the role of a multi-strain probiotic in preventing these morbidities. Results demonstrate that the multi-strain probiotic is effective in significantly reducing peri-rectal colonisation with drug-resistant gram-negative bacteria, hospital-acquired bloodstream infection, and necrotising enterocolitis incidence as well as severity. The neonates also exhibit an improved feeding tolerance and weight and length gain.

#### Supervisor: Prof E van Niekerk

*Co-supervisors:* Prof MM van Weissenbruch *(external)*, Dr ANH Bulabula *(external)* 

TOD, Bianca Michelle (Dermatology)

### The clinical, pathological, and molecular features of acral melanoma in a South African population

This study investigates the epidemiological, clinical, pathological, and molecular features of acral melanoma in South African patients. The condition tends to be diagnosed at an advanced stage, emphasising the need for earlier detection and optimised treatment. Clinical and pathological features of the study population correspond with those reported in the international literature. Three and five-year survival rates of 64,8% and 56,0% respectively were observed among 91 patients. Genome sequencing results of tumour DNA largely conform to the genetic landscape described in other populations. The description of two molecular subgroups provides a framework for implementation of genomic medicine in acral melanoma.

#### Supervisor: Prof MJ Kotze

*Co-supervisors:* Dr W Visser, Prof A Bowcock *(external)*, Prof JW Schneider

VAN BAALEN, Gabriela Bella (Sport Science)

### Thoracic spinal mobility in adults: clinical assessments and exercise interventions

This study addresses the under-researched thoracic spine, emphasising its pivotal role in overall spinal biomechanics, breathing and posture. The focus is on exercise interventions to enhance thoracic mobility. Smartphones with mobile applications are shown to be valid tools to measure thoracic spine mobility. A cross-over study evaluates the efficacy of corrective exercise interventions, confirming significant improvement in thoracic spine rotation among hyperkyphotic asymptomatic adults. Overall, the study provides valuable insights into thoracic spine research and spells out practical implications for clinical assessments and interventions, utilising innovative smartphone applications as reliable tools.

Supervisor: Prof RE Venter Co-supervisor: Prof B Vanwanseele (external)

#### The trauma of non-marital romantic relationship breakups among emerging adults: associations with posttraumatic stress symptoms and underlying neural circuitry

To emerging adults, non-marital romantic relationship dissolutions (RRDs) could potentially be traumatic, resulting in posttraumatic stress symptomatology (PTSS). This mixedmethod case-case-control study finds significantly higher levels of PTSS in university students who experienced an RRD compared to their peers who experienced physical or sexual assault. On brain imaging, the two groups exhibit comparable increased activation in the amygdala and hippocampus in response to a functional brain imaging provocation paradigm. Early identification of PTSS in the context of an RRD may counter more serious mental health sequelae. These findings may also guide trauma-informed care for RRD-related PTSS.

Supervisor: Prof S Seedat Co-supervisors: Prof E Lesch, Dr A Roos

VAN TONDER, Riaan (Sport Science)

# Head Smart – the implementation of a law variation in community rugby union and its effect on head injury rates

To reduce head injuries, particularly concussion, this research explores the implementation of a law variation in community rugby. Although the lowered legal tackle-height law variation does not significantly reduce concussion incidence, the study reveals important systemic effects. Nearly 15 000 tackles are analysed, identifying factors linked to illegal high tackles. Positive changes in player and referee behaviour are observed, with fewer upright tacklers in the season's later phase. Interviewed stakeholders emphasise the value of the law variation. Yet the prevailing rugby culture – prioritising performance over player welfare – necessitates a comprehensive, systems-oriented strategy, emphasising ongoing education and awareness campaigns to address concussion in rugby.

#### Supervisor: Prof W Derman

*Co-supervisors:* Drs J Brown, S Hendrix *(external)*, Prof K Stokes *(external)* 

WATKYNS, Ann Frances (Occupational Therapy)

# Sensory reactivity assessment of children: determining the feasibility of an adapted measurement tool for children in the Western Cape province, South Africa

Sensory reactivity problems are characterised by difficulties regulating responses to sensory stimuli to which most people would easily adapt. An appropriate, valid and reliable standardised assessment battery is needed, comprising a caregiver questionnaire as well as a performance-based assessment for the South African population. This study adapts the performance-based Evaluation in Ayres Sensory Integration (EASI) and Sensory Processing Measure, Second Edition (SPM-2) questionnaires for preschool and child caregivers for 3–12-year-olds in the Western Cape. A feasibility study with 30 child/caregiver dyads confirms face and content validity. The adapted test establishes a foundation for translation in other South African languages.

Supervisor: Prof LG Cloete Co-supervisor: Prof D Parham (external)

WEICH, Hellmuth Stephan Von Heyderhoff (Internal Medicine)

# Development of an improved approach to transcatheter heart valve replacement in younger patients

Transcatheter heart valves (THVs) have transformed the management of elderly patients with calcific aortic stenosis. THVs in young rheumatic heart disease (RHD) patients, however, are limited by challenges to accurately deploy or secure THVs in non-calcified valves and suboptimal leaflet durability. A non-occlusive deployment balloon (NOB) and anchor stents are developed to accurately deliver and anchor THVs, resulting in an alternate NOB and anchor-stent design. Moreover, novel THVs, utilising decellularised bovine pericardium with and without low-dose glutaraldehyde fixation to limit early degeneration, also outperform the industry standard (high-dose glutaraldehyde) in a sheep model. These developments hold great promise for THVs in young RHD patients.

Supervisor: Prof AF Doubell Co-supervisor: Prof F Smit (external)

### Faculty of Medicine and Health Sciences Fakulteit Geneeskunde en Gesondheidswetenskappe

#### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

#### Master of Science Magister in die Natuurwetenskappe

Alberts, Janneke (Pharmacology) Alberts, Rencia (Molecular Biology) Bahta, Amanuel Yirgalem (Biostatistics) Basson, Kriston (Medical Physiology) Brooks, Farron (Medical Microbiology) (cum laude) Chabuka, Lucious (Human Genetics) (cum laude) Chazanga, Leona Racheal (Biostatistics) (cum laude) Chinovhiringa, Ronald Ruzivo Tonderai (Biostatistics) Dube, Kopano Rebaona (Clinical Epidemiology) (cum laude) Fokkens, Hannah (Medical Physiology) (cum laude) Gangat, Radiya (Epidemiology) Geldenhuys, Rebecca Carla (Molecular Biology) (cum laude) Grobler, Corné (Medical Physiology) Groenewald, Barend Jacobus (Medical Physiology) (cum laude) Homu, Lerato Opel (Pharmacology) Jacobs, Steve Lerenzo (Medical Physiology) (cum laude) Khan, Johara (Anatomy) (cum laude) Kotze, Anri (Medical Physiology) Kriel, Christine (Clinical Epidemiology) (cum laude) Lentswe, Tshepiso Innocent (Epidemiology) Maaruf, Shamsuddeen Yusuf (Molecular Biology) (cum laude) Macdonald, Candice Elvina (Clinical Epidemiology) (cum laude) Madzime, Ruvarashe Joylyne (Molecular Biology) (cum laude) Mahabeer, Yastika (Molecular Biology) (cum laude) Maloka, Kabelo Simon Mabokane (Human Genetics) (cum laude) Manful, Ewura-Esi (Molecular Biology) (cum laude) Marais, Chantelle (Anatomy) Matthee, Joshua James (Medical Physiology) Mcmaster, Erin Cullen (Molecular Biology) (cum laude) Meyer, Burnet Adriaan (Medical Virology) Mouton, Christina Johanna (Pharmacology) Mphephu, Thabiso (Molecular Biology) Mwape, Innocent (Medical Virology) (cum laude) Naidoo, Sharnay (Medical Physiology) (cum laude) Ndlovu, Patience (Infection Prevention and Control) Nyirenda, Martha (Epidemiology) O'Brien, Cassidy Joy (Medical Physiology) (cum laude) O'Hare, Michaela Anne (Human Genetics) (cum laude) Oliver, Jayed (Nuclear medicine) Pekeur, Jade Chantel (Medical Microbiology) Rabela, Vuyisane Michael (Medical Physiology) Ramashia, Rudzani (Medical Physiology) (cum laude) Rathbone, Anna Elizabeth (Anatomy) (cum laude)

Roberts, Bronwyn Lydia (Medical Virology) Roberts, Tina Sharon (Clinical Epidemiology) Rohwer, Christa Ingrid (Clinical Epidemiology) *(cum laude)* Shaik, Ayesha Rasheed (Medical Physiology) Siwada, Anwani Elisanah (Human Genetics) Smith, Tayla Juliet (Molecular Biology) *(cum laude)* Sproul, Denise (Clinical Epidemiology) *(cum laude)* Stuurman, Cameron Clark Anthony (Anatomy) Swanepoel, Lize-Mari (Clinical Epidemiology) *(cum laude)* Tshanga, Siphokazi Sisanda (Clinical Epidemiology) Van Zyl, Petrus Jurgens (Nuclear Medicine) Welmans, Aimèe (Anatomy) Wilck, Danielle Shira (Medical Microbiology) *(cum laude)* 

#### Master of Science in Sport and Exercise Medicine Magister in die Natuurwetenskappe in Sport- en Oefeninggeneeskunde

Green, Darren Shiloh Van Zyl, Johannes Lodewikus Walton, Kerry-Ann

#### Master of Science in Sport Science Magister in die Natuurwetenskappe in Sportwetenskap

Akumba, Solomon Baba Brooks, Michael (*cum laude*) Coetzee, André Matthew (*cum laude*) De Lange, Menanto Theodor (*cum laude*) Diacon, Nathalie (*cum laude*) Landman, Marc Derek (*cum laude*) Litch, Conrad Frederik (*cum laude*) Zwiegelaar, Su-Ané (*cum laude*)

#### Master of Medicine Magister in die Geneeskunde

Akuaake, Lembi Magano (Emergency Medicine) Blomerus, Rikus (Anaesthesiology) Bundhoo, Yashmeeta (Radiation Therapy) Franks, Sheri-Leigh (Obstetrics and Gynaecology) Grobler, Gerard (Urology) Jacobs, Gabby (Family Medicine) Keshani, Vivek (Neurology) Koen, Johannes Gerhardus (Thoracic Surgery) (cum laude) Kruger, Stephan (Urology) (cum laude) Masaku, Matheus Kakoko (Surgery) Mathoorah, Disha Devi (Anaesthesiology) Mokete, Gaone Gosego (Obstetrics and Gynaecology) Mubita, Mwaka (Paediatrics) Myburgh, Chantelle (Paediatrics) Naidoo, Esther Ruth (Family Medicine) (cum laude) Pillay, Sheylyn (Microbiological Pathology)

Ras, Abraham (Anaesthesiology) *(cum laude)* Van Wijk, Monica (Radiological Diagnosis) Van Zyl, Beulah Christina (Radiological Diagnosis) Vazi, Luthando (Internal Medicine) Williams, O'brian Dewayne (Radiation Therapy)

#### Master of Public Health Nutrition Magister in Voeding in Publieke Gesondheid

Cele, Nokukhanya Prudence (Public Health Nutrition) Herman, Lanine (Public Health Nutrition) Mzumara, Martin Khuluta (Public Health Nutrition) Solomon, Salaamah (Public Health Nutrition) Theron, Ingrid (Public Health Nutrition)

#### Master of Human Rehabilitation Studies Magister in Menslike Rehabilitasie Studies

Abrahams, Shaunelia Heidi (Rehabilitation) Theron, Bennie Josephus (Rehabilitation) *(cum laude)* Thobela, Nothemba Siphosakhe (Rehabilitation)

#### Master of Philosophy Magister in die Wysbegeerte

Adegbesan, Abiodun Christopher (Cancer Science) Aqyekum, Isabella Sannette (Cancer Science) April. Johannes Kobus (Cancer Science) Binneman, Enrico Cyril (Cancer Science) Du Plessis, Adele (Health Professions Education) Eksteen, Lawson Barry (Health Professions Education) Elhuni, Emad Mohamed (Paediatric Medical Oncology) English, Rene Glynnis (Health Professions Education) (cum laude) Erasmus, Linda Gracial (Cancer Science) Fourie, Louise Pauline (Cancer Science) Goeieman, Daniela Sefora (Family Medicine) Gumede, Sinenhlanhla (Health Systems and Services Research) Kwape, Lawrence Lesego (Gastroenterology and Hepatology) Lupton-Smith, Alison Rosalie (Health Professions Education)

Malinga, Thobile (Cancer Science)

Mbulawa, Zizipho Zipozake Anita (Health Professions Education)

Mbungu, Nomaphelo (Reproductive Medicine) Mouton, Johannes (Health Professions Education) Salman, Francis Kwame (Health Systems and Services Research)

Van der Merwe, Marius (Health Professions Education)

#### Master of Occupational Therapy Magister in Arbeidsterapie

Bence, Jenine Conolly, Naomi Beth *(cum laude)* Rautenbach, Gaby Van Jaarsveld, Louise

#### Master of Nursing Magister in die Verpleegkunde

Baartman, Zubrina De Klerk, Natasha Maryna *(cum laude)* Lotz, Claudette Munenguni, Elise Taati Nzimande, Londiwe Nosipho Van Papendorp, Cristelle *(cum laude)* 

#### Master of Nutrition Magister in Voeding

Holtzhausen, Tirsa (Nutritional Sciences)

#### Master of Therapeutic Nutrition Magister in Terapeutiese Voeding

Breda, Shelldon Athena (Therapeutic Nutrition) Grobbelaar, Nadine (Therapeutic Nutrition) *(cum laude)* Huang, Lih-Chii Michelle (Therapeutic Nutrition) Rademan, Hannelise (Therapeutic Nutrition) Theron, Darinka (Therapeutic Nutrition) Venter, Jessie Morgan (Therapeutic Nutrition)

#### Master of Physiotherapy Magister in Fisioterapie

Bharath, Francesca Du Plessis, Herne Han, Sung Huyk Han Louw, Lania Prins, Gabriela Babette Smit, Elmari

#### Master in Speech-Language Therapy Magister in Spraak-Taalterapie

Achmat, Bilqees (*cum laude*) Bester, Nena (*cum laude*) Moosa, Farzaana Ndlovu, Blessing Ntokozo (*cum laude*) Swart, Anike

#### Bachelor of Science Honours Honneurs-Baccalaureus in die Natuurwetenskappe

Maduna, Junior (Pharmacology) Vuzane, Zimasa (Physiology (Medical)) (*cum laude*)

#### Bachelor of Science Honours in Sport Science Honneurs-Baccalaureus in die Natuurwetenskappe in Sportwetenskap

Rabie, Kieren Edward (Performance Sport)

#### Bachelor of Science Honours in Biokinetics Honneurs-Baccalaureus in die Natuurwetenskappe in Biokinetika

Grobbelaar, Ian Gerrit (Biokinetics)

#### Postgraduate Diploma in Occupational Medicine Nagraadse Diploma in Beroepsgeneeskunde

Aleke, Adjokanezo Gaetan Du Plessis, Rohan Tertius Joseph, Lochelle

#### Postgraduate Diploma in Midwifery Nagraadse Diploma in Verloskunde

Fente, Nosipho Rayners, Melanie September, Iris Leonie Soko, Yanga Yame, Bulelwa

#### Postgraduate Diploma in Nursing Education Nagraadse Diploma in Verpleegonderwys

Dinge, Nomampondomise Precious Esack-Collins, Malicka Faro, Nikita Mabasa, Serene Ntengo, Visisa Xasa, Athandiwe Canicia

#### Postgraduate Diploma in Primary Care Nursing Nagraadse Diploma in Primêresorgverpleegkunde

Dywili, Asanda Gegela, Pakamisa Kimbili, Siphosethu Mandondo, Khanyisa Tania Maqambayi, Siphokazi Nomandela, Sizukisiwe Phinzi, Zethu Saul-Bophi, Lulama Sinama, Khaya Tshangela, Asive Zibi, Ongezile

#### Postgraduate Diploma in Mental Health Nursing Nagraadse Diploma in Geestesgesondheidverpleegkunde

Koloti, Masego Veronica Marwanana, Xoliswa Nawane, Gaolebalwe Sarah Ngcaba, Asiphe Olifant, Aobakwe Kennedy Petersen, Othusitse Thisani, Nomakholwa Tshikota, Bismarck Tshivhidzo Wagner, Quinton Zibi, Luzuko

#### Postgraduate Diploma in Perioperative Nursing Nagraadse Diploma in Peri-operatiewe Verpleegkunde

Mulugana, Tsholofelo Paul, Mandisa

#### Postgraduate Diploma in Health Service Management Nagraadse Diploma in Gesondheidsdiensbestuur

Khumalo, Thembi Jesi Tom, Lumka *(cum laude)* Voco, Andiphe

#### Postgraduate Diploma in Infectious Diseases Nagraadse Diploma in Infeksiesiektes

Chara, Abdullahi Umar Hugo, Susan Stefanie *(cum laude)* Kyazze, Sandra Denise Daphine *(cum laude)* Mbapah, Leslie Tasha *(cum laude)* Munkondya, Charlene Okereke, Michael Uche Snyders, Gloria Tom, Modether Jadarab Tomose, Nopasika

#### Postgraduate Diploma in Emergency Nursing Nagraadse Diploma in Noodverpleegkunde

Bakubaku, Nozibele Grace Bless, Pumza

#### Bachelor of Medicine and Bachelor of Surgery Baccalaureus in die Geneeskunde en Baccalaureus in die Snykunde

Abdelfattah, Mariam Moosa, Maryam Sokwaliwa, Neo Mfundo Xolani

#### Bachelor of Nursing Baccalaureus in Verpleegkunde

Magubane, Thandolwethu Langelihle Mpadisang, Modisaotsile Jacobus

#### Bachelor of Occupational Therapy Baccalaureus in Arbeidsterapie

Smit, Ria

forward together sonke siya phambili saam vorentoe



### Faculty of Science

26 March 2024 | 13:00

### Fakulteit Natuurwetenskappe

26 Maart 2024 | 13:00

### Programme

Please stand	1.	Entrance of academic procession into the hall.
Please stand	2.	Playing of the National Anthem.
Please sit	З.	Congregation formally constituted by the Vice-Chancellor.
	4.	Welcome by the Vice-Chancellor.
	5.	Presentation of candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Vice-Chancellor.
	6.	Closing by the Vice-Chancellor.
Please stand	7.	The academic procession leaves the stage.

### Program

Staan asseblief	1.	Akademiese prosessie kom die saal binne.
Staan asseblief	2.	Speel van die Nasionale volkslied.
Sit asseblief	З.	Formele konstituering deur die Visekanselier.
	4.	Verwelkoming deur die Visekanselier.
	5.	Voorstelling van kandidate wat kwalifikasies ontvang deur die dekaan van die fakulteit en toekenning van kwalifikasies deur die Visekanselier.
	6.	Sluiting deur die Visekanselier.
Staan asseblief	7.	Akademiese prosessie verlaat die verhoog.

### Faculty of Science Fakulteit Natuurwetenskappe

#### DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

#### DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

#### ARASPIN, Laurie Nina (Zoology)

# Thermal adaptation in an invasive frog (*Xenopus laevis*): impact of temperature on locomotion and physiology

*Xenopus laevis* is an aquatic frog native to Southern Africa, but invasive on four continents. This study investigates the thermal adaptive ability of this species from populations in both native and invasive ranges. Through experiments in common garden settings, the phenotypes of >100 animals are profiled, using the locomotor and metabolic performance of individuals at a range of temperatures. Results demonstrate that populations exhibit different thermal dependence of performance in both plastic and adaptive nature. The research contributes to a greater understanding of the physiology of *X. laevis* and will support the building of mechanistic models to predict future spread.

Supervisor: Prof J Measey Co-supervisor: Dr A Herrel

BALL, Lauren Elaine (Polymer Science)

#### Universal RAFT-mediated synthesis of double hydrophilic SMA-*b*-PVP copolymers for surface immobilisation of SMALPs

Amphiphilic copolymers such as those of styrene and maleic acid have earlier been shown to be able to extract, isolate and stabilise membrane proteins in nanodiscs that also comprise the membrane protein's annular lipids. To make this technology universally applicable with common techniques in the study of membrane proteins, this study develops block copolymers that enable the immobilisation of the nanodiscs on a gold surface, which makes them suitable for surface plasmon resonance spectroscopy. Detailed investigations of the synthesis of block copolymers consisting of moreactivated and less-activated monomers pave the way for well-defined materials with the desired properties.

Supervisor: Prof L Klumperman Co-supervisor: Dr R Pfukwa

#### BARRY, Christopher James (Biochemistry)

#### Kinetic modelling of the peroxiredoxin system

This study investigates the kinetics of the peroxiredoxin protein, a vital antioxidant that regulates cellular hydrogen peroxide levels across all kingdoms of life. The switching of the protein between multimeric states, and its impact on oxidation dynamics and kinetics, is quantified. A flaw in the horseradish peroxidase competition assay, a long-standing method for studying peroxiredoxin kinetics, is identified and rectified. Finally, a detailed kinetic model is assembled and analysed, describing peroxiredoxin activity in *Saccharomyces cerevisiae*, an important model organism in redox biology. The research advances our understanding of hydrogen peroxide metabolism by peroxiredoxin in particular, and of redox biology more broadly.

Supervisor: Prof JM Rohwer Co-supervisor: Dr CS Pillay (external)

BEUKES, Emile (Applied Mathematics)

# Hand vein-based biometric authentication using neural networks

Several readily implementable dorsal hand vein-based authentication systems are proposed in this study. An artificially generated dorsal hand vein database called GenVeins is developed for the purpose of acquiring statistically representative sets of fictitious individuals. Experimental results clearly indicate that system proficiency is significantly enhanced by utilising the GenVeins database for training, as opposed to considering an insufficient number of different individuals. The proposed systems are also shown to generalise exceptionally well when trained on artificial images from the GenVeins database and subsequently tested on images from unseen individuals.

Supervisor: Dr J Coetzer

#### Towards an orthogonal synthesis of amphiphilic PVPblock-PLA block copolymers, using PI-RAFT and ROP

This study develops an orthogonal one-pot, one-step approach for synthesising poly(*N*-vinylpyrrolidone)-*blockpoly* (D,L-lactide), or PVP-b-PLA, a biomedically important amphiphilic block copolymer (BCP). The approach utilises the light-activated reversible addition-fragmentation transfer polymerisation of *N*-vinylpyrrolidone and the organocatalytic ring-opening polymerisation of D,L-lactide, using hydroxylfunctional xanthate and dithiocarbamate chain transfer agents. Important experimental parameters such as light intensity, solvent polarity and organocatalyst concentration are carefully optimised. The subsequent BCPs are characterised using spectroscopic and chromatographic techniques. The result is a streamlined low-energy method, carried out at room temperature, for accessing well-defined PVP-*b*-PLA amphiphilic BCPs that are suitable for polymeric drug delivery.

*Supervisor:* Dr R Pfukwa *Co-supervisor:* Prof B Klumperman

#### CARSTENS, Alno (Microbiology)

# The role of plant-biofilm interactions in a hybrid constructed floating wetland to remove chemicals of emerging concern from contaminated surface waters

The ability of a hybrid constructed floating wetland (HCFW) to remediate water from the contaminated Eerste River in South Africa is evaluated. A range of pollutants, including pharmaceutical and personal care products, are removed in large quantities from the water and are ultimately proven to accumulate in various sections of plants inside the system as well as in the biofilms associated with their roots. No specific community fingerprint can be determined for microbial communities associated with roots, synthetic roots and sediment in the system. The study identifies the limitations of HCFW and proposes improvements for optimisation.

Supervisor: Prof GM Wolfaardt Co-supervisors: Dr M Botes, Prof L Joubert

#### CHINGWARU, Steve (Earth Sciences)

#### Gold deportment and ore characterisation of the historical Witwatersrand tailings dams with emphasis placed on the sulphides

The Witwatersrand gold tailings dumps contain abundant unrecovered gold associated with heavy-metal pollutants. Laser ablation analyses reveal that auriferous pyrite is the preferred mineral host for gold, representing a potential residual gold endowment of over 420 tons. Sequential leaching tests show that ~30% of gold, mostly in the fine fractions, is present in its cyanide-amenable native form. This mineral-specific knowledge of gold deportment enables the development of targeted reprocessing strategies. Strategies that recover the sulphide-associated gold fraction hold added benefit for reducing the contaminant flux into surface environments around tailings dumps, which represent significant pollution point sources.

*Supervisor:* Dr BP von der Heyden *Co-supervisor:* Dr M Tadie

#### CLAASE, Megan Jane (Zoology)

#### Shared marking site use in African wild dogs (Lycaon pictus)

African wild dogs use long lasting latrines, or shared marking sites, an understanding of which could aid these animals' conservation. These discrete marking sites were used by multiple dog packs throughout the year and were situated in areas where they were likely to be found by conspecifics. Patterns of scent marking by individuals within packs indicate a role in territorial maintenance, with dominants marking more than subdominants. However, patterns vary by sex and status, likely driven by uneven investment in defendable resources. Broadly, marking patterns show that the 'dear enemy' territorial response in wild dogs depends on pack size.

Supervisor: Prof MI Cherry Co-supervisor: Dr NR Jordan

#### CUNNINGHAM, Randy Duwayne (Polymer Science)

### *N*-vinylpyrrolidone-based copolymer for the conjugation of therapeutic agents

A one-pot, one-step procedure to synthesise a block copolymer significantly simplifies the process to produce functional materials. The inherent reactivities of maleic anhydride (MAnh) and *N*-vinylpyrrolidone (NVP) are such that upon controlled radical copolymerisation of a mixture that contains an excess of NVP, an alternating copolymer of the two monomers is first formed, followed by a block of homopolymer of NVP. The reactivity of the MAnh residues allows the post-polymerisation conjugation of drug molecules such as platinum complexes. The inhibitory concentration (IC50) of platinum towards tumour cells is strongly reduced in comparison to well-known platinum-based drugs such as cisplatin.

*Supervisor:* Prof L Klumperman *Co-supervisor:* Dr R Pfukwa

# Precision control of autophagy and toxic protein cargo flux in model systems of Alzheimer's disease

Alzheimer's disease represents a major challenge, with autophagy flux and mitochondrial dynamics at the centre of neurodegenerative disease pathogenesis. Memantine and resveratrol enhance autophagosome and autolysosome volume and protect the mitochondrial network against druginduced injury. A higher memantine concentration exposure increases the autolysosomal compartment, while a lower memantine concentration strongly induces mitophagy. HeLa cells and a Drosophila model expressing the mitoQC tandem reporter confirm this mitophagy-inducing impact. A comprehensive bioimage analyses pipeline is developed to identify morphometric descriptors for future analyses. Importantly, the study reveals that mitophagy induction may offer major benefits for targeting Alzheimer's disease.

Supervisor: Prof B Loos Co-supervisor: Dr R Theart

GENT, Rachelle (Biochemistry)

# The metabolism and receptor interactions of C11-oxy steroids: implications for hormonal homeostasis and pathophysiology

11 $\beta$ -Hydroxysteroid dehydrogenase (11 $\beta$ HSD) isozymes interconvert C11-oxo and C11-hydroxy steroid hormones, both C11-oxy progestins and C11-oxy androgens. In addition, the C11-oxy progestins can be converted to C11-oxy androgens by cytochrome P450 17 $\alpha$ -hydroxylase and, together with 5 $\alpha$ -reductase, lead to the production of novel steroid hormones, identified by analytical methods developed and validated during this study. In the conversion of the C11-oxy steroid hormones, the 11 $\beta$ HSD isozymes are identified as regulators of hormonal homeostasis. The interaction of the C11-oxy steroid hormones with the progesterone and androgen receptors affects normal physiological processes as well as pathophysiologies such as prostate cancer and type 2 diabetes.

Supervisor: Prof AC Swart Co-supervisors: Prof JL Snoep, Dr CH Kaschula HARMSE, Christiaan Johannes (Geography and Environmental Studies B)

# Earth observation methods for sustainable Karoo rangeland management

The Nama-Karoo is a highly sensitive biome and is at risk of being overgrazed by livestock. This study evaluates the use of satellite and drone technologies coupled with machine learning for monitoring rangeland condition. Satellite imagery is found to be highly suitable for providing an overview of livestock movement patterns and predicting weight gain in sheep. Hyperspectral drone imagery and machine learning, in turn, managed to differentiate and map 15 dominant Nama-Karoo plant species with an accuracy of more than 76%. It is concluded that satellite and drone imagery is very useful for ecological assessments over vast, inaccessible areas.

Supervisor: Prof A van Niekerk

#### JACKSON, Tassin Kim (Genetics)

# Investigating the genetic determinants of growth in dusky kob (*Argyrosomus japonicus*)

The dusky kob is an economically important marine finfish. However, since it is overexploited and endangered in the wild, aquaculture is a sustainable alternative to wild fisheries. Understanding the heredity of growth – an important production trait for aquaculture – will facilitate accelerated improvement of the species, enhancing production. In this study, the genome sequence of the South African conspecific is established. Using genetic mapping and transcriptomic analysis, the genes and biological pathways that underpin phenotypic variation for growth in this fish are identified. The findings lay the foundation for the use of genomics-assisted technologies in the South African aquaculture industry.

Supervisor: Prof C Rhode

KERET, Rafael (Plant Biotechnology)

#### The physiological and genetic underpinnings that influence the xylem properties of *Eucalyptus grandis* when subjected to different levels of water availability

*Eucalyptus grandis* is an important hardwood forestry species. Unravelling the core mechanisms governing wood properties under drought stress is critically important for forestry companies, since unpredictable rainfall due to climate change will significantly affect the industry. Under drought stress, *E. grandis* produces smaller vessels at a higher density, which are more resistant to embolism. A comparative transcriptomic approach reveals a decrease in gene expression relating to cell expansion and division, and changes in cell wall remodelling and biosynthesis. Expression of genes relating to lipid surfactants and osmotica suggests that xylem parenchyma plays an important role in embolism prevention and repair.

Supervisor: Dr PN Hills Co-supervisor: Prof D Drew

#### KUBYANA, Mmatlou Simeon (Mathematics)

#### A multiscale eco-evolutionary model for adaptive games: an extension of the classic evolutionary games

In this study, a novel eco-evolutionary model expands on the classic rock-paper-scissors (RPS) game to delve into dynamic strategy interactions and trait evolution. Unlike the traditional RPS setup, this adaptive game integrates evolutionary game theory and adaptive dynamics, showcasing how strategies adapt over time. Findings point to enhanced flexibility and resilience. Furthermore, the model explores the impact of varying traits, such as altruism and restraint, on strategy performance. Results suggest that adaptive strategies achieve a better balance between generosity and constraint than the fixed strategies in traditional evolutionary games, fostering coexistence and reducing extinction risk.

*Supervisor:* Prof C Hui *Co-supervisor:* Dr P Landi

#### KUYLER, Gestél Christine (Polymer Science)

# Novel terpolymers for the isolation of G-protein-coupled receptors

Membrane proteins (MPs) such as G-protein-coupled receptors are notoriously difficult to isolate from cell membranes in their intact and fully functional form. This study synthesises amphiphilic copolymers that vary in their hydrophilic-hydrophobic balance. These polymers are able to extract MPs with their annular lipids into nanodiscs. The MPs retain their stability and functionality. MP-specific trends are observed in extraction efficiency based on the hydrophilic-hydrophobic balance of the polymers. The well-defined and easily adaptable polymers will enable the systematic study of MPs, their isolation and downstream study, as well as the utilisation of MPs for drug discovery.

*Supervisor:* Prof L Klumperman *Co-supervisor:* Prof M Wheatley

#### MAHACHI, Carol Batsirai (Physiological Sciences)

#### Neutrophil gelatinase-associated lipocalin and associated damage markers in a chronic kidney disease model and in an acute muscle injury model

This study evaluates blood and urine biomarkers in three patient groups with chronic kidney damage (CKD), control patients with HIV-no-CKD, along with healthy controls after exercise-induced muscle damage. The CKD groups had HIV-associated nephropathy (HIVAN), HIV focal segmental glomerular sclerosis (HIV-FSGS), and CKD-FSGS without HIV. HIVAN patients are shown to have the highest urine and plasma neutrophil gelatinase-associated lipocalin (NGAL) and fibroblast growth factor-21. Matrix-metalloproteinase-9 (MMP9) and MMP9/NGAL complex are elevated only in plasma, but less so with FSGS. MMP9 without elevated NGAL distinguishes muscle damage from CKD. MMP9 and NGAL co-localisation in renal biopsies is high, with slight elevation in healthy controls after exercise damage. These biomarkers are useful for tracking disease severity or recovery after muscle damage.

Supervisor: Prof KH Myburgh

MALULEKE, Amukelani (Botany)

# Exchange of carbon dioxide, water and energy in South African semi-arid ecosystems

Semi-arid regions have recently been shown to have a greater impact on the global carbon cycle than recognised before. Disturbance and climate dynamics influence ecosystem feedback to the atmosphere, but are poorly quantified in African drylands. This research uses eddy covariance to assess the drivers of key fluxes in co-located sites in the Nama-Karoo and savanna biomes. Savanna is found to have higher carbon flux and water use efficiency. Rainfall drives net ecosystem exchange and evapotranspiration, with net carbon uptake thresholds differing between sites and seasons. Satellite-derived indices accurately represent production dynamics, but underestimate production by a factor of 50%.

Supervisor: Prof GF Midgley Co-supervisors: Drs G Feig, C Brümmer

#### MANGWANA, Noluxabiso (Microbiology)

#### Delineating the transmission and evolution of SARS-CoV-2 through genomic analysis as a platform for wastewaterbased epidemiology

Wastewater-based epidemiology was used as a tool for public health decision-making during the SARS-CoV-2 pandemic, involving surveillance, spatiotemporal tracking and normalisation. This entailed method development aimed at adaptation for low-to-medium-income countries. Important trends were revealed in different communities by correlating peak viral loads with reported cases, which supported targeted interventions. For instance, it proved useful in student residences for early SARS-CoV-2 detection, and for monitoring pharmaceuticals as outbreak predictors. The utility of this approach was further demonstrated through its subsequent use for the tracking of rotavirus prevalence, revealing this virus's year-round persistence in high-risk areas.

Supervisor: Prof GM Wolfaardt

Co-supervisors: Dr E Archer, Profs R Johnson, C Muller (external)

MASOABI, Malira (Plant Biotechnology)

# Genetic engineering strategies to enhance drought tolerance in sugarcane

Climate change negatively affects sustainable sugarcane production. This study uses several biotechnological engineering strategies to engineer drought- tolerant sugarcane plants. Transgenic plants are generated that overexpress two genes that encode small ubiquitin-like modifier (SUMO) proteases involved in SUMOylation or lead to the partial silencing of the endogenous cytokinin dehydrogenase gene involved in hormone regulation. In addition, random mutations are chemically introduced in the sugarcane genome and plants selected for osmotic tolerance. The transgenic and mutant lines display enhanced drought tolerance through changes in the photosynthetic machinery, scavenging of reactive oxygen species, and osmotic adjustments.

*Supervisor:* Dr C van der Vyver *Co-supervisor:* Dr S Snyman (external)

MGANI, Damas Karmel (Mathematics)

# Exploring some categorical aspects of foundational concepts in algebraic geometry

This study investigates the foundational concepts of algebraic geometry from a categorical perspective, with a focus on the significance of the gluing property. A category-theoretical framework applicable to various mathematical structures is introduced, facilitating a deeper understanding of (pre)sheaves, ringed topological spaces, and schemes. Additionally, the separation property of (pre)sheaves is explored, shedding light on sheafification and separafication processes. These insights enrich our understanding of the categorical nature of algebraic geometry and lay the groundwork for future exploration in the field.

Supervisor: Dr S Marques

#### MIORA, Ratsimandresy Holinirina Dina (Physics)

#### Theory of computing point spread functions

In fluorescence microscopy, deconvolution is an affordable route to improve image quality and contrast, but requires an accurate and realistic model of the optical system's impulse response, called the point spread function (PSF). In this research, new Fourier-based vector PSF models and software toolboxes are developed, and quantitative and qualitative experimental validation of the models is conducted. Findings indicate that the PSF models are computationally efficient, outperforming typical state-of-the-art methods. Specifically, the models show a greater than 100-fold contrast improvement in fluorescence microscopic images.

Supervisor: Dr GW Bosman Co-supervisor: Prof R Heintzmann (external)

#### MOKUMO, Mosihla Frederick (Botany)

### Linking physiological, genomic and ecological functioning in the seagrass *Zostera capensis*

The endangered seagrass *Zostera capensis* provides important ecosystem services, but its ecology and restoration are poorly understood. This study shows that local-scale effects determine shoot, leaf and meadow responses, with anthropogenic impacts negatively affecting seagrass meadows. Transplantation using different core sizes and planting patterns reveals poor survival in permanently and temporarily open/closed estuaries, requiring careful planning of future restoration efforts. Photophysiology and downregulation of genes involved in photosynthesis show that marine heatwaves severely affect the survival of *Z. capensis*, with both intertidal and subtidal morphotypes affected by warming waters, highlighting the impact of climate change on the survival of seagrass.

Supervisor: Prof S von der Heyden Co-supervisors: Profs J Adams (external), G Midgley

#### MREMA, Elizabeth (Mathematics)

# Study of cyclotomic extensions of degree power of 2 and classification of radical extensions up to isomorphism

Cyclotomic field extensions are pivotal in mathematics for their role in connecting number theory, algebraic structures and geometry. These extensions support crucial mathematical areas such as Fermat's last theorem and modular forms. This research explores cyclotomic extensions with degrees as powers of 2, involving an analysis of their Galois structures, sub-extensions and minimal polynomials. Key invariants are introduced to describe their properties, including connections to Catalan numbers. Radical extensions are classified up to isomorphism, elucidating their relationships through a novel parameterisation approach. The results enrich the understanding of algebraic number theory, providing insights into fundamental mathematical structures.

Supervisor: Dr S Marques

#### MYBURGH, Marthinus Wessel (Microbiology)

### Developing recombinant *Saccharomyces cerevisiae* strains for the hydrolysis and valorisation of bioplastics

Bioplastics are considered environmentally friendly, but are not always degraded quickly and efficiently in the environment. Bioplastic degradation can be significantly enhanced with microbial enzymes that hydrolyse the polymers into smaller monomers, which can be recycled or converted into valuable materials. In this study, a recombinant yeast strain is engineered to produce a cutinase-like enzyme that hydrolyses polylactic acid (78% weight loss in seven days). When used together with a starch-degrading yeast, starch-based bioplastics in commercial shopping bags are hydrolysed, and the glucose monomers are fermented to ethanol. The research contributes to innovative solutions for more efficient bioplastic waste management.

*Supervisor:* Prof M Viljoen-Bloom *Co-supervisors*: Profs WH van Zyl, L Favaro

#### NZAGANYA, Nzaganya Edson (Mathematics)

# Coherent loop states and their applications in geometric quantisation

Complex geometric quantisation is a mathematical procedure of assigning finite-dimensional inner product spaces to geometric data, namely polarised Kahler manifolds. Coherent loop states are vectors in the inner product space that are obtained by integrating over Bohr-Sommerfeld Lagrangians in the manifold. In this study, these states are computed explicitly in the case of the two-dimensional sphere. The asymptotics of their inner products are computed in geometric terms, thus contributing to the representation theory of SU(2) as well as the understanding of angular momentum in quantum mechanics. Finally, these results are extended to all quasi-regular polarised Riemann surfaces.

Supervisor: Prof BH Bartlett

#### OLIVIER, George (Geomorphology)

# Gully dynamics evolution under environmental change pressures

Gully erosion severely degrades land and water resources. This study develops new, scalable methodologies to assess gullying, starting on a national scale and then narrowing down to the individual gully scale. The scalable methodologies reveal that gully severity in South Africa generally increases in an east-west direction. Surprisingly, rainfall intensity – identified as the primary driver of increased gullying due to climate change – is found to play only a secondary role, after rainfall variability. Land use change appears to enable gully erosion process activity. The new methodologies can frame future research and be used to advise on soil conservation strategies.

Supervisor: Dr WP de Clercq Co-supervisors: Drs MJ van de Wiel (external), J Fried (external) **RABEARIVONY**, Andriamahazosoa Dimbinantenaina (Mathematics)

### Domination and generalised domination in ordered Banach algebras

The domination problem asks under which conditions properties of a positive element are inherited by smaller positive elements. This has been studied for several decades in operator theory and, more recently, in general ordered Banach algebras. In the generalised domination problem, the smaller elements are not assumed to be positive. This research investigates both the domination and generalised domination problems in the context of general ordered Banach algebras. Several spectral properties are considered, with ergodicity yielding particularly interesting results. Solutions are presented to two open problems in spectral theory.

*Supervisor:* Prof S Mouton *Co-supervisor:* Dr RAM Benjamin

#### **REDDY**, Kaylan (Botany)

#### Chemotypic and genetic diversity in the Sceletium genus

*Sceletium* (syn. *Mesembryanthemum*) *tortuosum* and its relatives produce mesembrine alkaloids with anti-anxiety and anti-depressant effects. Combining metabolomics, feature-based molecular networking and DNA bar coding provides for a multidisciplinary approach that pioneers a comprehensive platform for authentication of *Sceletium* species for the phytopharmaceutical industry. Novel foundational information on the leaf morphology, biochemistry and ecology of the species causes a paradigm shift in our general understanding of the phenotypic and chemical plasticity of these medicinal plants found across disparate biomes and niche environments. This highly innovative study answers several questions relating to *Sceletium* that have plagued the medicinal plant industry.

Supervisor: Prof NP Makunga Co-supervisor: Dr GI Stafford (external)

#### ROSSOUW, Michelle (Microbiology)

### Heterologous expression of antimicrobial peptides in *Saccharomyces cerevisiae*

Bioethanol is routinely produced via the enzymatic hydrolysis and fermentation of starch with the yeast *Saccharomyces cerevisiae*. However, the process is susceptible to microbial contamination, mainly lactic acid bacteria (LAB), which reduces the ethanol yield. In this study, three antimicrobial peptides (AMPs) from bacterial species are successfully expressed in *S. cerevisiae*, characterised and evaluated for their ability to inhibit LAB during starch fermentations. A yeast strain producing both starch-degrading enzymes and the antimicrobial peptide mundticin ST4SA increases ethanol yield in a non-sterile fermentation by 9%, suggesting that antimicrobial peptides could reduce the use of antibiotics in industrial bioethanol fermentations.

Supervisor: Prof M Viljoen-Bloom Co-supervisor: Dr RA Cripwell

#### SIKAZWE, Geofrey Wingi (Applied Mathematics)

# Mathematical modelling of co-infecting plant viruses in the presence of climate change

This mathematical modelling study investigates co-infecting plant viruses amidst climate change, focusing on cassava (*Manihot esculenta*). Cassava brown streak disease (CBSD), transmitted by the whitefly vector, threatens yields in sub-Saharan Africa. A combined ecological and epidemiological approach characterises virus distribution, whitefly lifecycle impact, and cassava response to infection pressure. Predictive models suggest increased CBSD risk in West Africa. An epidemiological model incorporating whitefly lifecycle and temperature variability identifies parameters driving disease outbreaks. Field trials confirm that virus accumulation correlates with cassava growth rate. These findings underscore the urgency of robust agricultural management and climate change adaptation to combat CBSD outbreaks.

Supervisor: Prof C Hui

*Co-supervisors:* Drs P Landi, REE Yocgo *(external)*, Prof DM Richardson

**SINGH**, Rebekah Gereldene (Geography and Environmental Studies)

### A multi-scale study of wind erosion susceptibility along the South African Wild Coast

Employing an 85-year historical analysis and long-term remote sensing, this study investigates wind erosion-induced land degradation along the Wild Coast. A spatial inventory is created, highlighting wind erosion sites. Results indicate both expansion and stabilisation of certain eroded areas due to peripheral vegetation establishment, Land cover change analysis identifies degraded grasslands as susceptible to wind erosion. Wind-exposed areas are influenced by vegetation, soil texture, moisture and human activity. Two susceptibility models are developed, indicating less than 4% of the region as highly susceptible. Recommendations include avoiding wind-aligned trackways and implementing targeted conservation strategies based on the findings of the research.

Supervisor: Dr J Kemp Co-supervisor: Dr G Botha

SMITH, Katrin Mary Geneve (Microbiology)

#### Characterisation and consequences of urban water resilience at the human-mycobiota interface: risk versus reward

Health risks relating to microbial contamination and chemical micropollutants (MPs) in water resources are of growing concern. Recognising that urban waters reflect the confluence of microbial ecology, population health and anthropogenic influences, it has become clear that the role of fungi is relatively poorly described. A survey of antifungals in regional rivers reveals concentrations of these MPs similar to levels detected globally, and further analyses show the impact of agricultural and medical use of antifungals as well as the influence of wastewater treatment plants on rivers. Subsequent experimentation demonstrates the potential of in-situ remediation based on microbial processes.

Supervisor: Prof G Wolfaardt Co-supervisors: Drs E Archer, W Stone

#### VAN DER COLFF, Dewidine (Biology)

### Invasive plant species in South Africa and their impacts on threatened native plant species

To date, invasive alien plants have been involved in seven of the 33 plant extinctions in South Africa. Understanding such impacts requires knowledge of both the impacted native plants and the impacting alien plants. Two international schemes addressing these issues provide complementary insights. Resurveying invaded areas sampled a decade ago highlights significant increases in some invasions, but also shows that a reduction in invasions and improvements to biodiversity are possible. The study develops frameworks to improve the collection and collation of impact data to guide management, and to ensure that native species can disperse in response to climate change.

Supervisor: Prof JR Wilson Co-supervisors: Dr S Kumschick, Prof W Foden

VAN WYK, Morné (Biochemistry)

#### Glycolytic oscillations in yeast and pancreatic beta cells

Glycolytic oscillations were studied in yeast cells, where they are known to lead to synchronisation and community formation. In addition to tracking them in these single-cell microorganisms, glycolytic oscillations were also studied in pancreatic beta cells, where they are important for the synchronisation of insulin production in the pancreas. Beta cells were incubated in microfluidic chambers, and upon glucose addition, calcium oscillation waves were observed, the direction of which could be reversed via external perturbation. The experimental data were simulated and analysed with detailed mathematical models that include fluid dynamics and the architecture of the experimental setup.

Supervisor: Prof JL Snoep Co-supervisor: Dr DD van Niekerk

#### VERMEULEN, Ross Rayne (Microbiology)

# Characterisation of atypical class I lanthipeptides from the marine bacterium *Thalassomonas viridans* $XOM25^{T}$

Next-generation sequencing (NGS) and heterologous gene expression are important tools to develop new antimicrobial agents and improve the chemical characteristics of lanthipeptides with antimicrobial activity. This is a challenge, mainly due to the presence of lanthionine rings and thioether cross-linkages between amino acids. Novel lanthipeptides belonging to the family of viridins, and produced by the marine bacterium *Thalassomonas viridans* XOM25T, were discovered through genome mining. Unlike most lanthipeptides, these peptides had no antimicrobial activity. Viridin VdsA1 had a sedative effect on zebrafish larvae, whereas VdsA2 acted as a stimulant. These peptides may have pharmaceutical applications.

Supervisor: Prof LMT Dicks Co-supervisor: Prof M Trindade (external)

#### WATSON, Katie Margaret (Botany)

# Exploring the restoration of *Zostera capensis* in Langebaan lagoon: ecological, molecular and physiological perspectives

Seagrasses are endangered globally, but are poorly protected, with limited success for their restoration. Using various techniques, this study provides novel insights for the restoration of seagrass meadows in Langebaan lagoon and successfully establishes new meadows using transplantation. By means of habitat suitability models, potential

restoration sites elsewhere are identified. Transcriptomic and photo-physiological responses to heat stress measured across two populations suggest that climate change is a major threat to the long-term persistence of *Zostera capensis* in South Africa. This should be taken into account when restoring and managing seagrass meadows and the important ecosystem services they provide.

*Supervisor:* Prof S von der Heyden *Co-supervisor:* Prof D Pillay *(external)* 

### Faculty of Science Fakulteit Natuurwetenskappe

#### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

#### Master of Science Magister in die Natuurwetenskappe

Beukes, Cheyenne Tamika (Biochemistry) Bhaga, Meenal (Physiological Sciences) Botha, Esmarie (Zoology) (cum laude) Breytenbach, Jacomi Heidi (Physiological Sciences) Carelse, Gaylen Evonne (Zoology) Ching Sent, Caitlin Jade (Zoology) (cum laude) Chiwira, Precious (Mathematics) (cum laude) Crament, Teagan Casey (Microbiology) Crowther, Devon Neil (Physics) De Beer, Emanuel (Polymer Science) De Vries, Herman (Biochemistry) (cum laude) Dewey, Marco Grant (Computer Science) Dlamini, Thembelihle Rose (Applied Mathematics) Douglas, Wesley (Mathematics) Du Plessis, Juan (GeoInformatics) Du Toit, Jaco (Computer Science) (cum laude) Foster, Bryce John (Bioinformatics and Computational Biology) (cum laude) Foster, Hannah Lea (Microbiology) (cum laude) Goedhals, Jaime Erin (Applied Mathematics) (cum laude) Gouws, Nina Ellen (Plant Biotechnology) Hagemann, Kyle Nicholas (Physiological Sciences) Holm, Clara Cornelia (Genetics) (cum laude) Jaffer, Shaakirah (Chemistry) Joos, Carla Grete (Microbiology) Kane, Boyd Robert (Computer Science) (cum laude) Kutama, Aluwani (Chemistry) Lalla, Jaina (Biochemistry) (cum laude) Lang, Ryan Dieter (Computer Science) (cum laude) Lategan, Henk (Chemistry) Louw, Carli (Microbiology) (cum laude) Louw, Nicholas Michael (Plant Biotechnology) Mangali, Asandile (Physiological Sciences) (cum laude) Masola, Kabelo Charles (GeoInformatics) Mathada, Gundo (Chemistry) Meyburgh, Suné Cecilia (Biochemistry) Michaels, Tara Marillize (Physiological Sciences) (cum laude) Mitha, Priyata (Biochemistry) (cum laude) Mostert, Kay-Leigh (Physiological Sciences) (cum laude) Mqulwa, Aza Zizipo (Microbiology) Murray, Kayleigh (Botany) Nagel, Cicely Cheryl (Zoology) Nakiranda, Proscovia (Computer Science) Ndyafi, Vincent Chimbunde (GeoInformatics) Nkuna, Nsuku Prithnea (Physiological Sciences) Nlandu Mabiala, Jérémie (Mathematical Sciences) Nthite, Ontlotlile Frans (Mathematical Sciences) Nundlall, Sharmista (Geography and Environmental Studies B) Okeowo, Victoria Iyabode (Mathematics)

Osikoya, Tosin Samuel (Mathematics) (cum laude) Pandey, Ashwinee Kumar (Machine Learning and Artificial Intelligence) Pestana, Nicole José De Abreu (Biochemistry) (cum laude) Potgieter, Jean-Phillip (Chemistry) Prinsloo, Philippus Albertus (Operations Research) Rakotoarisoa, Hobihasina Patrick (Mathematics) (cum laude) Reitsma, Petruné (Genetics) (cum laude) Salum, Gheda Ali (Genetics) (cum laude) Sarah, Brian Muchiri (Mathematics) (cum laude) Schutte, Casper Jan Hendrik (Bioinformatics and Computational Biology) Sekoko, Israel (Geography and Environmental Studies B) Selabe, Pheeha Audrey (Mathematical Sciences) Sequeira, Jose (Applied Mathematics) Sitharam, Nikita (Bioinformatics and Computational Biology) (cum laude) Smit, Catherine (Physiological Sciences) (cum laude) Smith, Alexandra Nicole (Applied Mathematics) Smith, David Jason (Mathematics) (cum laude) Stenning, Tyler (Zoology) Strelitz, Benjamin Steenveld (Computer Science) Tambe, Zahraa (Microbiology) Ter Huurne, Michele (Botany) (cum laude) Van Coller, Tamara (Microbiology) (cum laude) Van Deventer, Corne (Microbiology) (cum laude) Van Wvk. Luka (Genetics) Warren, Kyle Christopher (Plant Biotechnology) Yahaya, Mukhtar Muhammed (Mathematics) (cum laude)

#### Master of Science in Earth Sciences Magister in die Natuurwetenskappe in Aardwetenskappe

Hunink, Brynn Matthew Mukonki, Kapya Philippe Quinlan, Liam Bodley Renaut, Ray (*cum laude*) Rheeder, Christie George (*cum laude*)

#### Bachelor of Science Honours Honneurs-Baccalaureus in die Natuurwetenskappe

Iyer, Abigail Eden (Physics) Kalamoudacos, Nicholas (Earth Sciences) Lacey, Robin Sarah (Biodiversity and Ecology) Louw, Ben Christiaan (Computer Science) Malatjie, Kutlwano Motlatso Tendai (Earth Sciences) Moschides, Nicholas George (Physics) *(cum laude)* Van Coller, Frederick Joshua (GeoInformatics)

#### Honneurs-Baccalaureus in die Natuurwetenskappe in Bioinformatika en Berekeningsbiologie Bachelor of Science Honours in Bioinformatics and Computational Biology

Ntantiso, Yandisa Faith (Bioinformatics and Computational Biology) Ntsiyane, Somila Oyintando (Bioinformatics and Computational Biology)

#### Bachelor of Science Baccalaureus in die Natuurwetenskappe

Abbott, Leah Marie Albrecht, Nicole Arnolds, Brett Quinlon Asja, Lé-Chandré Kristen Badrodin, Muktaar Barnetson, Angus James Bester, Ilana Bester, Johannes Paul Bezerra, Natalie Van Wyk Blom, Romi Booys, Caren Fredlynn Tamlynn Booyse, Divan Botha, Neo Braithwaite, Philippa Rosemary Brittz. Matt Broekman, Carla Brugman, Leonard (cum laude) Carstens, Marno Coaton, Holly Anne Coetzee, Lené Coetzer, Kayla Conradie, Mell Henri Cooper, Chazlee Jethro Couto, Damiao Cremer, Keegan Weylin Da Costa, Yaseen De Mon. Zanika Lené De Villiers, Elsje Louise Dickson, Grace Dippenaar, Chanté Michelle Domingo, Nabeelah Du Plooy, Chelsea Geraldine Du Toit, Maré Chanté Duminy, Juan Dunjwa, Simbulele Charlotte (cum laude) Duthie, Kayla Hope Engelbrecht, Jordan Francis Esterhuizen, Danell Everett, Steven John Lawson Fick, Andre Gerber, Amè Green, Shéylle Cassey Grunewald, Benjamin Cornelius Guest, Oliver Gungqisa, Simamkele Handley, Katherine Grace Hardy, Samuel Jack Henriksen, Dean Anthony Hill, Christine Taylor

Hobson, Amy-Lee Immerz, Raissa Nicole Jacobs, Tian Josh Jaffer, Rabia Janse Van Rensburg, Divan Jasi, Ruvimbo Lisa Jonck, Rozanne Joubert, Wilmi Kaltenbrun, Cara Kgatlhane, Puleng Maria Kibble, Cara Koopman, Cara Kriegisch, Samantha Jessica Kruger, Elmé Le Roux, Ingrid Adrienne Lebombo, Matimba Martha Lewendal, Haley Josephine Liebenberg, Theodorus Johannes Lombard, Caira-Thereez Long. Sebastian Louw. Christian Ernst Mabika, Nkosinomusa Queen Mahabeer, Meriska Mahlangu, Lwazi Felicity Makinde, Ifeoluwa Elizabeth Makwinja, Kondwani Estelle Masango, Bonginkosi Masekoameng, Khutso Maria Mashego, Lesedi Itumeleng Matyunjwa, Alizwa Lihle Kululutho Mc Gregor, Joseph Melck, Monique Menzi, Elihle Meuter, Liandre Meyer, Jana-Mari Mhlanga, Lwandisile Mlungwana, Lisakhanya Mochai, Teboho Moheng, Cam'ron Carol Margareth Moore, Sian Nicole Motloung, Princess Paballo Motsoeneng, Relebohile Derek Mpetshwa, Inathi Sinobomi Mpiwa, Ofentse Mqoliwe, Vuyo Given Muller, Carli Myburgh, Leah Ndwandwe, Siphesihle Natatia Nel. Karla Nel. Nicolaas Everhardus Noah, Rehana Oosthuizen, Nadine Paulse, Cole Timothy Petiteaud, Tynica Pettenburger-Perwald, Jorgen Reinhard Phahlamohlaka, Martin Phale, Koketso Precious Phiri. Justin Pienaar, Amelie Jeanne Pillay, Kubeshnee Pokela, Sinesipho Potelwa, Libonge Uyanda

Potgieter, Gabriel David Powers, Collette Easton Quickfall, Chloe Robinson, Montana Emma-Jo Marilyn Roos, Carli Rwodzi, Emma Ratidzo Saiet, Salahuddin Sampson, Cayley Jade Saywood, Leigh Tyla Scholtz, Kay-Lee Shin, Seona Shipp, Nicole Elizabeth Smit, Githa Smith, Dilano Roy Smith, Hayley Stevens, Ivana Stuart, Angus Abel Tau, Mahlako Gift Tebbutt, Sarah Jane Ter Morshuizen, Lucy Marie Terblanche, Tanja Thekiso, Thabang Theunissen, Zani Titus, Conli Ruben Isaac Uys, Johan Wilhelm Van der Merwe, Eberhardt Van der Merwe, Herman Emil Van der Walt. Louis Stephanus Van Druten, Jonathan Paul Van Greunen, Morgan Adaliene Van Greunen, Shumé (cum laude) Van Rooyen, Carla Van Veen, Mika Josie

Vermeulen, Johanco Pieter Viljoen, Henry Alexander Visser, Jo-Handrie Volschenk, Anyané Vuma, Sidumiso Sijabuliso Walker, Luke Werner, Oliver James Theal Wood, Mia Joy Woods, Michael Xulu, Celiwe Fezile Yako, Zukhanye Vuyiswa Zwane, Nothando Baliwe

#### Bachelor of Science in Computer Science Baccalaureus in die Natuurwetenskappe in Rekenaarwetenskap

Bester, Dirk Wouter Bienz, Luca Bonthuys, Michael Fourie, Kristi Jevon, Marc Adrian Langley, Joshua Steven Maharaj, Raihik Mahomed, Nahid Shabih, Madhia Hussain Smith, Daniel Jesse Steenkamp, Chris Josh Steyn, Bernhardt Steytler, Joshua Charles *(cum laude)* Walker, Garryk John forward together sonke siya phambili saam vorentoe



### Faculty of AgriSciences

26 March 2024 | 17:00

### Fakulteit AgriWetenskappe

26 Maart 2024 | 17:00

### Programme

Please stand	1.	Entrance of academic procession into the hall.
Please stand	2.	Playing of the National Anthem.
Please sit	З.	Congregation formally constituted by the Chancellor.
	4.	Welcome by the Chancellor.
	5.	Presentation of candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Chancellor.
	6.	Closing by the Chancellor.
Please stand	7.	The academic procession leaves the stage.

### Program

Staan asseblief	1.	Akademiese prosessie kom die saal binne.
Staan asseblief	2.	Speel van die Nasionale volkslied.
Sit asseblief	З.	Formele konstituering deur die Kanselier.
	4.	Verwelkoming deur die Kanselier.
	5.	Voorstelling van kandidate wat kwalifikasies ontvang deur die dekaan van die fakulteit en toekenning van kwalifikasies deur die Kanselier.
	6.	Sluiting deur die Kanselier.
Staan asseblief	7.	Akademiese prosessie verlaat die verhoog.

### Faculty of AgriSciences Fakulteit AgriWetenskappe

#### DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

#### DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

#### BERRY, Anke (Viticulture)

#### A multi-scale approach to characterise and manage intraseason spatial-temporal variability on vine responses in a vineyard

Precision viticulture (PV) is a modern winegrowing method used to optimise resources while improving yield and quality. Despite advancements in PV, however, its practical implementation poses several challenges. Additionally, the impact of PV practices is not always evaluated in the final product (wine). Therefore, this study deploys remote and proximal sensing methods to map variability (water stress and canopy) and to assess the impact of intra-block variability on metabolites associated with berry and wine quality. Exploring natural variability (no treatments), the study provides a valuable opportunity to test PV techniques and workflows under realistic conditions.

Supervisor: Prof C Poblete-Echeverría Co-supervisor: Prof MA Vivier

JANTJIES, Heinrich (Agricultural Economics)

#### An inquiry into the competitive performance of the South African deciduous fruit canning industry

To examine the competitiveness of the South African deciduous fruit canning industry, this study traces the impact of trade dynamics, technological innovation and socioeconomic transformation since 1961. A constructivist approach is followed, grounded in new trade theory and an extended Porter model, the Porter 7. The newly developed normalised relative trade advantage (NRTA) is applied to measure trends empirically. The study reveals that the deciduous fruit canning industry has remained highly competitive, operating as the dominant value chain function and outperforming competing agroindustries. A strategic plan with 44 recommendations is proposed to enhance the industry's competitive performance even further.

Supervisor: Prof CJ van Rooyen

JOLLIFFE, Jenna Bryanne (Wine Biotechnology)

# Functional characterisation of grapevine genes involved in plant surface formation

The plant surface is significant because of its role in disease resistance and quality parameters, such as postharvest shelf life. This study investigated the regulatory mechanisms that drive grape berry surface formation, specifically in relation to fruit development and ripening. Various molecular, histological and chemical analyses were employed, revealing a transcriptional regulatory network that integrates surface formation and fruit ripening. The impact of this regulatory network on fruit quality and organ development was demonstrated, while the MIXTA transcription factor was identified as a key roleplayer in the integration of these biological processes.

Supervisor: Dr J Lashbrooke Co-supervisors: Drs C Moser (external), S Pilati (external), Prof MA Vivier

KAPP, Caro (Nematology)

### The role of nematode community structure and function as bioindicators of soil health in apple orchards

As the human population continues to grow, the need for sustainable food production increases. In South Africa's Western Cape province, apple production plays a crucial role in food supply, employment and economic welfare. To help ensure sustainable apple production practices, this study investigates soil nematode populations under different conditions, including the effect of cover crops on entomopathogenic nematodes. Cover crops do not appear to suppress harmful nematodes, underscoring the importance of careful management. The study emphasises the significance of understanding soil health dynamics and advocates for comprehensive research, standardised extraction methods and broader industry-specific approaches to improve fruit orchard sustainability.

Supervisor: Prof AP Malan Co-supervisor: Prof P Addison

#### LATEGAN, Eugene Lourens (Soil Science)

# Deficit irrigation and canopy management practices to improve water use efficiency and profitability of wine grapes

In a water-scarce country such as South Africa, agriculture competes for water with the urban and industrial sectors. The country's wine industry must continuously adapt to utilise water more efficiently and improve the economic viability of wine production. This is done through deficit irrigation strategies and adapting grapevine canopy manipulation to improve yield and grape quality. This study investigates how a combination of these strategies affects yield, wine quality and economic viability. It also evaluates a grapevine water requirement model that has been in use for 20 years, making recommendations to improve its accuracy and efficiency for future use.

Supervisor: Dr JE Hoffman Co-supervisor: Dr PA Myburgh (external)

#### LESKOVIĆ, Matija (Oenology)

#### Varietal thiols and reductive compounds in white wines

This study evaluates the sensory effect of varietal thiols and their interactions with 'reductive' off-odour sulfur compounds. Two methods to mitigate 'reductive' odours in wine are assessed, namely copper addition and the swirling of wine glasses. In Chenin Blanc wines with high varietal thiols and added H<sub>2</sub>S, swirling is found to be the main cause of 'reductive' aromas, while copper additions reduce 'reductive' intensities and free H<sub>2</sub>S levels, without significant tropical aroma decreases. Swirling enhances 'tropical' attributes, with evaporation primarily removing H<sub>2</sub>S during this process. This study generates new knowledge on reducing unwanted 'reductive' aroma compounds in white wines.

Supervisor: Prof WJ du Toit Co-supervisors: Drs J Brand, M Bekker (external)

#### MABITSELA, Mosima Mamoyahabo (Agronomy)

#### Soilless cultivation and the effects of salinity and drought on the productivity of an underutilised indigenous legume, Bambara groundnut (*Vigna subterranea*)

This study emphasises the need to diversify agriculture with underutilised crops such as Bambara groundnut to ensure food security in the face of climate change. Investigating soilless cultivation, it highlights the crop's potential for climatesmart agriculture and resilience to drought and salinity stress. The study reveals Bambara groundnut's adaptability to severe stress conditions, providing crucial insights for climate-vulnerable regions. Additionally, findings on the crop's nutritional composition underscore its significance as a nutrient-dense option. The study results help promote sustainable agricultural practices, offering holistic insights for resilient and climate-smart farming in the context of global challenges.

#### Supervisor: Dr EE Phiri Co-supervisors: Profs S Mavengahama (external), MJ Booysen

#### MATENDA, Rumbidzai Trust (Food Science)

# Assessment of *Listeria* species found on beef meat, using hyperspectral imaging

Traditional methods for identifying bacteria are often timeconsuming, prompting exploration of rapid techniques. This study delves into near-infrared hyperspectral imaging (NIR-HSI) for the detection of *Listeria monocytogenes* on solid growth media and beef. Operating at 950-2 500 nm, NIR-HSI in combination with chemometrics successfully differentiates *Listeria* species and *L. monocytogenes* serotypes (1/2a, 1/2c and 4b) with accuracies exceeding 90% and 80% respectively. Accuracies for *L. monocytogenes* detection on beef range between 63% and 81%. Distinctive wavebands associated with proteins, lipids and carbohydrates facilitate classification. These findings highlight the potential of NIR-HSI for *Listeria* detection and ensuring food safety.

Supervisor: Dr PJ Williams Co-supervisors: Drs D Rip, J Marais

MATHOBELA, Rebecca Mmamakgone (Animal Science)

#### Characterisation of smallholder pork production systems in the Cape metropole district of the Western Cape province, South Africa

This study evaluates pork production on smallholder farms in the Cape metropole, Western Cape, South Africa. It finds that the health, production and meat quality attributes of pigs raised on smallholder urban farms are less desirable compared to large-scale commercial farming standards. This is mainly the result of farmers' socioeconomic circumstances and the adoption of unsustainable production and marketing practices. It is suggested that smallholder pork production in the Cape metropole could be improved by the adoption of sustainable production and marketing practices and the holistic integration of socioeconomic, technological, environmental, institutional, legal and policy factors that influence farmers' decisions.

#### Supervisor: Prof C Mapiye

*Co-supervisors:* Dr AH Molotsi, Profs MC Marufu *(external)*, PE Strydom

#### MEYER, Aline (Soil Science)

#### Determination and modelling of evapotranspiration of bearing and non-bearing apple trees at Grabouw in the Western Cape

This four-year study finds that the water use of young apple trees increases with age and irrigation frequency. Longer irrigation cycles result in less evaporation and substantial water savings. The study develops a set of crop coefficients that growers can use together with weather data to calculate orchard water use. It also uses a novel scanning method to determine root growth, finding wider and deeper soil penetration with longer irrigation cycles. The more new roots and fine roots, the higher soil water extraction becomes. Finally, a root length density model is developed to predict the water use of an apple orchard.

Supervisor: Dr JL van Zyl Co-supervisor: Dr JE Hoffman

#### MTENGWA, Onai Ruvimbo Sibongile (Agronomy)

# Bambara groundnut: an evaluation of landrace pro-ductivity and the sociocultural perspectives surrounding its cultivation

Amidst the challenges of climate change in African food systems, the integration of underutilised crops such as Bambara groundnut (*Vigna subterranea*) is essential. Acknowledged for its impressive nutritional profile, Bambara groundnut is labelled a 'complete food'. This study assesses the existing constraints and enablers for its cultivation and utilisation in South Africa, exploring sociocultural dynamics, yield disparities and drought resistance among available landraces. Utilising a systems-thinking framework, the research explores interconnected drivers crucial for mainstreaming this crop. The findings provide valuable insights into the status of Bambara groundnut, and avenues for enhancing its role in bolstering food and nutrition security.

Supervisor: Prof PA Swanepoel Co-supervisor: Dr PJ Pieterse

#### NETHAVHANI, Zwannda (Genetics)

# Genetic diversity of edible *Lepidoptera* in southern Africa, and implications for sustainable use of wild populations

African *Saturniidae* include some of the most important edible insects in southern Africa, such as the mopane worm. These well-known caterpillars are harvested at the household and commercial scales in South Africa, Botswana and Namibia, creating opportunities for additional nutrition and seasonal income. Yet concerns have been raised about the sustainability of these practices due to increasing habitat destruction, urbanisation, overharvesting and climate change. This study documents the genetic diversity of African *Saturniidae* at the species and population level in these countries and offers recommendations for improved taxonomy and conservation of mopane worms and other emblematic edible species.

Supervisor: Dr B van Asch Co-supervisor: Dr R Veldtman

#### OLIVIER, Adriaan Jacobus (Conservation Ecology)

# The ecology of southern giraffe (*Giraffa giraffa*) in Zimbabwe – an unknown entity

This study explores how environmental changes, previous land use and management regimes drive and affect behavioural variation among giraffe populations in and between two different landscapes in Zimbabwe. It focuses on giraffe population dynamics, diet, activity patterns and movement behaviour. The outputs from the research – the first-ever indepth study of giraffe ecology in Zimbabwe – will contribute specifically to the compilation of a national giraffe conservation strategy or plan for Zimbabwe, which will also be used as a management tool in other giraffe range states in Africa.

Supervisor: Prof A Leslie Co-supervisor: Dr J Fennessy (external)

#### **ORTH**, Sebastian Helmut (Food Science)

#### Application of spectral imaging in the determination of variety and pre-harvest seed damage in *Hordeum vulgare* by using a chemometric approach

Preharvest germination poses an economic threat to the barley breeding and malting industries. This study utilises visible and short-wave infrared spectral data from various malting barley varieties, both before and after germination, to determine variety and identify preharvest-germinated kernels via sequential multiblock modelling techniques. Chemometric data fusion methods achieve high classification accuracies, suggesting potential for non-invasive industrial monitoring. This approach could enable the implementation of sensors in malting-related industries to support quality control. These techniques offer a valuable tool to industries that pursue strict quality standards, and hold promise for improved cereal grain breeding and malting practices.

Supervisor: Dr Stefan Hayward Co-supervisors: Profs GP Fox (external), M Manley

TEMBO, Chimwemwe (Agricultural Sciences)

# Investigating the sustainability of using endangered species in the indigenous food system: a case study of the chikanda orchids

This study examines the sustainability of CITES-listed orchid species whose tubers are used to prepare a traditional meat-like vegetarian cake called chikanda in Zambia. The endemicity, population trends and conservation status of the species are determined. An examination of the impact of harvest practices on community access and livelihoods and an analysis of the urban value chain uncover key actors, trade routes and marketable species, indicating partial economic yet lower social sustainability. Despite international protection, ongoing wild harvesting poses extinction risks, prompting the need for conservation measures. The study proposes indicators for monitoring sustainability in informal value chains.

#### Supervisor: Dr EE Phiri

*Co-supervisors:* Drs RR Malgas, K Maciejewski *(external)*, T Dube *(external)*, Prof S Syampungani *(external)* 

#### TSHILATE, Thendo Stanley (Genetics)

## The genetic architecture of growth-related traits in the South African abalone (*Haliotis midae*)

The South African abalone ('perlemoen') is an economically important marine living resource that is overexploited and endangered in the wild. Thus, aquaculture presents a sustainable alternative to wild harvesting. The species has a slow growth rate, affecting production efficiency. This study establishes the first draft genome sequence and high-density genetic map for the South African abalone. It uncovers key genes that explain observed phenotypic variation in growth rate both within South African abalone and across Haliotid species. The research delivers a comprehensive framework for understanding growth and valuable genetic resources that should facilitate accelerated genetic improvement through genomics-assisted technologies for abalone aquaculture.

*Supervisor:* Prof C Rhode *Co-supervisor:* Dr E Ishengoma (*external*)

#### VACU, Vincent Malizukiswe (Genetics)

#### Toward yield improvement: identification and characterisation of photosynthesis-enhancing genes from pigeon pea (*Cajanus cajan*)

Humanity needs to produce up to 60% more food by 2050. Classical crop breeding will not meet future food demands, and new genomic techniques are vital to improving crop production for future food and nutrition security. This study identifies genes involved in photosynthesis from the pigeon pea (*Cajanus cajan*), an important food security crop. Expressing these genes in tobacco improves photosynthetic capacity and increases soluble carbohydrate (sugars) and starch content, leading to improved total biomass. The findings provide new insights into how genetic manipulation of photosynthesis could improve pigeon pea productivity and yield.

Supervisor: Dr S Peters

#### VAN JAARSVELD, Wynand Jacobus (Plant Pathology)

# Determining factors that may shorten the productive lifespan of grapevine rootstock mother blocks

Grapevine trunk diseases pose a significant threat to the South African grapevine industry, and the risks of aging rootstock mother blocks infected with these diseases are unknown. This study investigates factors influencing the lifespan of rootstock mother blocks, analysing morphological, physiological and fungal infection aspects. While the results vary with planting year and season, high incidences of fungal pathogens are obtained from mother vine heads and oneyear-old canes, which are shown to adversely affect callus formation and nursery vine performance. Proper management, including pruning wound protection, sanitation, watering and fertilisation, can mitigate the risks posed by aging rootstock mother blocks.

Supervisor: Prof F Halleen (external) Co-supervisors: Profs L Mostert, JJ Hunter (external)

#### VAN ROOYEN, Jana (Food Science)

### Physicochemical, functional and structural properties of flour and starch from dry-heat-treated wheat

Wheat flour primarily comprises starch, which is a multifunctional food ingredient. Roasting whole wheat affects the properties of flour and starch, determining final product quality. This study uses near-infrared (NIR) spectra and ANOVAsimultaneous component analysis to show the significant effect of roasting on the chemical-structural properties of protein and starch. Time-domain nuclear magnetic resonance (TD-NMR) experiments accurately demonstrate water distribution in a starch-water system and provide information about the extent of gelatinisation after heating. Future cereal-based studies may benefit from the use of NIR spectroscopy as a characterisation technique, and TD-NMR relaxometry as a technique for studying molecular dynamics.

#### Supervisor: Prof M Manley

Co-supervisors: Dr S Oyeyinka (external), Prof S Simsek (external)

#### VENTER, Elrita (Plant Pathology)

# Etiology and epidemiology of pre and postharvest fungal diseases of *Punicae granatum* in South Africa

While 80% of pomegranates produced in South Africa are exported, up to 30% can be lost to postharvest decay, affecting the sustainability of the industry. This study determines the cause of postharvest decay in stored pomegranate fruit and investigates the efficacy of current and improved management strategies. *Penicillium* species are found to be responsible for the highest incidence of postharvest decay and appear to be sensitive to the existing registered fungicide fludioxonil. The fungus *Cytospora punicae*, commonly found as a trunk pathogen, is identified as the cause of stem end rot in stored pomegranates.

*Supervisor:* Dr C Lennox *Co-supervisor:* Dr J Meitz-Hopkins

### Faculty of AgriSciences Fakulteit AgriWetenskappe

#### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

#### Master of Science Magister in die Natuurwetenskappe

Adendorff, Ilka Alda (Plant Pathology) (cum laude) Arnold, Fagrie (Plant Pathology) Badenhorst, Alida Jeanetta Jacoba (Plant Pathology) (cum laude) Basson, Renier Johannes (Entomology) Clark, Keegan Scott (Wine Biotechnology) Clüver, Karin Elisabeth (Agricultural Sciences) (cum laude) Derman, David Garron (Wine Biotechnology) Dieltjens, Nathalie Luc Ingrid (Wine Biotechnology) Feni, Abongile Jackie (Sustainable Agriculture) Grobler, Barend Jacobus (Agricultural Sciences) (cum laude) Hamish, Gebers Roger (Sustainable Agriculture) Havenga, Mikhail Malherbe (Sustainable Agriculture) Keet, Marcelle (Plant Pathology) (cum laude) Kotze, Miché Charlize (Plant Pathology) Majewski, Emile Tomas (Wine Biotechnology) Möller, Heike (Plant Pathology) (cum laude) Mundia, Bryan Kariuki (Wine Biotechnology) Shange, Nomfundo Smangele (Wine Biotechnology) Solontsi, Siyamkele (Wine Biotechnology) Stoltz, Danae (Plant Pathology) (cum laude) Teubes, Megan (Sustainable Agriculture) (cum laude) Tobias, Micaela (Plant Pathology) Wolf, Anchen (Sustainable Agriculture)

#### Master of Science in Agriculture Magister in die Natuurwetenskappe in Landbou

Abdoll, Caitlyn (Agricultural Economics) Alweendo, Beatrix Namulo (Agronomy) Bestbier, Louise (Agronomy) Boden, Jarryd Michael (Animal Science) (cum laude) Botha, Johannes Petrus (Agricultural Economics) Chipembere, Luther Gwinyai (Agricultural Economics) Claasen, Nicholle Justine (Nematology) (cum laude) Cordy, Peter Anthony (Animal Science) Davies, Sarah Jane (Animal Science) (cum laude) Du Plessis, Marina (Soil Science) (cum laude) Du Plessis, Schalk Willem (Soil Science) Engelbrecht, Lambert Karel (Plant Pathology) Featherstone, Bradley William (Animal Science) Fourie, Louis Welricht (Entomology) (cum laude) Freysen, Kayla Megan (Animal Science) Gandiwa-Mudede, Charmaine Sandy (Agricultural Economics) Herrmann, Bruno Martin (Agronomy)

Hull, Sandra Iris (Agronomy) (*cum laude*) Keuck, Anika (Plant Pathology) (*cum laude*) King, Fransina Christina (Animal Science) Kriegler, Anmari (Horticultural Science) Ladegourdie, Jason Nathan (Horticultural Science) Mncedi, Sipho (Soil science) (cum laude) Mtwesi, Sinako (Agricultural Economics) Musto, Guy Alistair (Agronomy) (cum laude) Nel, George Philippus (Horticultural Science) Ngindi, Buhle (Horticultural Science) (cum laude) Ntlokwana, Zolani (Agricultural Economics) Olivier, Alannah Murial (Animal Science) (cum laude) Orselli, Luca Angelo (Viticulture) Parker, Imaan (Soil Science) Seegmuller, Andre Joseph (Animal Science) Steyn, Erneli (Animal Science) Sutherland, Brandin (Animal Science) Tommasi, Alexia (Animal Science) Tsilatsila, Onndwela Princess (Agronomy) Tyelo, Mkhanyisi (Agricultural Economics) Vahrmeijer, Karel Johannes (Horticultural Science) (cum laude) Van Rensburg, Waldo (Animal Science) Van Wyk, Chad Kurt (Horticultural Science) (cum laude) Van Wyk, Robert (Animal Science) (cum laude)

#### Master of Science in Forestry and Wood Sciences Magister in die Natuurwetenskappe in Bosbou- en Houtwetenskappe

De Villiers, Jacques Pierre (Forest Science) De Villiers, Peter Charl (Forest Science) *(cum laude)* Dombo, Khathutshelo (Forest Science) Kok, Simeon James (Forest Science) Kutzer, Karl (Wood Product Science) Mathenjwa, Ayanda Mfanafuthi (Wood Product Science) Moller, Michael Steve (Forest Science) Nefdt, Keenan Colin (Wood Product Science) Nevhungwili, Mashudu Lucy (Forest Science) Venter, Tertius (Forest Science)

#### Master of Science in Conservation Ecology Magister in die Natuurwetenskappe in Bewaringsekologie

Cunningham, Peter Low (Conservation Ecology) Khan, Zahra (Conservation Ecology) Little, Alyssa (Conservation Ecology) (*cum laude*) Van Tonder, Jeanne (Conservation Ecology)

#### Master of Science in Food and Nutrition Security Magister in die Natuurwetenskappe in Voedsel- en Voedingsekerheid

Diambwa, Mania Donatien Issel, Cheryl Erica Phiri, Alice Smith, Anne

#### Master of Science in Food Science Magister in die Natuurwetenskappe in Voedselwetenskap

Jankowitz, Corani Kelfkens, Jess Küster, Margot Ellen *(cum laude)* Schutte, Mia Olga *(cum laude)* Van Wyk, Mari *(cum laude)* 

#### Master of Agriculture Magister in Landbou

Mouton, Victor David (Agricultural Economics) Stringer, Cidney Jamie (Agricultural Economics)

#### Bachelor of Science Honours Honneurs-Baccalaureus in die Natuurwetenskappe

Barnard, Hendrik Andre (Applied Plant Physiology) Litabe, Mapaseka Gladys (Wine Biotechnology)

#### Bachelor of Agricultural Honours Honneurs-Baccalaureus in die Landbou

Flint, Luke John (Agricultural Economics) (cum laude)

#### Postgraduate Diploma in Forestry and Wood Science Nagraadse Diploma in Bosbou- en Houtwetenskappe

Mfeka, S'phiwe Snell-Jordaan, Marchalyn Varuske

#### Postgraduate Diploma in Agronomy Nagraadse Diploma in Agronomie

Mbongwa, Zamabongwa Cynthia Streicher, Eric Matthys

#### Bachelor of Science in Agriculture Baccalaureus in die Natuurwetenskappe in Landbou

Albertyn, Jessica (Plant and Soil Science) Barton, Jessica Claire (Agricultural Economics) Borchers, Beatrix Louise Taylor (Viticulture and Oenology) Bulo, Lulo Palesa (Viticulture and Oenology) Cawood, Joshua Joseph (Agricultural Economics) Coetzee, Christiaan Burger (Plant and Soil Science) Dlamini, Gift Reitumetse (Plant and Soil Science) Khan, Abdul Qadeer (Plant and Soil Science) Lourens, Jacobus Johannes Nicolaas (Plant and Soil Science)

Louw, Carla (Viticulture and Oenology) Magerman, Nathan Philip (Plant and Soil Science) Mbhele, Abongile (Plant and Soil Science) Mthalane, Nokwethemba Happiness (Viticulture and Oenology) Mthembu, Zandile Victoria (Plant and Soil Science) Ndhlovu, Chantel Rose (Plant and Soil Science) Ntshangase, Peaceful (Animal Science) Pool, Petru (Plant and Soil Science) Shaikh, Azharuddin (Plant and Soil Science) Sithole, Qiniso Siyanda (Plant and Soil Science) Smit, Anna Margaretha (Plant and Soil Science) Stevens, Jason David (Plant and Soil Science) Tyalana, Lunga (Viticulture and Oenology) Uys, Stefan (Plant and Soil Science) Van Wyk, Cj (Viticulture and Oenology)

# Bachelor of Science in Forestry in Forestry and Wood Science

Baccalaureus in die Natuurwetenskappe in Bosbou in Bosbou-en Houtwetenskappe

Visagie, Rovenco Rudy

Bachelor of Science in Food Science Baccalaureus in die Natuurwetenskappe in Voedselwetenskap

De Jongh, Nola Louw, Nicolene

#### Bachelor of Agriculture Baccalaureus in Landbou

Bosch, Jenna Lee Clucas, Andrew Douglas Dreyer, Willem Petrus Duthie, James Axel Rex Ekeji, Paschal Hans Uzoma Eksteen, Hendrik Johannes Giliomee, Johann Philip Herholdt, Stephanus Johannes Joubert, Johannes Joubert, Simon Kondile, Khaliphile Le Roux, Philippus Petrus Mahlali, Sesona (cum laude) Mohube, Khanyo Mpupu, Sizeka Nomfembe, Pelokazi Olwagen, Malan Schreiber, Hannah Alexis Thiart, Daniel Van der Westhuizen, Luc



Faculty of Economic and Management Sciences (Group 1) 27 March 2024 | 09:00

Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 1) 27 Maart 2024 | 09:00

### Programme

Please stand	1.	Entrance of academic procession into the hall.
Please stand	2.	Playing of the National Anthem.
Please sit	З.	Congregation formally constituted by the Vice-Chancellor.
	4.	Welcome by the Vice-Chancellor.
	5.	Presentation of the candidate for the honorary doctorate and conferment of the degree by the Vice-Chancellor.
	6.	Presentation of candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Vice-Chancellor.
	7.	Closing by the Vice-Chancellor.
Please stand	8.	The academic procession leaves the stage.

### Program

Staan asseblief	1.	Akademiese prosessie kom die saal binne.
Staan asseblief	2.	Speel van die Nasionale volkslied.
Sit asseblief	З.	Formele konstituering deur die Visekanselier.
	4.	Verwelkoming deur die Visekanselier.
	5.	Voorstelling van die eredoktorandus en toekenning van die eredoktorsgraad deur die Visekanselier.
	6.	Voorstelling van kandidate wat kwalifikasies ontvang deur die dekaan van die fakulteit en toekenning van kwalifikasies deur die Visekanselier.
	7.	Sluiting deur die Visekanselier.
Staan asseblief	8.	Akademiese prosessie verlaat die verhoog.

### Honorary Doctorate | Eredoktorsgraad

### FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES FAKULTEIT EKONOMIESE EN BESTUURSWETENSKAPPE

The degree Doctor of Commerce (DCom), *honoris causa*, to Die graad Doktor in die Handelswetenskappe (DCom), *honoris causa*, aan

#### Leonard Wantchekon

for advancing research in the fields of political economy, economic history and development economics, particularly in Africa; for transferring his expertise and knowledge through academia, and for his strong commitment to developing sustainable platforms that promote youth education in Africa.

A professor of Politics and International Affairs at Princeton University, Leonard Wantchekon has made substantive contributions to the fields of political economy, development economics and economic history. His research centres on Africa, with a focus on democratisation, clientelism and redistributive politics, the resource curse, and the long-term social impact of historical events.

His innovative work includes research on political institutions and governance, which entailed field experiments with politicians competing in real-time elections to investigate the effects of policy and campaign messaging on voters' behaviour. Some of his other ground-breaking studies examined the long-term economic effects of key events in history, such as the Atlantic slave trade, on Africa.

In 2014, Wantchekon established the African School of Economics (ASE) in Benin, his native country. The school identifies prospective African economists and policymakers and prepares them for industry or doctoral studies. Several ASE students have since enrolled in PhD programmes in the United States and elsewhere.

Having previously held positions at Yale and New York universities, Wantchekon is a fellow of both the American Academy of Arts and Sciences and the Econometric Society, as well as an executive committee member of the International Economic Association. vir die bevordering van navorsing op die gebied van die politieke ekonomie, ekonomiese geskiedenis en ontwikkelingsekonomie, veral in Afrika; vir sy vrygewigheid met die deel van sy diverse kundigheid en kennis deur die akademiese dissipline; en vir sy toewyding aan die ontwikkeling van volhoubare platforms wat die opvoeding van die jeug in Afrika bevorder.

As professor in die politiek en internasionale sake aan die Princeton-Universiteit, het Leonard Wantchekon wesenlike bydraes tot die gebied van die politieke ekonomie, ontwikkelingsekonomie en ekonomiese geskiedenis gelewer. Sy navorsing fokus op Afrika, veral op demokratisering, kliëntelisme en herverdelingspolitiek, die 'hulpbronne-vloek' en die langtermyn- maatskaplike impak van geskiedkundige gebeure.

Sy innoverende werk sluit navorsing oor politieke instellings en bestuur in en het veldproewe met politici behels wat aan intydse verkiesings deelgeneem het om die uitwerking van beleid en veldtogboodskappe op kiesers se gedrag te ondersoek. Sommige van sy ander baanbrekerstudies het die langtermyn- ekonomiese gevolge van belangrike geskiedkundige gebeure, soos die Atlantiese slawehandel, op Afrika ondersoek.

Wantchekon het in 2014 die Afrika-skool vir Ekonomie (ASE) in Benin, sy geboorteland, gevestig. Die skool identifiseer voornemende Afrika-ekonome en beleidmakers en berei hulle vir die bedryf of vir doktorale studie voor. Sedertdien het verskeie ASE-studente reeds vir PhD-programme aan universiteite in die Verenigde State en elders ingeskryf.

Hy het poste aan Yale-Universiteit en die Universiteit van New York beklee. Hy is 'n genoot van die Amerikaanse Akademie vir Kuns en Wetenskap, asook van die Ekonometriese Vereniging, en is lid van die uitvoerende komitee van die Internasionale Ekonomiese Vereniging.

### Faculty of Economic and Management Sciences (Group 1) Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 1)

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

#### DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

DU PLESSIS, Francois (Logistics Management)

#### Investigating marine cargo insurance claims for signs of climate change through the South African fresh fruit export supply chain

This study explores the nexus between climate change and supply chain risks, focusing on marine cargo insurance claims in South Africa. It sheds light on the consequences of climate-induced perils for global supply chains and formulates strategies for effective risk mitigation. Weatherrelated marine cargo insurance claims in South Africa, have markedly increased over the past decade. Therefore, the research examines the impacts of climate change on South African fruit exports and proposes a predictive model for future scenarios. Ultimately, it underscores the need for comprehensive risk management solutions to combat the growing challenge of climate change for supply chains, specifically in South Africa.

Supervisor: Prof L.L. Goedhals-Gerber *Co-supervisor:* Prof J van Eeden

VAN DER MERWE, Jacomina Magdalena (Transport Economics)

#### The impact of transport accessibility and spatial equity on employment outcomes

This study seeks to understand how transport, measured by accessibility and general transport cost components such as commuting cost and travel time, affects the labour market in South Africa. It measures the horizontal and vertical spatial equity impacts and how these vary across income groups. The research highlights the unequal distribution of accessibility, caused by congestion, across spaces and income groups in the City of Cape Town. It investigates the impact of transport costs on labour discouragement and provides evidence that longer commuting distances reduce employment duration for lower-income employees.

Supervisor: Prof SC Krygsman Co-supervisors: Profs ID Woolard, KL Papps (external) VAN RENSBURG, Johann Andre (Transport Economics)

### Distance-based road user charges as a road cost recovery method: a South African case study

Road infrastructure facilitates economic development and growth, yet the road sector continues to experience funding shortfalls. Fuel charges and levies are under pressure to meet road maintenance, upgrading and construction demands. New technologies, such as more fuel-efficient and electric vehicles, reduce income from fuel charges and levies, which may amplify the problem. This study follows the latest international developments to devise a methodology that uses global positioning system technology to charge road users based on their travel distance. The research shows the approach to be a viable option to introduce a fair and equitable road user charge in South Africa.

Supervisor: Prof SC Krygsman Co-supervisor: Prof MJ Booysen

### Faculty of Economic and Management Sciences (Group 1) Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 1)

#### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

#### Master of Commerce Magister in die Handelswetenskappe

Allies, Audria (Logistics Management) Bester, Marike (Industrial Psychology) *(cum laude)* Buys, Ruan (Financial Risk Management) *(cum laude)* Chen, Pinquan (Logistics Management) *(cum laude)* Coetzee, Debbie (Industrial Psychology) Du Plessis, Elana (Taxation) Els, Zuretha (Logistics Management) *(cum laude)* Gounder, Nathan David (Financial Risk Management) Jansen Van Rensburg, Pieter Willem (Financial Risk Management) Kleynhans, Yolika Johanna (Industrial Psychology) Macnab-Holding, Cuan Selkirk (Industrial Psychology) Mkhabele, Nkensani Keneth (Transport Economics) Motsamai, Edwin (Industrial Psychology)

Nxumalo, Gugu Ntobeko (Industrial Psychology) Putter, Laura Frances (Business Management) *(cum laude)* Rose, Courtney (Industrial Psychology) Scheepers, Clarissa Dawn (Industrial Psychology) Scholtz, Kelly (Human Resources Management) Scrooby, Rachel Claire (Industrial Psychology) Segoe, Mbalenhle Tshiamo (Industrial Psychology) Stapelberg, Keara-Linn (Statistics) *(cum laude)* Sulon, Robyn Andrea (Industrial Psychology) Van Tonder, Jana (Mathematical Statistics) *(cum laude)* Vlok, Cassius Ray (Operations Research) *(cum laude)* Waldek, Alex Vernon (Logistics Management) Zackey, Matthew David (Mathematical Statistics) *(cum laude)* 

Zakeyo, Macdonald Itayi (Industrial Psychology)

#### Master of Philosophy Magister in die Wysbegeerte

Butana, Nosiphelo (HIV/AIDS Management) Choabi, Dineo Charity (HIV/AIDS Management) Lukau, Blaise Dilumbu (HIV/AIDS Management) Mohlabi, Teboho Charles (HIV/AIDS Management) Mojela, Mokgadi Anna (HIV/AIDS Management) Motlokoa, Lineo Grace (HIV/AIDS Management) Sibandze, Nontobeko Lucia (HIV/AIDS Management)

#### Bachelor of Commerce Honours Honneurs-Baccalaureus in die Handelswetenskappe

Baker, Jordan (Statistics) Bence, JC (Financial Risk Management) Botha, Michael Alexander (Logistics Management) *(cum laude)* Herholdt, Frances Dania (Financial Risk Management) Knoop, Marco (Business Management) Lindsay, Brandon Troy (Mathematical Statistics) Nel, Dylan Reece (Financial Risk Management) Nxumalo, Lwandiso Eyethu (Logistics Management) Riekert, Chanelle (Business Management) Swanepoel, Edrich (Logistics Management)

#### Postgraduate Diploma in Strategic Human Resource Management Nagraadse Diploma in Strategiese Menslike

Nagraadse Diploma in Strategiese Menslike Hulpbronbestuur

Beharrie, Sharon Kaywood, Lungelwa Kumalo, Nelisiwe Nokuthula Madi, Sphilile Ntombizodwa Makine, Reitumetse Rejoice Mathebula, Duke

#### Postgraduate Diploma in Transport and Logistics Nagraadse Diploma in Vervoer en Logistiek

Tembani, Lithe-Thaa *(cum laude)* Tennick, Christopher Johnson

#### Nagraadse Diploma in Bemarking Postgraduate Diploma in Marketing

Johnson, Jesse Lael Poole, Breyton Avron Regue, Edward Matthew Wilkinson, Rachel Gerri

#### Nagraadse Diploma in MIV/Vigs-bestuur Postgraduate Diploma in HIV/AIDS Management

Adam, Humeria Ali, Andisiwe April, Sinegugu Minion Benya, Azabeluncedo Blayi, Mfefekazi Boshoff, Amber Charmelin Bowers, Edvina Melony Boyana, Afika Cele, Nozipho Sinikeziwe Zimbili Cele, Samukelisiwe Christobell Cenga, Sinazo Cidraas, Segametsi Nicolette Dipatane, Thuto (cum laude) Dlamini, Cynthia Sibongile Dlamini, Nolwazi Dlamini, Sindisiwe Patricia Dlangamandla, Noluthando Dube, Sarah Nowinile (cum laude) Farlane, Reneuoe Julian Fubesi, Nandise

Gamede, Aphelele Gasekoma, Phenyo Dominique Godas, Themba Gumede, Sfundo Manqoba Hlomendlini, Yandisa Jali, Confidence Samkelisiwe Jenkins, Calebe Johnson, Lara Anne Kahlane, Ntateng Vivienne Kemele, Siphiwo Absalom Khoza, Sithembile Primrose Khuduge, Israel Morgan Khuvutlu, Portia Rito (cum laude) Koetle, Mamokone Florence Kuane, Allentha Bruneth Lembethe, Ayanda Christopher Lepheana, Kefuoe Lepheana, Makgaola Handsome Lingani, Anathi Lufuta. Philela Mabe. Keitumetse Esther Mabudle, Asanda Pearl Machete, Maureen Machimana, Ripfumelo Faith Macwili, Sinovuyo Madimola, Tumi Ingrid Mafilika, Ponello Magagula, Khombisile Magobongo, Zuko Maheya, Maeshela Cilly Mahlangu, Nhlanhla Buyisile Makhafola, Ennie Ramadimetja Makhapha, Pabatso Makoatsane, John Thinane Malatji, Granny Malatji, Kgethishi Solly Maleki, Zikhona Mathiya, Nosiphenathi Matshinvatsimbi. Muelelwa Matthee, Jurie Johannes Mavuso, Nozipho Precious Mazibuko, Thubalakhe Mthokeleli Mazikwana, Thuliswa Julia Mbengane, Benele Mbiyo, Siphelele (cum laude) Mbuwako, Bongiwe Favourite Mdingi, Balungile Mdledle, Nokwanda Prudence Mdutyana, Oyama Meyi, Akhona Mgadle, Athandile Mgcineni, Zukisa Mhambi, Gcobisa Constance Mhlaba, Nompilo Mlambi, Siphiwe Mfanafuthi Mlambisa, Buhle Modisenyane, Kelebogile Jacobeth Mohale, Clancina Clancy Mohlalisi, Mamotseare Mohloai, Teboho Molatelle, Mamello Molefe, Ogone Lincoln

Morabe, Tumelo Liteboho William Moruri, Johannes Shimane Moseki, Oarabile Millicent Moshoette, Patricia Motshedisi Moss, Phee Motata, Matseleng Motia, Cynthia Likeleli Motswene, Vusumuzi Hlophani Elias Mpetshwa, Phelele Msibi, Mbali Valencia Mtatambi, Thabisa Mthembu, Nondumiso Yvonne Mtsweni, Prudence Mtwentwe, Pumlani Hope Mubi, Mirriam Shalom Mxhaka-Norolela, Nomaxabiso Myeni, Rose Khanyisile Ndlazi, Sizani Virginia Ndlovu, Lindokuhle Melisa Ndlovu, Mandisa Nene, Glorious Simangele Ngcamu, Thandazile Ngobeni, Elaine Ngwenya, Precious Xolisiwe Nhlabathi, Jumaima Nely Njakazi, Sthabile Nkala, Marcus Vuyisile Nkosi, Negrow Nelisiwe Nofuya, Avela Pinkie Nomkoweni, Vuyiswa Notununu, Zintle Ntsewa, Getrude Ntshila, Aphiwe Ntuli, Sandiso Nyawo, Mzamo Khulani Nzimande, Ritta Palesa Okonkwo, Adaobi Onyebuchi (cum laude) Pama. Zusakhe Perez. Jesse Isai Pillay, Vishalini Qukwana, Sesethu Sebehela, Ithabeleng Gladys Sebola, Mabatho Hendrica Seshoka, Nthabiseng Sana Setaba, Boipelo Sanna Seturumane, Mapalo Shabangu, Nontobeko Patricia (cum laude) Shange, Wandile Wiseman Shologu, Sisanda Sibiya, Yonela Sigcau, Nombini Sigiyama, Lusanda Sikhakhane, Masiphila Sakhile Simelane, Sifiso Jeft Siphuma, Patricia Siwani, Lona Sixolo, Sinoxolo Sotshangane, Nozipho Tengile, Vuyiswa Thulo, Phemelo Tshaka, Olwethu Tsosane, Nthuseng

Tyiki, Akhona Acodelia Tywabi, Ntombosindiso Monica Van Wyk, Veronica *(cum laude)* Vilakati-Mahlangu, Lamlile Gcinile Vusani, Unathi Xaba, Xolisile Xabendlini, Siyanda Xulu, Fanyana Yoyo, Nwabisa Zwane, Prince Qiniso Sizwe

#### Bachelor of Commerce Baccalaureus in die Handelswetenskappe

Achilles, Mogamad Yusuf Ackerman, Alexander Leif Ackerman, Nica Anticevich. Brett Taine Arthur. Travis Scott Atler, Neroesjke Faith Backer, Hilmer Johannes Bagnall, Ashleigh Jenna Bengesai, Emmanuel Munashe Bester, Tiaan Bezuidenhout. Shanidiné Birch. Danielle Blaauw, Andrew Leo Blatch. Kai Luca Botes, Andrea Brink. Herman Marais Brown. Jessica Buchanan, Jock Wiliam Cary, Alexandra Mae Chigunduru, Brandon Takura Chitharai, Mishe' Christodoulou. Astra Lee Clark, Georgia Ann Cleaver, Cynan Cochrane, Carmen Abigail Coetzer. Petrus Johannes Conradie, Jacobus Daniel Coxwell, Andrew Gordon Cubitt. Luke Da Costa, Kean Dallas, Daniel De Bruyn, Fia De Gray Birch, Kyra Mijanou (cum laude) De Ridder, André Johan De Villiers. Cheri De Waal, Jean-Luc Paul Decker, Emma Rhiannon Delange, Tré Juan Dhakwa, Koshesai Edith Dicey, Taylor Du Plessis, Emile Prieur Du Toit, Jason Duma, Sabelo Duraan, Johanna Dawn Edgley, Mikayla Zeldene Watzek Edward, George Engelbrecht, Klara Fanampe, Dineo Joy

Fernandes, Camanarde-Raphael Raphael Fourie, Jacob Frodsham, Ashton Fyvie, Duncan Hector Giba, Siph'esihlesenkosi Govender, Tyrick Grassman, Danelle Grobbelaar, Lara Lynn Grundlingh, Jan-Louis Gumede, Wendy Nosipho Hall, William David Ham, Gemma Maree Hart, Peter Duncan Hayes, Luke Anthony Henry, Kyle Higgs, Jordan Thomas Hodgkinson, Matthew Craig Holdsworth. Connor James Holtzhausen, Nicholas Marais Hoosain. Muhammad Azhar Isaacs, Mushfeegah Islam. Suhail Jacobs, Chevan Ntatho Jacobs, Jade Jajbhay, Muhammad Daiyaan Jankowitz, Anna Elizabeth Janse van Rensburg, Caroline Eleanor Janse van Vuuren. Talitha Jepson, Claudia Johnson, Gregory James Jones, Colby Douglas Jones Jordaan, Danel Jordaan, Luca Joubert, Wihan Kambarami, Mandla Munashe Karaan. Burhan Kench, Camden Matthew Kilbourn, Connor Frank Kilbourn, Thomas Christopher Kingwill, Sasha-Lee Kotze, Gerhard Kritzinger, Chimoné Kurewa. Tadiwanashe Labuschagne, Benre Langa, Bongani Polycap Lawrence, Kyle-Aden Matthew Le Roux, Clarice Le Roux, Mikkela Le Roux, Tania Leach, Thomas Henry Oxenham Levack, Iman Liedtke, Christian Lock. Nerice Lombard, Ethan Kamfer Longworth, Sarah Kate Lonte, Mika Loomes, Samantha Louw. Frederik Johannes Louw. Josias Jacobus Lowe, James Edwin Maggo, Sesethu Maguire, Brady Kallan

Maré, Gerhardus Paulus Matsepe, Moleboheng Tholang Mieny, Jean Jacques Mokoena, Patricia Mmagauta Mokone, Kamohelo Morris, Corbyn Everett Morsink, Kaid Msibi, Ntombezinhlezamasibi Muller, Dané Mzele, Hlumani Naidoo, Danshil Naidoo, Hiren Naude, Brendan Andrew Ndinisa, Anthon Phindile Newman, Carla Ngcobo, Vuyo Chulumanco Nortje, Kyle Olivier, Hilda Paul, Christopher Marcus Peters. Errol Phofa, Lesedi Thomas Solly Phyfer, Courtney Pick, Andrew Lawrence Pienaar, Neil Pilling, Matthew William Potgieter, Danica Pretorius, Johannes Theodorus Rangongo, Kholofelo Mapula Read, Gordon John Reed. David Alex Reid. Joel Riley, Dominic Alexander Rimai, Ruvimbo Janet Rippon, Georgia Myra Roux, Liam Van Zyl Sacks, Jayden Michael Sampson, Georgie Carol Sayers, Joshua Caleb Schreuder, Jan Hendrik Marthinus Schultz, Daniela Michelle Schuster, Tobias (cum laude) Schutte, Danae Sylvia Seggie, Kieran Michael Sibanda, Natasha Chiedza Slettevold, Hannah Rose Small-Smith, Ian Pieter Johannes Smit, Marthinus Laurentius Smith. Muraad Smuts. Nina Soderlund, Holly Jane Solomon. Carlie Solomon. Wade Steven, Benjamin Bernard Stockenström, Charlotte Mari Strydom, Clio Swanepoel, Kyle Tarimo, Fiona Francis Thackwray, Kimberley Thomas, Sa'eed Thomas, Yushrah

Tshikuna, Biscoth Tshiami Turner, Jana Van Biljon, Kempen Higgo Van den Akker, Matthew Rodney Van der Berg, Wynand Van Zyl (cum laude) Van der Heever, Ruth Christine Van der Merwe, Albert Meiring Van der Merwe. Imke Van der Merwe, Shanika Van der Riet, Alistair Carl Van Tonder, Anneme' Irmhilde Van Velden, Pieter Gysbert Venter, Lizaan Vermeulen, Tristan Veysie, Joel Peter Viljoen, Adriaan Visagie, Leah Mary Visser. Henk Volschenk, Cornelius Gabriel Vorster, James Edward Wessels, Francois Marais White, Cameron James Willett, Joshua Eli Wolhuter, Keegan Ivan Zimanyiwa, Tinotenda Ethel

#### Bachelor of Commerce in International Business Baccalaureus in die Handelswetenskappe in Internasionale Besigheid

Baker, Georgina (cum laude) Barclay, Julia Amy Burger, Michelle De Villiers, Kyle (cum laude) Dennison, Annabel Grace Wallace Dobeyn, Josie Claire Doyle, Amy-Leigh Göbel. Luan Grier. Amie (cum laude) Hardisty, Nadine Hauptfleisch, Jean Jansen van Rensburg, Liezl (cum laude) Jonker, Rachel Towkheleth Koch, Timothy Andrew Lourens, Kirsten Louw, Ryan Alexander Molenaar, James Michael Olivier, Bismarck Steyn, Antoinette Susanne Streicher, Nicola (cum laude) Swart, Tannah (cum laude) Taylor, Jaime Leigh (cum laude) Taylor, Paula Jane (cum laude) Thompson, Matthew Jon Van Antwerp, Chelsea Van Tonder, Jacque Michiel (cum laude) Van Zyl, Taegan (cum laude) Vermaak. Devan Joshua Weinert, Karl Alexander



Faculty of Economic and Management Sciences (Group 2) 27 March 2024 | 13:00

Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 2)

27 Maart 2024 | 13:00

### Programme

Please stand	1.	Entrance of academic procession into the hall.
Please stand	2.	Playing of the National Anthem.
Please sit	З.	Congregation formally constituted by the Chancellor.
	4.	Welcome by the Chancellor.
	5.	Presentation of the candidate for the honorary doctorate and conferment of the degree by the Chancellor.
	6.	Presentation of candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Chancellor.
	7.	Closing by the Chancellor.
Please stand	8.	The academic procession leaves the stage.

### Program

Staan asseblief	1.	Akademiese prosessie kom die saal binne.
Staan asseblief	2.	Speel van die Nasionale volkslied.
Sit asseblief	З.	Formele konstituering deur die Kanselier.
	4.	Verwelkoming deur die Kanselier.
	5.	Voorstelling van die eredoktorandus en toekenning van die eredoktorsgraad deur die Kanselier.
	6.	Voorstelling van kandidate wat kwalifikasies ontvang deur die dekaan van die fakulteit en toekenning van kwalifikasies deur die Kanselier.
	7.	Sluiting deur die Kanselier.
Staan asseblief	8.	Akademiese prosessie verlaat die verhoog.

### Honorary Doctorate | Eredoktorsgraad

### FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES FAKULTEIT EKONOMIESE EN BESTUURSWETENSKAPPE

The degree Doctor of Commerce (DCom), *honoris causa*, to Die graad Doktor in die Handelswetenskappe (DCom), *honoris causa*, aan

### James Robinson

for his pivotal role in establishing and advancing the field of quantitative economic history in South Africa, and for generously sharing his knowledge and expertise to develop students in the disciplines of Economic History and Economic Development.

Prof James Robinson is a thought leader on economic development and political institutions. He has played a key part in establishing and advancing the field of quantitative economic history in South Africa and is recognised for his commitment to working in the Global South and actively collaborating with emerging scholars in Latin America and sub-Saharan Africa.

Robinson's affiliation with Stellenbosch University (SU) dates back several years. He supported the University as it prepared to host the first-ever World Economic History Congress in Africa in 2012. Engagements following this event precipitated the establishment of the Laboratory for the Economics of Africa's Past (LEAP) to elevate African voices in the disciplines of Economic History and Economic Development.

With collaborators from SU, the University of Chicago and Harvard, he also embarked on a project focusing on women's political participation in sub-Saharan Africa in historical and contemporary contexts. The exchange between SU and Chicago remains active.

Robinson currently serves as Reverend Dr Richard L Pearson Professor of Global Conflict Studies, university professor as well as director of The Pearson Institute for the Study and Resolution of Global Conflicts – all at the University of Chicago. vir sy deurslaggewende rol in die vestiging en bevordering van die vakgebied van kwantitatiewe ekonomiese geskiedenis in Suid-Afrika, en dat hy sy kennis en kundigheid mildelik gedeel het om studente op die gebied van Ekonomiese Geskiedenis en Ekonomiese Ontwikkeling te ontwikkel.

Prof James Robinson is 'n denkleier oor ekonomiese ontwikkeling en politieke instellings. Hy het 'n sleutelrol in die vestiging en bevordering van die vakgebied van kwantitatiewe ekonomiese geskiedenis in Suid-Afrika gespeel en word erken vir sy toewyding om in die Globale Suide te werk en aktief met opkomende vakkundiges in Latyns-Amerika en Afrika suid van die Sahara saam te werk.

Robinson se verbintenis met die Universiteit Stellenbosch (US) duur al etlike jare. Hy het die Universiteit ondersteun terwyl dit voorberei het om die heel eerste Wêreldekonomiese Geskiedeniskongres in Afrika in 2012 aan te bied. Samesprekings ná hierdie gebeurtenis het tot die stigting van die Laboratory for the Economics of Africa's Past (LEAP) gelei om Afrikastemme op die vakgebiede van Ekonomiese Geskiedenis en Ekonomiese Ontwikkeling te verhef.

Hy het ook saam met medewerkers van die US, die Universiteit van Chicago en Harvard 'n projek aangepak wat op vroue se politieke deelname in Afrika suid van die Sahara in historiese en kontemporêre kontekste fokus. Die kennisuitruiling tussen die US en Chicago bly aktief.

Robinson dien tans as die Eerwaarde Dr Richard L Pearsonprofessor in Globale Konflikstudie, universiteitsprofessor asook direkteur van die Pearson Instituut vir die Bestudering en Oplossing van Globale Konflikte – alles aan die Universiteit van Chicago.

### Faculty of Economic and Management Sciences (Group 2) Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 2)

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

#### DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

#### FRANSMAN, Tina (Economics)

## A study of political accountability, service delivery and political participation in South Africa

This study examines the relationship between access to public services, and voting and protest action, being two accountability mechanisms available to citizens in the South African democracy. A unique dataset is generated that relates these variables in space and time. The research makes use of advanced econometric techniques to explore important questions about South Africans' political decision-making. These questions include how increases in access to public services do not inform voting but do inform protest action; how relative deprivation affects decision-making around both voting and protest action, and why electricity access plays such a unique role in informing political decision-making.

*Supervisor:* Prof M von Fintel *Co-supervisors:* Profs S van der Berg, D Yu *(external)* 

LEACH, Grace Margaret Mary (Economics)

# Essays on the economics of early childhood development: spatial inequalities, service provision, and parental investment

This study investigates overlapping socioeconomic preconditions that are simultaneously required for healthy early childhood development in resource-constrained environments. Integrating many South African datasets, the research explores spatial inequalities in child health and the spatial demography of orphanhood. A multidimensional index is developed to identify regions with constraints to childhood service provision. Barriers to local public service provision are weighed up against household caregiving dynamics in determining whether children reach developmental goals. It is found that institutional and neighbourhood contexts are at least as important as home environments for on-track child development, and two-parent homes provide benefits for children in South Africa.

Supervisor: Prof DP von Fintel

SCHOLTZ, Henriëtte Elsabé (Accounting)

## Corporate governance, executive directors' remuneration and firm performance: evidence from JSE-listed firms

This study investigates the corporate governance measures intended to govern executive directors' remuneration (CGE) disclosure and establishes the determinants of such disclosure. It also explores the relationship between executive directors' remuneration and firm performance and examines the moderating effect of CGE on the pay-performance relationship. Overall, the research results contribute to agency theory by suggesting that firms may benefit from implementing CGE and linking executive directors' remuneration and firm performance as complementary strategies, rather than substitutes, to ensure effective oversight, accountability and long-term shareholder value creation.

Supervisor: Dr G Nel Co-supervisor: Prof E vd M Smit

### Faculty of Economic and Management Sciences (Group 2) Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 2)

### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

### Master of Commerce Magister in die Handelswetenskappe

Bezuidenhout, Gerrit Wouter (Economics) (cum laude) Brand, Michael Charles (Economics) Byrne, Austin (Economics) Eloff, Christiaan Johannes (Economics) Geldenhuys, Ruan (Economics) Grant, Grace Margery (Economics) (cum laude) Hyde, Andrew (Economics) Khan, Na-Ella (Computer Auditing) Kuzamunu, Jemima Mambote (Economics) MacGinty, Helen Mary Hannah (Economics) (cum laude) Meihuizen, Peter Andrew (Economics) Mkandawire, Lusungu (Economics) Morris, Ronan Mitchell (Economics) (cum laude) Pietersen, Lee-Ann (Computer Auditing) (cum laude) Schoeman, Charl Henri (Economics) Semenya, Ireen Matshidiso Fati (Economics) Van der Merwe, Gert Jacobus Hendrik Johannes (Computer Auditing) Visser, Amy (Economics) Young, Ryan (Economics) (cum laude)

### Master of Accounting Magister in Rekeningkunde

Smit, Carli (cum laude)

### Bachelor of Commerce Honours Honneurs-Baccalaureus in die Handelswetenskappe

Arndt, Fritz Jeremias (Economics) Beattie, Liam Andrew (Economics) Bruens, Rebecca Lucy (Economics) Cassiem, Abdul Qaadir (Economics) Dachs, Stephen Michael (Economics) (cum laude) De Beer, Matthew Bradley (Economics) Dube, Sukoluhle Linda (Economics) Fourie, James Stephen Andrew (Management Accounting) Gababonwe, Katlego (Economics) Jacobs, Gaby Dawn (Economics) Janisch, Thomas John (Economics) (cum laude) Jefferys, Cade Jarrod (Economics) Kamoto, Ramzan (Economics) Kasunda, Pao (Actuarial Science) Khumalo, Miranda Ntombikayise (Economics) Kirsten, Jared Frederick (Management Accounting) Kupa, Mochadibana Napyadi (Management Accounting) Lahoud, Matthew Frederick (Economics) Le Roux, Andre Louis (Economics) (cum laude) Leonard, Bradley (Actuarial Science) Litabe, Thembekile Abigail (Management Accounting) Madyah, Ropafadzo Valerie (Management Accounting)

Memela, Zibusiso Gloria (Economics) Mooketsi, Tlotlo (Economics) Morrow, Sinead (Economics) Mumba, Namatama (Actuarial Science) Mupfumi, Tapiwa John (Management Accounting) Nel, Petrus Abel Elias (Management Accounting) Ngobela, Thato (Management Accounting) Nhamo, Precious (Economics) Ooka, Mishay (Management Accounting) Risi, Michaela Anastasia (Economics) Sigenu, Somila (Economics) Soares, Marco (Management Accounting)

### Postgraduate Diploma in Accounting Nagraadse Diploma in Rekeningkunde

Arendse, Tatum Kaylynn Bester, Chante Botha, Jania Mila Brand, Carina Brand, Theo Cawse, Sage Luca Claassen, Kira Da Silva, Gabriella Penny De Bruijn, Lara Dercksen, Rufus Dirksen, Amber Leigh Field, Garrett Hilton Ford, Ryan Grobler, Bronwyn Harwood, Kirsten Morgan How Son, Nathan Kyle Irvine, Richard Oliver Forbes Jones, Julia Patricia Owen Karlson, Nicolette Kloppers, Niki Knaap, Lee Linnerts, Dreshne Logon Dominique Magagula, Ntokozo Precious Malan, Renée Marais, Marco Mathews, Curtly William Douglas Mohlabeng, Phuti Purpose Monageng, Katlego Innocent Ntinkama, Thando Perumal, Keyanna Ponnen, Tiarra Tamaryn Rieckert, Henco Niel Rieckert, Marné Schaefer, Garron David Scholtz, Daniël Francois Schultz, Conrad Smith. David De Villiers Theron, Francois Milan

Van den Berg, Johannes Stefanus Van der Walt, Jacobus Abraham Van der Watt, Johan Gerhardus Van Rooyen, Aidan Kilkie Waud, Cara Lee Wessels, Louwrens Willem Yssel, Mila Zororo, Tadiwanashe

### Bachelor of Commerce Baccalaureus in die Handelswetenskappe

Basson, Johannes Jacobus Marais Bavat. Hassan Bihl, Stephanie (cum laude) Bobe, Mbali Bosch, Linda Laurine Bostander, Yonda Braaf, Mohamed Hishaam Breedt, Catia Marcelo Burger, Schalk-Willem Buys, Reynhardt (cum laude) Cader, Ariyaana Shahn Coetzee, Jonel Davis, Danél De Doncker, Chase Connor Stephen De Freitas, Keanu Eduardo De Klerk, Dvlan Delle Donne, Luke Dorning, Emma Du Toit, Etienne Daniël Essack, Salma Evans, Jamie Luke Faku, Sinobom Faure, Hannah Ferreira. Judie Ferreira, Rhodé Fisher, Kitty Jean (cum laude) Flaherty, Ronan Edward Fourie, Matthys Johannes Fourie, Romano Fourie, Susanna Sophia (cum laude) Frye, Reece Lawrence Giliomee, Ian Daniel Graham, Tyla Jenna Greyling, Talyah Griffin. Luke Asher Grobler, Albertus Johannes Grové, Mignon Deirdrie Hakutangwi, Munashe Mordeccai Hattingh, Marco Holling, Nina Leta Ingram, Tristan Jacobs, Jaden Ridge Jacobs, Lara (cum laude) Jaftha, Eden Kola, Tanweer Kordom, Dafydd Kühn, Michiel Nicholaas Kulati, Phumelela Sharon Kwelelani, Simthembile Leitch, Tiffany Sandra

Lötter. Gené Made, Asanda Akhona Malan, Neal Pieter Marais, Enrique Mcneil Marewangepo, Leonah Marshall, Calvin Masuku, Mzwakhe Gabriel Masungwini, Xongile Matshayana, Mona-Lisa Mavovana, Zethu Merabe, Kelebogile Shibe Molefe, Reneilwe Moormann, Max Motabola, Tumello Mouton, Jeanette Maria Mgikela, Unathi Muller, Anthonie Phillip Muller, Frederick Johannes Myburgh, Michael Nair, Shreya (cum laude) Nepgen, Christoff Netshiozwi, Mpho Events Nhlapo, Babedi Palesa Tsepo Norman, Steven James Nyamupachitu, Tapiwa Kennedy Olivier, Daniélle Prinsloo, Markus Radebe, Nomonde Queen Ramessur, Vaman Robertson, Josh Robbie Sakawuli. Zodwa Sanne, Alexander Dietrich Savage, Jack Michael Scholtz, Jean-Pierre Schroeder, Bryce Schuyling van Doorn, Maike Sekakampa, Tshegofatso Johanna Shirley, Simóne Daniélle Shongwe, Vusumuzi Charles Smit. Clara Smith, Jacobus Johannes Snyman, Herman Frederik Spamer, Emmanuel Marinus Steenkamp, Ane Steenkamp, Douw Gerbrand Stevenson, Kayla Jade Stuart. Mathew Sussman, Matthew Swanepoel, Brendan Tarr. Alexander Cresswell Tedder, Tristen Daniela Thabethe, Lesedi Theron. Keane Thom. Gido Thomson, Nicole Van der Walt, Tjaart Johannes Van Heerden, Ruby-Ann Van Niekerk, Talisha Van Wyk, Ané Van Zyl, Joshua Retief Viljoen, Aaron Robson Wagener, Jacobus Meyer

Wensley, Georgia Zoë (*cum laude*) Williams, Benjamin Nicholas Williams, Marc André Williams, Nicholas Timothy Zacapa Bruchmann, Christian

### Bachelor of Accounting Baccalaureus in Rekeningkunde

Abrahams, Yusri Allman, Jaydin Richard Arendse, Jesse Louise Baldwin, Natasha Madison Bamber, Oliver Ian Barker, Thomas Anthony Barrett, Joshua Michael Bates, Tamryn Jade Botha, Leigh-Ann Bowman. Matthew Robert Brand, Jasper Johannes Briel, Christiaan Gerhardus Johannes Bruyns, Daniel Lloyd Buckle, Thomas John Bukasa, Debora Busi. Dario Byleveldt, Caroli Cloete, Tairique Cobbledick, Gregory James Combrink, Hans Jacob Bernardus Conradie, Jenna Mae Constable, Sonique Astrid Cousins, Luke Murray Croudace, Daniel Cyril Daniels, Kaye De Araujo, Max De Vos. Nerine Dearham, Rebecca Paige Dentan, Jean-Louis Diedericks, Laaigah Diedericks, Rainier Diedericks, Wicus Du Toit. Francois Dwadwa, Hlumelo Edwards, James Nicholas Erasmus, Pieter Francois Esselen, Louis Leipoldt Ferreira, Ferdinand Petrus Ferreira, George Frederick Flores Bartoli, Andrew Luis Gace. Nicola Claire Gatonby, Ryan Peter Gelant, Edwilithe Joyde Govender, Blake Ian Groenewald. Cora Lorraine Hart, Luke Hugh Havenga, Zahn Hay, Hans Roux (cum laude) Hill, Ethan Hindmarch, Jemima May Hobbs. Anne Honiball. Robert James Horn, Matthew Christopher

Jacobs, Johan Jordaan, Cara Joubert, Evert Frederick Kgosi, Reneilwe Reaoleboga Knipe, Henko Johan Knoetze, Armand Kotze, Sean Anton (cum laude) Kutta, Siphesihle Latter, Isabella Bianca Le Roux, Alex Peter Levine, Trinity Louw, Charl Leon Luggola, Nomfuneko Precious Lunt. Tristan Lups, Hendri Mahlaola, Prince Makosonke, Mibongo Linamandla Zomngophiso Malefo, Lethabo Mans. Willem Carel (cum laude) Marais. Rehan Maritz. Nicolaas Stefanus Martin, Karli Marx, Milan Ferreira Masango, Phodisho Phillipine Matongo, Vernon Tadiwa Meaker, Ryan Paul Miller, Simon Modise. Rethabile Mogashoa, Tshephiso Montocchio, Kate Margaret Moorhouse, Jarryd Graham Mrululu. Axolile Müller, Carla Susanna Munyati, Mudiwa Munyaradzi Musangu, Deborah Musimurimwa, Shamiso Vanessy Nashandi, Ileni Mkaliko Tunombili Olles, Mark Wolfgang Olyn, Travon Thierry Peter, Kungawo Zikhona Pienaar, Henri Johannes Pilane, Omphile Pretty Prettejohn, Christopher Gwynne Ramukosi, Rikoniswangae Retief, Hofmeyr Gideon Reuter, Ingo Hanno Friedrich Roode, Johannes Bernardus Rose, Lyel Rosich, Miguel Samaai. Maaiidah Siddle. Ellen June Sivertsen, Tano Ian Slabber, Pieter Mynhardt Smith, Elizabeth Marie (cum laude) Smits, Braydon Frans Smuts, Johan Erik Stander, Corbin Josh (cum laude) Steenkamp, Marnus Strauss, Charlotte Stroh, Dominique Swart, Babette Sophia Swartz, Simone Shamila

Syfert, Jana Terheyden, Ryan Bernard Theron, Wian Thomson, Ross Clive Toerien, Chanè Basson Turner, Edward Arthur Turpin, Jaime Van den Boogaard, Emile Van der Merwe, Zander Van der Walt, Denise Van der Westhuizen, Christiaan Rudolf Van Jaarsveld, Andries Bernard Van Niekerk, Githa Vermeulen, Diaan Vides, Joel Viljoen, Aidan William Von Wielligh, Heinrich Wessels, Jessi Wilson, Erin Margaret Zhu, Yuwai Zietsman, Paul Hendrik Zitha, Nolisina Jeanete



Faculty of Economic and Management Sciences (Group 3) 27 March 2024 | 17:00

Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 3) 27 Maart 2024 | 17:00

### Programme

Please stand	1.	Entrance of academic procession into the hall.
Please stand	2.	Playing of the National Anthem.
Please sit	З.	Congregation formally constituted by the Vice-Chancellor.
	4.	Welcome by the Vice-Chancellor.
	5.	Presentation of candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Vice-Chancellor.
	6.	Closing by the Vice-Chancellor.
Please stand	7.	The academic procession leaves the stage.

### Program

Staan asseblief	1.	Akademiese prosessie kom die saal binne.
Staan asseblief	2.	Speel van die Nasionale volkslied.
Sit asseblief	З.	Formele konstituering deur die Visekanselier.
	4.	Verwelkoming deur die Visekanselier.
	5.	Voorstelling van kandidate wat kwalifikasies ontvang deur die dekaan van die fakulteit en toekenning van kwalifikasies deur die Visekanselier.
	6.	Sluiting deur die Visekanselier.
Staan asseblief	7.	Akademiese prosessie verlaat die verhoog.

### Faculty of Economic and Management Sciences (Group 3) Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 3)

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

#### DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

CHIVANDIRE, Luckmore (Public and Development Management)

## An analysis of anti-corruption strategies in the primary health sector: case studies of Zimbabwe and South Africa

This study investigates the effectiveness of anti-corruption strategies in the healthcare sectors of Zimbabwe and South Africa. Through expert interviews and case studies, it adopted the Qualitative Comparative Analysis technique to analyse the factors that determine the success of anti-corruption strategies in both countries. The findings revealed a set of factors that influence the success of anti-corruption strategies. These include political will, institutional independence, effective coordination of anti-corruption institutions, and public participation. Recommendations include stakeholder engagement in the fight against corruption, a review of procurement legislation in both countries, the capacitation of anti-corruption institutions, and the amendment of both jurisdictions' whistleblower protection laws.

Supervisor: Prof P Pillay Co-supervisor: Dr M Saruchera

DE WET, Marion Sharon (Public and Development Management)

### Towards an enabling policy and governance framework for the sustainable extraction of unconventional natural gas in South Africa

This study dissects the realm of public policy and governance that guides the sustainable extraction of unconventional natural gas in South Africa. Against a backdrop of policy uncertainty, government's efforts to develop domestic natural gas align strategically with the global move to diminish carbon footprints. The research advocates for an equilibrium among renewables, conventional fuels, and natural gas to ensure energy security and environmental responsibility. It critically evaluates the interplay of sustainability, sustainable development, public policy, governance and stakeholder theory, culminating in an evidence-based environmental, social and governance-focused policy framework for the orderly, sustainable extraction of domestic unconventional natural gas.

Supervisor: Prof APJ Burger Co-supervisor: Prof M de Wit NAGTEGAAL, Jackie (Futures Studies)

## Transcontextual futures: exploring the law as a tool for future making

This study investigates the complex intersection of futures studies and the law within the context of South Africa's sociopolitical challenges. The inherent capacity of the law to influence the future is often impeded. A transcontextual futures framework is developed to understand complex relational dynamics and intricate webs of interdependence, offering a more contextually rich understanding of potential futures. The research intertwines the tenets of futures studies with the legal system to understand the complexity of South Africa's legal landscape and the role that the law could play in designing desirable and equitable futures that are resilient and sustainable.

Supervisor: Prof A Roux

### Faculty of Economic and Management Sciences (Group 3) Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 3)

### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

### Master of Philosophy Magister in die Wysbegeerte

Bragg, Shelley (Sustainable Development Planning and Management) Damons, Shamilah Michela Annelise (Sustainable Development Planning and Management) (cum laude) Dangwa, Lorraine (Environmental Management) Decina, Ashna (Leadership Coaching) Doyle, Jeremy (Sustainable Development Planning and Management) (cum laude) Dreyer, Delicia Carmen (Leadership Coaching) Dzingwa, Nokuthula Ellen (Leadership Coaching) Etobe, Onaedo Chinemerem (Sustainable Development Planning and Management) Faustmann, Rainer (Leadership Coaching) Gozo, Elegance (Leadership Coaching) Grovers, Lester Graeme (Futures Studies) Hiemstra, Shanna Carmen (Futures Studies) Jordaan, Magrietha Magdalena (Leadership Coaching) (cum laude) Kafula, Ngonyothi (Environmental Management) Kamati, Theopoline Ndiliponhofi (Leadership Coaching) Lange-Serfontein, Engela Susara (Leadership Coaching) Mashigo, Hope Tau (Leadership Coaching) Matsetela-Hartmann, Mathoto Ramokone (Futures Studies) Mavuso, Nomcebo Zanele (Leadership Coaching) Meyer, Michelle (Leadership Coaching) Mhlanga, Irene (Sustainable Development Planning and Management) (cum laude) Mnisi, Evidence Bongani (Sustainable Development Planning and Management) Moolman, Simone (Leadership Coaching) Msimang, Nhlakanipho Mkhanyisi (Leadership Coaching) Mwaura, Natasha Esther Nguhi (Futures Studies) Naidoo, Thirushen (Futures Studies) (cum laude) Ndlovu, Joram (Environmental Management) Neshuku, Rosalia Ndinelago Simaneka (Environmental Management) Ngcobo, Sphiwe Ella (Leadership Coaching) Ngobeni, Freedom Uyanda (Sustainable Development Planning and Management) (cum laude) Omarjee, Raeesa (Leadership Coaching) Padayachee, Dharshni (Leadership Coaching) (cum laude) Paynter, Caris Jane (Sustainable Development Planning and Management) (cum laude) Pogisho, Jennifer Loreny Cynthia (Leadership Coaching) Pratt, Glenn Alwyn (Futures Studies) (cum laude) Raphaphula, Motlalepula Carrol (Leadership Coaching) Schubert, Alexander Constantin (Futures Studies) Serfontein, Hendricus Cornelius (Leadership Coaching) Smit, Christiaan Charl (Environmental Management)

Stoker, Pieter Helenius (Futures Studies) Takalani, Nompumelelo Zakithi (Leadership Coaching) *(cum laude)* Tapinos, Neil (Leadership Coaching) Van Zyl, Martin Louis (Futures Studies) Wagenaar, Tamika (Leadership Coaching) Zuma, Sindisiwe Prudence Queen (Leadership Coaching)

### Master of Philosophy in Development Finance Magister in die Wysbegeerte in Ontwikkelingsfinansies

Dawodu, Hasana Ebunoluwa Hlabeli, Tebelo Jimana, Thembisa Kuveza, Fabiola Rolleta Makgata, Mogaramedi Joel Malatsi, Mthetho Paul Mviko-Sihlahla, Andisiwe Singh, Sameer

#### Master of Business Management and Administration Magister in Besigheidsbestuur en -administrasie

Abdo, David Joseph Abrahams, Lorenzo Agema, Pieter Roelof Andreas, Rachel Nghinambedi Masora Auret, Francois Benedictus Badenhorst, Michael Barrett, Devin Barrett, Lauren (cum laude) Benjamin, Stefan Jason Vincent Botha, Johan Phillip Bouwer, Willem Jeremias Breedt, Janita Breet, Elsie-Marie (cum laude) Burger, Elmarie Louise Burger, Mieke Cain, Zameka Charikinya, Edson (cum laude) Cilliers, Natasha Coetzee, Gert Davel, Dewald Hattingh (cum laude) De Klerk, Andries Johannes Jacobus (cum laude) De Villiers, Lisha De Wet, Jacobus Johannes De Wit, Martha Helena Dhanah, Caroline Diyerenge, Fillomena Mutenya Dlamini, Philiswa Charity Dlamini - Ginindza, Makhosazana Promise Drever, Juanita Du Plessis, Jacobus Johannes

Du Plessis, Karin (cum laude) Du Plessis, Le Riche Oscar Eloff, Elsamaria (cum laude) Engelbrecht, Wentzel Christiaan Erasmus, Enrico Laten Ferreira Marcelino, Neusa Marina De Assuncao Varela (cum laude) Fortuin, Basil Gerber, Carmen Govender, Nicolette (cum laude) Gule, Nonjabulo Prudence Gule, Zamanyuswa Amelia Haines, Mario Michael Linsy Hallatt. Clifford Hanekom, Johann Paul Harris, Monique Shelley Heath, Jan Hendrik Hendricks, Sylvan Lucien Garret Hoala. Neo Hofmeyr, Louise Holmes, Sean Hopkins, Jonathan David (cum laude) Idowu, Oluwatosin Olumide Indongo-Namandje, Lovisa Ipangelua, Munolwisho Elizabeth Jackson, Khwezi Jacobs, Andrea Nicole Janse van Rensburg, Dirk Janse van Vuuren, Deon Amico (cum laude) Jazbhay, Khatija (cum laude) Jhamba, Karabo Gorata Janet Jonker, Cornelius Johannes Kadandara, Hellen Kapuya, Terence Katoma, Taleni Ndinehafo Kganane, Helvy Thembi Khamula, Daniel (cum laude) Khumalo, Goodwil Jonas Kleyn, Lesley-Anne Klindt, Niel Kruger, Pieter Christiaan Le Roux, Gert Johannes Nieuwoudt Linde, Nicolaas Albertus Machakata, Clive Made, Isabel Madengwane, Vuyokazi Malele, Tebogo Anicky Mantji, Boitumelo Ntebatse (cum laude) Manyoni, Mphengwa Kgaugelo Marais. Delise Mari, Vangie Perumal Martinson, Charles Henry Mashifane, Molate Lehlogonolo Geoffrey Matlanyane, Tsioane Matsoso, Thato Matyholo, Pilisa Luvo Mbuyamba, Mbongo Mienie, Dewald (cum laude) Mkhize, Olwethu Prince Zamokuhle Mlozana, Siyasanga Mncube, Fisani Gerald Mnisi, Motselisi

Mokoena, Lindumusa Wiseman Mooketsi, Goitseona Erlinda Magdeline Mosikili, Samuel Sammy Mpanza, Horace Mthethwa, Menziwokuhle Ndumiso Mkhanyesilwa Muller, Tanya Mupunga, Victor (cum laude) Mwanza, Misozi Naidoo, Patrina-Christine Nala, Thokozane Hector Ndebele, Buyeleni Vanessa Ndlodaka, Phinda Nonies, Keanan Robin Oosthuysen, Pieter Cornelius Gerhardus Owindu. Elsie Paliso, Busisiwe Pillay, Carina Maria Pillay, Pranellan Surendra Rajah, Brynn-Lee Rainer Ramklown, Vithesh Rankunyane, Keineetse Elizabeth Raphuthing, Busisiwe Reddy, Michelle Schoombee, Gert Theunis Schoonbee, Lize Schreuder, Jacobus Theunis Kotze Sebonego, Cynthia Sharp, Kendon Wavne Shula, Bwalya Sieas, Jason Patrick Siyanga, Moureen Monde Smith. David-Dean Smith, Johannes Petrus Smuts, Johette (cum laude) Smuts, Marthinus Stephanus (cum laude) Sutcliffe. Mikaela Tait, Shaun Jonathan Taute, Jakobus Deklerk Theron, Quinton Jacques Thomas, Donovan Tjiueza, Mbavanga Trentelman, Thinus Reinhard Tshiningayamwe, Paulus Urikob, Kennedy Vahekeni, Cornelia Tulili Van ver Merwe, Ernest Van ver Nest. Rainier Van Dyk, Pieter Ackerman Van Rooyen, Pieter Aucamp Van Schalkwyk, Maria Aletta Van Waart, Henri Van Wyk, Jo Anne Van Zyl, Martha Maria Visser, Judith Jacoba Voges, Jan Frederik Rykers (cum laude) Walenga, Helena Tashiya Weinberg, Sophia Wiggins, Henry-Peter Zaayman, Christopher Hein (cum laude) Zurcher, Tracey-Lee Zwane, Kagiso

### Master of Public Administration Magister in Publieke Administrasie

Hamutumwa, Sylvia Nangolo Katire, Ferdinand Kotelo, Bulelwa Malahleha, Mafumane Alice Nkhoma, Kisa Shikokola, Matilde Sirkka Patemoshela Sigenene, Dumisani Advocate Thema, Momotho Georgina

### Bachelor of Commerce Honours Honneurs-Baccalaureus in die Handelswetenskappe

Jefthas, John Andre (Public and Development Management) Matlala, Koketso Manfred (Public and Development Management) Mneno, Abonga (Public and Development Management) Monyane, Amina (Public and Development Management) Mpikashe, Ongeziwe (Public and Development Management) Shelembe, Alicia (Public and Development Management)

### Bachelor of Public Administration Honours Honneurs-Baccalaureus in Publieke Administrasie

Ajah-Mvunelwa, Julia Baartman. Zandi Dakada, Helen Derby, Deborah Christine Kholoanyane, Sabata Samuel Khumalo, Mbhekiseni Phikelamangwe Leukes, Daniel James Links. Johannes Mabala, Joseph Makanti Madyibi, Sanga Sikelelwa Magadla, Mlisela Busobengwe Mapipa, Sinelizwi Magina, Yandiswa Maseko, Mandla Mathekga, Mamaswa Bridget Mavuso, Bernard Thulani Mayisela, Humphrey Sizwe Mbenyane, Irene Thokozile Mboya, Buyelwa Cynthia Mdewu, Sinazo Mlambo, Bongani Joseph Mntumntum, Vuviswa Nkoane, Brian November, Kekeletso Victress Ntshangase, Nombulelo Innocent Phumzile Nutt, Hildegard Reona Rasonti, Yalezo Zokwe, Amanda

### Postgraduate Diploma in Leadership Development Nagraadse Diploma in Leierskapontwikkeling

Andrews, Cindy Anthony, Celisa Ariefdien, Sadigah (cum laude) Blackburn, Yolanda Boois, Peter Benjamin Brown, Rodney Wayne Burger, Cornelia (cum laude) Fuzile, Ayanda Khumalo, Skhumbuzo Patrick Kondjamba, Albethina Ndahambelela Loxton, Patrick Michael (cum laude) Luswazi-Hlengisa, Pinkie Nomahomba Masheka, Fidelis Kumbirayi Mmako, Mahlatse Mogale, Lebogang David Moshodi-Mzongwana, Natasha Salome Nickanor, Nandehasho Petrus Nkisi, Tumelo Obaray, Reza Parker, Mitchell Shaun (cum laude) Sapula, Sibongile Thobeka (cum laude) Schwartz, Frederick Christiaan Daniel Sekgobela, Thabo Masilo Shah, Ree Hana (cum laude) Soobramoney, Chantal Joanie (cum laude) Strydom, Kegan Jonathan Gerard (cum laude) Tunzi, Sindiswa Van Wyk, Prescilla Roux-Che Zimba, Tumisang Janice

### Postgraduate Diploma in Sustainable Development Nagraadse Diploma in Volhoubare Ontwikkeling

Coetzee, Michelle *(cum laude)* Salie, Uzair

### Postgraduate Diploma in Environmental Management Nagraadse Diploma in Omgewingsbestuur

Mukansi, Cheeza Delian *(cum laude)* Setefane, Matebele Michael Temana, Ntsako Charity Van der Merwe, Bianca Vutha, Sokhanyiso

### Postgraduate Diploma in Project Management Nagraadse Diploma in Projekbestuur

Amadhila, Bren Amunyela, Tulonga Magnaem (cum laude) Bokaako, Thoso Carlse. Elton Carolissen, Bradley Ian Cloete, Linda Kauna Coetzee, Eduard Daniels, Wayne Charles Dike, Sipho Patric Dimairho, Lorraine Dlomo, Sthembile Sweetness Dube, Siphiwithemba Masokisi Esterhuyse, Elmo Birk Feiz. Niki Fisher, Simon Mark Fonley, Yanga (cum laude)

Howburg, Carla Dee Indongo, Frieda Ithana, Taapopi Jeanette Shirley Jamieson, Colin Wayne Jedidiah, Vikesh Ramesh (cum laude) Johnson, Robin Kethwa, Anele Andries (cum laude) Lepelle, Setupu Edward Liebich, Frank Torsten Oliver Littlejohn, Lieschen Mabaso, Vuyelwa Mafanya, Kwanele Mahlawe, Nceba Lucky Mantshimuli, Hulisani Munzhedzi Maoto, Tebogo Christopher Raymond Marcus, Justin Matthew (cum laude) Mautla, Motlanalo Zeldah Meintijes, Anneleen Catheleen Mettler, Lizelle Natasha Mhambi, Sibusiso Mhlakaza, Bathandwa Mhosho, Fezeka (cum laude) Mkhabela, Solomon Papa Mkize, Babongile Pretty Moonyane, Tsepo Motha, Precious Nokuthula Mpobane, Lettecia Mumpi, Erick Nier Mvulane, Mmakeagile Magdeline Naidoo, Debra Naudé, Michele Vereen Ndhlovu, Stanley Sakhile Ndwandwe, Bongumdali Sicelokuhle Nyanda, Onke Nyoni, Mandla Simba Odendaal. Tielman Hector Parsotam-Brown, Meera Phindiso, Thembisa Pinetown, Andrea Linsev Ramorula, Ofentse Titus Reddy, Yagambaram Relling, Ferdinand Christiaan Reynolds, Louanne (cum laude) Sefara, Molau Shangase, Lindelihle Andile Duduza Shozi, Sanelisiwe Cleopatra Shugu, Yolisa Felicity Sizani, Olwethu Gcotyelwa Tembani, Zimela Thirion. Jean Cornelus Van Staden, Rikus (cum laude) Whaley, Louis Jay Zikalala, Phakamani Zylstra, Iwan (cum laude)

### Postgraduate Diploma in Financial Planning Nagraadse Diploma in Finansiële Beplanning

Bechan, Nehal Carstens, Ruhann Christopher Ntene, Moleboheng Patience

#### Postgraduate Diploma in Public Finance Management Nagraadse Dilpoma in Openbare Finansiële Bestuur

Faku, Ephraim Monde Mabaso, Thabani Emmanuel Manana, Mbuyisa Manel, Pascalet Siphokasi Mgudlwa, Pumza Roelfse, Elke (*cum laude*) Sibisi, Gabriel Phungulani Wildschutt, Nico Claudio

### Postgraduate Diploma in Business Management and Administration Nagraadse Diploma in Besigheidsbestuur en -administrasie

Abrahams, Isma-Eel Appel, Nathan Cecil Bailey, Dugald Liam Boshoff, Spencer Edward Buthelezi, Nokulunga Carmichael, Carmel Chalmers, Matthew Michael Chetty, Nadine Coetzee, Graeme Cox, Shandre Lizzane Craven. Lauren Jennifer De Jager, Brandon De Oliveira, Arsenio Dlamini, Wandile Nkululeko Dlelana, Melita Doherty Bigara, Michelle (cum laude) Dollie, Zubair Drysdale, Cameron Douglas (cum laude) Duncan, Graham Fourie, Lourien Godongwana, Athi Goliath. Anneline Marilvn Govender. Derrin Griffiths, Magan Helen Gumbi, Sandile Gumbi Hattingh, Zirkia Hendricks, Ashley Human, Elmar (cum laude) Janse van Rensburg, Zenta Jansen van Nieuwenhuizen, Mauritz Jordaan, Charl Daniel Joubert, Jarrett Francois Jowitt. Catherine Laura (cum laude) Kahla, Mzingaye Kemp, Bevan Dorian Khanyile, Sizwe Patrick Khosa, Victor Kluits, Bernard Jacobus Koegelenberg, Frederik Nicolaas (cum laude) Koning, Mark Richard Langa, Delicio Lawrie, James Christopher Mckerrow Ludolph, Pierre Jacmour Maiola. Ndilisa Busisiwe Nosithwalandwe (cum laude) Makitla. Molefe Kau

#### Postgraduate Diploma in Futures Studies Nagraadse Diploma in Toekomsstudie

Malherbe, Stephanus Jacobus Maritz, Willem Barend Mashapu, Mokgadi Precious Mavuso, Muzi Mdluli, Fortune Khomo Mfaba, Philasande Wiseman Mhlongo, Disebo Motsheoa Mhlongo, Gugulethu Pearl Mohapi, Boitumelo Laura Morakane Mojapelo, Mabothe Dinah Moloko, Caren Obakeng Mosanya, Kagiso Philemon Mtshali, George Pollen Naidoo, Santhan Nell, Bruce Willy-Jon Netshifhire, Vhulenda Ngobeni, Edwin Nhinda, Ndadjepuke Namene Tukate Nieman. Sean Patel. Amit Phiri, Rejoice Nonhlanhla Prigge, Norman Louis Qwabe, Andile Edith Roos, Dion Paul Rughbeer, Kim Lindsey Rughbeer, Shaun Suresh Shivolo, Ndelineekela Helao Shoko, Mercv Shongwe, Sibongile Cynthia Sithole, Nokulunga Nomfundo Slabbert, Benita Thepa, Dimpho Lwandile Thysse, Darren Michael Tong, Tebogo Timothy Tshangela, Mabhelandile Matthews Tshangela, Zizipho Rebecca Tshazi, Nwabisa Bonita Tuck. Winston Van Bilioen, Kvle Van den Berg, Jacobus Petrus Van der Merwe, Dirk Pieter Van der Walt, Frederik Casper Van Deventer, Juan Pierre Van Heerden, Berno (cum laude) Van Heerden-Rohrmüller, Ulindi Van Rooyen, Dayyaan Van Vuuren, Ilonka Van Zyl, Cornelia (cum laude) Voigt, Martionette Walters, Zedia Emerentia (cum laude) Wehr, Corne Weyers, Morné (cum laude) Windvogel, Morne Neil Winkler, Natasha Yende, Sibusiso Sipho Zhao, Zhenni Zwane, Hlelekile

Alcock, Marlon Arthur, Stella Bennet, Michael Ian (cum laude) Bester, Martie-Louise (cum laude) Boamah, Claudia Boatemaa Carlin, Steven (cum laude) Chisiri, Otto Tawanda Chisiri (cum laude) Du Plessis, Danielle Elizabeth (cum laude) Erasmus, Marike (cum laude) Fononda, Amanda Phaphama Gono. Garikai Hendricks, Shahnaaz (cum laude) Heuvel, Terushka Hlatshwayo, Nosipho Jacobs, Shivonn Catlin Jones, Michelle Margaret Jordan, Lelethu Kone, Lynette Kotsi, Tolane Fanuel Lengoasa, Itumeleng Logie, Luaneta (cum laude) Loni, Siyasanga Lourens, Reinette Magodla, Thandi (cum laude) Maharaih. Samantha Mahlare, Maubane (cum laude) Makhubedu, Thabang Mamogale, Dire Lucas Mangani, Johan Prince Marais, Jan Adriaan Venter (cum laude) Marawa, Nomvula Ingrid Gail Marthinussen, Leslie Mario Mashishi, Neo Matoti, Zamangwevu Khuthaza (cum laude) Motaung, Cynthia Mukoyi, Tinashe Donald Muller, Johannes Jacobus Nell, David Heinrich Nghifitikeko, Tusnelde Tonata Nthangeni, Welheminah Nyoni, Dalton Mbodzi Oberholzer, Madelein Mariè (cum laude) Ostberg, Per Bo Erik (cum laude) Pather. Claudia Prinsloo, Almero (cum laude) Pyke, Anita Jane (cum laude) Ruga, Nomfundiso Schoeman. Thene (cum laude) Sefara, Mmaleebana Willard (cum laude) Sewpersad, Niraj Bhana (cum laude) Singh, Nishani Sixholo, Joy Tak, Samantha Chay Moi Tlhakanelo, Ronnie Mothusi

Tsuari, Innocentia Khanyisile Van der Merwe, Justine Katherine *(cum laude)* Van der Merwe, Nicolaas Johannes *(cum laude)* Van Oordt, Reuben Ernlyn *(cum laude)* Wagner, Johannes Frederik Wentzel, Andre *(cum laude)* Wessels, Hendrik Christiaan Davis *(cum laude)* White, Ricardo Thys

#### Postgraduate Diploma in Development Finance Nagraadse Diploma in Ontwikkelingsfinansies

Amakutuwa, Petrus Tonateni Banyu, Fatima Mpehashu Chikutukutu, Isaac Tichafa Dalamba, Yandisa (cum laude) Fobo, Andiswa Hermanus, Victor Cebo Komeheke, Joachim Lupekesa, Chipasha Salome Bwalya (cum laude) Mabumbulu. Olwethu Mohlomi, Andiswa Awethu Molatlhegi, Reaobaka Eric Ndoda, Kwandakwethu Ngxongo, Nkosinathi Qaphelani Sekoaila, Mohlatleho Lucy Sikwatsha, Lizeka Joyce Thai, Christopher Mokale (cum laude) Twala, Sibongile

#### Diploma in Sustainable Development Diploma in Volhoubare Ontwikkeling

Meyers, Zoe Nompehle, Avela Ivy Rive, Shanéad Hannah Somathika, Vuyelwa Makabongwe

#### Diploma in Public Accountability Diploma in Openbare Verantwoordbaarheid

Abrahams, Jolize Viyoniefe Botha, Orson Dindili, Sipho Dolomba, Bulelwa Groep, Marcel Andre Hermanus, Elbenice Marisca Jantjies, Lizelle Mercia Jooste-Leslie, Charldene Quinith Mbekeni, Sikhulule Mdlalo, Lihle Mokhele, Palesa Nase. Beth Nhlabathi, Nomzamo Alisa Siegelaar, Daneline Stegmann, Carien Alwena (cum laude) Summers, Nathan Robert

Thomas, Egnatuis Elmo Chestney Tshefu, Dunyiswa Van Turha, Denwin Charl Viviers-Simpson, Grisselle Sauline Helga

### Advanced Diploma in Public Accountability Gevorderde Diploma in Openbare Verantwoordbaarheid

Du Pokoy, Junilla Veronato February, Chantley Chiree P Hans, Devon Aldo Khwalu Khwalu, Siphelele Kutuka, Sindiswa Sylvia Majavie, Jonathan Christopher More, Lorraine Mohumi Murison, Richard John Nomana, Linda Sibeko, Impiyakhe Enock Skele, Verity Nomampondomise Stanfield, Janine Gail Titus, Petro Faith Van der Merwe, Damian Johan

#### Advanced Diploma in Sustainable Development Gevorderde Diploma in Volhoubare Ontwikkeling

Muchanyara, Hackenzie Yekelo, Kamvelihle Kobus forward together sonke siya phambili saam vorentoe



### FACULTIES

Law · Military Science 28 March 2024 | 09:00

### FAKULTEITE

Regsgeleerdheid · Krygskunde

28 Maart 2024 | 09:00

### Programme

Please stand	1.	Entrance of academic procession into the hall.
Please stand	2.	Playing of the National Anthem.
Please sit	З.	Congregation formally constituted by the Chancellor.
	4.	Welcome by the Chancellor.
	5.	Presentation of candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Chancellor.
	6.	Closing by the Chancellor.
Please stand	7.	The academic procession leaves the stage.

### Program

Staan asseblief	1.	Akademiese prosessie kom die saal binne.
Staan asseblief	2.	Speel van die Nasionale volkslied.
Sit asseblief	З.	Formele konstituering deur die Kanselier.
	4.	Verwelkoming deur die Kanselier.
	5.	Voorstelling van kandidate wat kwalifikasies ontvang deur die dekaan van die fakulteit en toekenning van kwalifikasies deur die Kanselier.
	6.	Sluiting deur die Kanselier.
Staan asseblief	7.	Akademiese prosessie verlaat die verhoog.

### Faculty of Law Fakulteit Regsgeleerdheid

### DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

#### DOCTOR OF LAWS DOKTOR IN DIE REGSGELEERDHEID

BARNES, Johndre (Public Law)

### "Inconvenient identities": The recognition of a non-binary gender in view of the constitutional values of human dignity, equality and freedom

This study examines whether a non-binary gender should be given legal recognition in South Africa in view of the constitutional rights to human dignity, equality and freedom. It employs a queer theoretical lens to interpret the relevant constitutional provisions and to analyse and critique legislation and case law. It is argued that the legal system should move beyond a strictly binary approach to gender towards an approach that respects difference and extends full recognition to individuals, irrespective of whether they conform to heteronormative norms and assumptions.

Supervisor: Prof H Botha

CONRADIE, Riana (Mercantile Law)

### A comparative legal analysis of the accommodation of neurodiversity in the workplace: towards a universal right to reasonable accommodation

This study departs from the reality that workforces are made up of individuals with different personal characteristics, which may be traced back to unique personalities, or sometimes to neurodivergence. Through a comparative analysis, it considers the legal implications of neurodiversity in the workplace, investigating the employment law principles that may be used to protect and promote respect for neurodiversity at work. The study concludes with findings and recommendations on the use of discrimination law and the concept of reasonable accommodation to best regulate neurodiversity in the workplace and protect employees against prejudicial treatment on account of their personal neurodiverse characteristics.

Supervisor: Prof CJ Garbers

FOX, Bryony Elizabeth (Private Law)

## Not just hot air: soft law and the protection of climate change- induced displaced children's needs and rights

This study examines to what extent existing international soft law instruments protect the needs and rights of children who have been displaced by climate change across international borders, both while they are on the move and in finding durable solutions to their displacement. A children's rightsbased approach is utilised to analyse and critique the various soft law instruments. Among others, the study finds a woeful lack of protection in these instruments for climate changedisplaced children while on the move and in their search for durable solutions. It is argued that states have an obligation to look for new, creative, climate-responsive, rights-based solutions.

Supervisor: Prof CS Human

LOURENS, Marna (Private Law)

### Towards transformative justice for un-coerced adult female sex workers in South Africa: an approach that speaks to the multilayered and multifaceted realities of women in South Africa

This study explores the extent to which the existing legal approach to un-coerced adult female sex work in South Africa is aligned with the country's constitutional dispensation. It employs an intersectional lens to help the legislator make sense of the multilayered and multifaceted realities of these sex workers within the parameters of a constitutional dispensation. The study argues that the ideological inadequacy of the criminal law necessitates an approach that considers the prevailing and interlocking constraints implicit in sex workers' lives. Insofar as it moves the discourse beyond punishment and retribution, intersectionality could help achieve transformative justice for this group.

Supervisor: Prof CS Human Co-supervisor: Dr A Coetzee

### Faculty of Law Fakulteit Regsgeleerdheid

### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

### Master of Laws Magister in die Regsgeleerdheid

Alberts. Tobias Vivian (cum laude) Aphane, Mpho Ororiseng Raesetia Baartman, Deidré Maudelene Basini-Gxokonyeka, Nosicelo Natasha Fourie-Viljoen, Marthinus Phillipus (cum laude) Gain. Andrea Koster, Carlien Kotze, Dirk Jacobus Petrus Krige, Kristhoff Lehabe, Thabo Leburu Mabetlela, Samuel Phaladi Madiba, Kgomotso Angel Gillian Mapani, Rumbidzai Laura Maserumula, Matlebjane Kabelo Mhlongo, Malusi Howard Monyanga, Asher Musetsho, Lufuno Rodney Nakah, Rumbidzaishe Nakah Lobukhosi Ndhlovu, Nandi Nel. Nicole Erin Nomkuca. Nobuntu Oosthuizen. Jana Embe Phillips, Chad (cum laude) Pillay, Indhrasen (cum laude) Pitso, Tshoanelo Rankin. Claire (cum laude) Rousseau. Genevieve (cum laude) Scholtz, Karli Sibisi, Sanele Fezile Taft, Michael-John Tsaes, Rachida Zenid Monique Van der Vyver, Karel Van Duivenbooden, Danielle Van Dyk, Frederik Rudolph Van Wyk, Tiaan

### Bachelor of Laws Baccalaureus in die Regsgeleerdheid

Allen, Jared Duncan Barnes, Jade Kerenchia Beviss-Challinor, Kelly Anne Billa, Tshepiso Ntshembo Brandt, Brittney Brandt, Jandre Du Toit Broodryk, Robyn Chirikure, Tavonga Sasha Chiweshe, Odette Cloete, Thurston Charles Coetzee, Lianca Colman, Paige Veronica Cotton, Caroline May De Klerk, Neena Evers, Jonathan James Firman, Shannon Fisher, Christiaan Frank, Johan Freed. Hannah Marthina Guerreiro Kurt, Cameron Carlos Leston Haggard, Marzanne Hamdulay, Reza Mansoor Hariparsad, Shreya Harris, Alexandra Joan Havenga, Ané Herselman, Ruda Jardim, Caitlin Lee Kleynhans Jasson, Willbur Davern Jokazi. Linah Chumani Justus, Nicola Kallis, Christopher Keenan Koloane, Peloyareng Kealoboga Keabetswe Kruger, Ulrich Lagerwall, Kerryn Nicola Louw, Leané Manikai, Matifadza Joy Martin. Carmen Lilian Matthews. Victoria Mclean, Cameron Murray, Jamie Lynn Ndevu, Asanele Ndwandwe, Boipelo Mbiko Newman, Aiden Ngobeni, Kulani Itumeleng Njengele, Xola O'Donoghue, Michaela Parenzee. Zen James Pillay, Kiasha Plaatjies, Dillon Curtly Pretorius, Ruben Rousseau, Jeanne-Marie Sampson, Kai Stoffels, Michalin Theron, Phillip Van der Bank, Christo Van der Westhuizen. Larah-Lané Van der Westhuizen, Patricia Amanda Van Rensburg, Melissa Leigh Van Rooyen, Aakifah Van Wyk, Elouise Viljoen, Kelly Vorster, Jandre Krynauw Williams, Jeanté Tammy Worthington, Shea Jean

## Postgraduate Diploma in Intellectual Property Law Nagraadse Diploma in Intellektuele Goederereg

Baleni, Zintle

Postgraduate Diploma in Public Procurement Policy and Regulation Nagraadse Diploma in Staatsverkryginsbeleid en -regulering

Fokazi, Bongiwe Gogotya, Andile Kambonde, Selma Ndapewa Metumo Nxumalo, Lindani Goodman Salomo, Emilia Ndeshipanda

#### Postgraduate Diploma in Tax Law Nagraadse Diploma in Belastingreg

Hugo, Chantal Frederine Matrose, Sinethemba Mshengu, Sibongile Xoliswa

#### FAKULTEIT EKONOMIESE EN BESTUURSWETENSKAPPE

### Bachelor of Accounting and Bachelor of Laws Baccalaureus in Rekeningkunde en Baccalaureus in die Regsgeleerdheid

Mostert, Anike Oosthuizen, Bernard Jacobus Henry Rantsonyane, Martin Tshepo

### Faculty of Military Science Fakulteit Krygskunde

### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

### Master of Military Science Magister in die Krygskunde

Akalezi, Uchendu Nicholas (Organisation and Resource Management) Andreas, Jan (Strategic Studies) Bentley, Casey Lilly (Military Science) Nkambule, Ayanda Hellen (Military Science) Teubes, Kenne Nicolaas (Military Science)

### Bachelor of Military Science Honours Honneurs-Baccalaureus in die Krygskunde

Molepo, Anastasia Ditlakala (Strategic Studies) Mooketsa, Adolphina Maphiri (Industrial Psychology (Mil)) Sibeko, Peter (Industrial Psychology (Mil))

### Postgraduate Diploma in Defence Studies Nagraadse Diploma in Verdedigingstudie

Schoeman, Christiaan Johannes Petrus

### Bachelor of Military Science Baccalaureus in die Krygskunde

Limbede, Zibuyile Victoria Maatjie, Phetogo Owen



### Faculty of Engineering

28 March 2024 | 13:00

### Fakulteit Ingenieurswese

28 Maart 2024 | 13:00

### Programme

Please stand	1.	Entrance of academic procession into the hall.
Please stand	2.	Playing of the National Anthem.
Please sit	З.	Congregation formally constituted by the Vice-Chancellor.
	4.	Welcome by the Vice-Chancellor.
	5.	Presentation of candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Vice-Chancellor.
	6.	Closing by the Vice-Chancellor.
Please stand	7.	The academic procession leaves the stage.

### Program

Staan asseblief	1.	Akademiese prosessie kom die saal binne.
Staan asseblief	2.	Speel van die Nasionale volkslied.
Sit asseblief	З.	Formele konstituering deur die Visekanselier.
	4.	Verwelkoming deur die Visekanselier.
	5.	Voorstelling van kandidate wat kwalifikasies ontvang deur die dekaan van die fakulteit en toekenning van kwalifikasies deur die Visekanselier.
	6.	Sluiting deur die Visekanselier.
Staan asseblief	7.	Akademiese prosessie verlaat die verhoog.

### Faculty of Engineering Fakulteit Ingenieurswese

### DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

#### DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

ABRAHAM, Chris Joseph (Electrical Engineering)

## Evaluating electrical vehicle technology for paratransit in Africa through simulation

This study investigates the feasibility of a transition towards electric vehicles (EVs) for minibus paratransit, being Africa's predominant public transport system. To date, no research has been done in this field, owing partly to the system's unpredictable mobility patterns and limited data. This study helps address this research gap by assessing the technical feasibility of such a transition. This is done for seven African cities, using both grid and renewable energy-based charging concepts. The research contributes a novel methodology, which can be extended for the evaluation of paratransit fleets in broader contexts.

Supervisor: Prof MJ Booysen Co-supervisor: Dr AJ Rix

#### BESTER, Frederick Albrecht (Civil Engineering)

## Rivet and wire rope reinforcement in extrusion-based printed concrete

This study tackles the challenge of reinforcement integration in extrusion-based concrete printing. A novel reinforcement strategy tailored to the system constraints of concrete printing is proposed, evaluated and analysed. Various reinforcement strategies are assessed for their alignment with the benefits of concrete printing. Modified male–female blind rivets are then experimentally evaluated for orthogonal reinforcement, and wire ropes for longitudinal reinforcement. The analysis includes rivet strand displacement, compressive force exertion, and time efficiency during fastening, along with an evaluation of the mechanical properties of these reinforcements, and their influence on printed concrete samples.

Supervisor: Prof GPAG van Zijl Co-supervisor: Dr PJ Kruger **COETZER**, Kurt Michael (Electrical Engineering)

### Nonlinear high-frequency circuit-electromagnetic hybrid modelling of photovoltaic modules

This study investigates the susceptibility of two solar photovoltaic modules to indirect lightning-related electromagnetic interference by developing improved largesignal, high-frequency photovoltaic cell and bypass diode circuit models. These models are combined with new three-dimensional computational electromagnetic representations of photovoltaic modules, thereby producing a circuit-computational electromagnetic hybrid model. The new three-dimensional representations incorporate several novel aspects, such as distributed cell layouts and implicitly calculated inductances. A series of high-frequency measurements validate the accuracy improvement resulting from the unprecedented modelling methodologies, specifically in terms of the differential-mode impedance, internal stringto-string coupling, and far-field radiation behaviour.

Supervisor: Dr AJ Rix

DANIEL-DURANDT, Francisca Muriel (Electrical Engineering)

### Advancements in spectral corrections for enhanced photovoltaic performance monitoring and modelling

In this study, the development and validation of automated quality control procedures enables the use of large irradiance datasets as a reliable input for future irradiance modelling activities. A significant improvement in the hourly direct normal irradiance estimation is achieved through the development of a new decomposition model for Southern Africa. Using this data, a novel spectral correction methodology is demonstrated, enabling long-term solar photovoltaic performance ratio estimations from short-term measurements. This marks the first documented effort to rectify the performance ratio calculation by using spectral corrections, improving on existing methods, which only consider irradiance and temperature corrections.

Supervisor: Dr AJ Rix

## Towards a protocol for evaluating unrestrained torso neck braces

This study proposes a methodology for the evaluation of prophylactic unrestrained torso neck braces, such as those used by motorcycle riders. The methodology represents the first step towards an international test protocol for these neck braces, intended to reliably determine their efficacy. The methodology recreates various neck injury mechanisms through experimental testing and computational methods, and identifies applicable neck measures, criteria and injury risks to evaluate. A case study evaluation of the methodology reveals its ability to gauge neck brace performance in terms of industry-standard injury measures and applicable biomechanical considerations.

Supervisor: Prof AH Basson Co-supervisor: Dr EH Knox (external)

DU PLESSIS, Maria Catharina (Civil Engineering)

## Experimental and numerical investigation on the effect of gaps in mass timber connections in fire

The resurgence of timber as a structural material makes the fire performance of mass timber connections an important research area. The influence of gaps in mass timber connections, and their effect on the fire resistance rating of a connection, is paramount to prevent premature failure. This study investigates the influence of these gaps and the use of an intumescent fire sealant as a fire protection measure in mass timber connections. It finds that the application of an intumescent fire sealant improves the predictability of thermal development in the connections and limits temperature development in the metal components significantly.

Supervisor: Prof RS Walls

DU TOIT, Frederick Jacobus (Electrical Engineering)

## Cluster graph representations of low-density parity-check codes, including non-stationary channel noise estimation

This study explores novel Bayesian inference algorithms from the probabilistic graphical model literature, applying them to the low-density parity-check codes used in wireless communication systems. It finds that cluster graph-based methods exhibit enhanced accuracy and computational efficiency compared to commonly used factor graphbased methods. The cluster graph-based method is also extended further, allowing low-density parity-check codes to dynamically track and adapt to non-stationary changes in signal-to-noise ratios. Testing of this extended method on real-world drive-test data reveals a further improvement in the error-correcting performance of the low-density parity-check code.

*Supervisor:* Prof JA du Preez *Co-supervisor:* Prof R Wolhuter ENGELBRECHT, Emile Reynard (Electronic Engineering)

## Unified machine learning: open-set learning with augmented category by exploiting unlabelled data

This research centres on enhancing the cost-effectiveness and applicability of neural network classifiers. Recognising the nuances of application-grade datasets, the study identifies the need to combine various frameworks into a single approach. Specifically, it integrates semi-supervised learning with novelty detection to create a more enriched embedding space. This synthesis of research branches retains the benefit of each of these fields in a single model – reduced costs for data preparation, and the ability of the artificially intelligent model to say 'I don't know'. The resultant integrated learning framework will render neural networks more accessible and practically useful.

Supervisor: Prof JA du Preez

ERNST, Rudolf Heinrich (Industrial Engineering)

## Evolutionary algorithms for routing problems with drones with interceptions

This study delves into the intricacies of last-mile delivery optimisation, focusing on the synergy and synchronisation between drones and trucks for deliveries. The research showcases the development and application of advanced algorithms that significantly enhance route planning, promising significant efficiency gains. It delves deeper into the performance of metaheuristics, highlighting both the benefits and drawbacks of the approach. The truckand-drone routing problem is scaled to a more realistic version, and algorithm performance is improved through the application of problem-specific operators. The study motivates for the use of trucks and drones in combination to deliver goods to customers.

Supervisor: Prof J Grobler Co-supervisor: Prof PM Kaminsky (external)

EZEBILI, Ifeanyi Francis (Mechatronic Engineering)

## A model for accurate error propagation in a convergent stereovision system

An epipole-featured model with short execution time is proposed and evaluated for scene reconstruction in active geometric computer vision. Virtual depth and depth factor are introduced, which together define the depth of a 3-space point relative to the reference camera. An equivalence relation between coplanar-parallel and convergent stereo-camera imaging systems is established, in which baseline-to-depthfactor ratio is defined and termed 'convergent stereo disparity'. This disparity is equated with the image rectification process in coplanar-parallel stereo-camera imaging. Subsequently, mathematical models are derived to study the variation of depth sensitivity coefficient and relative depth uncertainty with respect to convergent stereovision system parameters.

Supervisor: Prof K Schreve

GANZEVOORT, Reinard Christiaan (Industrial Engineering)

### A decision support framework for the selection of appropriate time-series forecasting methods in the retail sector

A framework is proposed in this study for assisting retail practitioners in their selection of forecasting methods for stockkeeping unit sales prediction. The framework incorporates a two-phased approach. During the first, benchmarking phase, historical sales time series are clustered into groups that exhibit similar behaviour, and each group is associated with a ranked list of ideal forecasting methods. The second, implementation phase involves classifying unseen time series into one of the established groups with a view to recommend a tailored forecasting model for each time series. The effectiveness of the framework is verified in respect of retail sales benchmark data.

Supervisor: Prof JH van Vuuren Co-supervisor: Drs J du Toit (external), BG Lindner (external)

JACOBS, Daniel Rudolf (Industrial Engineering)

### A new simulation-based methodology for pro-active planning in deep-level mine ventilation systems to identify and mitigate hazards

Deep-level mines rely on complex and dynamic ventilation systems to supply adequate air to underground workers. However, there is no concise strategy for hazard avoidance in life-of-mine planning, and there is also a need to determine how frequently planning should take place. In response, this study develops a hazard avoidance strategy that can be used in proactive planning. The strategy is validated in two case studies, firstly verifying the strategy itself, and secondly utilising it for two different planning methods. This validation exercise now ensures the availability of an implementable new strategy to be used in life-of-mine planning.

Supervisor: Prof CSL Schutte Co-supervisor: Dr JH van Laar

JANSEN VAN VÜREN, Joshua Miles (Electronic Engineering)

### Neural network-based language modelling for codeswitching in South African languages

Code-switching is the use of multiple languages during discourse, and is prevalent among South African speakers. Since it is spontaneous, code-switching is not commonly present in written text, and therefore, remains unsupported in language technology. This study considers the computational modelling of code-switching between five South African languages – isiZulu, isiXhosa, Sesotho, Setswana and English – using state-of-the-art neural network architectures. Generative approaches, where mixed-language text is synthesised, as well as analytical approaches, where code-switches are explicitly modelled, are developed, and are shown to lead to substantial and complementary improvements in automatic speech recognition accuracy.

Supervisor: Prof TR Niesler

#### KADAN, Richard (Civil Engineering)

## Social Network-related risk management practices in mega construction project supply chains in Africa

Mega infrastructure projects, characterised by substantial funding and complex supply chains, have a significant impact on local populations and economies. The intricate web of stakeholders, including contractors, project owners and government agencies, adds layers of complexity to the supply chains of these projects. Yet the role of social networks in managing the supply chain risks of mega construction projects remains unexplored. This study examines construction supply chain risk management through the lens of social networks, encompassing dynamic interactions among project participants. The findings and recommendations guide strategies for managing social network risks in megaproject supply chains, which have a global impact, particularly on developing regions.

Supervisor: Prof JA Wium

KOTZÉ, Jacobus Marius (Electronic Engineering)

## Design of quadruple-ridged orthomode transducers with reduced modal content

This study presents new methods for the design of quadrupleridged orthomode transducers that maximise coupling to the fundamental waveguide mode over large bandwidths, achieved by reducing coupling to higher-order modes. The use of such a quad-ridged orthomode transducer leads to intrinsic performance improvements over existing designs, and enables the accelerated parallel design of a quad-ridged reflector feed-horn based on the orthomode transducer. A measurement technique is also developed to characterise the multimodal properties of orthomode transducers and waveguide devices in general, and is used to verify the reduced higher-order modal content designs presented in the study.

*Supervisor:* Prof P Meyer *Co-supervisor:* Dr W Steyn

LE ROUX, Marco (Industrial Engineering)

## Identifying water wastage in deep-level mines, using novel simulation-based zero-waste baselines

Deep-level mine chilled-water reticulation systems are energyintensive and prone to wastage. Current techniques used for chilled-water wastage identification are unable to capture the true extent of the wastage. An alternative baselining technique, namely zero-waste baselining, determines the expected water usage from consumer demand. In this study, a new method is developed that utilises novel simulationbased zero-waste baselines to quantify water wastage in deep-level mines. This method is subsequently applied to three case studies, where an average water wastage of 44% is quantified, which is 47% more wastage than the next best technique managed to identify.

Supervisor: Prof CSL Schutte Co-supervisor: Dr JH van Laar

### Techno-economic and life-cycle analysis of polyethylene, polyethylene furanoate and polyethylene terephthalate production in integrated sugarcane biorefineries

The conversion of sugarcane feedstocks into bioplastics, specifically polyethylene (PE), polyethylene terephthalate (PET) and polyethylene furanoate (PEF), was investigated. Economic and environmental assessments were conducted for each bioplastic and their respective monomers and intermediates. PEF and PE were economically viable, with green price premiums of 44% and 56% above their respective fossil-based market prices, while PET was economically unfeasible, with a premium of 128%. Production of the monomer 2,5-FDCA (12% premium) or intermediate isobutanol (-19%) was more profitable than their bioplastic counterparts. PE was the most sustainable bioplastic, while isobutanol emerged as the most sustainable investment overall, excelling both economically and environmentally.

Supervisor: Prof JF Görgens

MACALLISTER, Nicolas (Mechanical Engineering)

## Fracture mechanics-based fatigue life assessment of additvely manufactured Ti-6AI-4V

Additive manufacturing using titanium alloys is well suited to the South African context in terms of economic climate, strong manufacturing relationships, and the abundance of mineral titanium reserves. Despite extensive research, however, challenges persist to reliably certify the dynamic fatigue behaviour of these materials. This complexity stems from the intricate relationships between additive manufacturing parameters, build orientation, surface roughness, inherent defects, residual stresses, and meso and microstructure. Establishing reliable baseline fatigue strength values required by industry is particularly challenging. To address this, a novel damage-tolerant method is developed, incorporating fracture mechanics-based frameworks along with nondestructive testing.

Supervisor: Prof TH Becker Co-supervisor: Prof DC Blaine MANJENGWA, Evelyn Ruvimbo (Chemical Engineering)

## Incorporating sustainable-practice principles into the development of solutions for the mitigation of mine waste

Increased regulatory compliance, institutional pressures and access to information demand a proactive and holistic shift in the business practices and governance of the mining industry. In response to the existential pressures threatening the viability and legitimacy of the industry, this study develops and tests a holistic decision-making framework to support mine waste management projects, employing economic, social and environmental sustainability metrics. Viewing stakeholder priorities from a multistakeholder and a company perspective, the research delivers a multicriteriamultistakeholder decision-making framework that captures both sustainability and business metrics.

*Supervisor:* Dr M Tadie *Co-supervisor:* Prof C Dorfling

MARITZ, Roelof Frederick (Chemical Engineering)

### Comparing the environmental impact of different hydrometallurgical processes for the recycling of lithium-ion batteries using a life cycle assessment approach

The recycling of end-of-life lithium-ion batteries, one of the fastest growing waste streams globally, is critical from a waste management perspective. This study compares the environmental impacts of different hydrometallurgical process flowsheets designed for metal recovery from endof-life lithium-ion batteries, using life cycle assessments and multivariate uncertainty analyses. The environmental impacts of mineral acid-based processes are determined to be lower than that of organic acid-based processes. The mixed metal precipitation of Ni, Mn and Co provides the greatest environmental benefit of the flowsheets considered in the research. Alternative process technologies for improved environmental performance are also identified through weak-point analyses.

Supervisor: Prof C Dorfling Co-supervisor: Prof G Akdogan

#### Mc LEOD, Claudia (Civil Engineering)

## Optimisation of sand trap and settler designs for efficient deposition of suspended sediment

This study contributes to design guidelines for sand traps and settlers in areas with high fine non-cohesive sediment loads. It uses a fully three-dimensional computational fluid dynamics (CFD) model, coupled in terms of hydrodynamics and sediment transport, to investigate design considerations. The hydraulic performance of an existing sand trap and settler in South Africa is also examined to identify areas for improvement. Additionally, the study evaluates an innovative 'split-and-settle' sand trap concept, which shows potential for enhanced efficiency, reduced length requirements, sustained capacity and minimal maintenance. The calibrated CFD model offers a valuable design tool for future design guidelines, emphasising the significance of the split-andsettle concept in sediment management and hydraulic engineering.

Supervisor: Dr A Bosman Co-supervisor: Prof GJF Smit

MÜLLER, Christiaan Johann (Electronic Engineering)

## Map point selection for hardware-constrained visual simultaneous localisation and mapping

Simultaneous localisation and mapping (SLAM) is essential for mobile robots to operate autonomously in initially unknown environments. Cameras are commonly used to perform SLAM. The resulting visual SLAM algorithms produce very large maps when applied to large-scale and long-term scenarios, making them unsuitable for hardware-constrained robotic platforms. This study proposes a number of novel techniques to reduce the size of the map produced by visual SLAM. A thorough evaluation of these techniques on practical data shows that they allow a significant reduction of the map during operation, often at a minimal cost to SLAM accuracy.

Supervisor: Dr CE van Daalen

### MUNEMO, Ruvimbo Eustina (Civil Engineering)

## Physico-chemical interventions for improved interlayer adhesion in 3D printable concrete

Three-dimensional concrete printing (3DCP) holds promise for construction, but suffers from weak interlayer adhesion (IA). This study delves into physico-chemical interventions to strengthen IA without hindering the fabrication process. It conducts an exhaustive review of strategies, introducing the novel interventions of thermo-hydrokinetics and silicate impregnation. These methods significantly enhance IA, demonstrating viability and reliability, while seamlessly integrating into the 3DCP process. Empirical and computational models validate these interventions, showcasing their ability to improve IA effectively. The findings advocate for a more cohesive approach that amalgamates these strategies to create resilient and structurally sound printed constructions.

Supervisor: Prof GPAG van Zijl Co-supervisor: Dr PJ Kruger

#### ROZON, Francois (Mechanical Engineering)

### An outlook on the energy mix at South African beverage manufacturers, and opportunities for greater adoption of renewable energy solutions

The adoption of renewable energy solutions by industry is critical, considering that industry accounts for 50% of carbon emissions globally, including in South Africa. This research focuses on the South African beverage sector to define boundary conditions and frame investment decisions. The study proposes a framework for the accelerated adoption of renewable energy technologies. The framework incorporates a data-driven renewable energy capacity and cost forecasting approach as well as techno-economic analyses of investment options to support strategic decision-making regarding the shift towards sustainable industrial energy systems.

Supervisor: Prof C McGregor Co-supervisor: Prof MTF Owen

SCHOEMAN, Stephan Petri (Electronic Engineering)

#### Development of a layered electrochemical biosensor

This study achieves a significant advancement in protein quantification through the design of an innovative biosensor with a unique layered structure. The device incorporates three separate carbon nanofiber electrodes, each divided by layers of nitrocellulose paper. The design is validated by measuring levels of C-reactive protein, an important biomarker for tuberculosis diagnostics. The final prototype operates within a detection range of 1 pg/ml to 10 ng/ ml and demonstrates the use of a control electrode as a validation mechanism for each test. The device paves the way for many practical applications in diagnostics and other electrochemical detection systems.

Supervisor: Prof WJ Perold Co-supervisor: Prof G Walzl

SCHULZE-HULBE, Alexander (Chemical Engineering)

## Developing the s-SAFT- $\gamma$ Mie equation of state toward nonaqueous alkanolamine-based carbon capture systems

Nonaqueous alkanolamine-based chemical-absorption carbon capture presents a promising pathway to reducing industrial  $CO_2$  emissions. Considering this, this research develops the s-SAFT- $\gamma$  Mie thermodynamic model for predicting  $CO_2$  solubility in nonaqueous alkanolamines. s-SAFT- $\gamma$  Mie proves capable of qualitatively reproducing the effects of temperature, liquid-phase composition and organic cosolvent chain length on  $CO_2$  solubility. This holds for both lower pressures, where  $CO_2$  solubility is driven by chemical absorption, and higher pressures, where  $CO_2$  is dissolved by physical absorption. These robust capabilities underline the value of s-SAFT- $\gamma$  Mie and its newly developed parameters for preliminary process design activities such as alkanolamine/organic cosolvent screening.

Supervisor: Dr JT Cripwell Co-supervisor: Prof AJ Burger

### Natural language processing for characterising the Covid-19 infodemic on South African Twitter

This study explores machine learning and natural language processing approaches for mapping misinformation and disinformation on South African Twitter during the Covid-19 pandemic. An unsupervised approach, mainly utilising dynamic topic modelling, proves successful in isolating clusters of tweets relating to misinformation. These clusters are investigated further, linking their characteristics to specific elements of misinformation. In addition, the research delivers a novel generalised framework for characterising large corpora of text with dynamic topic modelling, topic evolution networks and topic characterisation procedures.

Supervisor: Prof J Grobler

#### TER HAAR, Bjorn (Civil Engineering)

## Off-site 3D concrete printing construction system for structural building frames

This study develops a construction system that uses off-site 3D concrete printing (3DCP) for the multistorey structural frames of low-rise residential buildings. A systematic literature review is conducted to determine targeted actions that support the success of off-site 3DCP construction systems. A target frame is selected from local case studies, and a concept of the off-site 3DCP construction system is defined by means of systems engineering tools. A novel 3D-printed concrete beam and beam-column connection are then designed, fabricated and experimentally tested. The construction system presents a feasible path towards the realisation of a full-scale 3DPC structural frame.

Supervisor: Prof GPAG van Zijl Co-supervisor: Dr PJ Kruger

USMAN, Ayinde Mohammed (Electrical Engineering)

### On Eigendecomposition-based algorithms as feature extraction techniques used with hidden Markov model for the detection of whale vocalisations

Whales are integral to marine ecosystems, yet face threats from human activity. The accurate detection of the different whale species is vital for marine ecologists to understand their behaviour and mitigate these threats. Whales emit diverse sound signals for communication and other social functions, collected via passive acoustic monitoring (PAM). This study employs signal processing and machine learning approaches to develop models based on Eigendecomposition algorithms coupled with hidden Markov models for the automatic detection of whale species in PAM datasets. The models exhibit strong performance across various evaluation metrics, providing valuable insights into whale ecology and conservation efforts.

Supervisor: Prof DJJ Versfeld

#### USONGO AMIKA, Akuta (Civil Engineering)

Parameter ranking, predictive modelling and reliability assessment for ultimate load capacity of eccentrically loaded slender circular concrete-filled double-skin tubular columns

This study explores the behaviour and ultimate load capacity of slender circular concrete-filled double-skin tubular (CFDST) columns under eccentric loading. Through a sensitivity analysis, the key parameters are ranked to determine their priority. This ranking is then utilised in a statistical analysis to develop a reliable and easily implementable design model for predicting the ultimate load of CFDST columns, considering seven parameters. The reliability analysis demonstrates that this model achieves the required target reliability indices for design. The study concludes by recommending adjustment factors to enhance the reliability of existing codified design requirements.

Supervisor: Prof TN Haas

VAN HEERDEN, Quintin (Industrial Engineering)

## A distributed simulation-optimisation system in support of goal pursuit in large-scale urban growth scenarios

Urbanisation is an important consideration in the pursuit of the United Nations' sustainable development goals. Local planning practices should align with these goals, but are plagued by an overabundance of legislative requirements, with little focus on testing the efficacy of long-term plans. Urban growth simulation models are useful tools in support of the local planning process, although existing models are too limited in their application. A generic distributed urban growth simulation-optimisation system is proposed in this study for combining integrated land-use transport models with a multi-objective self-adaptive metaheuristic and Chebyshev scalarisation to achieve trade-offs between conflicting long-term urban planning objectives.

Supervisor: Prof JH van Vuuren

VAN TONDER, John Dean (Mechanical Engineering)

## Using full field data to produce a single indentation test for fully characterising the Mooney Rivlin material model

A novel method is proposed to address the non-uniqueness problem in hyper-elastic material characterisation by introducing a way to reduce the size of the parameter space and reformulate the material characterisation process as a constrained optimisation problem. The technique uses the inverse finite element method to isolate the domain on which the correct material parameters are located. The proposed method provides a repeatable and accurate set of material coefficients. It is validated with physical and synthetic testing and is shown to outperform current state-of-the-art approaches. This method will improve the capacity of numerical simulation of soft materials.

Supervisor: Prof MP Venter Co-supervisor: Prof G Venter

## How to automatically detect calls from cetaceans and fish without large-scale training data

This study involves the development of an automatic detection toolkit that aids in the detection of cetacean and fish calls in audio recordings without the need for copious amounts of training data. The toolkit consists of a silence detector that removes stationary noise from an audio signal, two methods that test an audio frame for harmonic sounds, and a set of deep-learning methods that cluster noise from cetacean vocalisations in imbalanced bioacoustics datasets. The toolkit succeeds in quickly detecting cetacean and fish calls in imbalanced audio datasets without requiring many training samples.

Supervisor: Prof DJJ Versfeld Co-supervisor: Prof JA du Preez

#### VENTER, Adam John (Mechanical Engineering)

## Augmentation of the actuator-disk method for low-pressure axial flow fan simulation

Low-pressure axial flow fans find application in many industrial systems, including air-cooled condensers and carbon capture systems. The accurate numerical simulation of these fans in large-scale installations is important for the development and improvement of these systems. Using insights derived from high-fidelity computational fluid dynamics analyses, this study presents a new actuator-disk fan model formulation based on the unique aerodynamic behaviour of axial fans. The new formulation exceeds the capacity of existing models to accurately estimate real fan blade forces and offers an improved field flow resolution, enabling researchers to better investigate complex system dynamics.

Supervisor: Prof MTF Owen Co-supervisor: Dr J Muiyser

#### WEIDEMAN, Rina-Mari (Electronic Engineering)

#### Sub-sampled exponential analysis in antenna applications

The use of sub-sampled exponential analysis in antenna applications is appealing for a number of reasons. The computational time of simulations may be significantly reduced, or increased resolution may be achieved in sensor systems such as radio telescopes. In this study, a sub-sampled exponential analysis method called VEXPA is applied to three different antenna application problems. The first involves the use of one-bit data in the sparse direction-ofarrival (DOA) estimation problem, the second is the inverse DOA problem as applied to antenna position estimation in large antenna arrays, and the third is the characterisation of frequency ripple in reflector systems.

*Supervisor:* Prof DIL de Villiers *Co-supervisor:* Prof A Cuyt (*external*) **WRIGHT**, Henry-John (Civil Engineering)

## Investigation of a novel deflector shapes for uncontrolled stepped spillways

Spillways are designed to control the release of excess water from a reservoir and convey it safely to a downstream river channel. This study, incorporating physical (1:50 scale model) and numerical modelling, determines the feasibility of novel deflector forms aimed at increasing the safe discharge capacity of stepped spillways by deflecting the flow away from the spillway slope. The proposed novel deflectors prove effective at various flow rates when considering the flow trajectory and threshold pressures. They could be used for dams higher than 150 m and unit discharges of between 100 and 200 m<sup>3</sup>/s.m.

Supervisor: Dr A Bosman Co-supervisor: Prof IC Brink

### Faculty of Engineering Fakulteit Ingenieurswese

### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

Master in Engineering Science in Biomedical Engineering Magister in Ingenieurswetenskappe in Biomediese Ingenieurswese

Diayar, Aashish (Biomedical Engineering) *(cum laude)* Pheko, Reatile (Biomedical Engineering)

### Master of Engineering Magister in die Ingenieurswese

Akoodi, Aaisha (Chemical Engineering)

- Akwuruoha, Uzoma Nobel (Electronic Engineering) (cum laude)
- Andringa, Yde Sybren (Engineering Management) (cum laude)

Baartman, Quinton (Civil Engineering)

Basson, Marthinus (Industrial Engineering) *(cum laude)* Batt, Richard John (Electronic Engineering)

Baumgartner, Shana Joy (Mineral Processing)

Blackburn, Dean Basil (Industrial Engineering)

Blackwell, Matthew Austin (Mechanical Engineering) (*cum laude*)

Blignaut, Andre Cilliers (Industrial Engineering)

Botha, Eugene Philip (Industrial Engineering)

Bowmaker, Alan Philip Macgowan (Civil Engineering) (cum laude)

Boyes, Andrew Barry (Industrial Engineering) *(cum laude)* Brand, Michiel Hendrik (Electronic Engineering)

Brink, Gerrit Hendrikus (Industrial Engineering)

Brink, Lambert Paul (Electronic Engineering) *(cum laude)* Brisley, Jesse Edward (Mechanical Engineering) *(cum laude)* 

Brits, Jeandre Adriaan (Civil Engineering)

Broeksma, Cornelis Reitz Daniël (Industrial Engineering) *(cum laude)* 

Broughton, Donovan (Industrial Engineering) *(cum laude)* Brown, Alida Margaret (Chemical Engineering) *(cum laude)* 

Buitendach, Nadine (Chemical Engineering) (*cum laude*) Bulterman, Stuart (Industrial Engineering) (*cum laude*)

Burger, Louis Willem (Industrial Engineering) *(cum laude)* Burgess, Aiden Edward (Chemical Engineering) *(cum laude)* 

Buthelezi, Muzwandile Menzi (Civil Engineering)

Caromba, Claudio Mauricio (Industrial Engineering) *(cum laude)* 

Chung, Sung Hee (Mechanical Engineering)

Coetzer, Margerethe (Electronic Engineering) (*cum laude*) Conradie, Johann Liam (Industrial Engineering) (*cum laude*) Davids, Nadeem (Mechatronic Engineering)

De Bruyn, Johannes (Electrical Engineering)

De Waal, Andri (Mechatronic Engineering)

De Wet, Werner (Electrical Engineering) (cum laude)

Denkema, De Wet (Electronic Engineering) (*cum laude*) Dlamini, Mbongiseni Nkosingiphile (Electrical Engineering) Dlamini, Nondumiso S'phiwe (Civil Engineering) Domingues, Bianca Rochelle (Engineering Management) Dreyer, Tashreeq (Civil Engineering) (*cum laude*) Du Toit, Charl (Electronic Engineering) (*cum laude*) Du Toit, Jacques Francois (Mechanical Engineering) (*cum laude*)

Dube, Kholwani Joseph (Civil Engineering) Duque, Ricardo Filipe (Civil Engineering) Ehlers, Gert (Electrical Engineering) *(cum laude)* Erasmus, Amanda Stephanie (Chemical Engineering) Erasmus, Nicholas Jacobus (Mechanical Engineering) *(cum laude)* 

Erwee, Hanno (Mechatronic Engineering) Fivaz, Michael Arthur (Mechanical Engineering) Fleming, Warren Francis (Chemical Engineering) *(cum laude)* 

Fourie, Franco Marius (Electrical Engineering) Gerber, Waldo Tertius (Industrial Engineering) *(cum laude)* Gool, Haroon (Industrial Engineering) *(cum laude)* Greyling, Deon (Civil Engineering)

Grobler, Abraham Frederick (Electronic Engineering) Grobler, Elze (Chemical Engineering) *(cum laude)* Grove, Johannes Benjamin (Engineering Management) Haasbroek, Petrus (Mechanical Engineering)

Hartley, Dayton (Civil Engineering) *(cum laude)* Hendriks, Jacobus Christiaan (Electrical Engineering) Heynes, Callen Foster (Civil Engineering)

Higgo, Megan Grace (Engineering Management) (cum laude)

Hofmann, Viola Sofia (Chemical Engineering)

Hughes, Merrick Stuart Macqueen (Electronic Engineering) (*cum laude*)

Jacobs, Eugene (Civil Engineering)

Janse Van Vuuren, Martin (Mechanical Engineering) (cum laude)

Kabini, Sfiso Abel (Civil Engineering)

Karan, Moegammad Yaaseen (Engineering Management) Katsumbe, Tinotenda Dudu (Industrial Engineering) Keanly, Oran Declan (Electronic Engineering) (*cum laude*)

Killian, Gerrit (Industrial Engineering) (cum laude)

Kloppers, Jacobus Le Roux (Engineering Management) Knight, Marcus Alexander (Chemical Engineering)

Knight, Marcus Alexander (Chemical Engineering)

Knoetze, Francois Emil (Industrial Engineering) *(cum laude)* Koekemoer, Johannes Hendrik (Mechanical Engineering) *(cum laude)* 

Korf, Gerhardus Jozua Joubert (Electronic Engineering) *(cum laude)* 

Kring, Bianca (Civil Engineering)

Lakhoo, Shaniel (Electrical Engineering)

Le Roux, Anri (Mechanical Engineering)

Lewis, Modesty Kem (Engineering Management) (cum laude)

- Ligthart, Philip Frederik (Mechanical Engineering) *(cum laude)*
- Loedolff, Christiaan (Mechanical Engineering) *(cum laude)* Loeffler, Stefanie (Engineering Management) *(cum laude)* Loots, Hendrik Johannes (Civil Engineering) *(cum laude)* Lubbe, Nikola (Industrial Engineering)
- Mafela, Mahlohonono Precious (Chemical Engineering) Maharaj, Ashail (Industrial Engineering) (*cum laude*)
- Mampana, Richard Leseja (Chemical Engineering) (cum laude)
- Manuel, Joel Wade (Industrial Engineering)
- Masha, Marisana Andreck (Chemical Engineering) (cum laude)
- Matsepe, Lebalang Sophia (Electronic Engineering) *(cum laude)*
- Matua, Moses Mandela Trevor (Civil Engineering)
- Mbatha, Success Katlego (Electronic Engineering) Meyer, Ewald Mauritz (Civil Engineering)
- Meyer, Kobus (Electronic Engineering) (cum laude)
- Mokgotho, Katlego Michelle (Industrial Engineering) (cum laude)
- Mostert, Dorothy Hilda (Industrial Engineering) *(cum laude)* Motala, Zaheer (Civil Engineering)
- Moyo, Zandile Chipo (Electrical Engineering) *(cum laude)* Mthembu, Simphiwe Sanele Ambition (Civil Engineering) Mtimuni, Tadala (Chemical Engineering)
- Mwamfupe, Veronica (Engineering Management) (*cum laude*)
- Nagel, Matthew (Mechatronic Engineering)
- Naidoo, Santeshan Yogandra (Industrial Engineering) (*cum laude*)
- Naudé, Ansuné (Industrial Engineering) *(cum laude)* Ndlela, Thandekile Julianah (Chemical Engineering)
- Nel, Bianca (Engineering Management)
- Nel, Gert (Electronic Engineering)
- Nel, Ryno (Civil Engineering)
- Nemauluma, Dakalo Nemauluma (Industrial Engineering) Nielsen, Shaun Jurgen (Mechanical Engineering) Nkhoma, Mcphancio (Chemical Engineering)
- Nkosi, Nompumelelo (Industrial Engineering)
- Nulliah, Puvasen (Mechanical Engineering)
- Nyamaka, Panashe Raphael (Chemical Engineering) Odendaal, Izanne (Industrial Engineering) *(cum laude)* Okantah, Edward (Civil Engineering)
- Okantah, Edward (Civil Engineering)
- Olifant, Fortunate Kenneth (Industrial Engineering) *(cum laude)*
- Olivier, Jaco Stefanus (Industrial Engineering) *(cum laude)* Olivier, Paul (Mechatronic Engineering) *(cum laude)* Oosthuizen, Gert Niël (Engineering Management) *(cum*
- laude)
- Pansarey, Abubakr (Mechanical Engineering)
- Parshotam, Himil (Industrial Engineering) *(cum laude)* Pelser, Stefan Petrus (Electronic Engineering)
- Phenyane, Nokwanda Sabeliwe (Civil Engineering) *(cum laude)*
- Pienaar, Carel-Johan (Electrical Engineering) *(cum laude)* Pooe, Tebogo (Civil Engineering)
- Pow Chong, Shane Steven (Industrial Engineering) *(cum laude)*
- Pretorius, Christiaan Petrus (Industrial Engineering) *(cum laude)*

- Rabadia, Mayur Manji (Electronic Engineering) *(cum laude)* Raphoolo, Ikaneng Vicotor (Electrical Engineering) Rautenbach, Simon (Industrial Engineering) *(cum laude)* Rhode, Aiden Kyle (Electrical Engineering) Robinson, Gian (Engineering Management) *(cum laude)* Rode, Lukhanyo (Chemical Engineering)
- Rohde, Gustav Michiel (Engineering Management) (*cum laude*)
- Ross, Brandon Sean (Chemical Engineering) *(cum laude)* Ross, Jordan Ian (Chemical Engineering)
- Roux, Andries Adriaan (Industrial Engineering) *(cum laude)* Roux, Dirk (Engineering Management)
- Schoeman, Lente (Industrial Engineering) *(cum laude)* Scholtz, Nicholas Edward (Chemical Engineering) Serfontein, Gideon Louis (Electronic Engineering) Shiindi, Natalia Kalapushe Mwiishioule (Engineering
- Management) Sidwell, Garett Lloyd (Industrial Engineering) (cum laude)
- Sijovu, Zimkhitha (Electronic Engineering) Skhosana, Vincent Sipho (Engineering Management) Slabbert, Johan Daniel (Industrial Engineering) *(cum laude)* Slabbert, Robert Malcolm (Chemical Engineering)
- Snyman, Dewalt Etienne (Electronic Engineering) (cum laude)
- Snyman, Liam Chad (Mechanical Engineering) Steyn, Barend Johannes (Mechatronic Engineering) *(cum*
- laude) Strauss, March Brian (Electronic Engineering) (cum laude) Strever, Albert Erasmus (Engineering Management) (cum laude)
- Swanepoel, Raynard (Electronic Engineering) (cum laude) Swanevelder, Matthew Clive (Industrial Engineering) (cum laude)
- Swart, Chris (Industrial Engineering) *(cum laude)* Swart, Irvin Deaan (Electronic Engineering) *(cum laude)* Tendere, Takudzwa Lewis (Industrial Engineering) Tessendorf, Kayle Anthony (Civil Engineering) *(cum laude)* Tshuma, Predious (Engineering Management) Uys, Catharina Elizabeth (Industrial Engineering) Van Coller, Christiaan Lodewyk Wentzel (Engineering Management)
- Van Dyk, Corné Andri (Mechatronic Engineering) (cum laude)
- Van Eeden, Christiaan Benjamin (Electronic Engineering) Van Rooyen, Jaybe (Chemical Engineering)
- Van Schalkwyk, Philip (Industrial Engineering) (*cum laude*)
- Van Schoor, Annalie Ula-Caye (Chemical Engineering) Van Tonder, Inge (Civil Engineering) *(cum laude)*
- Van Tonder, Josua Johannes (Mechanical Engineering) (*cum laude*)
- Van Wyk, Abraham Erasmus (Civil Engineering) *(cum laude)* Van Wyk, Ryno (Civil Engineering) *(cum laude)*
- Warwick, Calvin Durnford (Chemical Engineering)
- Wessels, Francois Jacques (Mechanical Engineering) *(cum laude)*
- Wright, Gary (Civil Engineering)
- Yapi, Zizipho Zikhona (Civil Engineering)
- Yates, Ryan Arthur (Civil Engineering) (cum laude)
- Zulu, Siphephelo Phakeme (Civil Engineering) (cum laude)

### Postgraduate Diploma in Engineering Nagraadse Diploma in die Ingenieurswese

Debeila, Mpudu Phumi Jonas, Lukhanyo Phahla Masemola, Mahlatse Hunadi Mosai, Kopano Ngwepe, Kwena David Ohetso, Naledi Bruce Simakuhle, Amukelani Berlina Tovhakale, Alusani Tshisungu, Dan Akulayi

### Bachelor of Engineering Baccalaureus in die Ingenieurswese

Barnard, Mikael Stephan (Electrical and Electronic) Barrett, Daniel Anthony (Chemical) (cum laude) Bergh, Stefan (Mechatronics) Bester, Kellyn (Mechatronics) Beukes, Jacobus Petrus Johannes (Industrial) Botha, Hester Helena (Mechatronics) Botha, Ian (Mechanical) Bowker, Dylan Campbell (Mechanical) Chawatama, Tendekayi (Electrical and Electronic) Coetzee, Jacobus Johannes Jozua (Industrial) Coombe, Thomas Robert Lister (Mechatronics) Cradock, Oliver Brav (Mechatronics) Craig, Simon Thomas (Mechatronics) Easthorpe, Shanice Lara-Leigh (Chemical) Edwards, Kyle Sheldon (Industrial) Engelbrecht, Hermanus Jacobus (Civil) Ferreri, Davide (Industrial) Ferris, Laa'iqah (Industrial) Francis, Wayde Winston (Industrial Engineering) Guerrini, Francesco Nicolo (Mechatronics) Hartogh, Moegammad Shakir (Mechanical) Heyns, Stephan (Industrial) Hlophe, Fisiwe (Industrial) Hockey, Graham John (Industrial) Hockly, Daniel-Keagan (Mechanical) Horstmann, Ralf Ludwig (Industrial) Jacobsz. Dewan (Industrial) Jordaan, Jacob Gideon (Mechatronics) Kuhn, Shane-Lee Ivan (Industrial) Lategan, Jan Thuynsma De Villiers (Civil) Laubscher, Caro (Mechanical) Lindsay, Thomas Craig (Mechanical) Loubser, Christel (Electrical and Electronic) Louw. Chrizanne (Civil) Louw, Jani (Industrial) Mabomba, Babalo (Mechanical) Madumela, Nonelwa Sharon (Electrical and Electronic) Marsden, Joel Matthew Luke (Civil) Matingo, Munashe Carlton Wayne (Electrical and Electronic) Mayiji, Okuhle Alungile (Chemical) McIntosh, Sebastian Gordon (Industrial) McIntyre, Stuart Craig (Mechatronics) Mdau, Boy-Meshack Mangoba (Industrial Engineering) Meyer, Jay-Dee (Electrical and Electronic) Mnyayiza, Mbali Nomfundo Lerato (Civil) Mocke, Johannes Jacobus (Electrical and Electronic) Mohamed, Ameer (Mechanical) Mokemane, Thato Derick (Chemical) Motala, Laylaa (Mechatronics) Motsoeneng, Refiloe (Industrial) Msiwa, Sibabalwe (Civil) Murugan, Viasan Velu (Civil) Ngwenya, Thabo Enock (Chemical) Ochse, Retief (Mechatronics) Odendaal, Harry Willy (Electrical and Electronic) Oehley, Shannon (Chemical) Panjwani, Zara Cristina Da Silva (Mechanical) Paulse, Shamiel (Mechanical) Phukubye, Noko Sekolo (Mechanical) Pieterse, Christiaan Johannes (Industrial) Pitili, Simbulele (Mechanical) Repinz, Theodore Pierce (Mechanical) Roe, Chiron Jarad (Chemical) Rousseau. Ruan Ertzart (Industrial) Sawule, Yamkela (Mechanical) Siljeur, Leila (Chemical) Smit, Pieter Ben (Mechatronics) Smith, Chad Montell (Mechatronics) Smith, Malcolm Owen (Industrial) Smith, Ray (Chemical) Snygans, Elroy Ceagan (Chemical) Steenkamp, Johannes Andries (Mechanical) Stemmet, Johan Wilhelm (Civil) Stevn. Carla (Mechanical) Strauss, Jacobus Hendrik Louw (Industrial) Swart, David Fourie (Industrial) Swart, Johanna Elizabeth (Industrial) Thabana, Nare Segopotjo (Civil) Tlali, Phoka Brian Kgahlametso (Electrical and Electronic) Tubby, Anthea Nicole (Industrial) Van den Heuvel, Jamie (Mechatronics) Van Rooyen, Louis (Electrical and Electronic) Van Zyl, Minette (Industrial) Vegter, Willem Patrick (Electrical and Electronic) Viljoen, Ruben Francois (Electrical and Electronic) Waugh, Keagan (Civil) Willson, Daniel Anthony (Mechanical) Yan, Boyue (Mechatronics)



### FACULTIES

## Education $\cdot$ Theology

28 March 2024 | 17:00

### FAKULTEITE

## Opvoedkunde $\cdot$ Teologie

28 Maart 2024 | 17:00

### Programme

Please stand	1.	Entrance of academic procession into the hall.
Please stand	2.	Playing of the National Anthem.
Please sit	З.	Congregation formally constituted by the Vice-Chancellor.
	4.	Welcome by the Vice-Chancellor.
	5.	Presentation of candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Vice-Chancellor.
	6.	Closing by the Vice-Chancellor.
Please stand	7.	The academic procession leaves the stage.

### Program

Staan asseblief	1.	Akademiese prosessie kom die saal binne.
Staan asseblief	2.	Speel van die Nasionale volkslied.
Sit asseblief	З.	Formele konstituering deur die Visekanselier.
	4.	Verwelkoming deur die Visekanselier.
	5.	Voorstelling van kandidate wat kwalifikasies ontvang deur die dekaan van die fakulteit en toekenning van kwalifikasies deur die Visekanselier.
	6.	Sluiting deur die Visekanselier.
Staan asseblief	7.	Akademiese prosessie verlaat die verhoog.

### Faculty of Education Fakulteit Opvoedkunde

### DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

#### DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

BISHOP-SWART, Shannon (Education Policy Studies)

## A study of teacher emotions in a unique online learning environment due to a pandemic lockdown

This study examines the emotional responses of higher education teachers in South Africa in the unique online learning environment that resulted from the Covid-19 lockdown. Three different conceptual frameworks are used to test the interrelatedness of two sets of teacher participants' reflective practice. Findings show that improved technology skills resulted in greater pride, hope and enjoyment, while technological inconsistencies and institutional expectations caused anxiety and frustration. Isolation heightened teachers' sense of concern and anxiety for their students and spurred them to develop unique coping strategies, such as digital communities of practice.

Supervisor: Prof JD Jansen

DE KLERK, Miné (Higher Education)

### The design and facilitation of an online short course at a residential university: a complex systems perspective

This study tracks the design and facilitation of a fully online short course on postgraduate supervision at Stellenbosch University through five iterations to investigate the course as a complex system and identify conditions enabling or hindering system actors' learning. Drawing on dialogue and complexity as theoretical frameworks, the study uses a soft systems methodology to gather and analyse qualitative data from documents, interviews and course records. It identifies enabling factors for collective learning by role-players in course design and facilitation. It also generates insights into learning as emergence in a complex techno-social system.

Supervisor: Prof PN Rule

FORBES, Deidre Wilma (Curriculum Studies)

# Exploring the effects of a communicative, form-focused teaching approach on the grammatical accuracy levels of English First Additional Language learners in the FET band

This action research study explores the effect of formfocused, communicative grammar instruction compared to instruction delivered through the more traditional present-practice-produce approach. A comparison of data from before and after the intervention indicates that formfocused, communicative grammar instruction resulted in an improvement in the research group's mean test scores, while the control group's performance showed no improvement over time. Therefore, the study provides educators with a guideline for combining form-focused instruction effectively with communicative, collaborative learning activities and learner-oriented assessment methods to achieve lasting improvement in learner performance.

Supervisor: Prof C van der Walt

SINGH, Suzanne Angelique Maria (Educational Psychology)

## Teachers and high-school learners' experience of a diversity programme

Decades after democratisation, South Africa still struggles to affirm diversity in its basic education institutions. This study reconceptualises the significance of schools as both a reflection of and a shaping force in society by investigating teachers and learners' experience of a diversity programme. It is argued that participation in a diversity programme can create and promote structured opportunities for authentic interracial and intercultural interaction. As a scholarly contribution, the study offers a model of practice for the consistent implementation of diversity programmes in schools so as to effect change in pursuit of social justice in an inclusive education system.

Supervisor: Prof LM Dreyer

### Faculty of Education Fakulteit Opvoedkunde

### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

### Master of Philosophy in Higher Education Studies Magister in die Wysbegeerte in Hoëronderwysstudies

Nawaseb, Dennis Sedney (Higher Education Studies)

### Master of Education in Educational Psychology Magister in die Opvoedkunde in Opvoedkundige Sielkunde

Bassett, Nicola *(cum laude)* Dees, Sandy Valentina Du Plessis, Jan Gerbrand Fleischack-Thomson, Anne *(cum laude)* Heath, Kirstin Francis *(cum laude)* Kidd, Eriné *(cum laude)* Menzi-Cotani, Zola Pamella Swart, Madeleine Van Schalkwyk, René Wepener, Ida

### Master of Education Magister in die Opvoedkunde

Adams, Theo (Education Policy Studies) Els, Zanne-Mari (Curriculum Studies) Gani, Yolanda (Educational Support) *(cum laude)* Gerber, Jeanne-Alex (Curriculum Studies) Gillespie, Micaela Simone (Educational Support) Goliath, Le-Anne Lezhaan (Educational Support) *(cum laude)* 

Jaffer-Solomon, Taahirah (Curriculum Studies) Khule, Koketso Peter Tanki (Curriculum Studies) Mcevoy, Jessica Jane (Educational Support) Muller, Carla Monica (Education Policy Studies) Porter, Gabi (Educational Support) Roode, Yvonne (Curriculum Studies) Schoeman, Paul Christiaan (Curriculum Studies) Smit, Emma (Curriculum Studies) (*cum laude*) Tintinger, Shiree (Educational Support) Waggie, Chanté Chanelle (Curriculum Studies) Wagner, Keanan Nicole (Curriculum Studies) Watson, Lauren Lacey (Educational Support)

### Bachelor of Education Honours in Education Development and Democracy Honneurs-Baccalaureus in die Opvoedkunde in Onderwysontwikkeling en Demokrasie

Malinga, Thuleleni Samanthah

#### Bachelor of Education Honours in Foundation Phase Teaching Honneurs-Baccalaureus in die Opvoedkunde in Grondslagfase-onderrig

Bower, Karla (Foundation Phase Education) Lalendle, Ziyanda Ziqaqambile (Foundation Phase Education) Maquthu, Siphokazi (Foundation Phase Education)

### Bachelor of Education Honours in Curriculum Inquiry Honneurs-Baccalaureus in die Opvoedkunde in Kurrikulumondersoek

Makendlana, Yonela Mkhize, Thabiso Manelisi Ndlela, Masixole Phiwokuhle Nomatshaka, Babalwa Poswa, Odwa Van der Westhuizen, Lizahn Carolynn

### Bachelor of Education Honours in Language Education Honneurs-Baccalaureus in die Opvoedkunde in Taalonderwys

Christians, Thora Kriga, Danielle Noordien, Kauthar Wessels, Holly Christine *(cum laude)* 

### Postgraduate Certificate in Education in Further Education and Training Teaching Nagraadse Onderwyssertifikaat in Verdereonderwysen Onderrigopleiding

Adams, Marsha-Lee Adams, Matthew John Bosman, Chloë Martine *(cum laude)* Dotwana, Mandihlume Elson, Shentin Konyana, Refilwe La Meyer, Ueland Jade Leen, Kyla *(cum laude)* Mchunu, Mongezi Nkomozake, Phumelele Reuterink, Michael John *(cum laude)* Scharneck, Luke Bachelor of Education in Foundation Phase Teaching Baccalaureus in die Opvoedkunde in Grondslagfase Onderwys

Ludick, Gabriella Swart, Emma *(cum laude)* 

Bachelor of Education in Intermediate Phase Teaching Baccalaureus in die Opvoedkunde in Intermediêre Fase Onderwys

Dingana, Inga C Fortuin, Keithan Raoul Mlindi, Nkosifikile Witness

Advanced Diploma in Education in Further Education and Training (FET) Life Sciences Teaching Gevorderde Diploma in Opvoedkunde in Verdere Onderwys en Opleiding (VOO) Lewenswetenskappeonderrig

Kgwebane, Kedibone Welheminah Lekgoba, Dimakatso Grace Machethe, Ramokone Grace Madzivhe, Mulalo Dinah Makwela, Maria Matlaleng Mathenjwa, Sizakele Lucia *(cum laude)* Moemedi, Bohutsana Judith Moeng, Verity Semakaleng Saudi, Ipotseng Cynthia Tanke, Sinah Eva Tukgi, Evelyn Meikie Turner, Irene *(cum laude)* 

### Faculty of Theology Fakulteit Teologie

### DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

#### DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

AMANTE, Motuma Badassa (New Testament)

## The role of genealogies in the *Antiquities of the Jews* and the Gospel of Matthew: a comparative study

This study explores the role of genealogical material in the Gospel of Matthew and Josephus's *Antiquities of the Jews* in shaping the identity of religious and ethnic communities in specific historical contexts. It undertakes a detailed analysis of both texts' intertextual use of genealogical material from the Old Testament to understand the multifaceted role of genealogies, encompassing relational, historical as well as theological dimensions. The study concludes that while Matthew emphasised Jesus's role in God's redemptive plan, inclusive of both Jews and non-Jews, Josephus focused on constructing Jewish identity around a common ancestor, Abraham, to garner favour from the Romans.

Supervisor: Prof MJ Nel

BODENSTEIN, Gerbrand (Praktiese Teologie)

#### Die gereformeerde pastor in die eeu van egtheid

In die hedendaagse era beleef verskeie pastors 'n identiteitskrisis weens hulle kwynende relevansie. Pastors het histories heelwat status en invloed gehad, maar funksioneer deesdae dikwels op die rand van die samelewing en worstel om as relevant beskou te word. Hierdie studie voer aan dat pastors se werklike krisis nie net oor relevansie gaan nie, maar oor die siening van goddelike aksie in die samelewing. Die voorgestelde alternatief is dat pastors 'n 'aktiewe wag'benadering volg en aktief wag op God om Godself in die lewe te openbaar. Hierdie benadering daag pastors uit om goddelike aksie ernstig op te neem in 'n samelewing waar God dikwels tot 'n persoonlike instrument vir relevansie gereduseer word.

*Promotor:* Prof CJ Wepener *Medepromotor:* Prof RR Vosloo **CELESI**, Mawonga Phaphile (Practical Theology)

## Partnership towards self-reliance: Back to God movement of South Africa as a case study of holistic mission

Poverty remains a significant challenge in South Africa. This study examines the Pentecostal Assemblies of God-Back to God (AoG-BtG) church as a case of holistic mission, exploring the ways in which the church accompanies the poor in facing the challenge of poverty through self-reliant means and initiatives. Being a church 'with the poor', this indigenous denomination demonstrates how an African theological perspective, which foregrounds Pan-African and black consciousness thinking together with Pentecostal sensibilities, affirms the poor as worthy partners in mission and development, with agency to address their own challenges.

Supervisor: Prof N Bowers Du Toit

CHISANGO, Andrew (Old Testament)

### The Noah flood narrative in the context of Cyclone Idai in Zimbabwe: an exegetical and hermeneutical study of Genesis 6:5–9:17

This study investigates how the experience of the devastating Cyclone Idai of 2019 influenced Zimbabwean Christians' understanding of the Noah flood narrative in Genesis 6–9. It finds that, having experienced Idai, lay Christians interpret the biblical narrative very literally and existentially, and most Zimbabwean exegetes appropriate the narrative with minimal use of scientific exegetical methods. For this reason, the study engages with the question of how Western and African modes of exegesis can be brought together to ensure responsible and accountable Bible interpretation. It concludes that, by following a communal approach, these modes of exegesis can be mutually enriching.

Supervisor: Prof LC Jonker

### Breaking the silence: reproductive health as a challenge and opportunity for youth ministry in the Church of Central Africa Presbyterian (CCAP) synod of Livingstonia, Malawi

Presenting an in-depth discussion of sexual and reproductive health (SRH), this study examines the social, cultural and religious factors that may influence perceptions of SRH in Africa in general, and in Malawi specifically. It points out the overlap between sexual cultural practices and religious views about sex and sexuality and finds that it is primarily females who are adversely affected by these practices. A human rights perspective and a theological understanding of human dignity are utilised to help churches develop more effective teachings and strategies to address the challenges that young people face due to a lack of SRH.

Supervisor: Prof A Cloete

KAMANGA, Chrispine Nthezemu (Practical Theology)

### A pastoral perspective of the Vimbuza ritual among people suffering from mental illness in the Rumphi district of northern Malawi

Against the backdrop of the church's ostracising of those involved in the Vimbuza ritual ceremonies, this study explores a pastoral care perspective of the Vimbuza ritual performance among people suffering from mental illness in Malawi. Through inculturation, the study considers the pastoral care ministry of the church as an important institution to intervene positively in the care of people taking part in the Vimbuza to achieve sustainable mental health healing. It is understood that the cosmology of the Tumbuka people, their cultural upbringing, and their conceptualisation of mental illness as an African disease influence their health-seeking behaviour.

Supervisor: Prof CH Thesnaar Co-supervisor: Prof M Vähäkangas (external)

LAMBERTI, Walter (New Testament)

### Wealth at the end of the age: a comparative study of the function and nature of wealth and possessions in selected Pauline letters and Dead Sea scrolls

A comparison of Pauline and Qumran communities through their literary remains reveals varying views of wealth *simpliciter* and a distinct approach to wealth and possessions in terms of praxis. Significant differences are present in the way wealth was viewed and handled both intra-communally and in relation to the outside world. These differences extend beyond divergent social contexts and are primarily the result of controlling paradigms that served to imbue their respective apocalyptic outlooks with their unique characteristics. The controlling paradigm in the case of the Qumran community was covenant fidelity, and in the case of the Pauline community, the Christ event.

Supervisor: Prof J Punt

**MLAMBO,** Ntandoyenkosi Nomkhosi Nokuphiwa (Church History and Church Polity)

### A theology of spatial justice in relation to land in South Africa's history, 1856–2020, with reference to the three South African congregations

This study explores a theology of spatial justice, using the three congregations of St John's Anglican parish in Cape Town's southern suburbs, the Dutch Reformed Church presbytery in Pretoria and the Church of the Nazarene in Khayelitsha as case studies. The historical narratives of these three congregations locate the study in South Africa's history of land conflict and dispossession in the years between 1856 and 2020. It is demonstrated that the lived experiences of the congregations are crucial to developing a hermeneutical lens through which to construct an informed notion of spatial justice for these ecclesial communities.

Supervisor: Prof H Mbaya

NAUDE, Stephanus Johannes (Old Testament)

# Telling a different story of privilege and poverty: an intercultural Bible reading of Ruth in the context of contemporary South Africa

This study investigates the transformative potential of intercultural Bible reading for changing the narrative about privilege and poverty in South Africa. It exposes Bible readers from various socioeconomic backgrounds in Gqeberha to the same transformative power that the book of Ruth exerted at the time of its origin. Building upon the textual, historical and ethical dimensions of Ruth, the study explores how participants' perspectives on poverty and privilege evolve. By relating the ancient rhetorical thrust of the text analogically to modern-day interpretations of Ruth, it is shown that biblical narratives can indeed transform contemporary debates about privilege and poverty in South Africa.

Supervisor: Prof LC Jonker

NIYUKURI, Benaya (Practical Theology)

### Xenophobia as a challenge to the notion of hospitality in pastoral care: The plight of Burundian refugees living in Cape Town-South Africa

In the context of the plight of Burundian refugees in Cape Town, this study explores how xenophobia challenges the notion of hospitality in pastoral care. It indicates how black South Africans' suffering under the apartheid regime has contributed to xenophobic attitudes towards foreigners from other African countries. A theological reflection on xenophobia is then achieved by examining how God's people faced xenophobia in the Bible. By studying biblical passages that enhance hospitality instead of xenophobia, the research constructs a practical theological approach to dealing with xenophobia through the interplay between diakonia and hospitality.

Supervisor: Prof CH Thesnaar

#### O'MALLEY, Mary (Old Testament)

### Unmanned and unmade: uncovering violence, emasculation, and shame in Nahum 3

This study explores the intersection of cultural trauma and masculinity in the book of Nahum. The violent portrayal of the emasculation of the king of Assyria and his army of warriors in Nahum is read in the context of military sexual trauma, providing insight into the experiences of contemporary male survivors and the loss of identity, shame and isolation felt in the aftermath of rape. By contemplating the implications of the portrayal of sexual violence in Nahum for male survivors, the rarely discussed consequences of sexual violence against men can be more fully recognised and addressed.

Supervisor: Prof LJM Claassens

PEKEUR, André Herman (Church History and Church Polity)

In search of congruence between confessional theology and church polity discourse: a church judicial inquiry in light of the reception of the Belhar Confession in the Dutch Reformed family of churches

This study seeks to find congruence between confessional theology and church polity discourse by identifying church judicial challenges as to why the Dutch Reformed Church struggles to adopt the Belhar Confession as a confession of faith. Over the past decades, many other Reformed churches worldwide have adopted the Belhar Confession based on their own historical contexts. This study shows that the only possible way for the Dutch Reformed Church to adopt the Belhar Confession and potentially achieve church unity with the Uniting Reformed Church in Southern Africa is for its General Synod to amend Article 44.1 of the Church Order.

Supervisor: Dr SS Mahokoto

STEYN, Riaan Riël (Praktiese Teologie)

### 'n Himnologiese praxisteorie vir 'n ekumenies-gereformeerde Suid-Afrikaanse kerkmusiekkurrikulum vir opleidingsgebruik binne die Nederduitse Gereformeerde Kerk in Suid-Afrika

In die Suid-Afrikaanse ekumenies gereformeerde konteks bestaan daar tans geen praktykgerigte kerkmusiekkurrikulum vir die opleiding van himnoloë nie. Hierdie studie onderneem 'n himnologiese ondersoek van verskillende peilings: ekklesiologies, teologies, musikologies en kurrikulêr. Deur middel van én as 'n produk van interferensie, vorm dit 'n praxisteorie, wat as roetemerker dien vir 'n praktykgerigte kerkmusiekkurrikulum. 'n Komplementêr geïntegreerde benadering word a fortiori as kurrikulêre voorvereiste geïdentifiseer. 'n Kurrikulum moet dus die ekklesiologiese landskap verstaan, (teologiese) intra- en (musikologiese) interdissiplinêre benaderings inkorporeer én voortbou op bestaande kurrikula, wat alles interafhanklik op die praxisteorie dui. Laasgenoemde is aanpasbaar vir gebruik in verskillende kontekste.

Promotor: Prof CJ Wepener

VAN GROENINGEN, David Ross (New Testament)

#### Luke's use of Abraham as a social identity marker in Luke-Acts

This study explores the significance of the figure of Abraham as a social identity marker in the Gospel according to Luke and the Acts of the Apostles. It reveals that Luke used Abraham to indicate who formed part of the social group called "children of Abraham". The study finds that, while Luke included Gentiles under the children of Abraham, he also used Abraham to signal continuity between this group and Judaism. Therefore, the analysis of the use of Abraham as social identity marker clarifies Luke's understanding of the relationship between Jews and Gentiles in the early church.

Supervisor: Prof MJ Nel

### Faculty of Theology Fakulteit Teologie

### OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

#### Master of Theology Magister in die Teologie

Beukes, Rosemary (Practical Theology: Ministry) Gumede, Lindani (Practical Theology: Clinical Pastoral Care)

Gysman, Petrus Johannes

Joseph, Philipa Joy (Practical Theology: Clinical Pastoral Care)

Litlhakanyane, Limpho (Practical Theology: Clinical Pastoral Care)

Mino, Yutaka (Old Testament) (cum laude)

Paulse, Niklaas (Practical Theology: Ministry)

Platt, Chanel (Systematic Theology) (cum laude)

- September, Tresenia Mary-Ann Heather (Missiology) (cum laude)
- Swart, Chane (Practical Theology: Clinical Pastoral Care) (cum laude)

Terblanche, Bettie-Madre (Practical Theology: Ministry) Visser, Jakobus Johannes (Practical Theology: Clinical Pastoral Care)

Waanar, Andrew (Practical Theology: Ministry)

### Master of Divinity Magister Divinitatis

Hanekom, Petrus Johannes (Ministry) (*cum laude*) Krüger, Tristan Dieter (Ministry) (*cum laude*)

### Postgraduate Diploma in Theology Nagraadse Diploma in Teologie

Abrokwaah, Debora Adomakoa Adonis, Rochaen-Dee Booysen, Frans Bowler, Wilhelmus Albert Johannes (*cum laude*) Brecht, Gail Leonie Fourie-Le Roux, Aneleh Katom, Nokuphiwa Louw, Stephanus Andries Mchani, Aludwe Mouton, Jacobus Frederik (*cum laude*) Panda, Baptista Alberto Pongo, Ilesate Sybil Sena Qomoyi, Sipho Amos Siyengo, Andile Williams, Chelsea Jasmine

### Bachelor of Theology Baccalaureus in die Teologie

Fletcher, Aidan Lucian Karolus, Tyrone Keenan Maphotholo, Vathiswa Mbili, Simamkele Mentoor, Elorice Brigitte Nkume, Lindokuhle Shante Nxazonke, Khanyisa Hope Sidzumo, Sibongile Kelebokgile Smith, Georgia Tatum Torien, Brittinee Joe

#### Bachelor of Divinity Baccalaureus Divinitatis

Barnard, Jorgen Edward Serfontein, Alida *(cum laude)* 



### National anthem

### Nasionale volkslied

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.

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