

Graduation Ceremonies

27 March - 31 March

Gradeplegtighede

27 Maart - 31 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 ka2040

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 this message to our graduation ceremonies.

Last year had its difficulties. But amidst many challenges, you have succeeded in graduating – and this says great things about your future and ours!

This week, we are enormously proud of the cascade of hardwon degrees, diplomas and certificates we confer at these ceremonies. Students, lecturers, supervisors, support services staff and management – each one of you have played a critical part in ensuring that Stellenbosch University continues to flourish.

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

A further word of appreciation to our generous-hearted donors and sponsors. They have indispensably helped our graduands to keep working, to learn and apply dedication and purpose, until the very end, to crown today's achievements.

To each and every graduand:

May the pride and joy with which we celebrate your achievement today develop over time into something even more valuable – a richer sense of duty and responsibility. Your new status means you can use the knowledge, skills and networks from your studies at Stellenbosch to make our country, continent and the world better.

More than ever, it is your enriching and empowering choice 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.

Retired Justice Edwin Cameron Chancellor

Geagte lid van die Universiteit Stellenboschgemeenskap

Dit is vir my 'n eer en 'n voorreg om hierdie boodskap vir ons gradeplegtighede te lewer.

Verlede jaar het sy probleme gehad. Maar te midde van uitdagings het julle daarin geslaag om julle kwalifikasie suksesvol te voltooi – en dit spreek wonderlike boekdele oor julle én ons toekoms!

Ons is vandeesweek ongelooflik trots daarop om die menigte grade, diplomas en sertifikate waarvoor daar so hard gewerk is, by hierdie plegtighede te kan toeken. Studente, dosente, toesighouers, steundienstepersoneel en bestuur – elkeen van julle het 'n uiters belangrike rol gespeel om te verseker dat die Universiteit Stellenbosch verder floreer.

En sonder die ondersteuning wat geliefde familie en vriende so onvoorwaardelik bied, sou talle studente nie vandag hier kon wees om hulle prestasie te vier nie – so, ons sê uit ons hart uit ook dankie aan hulle.

'n Woord van waardering gaan ook aan ons ruimhartige donateurs en borge. Hulle onontbeerlik hulp het ons graduandi gehelp om tot aan die einde met toewyding en doelgerigtheid aan te hou werk en aan te hou leer sodat hulle vandag die vrug van hulle arbeid kan pluk.

Aan alle graduandi:

Mag die trots en vreugde waarmee ons vandag julle prestasie vier, met die verloop van tyd in iets nog waardevoller ontwikkel – 'n ryker sin van plig en verantwoordelikheid. Julle nuwe status beteken julle kan nou die kennis, vaardighede en netwerke van julle studentejare by die Universiteit Stellenbosch gebruik om ons land, vasteland en die wêreld 'n beter plek te maak.

Dit is nou nog meer as te ooit te vore julle verrykende en bemagtigende keuse om te help om die samelewing te vorm en om 'n werklike verskil in julle gemeenskap te maak.

Ek wens julle vreugde, sukses en vervulling toe met die volgende fase van julle lewensreis.

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, firstly, is to graduate, and today you're achieving that. This must be celebrated, so I want to say well done to you and everyone who has championed you along the way.

Secondly, your qualification from Stellenbosch University will open doors, no matter where you are in the world. Despite the challenges of last year, our international reputation is more than intact. We've built strong networks and purposeful partnerships, and the international community is keen to see what impact our graduates will have.

In 2020 and 2021, when the pandemic was still very much at the forefront of everything we did, our objective was simple: complete the academic year. And yet, because of the agility and can-do spirit of our staff and students, we managed to surpass this objective and thrive.

And last year we were able to go even further. Our staff and students across the academic spectrum proved that SU nurtures and advances innovation.

We continue to reflect on transformation. But reflection also requires action, and we will do everything necessary to ensure SU is a place where everyone feels welcome and heard.

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

We'd like you to stay in touch and be part of SU's future through our alumni network. Please visit www.matiesconnect. com, where you'll 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 a strong alumni network is not only beneficial for our University but will also enhance your professional development going forward.

Good luck with what the future holds, until we meet again!

Prof Wim de Villiers Rector and Vice-Chancellor

Beste Matie-graduand

Eerstens, baie geluk!

Die hoofdoel daarvan om by 'n universiteit in te skryf, is eerstens om te gradueer, en vandag bereik jy hierdie doelwit. Dit moet gevier word. Daarom wil ek aan jou sê: Knap gedaan aan jou en elkeen wat jou op hierdie reis ondersteun het.

Tweedens sal jou kwalifikasie van die Universiteit Stellenbosch vir jou deure open, ongeag waar jy jou ook al in die wêreld bevind. Ondanks ons uitdagende jaar in 2022, is ons internasionale reputasie meer as ongeskonde. Ons het sterk netwerke en doelgerigte vennootskappe gebou en die internasionale gemeenskap is gretig om te sien watter trefkrag ons gegradueerdes gaan hê.

Te midde van die allesoorheersende pandemie in 2020 en 2021 was ons doelwit eenvoudig: Voltooi die akademiese jaar. Maar danksy ons personeel en studente se veerkragtigheid en 'n ingesteldheid van ons-gaan-dit-regkry, kon ons hierdie doelwit oortref en floreer.

En in 2022 kon ons selfs verder gaan. Ons personeel en studente regoor die akademiese spektrum het bewys dat die US innovasie kweek en bevorder.

Ons gaan voort om na te dink oor transformasie. Maar nadenke vereis ook aksie, en ons sal alles wat nodig is, doen om te verseker dat die US 'n plek is waar almal welkom voel en na geluister word.

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 – uitnemendheid, deernis, billikheid, respek en verantwoordbaarheid – uit te leef.

Ons wil graag hê jy moet in aanraking bly en deel word van die US se toekoms deur middel van ons alumni-netwerk. Besoek gerus www.matiesconnect.com waar jy jou bande met jou Universiteitsvriende kan behou, werksgeleenthede kan sien en mentors en netwerkgeleenthede sal vind. Die US sal altyd jou akademiese tuiste bly en 'n sterk alumninetwerk strek nie net tot voordeel van ons Universiteit nie, maar sal ook vir jou professionele ontwikkeling op jou pad vorentoe voordelig wees.

Alle voorspoed vir die toekoms, tot ons weer ontmoet!

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)

Acting Chairperson of Council | Waarnemende 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, MBChB, 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

Deans | Dekane

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

Arts and Social Sciences | Lettere en Sosiale Wetenskappe

Prof AJ Leysens, MA, DPhil

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

Education | Opvoedkunde Prof MR Madiba, DLitt et Phil

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

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

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

Science | Natuurwetenskappe Prof L Warnich, MSc, PhD

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

Always a Matie

Congratulations and welcome to the Stellenbosch University alumni family! 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.

There are many ways to stay connected.

Homecoming and Family Weekend

The University's Homecoming and Family Weekend takes place from Thursday 14 September to Saturday 16 September 2023 on the Stellenbosch campus. Information is available on www. matiesalumni.com.

Join Maties Connect

Our www.matiesconnect.com 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

The 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.

Zininzi iindlela zokuhlala uqhagamshelekile.

IMpelaveki yoBuyelekhaya ubekunye noSapho

IMpelaveki yoBuyelekhaya ubekunye noSapho eyenzelwe abo babesakufunda apha yenzeka ukusuka ngoLwesine umhla we-14 kwinyanga yoMsintsi ukuya kutsho ngoMgqibelo umhla we-16 kweyoMsintsi 2023 kwikhampasi yaseStellenbosch. Iingcombolo ezithe vetshe zifumaneka ku-www.matiesalumni.com.

Joyina i-Maties Connect

Iqonga lethu le-www.matiesconnect.com 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 Alumnikantoor is jou lewenslange skakel met die Universiteit.

Daar is vele maniere om in kontak te bly.

Tuiskoms-en-Familienaweek

Die Universiteit se Tuiskoms-en-Familienaweek vir alumni vind vanaf Donderdag 14 September tot Saterdag 16 September 2023 op die Stellenboschkampus plaas. Inligting is by www.matiesalumni.com beskikbaar.

Sluit aan by Maties Connect

Ons www.matiesconnect.com-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. 27 March | Maart 2023 (13:00)

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

BA (Development and Environment); BA (Human Resource Man); BA (Humanities); BA (International Studies); BA (PPE); BA (Social Dynamics); BA (Socio-Informatics); BA (Sport Science); PGD (Applied Ethics); PGD (Disaster Risk Studies and Development); PGD (Knowledge and Information Systems Management); PGD (Monitoring and Eval); PGD (Research Management and Administration); BA Hons (Geography and Environmental Studies); BA Hons (History); BA Hons (International Studies); BA Hons (Philosophy); BA Hons (Political Science); BA Hons (Psychology); BA Hons (Social Anthropology); BA Hons (Sociology); BInfoHons; M (Urban and Regional Planning); 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 Soc and Anthrop); MA (Socio-Informatics); MA (Sociology); MA (Social Anthropology); 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); 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	14
2.	27 March Maart 2023 (17:00)	19

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

Higher Certificate (Music); Dip (Practical Music Studies); B Social Work; BA (Drama and Theatre Studies); BA (Fine Arts); BA (Lang and Culture); BA (Law); B Music; BA (Music); PGD (Second-Language Studies); PGDip (Music Technology); BA Hons (African Languages); BA Hons (Afrikaans and Dutch); BA Hons (Ancient Cultures); 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); BMusHons; BA Hons (Music); BA Hons (Translation); BA Hons (Visual Arts Illustration); BA Hons (Visual Studies); MA (African Languages); MA (Afrikaans and Dutch); MA (Ancient Cultures); MA (Ancient Languages); MA (Creative Writing); MA (Drama and Theatre Studies); MA (English Studies); MA (General Linguistics); MA (General Linguistics); MA (General); MA (General Linguistics); MA (General); MA (Intercultural Communication); MA (Journalism); MA (Social Work); MA (Lexicography; MA (Translation); MA (Visual Arts); MMus; MPhil (Film Music); MPhil (Music Technology); PhD (African Languages); PhD (Afrikaans and Dutch); PhD (Ancient Cultures); PhD (Comparative Literature); PhD (Drama and Theatre Studies); PhD (English Studies); PhD (Comparative Literature); PhD (Drama and Theatre Studies); PhD (English Studies); PhD (German); PhD (German); PhD (Lexicography); PhD (Music); PhD (Social Work); PhD (German); PhD (Journalism); PhD (Lexicography); PhD (Music); PhD (Social Work); PhD (Translation); PhD (Visual Arts)

Doctoral Qualifications | Doktorale Kwalifikasies21Other Qualifications | Ander Kwalifikasies24

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	ty of Medicine and Health Sciences teit Geneeskunde en Gesondheidswetenskappe	
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Facul	ty of AgriSciences Fakulteit AgriWetenskappe	
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5 . 29 M	larch Maart 2023 (09:00)	47

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

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); 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); MPhil (HIV/AIDS management); PhD (Business Management); PhD (HIV/AIDS Management); PhD (Industrial Psychology); PhD (Logistics); PhD (Logistics Management); PhD (Mathematical Statistics); PhD (Industrial Psychology); PhD (Cogistics); PhD (Logistics Management); PhD (Mathematical Statistics); PhD (Industrial Psychology); PhD (Logistics); PhD (Logistics Management); PhD (Mathematical Statistics); PhD (Industrial Psychology); PhD (Logistics); PhD (Logistics Management); PhD (Mathematical Statistics); PhD (Industrial Psychology); PhD (Cogistics); PhD (Logistics Management); PhD (Mathematical Statistics); PhD (Transport Economics); PhD (Operational Research); PhD (Statistics)

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

B Accounting; BCom (Actuarial Sciences); BCom (Economic Sciences); BCom (Financial Accounting); BCom (Management Accounting); PGD (Accounting); PGD (Actuarial Science); BAccHons; BComHons (Actuarial Science); BComHons (Economics); BComHons (Management Accounting); MAcc; MCom (Actuarial Science); MCom (Computer Auditing); MCom (Economics); PhD (Accounting); PhD (Agricultural Economics); PhD (Economics)

Doctoral Qualifications Doktorale Kwalifikasies	
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Other Qualifications | Ander Kwalifikasies

59 60

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); 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); MBA; MCom (Public and Development Management); MPA; MPhil (Development Finance); MPhil (Environmental Management); MPhil (Futures Studies); MPhil (Management Coaching); MPhil (Sustainable Development Planning and Management); PhD (Business Management and Administration); PhD (Development Finance); PhD (Public and Development Management); PhD (Sustainable Development Planning and Management)

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	Other Qualifications Ander Kwalifikasies	70
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	Faculty of Engineering Fakulteit Ingenieurswese	
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	Other Qualifications Ander Kwalifikasies	114
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forward together sonke siya phambili saam vorentoe

Faculty of Arts and Social Sciences (Group 1)

27 March 2023 | 13:00

Fakulteit Lettere en Sosiale Wetenskappe (Groep 1)

27 Maart 2023 | 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 Lied.
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

ADEYEYE, Adedamola David (Science and Technology Studies)

Exploring the dynamics of innovation for Inclusive Development Systems: A study of the Nigerian growth enhancement support scheme

Innovation remains central to creating targeted solutions to development problems. The goal of this study is twofold, namely to develop an analytical framework for expanding the innovation systems framework to incorporate inclusive development, and to show the utility of the framework in the context of innovation for inclusive development (IID) by generating insights into the functional dynamics and performance of an innovation system. The study utilises the event history analysis to identify the functions and the relationship between them, thereby uncovering the evolution and implementation of the Growth Enhancement Support Scheme in Nigeria's agricultural system

Supervisor: Prof SS Grobbelaar

AJALA, Olufisayo Temitope (Sociology)

Coping and social support strategies of Nigerian military widows in the war against Boko Haram

The Nigerian army has been engaged in asymmetric warfare with the Islamist terrorist group Boko Haram since 2011. This study examines how Nigerian army widows cope with their husbands' deaths and sustain their livelihoods in the absence of state support. A central finding of the study relates to the inability of the Nigerian military authorities to fulfil their legal and social obligation to the widows. This means that widows need to rely on external sources of support, such as the Military Widows' Association, their families and charities. Access to this support depends on their military status as well as cultural practices, which limit their rights as both women and widows.

Supervisor: Prof LPT Heinecken

BORCHARDT, Stephanie Paula (Sociology)

Illuminating energy poverty: A case study of the energy needs and challenges of low-income households in De Aar, a renewable energy hub in South Africa's Northern Cape province

This study examines the contribution of the renewableenergy sector to sustainable development at household level through a mixed-methods study of energy poverty in De Aar, a renewable-energy hub in the Northern Cape. Despite the proliferation of wind and solar farms around the town, the municipal electricity dispensation is dysfunctional, and poor households struggle to meet basic energy needs. Managing electricity consumption in these households is a constant source of stress, which plays out along gender and generational lines. Policy debates on South Africa's 'just transition' need to address the needs of poor communities in areas producing renewable energy for the national grid.

Supervisor: Prof CJ Walker

COWLIN, John Richard (History)

Professor JC (Kay) De Villiers (1928-2018): A life in medicine

Demonstrating a fine understanding of the intricacies of biographical writing, the candidate, who is a medical doctor himself, unpacks the life of a prominent South African neurosurgeon and academic, Prof Kay de Villiers. De Villiers' career is seen in context during the years of burgeoning Afrikaner nationalism and apartheid. What emerges is a convincing analysis of a multitalented medical specialist and an involved citizen during tumultuous times. The study fills an important gap in the existing medical historiography of South Africa.

Supervisor: Prof AM Grundlingh *Co-supervisor:* Dr A Ehlers

The history of Physical Education at Stellenbosch University, 1937-2019

This study analyses the development of Physical Education, later reimagined as Sport Science, as a department and discipline at Stellenbosch University from its inception in 1937 to 2019. The University's ethno-conservativism and efforts towards nation-building contoured departmental shifts. Physical Education was employed as a tool of 'citizen making'. In aiding the national Physical Education standardisation movement of the 1930s and 1940s, prominent academics pushed the discipline towards a 'science'. Post-1994, the state did not consider Physical Education a matter of national concern, and following South Africa's re-admission into the international sports arena, 'mega-events' now served to forge a new nationalism.

Supervisor: Prof SS Swart

DEMAS, Grant Henry (Psychology)

An exploration of Stellenbosch University students' conceptualisation and praxis of community engagement using the grounded-theory method

Community engagement (CE) is a mandatory enterprise at South African higher education institutions. This qualitative study explored student leaders' derivations and praxis of CE. Twenty-one student volunteers in various CE leadership roles were individually interviewed with a view to developing a theoretical explanation of CE. This was accomplished by applying a grounded-theory approach, analysing each interview transcript until a narrative emerges from the themes generated, from which a theoretical explanation is developed. The findings indicate that from initial altruistic intentions, students' engagement morphs into transactional and, in some cases, transformative ideals as a consequence of participation in their CE initiatives.

Supervisor: Prof AV Naidoo

ERIKSEN, Garrett Ernst (History)

One percent terror, ninety-nine percent boredom: An analysis of the military boredom and leisure time experiences of SADF soldiers during the South African Border War, 1966–1989

Understandably, war histories generally focus on the formal nature and outcome of warfare as well as related political and social linkages. In a much commended departure from this approach, however, this study concentrates on soldiers' activities when resting, recovering or keeping themselves entertained between adrenalin-soaked action. The study deals effectively with new questions, including the multiple concerns that influenced wartime recreational patterns. It fills a major gap in the existing historiography.

Supervisor: Prof AM Grundlingh

GERBER, Schalk Hendrik (Philosophy)

The Ontological Demand: on the ethics of being-in-common in Jean-Luc Nancy and Achille Mbembe

This study addresses the question of what demands of us to be ethical after the 'death of God' and of the modern 'Subject'. In conversation with philosophers Jean-Luc Nancy and Achille Mbembe, the study claims that the ethical demand emerges from a prior ontological demand: We are obligated to take responsibility for our shared existence, in the world, with others, who co-constitute both us and our world. The ethical demand thus emerges from a relational ontology or a primordial being-with. Our fundamental ethical responsibility therefore includes reparation of broken relations and others' dignity after racialised dehumanisation.

Supervisor: Prof HL du Toit

Co-supervisors: Prof WL van der Merwe, Dr JM Halsema *(external)*

HECTOR, Michael Carl (Political Science)

Exploring ecological modernisation in an African context: A case study of South Africa's e-waste sector

This study examines the application of ecological modernisation in the context of an emerging African economy, South Africa. Ecological modernisation as a pathway to sustainable development is often present in states with a neoliberal ideology to environmental management. The study finds that the presence of ecological modernisation in environmental policy does not guarantee effectiveness; the realisation of environmental policy imperatives needs to be considered. In the management of e-waste in South Africa, the implementation of extended producer responsibility has to prioritise socioenvironmental justice concerns, with the inclusion of waste pickers in decisionmaking processes being paramount to waste management.

Supervisor: Dr D Lambrechts

LUYT, Linda Jean (Psychology)

Adopting transracially in the Western Cape: Understanding families' experiences in context

Most adoptions in South Africa are transracial, and the issue of transracial adoption is controversial. This multilayered study explores the experiences of families constituted by transracial adoption in the context of adoption practices and policies nationally and provincially. Creating a transracial adoptive family identity and managing relationships with biological family are ongoing challenges for the transracial adoptive family. Different aspects of these ongoing tasks become salient at different stages of the life cycle, prompted by individual development, family development, and changes in the external environment. Attention to both psychosocial and broader political issues is important to understand these processes.

Supervisor: Prof L Swartz

A History of the death penalty in Botswana, c. 1891-2021

This study reconstructs the history of the death penalty in Botswana within the broader capital punishment context of Southern Africa. It seeks to correct theories from human rights activists, who claim that capital punishment was a colonial imposition, when actually it has long precolonial roots. Contrary to convention, it also demonstrates that the death penalty was not used to suppress dissent, unlike in countries that waged bitter independence struggles. Moreover, it contends that in the postcolonial period, the death penalty was not used politically – at least, not internally. Instead, Botswana rejected outside pressure to abolish the death penalty to assert its autonomy.

Supervisor: Prof SS Swart Co-supervisor: Dr T Dube

NELL, Erika (Psychology)

Family relationships and non-resident black South African fathers' contact with their adolescent children: A study of families with infrequent non-resident-father-child contact

This study obtained data from multiple members of nonresident-father families to investigate how non-resident fathers' infrequent contact with their adolescent children is influenced by the quality of the father's relationships with key family members. The findings highlight two important factors that strain family relationships and limit father-child contact, namely the continued dominance of the father as provider discourse, and family members abdicating the responsibility to initiate contact and waiting on one another to do so. This emphasises the importance of advocating for broader non-resident-father roles and open conversations in non-resident-father families to explicate rules and expectations for father-child contact.

Supervisor: Prof. E Lesch

SEABO, Batlang Edyson (Political Science)

Ritual partitions or rational voters? Voting behaviour in Botswana's electoral Democracy: 2008-2019

This is one of the first empirical studies to use survey research to explore voter behaviour in Botswana over a series of elections. It finds that short-term voter evaluations of government's economic and political performance are key influences on the vote, while partisan loyalties and sociological factors are of secondary importance. Moreover, a process of cognitive mobilisation mediates the vote decision. As such, it poses a contrasting account of voter behaviour to conventional arguments, which traditionally emphasise ethnicity and clientelism as major influences on voters in the sub-Saharan African region, with positive implications for democracy.

Supervisor: Dr C Schulz-Herzenberg

SHEHU, Abdullahi Hamisu (History)

Procession, Pilgrimage and Protest: A Historical Study of the Qadiriyya-Nasiriyya and Islamic Movement in Nigeria, Public Religiosity in Northern Nigeria, 1952-2021

Described as an "outstanding contribution on the history (and the religious anthropology) of Islam in northern Nigeria", this empirically sound historical study traces the evolution of both the institution and religious processions of the Qadiriyya-Nasiriyya and Islamic Movement in Nigeria. Public religiosity is performed through the street processions, revealing how religious identities, beliefs and practices change over time. This is shaped by shifting institutional ideologies, political and social context, inter-sectarian and intra-sectarian violence, and global Islamic politics. The study argues that religious procession, pilgrimage and protest is a fundamental dimension of the struggle for identity and public space in northern Nigeria.

Supervisor: Dr CJP Fransch

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

Arries, Basheer (Sociology) (cum laude)

Botha, Marco (Political Science)

Campbell, Emma (Geography and Environmental Studies A) *(cum laude)*

Chidamwoyo, Kudzai Allan (History)

Coetzee, Lauren (History)

De Villiers, Zenaria Oriskia (Geography and Environmental Studies A)

Du Pisani, Tian (Political Science) (cum laude) Edwards, Eboni (Public Sociology and Anthropology) Fortuin, Calley Jean Jennifer (Public Sociology and Anthropology) Fox-Martin, Amber Dawn (History) (cum laude) George, Kayla Karen (Psychology) Herandien, Tarshlyn Lancé (Sociology) (cum laude) Jacobs, Keenan Edward (Political Science) (cum laude) Jefthas, Tammy Lee (Geography and Environmental Studies A) Legg, Benthe Maria (Psychology) Lemon, Kelsey (History) (cum laude) Light, Rebecca Ann (Geography and Environmental Studies A) Macleod, Cristan Lee (Political Science) Matshoba, Pakama Sbongile (History) Meek, Stephanie Angela (Political Science) (cum laude) Mlomzale, Mfundo (Sociology) Modiba, Molebogeng Christinah (Clinical Psychology) Mofulatsi, Mofenyi Kgotso (Political Science) Mukutiri, Tinaye Mirabella (Public Sociology and Anthropology) Odendaal, Chanté Maree (Psychology) Oosthuizen, Alzet (Political Science) Robertson, Jamie-Lee (Psychology) Samuels, Tresan (Psychology) (cum laude) Schade, Lena Rebecca (Psychology) Smith, James Warren (Philosophy) (cum laude) Theron, Shirah (Philosophy) (cum laude) Theunissen, Andrea Leigh (Psychology)

Tonkin, Curtley Wayne (Geography and Environmental Studies A)

Truter, Joshua (Political Science)

Master of Philosophy Magister in die Wysbegeerte

Barties, Biondi Neil (Monitoring and Evaluation Methods) Bekwa, Senty Phindile (Information and Knowledge Management)

Booi, Bulelwa Cynthia (Information and Knowledge Management)

Clift, Janet (Science and Technology Studies) Dingayo, Nomaza (Information and Knowledge Management) Engelbrecht, Chandre Robin (Monitoring and Evaluation Methods)

Fuma, Simson (Science and Technology Studies)

- Janse Van Rensburg, Sophia Maria (Monitoring and Evaluation Methods)
- Jomboro, Moreblessing (Monitoring and Evaluation Methods)

Kottoh, Mawuli (Monitoring and Evaluation Methods)

Law, Jessica Emma (Disaster Risk Science and Development) Lupahla, Ishmael (Monitoring and Evaluation Methods)

- (cum laude) Mashabane, Thuli Tshwarelo (Monitoring and Evaluation Methods) (cum laude)
- McConville, Emily (Disaster Risk Science and Development *(cum laude)*

Moseki, Gaabadzo (Science and Technology Studies) Mthethwa-Kunene, Khetsiwe Eunice Faith (Monitoring and Evaluation Methods) *(cum laude)*

Mukata, Calvin Mukata (Monitoring and Evaluation Methods) Mumpande, Jacob (Monitoring and Evaluation Methods) Mushwana, Gilchrist Fortune (Applied Ethics) Mwaura, Catherine Njoki (Monitoring and Evaluation Methods) Ndisiro, Josika (Monitoring and Evaluation Methods) Ndunguru, Neema Janet (Monitoring and Evaluation Methods) Ngala, Lapani (Monitoring and Evaluation Methods) Ratsibi, Humbelani Edzani (Science and Technology

Ratsibi, Humbelani Edzani (Science and Technology Studies)

Sehlabaka, Lietsiso Gertrude (Applied Ethics) Sepetla, Mahopolele Celestina (Monitoring and Evaluation Methods)

Shapiro, Robyn Joan (Applied Ethics)

- Tizora, Yeukai Caroline (Monitoring and Evaluation Methods) (*cum laude*)
- Tobias, Hilton Calvin (Science and Technology Studies) Van Niekerk, Marthie (Science and Technology Studies) Veldsman, Susan (Science and Technology Studies) (*cum laude*)

Walter, Sheridan Mark (Applied Ethics) Wolfenden, Jurgen Vaugn (Applied Ethics) *(cum laude)*

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

Shefika, Nestor (Urban and Regional Planning)

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

Aryee, Mabel Abena (Psychology) Bardien, Ilhaam (Philosophy) Conradie, Pieter (Philosophy) *(cum laude)* Daniels, Lauren Cliffayne (Social Anthropology) Gabier, Bilqees Bint Yusuf (Geography and Environmental Studies) Joubert, Paul Christiaan (Philosophy) *(cum laude)* Kassiem, Ameer (Geography and Environmental Studies) Kay, Caleb Leum (International Studies) Liebenberg, Niall (History) Marais, Charl Marius (Philosophy) Matuba, Bohlale Thuto (Geography and Environmental Studies) Palm, Nienke (History) Sarovic, Vanja (Social Anthropology) *(cum laude)* Shewell, Daniel Paul (Philosophy) Sidzumo, Puleng (Philosophy) Simpson, Ceilidh Wendy Gwynnyth (Philosophy) *(cum laude)* Smith, Ashley (History) Solomon, Emma Jeanne (History) *(cum laude)* Van der Merwe, Mia (History) Van Huyssteen, Ava Rina (Social Anthropology)

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

Flack-Davison, Eleni Iris Hanekom, Sunelle Hatutale, Sylvia Jordaan, Maryam Amra Josias, Patricia Dawn Mcnamara, Caryn *(cum laude)* Peter, Sinazo Solani, Sinazo Sparkes, Casey Karen Tirivavi, Mandla Wright, Dilla

Postgraduate Diploma in Applied Ethics Nagraadse Diploma in Toegepaste Etiek

Ndlabhu, Sisipho

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

Difele, Perseverance Boitshoko Kabelo, Dimpho Neo Mannathoko, Koketso Valerie Mashamaite, Sherly Sharon Ndjarakana, Zanjinganjinga Phistosina Wessels, Mphonyana Prudence

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

Banda, Joy Tinotenda Banks, Ryan *(cum laude)* Bushula-Njah, Vuyiswa Sylvia Gumbie, Tendai Emmanuel Hugo, Frederick Khumalo, Nomvuyo Memory Kloppers, Maatje Maile, Pinkie Winny Matshaka, Netsai Sarah Mengela, Tuhafeni Ndeshipanda Mkhize, Samukelisiwe Molapo, Teboho Molefe, Mampheng-Pheng Grace Morta-Andrews, Nadheerah Murangandi, Fungai Ndlela, Nobukhosi Sanelsiwe Phakathi, Nompumelelo Precious Risinamhodzi, Miriam Rutendo Sampati, Roux Lutokwa Sekano, Nthabiseng Shinana, Eveline Mwadina Tshinavhe, Alilali Pashy

Bachelor of Arts Baccalaureus in die Lettere en Wysbegeerte

Abrahams, Robyn Albertha Adams, Dain Luke Adonis, Timia Thelma Aiyer, Josiah Luke Alcock, Georgia Emma Anker, Francois De Villiers Apollis, Carly Petre April, Lushesne Peone Bailey, Keziah Monisha Bapela, Karabo Bedford, Devin Donovan Benjamin, Cameron Jo Bhako. Asithandile Bolsen, Deonica Boshoff, Amber Charmelin Bright, Danielle Corlia Britow, Shaakeerah Bromfield, Michael Victor Bulana, Simthande Burger, Mieke Butler, Tristan William Buys, Sarah-Jayne Carstens, Allison Justene Chetty, Tyeesha Leigh Cliff, Ashleigh Coetzee, Jovandre Germaine Coetzee, Mikhaela Cooper, Lauren Jean Correia, Simone Cox, Christine Cunningham, Janet Davenport, Jessica Stephanie (cum laude) De Carvalho, Megan De Freitas, Alexia Julia De Koker, Dewald De Wet, Estie De Wet, Ruth Dickson, Zjada

Dirks, Jordan Ryan Domingo, Aasiyah Douglas Pedersen, Zindzi Khaya (cum laude) Du Toit, Annelie Du Toit. Jennifer Elizabeth Duvenhage, Elodé Els. Armin Elson, Shentin Engelbrecht, Amoreen Engelbrecht, Divane Engelbrecht, Emma Engelbrecht, Simone Erasmus, Gabrielle Faul, Richard Heinrich Fisher, Carlin Fokazi, Ezethu Fouche, Martha-Mila Fourie, Anna Elizabeth Fourie. Danica Fourie, Karla Fourie, Lana Fredericks, Paul Phillip Froelicher, Max Sebastian Gad, Gabriel Max Gainsford, Jemima Daisy Ghansah, Sive Gibson, Thomas Ian Goltz, Ludé Goodall, Michael Gorlei, Lexa Rae Gounden, Isabella Grinyer, Sarah Victoria Groenewald, Barend Hermanus (cum laude) Groenewald, Riané Hall, Jessica Amy Hickinbotham, Caitlin Skye Hill, Joshua Adam Hogg, Gina Anne Hoogbaard, Elske Howard, Amy Alison Human, Vrede Nathan Jackson, David Llewellyn Janneker, Tré Liam Janse van Rensburg, Christine Kammies, Paul Kanyemba, Bongai Kehl, Jenna Lucy Kiewiet, Tara Tarryn Klaase, Johandri Elmerentia Knight, Amber Loren Knight, Michael Robert Korb, Esthian Abrie Krieger, Chloe Kriel, Sean Kruger, Nicola Stanton

Le Fleur, Meché Caitlin Le Roux, Jesse Baronne Le Roux, Wiehan Leen, Kyla Leishman, Robyn Rose Lim, Joshua Yee Wai Chamras Livesey, Kelsey Loots, Chanel Louw, Jordan Lee Lucas, Nomonde Luvuno, Ndabuko Banele Mabandla, Kwano Malehlogonolo Kate Mackenzie, Tristan Tyler Magwa, Anomusa Malgas, Alison Maneveld, Kathryn Lee Maree, Shannah Ashleigh Martch, Jessica Martin. Micha-Lee Mashala, Gontse Godfrey Matsha, Tshegofatso Tebogo Mbashe, Thobeka Mbongwe, Amanda Melokuhle McCoy, Jack Douglas McMurray, Lara Meerburg, Kiara Erin (cum laude) Minnie, Stephanus Benjamin Mitchell, Joshua Mntungwa, Vezokuhle Mocke, Tayla Jade Mohamed, Ra-Eesa Moldenhauer, Kayleigh Moller, Angelique Monyane, Amina Mostert, Sunra Moyo, Laura Vuyelwa Mpikashe, Ongeziwe Muller, Cameron Luke Lindsay Ndabeni, Azana Nekhumbe, Zwivhuya Nell, Tarryn Leigh Noeth, Zoe Norman, Kerry Ann Nyawo, Ngobile Ohlson, Celeste Oliver, Mia Osman, Wafiqa Petersen, Kaylee Petersen, Waydan Chadwin Phenyane, Nosipho Sinenhlanhla Phillips, Jody Dayne Mark Phillips, Stephanie Jade Phyfer, Zanré Pillay, Tarishka Potgieter, Kirsten

Puchert, Daniel Vincent Rambo, Alexandra Anne Rangata, Musawenkosi Roux, Teagan Rubin, Jacob Daniel Rutherford, Paige Tyler Rutherford, Summer Safeda, Ra'eesah Samsodien, Nuraan Schofield, Heinz Schroeder, Chloe Jean Scott, Mieschka Seas, Jamy September, Kelsey Jade Serdyn, Carli Sewchuran, Sanjana Vashthi Seymour, Micarla Nolene Shell, Yetta Lilla Sidenberg, Samantha Zoe Sidube, Ntombizanele Arbiter Silokazi. Masilo Smit, Kiara Smit, Tiffany Smith, Jamie Smith, Milano Taryn Sol Martinez, Blanca Leticia Solomons, Zeo Spreeth, Danél Springbok, Amy Sarahlene

Stemmet, Hendrik Daniël Sterley, Samantha Crystal Stevens, Cleo Sabrina Steyn, Elzanne Swart, Phillip Bernard Marais Tang, Christine Taylor, Samantha Seluleko Tombs, Tyla Cydni Rebecca Vallejo Casals, Nikita Van Bosch, Michaela Van der Merwe, Tyler Catelynne Van der Westhuizen, Albert Van Heerden, Christelle Louise Van Schalkwyk, Benjamin Van Schalkwyk, Megan Venter, Xia Monique Visser. Chrislea Visser, De Wett Visser, Marlike Volkwyn, Chanté Abbigail Von Metzinger, Travis Robertson Whittaker, Liam James Wiehahn, Bernard Heinrich Wiese, Vian Jean Wiid. Karmen Wood, Casidi Elizabeth Bowmaker Zaranyika, Tapiwanashe



forward together sonke siya phambili saam vorentoe

Faculty of Arts and Social Sciences (Group 2)

27 March 2023 | 17:00

Fakulteit Lettere en Sosiale Wetenskappe (Groep 2)

27 Maart 2023 | 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 Lied.
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

BOTES, Herman (Visual Arts)

Exploring critical citizenship and decolonisation as a framework for design education in South Africa

This study explores how critical citizenship and decolonisation perspectives can contribute to a design pedagogy for citizen designer education. Considering the negative impact of increasing social and economic inequality on social justice, the study argues that South Africa requires conscientised citizen designers who can think and act beyond current expectations. The research contributes to the field of design education by identifying a wide variety of relevant and significant themes in critical citizenship and decolonisation perspectives that could be considered for implementation by design educators in their specific discipline when working towards developing a South African citizen designer.

Supervisor: Prof E Costandius

BURGER, Johanna Maria (Afrikaans and Dutch)

Die verband tussen kontekstuele en buitetekstuele faktore en die doeltreffende aanwending van gewone taal

Hierdie studie ondersoek die baie relevante tema van die gebruik van gewone taal in verskeie kontekste. Daar word bevind dat kontekstuele en buitetekstuele faktore 'n effek het op die nut van gewone taal vir die bedoelde gebruikers: Die finansiële en regskonteks lê die effektiwiteit van gewone taal aan bande, terwyl buitetekstuele faktore 'n rol speel ten opsigte van verstaanbaarheid en gebruikers se ervaring. Die waarde van die studie lê in die groot verdere navorsingspotensiaal wat blootgelê word, en in die praktiese riglyne vir dokumentontwerpers om openbare dokumente toegankliker vir verbruikers te maak.

Supervisor: Dr A Marais

CLAASSEN, Dané (Leksikografie))

Metaleksikografiese kriteria vir woordeboekpedagogie binne 'n omvattende woordeboekkultuur

Woordeboeke is praktiese gebruiksinstrumente wat opgestel word met inagneming van 'n spesifieke teikengebruikersgroep, hulle leksikografiese behoeftes en hulle naslaanvaardighede. Woordeboekvaardighede moet verwerf word. Gebruikers moenie net woordeboekgeletterd wees nie, maar ook inligtingsgeletterd, want aanlyn woordeboeke bied ook toegang tot eksterne naslaanbronne en die internet. Vanuit die teoretiese leksikografie kyk die studie krities na bestaande woordeboeke en die manier waarop hulle die teikengebruiker ter wille is. Die empiriese ondersoek lei tot die daarstelling van kriteria vir 'n woordeboekpedagogieprogram wat in die toekoms vir al die Suid-Afrikaanse tale gebruik kan word. Dit verryk die metaleksikografie en dra by tot 'n beter woordeboekkultuur.

Supervisor: Prof RH Gouws

DE VRIES, Maria Magdalena (Social Work)

Stories of mothers exposed to Biopsychosocial FASD services in The Langeberg Municipal area

South Africa has the highest recorded prevalence of fetal alcohol spectrum disorders (FASD) worldwide. Social workers have an important role to play in preventing FASD by providing interventions and support to high-risk drinking women. From a bio-psychosocial perspective, it is important to address the biological, psychological and social factors contributing to FASD. This qualitative study gains an in-depth understanding of the lives, realities and needs of women at high risk of having a child with FASD. Findings of the study indicate that there is a need for practical interventions with these women, including social work interventions and both physical and mental health services.

Supervisor: Dr I Slabbert

DU PLESSIS, Annette (Afrikaans and Dutch)

Reis as tema en metafoor in die egoliteratuur van Elsa Joubert

Aan die hand van heersende literêre teorieë oor outobiografiese tekste ondersoek hierdie studie die aard en belang van reis as tema en as metafoor in Elsa Joubert se outobiografiese drieluik 'n Wonderlike geweld, Reisiger en Spertyd. In 1948 reis 'n jong Elsa Joubert byvoorbeeld van die oorsprong van die Nyl tot by die monding van hierdie belangrike rivier in Afrika. Die studie bevind dat hierdie reise vir Joubert met 'n persoonlike transformasie gepaard gaan. Joubert se metaforiese reise deur haar Afrikanerskap, patriotisme, skrywerskap, identiteit, spiritualiteit en veroudering geniet ook besondere aandag in die navorsing.

Supervisor: Prof AG Visagie

HUIGEN-CONRADIE, Stephané Edith (Visual Arts)

Creolised objects: A study of material culture as marker of coloured identity

This study considers the material dimensions of people categorised as coloured through the study of their material possessions and life histories. It specifically focuses on residents' homes in Rehoboth in Namibia as well as Cloetesville and Idas Valley in Stellenbosch, South Africa. It is proposed that residents' possessions reflect a specific form of cultural creolisation that has taken place as a result of Southern Africa's histories of colonisation, enslavement and apartheid. The research uses a narrative approach to investigate how residents' display cabinets and their contents contribute to a particular material visualisation that reflects individual identity formation. The exploration makes a case for creolisation being a flexible conceptual tool that is directly comparable to processes of bricolage – the experimentation with various material and cultural elements to form cultural assemblages.

Supervisor: Prof E Costandius

KAPPIS, Jolene Auret (Music)

The choral music of Hans Roosenschoon

Hans Roosenschoon (b. 1952) is one of the leading South African composers of his generation. This is the first study to investigate an aspect of his extensive oeuvre in a detailed manner, focusing on selected works from the composer's music for unaccompanied choir. It provides precise information on the genesis of these works, a comprehensive analysis of their structure, form and style, and an evaluation of their position within the canon of South African art music. It reveals the unique and groundbreaking characteristics of Roosenschoon's work and its major contribution to reconciling European and African styles of music.

Supervisor: Prof WA Lüdemann

LIM, Rose Joanna (English)

Precarious unmoorings: Women's voices in the Anglo- and Lusophone literature of Adichie, Chiziane and Mohamed

This insightful study examines African women's articulations across selected Anglophone and Lusophone narratives. It pays particular attention to what the candidate describes as "unmoored", orphaned women's language that has taken on a life of its own and disengaged from its colonial-era Europhone sensibilities. The study examines novels from the literary repertoires of Nigerian author Chimamanda Ngozi Adichie, Mozambican writer Paulina Chiziane and Somali writer Nadifa Mohamed. The core chapters of the study identify three main strands of such unmoored articulations, namely the role of imposed and strategic silence in Adichie's narratives, a reliance on collective expression in Chiziane's work, and geospatial contemplations in Mohamed's texts.

Supervisor: Prof BC Steiner

LOUW, Susann Hermina (Afrikaans and Dutch)

Die konstruksie van Afrikaanse manlikheid in tydskrifte (2005 tot 2015): 'n Diskoersanalitiese ondersoek

Hierdie studie ondersoek 'n verskeidenheid Afrikaanse tydskrifte met die doel om bloot te lê hoe die algemene Afrikaanse samelewing aan manlikheid gestalte gee. Die implikasies van die studie is verreikend deurdat dit bevind dat Afrikaanse manlikheid in die media steeds die waardes van historiese Afrikanermanlikheid weerspieël, hoewel ooreenkomste met globale kategorieë van manlikheid ook opgelet word. Beroepsukses en magsposisies blyk 'n integrale deel van die uitgebeelde Afrikaanse manlikheid te wees, en die beeld van die boer word dikwels as die ideaal voorgehou. Verder bevind die studie dat Afrikaanse mans 'n gesondheidsbewuste lewenstyl as belangrik beskou, hoewel dit in oorwegend heteronormatiewe omgewings voorkom.

Supervisor: Dr A Marais

MAKHATHINI, Nduduzo Henry (Music)

Breaking into sound: Dis/Locating Ntu cosmology and improvisation in South African jazz

This study emerges from a mature artistic practice that understands jazz improvisation as a process that dialogues intimately with cosmology. Taking Ntu cosmology as point of departure, it presents alternative lexicons for engaging South African improvised musics. Drawing on notions of ritual, the study theorises the 'breaking into sound' as a ritual process that engages 'elsewhere', proposes divination (the throwing of the bones) as a different way to think about improvisation, and reads the bandstand as communal, ritual space. Guided by the artistic aspects of the candidate's own and selected jazz artists' work, the study constructs a framework for understanding jazz improvised musics in South Africa that is cosmologically, ontologically and epistemologically conscious.

Supervisor: Dr S Vos Co-supervisors: Prof SJVZ Muller, Dr U Phalafala

The complementation of ראה ("see") in Biblical Hebrew

This study investigates the complementation of האה ("see") in Biblical Hebrew. It examines all 1 303 instances of this verb in Biblical Hebrew and provides a coherent account of the various complements selected by the verb. It determines how the collocation of the verb with various kinds of complements effects meaning. For example, "saw that" signifies mental perception of a situation, whether or not physical eyesight is involved. The study also establishes various metaphorical or metonymic extensions, from physical perception to meanings such as "inspect" or "choose". An eclectic collection of insights from cognitive linguistics provides the linguistic framework for the investigation.

Supervisor: Prof CHJ van der Merwe

NDONGA, Moreblessing Memory (Social Work)

Assessment in child protection services: Challenges faced by social workers

Assessment is the first step in child protection service delivery when investigating alleged child abuse and neglect. This study explores the challenges that social workers experience when executing assessments from a rights-based and ecological perspective. Data is collected from social workers and their managers in the Cape Town area. Findings reveal that social workers focus on the utilisation of actuarial-based risk assessment tools rather than consensus-based assessment tools because of challenges such as heavy caseloads and a shortage of organisational resources. It is recommended that assessment practice be revised and adapted to suit the South African context.

Supervisor: Prof M Strydom

NOZEWU, Asithandile Esona (General Linguistics)

Linguistic practices, language ideologies, and linguistic repertoires of isiXhosa speaking families in Western Cape homes

This study investigates the linguistic practices, language ideologies and linguistic repertoires of three isiXhosa-speaking families in Western Cape homes. The findings indicate that all the families in the study are multilingual. The primary caregivers and children in these families make choices about which languages are preferred in the home based on their own (and other family members') linguistic repertoires, lived experiences of language, and language ideologies. Space is an important shaping factor in linguistic practices. Therefore, family language policies and practices are found to be entangled with multiple factors and are seen in this study as multilayered.

Supervisor: Dr MCA Oostendorp *Co-supervisor:* Prof F Southwood

PARK, Jung Hoon (Ancient Languages)

The psychagogical function of the topos of anger in the Greco-Roman moral philosophy

Ancient philosophers saw the ability to control one's emotions as a crucial requirement for a tranquil life. Particular attention was paid to anger, being the most dangerous emotion. As part of the psychagogy (moral formation) of their students, philosophers developed a training programme for dealing with emotions. This study discusses in detail four extensive treatises on dealing with anger by Greco-Roman authors representing different philosophical traditions. It concludes that, while each has a different view, the four treatises share a common approach in dealing with the topic. Therefore, this topos functioned as a significant element of the contemporary semantic universe.

Supervisor: Prof JC Thom

PAYTON, George William (Ancient Languages)

A cognitive semantic analysis of the uses of toledoth in the Hebrew Bible, with special references to its translation in the Book of Genesis

If one considers translations of toledoth in the Hebrew Bible, there is no consensus about its interpretation. This study identifies the meaning potential and uses of toledoth in the Hebrew Bible. A linguistic model implementing a grouping of approaches is used for this semantic analysis. It is shown that toledoth has distinct senses pointing to its overall meaning potential. The prototypical meaning of toledoth is 'progeny', yet its meaning potential also includes related senses such as 'numbered progeny', 'immediate offspring' and 'created ones'. This study also shows that the toledoth formulae provide cohesion and coherence throughout Genesis.

Supervisor: Prof CHJ van der Merwe Co-supervisor: Prof ER Wendland (external)

SEPTEMBER, Uwarren (Social Work)

Social work services to families caring for adult relatives with a mental illness

Families caring for mentally ill relatives can experience tremendous stress. Rendering social work services to such families could relieve their stress and improve their quality of life. This study explores the social work services that should be rendered to such families from an ecological systems perspective. Data collected from social workers and their seniors working at Cape Town-based governmental psychiatric hospitals reveals that these social services are indeed vital. However, delivering the services is challenging because of, inter alia, poor resource allocation and funding. It is recommended that guidelines be developed to improve the rendering of social services in resource-constrained environments.

Supervisor: Prof M Strydom

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

Beard, Layton (Journalism) Brand, Ilsebeth (Ancient Cultures) Christians, Nadine (Journalism) De Lange, Johannes Phillipus (General Linguistics) Goff. Edward Vincent (Journalism) Groeneveld, Elise (Translation) (cum laude) Hornea, Irina Carina (Ancient Languages) (cum laude) Kaloli, Mpho Marchia (African Languages) Lunde, Kerenza Carlee (English Studies) Mkumatela, Asambese (Translation) (cum laude) Mokonyana, Teboho Phillip (Journalism) Mthembu, Phathemseni Busisiwe (African Languages) Rowland, Viviene Jennifer (Journalism) Shirley, Renee (General Linguistics) Smit, Paula-Ann (Journalism) Van Eeden, Margaretha Louisa (Journalism) Viljoen, Zania (Intercultural Communication) Wright, Megan Anne (General Linguistics) (cum laude)

Master of Social Work Magister in Maatskaplike Werk

Scharein, Margaret Desiree (Social Work) Shikongo, Menesia Panduleni (Social Work)

Master of Music Magister in die Musiek

Friday, Lindsay (*cum laude*) Froehlich, Anke Hilde (*cum laude*) Walters, Caroline Althea (*cum laude*) West, David John (*cum laude*)

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

Coetzee, Hesté Hestelle Heléne *(cum laude)* Du Preez, Kirsten *(cum laude)* Hammann, Marihet Hangula, Erastus Hector, Kirsten Megan Mcdonald, Sharne *(cum laude)*

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

Abercrombie, Liam Rushan William (Journalism) Adams, Chérise (Visual Studies) Adshade, Maryna (Afrikaans and Dutch) *(cum laude)* Allison, James Ross (Translation) April, Chante Lesley-Ann (Afrikaans and Dutch) *(cum laude)* Babl, Bastiénne Stefanie Margarethe (Ancient Cultures) *(cum laude)*

Bastiaensen, Niels Jon (Visual Studies) Bell. Tea (Journalism) Beyers, Elsabe Lowna (Ancient Cultures) Brederode, William John (Journalism) (cum laude) Brewis, Nina-Lari (Afrikaans and Dutch) (cum laude) Brink, Marizaan (Afrikaans and Dutch) Burger, Nandi (Afrikaans and Dutch) Burnell, Chelsea (Journalism) Cogill, Connor Shay (Journalism) Ddamulira, Tina Nakangu Nakangu (Journalism) De Bod, Karla (Journalism) De Kock, Christo (Translation) De Lilly, Andrea Robyn (Journalism) De Villiers, Damian Jacques (Drama and Theatre Studies) De Wet. Mieke (Translation) Dolf. Sheldan Edward (Afrikaans and Dutch) Du Plessis, Charl Jean Pierre (Drama and Theatre Studies) Ebrahim, Na'ilah Begum (Journalism) Fuchs, Dominique Ann (Journalism) Geldenhuys, Esmari (Translation) Gerber, Alexandra (Visual Studies) Goliath, Courtney (Chinese) (cum laude) Gouws, Joanna Madeleine (Afrikaans and Dutch) (cum laude) Hansen, Cody Axel (Journalism) Hendrikse, Robin Jade (Translation) Hillier, Jessica Elizabeth (Journalism) Hoffman, Angel Ellen Hope (Translation) Hopley, Caylin (Afrikaans and Dutch) Hull, Jamie (Chinese) (cum laude) Jameson, Talitta (Drama and Theatre Studies) Katzke, Lane (French) (cum laude) Lawrence, Micaleb Albanishe (Journalism) Lawson, Heather Mae (Drama and Theatre Studies) (cum laude) Le Roux. Lise Paula (French) (cum laude) Lourens, Alana (Afrikaans and Dutch) (cum laude) Louw. Aiden (Journalism) Mabula, Kristin Asive (Journalism) Malinzi, Timothy Kawalya (Journalism) Mandaha, Rilinde Reginah (African Languages) Maseko, Vukile Nokwanda (Drama and Theatre Studies) Meyer, Iola Elizabeth (Chinese) (cum laude) Neethling, Bianke (Journalism) Olivier, Kara (Journalism) Ontong, Joel Charles (Journalism) Page, Tes-Adri Petroleen (Afrikaans and Dutch) Pongweni, Takudzwa (Journalism) Retief, Tamia (Journalism) Robinson, Cassidy Sylvia Rose (Visual Studies) (cum laude) Schnabel, Daniela Victoria (Translation) Skriker, Nakishka Nicole (Journalism) Swartbooi, Milandre Sashawnee (Ancient Cultures) (cum laude) Tredoux, Lerie (Translation) (cum laude) Tshilwane, Tsholofelo Alicia (Drama and Theatre Studies)

Uys, Jean-Marie (Journalism) Van der Merwe, Karla (Journalism) Van Heerden, Mia (Translation) Van Wyk, Liza (Drama and Theatre Studies) Van Wyk, Marlo (Ancient Cultures) *(cum laude)* Venter, Jamie Aine (Journalism) Von Ahlften, Elfriede (Visual Studies) *(cum laude)* Welgemoed, Zetta (Visual Studies) *(cum laude)* Wicomb, Tamara Hannah (Journalism) Wilschutt, Nazley (Journalism)

Bachelor of Music Honours Honneurs-Baccalaureus in die Musiek

Ajila, Oluwagbenga Nehemiah Louw, Leandri *(cum laude)* Ludick, Remi *(cum laude)* Mazibuko, Skhumbuzo Ziphozonke Pietersen, Joshua Small, Tana Ella Thornton-Dibb, Sarah Jean

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

Basson, Cayla Frances *(cum laude)* Carter, Emma Helena Coetzee, Bianca De Scande, Lereze Gibbons, Abbey Rae Howard, Philippa Kumwenda, Nkhuwemi Pieters, Mia Marié *(cum laude)*

Bachelor of Arts Baccalaureus in die Lettere en Wysbegeerte

Adams, Jada Arran, Seyuran Bird, Caitlin Leah Bührmann, Rolien Margarethe (cum laude) Burger, Marle Karla Clegg, Raffaela Angela Cronje, Elri Cubitt, Jason-Hendre Daiber, Toma De Decker, Amber Geneviève Mariette Duminy, Chris-Lee Finnie, Jocelyn Alexandra Francis, Erin Geldenhuys, Elsabe Goliath, Rodney Haasbroek, Bianca Krüger, Nina Lin, Kelly

Marais, Lize-Marié Martin, Emma Gloria Nel, Bianca Anna-Marie Newton-King, Emma Jane Ngamlana, Lukhanyo Papier, Shane Patton, Ethan Dean Petro, Neguin Keenan Prothero, Kayla Vera Rossouw, Heleen Smith, Jemma Swart, Hannes Julian Tregoning, Georgina Meg Van Beulen, Emma-Jane Van den Berg, Minette Van Wyk, Victoria Jody-Lee Willemse, Kyle

Bachelor of Social Work Baccalaureus in Maatskaplike Werk

Beukes, Warren Juandré Coetzee, Tyla Dawood, Nikita Thandi Layla Laatoe, Saadikah Mathonsi, Samkelo Mouton, Jean-Claude Nkhata, Casey Ivana Siegelaar, Amy Heidene Sigodlo, Babalwa Van Rooy, Maureshe Devercia Williams, Phumzile Jeanette

Bachelor of Music Baccalaureus in die Musiek

Briel, Lizé Marita *(cum laude)* Jaftha, Liam Lawson, Ethan Joshua Matikiti, Tibone Mvuli Amos Van der Westhuizen, Nicolaas Jacobus Gerhardus

Bachelor of Arts in Visual Arts Baccalaureus in die Lettere en Wysbegeerte in Visuele Kunste

Janse van Rensburg, Charlize Matthee (Visual Arts)

Diploma in Practical Music Diploma in Praktiese Musiek

Miso, Nicholas

Higher Certificate in Music Hoër Sertifikaat in Musiek

Petersen, Matthew Ross

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forward together sonke siya phambili saam vorentoe

Faculty of Medicine and Health Sciences

28 March 2023 | 13:00

Fakulteit Geneeskunde en Gesondheidswetenskappe

28 Maart 2023 | 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 Lied.
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 Medicine and Health Sciences Fakulteit Geneeskunde en Gesondheidswetenskappe

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

BRINK, Lucy Theresa (Obstetrics & Gynaecology)

A critical analysis of preterm birth in a largely homogeneous community near Tygerberg Academic Hospital with a high prevalence of preterm birth

Preterm birth is a matter of global importance. This study performs a critical analysis of preterm birth in a largely homogeneous community. It finds correlations between a high prevalence of preterm birth and poor education, the use of tobacco and alcohol during pregnancy, and placental maladaptation. The research makes a significant contribution to the literature and represents a valuable source of information.

Supervisor: Prof H Odendaal Co-supervisor: Prof DR Hall

BURGER, Marlette (Physiotherapy)

A prospective longitudinal study of the impact of prenatal and postnatal maternal mental health disorders on the neurodevelopmental trajectories of children during the first 18 months

This study advances current knowledge of maternal perinatal mental health disorders and their association with infant and toddler neurodevelopment during the first two postnatal years in low-income communities. The finding that persistent exposure to mood, psychotic and comorbid anxiety and mood disorders does not have an adverse impact on toddlers' cognitive, motor and language development and social-emotional and adaptive behaviour is reassuring for women with a clinical diagnosis of mental health disorders in the Western Cape province of South Africa. Understanding causal pathways, especially protective factors, is essential to optimise clinical care and child development in Africa.

Supervisor: Prof M Unger Co-supervisors: Profs DJH Niehaus, C Einspieler (external) CHITAPI, Unity Marvellous (Occupational Therapy)

Livelihood occupations of women with disabilities in Bulawayo, Zimbabwe: A case of Occupational Injustice?

An interpretative phenomenological analysis is undertaken to explore the occupational engagement of women with disabilities for a livelihood. Firstly, a scoping review maps literature on experiences of livelihood occupations for women with disabilities, revealing a dearth of research on the subject in low-income countries. Secondly, five themes are revealed and located at a theoretical nexus comprising occupational injustice, Bourdieu's 'habitus, capital and field' theory, and Sen's Capability Approach. Intrapersonal resources are drawn on, dispelling perceptions of women with disabilities as unable and dependent. The applicability of Occupational Injustice in occupations is problematised, and recommendations are made for the practice and education.

Supervisor: Prof L van Niekerk *Co-supervisor:* Dr A Blank (*external*)

CLARKE, Charlene (Molecular Biology)

Investigating host and pathogen biomarkers of *Mycobacterium bovis* and nontuberculous mycobacterial infection in African buffaloes (*Syncerus caffer*)

This study investigates host and pathogen biomarkers of *Mycobacterium bovis* and nontuberculous mycobacterial infection in African buffaloes. Methods are developed to accurately detect bovine tuberculosis, advancing diagnostic capacity for wildlife. This includes a field-tested blood-based algorithm to enhance diagnostic specificity. The study also explores immunological responses to non-tuberculous mycobacteria that may confound diagnosis. The research enhances the understanding of this disease in African buffaloes and improves currently available diagnostic guidelines.

Supervisor: Dr WJ Goosen Co-supervisor: Prof M Miller

DA CAMARA, Ncité (Molecular Biology)

Tools for Analysis of Luminex Immunoassay Data: Development of a Robust Pipeline and Best Practices Recommendations

A fundamental requirement for the scientific method is reproducibility. Modern methods produce vast amounts of information, which is often processed in ad hoc ways, contributing to irreproducibility. This study develops a robust computational pipeline to pre-process multiplexed enzymelinked immunosorbent assay data that ensures reproducibility. This lays the foundation for an open-source code repository to be used, and improved, by the community of scientists generating and analysing these types of data.

Supervisor: Prof G Tromp *Co-supervisor:* Dr E Maasdorp

DERENDINGER, Brigitta (Molecular Biology)

New and improved methods for the diagnosis of susceptibility to tuberculosis drugs

Drug-resistant tuberculosis is a global threat. Diagnosis in the shortest possible time is crucial. Optimisation of existing tests and expanding drug susceptibility testing for new drugs such as bedaquiline are essential to control transmission. This study shows how one of the most widely used tests for drug-resistant tuberculosis is often performed incorrectly and how this could be corrected, offering patients a better standard of care. The research also provides evidence of the programmatic emergence of resistance to bedaquiline in highrisk patients, highlighting the need for rapid and accessible drug-susceptibility testing to accompany any new drug.

Supervisor: Prof GDV Theron *Co-supervisor:* Dr M de Vos

DWADWA-HENDA, Nomvo (Health Science Rehabilitation)

Experiences of persons with disabilities of Xhosa rituals and traditions, which contribute to health and wellbeing.

This study explores the experiences of persons with disabilities of Xhosa rituals and traditions that contribute to health and wellbeing. Exploratory critical-ethnography case study research designs guided methods used to gather data from the Amabomvana indigenous community in the Eastern Cape province of South Africa. Content analysis was used, with the text divided into meaningful units. The study concludes by proposing a disability framework that is modelled on collectivism, with ubuntu used as the core guiding principle for disability matters in the Amabomvane community. The study represents an original and relevant contribution to the area of disability and indigenous knowledge systems.

Supervisor: Prof G Mji Co-supervisor: Dr C Ohajunwa

DYERS, Robin Edgar (Public Health)

A user experience conceptual model for the visualisation of routine health information system data for managerial decision support

Health managers are expected to make difficult decisions based on routine data to navigate the complexity of day-today service delivery. This study develops a user experience (UX) model that can inform the design of a health information visualisation system for managerial decision support in the Western Cape Department of Health. A multimethod case study is conducted to confront existing UX theory with health managers' experiences. This informs the iterative development of a UX model within the design science research paradigm. The model illustrates that purposeful storytelling with routine data, cognitive load as well as the service delivery context are important determining factors of UX.

Supervisor: Prof H Mahomed (external) Co-supervisor: Prof D van Greunen (external)

ERIBO, Osagie Aiwerioghene (Molecular Biology)

The gut microbiome and immunity to tuberculosis: Assessing the potential immunomodulatory role of polysaccharide-A-producing *Bacteroides fragilis*

Little is known about how specific gut microbes or microbial components mediate the dysregulated immune responses that may influence susceptibility to tuberculosis (TB), and whether alterations caused by anti-TB drugs contribute to an increased risk of re-infection with *Mycobacterium tuberculosis* after initial treatment and cure. This study establishes a mouse model for examining the effects of specific gut microbes on susceptibility to TB, and how the biomolecules produced by these microbes affect immunity and susceptibility to the disease. To date, the research has resulted in three peer-reviewed articles in accredited journals, with more expected.

Supervisor: Prof NN Chegou *Co-supervisors*: Profs N du Plessis, G Walzl

FISHER, Dominic (Physiotherapy)

Sedentariness and back health in Western Cape school learners: a feasibility study

Spinal musculoskeletal conditions and non-communicable cardiometabolic disease are increasing global health concerns, adding to the growing need for rehabilitation services. Sedentary behaviour has been associated with deleterious spinal and cardiometabolic health. The aim of this study was to develop a contextualised, evidence-based intervention aimed at reducing sedentary behaviour and improving spinal health outcomes in South African school children, and to assess the feasibility of the intervention. The intervention developed shows preliminary effectiveness in reducing classroom sedentary behaviour and improving spinal health. A trial is recommended for affirmation of the effect of the intervention.

Supervisor: Prof Q Louw Co-supervisor: Prof J Crockcroft

KIMANI, Clare Njoki (Pharmacology)

Beta cell regeneration and antidiabetic potential of Ficus sycomorus and Zanthoxylum chalybeum

Type 2 diabetes is characterised by pancreatic beta-cell dysfunction and cell death. Therefore, the regeneration of beta cells is of therapeutic relevance. The antidiabetic use of *Ficus sycomorus* and *Zanthoxylum chalybeum* has been corroborated experimentally. This study evaluates their effects on pancreatic beta cell regeneration. Mitogenic activity is demonstrated for *Zanthoxylum chalybeum* on beta cells in vitro, but not in diabetic rats. Ligand-target and molecular docking interactions relevant to beta-cell regeneration identify quercetin 3, 7-O- α -L-dirhamnoside, rutin, vanillic acid and diosmin as potential dual-specificity Dyrk1A inhibitors, while syringic acid is identified as a potential GABARB1 agonist. These are novel research findings.

Supervisor: Prof CJF Muller Co-supervisors: Profs H Reuter, S Kotzé (external)

KLEINHANS, Bronwyn (Medical Virology)

Identification and characterisation of paramyxoviruses in species-rich small mammals from South Africa

Several paramyxoviruses have spilled over from their smallmammal reservoir hosts to infect domestic animals and humans. This study finds an additional 23 South African bat, rodent, sengi and shrew species harbouring one or more previously unknown putative paramyxoviruses. The abundance and diversity of these viruses, belonging to at least five different paramyxovirus genera; the close relatedness of some to highly pathogenic zoonotic viruses, and their discovery in numerous small mammal species, some of which are very common and distributed widely, reaffirm the need for surveillance efforts. Further investigation into host-pathogen dynamics at the wildlife-domestic animal-human interface is warranted.

Supervisor: Prof W Preiser

Co-supervisors: Prof J-F Drexler (external), Dr NL Ithete (external)

LIKANDO, Christopher Mubita (Health Science Rehabilitation)

An exploration of lower limb prosthetics service delivery in Namibia in comparison to global standards

This study explores the status of lower-limb prosthetics service delivery in the public healthcare system of Namibia and compares it to the World Health Organisation's global standards for prosthetics and orthotics using a sequential mixed-methods design. Twelve of the 60 standards are being implemented in Namibia. A further 28 are partially adhered to, while 20 are not being implemented. Being the first study of its kind globally, its results can be used to strengthen prosthetic services in Namibia and further afield. The methods used can serve to guide similar research in other settings.

Supervisor: Dr SJ Visagie Co-supervisor: Prof G Mji

MAART, Rentia Amelia (Physiotherapy)

Defining the "Value" of Rehabilitation for Physical Disability in the Primary Health Care Sector in South Africa

In countries such as South Africa, limited budgets and resource constraints require careful consideration of best value for money and efficiency in healthcare spending. Defining the 'value' and importance of rehabilitation is an important step to inform policy changes that could secure investment in rehabilitation services in South Africa, particularly as the National Health Insurance system is rolled out. This study determines how the value of rehabilitation for physical disability can be defined in the primary healthcare setting in South Africa to inform policy and practice.

Supervisor: Dr LD Morris (external) Co-supervisor: Profs DD Ernstzen, G Mji

MAGERMAN, Yolande Nerissa (Nursing)

Best-practice guideline for nurses for the assessment and management of acute trauma-related pain in emergency centres

This multi-phased study is the first in the field of emergency nursing in the Western Cape that explores the assessment and management of acute trauma-related pain in emergency centres. Variation in practices, a lack of knowledge, the attitudes and practices of professional nurses as well as the need to deliver evidence-based, cost-effective and time-efficient care all point to a need for a best-practice guideline. Therefore, the end product of the study is a contextualised, evidencebased best-practice guideline, as well as an algorithm for professional nurses in emergency centres to assess and manage acute trauma -related pain.

Supervisor: Prof PJ Jordan *Co-supervisor:* Dr M van der Heever

MBHATSANI, Hlekani Vanessa (Nutritional Sciences)

A Model for the Promotion of Consumption of Locally Available Indigenous Vegetables and Micronutrient Status of Primary School Children

This study develops a model to promote the consumption of indigenous vegetables by primary-school children. To this end, a chef develops Amaranthus cabbage, Bidens dumpling and fishpea and integrates these with the school meal. Sensory evaluation suggests that all three dishes are acceptable to and liked by children for the three attributes of colour, taste and smell, with Amaranthus cabbage being the most acceptable. The palatability results affirm that more children appear to enjoy the dishes. The model is validated by expert end users and found to be implementable, understandable, and relevant to the context.

Supervisor: Prof XG Mbhenyane

MISBACH, Sadia (Health Science Rehabilitation)

A grounded-theory study exploring the participation of persons with disabilities in the Saudi Arabian culture

The aim of this study was to develop a substantive grounded theory that conceptualises the meaning of participation and its psychosocial processes to inform rehabilitation practices in Saudi Arabia. The research framework drew on multiple sources of knowledge, which were blended to produce a theoretical explanation of how persons with disabilities address their main concerns. Indigenous research was scaffolded onto classical grounded theory (GT) and was informed by Kovach's methodology to form the interpretivist indigenous grounded-theory research design. The proposed staged theory of cultivating dignity in participation spaces provides a framework that can be further developed to extract active ingredients for context-based rehabilitation interventions.

Supervisor: Prof G Mji Co-supervisors: Dr C Kahonde, Prof A Eide (external)

MULONGO, Samuel Mmbasu (Nursing Science)

Evaluating coordination and continuity of care for obstetric near miss cases: A mixed methods study in Kenya

For every pregnant woman who dies, approximately 20 other women experience a near-death experience, called 'near miss survivors'. Engstrom's activity analysis and development framework is used to identify the determinants of near miss experiences in Eldoret, Kenya, with a focus on prior continuity and coordination of care. It is found that failures in longitudinal and relational continuity of care lead to failures in sequential and parallel coordination. This suggests a need for behavioural and organisational change in the health system. A conceptual framework is developed to enhance continuity, support effective coordination and offer more woman-centred care, such as through better situational awareness, teamwork and collaboration during emergencies. The study also identifies interventions that should reduce maternal mortality.

Supervisor: Prof DKM Kaura Co-supervisor: Prof RM Mash

NGOTIE, Teckla Jebiwot (Nursing Science)

Exploring women's cultural experiences during pregnancy and childbirth among the Kalenjin in Kenya: towards a culturally driven safe care framework

Pregnancy and birth are associated maternal and neonatal mortality risk, yet cultural beliefs and practices hinder access to skilled birth attendants. Sociocultural norms and gender stereotypes also influence women's attitude towards medical care. An interpretive phenomenological approach was used to explore the complexities of women's culturally lived experiences during pregnancy and childbirth, utilising Ramsen's cultural-safety theoretical lens. Cultural awareness in birth attendants could grow into cultural sensitivity through cycles of experiential learning, as per Kolb's learning theory. This cultural sensitivity, in turn, could lead to culturally safe services that are women-centred and based on women's needs, including better communication, collaboration, and companionship. The study is summarised in a framework and concludes with recommendations for implementation.

Supervisor: Prof DKM Kaura Co-supervisor: Prof RM Mash

PILLAY, Samantha (Molecular Biology)

Accuracy and impact of the MTBDRplus v2 and MTBDRsl v2 line probe assays for the detection of first-line and second-line drug-resistant tuberculosis

A series of studies are conducted for the methodological validation (both technical and operational) of rapid tuberculosis (TB) diagnostic assays, including MTBDRplus and MTBDRsl. The performance of these assays is tested in diagnosing disease rapidly and accurately on specimens with low pathogen concentrations. The study then puts forward an innovative framework for the rational expansion of direct testing using these assays to the subset of specimens on whom the tests are most likely to work. The research also includes a systematic review and meta-analysis of the Xpert MTB/XDR assay, which contributes to the World Health Organisation's endorsement of this assay.

Supervisor: Prof GDV Theron *Co-supervisor:* Prof M de Vos (*external*)

PRETORIUS, Henry Sean (Orthopaedics)

The modification and testing of an anatomically shaped radius-and-ulna-interlocking intramedullary nail using statistical shape modelling derived from computed tomography scans

This study designs and tests a novel forearm intramedullary nailing system to improve the management of complex forearm injuries and address the design flaws identified in commercially available forearm nailing systems. The nail design is based on statistical shape modelling derived from 97 computed tomography (CT) scans and includes unique design features to improve usability and ergonomics. In addition to being used to design an anatomically shaped nail, the CT-derived statistical shape data is analysed using a linear regression model and has potential applications in the fields of anthropology and forensic medicine.

Supervisor: Prof N Ferreira Co-supervisor: Dr M Burger

TALLAM, Edna Chemutai (Nursing Science)

Developing a framework for standardized midwifery competencies to improve knowledge, skills, and behaviour in the pre-service midwifery programs in Kenya: Mixed methods study

Approximately 92% of pregnant women in Kenya receive suboptimal care due to inadequate monitoring and lack of timely interventions. The competence and confidence of midwives are critical to optimising maternal outcomes. Midwives are trained in various programmes with different curricula and qualifications. This study develops a framework for the standardisation of midwifery competencies. It finds that the degree qualified midwives only (and not integrated nurse-midwives) produces midwives with better competencies to assist during labour and childbirth. Confidently incompetent midwives and midwives without confidence in their competence are associated with failure to provide optimum care. Therefore, the proposed framework is meant to guide the future development of competency-integrated midwifery education, regulation and practices. Further, the framework implies the need for investment in midwifery and stronger policy.

Supervisor: Prof DKM Kaura Co-supervisor: Prof RM Mash

VAN Zyl, Anel (Paediatrics and Child Health)

Late effects of childhood cancer

Little is known about the late effects of childhood cancer and long-term follow-up healthcare for childhood cancer survivors in South Africa. This study finds a higher proportion of survivors who have had at least one late effect than suggested in published literature, as well as higher levels of psychological distress. The female sex, a higher age and the severity of late effects negatively influence health-related quality of life. There is a lack of knowledge and training regarding long-term follow-up healthcare for childhood cancer survivors. A national risk-based shared-care programme of long-term follow-up healthcare should be implemented for these patients, with adequate training of healthcare professionals.

Supervisor: Prof M Kruger Co-supervisor: Prof PC Rogers (external)

WILLIS, Roderick (Sport Science)

A Historical Narrative of High School Athletics Amongst Oppressed Communities in the Western Cape, 1956 – 1994

School sport among oppressed communities during apartheid mirrored the then social and political landscape of the broader Cape Town. Despite many constraints, both material and in terms of human resources, the Western Province Senior School Sports Union (WPSSSU), a multi-coded school sport organisation, navigated the sociopolitical environment, largely through the efforts of dedicated teachers, by providing sport activities for thousands of high-school learners. This study investigates this history with a specific focus on the athletics code. The WPSSSU's sophisticated sport administrative machinery and training of young athletes ensured world-class achievements at the time. The research presents a narrative of this unique history through an insider's lens, filling a gap in existing scholarship on black school sport history as an instrument for social and political wellbeing.

Supervisor: Dr FJ Cleophas Co-supervisor: Prof W Kraak

Faculty of Medicine and Health Sciences Fakulteit Geneeskunde en Gesondheidswetenskappe

OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

Master of Science Magister in die Natuurwetenskappe

Ahiavi, Kwame (Molecular Biology) Asimeng, Jesse Amoako (Molecular Biology) (cum laude) Botha, Nicole (Molecular Biology) (cum laude) Chakalisa, Unoda Amanda (Clinical Epidemiology) Chitedze, Agness Chisomo (Clinical Epidemiology) Cloete, Stephanie Simone (Medical Microbiology) (cum laude) Dambi, Jermaine Matewu (Clinical Epidemiology) De Kock, Michaela (Medical Physiology) (cum laude) Engel, Stacey Caitlin (Molecular Biology) (cum laude) Evert, Christine Margaret (Medical Microbiology) Fincham, Lisa (Clinical Epidemiology) (cum laude) Fortuin, Chelsi Shante (Medical Physiology) Gelderblom, Michelle Valerie (Pharmacology) Govender, Saiuree (Medical Physiology) (cum laude) Greeff, Reine Athena (Human Genetics) (cum laude) Harries, Sarah Kate (Medical Physiology) (cum laude) Hope, Daniel Lance Lionel (Clinical Epidemiology) Katsabola, Hillary (Biostatistics) Lunn-Collier, Robyn (Anatomy) Mac Dermott, Kerryn D (Anatomy) (cum laude) Magoya, Mary Tiya (Biostatistics) Mahlakwana, Gugulethu Boreadi (Molecular Biology) (cum laude) Maleka, Kgomotso Frank (Medical Microbiology) Martin, Lauren Courtney (Human Genetics) (cum laude) Mathee, Raadhiyah (Molecular Biology) (cum laude) Mpazi, Nothukela (Medical Virology) Mulder, Suray Jeanne (Clinical Epidemiology) Mwendwa, Leah Kalekye (Molecular Biology) Ndaramu, Peter Simbarashe (Biostatistics) Ngobeni, Trevor (Medical Virology)

Nkuhairwe, Ivan Nicholas (Biostatistics) Nortje, Simone-Odette (Medical Virology) Oosthuizen, Micke (Reproductive Biology) *(cum laude)* Payne, Carmen (Medical Physiology) *(cum laude)* Pfeiffer, Nadine Diana (Reproductive Biology) Phadu, Karabo Kristen (Medical Virology) Popperwell, Jake (Medical Physiology) *(cum laude)* Rossouw, Lindie (Clinical Epidemiology) Sehurutshi, Alice (Clinical Epidemiology) Sims-Handcock, Jethro Dylan (Molecular Biology) *(cum laude)*

Step, Kathryn Lee (Human Genetics) *(cum laude)* Sutherland, Andrew David (Medical Virology) *(cum laude)* Takawira, Hilary Takunda (Biostatistics) Van Heerden, Jacques (Medical Physiology) Van Niekerk, Hendrik Jacques (Clinical Epidemiology) *(cum laude)* Vanmali, Hameer Deepak (Medical Virology)

Willemse, Ilze Verona (Medical Physiology) Williams, Ricquelle Daphne (Molecular Biology) (*cum laude*) Ymele Soko, Vivette (Molecular Biology) (*cum laude*)

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

Ganai, Ali Mohammad (Sport and Exercise Medicine) Hough, Wayne (Sport and Exercise Medicine) Van der Hoven, Helene (Sport and Exercise Medicine) *(cum laude)*

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

Alexander, Justin Harry Andrag, Lizanne (cum laude) Botha, Marnelle Henning, Robert Heynes, Michaela Lee Horn, Carsten Michael (cum laude) Palframan-Donkin, Justine (cum laude) Price, Nicholas (cum laude) Sam, Megon (cum laude) Steyn, Andrie (cum laude)

Master of Medicine Magister in die Geneeskunde

Alwakwak, Asma (Obstetrics and Gynaecology) Barday, Mish-Al (Paediatrics) Boggenpoel, Ashton Richard (Otorhinolaryngology) Brugman, Jaanri (Radiological Diagnosis) Da Costa, Dawood (Microbiological Pathology) Elmi, Noradin Garad Egeh (Paediatrics) Ely, Cordelia Susan Elizabeth (Paediatrics) Gorry, David Laurence Ashwyn (Surgery) Hendricks, Firzana (Radiation Therapy) Johaar, Rizgah (Paediatrics) Kim, Jin Yong (Thoracic Surgery) Louw, Byron Clarence (Paediatrics) Mathews, Chariss Polani (Anaesthesiology) Mostert, Lambert Jacobus (Forensic Pathology) Mukhtar, Abdiwahab Abdirahman (Otorhinolaryngology) Naidoo, Sashelin (Thoracic Surgery) Naili, Ahmed Mustafa Mohamed (Internal Medicine) Ncana, Lesedi (Anaesthesiology) Ngcobo, Qhawekazi Nyenyedzi (Paediatric Surgery) Szpytko, Alexander Jacek (Urology) Uren, Grace Amy (Forensic Pathology) Van Rooyen, Donee (Obstetrics and Gynaecology)

Master of Public Health Nutrition Magister in Voeding in Openbare Gesondheid

Bereng-Kuenene, Bernadett Marethabile (Public Health Nutrition) Braimoh, Omoyeni Deborah (Public Health Nutrition) Mziligazi, Walter (Public Health Nutrition) Nambeye, Phililo (Public Health Nutrition) Nephalama, Shonisani Edgar (Public Health Nutrition) Ngwenya, Phunyuka (Public Health Nutrition)

Master of Human Rehabilitation Studies Magister in Menslikerehabilitasiestudies

Altin, Marzanne (Rehabilitation) Fisher, Mylcka Jade (Rehabilitation) Mason, Brett James (Rehabilitation) (*cum laude*) Morris, Selwyn Shawn (Rehabilitation) Motshwane, Judith Ntsiki (Rehabilitation) Ramdeen, Joshika Diyajal (Rehabilitation) Solomon, Elana Tina (Rehabilitation) Solomons, Jameelah (Rehabilitation) Torres, Marcia Amanda (Rehabilitation) Van Vuuren, Susanna Catharina (Rehabilitation)

Master in Pathology Magister in Patologie

De Long, Chantal Kaylinn (Haematological Pathology) De Wet, Johann (Anatomical Pathology) *(cum laude)* Isaacs, Shareefa (Haematological Pathology) *(cum laude)* Louw, Meagan (Anatomical Pathology)

Master of Philosophy Magister in die Wysbegeerte

Abrahams, Ilhaam (Neonatology) Buthelezi, Sanele (Health Professions Education) Du Plessis, Michelle (Infant Mental Health) *(cum laude)* Foiret, Jaudon Ron (Health Professions Education) Fourie, Natasha (Health Professions Education) Gabriels, Charnotte Margot (Neuropsychiatry: Old-age Psychiatry)

Kulola, Irene Bahoya (Health Professions Education) Lishman, Juanita (Paediatric Infectious Diseases) Ncube, Janet (Health Systems and Services Research) (cum laude)

Nhlabathi, Sihle (Neuropsychiatry: Old-age Psychiatry) Petrus, Hambeleleni (Health Professions Education)

Master of Occupational Therapy Magister in Arbeidsterapie

Mataswa, Enesia Zvikomborero

Master of Nursing Magister in die Verpleegkunde

Anthony, Victoria Jenine Botha, Andrea Elizabeth *(cum laude)* Chekerwa, Petronella Davids, Vanessa Berenice De Silva, Rene Zureen Esau, Racheal Govender, Moganambal Mccarthy, Danelia Maude Shelton, Jamie Lee *(cum laude)* Vollgraaff, Martha Etresia Vorster, Humeri

Master of Nutrition Magister in Voeding

Lukhele, Danisile Patricia (Nutritional Sciences)

Master of Therapeutic Nutrition Magister in Terapeutiese Voeding

Aziz, Ghumayra (Therapeutic Nutrition) Blaauw, Giana Francis (Therapeutic Nutrition) *(cum laude)* Blaauw, Liezel (Therapeutic Nutrition) *(cum laude)* Blignaut, Paige Louisa (Therapeutic Nutrition) *(cum laude)* Govender, Logeshpree Santhamara (Therapeutic Nutrition) Palframan, Karla (Therapeutic Nutrition) *(cum laude)* Profe-Fuchsloch, Mikayla (Therapeutic Nutrition)

Master of Physiotherapy Magister in Fisioterapie

Abrahams, Adrian Ian Lijodi, Brenda Ayuma *(cum laude)* Mocke, Marieke Scott, Lindsay Truter, Christel Zantsi, Siphosethu

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

Aspeling, Amy Jane (Biokinetics) Jewaskiewitz, Zenobea (Biokinetics)

Postgraduate Diploma in Midwifery Nagraadse Diploma in Verloskunde

Bailey, Carmen Gendy, Maryike Mpengesi - Ntsele, Allet Nokulunga Nake, Mmadikobe Hellen

Postgraduate Diploma in Nursing Education Nagraadse Diploma in Verpleegonderwys

Mayo, Lindiwe Lynette

Postgraduate Diploma in Primary Care Nursing Nagraadse Diploma in Primêresorgverpleegkunde

Goci, Abongile Makgale, Matumelo Mphohadi *(cum laude)* Mantanga, Iviwe

Postgraduate Diploma in Mental Health Nursing Nagraadse Diploma in Geestesgesondheidverpleegkunde

Gudla, Sibusiso Masinge, Kamogelo *(cum laude)* Mbulawa, Feziwe Mndaweni, Thulile Brenda Nojaholo, Ntombiyethu Tom, Simangele

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

Valentyn, Nazeema

Postgraduate Diploma in Health Care Management Nagraadse Diploma in Gesondheidsorgbestuur

Hodsdon, Lesley Anne Masipa, Moloko Clifford Wilson, Wendy Anne

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

Benjamin, Nazley Burness, Trent Joel Fakier, Ammaar Macheke, Clara-Marie Tadiwa Makangela, Songe Mququ, Khanyisa Pakama Ntoyanto, Asive Seedat, Fatimah Solomon, Yusrah

Bachelor of Nursing Baccalaureus in Verpleegkunde

Lategan, Andrea

Bachelor of Occupational Therapy Baccalaureus in Arbeidsterapie

Cannon, Tenille Zara Von Bulow, Alison

Bachelor of Science in Dietetics Baccalaureus in die Natuurwetenskappe in Dieetkunde

Sibanda, Thandeka Angela

Faculty of AgriSciences

28 March 2023 | 17:00

Fakulteit AgriWetenskappe

28 Maart 2023 | 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 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 Lied.
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 AgriSciences | Fakulteit AgriWetenskappe

The degree Doctor of Science in Agriculture (DScAgric), *honoris causa*, to Die graad Doktor in die Natuurwetenskappe in Landbou (DScAgric), *honoris causa*, aan

Uma Lele

her visionary leadership in the theory and practice of rural development globally and her pursuit to influence public policy through rigorous empirical research.

Dr Uma Lele is a leader in the field of economic development. Over five decades, this independent scholar and development economist has accumulated a wealth of experience in research, operations, policy analysis and evaluation at the World Bank, universities and international organisations.

She has consistently been at the forefront of new departures in the theory and best practice of rural development, continuously challenging the status quo and pushing the boundaries in her search for a more meaningful path to development. Her body of work is characterised by the constant endeavour to influence public policy through rigorous empirical research.

During her tenure at the World Bank, she led evaluations of the World Bank's Forest Strategy, its Consultative Group on International Agricultural Research, and its approach to global programmes. She has served on numerous advisory and expert panels for international organisations, including for the Sasakawa Global 2000 programme and the World Food Prize. In addition, she co-chaired a task force on global research on the environment-agriculture nexus, and established and directed the Global Development Initiative of the Carter Centre and Carnegie Corporation.

The first woman to be awarded a PhD in agricultural economics by Cornell University, Lele is the current president of the International Association of Agricultural Economists and is affiliated with the Institute of Economic Growth, Delhi. haar visionêre leierskap in die teorie en praktyk van landelike ontwikkeling wêreldwyd en haar werk om openbare beleid deur streng empiriese navorsing te beïnvloed.

Dr Uma Lele is 'n leier op die terrein van ekonomiese ontwikkeling. Hierdie onafhanklike vakkundige en ontwikkelingsekonoom het oor vyf dekades ryke ervaring in navorsing, bedryf, beleidsontleding en evaluering by die Wêreldbank, universiteite en internasionale organisasies opgedoen.

Sy is konstant aan die voorpunt van nuwe ontwikkelings in die teorie en beste praktyk van landelike ontwikkeling, en bevraagteken voortdurend die status quo en versit grense in haar soeke na 'n sinvoller pad na ontwikkeling. Haar werk word gekenmerk deur 'n konstante poging om openbare beleid deur streng empiriese navorsing te beïnvloed.

In haar tyd by die Wêreldbank was sy aan die stuur van evaluerings van die Wêreldbank se Woudstrategie, sy Raadplegende Groep oor Internasionale Landbounavorsing, en sy benadering tot wêreldwye programme. Sy het al in etlike advies- en deskundige panele vir internasionale organisasies gedien, waaronder vir die program Sasakawa Global 2000 en die Wêreldvoedselprys. Daarbenewens was Lele medevoorsitter van 'n taakgroep vir wêreldwye navorsing oor die verband tussen landbou en die omgewing en het sy die Globale Ontwikkelingsinisiatief van die Carter-sentrum en Carnegie-korporasie op die been gebring en bestuur.

Hierdie eerste vroulike ontvanger van 'n PhD in landbouekonomie van Cornell-universiteit is tans die voorsitter van die Internasionale Vereniging van Landbou-ekonome en is geaffilieer by die Instituut vir Ekonomiese Groei, Delhi.

DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

BOSUA, Henrika Jacomina (Entomology)

Desiccation physiology of Ceratitis species

This study shows that fruit fly species varying in their geographic distribution have different strategies for coping with drought stress. The most broadly distributed species has diverse mechanisms that enhance survival in adverse conditions compared to more specialised, narrow-range species. It is found that shifts in nutrient utilisation, such as mobilisation of body lipids, can help mitigate drought stress and that more broadly distributed species are more flexible under stress than range-restricted species. Finally, the study provides evidence for the genetic and metabolic pathways that contribute to the drought stress response in the most plastic, broadly distributed fly.

Supervisor: Prof JS Terblanche Co-supervisor: Prof CW Weldon (external)

BOTES, Wilhelmina Jacoba (Horticultural Science)

Role of cell membrane integrity and oxidation stress in development of external browning of white seedless table grapes

Berry skin browning is an important quality problem in white seedless table grapes. This study confirms that the cell membrane composition and antioxidant levels differ between 'Regal Seedless', which is highly susceptible to external browning, and 'Thompson Seedless', which is less susceptible, as well as between a high and low browning incidence season. Cell membrane and antioxidant variables determined in grape skins harvested at two maturities and stored at different storage temperatures could explain the postharvest variance in external browning between a high and low browning incidence season. The variables determined could successfully discriminate between green and brown berry skins of two harvest maturities.

Supervisor: Dr MM Jooste Co-supervisor: Dr EM Crouch

CHOMBA, Doreen (Plant Pathology)

Maize ear rot fungi and mycotoxins associated with maize grain produced in Zambia

Maize ear rots reduce grain yield and quality and represent food safety concerns due to grain contamination with the mycotoxins produced by causal fungi. Agricultural practices by small-scale farmers that contribute to the increased occurrence of maize ear rots include monoculture maize production, the late harvest of grain, and the planting of recycled seed or landraces. This study determines the distribution of maize ear rot pathogens and the levels of mycotoxin contamination in all agroecological zones in Zambia. It identifies genotypes with improved tolerance to Fusarium ear rot and fumonisins, which can be utilised to produce maize grain that is safe for consumption.

Supervisor: Dr LJ Rose *Co-supervisor:* Prof A Viljoen

CRONJE, Regina Barbara (Horticultural Science)

Physiological and molecular mechanisms underlying shoot manipulation strategies with the plant growth regulator ethephon for the improvement of flowering in litchi (*Litchi chinensis* Sonn.) cv. 'Mauritius'

Litchi is a highly profitable crop in South Africa, but erratic flowering due to continuous shoot growth during warm autumns and winters is affecting productivity. This study investigates whether modifying the conventional shoot control practice with ethephon can improve its efficacy when applied to mature instead of immature shoots. It is found that ethephonderived ethylene affects the expression of dormancy- and flowering-related genes. This induces bud dormancy, inhibits shoot growth, and delays bud break to a period with lower temperatures, thus leading to improved floral development and production. Therefore, judicious ethephon applications are an important flower manipulation tool for South African litchi growers.

Supervisor: Dr EW Hoffman Co-supervisors: Profs KI Theron, X Haung (external)

DUNN, Murray David (Nematology)

The in-vitro liquid mass culture of entomopathogenic nematodes in shake flasks and bioreactors

Insect-parasitic nematodes, or roundworms, are excellent candidates for use as biocontrol agents against economically important pest insects that affect our agricultural industries. The reduced use of chemicals will also protect our environment. One key to success is the mass production of local nematode species, using in-vitro liquid mass culture. The commercialisation of nematodes is now achievable thanks to the development of, and proof of concept for, mass production in shake flasks and bioreactors, which allows high nematode production and formulation for commercial application. Results from this study are a promising development for successful implementation in the biological control industry in South Africa.

Supervisor: Prof AP Malan Co-supervisor: Prof BD Belur (external)

EDWARDS, Kiah (Food Science)

Approaching authenticity issues in processed meat products by using hyperspectral imaging and chemometrics

Meat is a major source of protein in South Africa, with an approximate consumption of between 60 and 70 kg per capita per year. Since red meat is expensive, there is significant financial benefit in adulterating meat products. New South African regulations stipulate the composition of a 'beef patty' in order to promote transparency and accurate food labelling. This study demonstrates that near-infrared hyperspectral imaging shows potential to rapidly and accurately distinguish between processed beef burger patties consisting of various ingredients, species and adulterants. This could contribute to the authenticity and fair trade of processed meat products locally and internationally.

Supervisor: Dr PJ Williams Co-supervisors: Profs M Manley, LC Hoffman

HANSEN, Steffan Pieter (Entomology)

Phlyctinus callosus (Coleoptera: Curculionidae) species complex linked to biological control and ecology

Two closely related insect pest species of banded fruit weevils are of economic importance to the deciduous fruit and grapevine industries of South Africa. This study assesses how these two species differ in terms of taxonomy, morphology, biological control options and thermal physiology. Genetic barcoding is conducted on both species, the effect and use of entomopathogenic fungi and nematodes for the biological control of these pests is assessed, and the temperature tolerance limits of both weevil species are determined. While generally similar, occasional differences between the two weevil species do occur and are discussed in the study.

Supervisor: Prof P Addison Co-supervisors: Prof AP Malan, Dr J Haran (external)

JANSEN VAN RENSBURG, Rochelle (Agricultural Sciences)

Evaluating the effect of organic amendments, soil quality parameters and semi-selective chemicals on apple replant disease

Apple replant disease (ARD) leads to reduced yields when new, young apple trees are planted into soil previously cultivated with apple. ARD is caused by a complex of agents that builds up in soil during the lifespan of orchards. This study finds that the long-term application of organic amendments (mulch or mulch-plus-compost) in apple orchards results in inconsistent suppression of ARD in subsequent plantings. In addition, a semi-selective chemical mix could not be optimised for suppressing ARD utilising new nematicides. Finally, while soil quality indicators could be identified for assessing sustainable soil production practices in silt loam apple soils in the Koue Bokkeveld region, the indicators are not indicative of ARD suppressiveness.

Supervisor: Prof A McLeod *Co-supervisor:* Dr AG Hardie-Pieters

KAYAGA, Hellen Ninsiima (Genetics)

Characterisation of EMS mutagenic bread wheat (*Triticum aestivum* L.) lines to investigate their water deficit stress tolerance and adaptability

Wheat is a staple food to 2,5 billion people, but its production is being threatened by droughts. This creates a need for drought-tolerant wheat lines. This study characterises the agromorphological and biochemical traits of newly developed ethyl methanesulfonate bread wheat lines, along with the baking quality of their flour. It is found that ethyl methanesulfonate mutants outperform their wild-type parents under water-deficit stress conditions. It is concluded that ethyl methanesulfonate treatment increases genetic diversity of the new lines through induction of point mutations, resulting in lines with desirable agrotypes, good baking quality characteristics, and high tolerance to water-deficit stress.

Supervisor: Prof A-M Botha-Oberholster *Co-supervisor:* Dr C van der Vyver

KUHLMAN, Brock Alan (Wine Biotechnology)

Determining the astringency-perception modulation of polysaccharides in a red-wine context

This study investigates the effects of grape ripening levels and pectolytic enzymes on the astringency, polysaccharide and phenolic content of Cabernet Sauvignon wines. To this end, it uses ELISA immunodetection of specific epitopes, gel permeation chromatography, HPLC phenolic analyses and NMR ligand-protein analyses. Enzyme usage has a greater effect on phenolic extraction than grape ripening levels, while also leading to changes in grape-derived polysaccharide content in the final wine. NMR results further suggest that polysaccharides mainly compete directly with tannin for salivary protein binding sites, thereby affecting red-wine astringency.

Supervisor: Prof WJ du Toit.

Co-supervisors: Drs JP Moore, J-L Aleixandrei-Tudo (external)

MAMABOLO, Emogine (Entomology)

Characterisation of soil macrofauna and mesofauna diversity and soil health in agroecosystems

Soil fauna, particularly arthropods, are linked to sustainable agriculture, as good soils promote crop growth and yields. This study finds that farms under conservation or integrated farming systems were more akin to natural grasslands in their soil faunal diversity, than conventional farms. Furthermore, where there is minimal soil disturbance or where complex vegetation is present, most soil functional groups can establish, leading to more efficient litter decomposition. Multivariate analyses have resulted in the development of a robust soil health assessment tool. Low-intensity agriculture promotes soil fauna, and therefore also the sustainable management of soils in agriculture, and has the potential to increase the overall soil health, biodiversity and function.

Supervisor: Prof JS Pryke Co-supervisor: Dr R Gaigher

MATTHEWS, Megan Ceris (Plant Pathology)

The global spread and detection of *Fusarium oxysporum* f. sp. *cubense* tropical race 4

Fusarium wilt, a plant disease caused by the soilborne fungus Fusarium oxysporum f. sp. cubense TR4, is devastating banana production worldwide. When introduced into a banana field, the pathogen is impossible to eradicate. To detect the fungus in banana fields, this study develops protocols to locate the pathogen in soil by using quantitative PCR, and in planting material by using a CRISPR-Cas-based point-of-care detection system. The global spread, diversity and population structure of the pathogen are elucidated through a whole-genome comparative approach. The outcomes of this study will contribute to the prevention and management of the Fusarium wilt fungus globally.

Supervisor: Dr D Mostert Co-supervisor: Prof A Viljoen

MLOTHA, Vincent (Aquaculture)

Characterisation and meat quality of tilapia (*Oreochromis* species) on the Malawian market

Tilapia (Oreochromis species) contributes to global fish supply, food security and nutrition. This study reviews tilapia consumption trends in Southern Africa and assesses consumer preference and meat quality of wild versus farmed tilapia on the Malawian market. Tilapia supply trends show that wild-sourced tilapia has declined, while farmed and imported tilapia is used to help supply Southern Africa. Malawian consumers prefer wild over farmed tilapia, despite descriptive sensory analysis showing comparable results on the sensory profile of the fish. Farmed tilapia is higher in fatty acids, and toxic heavy-metal concentrations are below minimum recommended thresholds, thus providing excellent potential to supply fish to the market.

Supervisor: Prof K Salie Co-supervisors: Drs J Marais, A Molotsi

MNCUBE, Temnotfo Lobesutfu (Agronomy)

Weed species diversity and impact in smallholder croplivestock farming landscapes

The application of cattle manure and/or inorganic fertilisers in smallholder maize-cropping systems influences weed species assemblages. Study results demonstrate that the application of manure only and manure plus inorganic fertiliser results in higher species richness and diversity compared to inorganic fertiliser alone. Weed species composition between the fertiliser regimes is explained by nutrient availability and climatic conditions in two agroecological zones of Eswatini. The drivers of vegetation distribution patterns are found to be climatic factors, soil physicochemical properties and socioecological factors, which enable the prediction of both high and low-potential species richness between the maizecropping fields and surrounding natural grasslands.

Supervisor: Dr EE Phiri

Co-supervisors: Drs PJ Pieterse, PN Mothapo, JT Rugare (*external*), Prof. HR Mloza-Banda (*external*)

MPINA, Mohammed Hussein (Plant Pathology)

Genetic analysis of resistance to *Fusarium oxysporum* f. sp. *cubense* (Foc) race 1 in banana (*Musa* spp.)

Banana Fusarium wilt is a serious plant disease caused by the fungus *Fusarium oxysporum* f. sp. *cubense* (Foc). The disease can only be managed by replacing susceptible bananas with resistant ones. Resistance breeding of bananas, however, is a slow process that requires reliable molecular markers to speed up the activity. In this study, inheritance of resistance to the pathogen is investigated and genetic linkage maps are constructed to identify genomic regions associated with resistance. The study finds that several genes are responsible for resistance to the pathogen, and putative molecular markers for banana breeding are developed. These markers now have to be validated on other banana genotypes.

Supervisor: Prof A Viljoen

Co-supervisors: Drs B Uwimana (*external*), A Brown (*external*), Prof R Swennen (*external*)

MUCHENA, Lindsay (Horticultural Science)

Sensitivity of apple rootstocks to water stress

This study quantifies the seasonal transpiration and physiological traits of Rosy Glow apple trees on five rootstocks of contrasting vigour classes, combined with responses to summer water deficits. It is found that trees on the dwarfing rootstock (M.9-RN.29) use the least water, while those on the semi-vigorous rootstock (M.793) use the most. Trees on M.9-RN.29, G.222 and MM.109/M.9 (more dwarfing) have higher hydraulic resistance than trees on M.793 and M.7 (more vigorous). Rootstocks MM.109/M.9 and M.9-RN.29 give the highest crop water productivity. Water deficit does not reduce transpiration in the orchard, with no evidence that trees on dwarfing rootstocks are more susceptible to water stress.

Supervisor: Prof SJE Midgley Co-supervisors: Drs S Dzikiti, E Lotze

Determination of variance components for skin traits of ostriches in South Africa

This study finds that sufficient genetic variation exists in all ostrich leather traits of economic importance to allow for the genetic improvement of leather quality. The dominant driver of skin value is grading, which is largely based on visual damage and defects. Therefore, skin damage and defects (i.e. hair follicles) need to be minimised to maximise leather income. The study also shows that the implementation of crossbreeding can have economic benefits with regard to most leather traits. These results can be used to develop a structured breeding plan to maximise profitability and contribute to the sustainability of the ostrich industry.

Supervisor: Dr A Engelbrecht (external)

Co-supervisors: Profs SWP Cloete, K Dzama, Dr O Tada (external)

NGWENYA, Duduzile Keron (Conservation Ecology)

Simulating natural processes to scale up ecological restoration in Lowland Sand Fynbos

By coupling alien-clearing interventions with restoration of native vegetation, this study seeks ways to improve and scale up current ecological restoration efforts in the Greater Cape Floristic Region. Alternative ways are sought to encourage native species regeneration, while discouraging the invading species from resurging. By avoiding fire, acacia are deprived of fire-related germination cues, while the germination of selected pre-treated native species is promoted. Delaying fire allows the acacia seed bank to reduce in size, translating to reduced seedling densities that allow pre-treated native seedlings to recruit. The technical and financial effectiveness of various treatments is compared, yielding context-specific outcomes.

Supervisor: Prof KJ Esler Co-supervisors: Profs PM Holmes (external), S Geerts (external)

NYELEKA, Sipokazi (Animal Science)

The potential of Nutrifen® in broiler chicken production

The broiler chicken industry worldwide faces the challenge of finding alternatives that can reduce the use of antibiotic growth promoters in broiler feeds. Consequently, this study investigates the potential of Nutrifen® as a feed additive for stressed and non-stressed broilers. It finds that Nutrifen® supplementation improves the performance of non-stressed broilers, but not the performance of those that are stressed. The study concludes that broiler diets can be supplemented with Nutrifen® without causing growth defects or intestinal damage, especially for broilers kept at optimum environmental conditions, without stress.

Supervisor: Dr E Pieterse

PRETORIUS, Mathys Cornelius (Plant Pathology)

Identifying factors associated with citrus slow decline in South Africa

Citrus slow decline occurs in citrus orchards older than nine years. Infected trees exhibit symptoms of retarded growth and, eventually, reduced yields. This study uses multivariate analyses to investigate more than 40 soil, leaf, root and trunkassociated variables in six citrus orchards in Mpumalanga. Diseased trees are generally characterised by higher leaf sodium levels and higher levels of several bark elements. Soil nematode profiling analyses are incapable of differentiating healthy from diseased trees. The analysis of orchards with colour infrared images along with machine learning algorithms shows the best potential for identifying three tree categories varying in disease severity.

Supervisor: Prof A Mcleod

Co-supervisors: Profs M Daneel (external), N Labuschagné (external)

RONQUEST-ROSS, Lisa-Claire (Food Science)

An analysis of the South African food and beverage industry efforts since 1994 in responding to major shifts in food consumption patterns and mapping of the potential future applications of science and technology advances, to provide safe, affordable and nutritious foods

South Africa's food system is failing. This is evidenced by increased hunger, rising food costs, lack of dietary diversity, child stunting, foodborne illnesses, excessive food waste and an obesity epidemic coupled with malnutrition. This study establishes the broad consumption shifts in packaged foods since 1994 to explore the application of food science and technology advances and investments made by industry to meet these shifts, to assess the extent to which nutrition practices are integrated into core business practices, and to identify underutilised or emerging food sources that could provide safe, affordable and nutritious foods relevant for South Africans.

Supervisor: Prof GO Sigge

SMITH, Jacobus Francois Naudé (Soil Science)

Determination of optimal soil conditions and foliar nutrient levels in commercial rooibos tea production

Despite the importance of the rooibos tea industry in South Africa, soil and foliar nutrient sufficiency ranges for commercial production are unknown. This study addresses this knowledge gap. It gathers the soil and plant data of rooibos producers throughout the Western and Northern Cape production region and analyses the data using quadratic boundary line approach (BLA) to derive optimal nutrient norms. Lime and fertiliser field trials are also conducted to help confirm the BLA-derived norms. The soil and foliar nutrient sufficiency ranges derived in this study are of significant importance for sustainable rooibos tea production in South Africa.

Supervisor: Dr AG Hardie-Pieters *Co-supervisor:* Dr JE Hoffman

SNYMAN, Carla (Wine Biotechnology)

Unravelling the impact of non-Saccharomyces-derived mannoproteins on wine properties

Mannoproteins are essential components of yeast cell walls, although their diversity and functional roles are not well characterised. Their biochemical properties display industrial relevance, including the improvement of wine quality. In this study, the extraction and purification of mannoproteins from different yeast species is optimised and their diversity explored. Structural differences in monosaccharide content and molecular weight are found, while the different mannoproteins have variable impacts on wine browning and colour intensity. This study contributes to current knowledge regarding cell wall diversity between yeast species, and their potential application to wine.

Supervisor: Prof BT Divol Co-supervisor: Prof M Marangon (external)

Faculty of AgriSciences | Fakulteit AgriWetenskappe

OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

Master of Science Magister in die Natuurwetenskappe

Africa, Amber Justine (Wine Biotechnology) (cum laude) Blakeway, Nicole Jessie (Wine Biotechnology) (cum laude) Booysen, Vernon (Sustainable Agriculture) Bougard, Kayleigh (Agricultural Sciences) Carter, Kayleigh (Plant Pathology) (cum laude) Crause, Jenny Jessica (Plant Pathology) Daiber, Rocco (Sustainable Agriculture) Jordaan, Kerry Pearl (Wine Biotechnology) Kemp, Bernitia (Sustainable Agriculture) Kleyn, Ellene (Sustainable Agriculture) (cum laude) Lombard, Paul Hendrik (Plant Pathology) Majaha, Jabulani (Sustainable Agriculture) Matthyse, Kayley (Wine Biotechnology) Moyo, Tumelo (Wine Biotechnology) Papageorgiou, Alexia (Wine Biotechnology) (cum laude) Peddie, Rudé Jo-Anne (Sustainable Agriculture) Petzer, Heleen (Sustainable Agriculture) Qwebani, Sinazo (Wine Biotechnology) Tuaandi, Dolly (Sustainable Agriculture) Viljoen, Nadia (Entomology)

Master of Science in Agriculture Magister in die Natuurwetenskappe in Landbou

Baloyi, Nsovo Happiness (Agronomy) Basson, Nicolaas (Entomology) Bester, Cecile (Genetics) (cum laude) De Beer, Janika (Animal Science) Dippenaar, Charlize (Horticultural Science) (cum laude) Dlamini, Welile Mlando (Agronomy) Erasmus, Talitha (Entomology) Fernhout, Lize-Mari (Animal Science) (cum laude) Gouws, Michelle (Animal Science) (cum laude) Horne, Alfred William (Horticultural Science) Jacobs, Abdul Ghaseeb (Entomology) Jordaan, Stephen Christian (Horticultural Science) Makalisa, Asiphe (Oenology) Mdluli, Bandile Banele (Agricultural Economics) Mfule, Zintle (Agricultural Economics) Mkhabela, Lonhlanhla Samantha (Agricultural Economics) Niemann, Michelle (Oenology) (cum laude) North, Jade Joan (Horticultural Science) (cum laude) Nowers, Petrus Johannes (Animal Science) Old. Jessica Anne (Animal Science) Pellissier, Jean-Pierre (Agronomy) Pohl, Monje Alet (Viticulture) Pretorius, Hendrik Stephanus (Agricultural Economics) (cum laude) Pretorius, Johannes Jacob (Soil Science) Richard, Martin-John (Plant Pathology) Sakala, Brian Josat (Soil Science) Smit, Lomé (Agronomy) Swart, Reinhard (Viticulture) (cum laude)

Van der Merwe, Jana Mart (Agricultural Economics) (cum laude) Van Greunen, Benjamin Biekersteth (Animal Science) Van Niekerk, Liane (Animal Science)

Van Niekerk, Llane (Animal Science) Visser, John-Murray (Soil Science) White, Michaela-Anne (Genetics)

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

Favis, Jesse (Wood Product Science) Hubbard, Alan John (Forest Science) *(cum laude)* Jacobs, Mj (Wood Product Science) Neethling, Alwyn (Wood Product Science) Raboho, Ndamulelo (Forest Science) Taziwa, Gerald Hazvineyi (Forest Science) Zandberg, Jacobus Hugo Visser (Forest Science)

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

Andrews, Jade (Conservation Ecology) Mandlana, Qhamani (Conservation Ecology) Smith, Amber Terry (Conservation Ecology) *(cum laude)* Steyl, An-Mari (Conservation Ecology)

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

Agutu, Olivia Achieng' (Food and Nutrition Security) Hobson, Suzaan (Food and Nutrition Security) Linde, Leandri (Food and Nutrition Security) *(cum laude)* Machoko, Dencia (Food and Nutrition Security) Ngcamu, Sibongile Princess (Food and Nutrition Security) Ruiters, Rushaan (Food and Nutrition Security) Sichivula, Yaled Chenda (Food and Nutrition Security) Stuart, Ross Dean (Food and Nutrition Security)

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

Becker, Jana (*cum laude*) Becker, Liné Engelbrecht, Marzanne Mannix, Kim Teresa (*cum laude*)

Master of Agriculture Magister in Landbou

Naudé, Wilhelm Heinrich (Agricultural Economics) Shakankale, Kabanga Tabo (Agricultural Economics) *(cum laude)* Van der Linde, Karen (Agricultural Economics)

Bachelor of Science Honours Honneurs-Baccalaureus in die Natuurwetenskappe

September, Andrea Jordan (Applied Plant Physiology)

Bachelor of Agricultural Honours Honneurs-Baccalaureus in die Landbou

Rossouw, Jean-Jacques (Agricultural Economics)

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

Kamfer, Winston Tshego, Phahledi Doctor

Postgraduate Diploma in Agronomy Nagraadse Diploma in Agronomie

Nyoka, Sibulele Babalo

Bachelor of Science in Agriculture Baccalaureus in die Natuurwetenskappe in Landbou

Baloyi, Ntsako Clinton (Agricultural Economics) Chapple, Terence Max (Viticulture and Oenology) De Jager, Johan Andreas (Viticulture and Oenology) Esterhuyzen, Zaan (Agricultural Economics) Fernandes, Sabrina Marini (Plant and Soil Science) Guest, Matthew Daniel (Agricultural Economics) (cum laude) Hartnick, Shelaine Shelby (Plant and Soil Science) Havenga, Daniel Johannes (Plant and Soil Science) Hoal, Garner William (Plant and Soil Science) Kempen, Courtney Leigh (Plant and Soil Science) Kluyts, Conrad (Plant and Soil Science) Kok, Jacobus Johannes Uys (Viticulture and Oenology) Letlape, Gomolemo Katlego (Viticulture and Oenology) Loader, Cuan Scott (Animal Science) Matlala, Patience Kamogelo (Plant and Soil Science) Mccrorie, Ethan Anton (Plant and Soil Science) Mundell, Claire (Plant and Soil Science) Riet, Robin Laiken (Plant and Soil Science) Sanga, Savojimwi Josephath (Plant and Soil Science) Schmeisser, Teo Stefan (Agricultural Economics) Stander, Franco Christiaan (Plant and Soil Science) Van der Hoven, Madeleine Anne (Plant and Soil Science) Van Zyl, Maryke Helene (Viticulture and Oenology) Visser, Jessica Danielle (Viticulture and Oenology) Xogwa, Sihle (Viticulture and Oenology)

Bachelor of Science in Forestry in Forestry and Wood Science

Baccalaureus in die Natuurwetenskappe in Bosbou in Bosbou-en Houtwetenskappe

Gerntholtz, Dirk Ngqebane, Ayanda Park, Jina Pietersen, Liam Reese

Bachelor of Science in Conservation Ecology Baccalaureus in die Natuurwetenskappe in Bewaringsekologie

Burger, Carla Danielle Nkuna, Nkosinathi Pascoe, Deborah Elisabeth Pellow-Jarman, Jonathan Smit, Annelie

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

Nortje, Cassandra

Bachelor of Agriculture Baccalaureus in Landbou

Banks, Matthew Benjamin David Becker, Okkie Wiehahn Beyers, Joshua Dreyer Boer, Frederick Alfred Carol Botoulas. Constantine Nicholas Brink, Cheryli Burger, Christiaan Jacobus Bursey, Thomas Stephen Byliefeldt, Marco Cupido, Tracy De Villiers, David Jacobus Du Toit, Phillipus Fourie, Hermanus Cornelius Marthinus Gillion, Jarryd Wallace Raynold Hoffmann, Jordan Fechter Hofmeyr, Dirk Kidger, Jennifer Jane Kinnear, Tyler-Jade Kloppers, Kirstein Manganyi, Rivoningo Masoleng, Mahlape Karabelo Oosthuizen, Barry Adriaan Rix, Heinke Donald Sauerman, Julandri Smit, Johannes Petrus Tennick, Christopher Johnson Uys, Kolbé Hofmeyr Van Heerden, Marné Viljoen, Christof

Faculty of Economic and Management Sciences (Group 1)

29 March 2023 | 09:00

Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 1)

29 Maart 2023 | 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 candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Vice-Chancellor.
	6.	Introduction of the candidate for the Chancellor's Award and presentation of the award 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 Lied.
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.	Voorstelling van kandidaat vir die Kanselierstoekenning en oorhandiging van die toekenning deur die Visekanselier.
	7.	Sluiting deur die Visekanselier.
Staan asseblief	8.	Akademiese prosessie verlaat die verhoog.

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

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

DOCTOR IN PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

KHUMALO, Gculisile (Logistics Management)

An investigation of non-conformance factors of in-transit citrus container shipments to cold-protocol markets

This study investigates factors that contribute to the nonconformance of in-transit citrus container shipments to coldprotocol markets, particularly landside factors. The aim is to help rectify the logistical issues and inefficiencies experienced in the citrus cold chain. The known effect of out-of-protocol events in the cold-sterilisation process leads to challenges such as increased handling costs and fruit quality issues for exporters. The best-practice guideline formulated in the study is intended to guide stakeholders in the citrus industry who seek to improve citrus export shipments to cold-protocol markets.

Supervisor: Prof LL Goedhals-Gerber Co-supervisors: Prof PJR Cronje, Dr TM Berry

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

Alderslade, James William (Operations Research) Beelders, Jaen Stefan (Industrial Psychology) Bezuidenhout, Jean-Pierre (Statistics) Bhatti, Aeysha (Statistics) Bosman, Lisa-Marie (Financial Risk Management) Bupilo, Mercy Mercy-Muyeze (Industrial Psychology) Burgstahler, Micah (Logistics Management) Cupido, Amber (Business Management) Dagnin, Monique (Quantitative Management) (cum laude) Davhana, Tangedzani Yvonne (Industrial Psychology) Dougall, Caitlin (Industrial Psychology) Dreyer, Mia (Logistics Management) (cum laude) Du Preez, Tiana (Mathematical Statistics) Enoos, Bashier (Logistics Management) Frielingsdorf, Kara Terien (Industrial Psychology) Hallé, Rebecca Mae (Industrial Psychology) Heinrich, Bowen (Operations Research) Jonker, Nichola (Industrial Psychology) Klue, Chevonne (Industrial Psychology) Manganyi, Tiyisela Arthur (Industrial Psychology) Molenaar, Rebecca Rae (Industrial Psychology) Nel, Margot (Logistics Management) (cum laude) Njokwe, Aphiwe Sonke (Industrial Psychology) Paul, Rene Lauren (Transport Economics) Pretorius, Annika (Industrial Psychology) (cum laude) Purchase, Michael Andrew (Financial Risk Management) (cum laude)

Sibiya, Goodness Nokubonga (Industrial Psychology) Smith, Sophia (Industrial Psychology) *(cum laude)* Strauss, Nicolaas Johannes (Financial Risk Management) Vergottini, Danielle (Industrial Psychology) *(cum laude)* Whitfield, Liam Duncan (Industrial Psychology) Zirzow, Maike (Industrial Psychology)

Master of Philosophy Magister in die Wysbegeerte

Adebanjo, Tolulope Omolola (HIV/AIDS Management) Ayebola, Pat Ade (HIV/AIDS management) *(cum laude)* Dlamini, Bhekizenzo Thulani (HIV/AIDS Management) Ekitahuka, Kongeyami Samuel (HIV/AIDS Management) Mahapang, Maleshoane Edlett (HIV/AIDS Management) Maoto, Millicent (HIV/AIDS Management) Mkandawire, Winnie Clara (HIV/AIDS Management) Mkhize, Rebecca (HIV/AIDS Management) Ndaba, Nomsa Sheron (HIV/AIDS Management) Smith, Amber Lauren (HIV/AIDS Management) Tsoeu, Mamorapeli-Limpho (HIV/AIDS Management) Zwane, Thamsanqa Paulos (HIV/AIDS Management)

Bachelor of Commerce Honours Honneurs-Baccalaureus in die Handelswetenskappe

De Bod, Anja Mari (Logistics Management) (cum laude)

Kamocha, Langelihle Lesley (Statistics) Magada, Muofhe (Financial Risk Management) Marais, Nina (Industrial Psychology) Oelofse, Nicolene (Industrial Psychology) Pudumo, Katleho (Logistics Management) Ragoleka, Boitumelo Vuyo (Financial Risk Management) Thackrah, Marcus James (Logistics Management) Van der Riet, Troon Jacob (Logistics Management)

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

Mzamo, Khuselwa

Postgraduate Diploma in Marketing Nagraadse Diploma in Bemarking

Simelane, Celenkosini Hopewell

Postgraduate Diploma in Strategic Human Resource Management Nagraadse Diploma in Strategiese Menslikehulpbronbestuur

Tshisa Ndamase, Thembakazi

Postgraduate Diploma in HIV/AIDS Management Nagraadse Diploma in MIV/VIGS-bestuur

Asani. Mutari Basoni, Unathi Behuhuma, Ngundu Osee Bere, Komborero Boyce, Athenkosi Sivuyile Khabalengwe Cekiso, Zanele Cele. Sakhisile Chambal, Chambalson Jorge (cum laude) Chauke, Busisiwe Nobelungu Olive Chauke, Katekani Daniels, Reeva Leandra Dlamini, Siyabonga Lovengtone Dlamini, Thomas Dithoyi Dlunge, Yamkela Dolomba, Noziphiwo Duma, Sihle Fortune Egumbo, Dinah Namutenya Tunelago Enongene, Mekolle Julius Fatman, Vuyokazi Benedittor Gcaba, Smangele Slindile Hlazo, Avukile Isaacs, Gardeo Edward Isaacs, Jermaine Stewart Jonas, Anita Julius, Hilton Paul Ketani, Zimkhitha Gloria Khali, Mareitumetse Khalikane, Makhalikane Iddlet

Khumalo, Sthembiso Promise Kobokana, Viwe Kolwane, Kabelo Joseph Lees. Cresenda Liau, Makabelo (cum laude) Links, Sophia Maria Ludidi, Ntobeko Lukau, Blaise Dilumbu (cum laude) Mabilisa, Sikhumbuzo Cecil Mabizela, Cedric Sithembiso Madlavuza, Vuyelwa Prudence Magawu, Babalwa Magingxa, Pumeza Makgato, Mmaisaka Margaret Makhado, Dakalo Duncan Makinta, Lerato Maliwa, Bongiwe Manetti, Benjamin Sebulon Klaas (cum laude) Manghena, Busisiwe Mumsey Marawu, Ncumisa Masaile Tebeli, Matebeli Mate, Noluthando Mathonsi, Colisile Nonduduzo Matlala, Thabang Diphala Lemson Mbaleni, Mambimbi Suzan Mbongwa, Samukelisiwe Sthembile Mdanyana, Ayanda Mgudwana, Zizo Mkhamisa, Sihle Mkhize, Patience Bongiwe (cum laude) Mmbodi, Morongwa Laureen Mmola, Siphiwe Magdeline Kobi Mndebele, Lihle Promise Mnginana, Nasiphi Mogane, Keneilwe Mohlakwane, Prudance (cum laude) Molebaloa, Amogelang Morakaladi, Noko Lucky Moremi, Kgadi Mosesane, Sello Roudah Motiki, Retsepile Mphunyetsane, Khahliso Alice Mrwetjana, Anelisiwe Mtintsilana, Sivenathi Cecilia Mtungwa, Sizwe Sonboy Mudila, Aimerance Miandabu Musopole, Robert Mwamba, Daniel Mzimela, Nonkululeko Zinhle Nanto, Luchulumanco Lihle Ndamase, Nasiphi Siyamthanda Ndou, Khwathelani Gerson Nemavhidi, Phindulo Nevhulaudzi, Lufuno Ngati, Tsholofelo

Ngcape, Ongezwa Ngcobo, Kwandokuhle Lungani Nhlapo, Mmapebe Ningiza, Sive Njeza, Nomzamo Nkosi, Nolwazi Nontombi Maria Nkosi, Nontobeko Eunice Nodada, Zingisa Nodwengu, Nombulelo Nontangana, Avuyile Ngayi, Nothemba Ntoi, Thabiso Ntombela, Mdumiseni Ntsasa Moabi, Makhala (cum laude) Nukeri, Kingsley Ramokhele, Boiketlo Samuel Ramokoatsi. Ntsiane Vincent Ramosedi. Rethabile Isaac Ranyana, Phathiswa Rikhotso, Permission Sangaya, Naomi Novahiwa Sdepa, Phumla Seisa, Katleho Sello, Moroa Cecilia Senti, Sibusiso Sepeka, Mamorena Setlhoke, Precious Refilwe Gasehele Shange, Anita Lungile Sissy Shibambo, Letlhogonolo Matlhodi Shilunga, Rosalia Ndinelago Sikhakhane, Scebi Sphamandla Sineke, Nolwandle Sithole, Luka Smit, Eduan Soboil, Nichole Carey Sokutu, Sisanda Swart, Sean Thulo, Reitumetse Tshibanda, Nyunyi Tshuma, Oltah Vika, Ayabonga (cum laude) Weber, Tanzin Xaba, Thabiso Percival

Bachelor of Commerce Baccalaureus in die Handelswetenskappe

Agubata, Godswill Uzochukwu Albertyn, Christopher Jozua Allan-Reynolds, Tegan May Anderson, Bruce Harry Antullay, Anisah Badham, Chloe Bain, Tian Stewart Banyu, Fatima Mpehashu Barnard, Kara Barr, Preston Wayne Bassie, Wanda Basson, Nicolaas Johannes Baudewig, Lara (cum laude) Beck, Justin Beineke, Izobelle Petra Ingeborg Alexandra Morado Bence, JC Bloch, Benjamin Lee Botma, Jacques Breetzke, Benjamin Luke Harrison Breunissen, Hein Rudolph Brotherton, Julia Jane Budhram, Selina Burger, Elke Burton, Thomas Candiotes, Jaimie Capes, Chelsea Elizabeth Carelse, Kayden Keano Carstens, Ruhann Christopher Cavalieri, Daniel Giovanni Chimpeni, Benjamin Kumtola Christodoulou, Nicholas Clowes, Luke Simon (cum laude) Cohen, Rory Joshua Cooper, Jenna Leigh Copeland, Dylan Mckay Cordy, Matthew Charles Crous, Sonet D'Aquiar. Peter Leslie Dakin, Lain Denard Darries, Cherner Davidyan, Daniela Andrag De Freitas, Joshua De Jongh, Adriaan De Villiers, Irmari Dhliwayo, Samantha Rebecca Dlamini, Nqobile Lincoline Dreyer, Jeanne Dunn, Alastair Raymond Dykman, Jeanne Ellis, Kieran Elton, Timothy Hallam Emslie, Kate Anne Engelbrecht, Mianke Engelke, Kara Nadia Ferguson, Cameron Alexander Firth, Christine Marie Flagg, Georette Rosemary Fleurs, Nevaldo Jonathan Foster, Michael Fourie, Dedré Fowlds, Laura Natalie Friis-Smith, Jemma Katherine Geddie. Samuel Lex Gerber, Charl Goble, Timothy Ian

Goncalves, Paulo Alexandre Cristovam Gordon, Joshua Eli Goredema, Mukudzeyi Martin Gossow, Luke Govender. Ushen Gutsche. Alexa Ruth Hamdulay, Khadeeja Hamman, Lisa Hart, Shane Hartley, Benjamin Jon (cum laude) Haw, James Laurence (cum laude) Hawkesworth, Sabrina Mae Heald, Thomas Helberg, Ruben Morne Hendricks, Faghrie Hewitt. Emma Hilda Hill, Georgia Alexandra Hill, Rebecca Jane Hutton, James Richard Innes, Troy Michael Jacobs, Gaby Dawn Jacobs, Kyle Janse van Rensburg, Alec Nicolaas Johnson, Jamie Lee Jooste, René Benita Jordan, Luke William Joseph, Marco Mark Junius, Shane Waldo Kalil. Joshua Paul Khan. Abdul Aziz Kilbourn, Jonathan Patrick Herman King, Ricky (cum laude) Knoetze, Carla Jani Knoop, Marco Koehn, Qiana Leigh Korff, Britney Sarah Kruger, Marizanne Kuit, Calvin Laubscher, Bernice Le Cordeur, Kendall Cameron Le Roux, Redge Lehmann, Carl-Phillip Lenferna De La Motte, Luc Lombard, Riccardo Loots, Francis Kendle Lowe, Evann Edward Harvey Ludski, Natalia Mackay, Kaylin Tanique Manuel, Aisha Marais, Malandi Marais, Nadine Masendu, Farai Matela, Malebusetsa Jessica Mathie, Drew Angus May, Leo

McCree, Matthew Patrick Mdluli, Nombuyiselo Londiwe Merkel, Greg Aaron Michel. Brett Milton, Bradley Keith Mitropoulos, Polixeni Basil Moller, Christiaan Möller, Pieter Daniel Morar, Jasveer Mostert, Elke Mshumpela, Xhantilomzi Sylvester Mutibura, Tadiwanashe Naidoo, Ammaarah Munisha Nakidien. Muiaheed Nash, Paige Ndengu, Tasimba Neethling, Autumn Raine Negrine, Danielle Nel, Dylan Reece Nel, Elizabeth Ngcwayi, Aviwe Nieuwenhuys, Jason Nxumalo, Lwandiso Eyethu Oliver, Zoë Reece Onnebrink, Laura Marie Erika Rotraud Oppermann, Lauren Kate Parker, Jessica Megan Petersen, Monwabisi Nhlanhla Vusumuzi Piatrova Cloete, Marvia Pienaar, Ruwan Ernst Potgieter, Zandri Rabe. Hein Raine, William Cron Ramonotsi. Keiso Boitumelo Buntu Rey, Jean-Marc Michel Rheeder, Estheranne Richardson, Maxine Robb, Julia Ruth Rogan, Juliet Louise Rose, Tyla Courtney Rossouw, Bianke Rousseau, Henri Anton Beaumont Roux, Callen Keith Roux, Jeanette Saad, Paul Anthony Saker, Clayton Nolan Schlebusch, Lucy Kyra Widdrington Schumann, Simon Werner Schwulst, Matthew David Sehloho, Katleho Tau Silberbauer, Matthew Ryan Slabbert, Joshua Sofianos, Shelby Paige Solomons, Christan Brindy Solomons, Grant Lee

Solomons, Mckyle Dillon Steenkamp, Rudi Steyn, Jarred Gabriel Swanepoel, Kelvin Alexander Swanepoel, Pieter Cornel Tainton, Megan Taylor, Brandon Teichmann, Dominique Jaide Temperley, Jonathan Mark Thomas, Declan Jordan Tirivanhu, Tinashe Tinei Van den Berg, Jacobus Petrus Van den Heever, Michael Andrew Van der Merwe, Martin Van Galen, Matt Rene Van Herzeele, Matthew Tom Charles Van Niekerk, Jana Van Rensburg, Rémy Willem Van Rooyen, Marné Van Schalkwyk, Jacques Van Wyk, Sean Andrew (cum laude) Vegter, Andre Derek Vercuiel, Juli Vito, Kuzivakwashe Tina Walters, Anri Webel, Tristan Weideman, John-Pierre (cum laude) Wevell, Margaret Adeline White, Thomas Edward Wildschut, Clint Greg Willemse, Josias Johannes Williams, Devon Reece Williams, Sebastian Andrew Writes, Wiehann Wyatt, Ashleigh Megan Wyngaard, Tatum Tabitha Yantolo, Ayabulela

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

Berkenbosch, Ryan Buxton, Tyshae Beth *(cum laude)* Chambers, Jesse Lee De Vos, Jacques Quass Den Hartog, Emma Joan Dewrance, Grace *(cum laude)* Du Plessis, Rikard Duggan, Paula Geyer, Charisa Amorie Grobbelaar, Tara *(cum laude)* Grubb, Thomas Charles Crichton Hermann, Reevin Kenny *(cum laude)* Holder, Colenso Paul Kiln, James Mitchell Lawrie, Julia Meggan Maritz, Mia Nel, Erin Louise (*cum laude*) Nongwe, Someleze Olivier, Gabriella (*cum laude*) Palvie, Ruan Eric (*cum laude*) Ranwell, Kara (*cum laude*) Steward, Chloe Payton Tocknell, Sarah Ann (*cum laude*) Van Schalkwyk, Megan (*cum laude*) Veldtman, Nina Marie

CHANCELLOR'S AWARD | KANSELIERSTOEKENNING

Responsibility Centre: Strategy, Global and Corporate Affairs Verantwoordelikheidsentrum: Strategie, Globale en Korporatiewe Sake

Robert Kotzé

Mr Robert Kotzé started his professional relationship with Stellenbosch University (SU) in 1984. In 1996, he became the first Head of SU's International Office, and in 2003 he was promoted to Director of this office. While in this position he laid the foundation for SU's now strong partnerships with particularly the Catholic University Leuven (KU Leuven) in Belgium, as well as Leipzig University in Germany, which has become a model for the development of global partnerships and networks. Over the past four years, with the development of SU's first Institutional Internationalisation Strategy and the establishment of the Institutional Advisory Committee on Internationalisation, Mr Kotzé played a key role in SU's strategic positioning within the global higher education sector, and particularly the expansion of SU's footprint on the African continent. Mnr Robert Kotzé het sy professionele verhouding met die Universiteit Stellenbosch (US) in 1984 begin. In 1996 het hy die eerste Hoof van die US se Internasionale Kantoor geword, en in 2003 is hy tot Direkteur van hierdie kantoor bevorder. Terwyl hy in hierdie posisie was, het hy die grondslag gelê vir die US se nou sterk vennootskappe met veral die Katolieke Universiteit Leuven (KU Leuven) in België, sowel as die Universiteit van Leipzig in Duitsland, wat 'n model geword het vir die ontwikkeling van globale vennootskappe en netwerke. Mnr Kotzé het die afgelope vier jaar, met die ontwikkeling van die US se eerste Institusionele Internasionaliseringstrategie en die totstandkoming van die Institusionele Advieskomitee oor Internasionalisering, 'n sleutelrol gespeel in die US se strategiese posisionering binne die globale hoëronderwyssektor, en veral die uitbreiding van die US se voetspoor in die res van Afrika.



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Faculty of Economic and Management Sciences (Group 2)

29 March 2023 | 13:00

Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 2)

29 Maart 2023 | 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 Lied.
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 Economic and Management Sciences (Group 2) Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 2)

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

DOCTOR IN PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

DEGHAYE, Nicola Mary (Economics)

Measuring enrolment and support for children with disabilities at the school level

This study critically assesses how disability inclusion in schools is and should be measured, and develops and reports on new measures of disability inclusion. The measurement of school-reported enrolment of learners with disabilities as well as inputs, processes and enablers of disability inclusion in mainstream (ordinary) schools are considered. The performance of full-service schools is empirically compared to ordinary schools. A sample of full-service schools is found to perform better than ordinary schools in disability inclusion, but still fall short of the expectations in current guidelines. The study offers a more comprehensive depiction of disability inclusion in ordinary schools and adds substantially to evidence on operationalising the bio-psychosocial model of disability in school indicators in middle-income countries.

Supervisor: Prof S van der Berg Co-supervisor: Prof J Hanass-Hancock (external) RICH, Kate Tamarin (Economics)

Socioeconomic status, economic insecurity and the obesity transition in South Africa: Generational and life-course aspects

This study explores aspects of the socioeconomic gradient in body weight in South Africa, with a particular focus on life-course and generational drivers of the obesity transition, being an internationally observed shift in the distribution of obesity from rich to poor households as economies develop. In a context of high inequality, sub-populations are positioned at different phases of the obesity transition. Childhood socioeconomic circumstances, intergenerational mobility and generational macro-contexts are associated with shifts in the gradient. Obesity in adulthood increases with upward socioeconomic mobility, although there are signs that the pattern reverses after two generations of sustained high socioeconomic status.

Supervisor: Prof D von Fintel

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

Baltazar, Tiago (Economics) Bartlett, Jacques Hilton (Economics) Bezuidenhout, Kathleen Nonnie (Economics) Cater. Tian (Economics) Chukwuka, Ndidiamaka Peggy (Economics) Dennis, Kirsten (Actuarial Science) Dennis, Lara (Actuarial Science) Farguhar, Christopher (Economics) Gauna, Andrea Lucia (Economics) (cum laude) Kapenda, Deborah (Economics) Laing, Harriet Catherine (Economics) Leak, Tivan (Economics) Lourens, Chase Grant (Economics) Monnaatsheko, Mofenyi Winnie (Economics) Olivier, Carel Aron (Economics) Pretorius. Jaco Harm (Actuarial Science) Prinsloo, Zander (Economics) (cum laude) Rees, Pablo Simon (Economics) Richardson, Sean Geoffrey (Economics) (cum laude) Stevens, Lauren (Economics) Terblanche, Emma Leonie (Economics) Van der Berg, Jessica (Economics) Wagner, Julia Rebecca (Economics) (cum laude) Wellmann. Sven Oswald (Economics)

Bachelor of Commerce Honours Honneurs-Baccalaureus in die Handelswetenskappe

Bogner, Romy (Economics) Dlamini, Sihawu Bafana (Management Accounting) Du Preez, Grant Orin (Economics) Fromet de Rosnay, Jean-Luc (Economics) Geldenhuys, Ruan (Economics) Jacobs, Milisa (Management Accounting) Johnson, Caitlin Marie (Economics) Karas, Dylan Jason (Management Accounting) Kuzamunu, Jemima Mambote (Economics) Meihuizen, Peter Andrew (Economics) Melck, Martine (Management Accounting) Mohamed, Dorothy (Economics) Mota, Nthatisi (Economics) (cum laude) Naidoo, Tashen (Economics) Neilon, Gabriella (Economics) Petersen, Ro-Eagan Roche (Economics) Pretorius, Jan-Hendrik (Economics) Rambanapasi, Gabriel (Economics) Shabalala, Nelisa (Management Accounting) Solomons, Chloé Shanon (Economics) Trodd, Bryce Henry (Economics) Van Zyl, Anja (Actuarial Science) Viljoen, Tara (Management Accounting) Williams, Wesley James (Economics) (cum laude)

Postgraduate Diploma in Accounting Nagraadse Diploma in Rekeningkunde

Abraham, Ryan Joshua Adimulam, Theron Albertse, Brendan Bailey, Cailin Barrow, Georgina Ailsa Bester, Nicole Bogner, Phoebe Boshoff, Madri Botha, Ruan Zerwick Brandsma, Savannah Justine Campbell, Kayley Ann Chandler, Melissa Erica Chelius, Nicola Georgina Christiansen, Corinne Sophie Curtis, Dylan Michael Domnick, Sasha Gail Eksteen, Stefanie Endenburg, Rory Engelbrecht, Teana Farrell, Liam Sean February, Shehaam Ferreira, Liam Frans. Chad-Lee Glover. Donovan Brian Goosen, Edwan Govender, Pranav Kaylin Gowar, Andrew Russell Grosche, Stefanie Hay, Eduan Johan Hellmann, Silke Herbst, Justinne Hofmeyr, Matthew Philip Hunt, Jared Keagan Jansen Van Rensburg, Divan Frederick Juries, Nathan-Lee Koetsier, Hans-Jacques Kotze, Hanneke Kriel. Donne Lamprecht, Henry Lengana, Pride Thabo Mohapi Boipelo Magerman, Azeeza Maluk, Aqueel Marais, Jaydene Motumi, Onkgopotse Ratladi Muller, Helaine Janka Neethling, Johannes Josua Christiaan Nel, Brandon Ngonyama, Mincili Ncubeko Nkandi, Monde Percy Nsingo, Dumisani Oellermann, Shannon Papane, Kagisho

Plekker, Riley Jane Pretorius, Kayla Ché Quin, Leighton Riffel, Whillin Aynsley Roberts, Emile Roy Rutherford, Laura Megan Sapepa, Zola Andiswe Kanyisa Sauer, Zéann Schoeman, Annaretha Shezi, Lizwe Luyanda Smith, Anja Stevens, Mitchell Brett Swart, Willem Adriaan Stals Theron, Lehan Tredoux, Caitlin Dawson Tyawa, Ntandoyenkosi Thokozani Van Burick, Johannes Lodewiekus Van der Spuy, Lehani Van der Walt, Tharien Van Rooyen, Elmarie Van Schalkwyk, Lozaan Versfeld, Robert Owen Rees Visser, Lohan Wales, Liam Jason Watson, Jade Wessels, Jana Wicomb, Lara Williams, Samantha Angela

Bachelor of Commerce Baccalaureus in die Handelswetenskappe

Africander, Nicole Gaby Baker, Jordan Basslian, Greg Louis (cum laude) Behm. Danelle Beukes, Alida Louise Blignaut, Adiël Ester Brain, Liam Andrew James (cum laude) Campher, Alouise Cassiem, Abdul Qaadir Castle, Liam Chavaranis, Xenocratis Cloete, Johannes Hendrikus Combrink, Mia Copeland, Devon Josh Cornelissen, Nadja Crous. Wilhelmina Davids, Berinick Davi-Lene De Villiers, Jean-Maurice De Waal, Josie Lanya De Wet, Chené Calvin De Wet, Jacques Pieter Dean, Christopher Daniel Dixon, Jamie Robert

Dollie, Muhammad Ansaar Durie, Matthew Sinclair Duys, Charlize Erwee, Rossouw Andries Evans. David Murrav Feris, Zane Roland Focke, Michael Alexander Fortuin, Adwaldo Jogan Fredericks, Ethan Taine Gouws, Dylan Govender, Keshaylin Gutsche, Ethan Alexander (cum laude) Havenga, Michau Heydricks, Kayla Leigh Holroyd, Lee-Ann Honiball, Courtney Kaylin Hutchings, Carmen Izaks, Melissa Jackson, Ayrton Jansen, Almandro Jansen van Rensburg, Wayne Johnson, Agatha Genevieve Kamoto, Ramzan Kaptein, Mikah Caitlin Kasunda, Pao Kathrada, Aaliah Khan, Mohammed Aasim King, Braylen Ralph Kirsten, Jared Frederick Kotze, Dirk Richard Krause, Berdine La Cock, Jan-Hendrik Labuschagne, Connor Gregory Lahoud, Matthew Frederick Lamprecht, Elma Le Roux. Andre Louis Leonard, Bradley Lingenfelder, Tiaan Lokwe, Nozipho Malone Owethu Lombard, Marné Irene Maartens, Marné Madoda, Nosizwe Mmathuto Madyah, Ropafadzo Valerie Malan, David Joshua Manus, Daniel James Markus, Maulisha Marx. Emma Jade Masiza, Yanelisa Memela, Zibusiso Gloria Meyer, Rouxvé Emma Miso, Sisipho Mlumbe, Gracia Rethabile Mumba, Namatama (cum laude) Mungwari, Tinotendaishe Jonathan Naidoo, Sachin Dylan

Ngcobo, Zakhele Musa Nhamo, Precious Nhliziyo, Shaun Tyrone Nopote, Chulumanco Omar, Zaynah Pansegrouw, Jacques Petrus Prins, Zané Raji, Kehinde Morufa Reed, Rodjoh Reagan Reich, William Luke Rhoda, Ashton Santos, Carla Robyn Siegelaar, Zia Maria Sigenu, Somila Slabbert, Pieter George Smit, Suné Staal, Henri Temba, Chantal Boipelo Terblanche, Daniel Burger Thenjwayo, Lindokuhle Nelisiwe Thompson, Teagan Anne Tilney, Benjamin Mathew Van Breda, Martin Van der Merwe, Andri Van Zyl, Johannes Francois Velhanos, Trecia Wales, Jaimee Liz-Marè Watkins, Vuviswa Wilkinson, Hannah Wille, Matthew Kyle Williams, Caleb Jayden Matthew Xhamfu, Phumlani Zulu, Nombuso Samukelisiwe

Bachelor of Accounting Baccalaureus in Rekeningkunde

Abrahams, Danusha Badenhorst, Deresha Bakker, Derek Trevor Banda, Taonga Bell, Vicky Bierman, Barend Daniel Blewett, Adam Samuel Botha. Jania Mila Campbell, Kyle Cawse, Sage Luca Cele, Lethukuthula Slondiwe Christians, Aden Matthew Cloete, Hermanus Gerhardus (cum laude) Conradie, Cornelia Conradie, Tristan Paul Coode, Kayla De Koker, Kelly-Ann De Koster, Arenda Marlene

Deats, Erin Jade Du Plessis, Martin David Jacobus Du Preez, Janke Du Toit. Leandrie Erasmus. Timothv Erasmus. Zanmari Farrant, Andrew James Ferreira, Marius Pieter Fleischer, Kylie Ford, Ryan Gabriels, Gary-Lee Green, Joshua Greyling, Quené Hanekom, Lijani Hansen, Luke Matthew Harding, Andrew Thomas Harding, Jordan Tyler Harwood, Kirsten Morgan Hattingh, Wynand Charl Hendrickse, Sinead Natalie Hollander, Carla Holz, Dylann Hope, Lauren Elizabeth Horwitz, Lisa Paige Hudson, Jody Jivan, Anjali Jones, Julia Patricia Owen Jones, Keegan Johnathan Kgatle, Teboho Naledi Knaap, Lee Kriek, Nicolaas Kruger, Anandie Kruger, Jonathan Lategan, Zeek Laubscher, Bruwer Ferreira Leerkamp, Emma Lenz, Liam Lewis, Dylan Daniel Love, Daniel Alistair Lubbe, Rudolf Olwie Mabaso, Jabulile Magagula, Ntokozo Precious Malan, Pieter Charles Malan, Renée Mandishaya, Victor Marais, Charl Johannes Marais, Gert Erasmus Marais, Marco McJannet, Lauren Tayla Mckenzie, Joseph Guy Mevana, Lukhangele Mgobozi, Lukhanyo Mnukwa, Anda Mongale, Gofaone Vincent Moody, Robert Victor

Mouwers, Jodie Nicole Naicker, Sasha-Leigh Oerlemans, Barthold Dricus Olivier. Francis Amanda Phalafala, Nakedi Pearl Pieterse, Kiara Petroné (cum laude) Ponnen, Tiarra Tamaryn Poole, Hagan Herman Preston-Whyte, Courtney Puttergill, Savannah Anne Ransby, Tyron Reddy, Danielle Nicole Roothman, Jeanne Ane Sampson, Micaela Tiffany Samuels, Telvina Shange, Ngobakha Slier. Lucas Smit, Danté Vanrhijn Smith, David De Villiers Smith. Piet Stainton, Hannah Lee Stead, Rachael Sarah Stone, Mikhail Sulter, Mikayla Liza Swart, Jurgens Johannes Theron, Francois Milan

Van den Berg, Johannes Stefanus Van der Merwe, Zoé-Lee Van Deventer, Cameron Victoria Van Dyk, Sybrand Moolman Van Nieuwenhuyzen, Heinrich Jansen Van Rooijen, Alexander Van Rooyen, Aidan Kilkie Van Rooyen, Tamson Donnay Van Wyk, Louise Van Zyl, André Venter, Cameron Visagie, Rikus Abraham Daniel Von Staden, Nikola Danelle Waud, Cara Lee Weir. Lara Jade Wessels, Jurie Wynand Wessels, Louwrens Willem Wiggins, Willem Adolf Wille, Sume Willemse, Wayne Williams, John Daniel Wookey, Zayd Young, Christopher Edwin Yssel. Mila



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Faculty of Economic and Management Sciences (Group 3)

29 March 2023 | 17:00

Fakulteit Ekonomiese en Bestuurswetenskappe (Groep 3)

29 Maart 2023 | 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 Lied.
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.

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

DOCTOR IN PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

ALLEN, Stuart Andrew (Business Management and Administration)

Costs and benefits of organisations' environmental sustainability initiatives from an employee perspective

Focusing on employees' contributions to organisational efforts to reduce harm to the natural environment, this study tests an elaborated theory-of-planned-behaviour model, including employees' perceptions of the costs and benefits of participating in environmental initiatives. An initial study captures employees' cost-benefit perceptions in a novel taxonomy. A second study measures cost-benefit perceptions, attitudes towards participation, intentions to increase engagement as well as actual increased engagement in initiatives. A third study considers the effects of employees' values and ecological concerns. Cost-benefit perceptions are found to be the more useful predictors of employees' participation intentions and actual participation in initiatives.

Supervisor: Prof J Volschenk *Co-supervisor:* Prof M de Klerk

ANDITI, Christer Adelaide (Public and Development Management)

Co-designing gendered energy innovations for urban informal settlement households in Kenya. a case study of Mathare valley informal settlement

Gender is a pertinent factor in energy innovation adoption. This study helps clarify the understudied role of gender in energy and its dynamics in informal settlements. It develops a novel theoretical tool for mainstreaming gender in energy innovation processes to enhance innovation adoption. Applying the tool in the Mathare Valley informal settlement in Kenya, the study reveals that women are less exposed to energy innovations, have poor technical skills training, and show low participation in energy projects. Therefore, women-specific and integrative approaches are required to address gender blindness across the energy innovation process.

Supervisor: Prof JK Musango *Co-supervisor:* Prof Z Ndevu BAGENDA, Bonny (Public and Development Management)

Development of a risk management model for public-private partnerships in Uganda

Governments are collaborating with the private sector through public-private partnerships (PPPs) to address public-infrastructure funding gaps. Using a mixed-methods approach, this study identifies the principal risks, risk allocation perceptions and management strategies for PPP projects in Uganda. It is established that principal risks associated with PPPs include construction completion, corruption, land acquisition, construction cost overrun, and high financing costs. Managing these risks requires a sound regulatory framework, political support, stakeholder sensitisation, capacity building, and developing the domestic financial market. Accordingly, a model is developed to guide the process of identifying, allocating, mitigating and monitoring PPP risks.

Supervisor: Prof Z Ndevu

CHIPUNZA, Kudakwashe Joshua (Development Finance)

Quality financial inclusion, financial vulnerability, and subjective wellbeing: Evidence from South Africa

This study examines the linkage between quality financial inclusion and consumer welfare using data from a nationally representative survey in South Africa. Through a rigorous quantitative analysis, the study confirms that an increase in quality financial inclusion reduces financial vulnerability and indirectly enhances consumers' subjective wellbeing via asset accumulation. Moreover, matching estimations indicate that access to formal financial products increases financial resilience to economic shocks such as that induced by the Covid-19 pandemic. The study develops a more comprehensive measure of financial inclusion and also proposes new directions for future research in financial inclusion.

Supervisor: Prof A Fanta

JANSEN VAN RENSBURG, Willem Tobias Boy (Public and Development Management)

A conceptual framework for municipal decision-making in a complex context: The Hessequa case

In an increasingly complex world, public-sector decisionmakers are required to respond to a wide range of stakeholder demands and consider local and global trends within the parameters of available legal, financial and natural resources. This study finds that even well-performing municipalities do not meaningfully engage with this complexity in their decision-making processes. A model is proposed that enables public-sector decision-makers to differentiate between simple, complicated and complex decision-making and to consider the inherent complexity of the issue when making a complex decision. Taking into account the degree of complexity of a public problem ensures more effective and efficient responses.

Supervisor: Prof B Rabie Co-supervisor: Prof J-H Hofmeyr

JANTJES, Anthea Lorraine (Public and Development Management)

An iterative improvement approach to a linear organisational performance management system in metropolitan municipalities in South Africa

Poor performance by most South African municipalities is a well-acknowledged fact. This study develops an iterative approach to organisational performance management in South African metropolitan municipalities. A review of various private and public-sector models and other theory and insights of relevant practice experts informs the framing of a local government iterative performance improvement model. It is proposed that with this approach, improvement can be obtained on key performance indicators. The model identifies and utilises the four phases of organisational performance management, raises key questions, iterates within and between the four phases, and identifies cause-and-effect relationships as a novel contribution. The model is also simulated using National Treasury functional key performance indicators.

Supervisor: Prof APJ Burger Co-supervisor: Prof Z Ndevu **KONADU-OSEI**, Obaa Akua (Business Management and Administration)

The development of positive work identities of women in male-dominated jobs

This study explores how women build positive work identities in male-dominated jobs in a collectivist context. Firstly, it identifies the either-or-neither approach to selecting a research methodology in a collectivist context as a false dilemma. Researchers can benefit from a fusion of conventional and contextually sensitive epistemologies. Secondly, the study finds that women's identity work is a kaleidoscope of processes that present non-linear and adaptable strategies aimed at simultaneously rejecting and/or differentiating from elements of major and minor identities. Finally, it is shown that organisational policies on diversity and inclusion may remain aspirational if organisational culture and norms perpetuate negative stereotypical views of women's competence.

Supervisor: Prof A Bosch Co-supervisor: Prof S Boroş (external)

MUKOBI, Robert (Public and Development Management)

Collective and networked Corruption: A Case of Public Procurement in Uganda

This study examines the influence of corrupt networks, using Uganda's public procurement as a case study. Through qualitative research approaches, it is found that the presence of stakeholders' corrupt schemes indicates a level of conspiracy between internal and external actors, where they deliberately design, knit and operate corrupt systems that undermine value for money in government expenditure, curtail public service provision, and remain a great obstacle in the attainment of development goals. The study recommends reforms involving deeper democratisation, reviving the economy and the welfare system, enhancing the external audit function of government, criminal prosecution, and increasing efficiency, effectiveness and economy in public procurement.

Supervisor: Prof E Mantzaris (external) Co-supervisor: Prof P Pillay SIFOLO, Ntandazo (Public and Development Management)

Elusive accountability? Examining the complexities of governance within the civilian intelligence services of South Africa

This study focuses on the accountability of the State Security Agency of South Africa for its financial expenditure, examining the reasons behind its poor accountability record. Utilising the grounded-theory research methodology, the study formulates a theory that could explain the phenomenon of accountability of intelligence services in view of their unique secret operational environment. The use of combined assurance is proposed as an approach to accountability within which the omnipresent variable of a secret environment is juxtaposed with universally championed whistleblowing, a leadership-infused culture of compliance, effective internal controls, robust oversight, and consequence management. It is found that secrecy is not fatal to accountability, as long as an appropriate interplay between the variables is maintained.

Supervisor: Prof G Quinot Co-supervisor: Dr DJ Brand WELSER, Carolin (Business Management and Administration)

From corporate social responsibility to brand activism and the effect on customer loyalty: A structural equation modelling approach

Advancing from corporate social responsibility, this study investigates the effect of brand activism on consumer loyalty. Using quantitative experimental methodology and structural equation modelling, six brand activism treatments (social, legal, workplace, economic, political and environmental) are mediated by brand trust, customer-company identification and brand image to ascertain customer loyalty among 372 Millennial (Generation Y) respondents. Findings indicate a positive association between brand activism and consumer loyalty, with customer-company identification being the most powerful predictor of loyalty, and perceived environmental brand activism being the most significant. The study develops a brand activism loyalty model and customer grid to minimise cognitive dissonance, enhancing the limited body of brand activism literature.

Supervisor: Prof M Terblanche-Smit

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

Adams, Robert Manual (Management Coaching) (cum laude) Alexander, Natasha (Futures Studies) Banks, Catherine Anne (Management Coaching) (cum laude) Bezuidenhout, Leilani (Management Coaching) (cum laude) Blades, Stephen Langton (Management Coaching) Bower, Amy Elizabeth (Environmental Management) Chinnian, Sonja Ann (Management Coaching) Cloete, Jan Hugo (Management Coaching) Da Silva, Ustine (Management Coaching) (cum laude) Dalamakis, Guy Michael Melless (Sustainable Development Planning and Management) (cum laude) Else, Jacques (Futures Studies) (cum laude) Fourie, Johanna Jacoba (Sustainable Development Planning and Management) (cum laude) Geytenbeek, Michaela Leigh (Sustainable Development Planning and Management) (cum laude) Gouws, Adriaan Pieter (Management Coaching) (cum laude) Jantjies, Lesley-Ann (Management Coaching) Johnson, Karen Elizabeth (Management Coaching) (cum laude) Kalam, Angelique (Management Coaching) Kobese, Major Mninawe (Futures Studies) Lee, Haeun (Sustainable Development Planning and Management) (cum laude) Malatjie, Louisa Izimangaliso (Management Coaching) Mbatha, Sphokazi Phelokazi (Environmental Management) (cum laude) McCarthy, Megan (Sustainable Development Planning and Management) Meyer, Leonie Angeline (Management Coaching) Milton, Nirvana Chavon (Sustainable Development Planning and Management) Mlaba, Sanelisiwe Ncumisa Yvonne (Environmental Management) Modise, Maseke Jeanett (Management Coaching) Mokgatle, Zandile Ntombifuthi Euphemia (Management Coaching) Mooi, Riana Rozanne Cynthia (Management Coaching) Morrison, Linda Cynthia (Management Coaching) (cum laude) Mosala, Thabo (Management Coaching) Nakuumba, Linear Inekela (Management Coaching) Ngadze, Fiona (Sustainable Development Planning and Management) Parker, Shabnem (Management Coaching) Potgieter, Stephanus Johannes (Futures Studies) Rathupetsane, Alboricah Tokologo (Sustainable **Development Planning and Management**) Richards, Nichola Deborah Mcculloch (Sustainable Development Planning and Management) (cum laude) Seibes, Winniefred Angel (Sustainable Development Planning and Management)

Shilongo, Genovefa Magano (Environmental Management) Sishuba, Lungisa (Environmental Management) *(cum laude)* Swart, Lourens P (Sustainable Development Planning and Management) (cum laude)
Swiegers, Louise (Management Coaching)
Tau, Zacharia Tshepo (Management Coaching)
Thakholi, Moliehi Florence (Environmental Management)
Titus, Shameemah (Futures Studies) (cum laude)
Tzellios, Martha (Futures Studies) (cum laude)
Van Achterbergh, Elzé (Sustainable Development Planning and Management) (cum laude)
Van den Bergh, Camryn (Sustainable Development Planning and Management) (cum laude)
Wolf-Gillespie, Isabel (Management Coaching) (cum laude)
Xala, Xolela (Environmental Management)
Zwane-Siguqa, Beauty Makhosazana (Futures Studies)

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

Aquebor, Nosakhare Dlamini, Nokuthula Patricia (cum laude) Gwama, Nosisa Ethel Holeni, Miyelani Keendyele, Rosowita Ndapandula Ketshengane, Thandokazi Kurubally, Fatumata Lironel, Mario Inoque Da Costa Mahlare, Patience Mahlutshana, Bukeka Malaza, Simphiwe Artwell Mavuso, Zwonaka Mnyatheli, Phiwe Molatudi, Tebogo Joseph Mvula, Jessie Qweqwe Naris, Gisela Nampasita Nasinda, Susiku Imataa Ndwandwe. Xoliswa Innocentia Nelani, Sakhiwo Nkomonde, Thandeka Khetiwe Busisiwe Nyokong-Crossman, Ipeleng Tlhage Phenyane, Thandolwethu Venceremos Masechaba Phiri, Kebuseditswe Emily (cum laude) Sekgetle, Galeiphiwe Sandra Sinkamba, Andrew Tjia, Ntakgolo

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

Amukende, Jonas Ashipala, Nangolo Haleinge Barnard, Mia (*cum laude*) Bestbier, Ruan Henri (*cum laude*) Bezuidenhout, Jandre (*cum laude*) Bhoolia, Karishma (*cum laude*) Blaauw, Lindie (*cum laude*) Botha, Johan Jacob (*cum laude*) Coleman, Christopher Cottle, Zelda De Jager, Tiaan (cum laude) Devaraj, Rachel Lucelle Du Plessis, Hendrik Christiaan (cum laude) Eigelaar, Andries Johannes Frederick Engelbrecht, Marthinus Johannes (cum laude) Erwee, Jurie Johannes Haikali, Elizabeth Ndeshipanda Ndiwetango Hammond, Bradley Jason Haripersad, Brendon Haripersad, Shivona (cum laude) Heath, Michael Jason Herselman, Francois Jacobus (cum laude) Heunis, Wynand Hlakudi, Machupe Cecil Horn, Marsunet (cum laude) Innes, Ricky Ricardo (cum laude) Ipangelwa, Timotheus Galikaneni Isaacs, Justin Isaacs, Tharwaan Jaimangal, Janelle (cum laude) Jwara, Thandeka Yvonne Sthembile Kafu, Bulelwa Carol Kalipi, Ismael Navakalengaho Karsten, Louisa Jacoba (cum laude) Kennedy, Lesley-Dee Kleinsmith, Edwin Ian Koekemoer, Daniël Elardus Koloi, Sebekedi Motlhabane Kruger, Juan-Mari (cum laude) Kruger-Nel, Chenel Kungwane, Solomon Moopelo Langenhoven, Romeo Shaun Langeveldt, Bronwin John Rhandel Le Cordeur, Nazmeera Rashool Lebelo, Setlamaropeng Charlotte Lerm, Frederik Johannes Madavhu, Mashudu Drake Makoe, Mpho Makundi, Kwame Rhodes Malope, Thamsanga Mthutuzeli Maneveld, Bianca Joy Manyathi, Nkanyiso Nkosingiphile Maritz, Jacobus Johannes Nel Masegela, Mathabo Kgabo Sheron Masiapeto, Hazel Kutlo Mbatha, Vongani Lisbeth Mbongwa, Nosiphesihle Jacqueline Meiring, Pieter Frederik Mettler, Ferdinand Mhlongo, Nontobeko Mokoka, Ororiseng Godwin Musiyiwa, Richard Muteka, Toini Nuusiku Zimina

Myatt, Anthea (cum laude) Naidoo, Olivia Regina Naidoo, Reshen (cum laude) Naude, Andre Daneel Neethling, Willem Nicolaas Nel. Leticia Nel, Pieter Jacobus (cum laude) Nepgen, Eugene Stephan Newall, James Alan Ngcobo, Nkosingiphile Siphukuthula Nkambule, Mduduzi Given Nkambule, Zodwa Fortunate Nkwe, Johannes Malesela Nzuzi Khuabi, Yves Oberholzer, Jacques Olivier, Steffen Panu, Gurpriya Singh Pillay, Nazril Gavilin Pyper, Andreas Rampiar, Anup Rees, Travell Cliford Rudzani, Fulufhelo Sydney (cum laude) Ruiters, Gavin Peter Shikongo, Immanuel Ndilipomuene Nauyoma Shipanga, Petrus Shongwe, Mitchell Slarmie, Mogamat Nazeer Smith, Jacobus Johannes Petrus Sookraj - Yagan, Nirakasha Steenkamp, Pauline Swanepoel, Jacobus Johannes Swanepoel, Sonja (cum laude) Taylor, Malcolm Andrew Theron, Jean-Mare Twynham, Shonna Rae Van Zyl, Jacobus Albertus (cum laude) Van Zyl, Ryno (cum laude) Venter, Carina (cum laude) Vorster, Eben Walters. Melissa Wessels, Twane (cum laude) Williams, Chericke Ann Williams, Curshwin Oscar Mark Zaayman, Ignatius Michael Zungula, Bandile Siphosihle

Master of Public Administration Magister in Publieke Administrasie

Kamuingona, Rahimisa Mapeyi, Christopher Lungelo Mboneni, Asanda Mtakati, Sipho Samuel Vilakazi, Nhlanhla Wilfred

Bachelor of Commerce Honours Honneurs-Baccalaureus in die Handelswetenskappe

De Villiers, Cole Warren Lee-Rick (Public and Development Management)

Du Plessis, Angie Nicole (Public and Development Management)

Dumas, Ethan Kyle (Public and Development Management) Gabier, Sophiya Bint Yusuf (Public and Development

Management) *(cum laude)* Hlatswayo, Thulani (Public and Development Management) Kale Lombe, Chrines (Public and Development Management)

- Lategan, Jan Adriaan (Public and Development Management)
- Lekhafola, Moitse Lynette (Public and Development Management)
- Lombard, Spencer Martin (Public and Development Management)

Moloto, Morufa (Public and Development Management) Nxumalo, Olwethu Ongeziwe (Public and Development Management)

Bachelor of Public Administration Honours Honneurs-Baccalaureus in Publieke Administrasie

Andre, Naville Nhlanhla Cetywayo, Tembisile Coker, Olwethu Adeola Cweni, Sibonile Damane, Qaqamba Davids, Bianca Chane Dayimani, Mathsidiso Zukiswa Lengs, Luxolo Lizo, Sinovuyo Mahlangu, Keneilwe Hilda Malloy, Lucius Isaac Manuel, Natasha Maphutha Mashaba, Mashimole Yvonne Mazibuko, Dipuo Mazuthu. Zintle Mkhwanazi, Nokuthula Ntombenhle Pretty-Girl Mohlabi, Mapaseka Mokoena, Tshepo Swartbooi Trust Molokomme, Kwena Paul Musale. Nauli Musariri, Herbert Melusi Ngalo, Ntsika Ngindana, Zethu Nkomonde, Mapaseka Magret Ntuli, Nkele Margaret Pakai, Vimbainashe Pheaha, Joyce Phillips, Siviwe Akhona Plaatjies, Justin Ronald Salmons, Reginald Regi Sibiya, Succeed Theo

Tshetu, Noluthando Patricia Tyandyatha, Anita Van Dyk, Lizna

Postgraduate Diploma in Leadership Development Nagraadse Diploma in Leierskapontwikkeling

Bonnet, Christel (cum laude) Bonnet, Wessel Johannes (cum laude) Du Pisani, Renaldo Murray (cum laude) Du Plooy, Sharon Fani, Unathi Forbes, Graham Joseph Gomolemo, Boitumelo Rejoice Govender, Shivani Jonas, Cynthia Ncumisa Nondumiso Kabondo Bakimbe, Michel Kandukira, Tjijandjewa Gift Khetsha, Zenzile Peter Koeberg, Christalene Kunene, Lindiwe Delight Princess Langazana, Nokwanda Octavia Mabuya, Tshepo Wilfred Mann, Zoe May Lewis (cum laude) Mcetywa, Linda Mkefa, Yvonne (cum laude) Mogotsi, Nthabiseng Mapula Mthethwa, Xavier Tholithemba Noxolo Bo Mtsewu, Judith Nonelwa Zaziswa Nakambunda, Nailoke Lineekela Namupala, Maria Tsenaye Nacamu, Ntuthuko Nkomo, Khuthala Phillips, Cindy Rwanga, Nonkoliseko Scheepers, Lynn Mary Sokupha, Chuma Euphemia Tiyeho, Makando Herbicious Tobin, Claire (cum laude) Yusuf, Sameera (cum laude) Zittel, Sophia Aurelia Ursual

Postgraduate Diploma in Sustainable Development Nagraadse Diploma in Volhoubare Ontwikkeling

Boswell, Kate Justine Ebrahim, Aishah Bibi *(cum laude)* Macheli, Tumiso Cherel Moodie, Keanu Raymond Motsilanyane, Keamogetswe Tebatso Nkatingi, Khensani Sagwadi Paullah Pobee, Christina

Postgraduate Diploma in Environmental Management Nagraadse Diploma in Omgewingsbestuur

Dombo, Langanani Joseph Matshaya, Zandile Mumbone, Mukendwa

Postgraduate Diploma in Project Management Nagraadse Diploma in Projekbestuur

Badla, Cramwell Baloyi, Tovhowani Victoria Behane, Nqobile Bicknell, Ryan Leigh Biro. Konstantina Botha. Hendrik Petrus Johannes Burger, Johanita (cum laude) Cicero, Gay (cum laude) Claasen, Sally-Anne Coetzee, Armand Conradie, Tracy Davis, Penelope Catherine Dlula, Ayanda Draai, Nicole Sally Du Toit, Johanna Maureen (cum laude) Hamakali, Thomas Tileinge Higgins, Vaughanine Chantal Antoinette Hilder, Dylan Hoffman, Nadia (cum laude) Jacobs, Morné (cum laude) Jacobsson, Nompumelelo Sindisiwe Lovelacia Kasonga, Don De Dieu Bijimine Khomola, Fhumulani Kuzinya, Fungai Mgcini Latha, Babalwa Otilia Lerotholi, Clement Koali (cum laude) Lubidla, Deborah Lorato Maanda, Ndivhuwo Elekanyani Madsen-Leibold, Marike Majola, Londiwe Nontobeko Millicent Makouana, Steve Eric Maloyi, Oyama Manhovo, Yvonne Maseko, Thembi Thobile Maxebengula, Nompumelelo Mehlomakulu, Nwabisa Yonela Mfazwe, Nceba Phillip Mingelius, Selma Kanunga Mjadu, Thabani Siyajabula Percival Mjoli, Vuyo Sisanda Gabriella (cum laude) Mkangeli, Sibonile Mokoena, Lerato Junior Morwamoche, Sibongile Angelic Hlageng Motaung, Billy Motlalepule Mukhari, Masingita Lucy Sheba Nake, Khanyisile

Nghivalwa, Martha Niemann, Michael Nieuwoudt, Gabriella Maria Nkuhlu, Andisa November, Xolela Nyama, Kgati Murcus Peter, Thembakazi Patricia Pieters, Hermanus Bernardus (cum laude) Pieterse, Janine Ann (cum laude) Pilatwe, Tebogo Pretorius, Hestelle Raghoonanan, Alisha (cum laude) Roberts, Wayne Michael Sandlana, Ntombiziyanda Dorothy Scheepers, Juan-Pierre (cum laude) Shirinda, Nhlamulo Christopher (cum laude) Sibandze, Mthokozisi Eugene (cum laude) Smith, David Benjamin Van As, Petra Cornel (cum laude) Visser, Danél Visser, Ryan Antonius (cum laude) Weber, Basheer Zoko, Sive

Postgraduate Diploma in Financial Planning Nagraadse Diploma in Finansiële Beplanning

Barends, Kyle Brittnell, Kai Daniel Djan, Elijah Hughes, Kieran Michael Lassen, Nicholas Soren Mukhovha, Ndivhuwo Patience Mzizi, Mpendulo Lwazi Parvess, Brendon Roeloffze, Maxine Lacey Shongwe, Philasande Themba, Majawonke Andrea Thomas, Bradley Ian Zondagh, Michelle Noreen

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

Abrahams, Alicia Veronica Nolene Banjwa, Berrel Londiwe Barnard, Leanne *(cum laude)* Bekker, Marco Booyse, Mitch Thomas Brown, Bradley Campbell, Stephen Alexander Chirwa, Angela Coetzee, Noleen Heidi De Bruyn, Wilna

De Freitas, Kyle Warren Engelbrecht, Jacob Johannes Fourie, Matthew Keith (cum laude) Fumba, Ricardo Xolisa Garikai. Lawrence Geldenhuys, Jan Pieter Schikkerling Gumpo, Thamsanga Hudson, Dion Wreford (cum laude) James, Liamzer Joseph, Kevin Ernest Kangumine, Veripi Khuzwayo, Londiwe Thuthukile Sindiswa Knoesen, Lea Le Roux, Etienne Lentsoane, Jessica Kananelo Magwa, Iviwe Mahachi, Olwetu Mahlangu, Lungile Vinolia Makhubo, Mbongiseni Kevin Marx, Frans Jacobus Maseko, Priscilla Zanele Maseko, Sibusiso Charles Mellish, Henry Trevor Mentoor, Davina Louishan Meyer, Jo-Ann Mhle, Tulisile Pamella Mphahlele, Satomola Cathy Mphethi, Mpuke Hyde Myemwatya, Ndinelao Tuliikeni Naicker, Mischkha Ngcukana, Azola Ngombabu, Shadrac Mbenga Ngubo, Zamangubo Nxumalo, Ayanda Simphiwe Nzube, Nosipho Faith Ockhuis, Clint Olivier, Hermanus Johannes Jacobus Petlele, Magankana Josephine Pfaff, Alba Pillay, Nalandrin Rajaram, Kimmi (cum laude) Raphiri, Nathalia Boitumelo Rigoli, Claudio Ezio Roscher, Christi Setlhapelo, Tebogo Ntshadi Shanglee, Emmarencia Ellen (cum laude) Simelane, Musa Nkosingiphile Tseisi, Mashudu Lucky Van Coller, Drew Van der Merwe. Michaela Vather, Eveshen Venter, Theunis Gertze Vey, Steven Richard Wessels, Joe-Mérie Wevers, Altus

Wiese, Lize-Marie Zimu, Bonginkosi Kenneth

Postgraduate Diploma in Futures Studies Nagraadse Diploma in Toekomsstudie

Bosman. Candice Britz, Jacobus Johannes Claughton, Stephanus Cumba, Raul Diogo Didi, Nonkoliseko Mavis Gessler, Natalie Gubb, Nicola Elise (cum laude) Herbst, Michiel Wiese (cum laude) Hlungwani, Precious Pakamile Jordaan, Daniel Du Plessis Scheepers Kagola, Leena Kahingunga, Menolitha Labuschagne, Marc Benjamin (cum laude) Larbi-Siaw, Akua Amponsaa Maggo, Eduan Rolland Maleka, Tebogo Marais, Carina Elizabeth Mashologu, Mlindi Mbolekwa, Luvuyo Mcmahon, Charles Beresford (cum laude) Mgudlwa, Lubabalo Mphaphuli, Zwaeda Johnson Mukhadakhomu, Aifheli Mupa, John Mzobe, Bernadette Sibusisiwe Naidoo, Reynold Ndlovu, Mthandazo Pienaar, Heinricht Joseph Ashton Pretorius, Johannes Petrus Quntana, Maria Moarabiemang Rossouw, Adore' Sibanyoni, Lebogang Sooka Singh, Sanum (cum laude) Steyn, Helga Maria Sukdev, Nirvaan (cum laude) Theart, Jakobus Van Baalen, Sarel Jacobus Van der Bijl, Natalie Walls, Christopher David Yako, Pumeza

Postgraduate Diploma in Development Finance Nagraadse Diploma in Ontwikkelingsfinansies

Amweenye, Helena Kaanane Bambo, Kgaogelo Cecilia De Beer, Frans Kamana, Monica Ndeshipanda *(cum laude)* Kane, Yaye Couro Karipi, Helen Meundju-Ngutukiro Naufiku Mahlobo, Xolani Manake, Horatius Kgatliso Mei, Zandile Mlotshwa, Lungile Wendy (cum laude) Moleme, Mosimanegape Morimoto, Taisuke Mphatsoe, Makena Christopher Rikhotso, Nkateko Roshuduvhadzwa Saunderson, Wilma Priscilla (cum laude) Shabane, Mbulelo Sinesizwe (cum laude) Sikopo, Frieda Ndapandula Ndapewoshali Soko, Welile Mamazane Van Rooyen, Renate (cum laude)

Diploma in Sustainable Development Diploma in Volhoubare Ontwikkeling

De Lange, Simone-Thandiwe Gouws Marlow, Stephen Pierré Seyuba, Chilombo Chapwakiso Tau, Mabusa Kabelo Vincent Williams, Teresinha Manuela Yekelo, Kamvelihle Kobus

Diploma in Public Accountability Diploma in Openbare Verantwoordbaarheid

Gaothaelwe, Lorato Petunia Mahokoto, Mangaliso Swarts, Galatia Pauline

Advanced Diploma in Public Accountability Gevorderde Diploma in Openbare Verantwoordbaarheid

Afrika, Fridinia Hofsta, Verna Madumbo, Shaun Heinrich Masango, Nhlanhla Emmanuel



forward together sonke siya phambili saam vorentoe

Faculty of Engineering

30 March 2023 | 09:00

Fakulteit Ingenieurswese

30 Maart 2023 | 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 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 Lied.
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.

DOCTOR OF ENGINEERING DOKTOR IN DIE INGENIEURSWESE

FOURIE, Coenrad Johann (Electronic Engineering)

Inductance in superconductor integrated circuits

This study presents a lifetime overview of the research and publications of the candidate and his research group on the design of superconductor integrated circuits around inductance as a key circuit parameter, on the development and verification of inductance extraction tools for complex, three-dimensional integrated circuit models, and on the application of inductance extraction and magnetic field analysis to improve superconductor circuit and system design. The research culminates in the extraction of compact simulation models for the analysis of superconductor integrated circuits in the presence of trapped flux and external magnetic fields, which was not previously possible.

Supervisor: Prof DIL de Villiers

DOKTOR IN DIE WYSBEGEERTE DOCTOR OF PHILOSOPHY

ALEXANDRE, Vital Jorge (Civil Engineering)

The time-dependent behaviour of cracked textile-reinforced concrete

Textile-reinforced concrete (TRC) is favoured for greener construction. Its long-term behaviour shows relevance, especially considering its implementation in construction practice. This study examines the time-dependent behaviour of post-damaged TRC samples. Experimental work is conducted on cracked samples, as it is in this state that the textiles are utilised to their greatest potential. Single-yarn pull-out tests highlight a bottleneck mechanism that increases pull-out resistance, which is amplified by the presence of debris. Macro-level tests find creep rupturing to occur at 75% stress levels. Additionally, pre-damaging decreases the tensile creep tendency due to the training effect.

Supervisor: Prof R Combrinck Co-supervisor: Prof WP Boshoff ATKINSON, Devan James (Mechanical Engineering)

Adaptive digital image correlation using neural networks

High-quality displacement measurements through digital image correlation require assigning appropriate correlation parameters for spatially and temporally varying image set properties. A modular, open-source digital image correlation framework is developed to address the gap in literature between theory and implementation. At the same time, it serves as a basis to train artificial neural networks to model the relationship between correlation parameters, image set properties, and resulting displacement errors. These artificial neural networks dynamically assign correlation parameters, which adjust to spatially and temporally changing image set properties to satisfy the error thresholds stipulated by the user, thereby outperforming the traditional global approach.

Supervisor: Prof TH Becker *Co-supervisor*: Dr M Neaves

BARNARD, Christian (Industrial Engineering)

Towards a generic film style machine learning analysis framework

It is widely accepted among film critics, film analysts and film historians that certain directors exhibit a unique film style. However, film analysts are divided on the matter of how best to analyse and describe visual film style. This study proposes a film style machine learning analysis framework that integrates quantitative and qualitative approaches to analyse the stylistic trends of a cinematic era or the style of a specific director. The framework is validated during two case studies pertaining to the silent and sound eras in cinema history and the work of writer-director Ingmar Bergman.

Supervisor: Dr GS Nel

A thermosiphon photobioreactor for photofermentative hydrogen production by *Rhodopseudomonas palustris*

Biological hydrogen production has been gaining attention as a route to hydrogen production from waste streams, leading to the development of more cost-effective and environmentally benign systems. By using solar radiation to generate temperature differentials, the novel thermosiphon photobioreactor can passively circulate biomass, circumventing the requirement for external energy inputs. This study for the first time demonstrates photofermentative hydrogen production using the bacterium *Rhodopseudomonas palustris* in a novel thermosiphon photobioreactor with a simulated waste stream. The thermosiphon photobioreactor is the only photobioreactor capable of producing green hydrogen without external energy inputs, while offering a circular economic approach by simultaneously cleaning waste streams.

Supervisor: Prof RWM Pott Co-supervisor: Prof SM Bradshaw

BRUWER, Megan Melissa (Civil Engineering)

The application of commercial floating car data for speedbased traffic state evaluation in the Sub-Saharan African context

Floating car data (FCD) comprises GPS-based vehicular speed and trajectory data. Commercial FCD providers pre-process and aggregate FCD to a highly usable format. Yet FCD is not yet widely applied in Africa. This study assesses commercial FCD application. It identifies sample bias, a novel characteristic of FCD that affects FCD speed accuracy, and then formulates FCD application models that use ratio indices to exclude sample bias. Finally, three unique use-case studies are carried out to demonstrate the usefulness of FCD in evaluating the impact of roadworks, identifying potholes along rural routes, and mapping traffic pattern changes during the Covid-19 pandemic.

Supervisor: Prof SJ Andersen Co-supervisor: Prof I Walker

CHOSE, Matthews (Electronic Engineering)

Analysis of large disjoint antenna arrays by localised solutions

The method of moments (MoM) is well suited to full-wave electromagnetic analysis of antenna arrays, but the cost of the solution increases rapidly with array size. In this study, new formulations based on a MoM domain decomposition technique known as the domain Green's function method (DGFM) are developed for the efficient analysis of large arrays consisting of identical disjoint elements. Enlarged local DGFM domains are introduced and the DGFM is expanded into an iterative scheme to enable solution accuracy control. A direct-coupling technique is developed for single-element excitation analysis, and adaptive cross-approximation matrix compression is added. Results show efficient and reliable performance. CILLIERS, Pierre Ian (Electronic Engineering)

Enhanced method-of- moments performance through efficient implementation and error estimation

Computational electromagnetic field solvers are an essential tool for analysing the behaviour of such fields and determining the operational properties of antennas and microwave devices. In this study, an electromagnetic field solver is implemented that is designed to fully utilise the hardware features of modern multi-core processors in a shared-memory environment. This solver is specifically designed for use in academic research environments as an alternative to commercially available software packages. A new method for error estimation is also developed to evaluate the accuracy of numerical electromagnetic solutions and to guide refinement of the discretisation for a targeted quantity of interest.

Supervisor: Prof MM Botha

DIETRICH, Fabian Tobias (Industrial Engineering)

Development of a blockchain-based traceability architecture for mapping object-related supply chain events

Supply chains have evolved into dynamic, interconnected networks, which increases the complexity of achieving endto-end traceability of object flows and their experienced events. With its capability to ensure a secure, transparent and immutable environment without relying on a trusted third party, the emerging blockchain technology shows strong potential to enable end-to-end traceability in complex, multitiered supply networks. This study develops a novel blockchain-based traceability architecture with the ability to map objects' creation and deletion, aggregation and disaggregation, transformation, and transaction. The architecture's practical applicability as well as its general-purpose capability are evaluated and proved with industrial case studies.

Supervisor: Prof L Louw Co-supervisor: Prof D Palm (external)

DU PLESSIS, Martin (Industrial Engineering)

A carbon mapping framework for the international distribution of fresh fruit

The emissions impact of distributing goods such as fresh fruit is attracting increasing attention due to heightened awareness of greenhouse gas emissions. Assessing how the transportation, handling and storage of goods produce emissions is a largely underdeveloped research field. This study develops a framework and the factors needed to quantify the emissions associated with the international distribution of fresh fruit from South Africa. The framework and factors enable stakeholders with reasonable knowledge to calculate the carbon footprint and total emissions produced by various distribution activities. Results show that distribution of fresh fruit is more carbon-intensive than previously thought.

Supervisor: Prof J van Eeden

Co-supervisor: Prof LL Goedhals-Gerber

Supervisor: Prof MM Botha

The development of a biosensor for the early detection of pancreatic cancer

This study develops an electrochemical biosensor for the early detection of pancreatic cancer, using carbohydrate antigen 19-9 as biomarker. Anti-CA19-9 antibodies are used as a biorecognition element and are covalently immobilised to various sensor surfaces by using biochemical crosslinking methods. A novel and inexpensive impedance spectroscopy analyser is also designed, with frequency and impedance ranges suited to the detection of the antigen on gold interdigitated electrodes. Five different concentrations of purified CA19-9 are observed, including the thresholds for the detection of pancreatic cancer. This paves the way for further research and development towards a point-of-care device for pancreatic cancer screening.

Supervisor: Prof WJ Perold Co-supervisor: Prof AM Engelbrecht

EVANS, Benjamin David (Electronic Engineering)

Accelerating deep reinforcement learning for autonomous racing

Deep reinforcement learning for autonomous racing has the benefit of not requiring explicit state representation but is limited by poor speed profile selection and high crash rates. In response, analytical vehicle models are used to improve learning methods for FITENTH vehicle racing. Firstly, creating high-speed learning formulations results in improved speed profile selection and higher completion rates at high speeds. Secondly, a supervisor ensuring vehicle safety is developed to train reinforcement learning agents to race without ever crashing. Finally, hybrid architectures for obstacle avoidance are investigated, demonstrating that learning agents can extend the capability of current planners.

Supervisor: Dr HW Jordaan Co-supervisor: Prof HA Engelbrecht

FAUSTMANN, Alexander (Electronic Engineering)

Polyspectral methods as tools for uncovering the statistics of pulsar radio signals

This study applies polyspectral methods to pulsar radio signals, an approach that is unique in the field of radio pulsar astronomy. An existing technique is extended to produce a simple metric that estimates the extent of intermittency in wideband pulsar radio signals. The method is applied to observations of six pulsars, and the final result offers evidence in support of a highly sparse and impulsive model for the signals. If this is indeed the case, it explains excess timing residuals, provides observational evidence for constraining the emission mechanism, and provides a possible feature for advanced detection algorithms.

Supervisor: Dr J Gilmore *Co-supervisor:* Dr LC Schwardt

FLEMMING, Alexander (Industrial Engineering)

A framework for modelling the spatio-temporal competition and spread of invasive plant species

This study involves the design of a framework that facilitates the spatio-temporal prediction of invasive species distribution. The ability to predict the spread of invasive species accurately holds the potential for supporting efforts to conserve native threatened species and prevent future or current introduced species from becoming invasive. The framework supports the investigation of environmental features and current species distributions using spatial analysis methods, the extraction of species-environment relationships that define species distribution habitats using machine learning and simulating the spatio-temporal spread and competition of invasive species, as well as potential management strategies in a time-stamped fashion using cellular automata.

Supervisor: Prof JH van Vuuren

GELDENHUYS, Heinrich Jacques (Industrial Engineering)

Project portfolio management of smart sustainable city transitions

Recent research has motivated the integration of sustainable city and smart city design, giving rise to the 'smart sustainable city' concept in an effort to solve urban sustainability challenges and, in doing so, benefit the environment, industry and society at large. Due to the lack of a comprehensive planning guide, this study develops a novel framework to assist municipal managers, city planners and project portfolio managers with strategic infrastructure planning and management at various governmental and stakeholder levels. The SSUIT ('smart sustainable urban infrastructure transitioning') framework of existing cities is refined against urban case studies and validated by multidisciplinary industry experts.

Supervisor: Prof AC Brent *Co-supervisor:* Prof IH de Kock

HABILA, Asia Saeed Kajo (Electronic Engineering)

Estimation of external disturbance torques on CubeSat satellites to enhance full-state attitude estimate accuracy and mission success

This study focuses on the accurate estimation and development of disturbance torque models to considerably improve estimation and attitude control accuracy, ensuring smallsatellite mission success. It proposes a bank of optimal nonlinear estimators to independently estimate magnetic and aerodynamic disturbance torques, which are then combined using an identification function to accurately estimate the total disturbance. The achieved performance results of the total estimated disturbance are satisfactory, outperforming previously reported work. An equivalent disturbance torque estimator is tested practically on the ground by means of an air bearing. The results are good, giving further confidence in the real-time prediction of in-orbit disturbances.

Supervisor: Prof WH Steyn

HARMSE, Michael David (Industrial Engineering)

A method to apply artificial intelligence techniques to deep-level mine service control systems for improved dynamic control

The South African deep-level mining industry is experiencing reduced profitability due to rising electricity costs. Improved control of energy-intensive systems can improve profitability. Dynamic control can be implemented to reduce energy inefficiencies and wastage. However, a lack of measurement equipment restricts the implementation thereof. Artificial intelligence could overcome the lack of measurement equipment. This study develops a method to utilise Artificial Intelligence techniques to improve dynamic control in deep-level mine service systems. Two case studies are conducted to validate the developed method, indicating a possible energy cost reduction of 14% and 8% respectively.

Supervisor: Prof CSL Schutte Co-supervisors: Drs JH van Laar, WA Pelser

HOCKADAY, Susanna Aletta Carolina (Mechanical Engineering)

Solar-thermal treatment of manganese ores

This study investigates the concentrating solar-thermal pre-treatment of three manganese ores in high-carbon ferromanganese production. Thermogravimetric laboratory and on-sun experiments allow for the development of reaction kinetics and a process model used to scale the annual production of a 2,5 MWth solar treatment plant. Ores with high braunite and calcite content benefit from concentrating solar-thermal treatment, requiring up to 45% less energy for manganese ferroalloy production. Manganese ores with oxidised manganese minerals do not significantly benefit in terms of reducing energy requirements for smelting, but do show reductions in greenhouse gas emissions of between 20 and 40%.

Supervisor: Prof F Dinter Co-supervisors: Prof C McGregor, Dr QG Reynolds

HOFFMANN, Johannes Jacobus (Civil Engineering)

The development of a daily stochastic streamflow model for probabilistic water resource management

This study focuses on the development of a daily stochastic streamflow model that local authorities in South Africa can use for resource management in small single-site catchments. The research methodology involves the generation of daily stochastic streamflow data by combining a Markov process, daily duration curves and a pseudo-random number generator. The Daily Markovian Stochastic Streamflow (DMASS) model developed, consists of four modules: pre-processing, analysis, generation and climate change. The DMASS model's daily stochastic streamflow sequences show good representation of the historical streamflow data and produce comparable variability of monthly stochastic data to the monthly stochastic data produced by existing models such as STOMSA and SAMS.

Supervisor: Prof JA du Plessis

JOUBERT, Bronwyn (Industrial Engineering)

Towards the sustainable implementation of Lean in hospitals

To achieve the necessary quality and efficiency improvements in healthcare delivery, hospitals have started applying Lean – a continuous improvement philosophy focused on adding customer value, eliminating waste activities, and respecting people. However, evidence suggests that the failure rate of Lean programmes in healthcare is, in fact, high and that hospitals are struggling to implement it sustainably. To foster long-term improvements, this study investigates the factors that aid Lean sustainability in hospitals to establish a set of hospital-specific practices required for Lean transformation. Additionally, an assessment tool that encapsulates these findings is developed to guide hospitals in their practical application.

Supervisor: Prof WG Bam Co-supervisor: Prof L Louw

KIRKMAN, Daniel Mark (Industrial Engineering)

Freeform support-free additive manufacturing with continuous fibre reinforced photopolymer

Fibre reinforcement has been shown to drastically increase the strength of polymer components produced by additive manufacturing. However, additive manufacturing methods are limited to planar, layer-wise build strategies. This study develops a robotic additive manufacturing system capable of the support-free deposition of a continuous glass fibre-reinforced photopolymer along freeform toolpaths. Objectives were to develop toolpath generation methods, hardware and software for the deposition process and to demonstrate the system by manufacturing and testing various test geometries. The continuous fibre-reinforced support-free additive manufacturing of a simple optimised part, using freeform toolpaths and load path-aligned reinforcement fibres, is successfully demonstrated.

Supervisor: Prof AF van der Merwe Co-supervisor: Prof RI Campbell (external)

KRIEL, Scott Graham Hilton (Electronic Engineering)

A figure of merit for the X-Band All-Sky Survey

This study concerns the instrument design for the X-Band All-Sky Survey, a single-dish radiometer used to aid observations of the cosmic microwave background. The focus is on the design methodology of such antennas for radio astronomy, where generic figures of merit (FoMs) traditionally used do not accurately describe the end performance of the instrument. Thus, a new FoM is developed, combining different characteristics of the antenna into a single metric that can be optimised in the design. The study shows how this relates directly to the end science goals of the project and provides a superior choice to other traditional FoMs.

Supervisor: Prof DIL de Villiers

LEONARD, Elizabeth (Industrial Engineering)

Evaluating the successful and sustainable implementation of evidence-based innovations in health systems in lowincome and middle-income countries: A maturity model approach

Enhancing the success and sustainability of innovation implementation has become one of the most apparent promoters of improvement in low-income and middle-income country (LMIC) health systems. A novel solution – the LMIC Health Innovation Implementation Maturity Model (HII-MM) – is developed to improve the implementation of innovations in LMICs. The HII-MM is a maturity assessment tool that facilitates the assessment of LMIC health innovation landscapes. It defines the system's current implementation maturity, identifies gaps hindering an innovation's successful and sustainable implementation, and provides potential maturation paths that can inform improvement initiatives.

Supervisor: Prof IH de Kock Co-supervisor: Prof WG Bam

LOUBSER, Carlo (Civil Engineering)

Water infrastructure planning under intermittent supply conditions

Various challenges, including limited freshwater resources, population growth and underinvestment in infrastructure, have led to intermittent water supply (IWS) in potable water distribution systems around the world. This study focuses on the prevalence of IWS in South Africa, developing a benchmarking tool for IWS and analysing various causes and impacts associated with IWS. Impacts researched include reliability of supply, the effect of the filling peak, and the impacts of various forms of IWS on consumers, water distribution systems and water services providers. In conclusion, mechanisms for improved management and prevention of IWS as well as for mitigating IWS impacts are suggested.

Supervisor: Prof JA Wium Co-supervisor: Prof HE Jacobs

MAKHETHA, William Motsoko Ishmael (Industrial Engineering)

The effect of selective laser melting (SLM) post-processing solutions on material properties to meet functional Ti-6Al-4V requirements

While metal additive manufacturing processes are already producing parts for, among others, the aerospace, automotive and biomedical industries, the benefits of the technology have not been fully realised. Its widespread implementation is hindered by process-inherent attributes that result in a part not meeting industry requirements. To contribute to a higher level of technology-readiness, this study develops and validates a framework to, through the use of post-processing technologies, meet specified industry requirements.

Supervisor: Prof TH Becker Co-supervisor: Prof N Sacks

MANHONGO, Tariro Tecla (Chemical Engineering)

A comparative investigation of the techno-economic feasibility and sustainability of mango waste biorefineries in South Africa: A process modelling approach

This study assesses the economic viability and sustainability of mango waste biorefineries in South Africa. Six scenarios for the co-production of pectin, polyphenols, bioethanol and bioenergy are evaluated. The production of bioenergy alone or the co-production of bioethanol and bioenergy is not economical. Co-production with pectin and polyphenols improves the economic performance but has an increased environmental impact. Overall, the most lucrative scenario in one or two sustainability categories is not the most attractive from another perspective. Thus, there is a need to establish trade-offs between the pillars of sustainability when selecting biorefinery options for implementation.

Supervisor: Prof AFA Chimphango Co-supervisor: Prof PE Thornley (external)

McCLELLAND, Michelle (Industrial Engineering)

Evaluating sectoral innovation system functional performance in the additive manufacturing sector: Cemented tungsten carbides case studies

Additive manufacturing has been identified as an additional manufacturing method for hard-metal products. Therefore, this study uses the innovation system perspective to develop an evaluation framework that supports innovation system analysis. The framework identifies the dynamics involved in the growth of the South African hard-metal industry, and the mechanisms that enable novel technologies such as additive manufacturing to be developed through the Valley of Death to commercialisation in industry. A survey of 80% of the South African additive manufacturing enterprises also reveal the innovation opportunities and roadblocks present in the Valley of Death.

Supervisor: Prof SS Grobbelaar *Co-supervisor:* Prof N Sacks

NARAYANAN, Vigneshwaran (Civil Engineering)

Reduced-scale modelling of informal settlement dwelling fires

Fires in informal settlements are a common occurrence. This study develops reduced-scale experiments (mini-shacks) to study fire dynamics and spread in informal settlements. Scaling methodologies are developed to allow safety interventions to be studied. The study investigates the significant impact of parameters such as wind, combustible cladding and inter-dwelling spacing on fire spread. The scaling methods demonstrate good fire dynamic correlations in individual dwellings and between two dwellings, but highlight the chaotic nature of large-scale incidents. Computational models capturing individual dwelling behaviour are produced. The study summarises mathematical techniques with correction factors for future settlement scaling applications.

Supervisor: Prof RS Walls

OKERE, Emmanuel Ekene (Electronic Engineering)

Hyperspectral/multispectral imaging technology: Application for pomegranate fruit internal quality evaluation and bruise detection

Pomegranate (*Punica granatum L.*) is one of the most ancient deciduous fruits in the world, and demand for it is growing due to its nutritional and health benefits. Its return in revenue is more than R145 million per annum. However, the occurrence of bruise damage significantly affects the optimum return on investment. Hyperspectral imaging (HSI), being an optically based biosensing technique, has shown great potential as a non-destructive inspection technique for internal quality diagnostics. This study demonstrates the efficacy of HSI for detecting early bruising, its development and severity as well as for maturity classification of pomegranate fruit.

Supervisor: Prof WJ Perold Co-supervisor: Prof UL Opara

OLALEYE, Kayode Kolawole (Electronic Engineering)

Visually grounded keyword detection and localisation for low-resource languages

Imagine having to build a speech processing system, but not knowing the language. One way would be to ask speakers of that language to describe images. This study uses this type of data to develop algorithms that allow a machine to process speech without any written resources. It specifically proposes new approaches that would allow visually grounded speech models to locate keywords – a task never attempted before. In addition, a new speech-image dataset is collected in Yoruba, illustrating for the first time how these multimodal machine learning models can be applied to a real low-resource language.

Supervisor: Prof H Kamper

OYERINDE, Abiola Oyetunde (Civil Engineering)

A sectoral model for estimating residential water use in heterogeneous suburbs with complex household supply systems

Residential water demand estimation is a particular challenge in regions where household water supply originates from multiple unmetered water sources, including piped supply, private wells and boreholes, community sources, delivery by vendors, and the purchase of water sachets for drinking. This study focuses on the estimation of demand in regions with complex supply. A multiple linear regression model and sectoral stochastic model are developed to simulate daily residential water demand, with a focus on a study area in Nigeria. The observed demand is estimated from 1 330 survey responses, and a model is derived based on observed data.

Supervisor: Prof HE Jacobs *Co-supervisor:* Prof JA du Plessis

RAAL, Ridalise (Electronic Engineering)

Sub-sampled exponential analysis applied to sparse planar antenna array configurations

Sparse exponential analysis can allow the accurate representation of a smooth function from only a few known samples. A recent development in multidimensional sparse exponential analysis is exploited in this study in the context of antenna array systems such as those used in modern radio telescopes such as LOFAR and the SKA. The exponential analysis problem is reformulated and solved for the non-linear near-field region to allow accurate in-situ position estimation of antenna elements in a sparse random array. Application of this algorithm will simplify the installation and calibration of the thousands of antennas required in the full telescope system.

Supervisor: Prof DIL de Villiers *Co-supervisor:* Prof A Cuyt (*external*)

ROBERTSON, Stuart (Electronic Engineering)

Efficient approximations of the multi-sensor labelled multi-Bernoulli filter

This study develops efficient multi-sensor multi-object trackers. The multi-object tracking problem is given a Bayesian formulation, and both the number of objects and their characteristics are inferred from the sensor data. The exact approach is computationally intractable, and approximate inference is performed using a combination of probabilistic graphical models and various multi-sensor data fusion algorithms. This leads to the development of three computationally efficient multi-sensor multi-object trackers that can track a large number of objects using many sensors in real time.

Supervisor: Dr CE van Daalen *Co-supervisor:* Prof JA du Preez

RUYOBEZA, Barimwotubiri Billy (Industrial Engineering)

A framework for developing remote patient management systems in South Africa

Assistive health technologies have for several years been expected to reduce skyrocketing health-related costs and the care burden on traditional healthcare systems. Based on a combination of rapid advances in body sensors, information and communications technologies as well as artificial intelligence, it is hoped that remote patient management tools and systems (RPMTS) will improve the efficiency and quality of traditional healthcare systems. However, their adoption has been slow in developing countries, where they ought to have made the greatest positive impact. This study develops an integrated process framework to guide and support developers in improving RPMTS adoption and scaling.

Supervisor: Prof SS Grobbelaar Co-supervisor: Prof A Botha

SCHABERG, Paul Werner (Mechanical Engineering)

Model-based exploration of the inter-relationships between diesel fuel properties and engine performance and exhaust emissions

This study develops artificial neural network models to accurately predict the impact of fuel properties and engine calibration parameters on the transient performance and exhaust emissions of a modern heavy-duty diesel engine. The model-based approach allows analysis of the impact of individual fuel properties, and examination of the extent to which variations in these properties can enable the optimisation of the engine calibration to improve fuel efficiency. This novel approach offers new insights into how diesel fuel compositions and properties can influence engine behaviour and enable performance and efficiency improvements.

Supervisor: Prof TM Harms Co-supervisor: Prof A Groenwold

SCHEFFLER, Otto Carl (Mechanical Engineering)

Discrete element method (DEM) calibration of wet materials for bulk handling

This study investigates the use of the discrete element method to simulate the behaviour of cohesive granular materials, specifically sand that has been moistened to induce cohesion. Various contact models for simulating the cohesive behaviour of the moistened sands are examined, and the models' parameters are calibrated using multiple laboratory tests and techniques. The calibrated parameter sets are then validated by comparing the simulated behaviour to physical measurements taken during bulk flow across a conveyor transfer point. The results indicate that the degree to which the modelled particles can be upscaled increases when the material cohesion increases.

Supervisor: Prof CJ Coetzee

STRUWIG, Michael Nicolas (Electronic Engineering)

Modelling and optimisation of linear-motion kinetic energy harvesters: Two approaches

Wildlife tracking collars are constrained by battery capacity due to size and weight limitations and are exposed to the non-harmonic mechanical motion of animal footsteps. Energy harvesting can extend the life of these devices. A microgenerator architecture is proposed, consisting of a variable number of evenly spaced magnets moving through an also variable number of evenly spaced coils, supported by a magnetic spring. A matching electro-mechanical model and optimisation strategy determine the design parameters optimising harvested energy for a given acceleration input. This model and method accurately predict micro-generator behaviour and harvest energy far in excess of a reference design.

Supervisor: Prof TR Niesler Co-supervisors: Profs JM Strauss, R Wolhuter TAYLOR, Rebecca Mimi Catharina (Electronic Engineering)

Approximate message passing algorithms for latent Dirichlet allocation

This study presents two new variational message passing algorithms for latent Dirichlet allocation, being a hierarchical Bayesian model. The first is approximate loopy belief update (ALBU), which uses loopy belief update and ideas from forward sampling. The second algorithm, termed VMP+ in the research, combines ideas from ALBU and variational message passing (VMP). The topic extraction performance of these two algorithms is compared with that of variational Bayes (VB) and collapsed Gibbs sampling (GS) on corpora containing short texts. The results show that both algorithms outperform VB, and the performance of ALBU is similar to that of GS.

Supervisor: Prof JA du Preez

TER HUURNE, Dominique Andrea (Civil Engineering)

Road network supply efficiency in Cape Town, South Africa, and its link to the incidence of road traffic crashes: An evaluation of equity

In South Africa, road safety is a short-term strategic priority. Crash-risk assessment, however, requires extensive input data, including road inventory data, exposure data and environmental data, which is not readily available in low-income and middleincome countries such as South Africa. Using commercially available origin-destination Floating Car data, this study examines the relationship between crash frequency and transport demand, and tests road supply network efficiency as a network-wide road safety measure. The results are both promising and extremely relevant given Africa's intention to focus the application of road safety assessments on mobility roads, while the majority of pedestrian crashes have been found to occur on access roads.

Supervisor: Prof M Sinclair

VENTER, Van Zyl (Industrial Engineering)

A decision support framework for cross-functional team selection

Team formation has become an integral part of modernday organisations, and the process of selecting appropriate candidates as team members from across an organisation can become very complex. This process, known as crossfunctional team selection (CFTS), involves the selection of candidates at multiple decision points in time and from different organisational departments to form a project team. In this study, a generic decision support framework for the CFTS process is designed, and an instantiation of the framework is implemented on a personal computer as a proof of concept. The framework methodology draws from several domains, including multicriteria decision making, anticipated team member performance time series forecastingand combinatorial optimisation.

Supervisor: Prof JH van Vuuren

A harvest and processing decision support system for table grape production

Harvesting and production decisions for table grape producers are complex. Delivering on customer-specific requirements based on the cultivar, packaging type and grape quality is complicated by ever-changing harvesting methods. This study uses a mixed-method exploratory sequential design to guide system development. The Non-Dominated Sorting Genetic Algorithm II is used to develop tactical and operational plans. A bi-objective model minimises demand deviation and distance between orchards and pack sites to preserve quality. The study produces a table grape-specific decision support system, filling a gap in the literature. Through a geographically diverse case study, the research also contributes to efforts to accommodate customers' pack-to-order needs.

Supervisor: Prof J van Eeden Co-supervisor: Prof JF Bekker

ZIETSMAN, Hans Jurie (Industrial Engineering)

An integrated framework for multi-objective decision support in retail inventory management

Inventory management systems are typically aimed at balancing the conflicting objectives of achieving good customer service levels and minimising inventory and operational costs. A variety of decisions affect trade-offs between these conflicting objectives. A framework for decision support is proposed in this study which integrates all the functions that typically underlie inventory decision processes. The framework supports product selection and prioritisation, the forecasting of statistical distributions of customer demand, and inventory replenishment recommendations. A computerised instantiation of the framework is also successfully verified in respect of benchmark data from the literature and validated during two real-world case studies in the South African retail sector.

Supervisor: Prof JH van Vuuren



Faculty of Engineering | Fakulteit Ingenieurswese

OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

Master in Engineering Science in Biomedical Engineering Magister in Ingenieurswetenskappe in Biomediese Ingenieurswese

Bergh, Oloff Charles Wessel (Biomedical Engineering) Dreyer, Rita Liezl (Biomedical Engineering) Kotze, Leon (Biomedical Engineering) Turner, Anne Mary Margaret (Biomedical Engineering) *(cum laude)*

Master of Engineering Magister in die Ingenieurswese

Abel, Nicolaas Cornelius (Civil Engineering) Adams, Logan Charl (Civil Engineering) *(cum laude)* Afeltra, Massimiliano (Mechanical Engineering) Amanful, Bright (Chemical Engineering) Amukwaya, Kelvine Fessy Nafuka (Electrical Engineering) Andersen, Eduard Petrus (Mechatronic Engineering) *(cum laude)* Attieh, Annitta (Mechanical Engineering) *(cum laude)* Bakambana Ngumba, Jérémie Ngumba (Electronic Engineering) Barnard, Christoffel Jacobus (Mechanical Engineering) Becker, Jolanda (Industrial Engineering)

Bekker, Emmarentia Lydia (Engineering Management) Bekker, Gretchen (Engineering Management) Bester, Morné (Industrial Engineering) (*cum laude*) Botes, Abraham (Electrical Engineering) (*cum laude*) Botes, Welri (Electronic Engineering) (*cum laude*) Botha, Liza (Civil Engineering)

Buhrmann, Sophia Wilhelmine (Mechatronic Engineering) (cum laude)

Burger, Andries Jacobus Johannes (Electronic Engineering) Chikande, Adriano Quondie Persuade (Chemical Engineering)

Coetser, Karlien (Engineering Management)

Coetzee, Berna (Industrial engineering) (cum laude)

Coetzer, Roanné Maria (Industrial Engineering) *(cum laude)* Cromhout, Bianca (Engineering Management) *(cum laude)* Cronje, Yakim (Chemical Engineering) *(cum laude)*

Daniels, Julian Trevor (Electrical Engineering) (cum laude)

Dawood, Ghaalib (Mechanical Engineering)

De Kock, Andrew John (Electrical Engineering) *(cum laude)* De la Bat, Willem Frederik (Electronic Engineering) *(cum laude)*

De Wet, Rijk Marius (Industrial Engineering)

Deyzel, Michael Christopher (Electronic Engineering) *(cum laude)*

Doubell, Gerhardus Christiaan (Mechatronic Engineering) (*cum laude*)

Du Plessis, Francois (Electrical Engineering) (cum laude)

Du Plessis, Morné Christiaan (Industrial Engineering) (cum laude)

Du Toit, Johannes Petrus (Civil Engineering)

Du Toit, Theunis Hendrik Jacobus (Mechanical Engineering)

Egberink, Ross Cameron (Mechanical Engineering) Ellerbeck, William Vincent (Mechanical Engineering) Eloff, Kevin Michael (Electronic Engineering) Erasmus, Devlon (Electronic Engineering) (*cum laude*) Erasmus, Sheldon (Electronic Engineering) (*cum laude*) Erasmus, Wian (Mechanical Engineering) Esmael, Abdullah (Industrial Engineering) (*cum laude*) Esterhuizen, Lohani (Industrial Engineering) (*cum laude*) Faure, James Philip Kossuth (Industrial Engineering) (*cum laude*)

Fenton, Craig Taylor (Civil Engineering) (cum laude) Fourie, Armand (Chemical Engineering) Fourie, Bradley (Engineering Management) (cum laude) Frost, Geoffrey Todd (Electronic Engineering) (cum laude) Gouws, Mirelle Rene (Chemical Engineering) Govender, Alistair (Civil Engineering) (cum laude) Greyling, Guillaume Hermanus (Industrial Engineering) (cum laude)

Grobbelaar, Hendrik Cornel (Mechanical Engineering) Grobler, Lindi (Mechatronic Engineering) *(cum laude)* Hanekom, Jandre (Mechanical Engineering) Harraway, Tricia Margaret (Industrial Engineering) *(cum laude)*

Harty, Amba (Electronic Engineering) (*cum laude*) Hattingh, Shane John (Electronic Engineering) Herbst, Christi Johannes Christoffel (Engineering Management)

Hesse, Bernhard (Industrial Engineering) (*cum laude*) Hestermann, Elke (Mechatronic Engineering) Heynemann, Marli (Mechanical Engineering) Hoffmann, Moritz (Engineering Management) Hohbach, Annika Hilde (Electronic Engineering) Impey, Roshana (Industrial Engineering) (*cum laude*) Iyambo, Sem Meke (Industrial Engineering) Jacobs, Derick Stephen (Industrial Engineering) (*cum laude*) Jacobs, Johannes Jacobus (Industrial Engineering) (*cum*

Jacobs, Johannes Jacobus (Industrial Engineering) (*cum laude*)

Jardine, Muhammad Ameen (Electronic Engineering) *(cum laude)*

Jeffery, Samuel John (Electronic Engineering) Jordaan, Ruan (Industrial Engineering) Joubert, Shaun (Industrial Engineering) Kalake, Refiloe (Civil Engineering) (cum laude) Kasperski, Sasha Dalena (Chemical Engineering) Keech, Amy (Mechanical Engineering) Kgetsi, Tswalle Seth (Civil Engineering) Khalifa, Muzafar Tagelsir Hamza (Chemical Engineering) Khuluse, Nothando Sbusisiwe (Civil Engineering) Kiautha, Antony Mugambi (Civil Engineering) Kleinhans, Ryno (Industrial Engineering) (cum laude) Kloppers, Piet Swart (Industrial Engineering) (cum laude) Kobole, Samantha Mandipa (Civil Engineering) Kühn, Justin (Civil Engineering) Kuhn, Mattheus Willem Johannes (Engineering Management) (cum laude)

Kuriakose, Rony Koodalil (Electronic Engineering) Laas, Jacobus (Mechanical Engineering) Landmann, Timur (Engineering Management) (cum laude) Laubscher, Heino (Electronic Engineering) (cum laude) Lazarus, Edward Nghidimongila (Electrical Engineering) (cum laude) Loots, Tiaan Andre (Engineering Management) Loubser, Roan (Mechanical Engineering) Lourens, Cordilia (Chemical Engineering) Lourens, Daniel (Civil Engineering) (cum laude) Lourens, Riaan Eksteen (Civil Engineering) (cum laude) Louw, Anke (Chemical Engineering) Louw, Christina Alet (Chemical Engineering) (cum laude) Louw, Ulrich Johan (Electronic Engineering) Macaskill, Justin Alban (Engineering Management) (cum laude) Makara, Nyane Patricia (Civil Engineering) (cum laude) Makhubelo, Dumisani Nation (Civil Engineering) Makombe, Tina Venessa (Civil Engineering) Malapane, Nkone (Civil Engineering) Manana, Setsabile Nothando Thembeka (Civil Engineering) Marshall, Cole James (Civil Engineering) Masoga, Ivory Lesego (Chemical Engineering) Matshaya, Thando (Civil Engineering) Meliadis, Panagiotis (Engineering Management) Mert, Serkan (Engineering Management) Meyer, Tanya (Chemical Engineering) Mikka, Saarty Tuyakula (Electrical Engineering) Momoh, Chris Favour Ojonugua (Chemical Engineering) Monteiro, Carlos Armando (Industrial Engineering) Mouton, Daniello Alberto (Electrical Engineering) Mulder, Gerhard Johan (Industrial Engineering) (cum laude) Mwambananji, Peter David (Industrial Engineering) (cum laude) Mwanangombe, Judah (Civil Engineering) Mzabane, Ondela (Chemical Engineering) Nalubega, Sharifa Ishaq (Civil Engineering) (cum laude) Nannoolal, Aveer (Industrial Engineering) (cum laude) Ndengu, Panduleni Ayihe (Electrical Engineering) Nekhavhambe, Tshifhiwa Shane (Electrical Engineering) Nel, Cameron Luke (Mechanical Engineering) Nel, Marko (Engineering Management)

Nigrini, Leanne (Industrial Engineering) *(cum laude)* Nothnagel, Andre Cornelius (Civil Engineering) Oberholzer, Johannes Jacobus (Civil Engineering)

Olivier, Wandie (Civil Engineering)

Ondiko, Jackson (Mechanical Engineering)

Oosthuizen, Jodri (Mechatronic Engineering)

Parker, Mohamed Zahier (Electronic Engineering) *(cum laude)*

Pheiffer, Clayton James (Electronic Engineering) Piwang, Howard (Mechanical Engineering) Rabie, Nadia (Civil Engineering) *(cum laude)* Rapp, Jannis (Engineering Management) *(cum laude)* Reed, Edwin Richard (Industrial Engineering) *(cum laude)* Richards, Nicole (Industrial Engineering) Robinson, Simon (Electronic Engineering) (cum laude) Roux, Dominic (Electronic Engineering) Rudolph, Sabrina Mary-Ann (Mechanical Engineering) (cum laude) Ruthven, Pieter Gerhard (Civil Engineering) Schnabel, Benedikt (Engineering Management) (cum laude) Schroder, Brandon (Mechanical Engineering) (cum laude) Schutte, Hendrik Jakobus (Industrial Engineering) (cum laude) Schweitzer, Felicia Cathrin (Engineering Management) (cum laude) Seshoka, Moloko Donald (Civil Engineering) Shabe, Refiloe Sarah (Industrial Engineering) Smit, Christoffel Andreas (Civil Engineering) Smit, Jacobus Hermanus (Industrial Engineering) Snyders, Francois Jurgens (Electronic Engineering) (cum laude) Spamer, Marike (Industrial Engineering) (cum laude) Stander, Charl Dirk (Engineering Management) Stephan, Gideon Adrian (Mechanical Engineering) Stewart-Burger, Cullen Douglas (Electronic Engineering) (cum laude) Steyn, Louisa Esmerelda (Civil Engineering) (cum laude) Swanepoel, Thea Martenique (Industrial Engineering) Takoorparsadh, Mohini (Electrical Engineering) (cum laude) Taljaard, Carl Magnus Lönngren (Civil Engineering) Tenderere, Kudzai Promise (Electronic Engineering) Thiry, Cesar Cameron (Mechatronic Engineering) Thompson, Ryan (Electrical Engineering) (cum laude) Totos, Luke (Industrial Engineering) Trafford, Nicholas (Mechanical Engineering) Tsese, Iketsetseng Joseph (Civil Engineering) Tsitsa, Ayanda (Civil Engineering) Twasa, Samuel (Civil Engineering) Van der Linde, Charley (Industrial Engineering) (cum laude) Van der Merwe, Arno (Industrial Engineering) Van der Merwe, Stefani (Industrial Engineering) (cum laude) Van der Merwe, Werner (Industrial Engineering) Van der Merwe, Werner (Electronic Engineering) (cum laude) Van der Westhuizen, Alex (Mechatronic Engineering) Van Heerden, Cara (Chemical Engineering) (cum laude) Van Heerden, Nicolette (Engineering Management) (cum laude) Van Jaarsveld, Nicolaas Vlok (Mechanical Engineering) Van Rooyen, Jacques (Civil Engineering) (cum laude) Van Straten, Armandt (Civil Engineering) Van Tonder, Francois Johann (Civil Engineering) (cum laude) Van Zyl, Bianca Jordan (Industrial Engineering) (cum laude) Van Zyl, Frederick Jacobus Van Eeden (Engineering

Reed, Michael James (Mechanical Engineering)

Management) *(cum laude)* Van Zyl, Jacques (Mechanical Engineering) Vass, Kane Ben (Mechanical Engineering) Venter, Michal Barend (Industrial Engineering) *(cum laude)* Verburg, Edrich (Electronic Engineering) Versfeld, Jozandri (Industrial Engineering) Vicente, Riccardo Piero (Engineering Management) Wasserfall, Jacob Gabriël (Mechanical Engineering) Webber, Bruce Francious (Civil Engineering) Weiss, Nathan Eduard (Electronic Engineering) *(cum laude)* Weltin, Michael (Engineering Management) *(cum laude)* Wessels, Bea (Electronic Engineering) Wiehahn, Erich Andre (Industrial Engineering) *(cum laude)* Wiesner, Brandon Oscar (Industrial Engineering) *(cum laude)* Williams, Christopher Allen (Industrial Engineering) Zietsman, Pieter Schalk Jacobus (Industrial Engineering) *(cum laude)*

Postgraduate Diploma in Engineering Nagraadse Diploma in die Ingenieurswese

Chopho, Ts'iame Michael Simeon, Ndategako Deapo Inamutila Swepu, Xola

Bachelor of Engineering Baccalaureus in die Ingenieurswese

Anokhina, Julia (Electrical and Electronic) Argall, Matthew Douglas (Industrial) Bartel, Leon Johan (Chemical) Botha, Matthys Herman (Industrial) Braaf, Cindi Toshca (Civil) Bruwer, Lisa (Industrial) Chetty, Declan Ethan (Chemical) Chingwena, Lesley Tafadzwa (Electrical and Electronic) Chiza, Tanyaradzwa Constance (Industrial) Claassen, Rudolf Johannes Jakobus (Mechatronics) Davis, Tristan (Mechatronics) De Greeff, Sarah-Lee (Mechatronics) Dreyer, Jan Hendrik (Mechatronics) Du Preez, Dylan (Mechanical) Elliott, Andrew (Chemical) Frazer, James Robert (Electrical and Electronic) Galloway, James Henry (Electrical and Electronic) Gardiner, Mark Bruce (Mechanical) Geldenhuys, Martiné (Civil) Goosen, Jacob Christiaan Stephanus (Mechanical) Groenewald, Hendrik Stephanus (Mechatronics) Hanekom, Jan-Hendrik (Chemical) Hanekom, Nicol Jesse (Chemical) Hayter, Ross Graham (Mechanical) Hein, Marc (Mechatronics) Heunis, Francois (Electrical and Electronic) Honey, Rikus (Electrical and Electronic) Jacobs, Dean Eduann (Industrial) Jacobs, Louw Eric (Mechatronics) Jaffer, Anees-Ahmad (Mechatronics) Janse van Vuuren, Hendrik Christoffel (Mechanical)

Johannes, Bradley Peter (Chemical) Joseph, Connor Jesse (Industrial) Joubert, Chris (Civil) Joubert, Francois Johannes (Civil) Joubert, Juvan (Civil) Kim, Sunin Kevin (Electrical and Electronic) Koebergh, Wade (Industrial) Kozuchowski, Klaudia (Chemical) Kroes, Johan (Industrial) Krone, Nicholas Charles (Civil) Kruger, Susanna Elizabeth (Civil) Kunene, Noluthando Lihle (Electrical and Electronic) Labuschagne, Ruan (Civil) Langdon, Christy (Industrial) Larkins, Justin Liam (Mechatronics) Le Roux, Danièlle (Mechatronics) Leigh, James David (Electrical and Electronic) Lloyd, Arloue Charles (Mechanical) Lombard, Daniel Wilhelmus (Civil) Luboya, Mpoyi (Mechatronics) Mabala, Phumudzo Wayne (Mechanical) Mabaso, Nelisa Zamantungwa Sphumelele (Industrial) Makakavhule, Nduvho (Chemical) Mangele, Abahle Vuyo (Civil) Marais, Maude-Ann (Industrial) Marnewick, Kisten (Industrial) Massingue, Derick (Civil) Mathebula, Luthando Mpho (Civil) Matheis, Michael Reinward Wilfried (Civil) Matlaila, Sindi Lerato (Chemical) Matthews, Brady Steven (Mechanical) Meyer, Lemar (Civil) Mile, Paballo (Industrial) Motsi, Alexander Takudzwa (Civil) Muzamhindo, Tinotenda Daniel (Mechatronics) Muzondidya, Tinomutendayi Tandare James (Chemical) Myburg, Hano Johannes (Industrial) Neubert, Jonathan Luke (Mechatronics) Okhuis, Melissa Anastasha (Civil) Olivier, Landon-J (Civil) Raatz, Kyle Franco (Industrial) Rabbets, Jake (Mechatronics) Rambau, Khuliso Newman (Mechanical) Raphadu, Tebogo Matome (Mechatronics) Rech, Ivano (Mechatronics) Salie, Aghmad (Mechanical) Schnaar-Campbell, Jean Marco (Mechanical) Shikulo, Frans Kamtalele (Electrical and Electronic) Shipindo, Jairus Lineekela (Civil) Singh, Shirahn (Mechatronics) Skein, Etienne-Pierre (Civil) Smit, Janré (Industrial) Smith. Travis Andre (Civil) Snyman, Dewaldt Neil (Electrical and Electronic)

Stemmet, Jamie Lee (Civil) (cum laude) Stofberg, Dennis De Villiers (Industrial) Swanevelder, Richter (Mechanical) Tayob, Ahmed Rishaad (Electrical and Electronic) Theron, Roland (Industrial) Theron, William (Electrical and Electronic) Thomson, Megan Emma Sherry (Chemical) Van de Venter, Graham John (Chemical) Van der Berg, Michiel Christiaan (Electrical and Electronic) Van der Merwe, Dian Philip (Civil) Van der Merwe, Ilghe (Mechatronics) Van der Merwe, Izak Luka (Industrial) Van der Merwe, Jurgen (Electrical and Electronic) Van der Merwe, Marcel (Mechanical) Van der Westhuizen, Jean-Pierré (Civil) Van Heerden, Courtney Griffin (Electrical and Electronic) Van Niekerk, Dawid Jacobus (Mechanical) Viljoen, Tino Christiaan (Industrial) Wieland, Marguerite (Chemical) Wolfaardt, Petronella Trinette (Electrical and Electronic) Young, Dylan (Civil) Zata, Masiiwa Madhamu (Chemical)

Faculty of Science

30 March 2023 | 13:00

Fakulteit Natuurwetenskappe

30 Maart 2023 | 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 Lied.
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.

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

DOCTOR OF SCIENCE DOKTOR IN DIE NATUURWETENSKAPPE

DICKS, Leon Milner Theodore (Microbiology)

Interactions between gut microbiota and the central nervous system, with emphasis on quorum sensing between commensal lactic acid bacteria and human cells

Gut microbiota, including lactic acid bacteria, synthesise and regulate the production of hormones and intermediate compounds such as short-chain fatty acids. These molecules are used by intestinal microorganisms to communicate with one another, gut epithelial cells and the central nervous system, regulate immune responses, and alter cognitive functions. Quorum sensing, combined with quorum quenching (silencing of microbial signalling), may lead to the control of neuroimmuno-endocrine pathways and the development of novel therapeutic agents, including target-orientated probiotics and psychobiotics. This will also lead to the design of biomarkers to diagnose intestinal disorders such as inflammatory bowel disease, cancer and neuropsychiatric abnormalities.

Supervisor: Prof A Botha

DOCTOR OF PHILOSOPY DOKTOR IN THE WYSBEGEERTE

BABEDI, Lebogang (Geology)

An investigation of the molecular-level mineral chemistry of metal-bearing pyrite and its electrochemical behaviour under flotation-related conditions

Pyrite is a common host to gold and is typically concentrated using flotation technologies. The efficacy of this beneficiation technique is affected by a range of parameters, one of which is the mineral chemistry and its associated surface reactivity. In this study, a set of synthetic pyrite minerals with varying proportions of trace-element substituents are grown for the detailed characterisation of their surface reactivity and rest potential (as a proxy for flotability). It is found that trace-element concentration and identity play a key part in modifying the flotation characteristics. These insights form the basis for improved and targeted auriferous pyrite beneficiation design.

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

BIKO, Odwa Dinilesizwe Vuyani (Microbiology)

Strategies to enhance production of a recombinant lignin peroxidase in *Pichia pastoris*

Lignin peroxidase is a key enzyme employed by fungi to degrade wood-derived lignin. The enzyme has several potential biotechnological applications, but limited production of lignin peroxidases from native and heterologous expression hosts restricts its industrial application. In this study, the *Phanerochaete chrysosporium* lignin peroxidase (lipH8) gene is successfully expressed in a recombinant *Pichia pastoris* yeast strain. Different medium optimisation and strain engineering strategies are used to increase the production titres more than ten-fold relative to standard conditions. This successful recombinant expression paves the way for the potential large-scale production of lignin peroxidases for industrial applications.

Supervisor: Prof WH van Zyl Co-supervisor: Prof M Viljoen-Bloom

CHISAPI, Vernon Maluba (Physics)

Spectroscopy of ⁵⁰Ti through internal-pair formation

A new piece of equipment using a solenoid magnetic lens spectrometer is successfully refurbished and upgraded to allow measurement of internal-pair formations (IPFs) in addition to conversion electrons (CEs) at the iThemba Laboratory for Accelerator-Based Sciences in Cape Town, South Africa. Coupling the lens spectrometer with a γ -ray detector-array consisting of seven HPGe Clover detectors gives the experimental setup capability to measure conversion electrons in coincidence with the γ -rays. An in-beam nuclear experiment is performed with the ⁵⁰Ti scattering reaction. The γ -ray decay is thoroughly investigated and the level schemes of all the populated nuclei are built.

Supervisor: Dr P Jones Co-supervisor: Prof RT Newman DE WAAL, Jan Hofmeyr (Geography & Environmental Studies)

Adverse impacts of agricultural expansion on hydrological and nutrient dynamics in a renosterveld landscape – can natural vegetation offer solutions?

The impact of agricultural expansion on the hydrological, sediment and water quality dynamics in the Overberg renosterveld landscape in the Western Cape is evaluated. Soil erosion modelling suggests that agriculture activities in the Bot River catchment have increased soil erosion more than twentyfold. Agricultural expansion in this catchment has also degraded the water quality in the rivers. Specifically, nitrogen and chloride levels periodically exceed water quality guidelines for aquatic ecosystems. The study suggests that the presence of natural vegetation buffer strips adjacent to watercourses demonstrably mitigates nutrient inputs from agricultural hillslopes to rivers in the region, while also acting as carbon sinks.

Supervisor: Prof A van Niekerk Co-supervisor: Prof J Miller

DU BUISSON, Johannes Petrus (Physics)

Dynamical large deviations of diffusions

The physical equations governing the evolution of small, microscopic systems are not deterministic: They are perturbed by a noise term, the thermal noise, which makes them stochastic, giving rise to diffusion equations that have been studied in statistical physics for more than a century. This study considers diffusion equations that are linear in the state and develops methods to calculate the distribution of thermodynamic quantities such as work or heat and to determine how these fluctuations arise physically. The results can be applied to determine the efficiency of systems such as biological engines and reactions.

Supervisor: Prof H Touchette Co-supervisor: Prof KK Müller-Nedebock

EABY, Alan Calvin (Chemistry)

Host-guest dynamics in porous organic crystalline materials

Porous crystalline materials have important applications in adsorption, catalysis, separation and purification technologies. Understanding the host-guest interactions that occur in porous solids is key to unlocking new insights into the development of the next generation of functional materials. This study demonstrates that water desorption from a crystalline hydrate is not only possible well below the normal freezing point of water, but can even occur rapidly. Moreover, shape-fixing in a well-studied van der Waals solid allows selective tuning of the host phase by controlling the gas pressure and the regeneration temperature.

Supervisor: Prof LJ Barbour Co-supervisor: Prof C Esterhuysen

GRIEBENOW, Stian (Botany)

Phosphorus and Nitrogen metabolism of several South African cluster rooted species

The ancient soils of the Cape fynbos are poor in phosphorus and nitrogen. These nutrients are the most limiting for plant growth in terrestrial ecosystems. Members of the *Proteaceae* have cluster roots, being a specialised adaptation to this environment. Cluster roots are effective phosphorus mobilisers and also promote nitrogen assimilation and recycling. Utilising phosphorus conservation reactions and the promotion of organic acid synthesis, these species stimulate phosphorus availability. Cluster roots are able to effectively assimilate inorganic nitrogen in addition to recycling organic nitrogen. This suggests that cluster roots are an adaptation for the most extreme of terrestrial soils.

Supervisor: Prof AJ Valentine Co-supervisors: Dr A Kleinert, Prof N Makunga

HAVENGA, Benjamin (Microbiology)

Chemical and biological control of Acinetobacter baumannii

This study highlights differences in the genotypic, phenotypic and antibiotic resistance profiles of clinical and environmental *Acinetobacter baumannii*. Moreover, the environmental strains are assigned to the novel ST2520, which substantiates the existence of *A. baumannii* in extra-hospital reservoirs. The efficacy of the biosurfactant surfactin as an antimicrobial agent against multi-drug-resistant and extensively drugresistant environmental and clinical *A. baumannii* strains is subsequently demonstrated. Similarly, while the predator *Bdellovibrio bacteriovorus* exhibits activity against antibioticresistant environmental and clinical *A.baumannii* strains, plastic phenotypic resistance is observed. However, this phenomenon is associated with reduced virulence, which could be exploited in treatment strategies.

Supervisor: Prof W Khan *Co-supervisors:* Drs B Reyneke, T Ndlovu

HULL, Kelvin Lloyd (Genetics)

Population and functional genomics of the black soldier fly, *Hermetia illucens*

Re-envisioned food production is a global imperative given the growing human population, climate change and diminishing natural resources. Insect farming is a sustainable and environmentally friendly alternative to conventional livestock production. This study investigates the microevolutionary forces acting on genomic and phenotypic variation in the black soldier fly. Population genomic and transcriptomic analysis highlights the dominant action of genetic drift versus selection, despite direct artificial selection for favourable traits. Specific genetic variants and gene expression profiles associated with economically important and fitness traits are also identified. The findings have implications for the genetic management and breeding of black soldier flies.

Supervisor: Prof C Rhode Co-supervisor: Prof AE Bester-van der Merwe

MAFAUNE, Asslly Tafara (Chemistry)

Triazole-functionalised and polymer-supported phenylboronic acid catalysts for direct amidation of carboxylic acids at room temperature

The amide bond is ubiquitous in nature and in pharmaceutical compounds, but its chemical synthesis is typically far from simple. Arylboronic acids have shown promise in catalysing the formation of these bonds and offer a greener alternative to the conventional methods employed in synthetic and peptide chemistry. New triazole-functionalised and polymer-supported phenylboronic acids are synthesised and demonstrate positive results in catalysing the formation of amide bonds at room temperature. The polymer-supported reagents offer insights into potential recyclable catalysts built on this framework.

Supervisor: Prof GE Arnott Co-supervisor: Prof PE Mallon

MATIKINCA, Phikolomzi (Zoology)

The implications of a changing environment for fouling biota

Ocean acidification is a major consequence of climate change for marine systems. However, little is known about how it manifests in coastal systems, particularly in Africa. This study presents the first data on carbonate chemistry from along the South African west coast and demonstrates that this region experiences particularly low pH in winter. Laboratory experiments reveal that fouling organisms are vulnerable to future predicted levels, even when they are soft-bodied and lack calcium carbonate shells. Finally, the effects of acidification are found to be most pronounced under cold, food restricted conditions, with juveniles displaying heightened sensitivity compared to adults.

Supervisor: Prof TB Robinson-Smythe

MBOBO, Tumeka (Botany)

Drivers of fleshy-fruited plant invasions: insights from Myrtaceae

A key challenge in the study of biological invasions is to understand when generalisations are valid and when invasionspecific details are needed for understanding and management. Focusing on fleshy-fruited species in the myrtle plant family, this study uses a range of survey techniques, builds species distribution models and conducts risk analyses to establish where trees are found, where they are invading, and where they might invade. Recommendations for management and regulation are developed for commercially important fruit trees (such as the common guava) and popular garden trees (such as the Australian brush-cherry), balancing users' needs with the threat of damaging invasions.

Supervisor: Prof JR Wilson Co-supervisor: Prof DM Richardson

McCOLL, Rhys Stewart (Physiological Sciences)

The effects of kirrel1 isoform expression on C2C12 differentiation and fusion in vitro

Muscle synthesis, or myogenesis, involves the fusion of stem cells into myotubes, eventually forming muscle fibres. Kirrel protein is vital for flight in insects, and its expression changes after injury in mouse muscle. However, the exact roles of kirrel are unclear. This research uses CRISPR/Cas9 genetic modification, shRNA knockdown and retroviral overexpression to assess kirrel1 during myogenesis in cultured myoblasts. It is found that kirrel1-complexes accumulate in normal myoblasts as fusion progresses. Overexpression drastically reduces myogenesis, potentially due to molecular overcrowding. Kirrel1A knockdown prevents myotube formation. Retroviral modification of the kirrel1A intracellular region disrupts myogenic regulatory factors, resulting in no fusion. Kirrel1 is required for healthy myogenesis.

Supervisor: Prof KH Myburgh

MOCKE, Leanie (Biochemistry)

Kinetic characterization and mathematical modelling of the CoA biosynthesis salvage pathway of *Mycobacterium tuberculosis*

CoA is an essential coenzyme for the tuberculosis-causing pathogen *Mycobacterium tuberculosis*. A mathematical model for the CoA salvage pathway is constructed based on initialrate kinetics for the purified enzymes. The model is validated in conversion assays and in the in-vitro reconstituted pathway. A metabolic control analysis of the pathway reconstituted with physiological enzyme ratios reveals that the last enzyme has the highest flux control. Having tested the model under a wide range of conditions, it is found that the last enzyme keeps most of the flux control and could be a potential drug target.

Supervisor: Prof JL Snoep *Co-supervisor:* Prof E Strauss

MULLER, Margaretha Magdalena (Chemistry)

Development and optimisation of multidimensional liquid chromatographic techniques

Online comprehensive two-dimensional liquid chromatography (LC×LC) is a powerful tool for the separation of complex samples, but its widespread use is hampered by complex method development. This study provides an automated LC×LC method development program incorporating both kinetic and selectivity considerations. A chromatographic simulation algorithm is incorporated to model elution profiles. The program is validated for the LC×LC analysis of phenolic compounds present in wine, rooibos, *Protea*, chestnut and *Cannabis* extracts. Optimised LC×LC methods hyphenated to high-resolution mass spectrometry shed new light on the phenolic composition of these samples, for example leading to the discovery of 39 new flavonoids in *Cannabis*.

Supervisor: Prof AJ de Villiers *Co-supervisor:* Dr AGJ Tredoux

MYBURGH, Dirkie Coenraad (Chemistry)

The heme detoxification pathway: Towards the development of a predictive model for the identification and validation of new β -hematin inhibitors

The heme detoxification pathway (HDP) in the malaria parasite results in the formation of hemozoin and is crucial for survival. Inhibition of synthetic hemozoin (β -hematin) formation is a viable drug target. Predictive models are generated using principal component analysis and are used to discover 20 new β -hematin inhibitors from 87 predicted, representing a 23-fold enrichment compared to random screening. A kinetic model of the HDP is developed in Matlab to account for the levels of iron in the digestive vacuole of the parasite arising from hemoglobin, free heme and hemozoin. This model may be perturbed at various key points to understand antimalarial drug activity.

Supervisor: Dr KA de Villiers Co-supervisor: Prof TJ Egan

OTTO, Tahnee (Earth Sciences)

A phase equilibrium investigation of the consequences of entrainment of components of the source on the crystallisation of mantle derived magmas in the upper crust, with specific relevance to the petrogenesis of chromitite layers in the Rustenburg Layered Suite of the Bushveld Complex, South Africa

The Rustenburg Layered Suite contains Earth's largest chromium deposits, which occur as monomineralic layers of the mineral chromite, the formation of which has perplexed petrologists for decades. This study investigates the stoichiometry of partial melting reactions in the mantle using phase equilibrium modelling to demonstrate that peritectic orthopyroxene is produced by the partial melting of peridotite. Entrainment of these Cr2O3-bearing crystals fundamentally changes the chromium content of the magma. On ascent, the peritectic orthopyroxene reacts with melt to form olivine and chromite, which can undergo density segregation on intrusion into upper-crustal magma chambers, producing layers of dunite and chromitite.

Supervisor: Prof G Stevens

RAPHALO, Evelyn Mokgadi (Zoology)

Evolutionary inferences of the terrestrial snail genus *Gittenedouardia* (Mollusca: Gastropoda: Cerastidae) with a comparative phylogeography aspect

This study examines the molecular systematic of forestdwelling snails in the class *Gastropoda* in South Africa. By using DNA barcoding, cryptic diversification is detected among most widespread taxa previously assumed to be conspecific. Phylogenetic and systematics of the genus *Gittenedouardia* reveal Mio/Pliocene cladogenesis and rampant undiscovered diversity and endemism obscured by morphological convergence. A comparative phylogeographic study between two codistributed forest-dwelling snail species reveals concordant breaks, yet different temporal genetic differentiation. Overall, the study highlights the need for alpha taxonomic studies to understand biodiversity among terrestrial snails.

Supervisor: Prof SR Daniels Co-supervisor: Dr M Cole

RASELIMO, Moeketsi Isaac (Computer Science)

Fault localization and repair for grammarware

Context-free grammars describe the formal structure of complex texts, such as PDF documents, configuration files or computer programs. However, grammar bugs can cause the software systems processing these texts to fail. This study develops a fully automatic approach to find and fix grammar bugs using only a given set of passing and failing tests, the grammar and the executable system. It identifies fault locations through the execution differences between the passing and failing tests and incrementally patches the faults using small-scale grammar transformations. It finds bugs in production grammars and fixes grammars written by students in a postgraduate compiler course.

Supervisor: Prof B Fischer

VAN DER MERWE, Pieter De Wet (Biochemistry)

Phylogenetic analyses in the African fish genus *Nothobranchius* in relation to landscape evolution

Fish of the genus *Nothobranchius* live in the African savannah, where they survive in spite of the drying out of their ponds as eggs in the mud. They evolved in central northern Africa and dispersed east and southwards to as far as the northern Kwa-Zulu Natal coast. Using DNA sequences, the relationships of most of the 101 species in the genus, and their dispersal route could be established. This was profoundly influenced by the geological formation of the East African Rift Valley, in fact this allowed an analysis of landscape evolution of a large part of south-central Africa.

Supervisor: Prof DU Bellstedt Co-supervisors: Drs FPD Cotterill, UK Schliewen (external)

Phytoplankton and tracemetal dynamics in the Southern Ocean

Marine algae are vital for ecosystem services, including securing the food n and removing carbon dioxide from the atmosphere. These algae require trace metals such as iron, manganese and zinc to support metabolic processes. Many of those metals are not accessible to the algae in vast areas of the Southern Ocean, partly because algal uptake of metals occurs in summer, with replenishment only occurring in winter. By early winter, many algae show signs of metal deficiency, leading to limited productivity and a change in the algal community. This, in turn, affects the food chain and carbon export.

Supervisor: Dr S Fietz

WEI, Xueting (Chemistry)

Structure-property relationship studies of novel porous metallocycles

The structure-property relationships of a series of novel metallocycles were studied. X-ray diffraction analyses, sorption experiments as well as thermal investigations were carried out. A single-crystal to single-crystal transformation due to desolvation in solvent could be triggered by the shape and steric hindrance of the metallocycle. Meta-xylene could be extracted using a porous metallocycle, with minimal energy input. Furthermore, the porous metallocycles are capable of adsorbing CO₂ molecules, which are retained in the structure by means of host-guest interactions. The study offers insights into crystal engineering and a fundamental understanding of these type of porous crystalline materials.

Supervisor: Prof LJ Barbour

WIENER, Kenwinn Dane (Geography & Environmental Studies)

Spatio-temporal dynamics of sediment and associated phosphorus retention in valley-bottom wetlands

Valley-bottom wetlands provide ecosystem services by trapping waterborne sediment, which reduces the downstream transfer of associated pollutants. However, the extent of this ecosystem service delivery remains unverified. In this study, the contemporary mass balance of suspended sediment and associated phosphorus fluxes demonstrates temporally variable rates of sediment and phosphorus trapping, resulting in alternate phases of net sediment storage and export. The transitory nature of sediment and phosphorus trapping effectiveness is attributed to a threshold associated with seasonal rainfall frequency and magnitude, while the spatial variability is linked to differences in catchment size and local geomorphology. This understanding is vital to planning wetland management and restoration.

Supervisor: Dr S Grenfell *Co-supervisor:* Dr S Manzano

OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

Master of Science Magister in die Natuurwetenskappe

Barron, Tamryn Shireen (Physiological Sciences) Bassett, Thierry (Zoology) (cum laude) Borrageiro, Christopher Matthew (Biochemistry) (cum laude) Brits, Anya (Polymer Science) Brown, Lauren Rachel (Applied Mathematics) (cum laude) Buck, Amy Claire (Biochemistry) (cum laude) Currie, Dailin Jade (Chemistry) De Stadler, Jessica Amy (Plant Biotechnology) De Villiers, Carmen (Biochemistry) (cum laude) De Vries, Adrian Matthew (Plant Biotechnology) Denissen, Julia Katherine (Microbiology) (cum laude) Dreyer, Andrei Michael (Computer Science) Du Toit, Elbe (Botany) Farmer, Anthea Greer (Chemistry) Forsyth, Gregory Graham (Geography and Environmental Studies B) Gafieldien, Thoreefa (Microbiology) (cum laude) Gqaleni, Nosipho Onwabile (Botany) Heinrich, Kayla (Chemistry) (cum laude) Hoffman, Sean (Earth Sciences) (cum laude) Hollocks, Stephanie Anne (Biochemistry) (cum laude) Hubble, Emma Rebecca (Genetics) (cum laude) Jackson, Jason (Computer Science) Kitshoff, Ruan (Biochemistry) Kode, Megan Ann (Microbiology) (cum laude) Koroleva, Elizaveta (Microbiology) (cum laude) Kulu, Nokwanda Nomfundo (Plant Biotechnology) Le Roux, Jancke (Plant Biotechnology) Leukes, Kay-Lynn Amber-Mari (Biochemistry) Lourens, Anname (Chemistry) (cum laude) Malherbe, Sarel Johannes Marthinus (Microbiology) (cum laude) Maphumulo, Siphosethu Cassandra (Physiological Sciences) (cum laude) Maree, Darren Nicholas (Chemistry) Maroen, Megan Melissa (Zoology) (cum laude) Matowanyika, Danai Rutendo (Geo-informatics) Mnyulwa, Thamusanga David Pike (Applied Mathematics) Mochoele, Kamano Angela (Physiological Sciences) (cum laude) Moore, Daniella (Mathematics) (cum laude) Mouton, Jacobie (Computer Science) (cum laude) Muller, Jared (Earth Sciences) Munnik, Brandon Liam (Chemistry) Murray, Thomas Everitt Rautenbach (Microbiology) (cum laude) Ndlovu, Malcolm Thabo (Chemistry) Nel, Tyron Ian (Biochemistry) Nenweli, Ritshidze (Earth Sciences) Nortje, Welri (Zoology) Olabiyi, Tobi David (Mathematics) (cum laude) Petersen, Ashlin Veruscka (Biochemistry)

Plavy Ntsiele, Legran Juldt Espoir (Earth Sciences) Prinsloo, Jared Reece (Microbiology) (cum laude) Rass, Atarah Melanie Rose (Physiological Sciences) Rawlins, Maia (Physiological Sciences) (cum laude) Rocher, Dominique Francoise (Microbiology) (cum laude) Sadie, Katerine Marí (Machine Learning and Artificial Intelligence) (cum laude) Saffer, Zoe Olivia (Physics) (cum laude) Sampson, Joshua Ethan (Genetics) (cum laude) Schwerdtfeger, Kirstie Susan (Microbiology) (cum laude) Sereo, Tumelo Donald (Applied Mathematics) Setlaba, Katleho (Chemistry) Smith, Michael-Phillip (Polymer Science) (cum laude) Strydom, Conrad (Physics) (cum laude) Swaine, Michael (Geo-informatics) (cum laude) Theart, Emma (Mathematics) (cum laude) Tonkin, Christopher John (Botany) Trinchero, Dario (Physics) (cum laude) Van Blerk, Daniel (Zoology) Van Heerden, Janca (Zoology) (cum laude) Van Schalkwyk, Clara Elizabeth (Biochemistry) Van Zyl, Christoff (Computer Science) (cum laude) Van Zyl, Jean-Pierre (Computer Science) (cum laude) Vlotman, Carly Bianca (Zoology) (cum laude) Wium, Emtia (Earth Sciences) Zitha, Marvin (Chemistry)

Bachelor of Science Honours Honneurs-Baccalaureus in die Natuurwetenskappe

Chater, Sean Thomas (Geo-informatics) Darkoh, Francisca (Physiological Sciences) Henman, Leo Peter (Computer Science) Marais, Rowin Pires (Earth Sciences) Rosenstrauch, Hannah (Computer Science)

Bachelor of Science Baccalaureus in die Natuurwetenskappe

Adams, Cara Amy (cum laude) Anderson, Amber Rose Bardien, Zeenat Barnard, Hendrik Andre Betchu, Sonica (cum laude) Bhoopchand, Cassidy Kiran Bouwer, Brendan Christopher Braithwaite, Isabella Mary-Anne Branders, Lydia Brown, Mia Jo Buchanan, Kayla Campbell, Jake Wesley Cedras, Ronaldo Cloete, Dylan John Coetzee, Xander Cogills, Kelly Amber Combrink, Rochelle

Cronje, Johann Erich De Bruin. Rohmine De Waal, Nicholas Johann Dlungwana, Nonelela Dovale. Jodi (cum laude) Du Plessis, Armand Du Toit, Johan Ellis, Norman Farao, Chrissadé Chloé Farge, Dylan Richard Farquhar, Megan Ruby Fouche, Elsie Sophia Fourie, Juan Adriaan Geldenhuys, Jani Mari Genders. Reuben Geragotellis, Nicholas Good, Cameron Micheal Govender, Seyanne Gricius. Chane Hammig, Marie-Louise Hans, Zoë Kelsey Holmes, James Ryan Hooker, Savannah Grace Hund, James Peter Jacobs, Anikah James, Tatum Olivia Jansen, Liam Christopher Japhta, Chelsea Jarvis, Hannah Julia (cum laude) Jenkins, Hannah Elizabeth Johannes, Meghan Retania Jooste, Adri Joubert, Aylisa Kapisa, Kondwani Alyce Kayat, Zakariyya Kearley, Micaela Jade Kedijang, Kelebogile Kennedy, Amy-Lee Kiiru, Joseph Kihu Kilian, Gemma Kimathi, Joseph Kleintjes, Rocky Nathan Koegelenberg, Hendrik Jurgen Koen, Maryke Kolatsis, Natalia Evgenia Kritzinger, Johannes Hermanus Langford, Megan Le Roux, Pierre Adriaan (cum laude) Loubser, Carli (cum laude) Luck, Abigail Rose Luis, Robyn-Susie Mabuza, Zandile Magidigidi, Palesa Wendy Malabi, Hakundwi Malatjie, Kutlwano Motlatso Tendai

Malungani, Lerato Malupe, Nomcebo Lesego Mashabane, Sinenhlanhla Joy Mashigo, Tebogo Pascaline Matolweni, Siphendulwe Mbulawa, Siphumeze Mchunu, Mongezi McIntyre, Savannah Meyer, Zanfré Ané Mkhatshwa, Nhlanhla Mzwandile Morris, Clarissa Megan Moschides, Nicholas George (cum laude) Muller, Jessica Rae (cum laude) Mweli, Simanga Naidoo, Joelle Naidoo, Yashendra Subbiah Nchabeleng, Boitshepo Shané Ndlovu, Benevolent Pasirayi Nell. Jesse Pamela Nelson, Daniel Mark Ngomba, Letitsia Ngwenya, Mayibongwe Ntokozo Maqeda Norton, Keegan Richard Ntenya, Lehlohonolo Ntshangase, Sigcino O'Malley, Tristan Anthony October, Shaye Micheala Ortell, Lara Robin Page, Frederik Geyer Palmer, Bianca Pike, Robert Craig Pillay, Rios Rae Pretorius, Byron Pretorius. Jacob Johannes Pretorius. Simoné (cum laude) Qhu. Reabetswe Ramsay, Erin Kate (cum laude) Rosant, Gudrun Urich Siegmund Ruiters, Isaac Danvor Saudan, Kyle Liam Sauls, Tristan Schapers, Nicholas Trevithick Schapiro, Jemma Daniella Senekal, Johannes Hendrik Serfontein, Justin Smith, Jade-Chelsea St Clair, Reecia Steenkamp, Valentina Steyn, Pia Rebecca Tembani, Lithe-Thaa Tonisi, Sibulele Truter, Kayla Maureen Turchino, Katia Van den Berg, Philip

Van der Merwe, Bianca

Van der Want, Saskia Noelle Van Duivenbooden, Ben Van Huyssteen, Beatrix Hendrina Van Rhyn, Lize Van Wyk, Toni Leigh Versfeld, Celize Visser, Johannes Petrus Williams, Teagan Zimri, Luzay Britney



Theology and Education

30 March 2023 | 17:00

FAKULTEITE

Teologie en Opvoedkunde

30 Maart 2023 | 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 Lied.
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.

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

BUERTEY, Joseph Ignatius Teye (Systematic Theology and Ecclesiology)

Revisiting Pentecostal spiritualities with reference to African traditional religious practices and Pentecostal theologies of prayer in Ghana

Taking as a point of departure that Pentecostal spirituality and Pentecostal theology constitute 'two sides of the same coin', this study finds that, theologically and spiritually, Pentecostal prayer is transactionally Christological, spontaneously 'glossolalic', lyrically doxological, and ontologically authoritative. However, Ghanaian Pentecostal spiritualities of prayer also developed and exist in an African traditional religious context characterised by a dualistic and causal worldview and the belief in a constant cosmic struggle. Against this background, a four-fold cosmological model of, and motif for, prayer is developed that acknowledges the importance and contribution of African traditional praxis in and to Ghanaian Pentecostal prayer.

Supervisor: Prof LD Hansen Co-supervisor: Dr LA Elorm-Donkor (external)

DAVID, Stephen Kioko (Ecclesiology)

From Disengagement to Engagement: Interrogating the Political Hermeneutics of Neo-Pentecostals in Kenya (2000-2022)

Focusing on neo-Pentecostalism and politics in contemporary Kenya, this study approaches its subject matter from a hermeneutical perspective, asking questions regarding the role of biblical interpretation in neo-Pentecostal approaches to politics. It sketches the broader history of Pentecostalism in Kenya to contextualise the research. It is argued that the Pentecostal movement has over time moved from a stance of disengagement to engagement with politics. However, the type of engagement remains influenced by what the study defines as 'spiritualised-selective-literal hermeneutics', which means that political stances seldom achieve activist proportions, but generally concern 'spiritual' activities such as prayer and a preoccupation with evil spirits and demons.

Supervisor: Prof R Müller

JUNG, Sung Ji (Practical Theology)

Preaching God within the Korean context? A practicaltheological investigation

Christian sermons cannot do otherwise but to express belief in the infinite God by means of human language. Because of this, and inevitably, preachers form certain kinds of Godimages when preaching. In this process, other factors come into play that should not be neglected or denied, such as the surrounding sociocultural elements, which also affect the preacher's God-images. This study uncovers the dominant God-images in 24 South Korean sermons, analysing them linguistically and theologically. The analysis investigates the sociocultural South Korean causes for these commonly held God-images. Lastly, the study provides theological perspectives and suggestions as a way forward.

Supervisor: Prof JH Cilliers Co-supervisor: Prof RR Vosloo

KWON, Yongjun (Practical Theology)

"... as we sing ...": *Lex canendi* as the practical-theological mode of doing liturgy

This study aims to find common factors that often cause various liturgical conflicts and to suggest a liturgical model that could help solve these conflicts holistically. The model hinges on a hermeneutical circle of reciprocity between *lex canendi* (the musical dimension) and the existing ritual, theological and living dimensions of liturgy (*lex orandi, lex credendi* and *lex vivendi* respectively) to overcome the dualisms causing liturgical conflicts. This model can be a useful tool to enable coexistence between what is traditional and what is contemporary, between what is intellectual and what is emotional, and between what is immanent and what is transcendent in worship.

Supervisor: Prof JH Cilliers

PIENAAR, Pascal (Ecclesiology)

The Missionary Women of the Huguenot Seminary: A Case Study in Vocational Formation through Education

This historical study focuses on the 19th-century Huguenot Seminary in Wellington, South Africa. It is particularly interested in the influences and motivation behind the career decisions of the women students at this institution who decided to enter missionary vocations. While such students' first-hand accounts, as gleaned from archival sources, show only 'spiritual' motivations, the study attempts to uncover underlying rational explanations and motivations. For this purpose, aspects of social cognitive career theory and calling theory are utilised. The result is a comprehensive picture showing a combination of factors, both ordinary and extraordinary, influencing the life decisions of 19th-century women students in the Cape Colony.

Supervisor: Prof R Müller

STOMS, Jay Nixon (Practical Theology)

Towards a dialogue between modern American narrative preaching and African-American preaching: A critical comparative homiletical study

This study represents a dialogue between the narrative preaching tradition and the African-American preaching tradition. The primary teachings of the principal proponents of each tradition are analysed to learn from their contributions and open up new possibilities with regard to narrative homiletics. The study advocates a movement towards a more simplistic and holistic narrative homiletic that tells the story of Jesus as the central act in the biblical redemptive drama of the restoration of creation and the formation of a multi-ethnic and multi-class new humanity. It utilises seven holistic principles to draw Christians together across ethnic, cultural and denominational divides.

Supervisor: Prof JH Cilliers

VAN DER BANK, Annelie (New Testament)

The significance of singing in Ephesians 5:19 and Acts 16:25 – a theatrical-theological exploration

This study finds in theatre as an establishment the conceptual language necessary to describe singing as a vital aspect of religious expression among the earliest Christ-followers, even if obscured from the modern perspective. Making novel and creative use of a theatrical-theological model for investigating New Testament texts, this innovative work focuses on theatre as a space, drama as a signal and performance as a community to tease out the underlying yet crucial presence of liturgical singing as 'incidental' phenomenon. The study proves that conceptualising theatre as a theoretical model enhances current knowledge of practices in the ancient Christ-movement.

Supervisor: Prof J Punt

Faculty of Theology | Fakulteit Teologie

OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

Master of Theology Magister in die Teologie

Anyimadu, Bernard Boakye (Practical Theology) Burmeister, Theodore William (Practical Theology: Ministry) (cum laude) Cloete, Rafle Edmund (Practical Theology) Ferreira, Hermiene (Old Testament) (cum laude) Fumba, Zukisa Patrick (Systematic Theology) Khoswe, Bongani (Practical Theology) Lategan, Jana (Practical Theology: Clinical Pastoral Care) (cum laude) Louw, Shane Carl (Practical Theology: Ministry) (cum laude) Magerman, Johann (Practical Theology: Ministry) Maqajana, Thembelani (Systematic Theology) Mbaya, Brandina (Practical Theology) Mokwena, Amogelang Gerald Levert (Practical Theology: Ministry) Msibi, Msizi Cyprian (Practical Theology) Snyders, Andrew Nicholas (Practical Theology: Ministry) (cum laude) Master of Divinity **Magister Divinitatis**

Abrahams, Simonè (Ministry) Van den Berg, Andene (Ministry)

Postgraduate Diploma in Theology Nagraadse Diploma in Teologie

Beja, Nwabisa Fikile Botes, Karin Maria *(cum laude)* Edge, Kieren *(cum laude)* Jooste, Jacobus Petrus Albertus Kannemeyer, Alexander John Kunene, Patrik Lucky Limana, Xoliswa Pretty Ludonga, Zimkhitha Niemandt, Hendrik Ostenwald Parkerson, Charles Winsto Earl Ragette, Philipp Van Breda, Wessel Aubrian Zungu, Sifiso Kenneth

Bachelor of Theology Baccalaureus in die Teologie

Abrokwaah, Debora Adomakoa Adams, Marsha-Lee April, Sinegugu Minion Bergens, Leandro Randall Jacques Dodi, Yonela James, Buhle Katom, Nokuphiwa Mayedwa, Eugenie Benito Mchani, Aludwe Nkumbi, Zizipho Poole, Breyton Avron Prinsloo, Marinda Volo, Malusi Romeo Williams, Dmitri John

Bachelor of Divinity Baccalaureus Divinitatis

Gxabe, Kholosa Blessing Hutten, Kara Krüger, Tristan Dieter Lange, Hans-Christoph

DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

DE KOCK, Cisca (Curriculum Studies)

Exploring frames that provide opportunities for learning by teaching, learning by reflecting, and learning by collaborating: Case studies of pre-service teachers

The changes to policy frameworks for teacher education (TE) over the past two decades have brought about a growing divide between TE stakeholders. This study focuses on understanding the challenges that pre-service teachers face during the practicum period. It cross-examines the quality of existing frames that provide opportunities for learning by teaching, learning by reflection, and learning by collaboration. The findings indicate that aspects of programmes relating to the disjuncture between university and schools require attention. A case is made for establishing collaborative mentoring programmes and professional development schools to address these issues.

Supervisor: Prof CPS Reddy Co-supervisor: Dr ML Botha

HAUFIKU, Anneli Ndapandula (Educational Support)

Educational and psychosocial experiences of women university students who became teenage mothers whilst at school

This qualitative study is one of few conducted in an African country where women's educational pathways, after having a teenage pregnancy, are explored. It integrates feminist, ecological and possible-selves theory to adopt a strengthsbased as opposed to a deficit-infused approach to adolescent pregnancy and post-school education. Twelve retrospective in-depth interviews were conducted with Namibian university women students who became pregnant during adolescence. The study shows that policy changes post-1994, national funding support schemes as well as family and community support have a significant impact on girls' ability to remain in school and enable subsequent access to university.

Supervisor: Prof RL Carolissen

KAPAMBWE, William Mpundu (Curriculum Studies)

Teachers' understanding and implementation of the Primary Literacy Curriculum: the case of Chongwe and Lusaka in Zambia

This study explored teachers' understanding and implementation of the Primary Literacy Curriculum (PLC) in Chongwe and Lusaka in Zambia. Through observations and interviews, it was found that teachers lacked a proper understanding of the PLC and had not received formal training for implementation. Enablers and barriers for implementation were identified, as well as contextual background factors from home and school. The study shows how a curriculum as planned differs from a curriculum as implemented and highlights the factors that have contributed to a policy-practice gap in the Zambian context. Recommendations to the Zambian Ministry of Education are provided.

Supervisor: Prof M Robinson

MESSINA, Mitchell Melvyn (Curriculum Studies)

Utilising Choice Theory and Reciprocal Teaching to promote the teaching of reading comprehension in the Intermediate Phase (Grades 4 to 6)

The previous PIRLS-2016 findings provided overwhelming evidence that Grade 4 and 5 learners in South Africa are challenged with reading comprehension and require a serious intervention. This study focuses on the role of teachers and what they can do to improve learners' reading comprehension. It investigates how Choice Theory, as an *explanation of human behaviour*, can provide a foundation to enhance the use of Reciprocal Teaching strategies for reading comprehension. The research is based on the theoretical framework of Social Constructivism and uses a qualitative single case study to obtain in-depth information from participants.

Supervisor: Prof M le Cordeur Co-supervisor: Prof P Robey (external)

ZYSTER, Jenéad Diana Nicole (Curriculum Studies)

The emotional experiences of Cape Peninsula University of Technology Education students in navigating Teaching Practice

This study investigated the role of emotions in Teaching Practice for students in the Bachelor of Education programme at CPUT. Bandura's social cognitive theory served as the theoretical framework. Data was gathered from 18 third-year students through questionnaires and interviews based on a poster. The findings highlight the complex and emotional nature of Teaching Practice, especially student teachers' efforts in learning to teach, and their endeavours to become socialised into the school community. Recommendations are made for how higher education institutions can help student teachers alleviate the stress that accompanies Teaching Practice, as well as how systems and support structures may be augmented.

Supervisor: Prof M Robinson Co-supervisor: Prof M le Cordeur



Faculty of Education | Fakulteit Opvoedkunde

OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

Master of Philosophy Magister in die Wysbegeerte

Du Preez, Daniëlla (Higher Education) Van der Westhuizen, Lana (Education and Training for Lifelong Learning) Van der Westhuysen, Anri (Higher Education)

Master of Education in Educational Psychology Magister in die Opvoedkunde in Opvoedkundige Sielkunde

Cloete, Lelani Cecile De Mink, Samantha Stephanie *(cum laude)* Faull, Kelly Rosemary Haywood, Vanessa Caremen Pienaar, Sharon Radmore, Aletta Sophia *(cum laude)*

Master of Education Magister in die Opvoedkunde

Asekun, Uvile Oluwadarasimi (Curriculum Studies) Benjamin, Mahmoodah (Education Policy Studies) Cloete, Jevonn Zandrim (Curriculum Studies) Khan, Yusiree (Education Policy Studies) *(cum laude)* Laubscher, Leila (Curriculum Studies) Shifotoka, Hileni Tuyoleni (Curriculum Studies) Theron, Carla (Curriculum Studies) *(cum laude)* Van der Hoven, Antoinette (Curriculum Studies) Van Zyl, Maria Susana (Educational Support)

Bachelor of Education Honours in Foundation Phase Teaching Honneurs-Baccalaureus in die Opvoedkunde in

Grondslagfase-onderrig

Nyanyiwa, Brenda (Foundation Phase Education)

Bachelor of Education Honours in Curriculum Inquiry Honneurs-Baccalaureus in die Opvoedkunde in Kurrikulumondersoek

Arendse, Caitlin Cindy (Curriculum Inquiry) Brown, Mikayla (Curriculum Inquiry) Cave, Dominique (Curriculum Inquiry) Laubscher, Nicole (Curriculum Inquiry) Sikhonyana, Nomsisi Letticia (Curriculum Inquiry) Smit, Nikita Joy (Curriculum Inquiry) *(cum laude)*

Bachelor of Education Honours in Language Education Honneurs-Baccalaureus in die Opvoedkunde in Taalonderwys

Brookman, Saskia *(cum laude)* Cicilie, Waylen Graham Luciano Davids, Bevin Roderick Irvin Donson, Ronda Carmenita *(cum laude)* Engelbrecht, Andrea Ruth *(cum laude)* Jackson, Robyn-Lee Mbodla, Nolubabalo Robertson, Kelly

Postgraduate Certificate in Education in Further Education and Training Teaching Nagraadse Onderwyssertifikaat in Verdereonderwys- en Onderrigopleiding

Bambiso, Phelokazi Betani, Siphesihle Ebrahim, Rameez James, Rafeeg Khoza, Andile Khoza, Siyanda Thulasizwe Mashego, Kgetho Uma Mcinga, Siphumlile Ntloko, Namhla Ntloni, Lumka Ntshebe, Achuma Nzima. Sesetu October, Jessica Sally (cum laude) Peni, Somila Saba, Sixolele Sonday, Muazzam Williams, Anil Hugo

Bachelor of Education in Intermediate Phase Teaching Baccalaureus in die Opvoedkunde in Intermediêre Fase Onderwys

Jansen, Shana-Leigh Madikane, Sakhile Qotywa, Collen Smith, Nicola

Advanced Diploma in Education in Senior Phase Mathematics Teaching Gevorderde Diploma in Opvoedkunde in Senior Fase Wiskunde-onderrig

Dowie, Annetta Jacoba Zass, Megon Heather



Military Science and Law

31 March 2023 | 09:00

FAKULTEITE

Krygskunde en Regsgeleerdheid

31 Maart 2023 | 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 Lied.
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 Military Science | Fakulteit Krygskunde

DOCTORAL QUALIFICATION | DOKTORALE KWALIFIKASIE

DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

BESTER, Kyle John (Military Science)

Exploring the views and perceptions of cybersecurity among South African military officers

Cyberthreats are pervasive and pose a significant challenge to governments, businesses, organisations and individuals. Employing securitisation theory as a point of departure, this study contributes to the field of cybersecurity by focusing on South African military officers, a hitherto under-researched subject in the South African military domain. The study explores four dimensions of cybersecurity by means of a sequential design, with an emphasis on the mixed-methods approach. It finds that military officers do execute online security practices and apply a level of caution in cyberspace, but also uncovers areas of neglect that must be addressed.

Supervisor: Dr M Nel Co-supervisor: Prof F Vreÿ

Faculty of Military Science | Fakulteit Krygskunde

OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

Master of Philosophy in Defence Studies Magister in die Wysbegeerte in Verdedigingstudie

Obute, Charles Odilile (Defence Studies) Verster, John Annandale (Defence Studies)

Master of Military Science Magister in die Krygskunde

Steyn, Leon (Military History) (cum laude)

Bachelor of Military Science Honours Honneurs-Baccalaureus in die Krygskunde

Magagula, Lindiwe Nurse (Military Geography) Maluleke, Karabo Lactitia (Industrial Psychology (Mil)) Mashaba, Wandile Wonderboy (Military Geography) Mbatha, Sfundo (Military Geography) Tsitsi, Sophie Mapaseka (Industrial Psychology (Mil))

Postgraduate Diploma in Defence Studies Nagraadse Diploma in Verdedigingstudie

Baloyi, Eric Mbazima Bawa, Mandla Jeremiah Human, George Diederik Lechuti, Frans Madalane, Sipho Samuel Makhosi, Balungile Matolweni, Luzuko Orlyn Molaolwa, Pheko Johannes Mothupi, Ernest Oduetse Vlok, Talia Olivia

Bachelor of Military Science Baccalaureus in die Krygskunde

Coetzee, Claire Alice Kekana, Abram Mabanjwa Makhanya, Sibusiso Mathonsi, Mfanafuthi Mfolo, Naledi Karabo Mlotshwa, Simesihle Moreane, Kgomotso Joy Mthimunye, Tumelo Michael Ngove, Vanecia Sedumedi, Deborah Williamson, Roxanne Ashleigh Tania

DOCTOR OF LAWS DOKTOR IN DIE REGSGELEERDHEID

DERCKSEN, Juletha-Marié (Mercantile Law)

The interface between competition and intellectual property law: Finding common ground and resolving the tensions between these areas of law from a South African perspective

Competition law and intellectual property law both incentivise innovation. However, they aim to achieve this in different ways. This, at times, creates tension between the two areas of law. This study attempts to determine where the tension lies and how it can be resolved in a manner that encourages innovation. For this purpose, it considers how competition law should deal with the licensing of intellectual property, Standard Essential Patents, pay-for-delay agreements and no-challenge clauses. Ultimately, it shows how guidelines and different forms of exemption can be utilised to create certainty and consistency in the application of the areas of law.

Supervisor: Prof PJ Sutherland

GERMISHUYS-BURCHELL, Wilhelmina (Mercantile Law)

The legal regulation of trade union recognition in South Africa in historical and comparative context

This study evaluates the regulation of trade union recognition by the Labour Relations Act, 1995, in different workplace contexts, notably collective bargaining and retrenchment. Through an analysis of legal developments since the adoption of the 1995 Act, and by placing that analysis in a pre-1995 and comparative context, the study convincingly shows the growing disconnect between current legislation, its interpretation by the courts, and workplace reality – especially in the case of minority special-interest groups of employees in the workplace and in the case of multilocational employers. A range of proposals for legislative reform are made.

Supervisor: Prof CJ Garbers Co-supervisor: Prof KB Calitz

LAVITA, Giséle Chloé (Public Law)

The regulation of Airbnb: A property law perspective

Currently, Airbnb is not regulated by national legislation in South Africa. This study determines the implications of Airbnb for relevant South African stakeholders, namely (a) hosts, (b) guests, (c) neighbours, (d) the tourism industry, (e) the hospitality industry, and (f) the South African government. The intention is to determine the impact of Airbnb on these stakeholders' rights, obligations and remedies. The study proposes national legislation to regulate short-term rental operations. It makes novel recommendations for how such a regulatory framework should look like by drawing on insights from the regulation of Airbnb in London and Germany.

Supervisor: Prof ZT Boggenpoel

SHAY, Richard Michael (Public Law)

Constitutionalising copyright: A principled normative theory for transformative copyright adjudication

This study proposes Ronald Dworkin's theory of legal interpretation as a viable model for the judicial transformation of copyright law through the reinterpretation of statutory provisions. It develops a principled, normative approach to interpretation that empowers courts to construe copyright law in line with the Bill of Rights. Drawing on the work of Robert Merges, the study develops four mid-level principles tailored to the South African context that can mediate between copyright law and the foundational normative commitments enshrined in the Constitution.

Supervisor: Prof H Botha

Faculty of Law | Fakulteit Regsgeleerdheid

OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

Master of Laws Magister in die Regsgeleerdheid

Abdurahman, Shehaam Ashipala, Hileni Popyeni Aspara - Nambahu, Yvette Zoë Ndapewa Barends, Richard Heinz Barkhuizen, Keagan James (cum laude) Boonzaaier, Robynne Laronicia Botha, Anya-Larissa (cum laude) Botha, Vanya Anneliese Brand, Simon Brink (cum laude) Davids, Kirstin Rebecca Delport, Maretha Dzoro, Charity Groenewald, Tertius Adriaan Hess, Valene Esther Hislop, Estelle Hailey (cum laude) Katoole, Magano Sophia Knutton, Keeley Marie Lotsch, Gabrielle Brigitte Mashiki, Gabriella Munesu Mathibe, Themba Mhlongo, Sandile Migliore, Raffaella Müller, Floris Petrus Johannes Padachey, Denisha (cum laude) Prins. Cohan Rein, Hanneke Roxburgh, Craig Sambaza, Sharon Tanyaradzwa Sydenham, Sarah-Emma Wilcock, Christopher Norman Wouters, Margaux

Bachelor of Laws Baccalaureus in die Regsgeleerdheid

Adams, Ryleigh Carlisle Agenbag, Chane Anker, Johan Frederik Apollos, Blaine Dana Baartman, Motlhago Bachmann, Cassidy June Bailey, Robert Drew Barath. Tasmika Bawa. Khadija Berry, Nkateko Lizanne Blake, Tamsyn Mary Bock, Ané Botha, Erin Leigh Bresler, Ivan Bastiaan Burger, Reuben Alex Damiani, Nikita Davids. Candice Davids, Veronay Marien

De Villiers. Nicole De Wet, Josua Christiaan Alfie Du Toit, Ethan Rico Du Toit. Michael Etienne Ellis, Amv Margaret Erasmus, Ethan Matthew Esau, Tamryn Monique Fisher, Arthur George Foster, Sebastian William Freddy, Caitlin Gain, Andrea Garson, Ruwayda Chante Goliath, Stacey Melanie Gordon. Zini Grant, Stewart Garnet Sinclair Haddock, Jade Ann Heap, Nicole Kayla Hector, Genevieve Hefer. Pasqualle Hendricks, Adrienne Nicola Henning, Tristen Tremaine Hoffman, Izak Jacques Hugo, Danika Isaacs, Danelle Kayla Israelsson, Cayley Jenna Johnson, Anna Gabriela Rodrigues Karsten, Hendrik Albertus Kim, Young Ji Kotze, Jacobie Kymdell, Robyn Lakay, Jessica Latchman, Alicia Lawrence, Alexandra Rose Lee. Thomas James Liebenberg, Giylah (cum laude) Liedtke, Alexandra Lucas. Thandile Ludik, Hendrik Gideon Scholtz Luus, Hendrik Johannes Jacobus Maasdorp, Andrea Brenda Maccioni, Chiara Mafundityala, Lamla Mains, Adrian Jerome Manley, Caitlin Louise Middendorp, Tyrone Miller, Cayla Mavourneen (cum laude) Mngadi, Grace Mbali Nailah Mostert, Liam Mugadza, Daisy Mazvita Müller, Gretchen Mwamba, Rolly Kazadi Naicker, Thamera Ngobeni, Risana Neldah Nyembe, Kwanda Nzimande, Mvelo Zamaphephetwa

O'Neale, Erin Oberholzer, Hannah Jaime Odendaal, Annelette Trudiana Opperman, Caro Pentz, Nicola Pooe, Koketso Naledi Pretorius. Natalie Prior, Simon Aston Pula, Rekgopetse Lesiba Rautenbach, Jade Rousseau, Genevieve Sandaza, Akhona Shaik, Elham Singh, Kiasha Smit, Daniel Steyn, Amore Tabata, Zandile Nombala Terblanche, Wilri Thompson, Jayden Brad Tjiane, Fikile Tunmer. Ian David Steele Van Niekerk, Marita Antoinette Van Rooyen, Jana Van Schalkwyk, Megan Vink, Alex Julian Von Below, Estelle Elke

Williams, Alyssa Witten, Codi Ray Yacoob, Saaniya

Postgraduate Diploma in Intellectual Property Law Nagraadse Diploma in Intellektuele Goederereg

Grundlingh, Johanna Cornelia

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

Mualusi, Phillis Musakalu, Rozaria Munsonto Raseote, Freddy

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

Coltman, Matthew Shaun Kloppers, Niki Mogashoa, Karabo Kefilwe Nonjabulo Pieterse, Dewald Wentley, Gareth Bryan

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.



Engage with us • Raak betrokke

Stellenbosch University Alumni

Graduating from university is a big step in your life's journey. Once you have obtained your degree, you form part of the alumni community and Stellenbosch University remains your intellectual home. The Alumni Relations Office believes the success of a university depends greatly on the participation of its alumni, therefore we strive to keep you connected to your alma mater long after the euphoria of obtaining your qualification/s has died down.

Om van 'n universiteit te gradueer is 'n groot stap in enigeen se lewensreis. Sodra jy jou graad verwerf het, vorm jy deel van die alumni-gemeenskap van jou universiteit en bly die Universiteit Stellenbosch jou intellektuele tuiste. Die Alumni-kantoor streef daarna om alumni met hul almal mater in verbinding te hou nog lank nadat die euforie van graadvang verby is.

Contact us

Tel: +27 21 808 9266 Fax: +27 21 808 8405 E-mail: alumni@sun.ac.za

Postal address:

Stellenbosch University Private Bag X1 Matieland, 7602 South Africa

Physical address:

Victoria Street, Admin B, 3rd Floor Stellenbosch

Kontak ons

Tel: +27 21 808 9266 Faks: +27 21 808 8405 E-pos: alumni@sun.ac.za

Posadres:

Universiteit Stellenbosch Privaatsak X1 Matieland, 7602 Suid-Afrika

Fisiese adres:

Victoriastraat, Admin B, 3de Vloer Stellenbosch



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@MatiesAlumni

