



STELLENBOSCH
UNIVERSITY • IYUNIVESITHI • UNIVERSITEIT

Graduation Ceremonies

7 December

09:00 • 13:00 • 17:00

Gradeplegtighede

7 Desember

09:00 • 13:00 • 17:00

2022

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.

The past year had its difficulties. The severity of the Covid-19 pandemic has declined in 2022, but the Stellenbosch University (SU) community confronted many other real difficulties.

Untoward incidents on campus reminded us that we have a long way to go in learning to live with and respect each other, and to join hands in working for our future together.

But amidst so many difficulties, 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 hard-won 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 University 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 Stellenbosch-gemeenskap

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

Die afgelope jaar het sy probleme gehad. Hoewel die erns van die Covid-19-pandemie in 2022 afgeneem het, is die Universiteit Stellenbosch (US) en sy gemeenskap deur verskeie ander probleme geteister.

Ongewenste voorvalle op kampus het ons daaraan herinner dat ons nog 'n lang pad moet stap om te leer hoe om saam met mekaar te lewe en hoe om mekaar te respekteer, en ook hoe om saam 'n toekoms te bou.

Maar te midde van alles het julle daarin geslaag om julle kwalifikasie suksesvol te voltooi – en dit spreek wonderlike boekdele oor julle én ons toekoms!

Ons is vandeeweke 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, steundienstpersoneel 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 onontbeerlike 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 our challenging 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 in 2022 we were able to go even further. Our staff and students across the academic spectrum proved that SU nurtures and advances innovation.

This is not to say we didn't face significant challenges. The unfortunate incidences at our University have forced us to reflect on what it truly means to be an inclusive institution. 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-graduandus

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, 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.

Dit beteken nie ons het nie aansienlike uitdagings beleef nie. Die ongelukkige voorvalle by ons Universiteit het ons gedwing om na te dink oor wat dit werklik beteken om 'n inklusiewe instelling te wees. 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 dat daar na hulle 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 alumni-netwerk 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)

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Prof MS Tshela, MSc, PhD

Arts and Social Sciences | Lettere en Sosiale Wetenskappe

Prof AJ Leysens, MA, DPhil

Science | Natuurwetenskappe

Prof L Warnich, MSc, PhD

Education | Opvoedkunde

Prof MR Madiba, DLitt et Phil

Law | Regsgeleerdheid

Prof N Smit, BLC, LLB, LLD

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 alumni hubs@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 uqhagamshelile.

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. Iingombolo 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 alumni hubs@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 alumni hubs@sun.ac.za.

Graduation Ceremonies | Gradeplegtighede

1. 7 December | Desember 2022 (09:00) 7

Faculty of Science (Group 1) | Fakulteit Natuurwetenskappe (Groep 1)

BSc (Chemistry); BSc (Human Life Science); BSc (Molecular Biology and Biotechnology); BSc (Sport Science); BSc (Stream: Applied Medicinal Chemistry); BSc (Stream: Bioinformatics and Computational Biology); BSc Hons (Biochemistry); BSc Hons (Bioinformatics and Computational Biology); BSc Hons (Chemistry); BSc Hons (Genetics); BSc Hons (Microbiology); BSc Hons (Physiological Sciences); BSc Hons (Polymer Science); MSc (Biochemistry); MSc (Bioinformatics and Computational Biology); MSc (Chemistry); MSc (Genetics); MSc (Microbiology); MSc (Physiological Sciences); MSc (Polymer Science); PhD (Biochemistry); PhD (Bioinformatics and Computational Biology); PhD (Chemistry); PhD (Genetics); PhD (Microbiology); PhD (Physiological Sciences); PhD (Polymer Science)

Doctoral Qualifications | Doktorale Kwalifikasies 9

Other Qualifications | Ander Kwalifikasies 11

2. 7 December | Desember 2022 (13:00) 15

Faculty of Science (Group 2) | Fakulteit Natuurwetenskappe (Groep 2)

BSc (Biodiversity and Ecology); BSc (Computer Science); BSc (Earth Science); BSc (General); BSc (Geo-informatics); BSc (Mathematical Sciences); BSc (Physics); BSc (Stream: Biomedical Mathematical Sciences); BSc Hons (Applied Mathematics); BSc Hons (Biodiversity and Ecology); BSc Hons (Computer Science); BSc Hons (Earth Science); BSc Hons (Geo-informatics); BSc Hons (Mathematics); BSc Hons (Operations Research); BSc Hons (Physics); BSc Hons (Plant Biotechnology); MSc (Applied Mathematics); MSc (Botany); MSc (Computer Science); MSc (Earth Sciences); MSc (Geography & Environmental Studies); MSc (Geo-informatics); MSc (Geology); MSc (Machine Learning and Artificial Intelligence); MSc (Mathematical Sciences); MSc (Mathematics); MSc (Operations Research); MSc (Physics); MSc (Plant Biotechnology); MSc (Zoology); PhD (Applied Mathematics); PhD (Botany); PhD (Computer Science); PhD (Earth Sciences); PhD (Geography & Environmental Studies); PhD (Geo-informatics); PhD (Geology); PhD (Mathematics); PhD (Physics); PhD (Plant Biotechnology); PhD (Zoology)

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Faculty of Engineering | Fakulteit Ingenieurswese

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Strive Masiyiwa

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Steven Bradshaw

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Faculty of Science (Group 1)

7 December 2022 | 09:00

Fakulteit Natuurwetenschappen (Groep 1)

7 Desember 2022 | 09:00



Programme

- Please stand*
- Please stand*
- Please sit*
- Please stand*
1. Entrance of academic procession into the hall.
 2. Playing of the National Anthem.
 3. 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.
 7. The academic procession leaves the stage.
-

Program

- Staan asseblief*
- Staan asseblief*
- Sit asseblief*
- Staan asseblief*
1. Akademiese prosesie kom die saal binne.
 2. Speel van die Nasionale Lied.
 3. 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.
 7. Akademiese prosesie verlaat die verhoog.

Faculty of Science (Group 1)

Fakulteit Natuurwetenskappe (Groep 1)

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

BENECKE, Rohan Meerholz (Physiological Sciences)

Comparative assessment of neurological versus metabolic allostasis as reflected in skin fibroblasts

Human skin-associated fibroblasts from patients with obesity and/or post-traumatic stress disorder (PTSD) were used in a comparative investigation of allostasis. PTSD was illustrated to decrease the calcium flux capacity of fibroblasts, indicating an allostatic link between neurological disease and peripheral maladaptation that was more pronounced than in obesity. Neuronal cells (astrocytes) exposed to the signalling milieu of these patient fibroblasts exhibited increased oxidative stress load, but only in undercompounded conditions of redox stress. These data suggest that endogenous countermechanisms may not be activated timely in response to low-level, chronic deviations from normalcy, providing the basis for allostatic load.

Supervisor: Prof C Smith
Co-supervisor: Dr M van de Vyver

KOK, Michellé (Biochemistry)

Studies on the metabolism of N-substituted pantothenamides in blood-stage *Plasmodium falciparum*

Drug-resistant *Plasmodium falciparum* parasites, the cause of malaria in humans, require new drugs and new drug targets to produce effective antimalarials. Pantothenate is an essential vitamin for parasite survival. N-substituted-pantothenamides are pantothenate analogues that kill blood-stage parasites by a mechanism that is not fully understood. Their mode of action was investigated using two strategies: first, by preparing novel fluorescent pantothenamides to study blood-stage parasite accumulation using confocal microscopy, and second, by investigating the effect of the structure-activity relationship of pantothenamides on parasite survival and transmission to the mosquito host. New insights into a new class of antimalarials and their main target were uncovered.

Supervisor: Dr M de Villiers
Co-supervisor: Prof E Strauss

LIPRINI, Marehette Suzanne (Polymer Science)

Developing marker technologies to probe complex polymers and products

The study of structure-property relationships is central to material science. In complex polymers and polymeric products, it is difficult to visualise the interactions between molecular species that are responsible for the properties of the polymer or artefact. The use of confocal fluorescence microscopy in conjunction with fluorescently tagged nanomaterials allowed for the visualisation of interactions between fractions of complex copolymers, while the use of these nanoprobe as security tags in paints was also illustrated. The autofluorescence of functional groups similarly allowed the visualisation of molecular changes caused by external stimuli in biodegradable active food packaging systems.

Supervisor: Prof AJ van Reenen
Co-supervisor: Dr M Lutz

OLAYOKU, Folasade Rosemary (Biochemistry)

SM6Met, a *Cyclopia subternata* extract, as a potential selective oestrogen receptor downregulator for breast cancer

Extracts of *Cyclopia*, a South African fynbos plant used to prepare honeybush tea, modulate molecular targets involved in breast cancer. Specifically, the extracts behave as oestrogen receptor subtype-specific downregulators by reducing ER α protein and mRNA levels, while elevating ER β protein levels through both transcriptional and proteasomal degradation mechanisms. In addition, the extracts preferentially induce ER β / β homodimerisation and ER α / β heterodimerisation and nuclear localisation of ER β . Therefore, the *Cyclopia* extracts selectively modulate ER subtype levels, their nuclear localisation and distribution, as well as their dimerisation in a manner that may be beneficial for the prevention or treatment of breast cancer.

Supervisor: Prof A Louw

PRETORIUS, Lesha (Physiological Sciences)

The effect of altered trace aminergic signalling and oestrogen on intestinal inflammation within an IBS context

The regulatory capacity of the trace aminergic system in the context of irritable bowel syndrome was investigated in microbial culture, human colon adenocarcinoma cell culture and a zebrafish larval model of intestinal inflammation. Novel findings included elucidation of the role of oestrogen in modulating the gut microbe trace amine secretion profile; identification of the role of tyramine in exacerbating intestinal inflammation-related symptomology; illustration of the capacity of oestrogen to prevent this tyramine-induced damage; identification of agmatine as potential preventative modality to strengthen intercellular tight junctions, thereby improving gut membrane integrity; as well as demonstration of the prebiotic potential of rooibos tea extracts in this context.

Supervisor: Prof C Smith

Co-supervisor: Dr AD van Staden

SIRUNDA, Jaime Johannes (Microbiology)

A comparative assessment of water quality of two reservoirs in an ephemeral river in the desert climate of Namibia: Measures to control and factors affecting growth of toxic cyanobacteria

A comprehensive assessment of water quality deterioration of two dams in the Omaruru-Swakop catchment, Namibia was conducted. This catchment is a primary source of water for Windhoek and surrounding areas. Densification in the catchment causes eutrophication of the water, leading to phytoplankton blooms in the dams. It was found that current control measures are not effective and that cyanobacteria, including toxic species, dominate the phytoplankton community in all seasons. A range of technical interventions, engagement with polluters, alternative forms of compliance enforcement as well as improved risk models for predicting cyanobacterial blooms are proposed.

Supervisor: Prof GM Wolfaardt

Co-supervisor: Prof P Oberholster (*external*)

VISSER, Maria Johanna Elizabeth (Physiological Sciences)

Investigating systemic inflammation and hypercoagulability in Psoriasis: Implications for cardiovascular disease

Psoriasis is a chronic immune-mediated inflammatory disease of the skin, associated with an increased risk of cardiovascular disease. Currently, the mechanisms responsible for this association remain uncertain. Hypercoagulability might be a potential mechanistic link. Biomarker analysis, thromboelastography and scanning electron microscopy were employed to assess the haemostatic profile of patients with psoriasis. In addition, fibrin secondary structure was examined using fluorescence microscopy and Fourier transform infrared spectroscopy. Patients with psoriasis presented with an increased tendency towards clot formation and an altered fibrin network architecture. This acquired hypercoagulability may have implications for the management of psoriasis as well as cardiovascular disease risk in these individuals.

Supervisor: Prof E Pretorius

VON BERG, Stuart Raymond Colenzo (Chemistry)

Bonding interactions in congested molecules: A Study of the interatomic forces and the molecular electrostatic potential

The quantum theory of atoms in molecules (QTAIM) was applied to the molecular electrostatic potential (MEP) and its topology used to determine whether a stabilising interaction exists between hydrogens in a congested molecule. The ratio of the nuclear and electronic components of the MEP was used as a tool to characterise bond properties, indicating that hydrogen-hydrogen interactions are stabilising. However, analysis of the electron density, Laplacian and kinetic energy creates an equally compelling argument against the interaction being stabilising. Applying the QTAIM method to MEP topology does not provide sufficient evidence to determine whether the hydrogen-hydrogen interaction in congested molecules is stabilising or destabilising.

Supervisor: Prof JLM Dillen



HOME

Faculty of Science (Group 1)

Fakulteit Natuurwetenskappe (Groep 1)

OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

Master of Science

Magister in die Natuurwetenskappe

Ambrose, Wade Daniel Mccallum (Physiological Sciences) (*cum laude*)
Andrews, Kelsey Jayne (Genetics) (*cum laude*)
Booyens, Renata Madre (Physiological Sciences)
Brits, Anya (Polymer Science)
Carstens, Althea (Polymer Science)
Cogill, Sinnead Anne (Physiological Sciences) (*cum laude*)
De Beer, Tanya (Microbiology)
Faure, Lindsay Marie (Microbiology) (*cum laude*)
Grobelaar, Lize Mireille (Physiological Sciences) (*cum laude*)
Knupp, Julieanne (Genetics) (*cum laude*)
Lesailane, Mmapula (Genetics) (*cum laude*)
Prinsloo, Hendrik Johannes (Genetics)
Sitzer, Warrick (Biochemistry)
Spencer, Katarina Paula (Genetics) (*cum laude*)
Stanvliet, Zahn (Polymer Science)
Steffen, Heidi Christa (Microbiology) (*cum laude*)
Straeuli, Rieze (Genetics)
Van der Merwe, Michelle Pauline (Physiological Sciences) (*cum laude*)
Van Wyk, Minette (Physiological Sciences) (*cum laude*)
Visagie, Aiden Weidner (Microbiology)
Wassenaar, Veronique (Chemistry)

Bachelor of Science Honours

Honneurs-Baccalaureus in die Natuurwetenskappe

Abdool Karim, Wasim (Bioinformatics and Computational Biology)
Abrahams, Harrison Forrest (Bioinformatics and Computational Biology)
Alexander, Natalie Bianca (Bioinformatics and Computational Biology) (*cum laude*)
Allsopp, Daniel Hugh (Genetics)
Anning, Ciara Joan Elizabeth (Genetics)
Arendse, Shannon Deslene (Bioinformatics and Computational Biology)
Averia, Glenn Gregorio (Biochemistry)
Babenko, Darya Alexandrovna (Microbiology) (*cum laude*)
Bam, Mariska (Physiological Sciences) (*cum laude*)
Beste, Nika (Genetics)
Bezuidenhout, Sherwin Heinrich (Biochemistry) (*cum laude*)
Bosman, Philippus Rudolph (Genetics)
Botha, Danelle (Microbiology) (*cum laude*)
Bowles, Brian Keith (Microbiology)
Bristow, Paolo Timothy (Biochemistry)
Brown, Zoe Alexandra (Polymer Science)
Carpenter-Frank, Andrew Nicholas (Genetics)
Chang, Kuan-Liuh Richard (Bioinformatics and Computational Biology) (*cum laude*)
Chetty, Caitlyn (Biochemistry)
Clinton, Tiffany Adelia (Genetics)
Collins, Megan (Genetics)
Cowley, Michael Lundin (Physiological Sciences)

De Beer, Coenraad Eduard (Bioinformatics and Computational Biology)
De Sousa, Cayleigh (Physiological Sciences)
De Wet, Suzaan Christine (Microbiology) (*cum laude*)
Delpierre, Luc Reynaud (Genetics)
Demas, Shadelene Unisha (Genetics)
Du Plessis, Anna (Bioinformatics and Computational Biology) (*cum laude*)
Espinoza, Jessica Louise (Genetics) (*cum laude*)
Faias, Daniel William (Biochemistry)
Fell, Sian Ryan (Chemistry)
Fourie, Xandr Kobus (Biochemistry) (*cum laude*)
Germishuys, Marijke (Biochemistry)
Grobler, Anjè-Lorè (Genetics)
Hanslow, Megan (Biochemistry) (*cum laude*)
Hingle, John Stephen (Physiological Sciences)
Houghton, Abbey Mae (Genetics)
Hugo, Liza (Genetics) (*cum laude*)
Janse van Rensburg, Imáney (Microbiology)
Kersten, Marko Ortwin (Biochemistry) (*cum laude*)
Kingham, Erin Kathleen (Genetics)
Kitching, Chene (Bioinformatics and Computational Biology) (*cum laude*)
Kleynhans, Sarah (Physiological Sciences)
Knupp, Samantha (Physiological Sciences) (*cum laude*)
Koh, Tammara Poa Siang (Bioinformatics and Computational Biology) (*cum laude*)
Kruger, Kian (Genetics)
Kuyler, Christel (Biochemistry)
Lakay, Fatimah (Physiological Sciences)
Laubscher, Andrea (Physiological Sciences) (*cum laude*)
Le Roux, Kyle (Biochemistry)
Lee, Michael Jonathan (Chemistry) (*cum laude*)
Lobb, Teagan Jade (Genetics)
Lochner, Bianca Lileen (Biochemistry)
Mac Kenzie, Jessica Amy (Physiological Sciences) (*cum laude*)
Maharaj, Arisha (Bioinformatics and Computational Biology)
Mashiane, Reitumetse Emily (Bioinformatics and Computational Biology)
Matanda, Siyabonga (Physiological Sciences)
Meyer, Madré (Physiological Sciences) (*cum laude*)
Midgley, Jessie (Bioinformatics and Computational Biology) (*cum laude*)
Mokoena, Khaya Reatlegile (Biochemistry)
Morgenrood, Tamsyn (Biochemistry) (*cum laude*)
Muller, Keelin Shanice (Genetics)
Muzenda, Florence (Biochemistry)
Naicker, Owen Ashley (Bioinformatics and Computational Biology) (*cum laude*)
Naidoo, Caitlin Alicia (Physiological Sciences) (*cum laude*)
Neethling, Emma Cecile (Genetics)
Nel, Jaydee (Biochemistry) (*cum laude*)
Nieto Lawrence, Juan Sebastian (Chemistry) (*cum laude*)
Nkentsha, Zenande (Physiological Sciences)
O'Meara, Mika Isabella Grace (Genetics)
Palmer, Jessica Mary (Microbiology)
Pedro, Zanne (Polymer Science)

Pieterse, Rohan (Bioinformatics and Computational Biology)
 Ramphal, Yajna (Bioinformatics and Computational Biology)
 Raoult, Kyla Michelle (Chemistry) (*cum laude*)
 Redelinghuys, Karla (Genetics) (*cum laude*)
 Reid, Jason Leslie (Biochemistry)
 Romer, Michaela Christina (Polymer Science)
 Roux, Mariek (Genetics)
 Schreiber, Caroline (Bioinformatics and Computational Biology) (*cum laude*)
 Scott, Sarah Anne (Chemistry)
 Steyn, Gina-Mari (Genetics)
 Steyn, Salomé Sophia (Polymer Science) (*cum laude*)
 Tambe, Azraa (Biochemistry)
 Tchokonte-Nana, Philo Chaverley Kamani (Bioinformatics and Computational Biology) (*cum laude*)
 Tlhapane, Bonolo (Bioinformatics and Computational Biology)
 Tshimbane, Charity (Biochemistry)
 Usher, Thomas James (Physiological Sciences) (*cum laude*)
 Van den Bergh, Paige Hannah (Physiological Sciences)
 Van der Merwe, Franco Leopold (Biochemistry)
 Van der Walt, Chante (Microbiology)
 Van Heerden, Hanri Johannes Lodewikus (Bioinformatics and Computational Biology)
 Van Niekerk, Carla (Genetics)
 Van Zyl, Kara Elena (Physiological Sciences)
 Vermeulen, Wian (Microbiology) (*cum laude*)
 Vorster, Melissa Sona (Bioinformatics and Computational Biology) (*cum laude*)
 Webster, Aiden Joel (Chemistry)
 Wessels, Francel (Biochemistry) (*cum laude*)
 Wessels, Jana (Polymer Science)
 White, Luke (Polymer Science)
 Wiese, Nina (Genetics)
 Witbooi, Catherine Patricia (Biochemistry)

Bachelor of Science Baccalaureus in die Natuurwetenskappe

Abdullahi Hassan, Faisa
 Allen, Jennifer O'kenedy
 Anderson, Gabrielle Tineke Elisabeth
 Anderson, Patricia Marguerite
 Arendse, Jessica Samantha
 Armstrong, Kayleigh Ann
 Atkinson, Katherine Jeanette
 Austin, Robyn Hannah
 Banda, Kondwani
 Basson, Chene
 Basson, Kristen Taylor
 Berry, Lara Denise
 Beyer, Kirsten Ruth (*cum laude*)
 Biggs, Nichole Jenna
 Böhler, Zoë
 Böning, Elita
 Botes, Danielle
 Botes, Monique Clare
 Botha, Joelle Lia
 Bowles, Carmen Elizabeth
 Boyi, Ripfumelo Tiisetso
 Brink, Danielle
 Brink, Henry
 Britton, Jayde
 Brundyn, Stefan Kyle
 Calvert, Josie Anne
 Cambell, Joshua
 Chambers, Samantha Lea
 Chan, Aaminah
 Christmas, Alistair James Barratt
 Clothier, Leigh Alexandra
 Coles, Jordan Tyler
 Conradie, Kayla Jacqueline
 Copley, Elizabeth Jane (*cum laude*)
 Cox, Chloe
 Dannhauser, Daniel
 Dantie, Mogamat Faez
 Davidson, Harry Reginald
 De Klerk, Courtney Jane
 De Kock, Anthonie Johannes
 De Koker, Jessica
 De Lange, Jani (*cum laude*)
 De Villiers, Sophie Anne
 De Vos, Aton Sinead
 De Voux, Sasha
 De Wet, Lisa Thea (*cum laude*)
 Dick, Jon-Ross
 Dippenaar, Annelet
 Dippenaar, Madelein (*cum laude*)
 Dotwana, Mzolisi Musa
 Du Preez, Ane
 Du Preez, Cecile Monique
 Du Preez, Christine Adléz
 Du Toit, Dominique Adrien
 Dunn, Gabrielle
 Engelsman, Craig Edgar David (*cum laude*)
 Ferreira, Robyn Taylor
 Fick, Corlia
 Field, Kayla Louise
 Flockhart, Shekinah
 Foot, Elrica
 Fourie, Chanté
 Fourie, Inge
 Geduld, Cobyne Quinn
 Geldenhuys, Bianca
 Glen, Tereka Angela
 Goodchild, Shannon
 Goodwin, Amy Illana Ann
 Goosen, Melissa (*cum laude*)
 Gordon, Andrea Zeta
 Govender, Thameshan
 Grobbelaar, Ian Gerrit
 Grové, Suné Venicia
 Hancke, Petri
 Harwood, Michelle
 Hawksley, Alice Nicole
 Hellestoe, Chad Broz
 Hewana, Sinelitha Luxolo
 Hoole, Hayley
 Isaacs, Selecia
 Isaacs, Zuhairaa
 Jacobsen, Jethro Hans Eric
 Jansen van Rensburg, Mieke
 Janson, Dayna Lynne (*cum laude*)
 Jeftha, Gretchen Leila
 Jonkers, Charnél Lilly-Anne
 Kenton, Jessica Louise
 Kilgour, Kyle (*cum laude*)
 Kirsten, Lana
 Kluyts, Tamryn
 Kortje, Cheslin Cameron
 Kuun, Joane
 Lawson, Erin Kim
 Le Roux, Elise (*cum laude*)
 Lewies, Jade Chante
 Lincoln, Stephanie Anne
 Loseby, Tayla-Jade

Lotter, Rianca
Louw, Aurielle Aimee
Makau, Boitumelo
Malan, Stephanus Willem
Manoko, Lerato
Marinho, Julie Suzanne Ophélie
Mcarthur, Sarah Susan
Mccree, Joshua Paul
Meerburg, Gemma (*cum laude*)
Messerschmidt, Hanneli Elisabeth
Meyer, Kristin Joan (*cum laude*)
Minnie, Deoné Filda
Mohamed, Zoe
Molisi, Asanda
Morphet, Cara Ruby
Morton, Matthew
Mosheshe, Liteboho Tlotliso
Moyake, Simamkele
Mpetshwa, Indiphile Khanya
Mugonda, Tanya Rudo
Muller, Handré Judene
Muller, Kaylin Jada
Munro, Sophie Rose
Myburgh, Elani
Naidoo, Terri-Lynne
Nel, Pieter Besselsen
Neuhoff, Hannah Marielese
Noda, Chwayita
Norris, Kayleigh Christen
Norval, Jessica
Omer, Basheerah
Oosthuisen, Nicole Jenna
Opperman, Pedro-Lynn
Otto, Nicola Miriam Elizabeth
Owen, Ryno
Pillay, Thmistra
Pillay, Vishalini
Plaatjes, Dominique Sadey
Prior, Holly Aston
Rajaruthnam, Seyuri
Rajaruthnam, Sunthuri
Redman, Bianca Lee
Rietoff, Katya
Robyn, Pierre Gordon
Roos, Willem Tielman
Rossouw, Lynn
Sampson, Ana Marie
Santos, Sabrina Andrea
Schefferlie, Jean-Carl Luc
Schmoor, Jared Kyle
Schonken, René
Schoonwinkel, Benita Elizabeth
Sello, Palesa Shalom
Sigqolana, Sihle
Slabber, Johann
Smit, Louwrens Braam (*cum laude*)
Smuts, Marilu
Stapar, Sara

Steyn, Hana Zoe
Steyn, Nina
Steynberg, Hanre
Stofberg, Emma
Straiton, Tyler Glenice
Strydom, Jana
Sunge, Ayesha
Swanepoel, Cornelis Francois
Swanepoel, Tineke Beatrix (*cum laude*)
Swart, Maret
Swart, Shané Petra
Swinney, Jessica Susan
Thackwray, Brett
Theron, Marianné (*cum laude*)
Theunissen, De Wet
Thompson, Anèl Elaine
Timson, Georgia Rose
Torppa, Johannes Elias
Tshiololi, Matodzi Princess
Tshwane, Asante Mmalepota
Turner, Erin Joan
Uys, Sharnah
Van Baalen, Mariechen
Van Ballegooyen, Patrick Michael
Van der Linden, Jos
Van der Merwe, Ayla
Van der Merwe, Breyten
Van der Walt, Sharyn (*cum laude*)
Van der Watt, Donnathea
Van der Westhuizen, Jana (*cum laude*)
Van Greune, Gia Minanto
Van Greunen, Amor (*cum laude*)
Van Jaarsveld, Duan Xavier
Van Niekerk, Jannika
Van Niekerk, Mieke
Van Rensburg, Daniel James
Van Rhyn, Anelda
Van Staden, Hermanus Johannes
Van Veen, Jem
Van Wyk, Marizanne
Van Zyl, Danelle
Van Zyl, Martin
Venter, Zannenlee
Vermeulen, Juan Nel (*cum laude*)
Visser, Sophia Juanita
Volminck, Nevin
Vrey, Jennifer
Vuzane, Zimasa
Wall, Thomas Keith
Wannenburg, Willem Petrus (*cum laude*)
Warner, Tayla Rose (*cum laude*)
Waters, Maxine Luise Ann
Wilson, Julia Alice
Wishart, Alexander Greig Stuart
Yokwe, Sisipho
Zingitwa, Ntandokazi
Zuccarini, Juliette Rosabelle



Faculty of Science (Group 2)

7 December 2022 | 13:00

Fakulteit Natuurwetenschappen (Groep 2)

7 Desember 2022 | 13:00



Programme

- Please stand*
- Please stand*
- Please sit*
- Please stand*
1. Entrance of academic procession into the hall.
 2. Playing of the National Anthem.
 3. 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.
 7. The academic procession leaves the stage.
-

Program

- Staan asseblief*
- Staan asseblief*
- Sit asseblief*
- Staan asseblief*
1. Akademiese prosesie kom die saal binne.
 2. Speel van die Nasionale Lied.
 3. 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.
 7. Akademiese prosesie verlaat die verhoog.

Faculty of Science (Group 2)

Fakulteit Natuurwetenskappe (Groep 2)

DOCTORAL QUALIFICATIONS | DOKTORALE KWALIFIKASIES

DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

ADEGBAJU, Muyiwa Seyi (Plant Biotechnology)

Analysis of interactions between glucan, water dikinase and either isoamylase or starch branching enzyme in determination of starch structure

Starch is a polymer that accumulates in plants and is used in many industries. Before use in industrial processes, it is often modified using chemical or enzymatic treatments to alter its physicochemical properties, which adds costs to industry. The aim of this study was to alter starch metabolism in transgenic potato tubers so that they synthesise starch with properties that are useful to industry without these costly modifications. Several genes involved in starch biosynthesis were repressed, and this led to starches with improved gelling and freeze-thaw characteristics. Both of these properties are useful in the processed food industry.

Supervisor: Prof JR Lloyd
Co-supervisor: Dr C Van der Vyver

CILLIERS, Charl Daniël (Geology)

Geology of the early Late Cretaceous Moreno Hill Formation, Zuni Basin, New Mexico

The poorly understood early Late Cretaceous period (~125–80 Ma) was a tumultuous time in Earth's history. Fortunately, the Moreno Hill Formation (MHF) in New Mexico could provide insights into climatic recovery after the Cretaceous Thermal Maximum (KTM). It was identified via radiometric age dating that the MHF was emplaced between 90.9 and 88.6 Ma. Thereafter, it was shown that these sediments were emplaced within a distal floodplain linked to regional tectonics, post-KTM cooling and regional sea-level fluctuations. By combining temporal and sedimentary data, stratigraphic context for key field sites was provided and seaward linkages to the Gallup Delta were strengthened.

Supervisor: Dr RT Tucker
Co-supervisor: Dr LE Zanno

JAMES, Bridget Susan (Zoology)

Investigating the role of social structure on residency, mating strategies and associations in a small population of bottlenose dolphins (*Tursiops truncatus*) under pressure

The social and underlying genetic structure of bottlenose dolphins in Namibia was investigated using photographic and genetic data. Genetically, high levels of inbreeding and low genetic diversity were present. A new method was developed that reliably predicted the sex of individuals using their distinctive dorsal fin markings. Differential responses to human impacts were observed, with females with small calves the most sensitive to disturbance. Mixed-sex groups were the most frequently seen, with strong and long-lasting associations between individuals and multiple mating systems present, including male alliances. A socially learned foraging strategy determined by age, sex and habitat preference was present.

Supervisor: Dr SH Elwen
Co-supervisors: Dr T Gridley, Prof CA Matthee

MARTIN, Keanu (Botany)

The effect of pollen quality on blueberry fruit yield

Blueberry plants of the same variety are clones of one another and pollen movement between clones leads to inbred fruit of poor quality. Although farmers sometimes plant clones in alternating rows, honeybees seldom move between rows of blueberries and so most pollination occurs between individuals of the same variety. This leads to reduced fruit production. By changing the planting arrangements of blueberry varieties to match pollinator foraging movements, cross pollination and fruit yields may be improved.

Supervisor: Prof B Anderson
Co-supervisors: Drs M de Jager, C Minnaar

MBANYANA-NHLEKO, Nokuthula Maria Doreen (Zoology)

Unravelling the biogeographical history of the southern African ant genus *Ocymyrmex* (Hymenoptera: Formicidae): An integrative approach

Ocymyrmex has only been recorded in the Afrotropical region, with most species being endemic to the arid regions of southern Africa. The morphological and phylogenetic data revealed six new ant species, while two of the described species synonymised. The dated phylogeny and biogeography results suggested that *Ocymyrmex* originated in the south-western dry parts of southern Africa 32 Mya and subsequently transitioned and diversified into the eastern subtropical parts of the region between 23 Mya and 2 Mya. The desiccation resistance and high abundance of long-chained cuticular hydrocarbon are possibly conserved traits across *Ocymyrmex*, and they fit with the arid origin of the genus.

Supervisor: Prof TC Wossler

Co-supervisors: Prof JJ le Roux, Drs S van Noort, B Blaimer

MÜHLBERG, Mortiz (Earth Sciences)

Magmatic and metamorphic evolution of the Stolzburg Block, Barberton Granitoid-Greenstone Terrain

The thermal evolution of the felsic Archean crust from the Stolzburg Block, Barberton Granitoid-Greenstone Terrain (BGGT) was investigated by trace-element and isotope analyses of apatite, titanite and zircon grains from granitoid rocks. The results showed a preservation of primary igneous characteristics as well as three distinct metamorphic events recorded by apatite. Temperature did not exceed 600 °C for any extended period and peak temperature did not exceed 700 °C. The felsic Archean crust preserved in the BGGT was relatively cool and stable and metamorphic processes were short-lived, arguing against some existing geodynamic models.

Supervisor: Prof G Stevens

Co-supervisors: Profs A Kisters, J-F Moyen (*external*)

OMOMULE, Taiwo Gabriel (Computer Science)

Mixtures of heterogeneous experts

Machine learning algorithms exhibit different inductive biases, resulting in different prediction behaviours for the same dataset. Ensemble models refer to committees of machine learning experts working together to solve the same problem. This study developed ensembles of heterogeneous machine learning experts to capitalise on the different inductive biases, thereby producing more accurate predictive models. The ensembles were extensively analysed with respect to various data quality factors on a number of regression and classification problems. The results showed that ensembles of heterogeneous experts consistently outperformed homogeneous ensembles over most of the datasets and data quality factors, producing significantly better generalisation performance.

Supervisor: Prof AP Engelbrecht

RABIE, Jacques (Mathematics)

Contributions to the theory of near-vector spaces, their geometry, and hyperstructures

Vector spaces are fundamental in mathematics and several of its applications. Some structures are nearly vector spaces, but fail to satisfy all of the relevant axioms and so one studies near-vector spaces. The geometric structure of André's near-vector spaces was investigated and used to prove several new results. Among these, the weak subspaces of near-field spaces were characterised, thereby linking the geometry to the algebra of the spaces. Projections of nearaffine spaces were also introduced and studied. Hyper near-vector spaces were defined, analogously to hyper vector spaces, which had recently been introduced, and properties of these were established.

Supervisor: Prof K-T Howell



Faculty of Science (Group 2)

Fakulteit Natuurwetenskappe (Groep 2)

OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

Master of Science

Magister in die Natuurwetenskappe

Babl, Cosima Tanja Ulricke (Plant Biotechnology) (*cum laude*)
Bayoulou, Madou (Mathematical Science)
Bormans, Jeroen (Physics)
Botha, David Johannes (Machine Learning and Artificial Intelligence) (*cum laude*)
Chakawa, Abraham (Mathematical Science) (*cum laude*)
Chipoka, Mulenga (Mathematical Science)
De Freitas, Cathrine-Rose (Geography and Environmental Studies B)
Du Plessis, Mikkell (Applied Mathematics) (*cum laude*)
Fischer, Riëtte Louwrene (Plant Biotechnology) (*cum laude*)
Hurst, Rebecca Jane (Plant Biotechnology) (*cum laude*)
Johl, Matthew Stephen (Machine Learning and Artificial Intelligence) (*cum laude*)
Kamga Matoukam, Bralyne Vanessa (Mathematical Science)
Kamusha, Joseph (Mathematical Science)
Korsten, Riaan Louw (Physics)
Kweya, Zeymisco Elias (Mathematical Science)
Kyakutwika, Nelson (Mathematics) (*cum laude*)
Lekgwara, Fortune Pitsi (Mathematical Science)
Louw, Christiaan Johan (Applied Mathematics)
Lwazi, Esther Wanangachi (Mathematical Science)
Maenje, Alinate (Mathematical Science)
Mahura, Tshepo (Mathematical Science)
Mamabolo, Molatela Paulina (Plant Biotechnology)
Marshall, Thomas Michael (Machine Learning and Artificial Intelligence) (*cum laude*)
Mokone, Obakeng Kelelelo (Mathematical Science)
Mouton, Rozanne (Geo-informatics) (*cum laude*)
Mulebya, Francisca (Mathematical Science)
Mulusa, Martha (Mathematical Science)
Mwenitete, Enock (Mathematical Science)
Namakhwa, Dumisani Lickson (Mathematical Science)
Ngwenya, Denzel Spencer (Mathematical Science) (*cum laude*)
Niehaus, Carla (Machine Learning and Artificial Intelligence) (*cum laude*)
Ogundeji, Opeyemi Dorcas (Mathematical Science)
Palko, Reinhardt Tamas (Machine Learning and Artificial Intelligence) (*cum laude*)
Rakotomanga, Mendrika Henitsoa (Mathematical Science) (*cum laude*)
Rall, Hjalmar (Physics) (*cum laude*)
Razanaparany, Bria Aimé (Mathematical Science) (*cum laude*)
Sakala, Enala (Mathematical Science)
Surajpal, Tarryn Lee (Applied Mathematics) (*cum laude*)
Tembo, Kunengwa (Mathematical Science) (*cum laude*)
Tshivhasa, Ndivhuwo Prince (Mathematical Science)
Tyabule, Khanyiswa (Mathematical Science)
Usher, Katherine Alice (Plant Biotechnology) (*cum laude*)
Van Litsenborgh, Pieter Steyn (Computer Science) (*cum laude*)
Zondo, Banele Blessing (Mathematical Science)

Bachelor of Science Honours

Honneurs-Baccalaureus in die Natuurwetenskappe

Abrahall, Lauren (Computer Science) (*cum laude*)
Ackland, Sarah Jane (Biodiversity and Ecology)
Alves, Rivaldo Marco (Earth Sciences)
April, Ashleigh Lisa (Biodiversity and Ecology)
Babl, Markus Tobias (Earth Sciences)
Bald, Alexandra (Plant Biotechnology)
Barnes, Shae (Plant Biotechnology)
Barrish, Daniel (Computer Science)
Beukes, Anorine (Biodiversity and Ecology)
Beyers, Louise (Applied Mathematics)
Boshoff, Simeon (Computer Science)
Bossert, Aidan (Biodiversity and Ecology)
Botes, Hope Jasmin (Biodiversity and Ecology)
Bradfield, Daena Kay (Computer Science) (*cum laude*)
Brand, Daniël Marthinus (Computer Science) (*cum laude*)
Brenner, Kyle (Plant Biotechnology)
Cobbold, Kira Anne (Earth Sciences) (*cum laude*)
Conradie, Stefan Alwyn (Applied Mathematics) (*cum laude*)
Cordy, Adam Johannes (Applied Mathematics)
Courtaillac, Kira Lee (Biodiversity and Ecology)
Day, Jason Charles (Plant Biotechnology)
De Beer, Isabella Willemien (Biodiversity and Ecology)
De Bruin, Rivaldo (Computer Science)
De Freitas, Damian Christopher (Computer Science) (*cum laude*)
De Villiers, Cornelius Johannes (Physics) (*cum laude*)
Demas, Daniel (Plant Biotechnology)
Dewitt, Justin Charl (Computer Science) (*cum laude*)
Dorfling, Line (Computer Science)
Du Plessis, Leroi Alexander (Physics) (*cum laude*)
Du Preez, Hulmari (Plant Biotechnology)
Du Toit, Jaco (Computer Science) (*cum laude*)
Du Toit, Simon (Computer Science) (*cum laude*)
Everts, Kelsey Alana (Physics) (*cum laude*)
Feierabend, Gregor (Mathematics) (*cum laude*)
Folscher, Nicholas Christian (Physics)
Gama, Nompumelelo Nonhlanhla (Earth Sciences)
Gaoaaga, Kereemang (Earth Sciences)
Gege, Ongeziwe (Earth Sciences)
Germeshuisen, Ezelna (Earth Sciences)
Goliath, Estevohn Caden (Earth Sciences)
Goosen, Nico Christiaan (Geo-informatics)
Grobler, Petrus Cornelius Jacobus (Biodiversity and Ecology)
Hamilton Russell, Leila Angela (Mathematics) (*cum laude*)
Harding, Daniel (Computer Science)
Hathorn, Sarah (Biodiversity and Ecology)
Hayward, Lauren (Computer Science) (*cum laude*)
Horoto, Langa (Physics) (*cum laude*)
Jacobs, Hanri Valkyrie (Physics)
Jones, Olivia Emma (Biodiversity and Ecology) (*cum laude*)
Jordaan, Christoff (Computer Science)
Joubert, Gideo (Mathematics) (*cum laude*)
Justus, Claudia Ledbury (Mathematics) (*cum laude*)
Kane, Boyd Robert (Computer Science) (*cum laude*)
Katharoyan, Chaitanya (Biodiversity and Ecology)

Kellermann, Rossouw (Geo-informatics)
 Kennard, Dominique (Geo-informatics)
 Kent, Jason (Applied Mathematics) (*cum laude*)
 Keyter, Janet (Plant Biotechnology)
 Khanyi, Masana Hlengiwe Michelle (Computer Science) (*cum laude*)
 Khumalo, Ismail (Computer Science)
 Kildaire, Tristan (Computer Science)
 Klassen, Amber Denél (Biodiversity and Ecology)
 Klink, Courtney (Biodiversity and Ecology)
 Linde, Altus (Plant Biotechnology)
 Mack, Ethan Eric (Earth Sciences)
 Makhafola, Jeremia Tshepo (Earth Sciences)
 Malherbe, Jozua Radandt (Physics)
 Mapetshana, Yamkela Aluluto (Earth Sciences)
 Mccleave, David (Computer Science)
 Mcginty, Jarred Gordon (Computer Science)
 Merrington, Nicholas (Computer Science) (*cum laude*)
 Meyer, Lucas (Computer Science)
 Meyer, Werner (Plant Biotechnology)
 Mitchell, Graham (Physics) (*cum laude*)
 Moodley, Sachin (Plant Biotechnology)
 Moolman, Petrone (Computer Science) (*cum laude*)
 Motloutsi, Amogelang (Applied Mathematics) (*cum laude*)
 Mouton, Alexander (Computer Science)
 Munz, Julian Morné (Computer Science)
 Myburgh, Harry (Computer Science)
 Naudé, Francois (Applied Mathematics) (*cum laude*)
 Nieuwenhuizen, Talitha (Biodiversity and Ecology)
 Nieuwoudt, Zandre Johan (Geo-informatics)
 Nylstroom, Nawaal (Earth Sciences)
 Painting, Cameron (Computer Science) (*cum laude*)
 Phakoe, Reabetsoe Clairina (Applied Mathematics)
 Raath, Ruan Francois (Earth Sciences) (*cum laude*)
 Rabie, Andre (Biodiversity and Ecology)
 Rademeyer, Juliette (Applied Mathematics)
 Rifai, Aisha Salim (Biodiversity and Ecology)
 Robinson, Bethany (Mathematics)
 Roodt, Alexander (Computer Science) (*cum laude*)
 Rossouw, Emma Isabelle (Biodiversity and Ecology) (*cum laude*)
 Samsodien, Zara (Earth Sciences)
 Schuurmans, Oliver Jon (Mathematics) (*cum laude*)
 Seesink, Diny Simone (Applied Mathematics)
 Selles, Gregory Michael (Geo-informatics)
 Senekal, Anna Maria (Biodiversity and Ecology) (*cum laude*)
 Stevens, Simon (Computer Science) (*cum laude*)
 Sururu, Ibrahim Sheriff (Computer Science)
 Symons, Craig Christopher Ray (Biodiversity and Ecology)
 Tabane, Nthabiseng Monica Thabitha (Physics)
 Tam, Matthew (Computer Science) (*cum laude*)
 Theron, Thomas Arnoldus (Computer Science)
 Tietz, Sasha Marco (Plant Biotechnology)
 Toth, Mila (Geo-informatics)
 Valkin, Benjamin (Computer Science) (*cum laude*)
 Van den Heever, Erin Jaimie (Computer Science) (*cum laude*)
 Van der Merwe, Jaymie (Physics)
 Van der Riet, Megan Hope (Mathematics) (*cum laude*)
 Van Eeden, Louis Burger (Earth Sciences)
 Van Niekerk, Adri Marita (Biodiversity and Ecology)
 Van Niekerk, Jesse Benjamin (Earth Sciences)
 Van Niekerk, Nadia (Computer Science) (*cum laude*)
 Van Rooyen, Wesley (Computer Science)
 Van Zyl, Ruan Johannes (Earth Sciences)
 Verwayen, Troy (Computer Science)
 Visagie, Joubert Christiaan (Computer Science)

Vlok, Anna Catharina Elizabeth (Applied Mathematics) (*cum laude*)
 Walker, Leanne Nicole (Plant Biotechnology)
 Watling, Brendan (Computer Science) (*cum laude*)
 Welham, Angela Ruth (Earth Sciences) (*cum laude*)
 Woithe, Gerhard Gustav (Physics) (*cum laude*)
 Wrensch, Matthew Patrick (Geo-informatics)

Bachelor of Science Baccalaureus in die Natuurwetenskappe

Allan, Kai
 Archer, Douglas
 Armien, Zain
 Asefi, Jordaan Babur Burna
 Bentley, Scott Grant
 Botha, Claudia Skye
 Bothma, Frans Stefanus
 Buchner, Reinhardt
 Burger, Gerrard Alwyn
 Busser, Gerrit Jo (*cum laude*)
 Butler, Marc Andrew
 Campbell, Tarryn
 Chetty, Jarooshan (*cum laude*)
 Cilliers, Nicola
 Cloete, Daniël Willem Hendrik (*cum laude*)
 Coetzee, Arnold
 Coetzer, Llelani Mischke
 Colesky, Pieter Theodorus
 Combrink, Charlotte (*cum laude*)
 Cooper, Keegan Timothy
 Dalton, Courtney
 Dastile, Yolanda
 Davids, Bradley Brain
 Davids, Keegan
 De Klerk, Gabrielle
 De Leeuw, Ellen Rijmpje
 De Villiers, Suzaan
 De Waal, Van Reenen Aubrey
 De Wet, Jean-Sebastian (*cum laude*)
 Dipnarain, Levi Samuel
 Du Plessis, Jean Francois (*cum laude*)
 Du Toit, Tracey Joanne (*cum laude*)
 Edward, Alice
 Ehrenreich, Jesse
 Engelbrecht, Tiaan Johan
 Everson, Gerainn Joseph Aubrey
 Faurie, Niekus Janu
 Finder, Samuel Ryan
 Forbes, Zain
 Foxcroft, Liam John (*cum laude*)
 Fraser, Jamie Leigh (*cum laude*)
 Garrett, Christopher Haddon
 Gibaud, Tegan
 Gildenhuis, Christiaan Petrus
 Giliomee, Neil Philip (*cum laude*)
 Glasby, Tallulah Rose (*cum laude*)
 Grant, Gregan
 Grimbeek, Kent Slade
 Grobbelaar, Nelia (*cum laude*)
 Hamilton, Marc William
 Henn, Lisa
 Hindley, Amber Jade
 Hochstadter, Eric Michael
 Hoppe, Andrea
 Hugo, Garrick
 Human, Nadia

Isaacs, Aamirah
Iyer, Abigail Eden
Izaaks, Danielle Nicola
Jacobs, Duncan
Jacobs, Luke Robin
Jacobs, Qelsee
Joubert, Jean-Pierre Roland
Joubert, Petrus Du Toit
Kalamoudacos, Nicholas
Kerby, Gabriella
Kruger, Alexander Ockert (*cum laude*)
Kurrimboccus, Mohammud Ansar
Lacey, Robin Sarah
Langeveldt, Chris Hough (*cum laude*)
Le Roux, Jacques
Le Roux, Stehan Henry
Lee, Jin Ree
Leslie, Dominic James
Liang, Ting-I
Lourens, Adele
Louw, Gemma Jessica
Mabelane, Nkgero Lincoln
Mackridge, Ruan
Martin, River Haelan Joshua (*cum laude*)
Martin, Robin Eve
Masemola, Balushi Percy
Matthews, Sindrino Mark
Mcgaffin, Gordon
Mengel, Kayleigh Jean
Mertens, Pieter Joris (*cum laude*)
Moolman, Kai Evian
Mugabe, Victor Farai
Muzembe, Sheanesu Ingrid
Naidu, Kaylan
Nel, Sammy-Lee
Neswiswa, Mueletshedzi Charlotte
Ngcobo, Siboniso Philasande
Ngubo, Nokwazi Zanele
Nieto Lawrence, Julian
O'Kennedy, Morgan Lynn
O'Neill, Jenna Rae (*cum laude*)
ODonoghue, Liam Gregory
Olivier, Daniel Johan
Pereira, David Antony West
Pienaar, Nikayla Claudia
Pillay, Krianka

Plougmann, Julia Phillipa Dieckow
Pretorius, Christian Harm
Pretorius, Ryan
Rademan, Alfred Gideon Johannes
Raffaelli, Sean Kieran
Rheeder, Christelle Magdeleen
Rocher, Pierre Milan (*cum laude*)
Roets, Tamryn (*cum laude*)
Sander, Nicholas Jan (*cum laude*)
Searle, Andrew
Sim, Cameron Leslie
Smit, Jeanné Katherina
Sutton, David James
Taylor, Keaton
Terblanche, Jeanne
Thekiso, Ikaneng
Thorburn, Jody
Timpson, Daniel
Twycross, Jude Hendri
Van Colter, Frederick Joshua
Van der Linden, Wicus Jan (*cum laude*)
Van der Meulen, Khia Rose
Van der Spuy, Alexandra (*cum laude*)
Van der Walt, Emil (*cum laude*)
Van Huyssteen, Stephanus Rutger
Van Loggenberg, Luan
Van Rensburg, Christiaan Martinus
Van Rensburg, Kayla Andrea (*cum laude*)
Van Schalkwyk, Jaco
Van Staden, Hermanus Johannes
Van Veen, Alec
Van Velden, Rocco Joubert (*cum laude*)
Van Wyk, Armand Chris
Van Wyngaard, Adriaan (*cum laude*)
Van Zyl, Daniel Jack (*cum laude*)
Van Zyl, Gibor (*cum laude*)
Venter, Kira Elisabeth
Von Moltke, Leon
Wessels, Bernardus Adriaan (*cum laude*)
Westaway, Georgia Claire
Wheeler, Mary Marjorie (*cum laude*)
Wiese, Yana
Willemse, Jade
Williams, Joseph Franklin



HOME

Faculty of Engineering

7 December 2022 | 17:00

Fakultät Ingenieurswese

7 Desember 2022 | 17:00





Programme

Please stand

1. Entrance of academic procession into the hall.

Please stand

2. Playing of the National Anthem.

Please sit

3. Congregation formally constituted by the Chancellor.

4. Welcome by the Chancellor.

5. Presentation of candidate for the honorary doctorate and conferment of the degree by the Chancellor.

6. Presentation of candidates receiving qualifications by the dean of the faculty and conferment of qualifications by the Chancellor.

7. Introduction of the candidates for the Chancellor's Awards and presentation of the awards by the Chancellor.

8. Closing by the Chancellor.

Please stand

9. The academic procession leaves the stage.

Program

Staan asseblief

1. Akademiese prosesie kom die saal binne.

Staan asseblief

2. Speel van die Nasionale Lied.

Sit asseblief

3. Formele konstituering deur die Kanselier.

4. Verwelkoming deur die Kanselier.

5. Voorstelling van die eredoktorandus en toekenning van die eredoktorsgraad deur die Kanselier.

6. Voorstelling van kandidate wat kwalifikasies ontvang deur die dekaan van die fakulteit en toekenning van kwalifikasies deur die Kanselier.

7. Voorstelling van kandidate vir die Kanselierstoekennings en oorhandiging van die toekennings deur die Kanselier.

8. Sluiting deur die Kanselier.

Staan asseblief

9. Akademiese prosesie verlaat die verhoog.



HONORARY DOCTORATE | EREDOKTORSGRAAD

Faculty of Engineering | Fakulteit Ingenieurswese

The degree Doctor of Engineering (DEng), *honoris causa*, to
Die graad Doktor in die Ingenieurswese (DIIng), *honoris causa*, aan

Strive Masiyiwa

for his visionary leadership in developing the mobile telecommunications industry in Africa, his contribution to the socioeconomic development of the continent, his commitment to philanthropy, and his remarkable achievements in the business sector.

One of the pioneers of the mobile telecommunications industry in Africa, Mr Strive Masiyiwa is the founder and executive chair of the diversified international telecommunications group Econet Global Ltd. The group includes Cassava Technologies and Econet Wireless.

Zimbabwean-born Masiyiwa had a vision to create an ecosystem of digital solutions to connect people and businesses across Africa. Today, Econet's offering includes Africa's largest open-access cross-border fibre broadband network that spans 100 000 km, the continent's largest network of interconnected carrier-neutral data centres, solar renewable energy, cloud and cybersecurity, fintech, as well as on-demand digital platforms.

Masiyiwa is also known for his philanthropic work. He is a board member of the Rockefeller Foundation and a co-founder of the Alliance for a Green Revolution in Africa, an initiative to assist 400 million African smallholders. In June 2020, he was appointed as African Union special envoy for Covid-19 to coordinate the acquisition of medical supplies and vaccines for Africa.

His multiple accolades include having been named one of Bloomberg's 50 most influential people as well as one of *Mail & Guardian's* 100 Africans of the year in 2020. In 2014, 2017 and 2021, he was also included in *Fortune* magazine's list of the world's 50 greatest leaders.

vir sy visionêre leierskap in die ontwikkeling van mobiele telekommunikasie in Afrika, sy bydrae tot die sosio-ekonomiese ontwikkeling van die vasteland, sy verbintenis tot filantropie, en sy merkwaardige prestasies in die sakektor.

Mnr Strive Masiyiwa, die stigter en uitvoerende voorsitter van die gediversifiseerde internasionale telekommunikasiegroep Econet Global Bpk, word as een van die baanbrekers van die mobiele telekommunikasiebedryf in Afrika beskou. Sy groep sluit Cassava Technologies en Econet Wireless in.

Dié boorling van Zimbabwe het 'n visie gehad om 'n ekosisteem van digitale oplossings te skep wat mense en ondernemings oor die hele Afrika sal verbind. Deesdae bied Econet onder meer die grootste oop oorgrensvesselbreëbandnetwerk in Afrika wat oor 100 000 km strek, die vasteland se grootste netwerk van onderling gekoppelde draerneutrale datasentrums, hernubare sonenergie, wolk- en kubersekuriteit, finansiële tegnologie, en pasgemaakte digitale platforms.

Masiyiwa is ook bekend vir sy filantropie. Hy is 'n direkteur van die Rockefeller-stigting en 'n medestigter van die Alliansie vir 'n Groen Revolusie in Afrika, 'n inisiatief wat beoog om 400 miljoen kleinboere in Afrika by te staan. Daarbenewens is hy in Junie 2020 aangestel as die Afrika-unie se spesiale gesant vir Covid-19 om die verkryging van mediese voorraad en entstowwe vir Afrika te koördineer.

Sy lang lys eerbewyse sluit in aanwysing as een van Bloomberg se 50 invloedrykste mense én een van *Mail & Guardian* se 100 Afrikane van die jaar in 2020. Hy is ook in 2014, 2017 en 2021 by die tydskrif *Fortune* se lys van die 50 beste leiers ter wêreld ingesluit.



HOME

DOCTOR OF PHILOSOPHY DOKTOR IN DIE WYSBEGEERTE

ABUFALGHA, Ayman (Chemical Engineering)

Development of a bubble column bioprocess for the application of alkane bioactivation

Hydrocarbon upgrading and alternative use has become an important field worldwide. This work considered the use of microorganisms for the conversion of linear alkanes into long-chain alcohols, which are valuable commodity chemicals. The bioprocess is complicated by the multiphase nature of the fermentation, necessitating investigation into the hydrodynamic behaviour of the bubble column with two-, three- and four-phase operation. A native hydrocarbon-degrading organism (*Alkanivorax sp.*) was selected as an attractive test organism. A genetic modification toolkit was developed for the organism and modified strains were successfully constructed. The work will allow for the development of hydrocarbon-degrading organism-based bioprocesses.

Supervisor: Prof RWM Pott

ATAGUBA, Clement Ogoche (Civil Engineering)

Stormwater runoff treatment from automobile workshops in Nigeria using combined rice husk, gravel and activated carbon filters

This study investigated the treatment of polluted stormwater runoff from automobile workshops in Nigeria, the development of low-cost, low-impact treatment technologies using locally sourced granular activated carbon, rice husk and river gravel filter materials and the application of isotherm models in predicting the removal of lead and iron. A comparative study between said treatment technologies and conventional oil and grease traps was additionally done. Finally, sustainability was assessed using the triple bottom line approach. The results indicated that these low-cost, low-impact treatment technologies generally performed well, supporting the use of low-impact technologies in this setting.

Supervisor: Dr IC Brink

CHRISTEN, Heidi Elisabeth (Civil Engineering)

Phase change material and recycled brick aggregate in thermal energy storage 3D printed concrete

A thermal energy storage passive design solution in the form of phase change material, impregnated into recycled brick aggregate, was combined with 3D printed concrete. Rheological and mechanical characterisations were performed on developed mixes, and 3D printed façade sections were created. The effectiveness of the phase change material in the façade geometry during different months of summer in Stellenbosch was investigated through thermal testing. The thermal tests were used to validate computational simulations of the heat transfer through the façade sections, which were in turn used to determine optimal phase change material melting temperatures and surface colours for energy saving.

Supervisor: Prof GPAG van Zijl

Co-supervisor: Dr WI de Villiers

KLINK, Dieter Gert (Electronic Engineering)

Yield analysis and optimization of microwave devices and antennas using non-linear partial least squares-based polynomial chaos expansion

Tolerances associated with large-scale production require the inclusion of uncertainties in the engineering design. This is typically done as a yield analysis, and a yield optimisation step is required should the yield not be acceptable. Classical yield analysis methods are restricted to small, simple applications, as they require many simulations. This study provides a rigorous mathematical framework to allow yield analysis and optimisation for large, complex problems. The yield of multiple complex electromagnetic structures was, for the first time, successfully analysed and optimised using this method.

Supervisor: Prof P Meyer

Co-supervisor: Prof W Steyn

KRUGER, Rynahrdt Pieter (Electrical Engineering)

Technical document accessibility

Non-textual graphical information in electronic documents, such as diagrams and equations, cannot be read by blind persons, making much technical and scientific literature inaccessible. This study developed sensory substitution methods allowing blind readers to systematically and interactively explore such content. Diagram elements were identified by touch-screen gestures and rendered as interpretable stereo sound signals. Equation elements were represented as interconnected rooms whose layout reflects the spatial arrangement of the mathematical terms. Using a text interface to move between rooms, the elements found in each can be explored using synthetic speech or by the same sound renditions used for diagrams.

Supervisor: Prof TR Niesler
Co-supervisor: Prof F de Wet

LABUSCHAGNE, Casper Jeremias (Electrical Engineering)

Design and critical evaluation of permanent magnet wind generator technology for small-scale wind energy systems

In this study, optimum permanent magnet wind generator designs for different front-end rectifier-connected small-scale wind energy systems were investigated. Various topology wind generator technologies were optimally designed for the different systems, including permanent magnet Vernier generators for their novel application in uncontrolled passive systems. The optimal wind generator technologies and the different small-scale wind energy systems were critically evaluated. It was found that the uncontrolled passive system with a permanent magnet synchronous generator is the most cost-competitive choice for small-scale wind energy systems that are deployed in rural locations for standalone application, which was an unexpected result.

Supervisor: Prof MJ Kamper

MARARAKANYE, Ndamulelo (Electrical Engineering)

Characterizing variable renewable energy generation uncertainty towards improved forecasting and operational decision making

This study provides a framework for understanding variable renewable energy integration issues based on available renewable resources, penetration level and grid characteristics of a region under consideration. It further proposes an approach for improving the accuracy of aggregated point and probabilistic forecasts derived from decentralised point forecasts by incorporating some of the common spatial and temporal correlations, including those caused by large-scale atmospheric circulations. It further proposes modelling approaches for improving the understanding and estimation of extreme wind power forecast errors and furthering the conditional wind power forecast error distribution for a given wind power forecast.

Supervisor: Prof B Bekker

OCKHUIS, Dillan Kyle (Electrical Engineering)

Critical evaluation of slip synchronous wind generator technology

In this study, a novel slip-synchronous generator was designed, developed and evaluated for slip-synchronous wind turbine systems. The slip-synchronous generator consists of a slip-magnetic coupling and a novel, hybrid-excited synchronous generator. Accurate finite-element-based modelling, analysis and optimisation frameworks were developed to predict the performance of the slip-magnetic coupling and the hybrid-excited generator. The modelling and analysis frameworks were verified with measured results of a prototype 15-kW slip-synchronous generator. It was shown that the slip-synchronous generator is grid-code compliant and that geared slip-synchronous wind turbine systems are cost-competitive.

Supervisor: Prof MJ Kamper

SIMWANDA, Leganji Shadrek (Civil Engineering)

Structural reliability of ultra-high-performance fibre reinforced concrete structures

This study focused on the development of methodologies for considering the reliability of ultra-high-performance fibre-reinforced concrete structures. Model uncertainties were quantified for available design models and Bayesian inversion was implemented to calibrate material property uncertainty. With this in place, structural reliability in flexure, shear and fire limit states were validated via numerical and surrogate models, and global resistance safety factors for the flexure and shear models were calibrated to ensure that these models give the required levels of safety prescribed in their standards.

Supervisor: Prof NPJ de Koker
Co-supervisors: Profs C Viljoen, AJ Babafemi

SMIT, Andries Petrus (Electronic Engineering)

Scaling multi-agent reinforcement learning to eleven aside simulated robot soccer

RoboCup is an annual competition where autonomous robots play soccer against each other, and it serves as a grand challenge for artificial intelligence research. This study investigated how multi-agent reinforcement learning can scale to the full 22-player setting in a 2D simulated environment using only one consumer-grade graphics processing unit. This was possible by making various improvements to the standard proximal policy optimisation algorithm. Experimental results verified that stable training in the full 22-player setting is possible and that the strategies learned in the full 22-player setting are stronger than those learned in the four-player setting.

Supervisor: Prof HA Engelbrecht
Co-supervisors: Prof W Brink, Dr A Pretorius

TEKE, George Mbella (Chemical Engineering)

Design and investigation of a semi-partitioned bioreactor for extractive fermentation using computational fluid dynamics simulations and experimental studies

Products or by-products can sometimes impede micro-organisms during fermentation. One route to circumvent this is via extractive fermentation. This study proposed a novel semi-partition bioreactor designed for *in situ* extractive fermentation using computational fluid dynamics simulations and experimental studies. The design was developed to employ the principles of liquid-liquid extraction for continuous extractive fermentation by demonstrating a proof of concept, followed by hydrodynamic and mass transfer studies on the system, and concluded with the production of a sample biomolecule that is susceptible to product inhibition. This novel semi-partitioned bioreactor gives bioprocess engineers and biotechnologists a robust operational model to select from, which is flexible to scale-up.

Supervisor: Prof RWM Pott



HOME

Faculty of Engineering | Fakulteit Ingenieurswese

OTHER QUALIFICATIONS | ANDER KWALIFIKASIES

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

Keirsgijeter, Hannah (Biomedical Engineering)

Master of Engineering Magister in die Ingenieurswese

Avenant, Jason (Electronic Engineering)
Banks, Daniel Marc (Electrical Engineering) (*cum laude*)
Baziruwaha, Jean Claude (Electrical Engineering)
Bezuidenhout, Mariska (Engineering Management) (*cum laude*)
Booyesen, Simone (Civil Engineering)
Buhrmann, Erika Isabel (Chemical Engineering) (*cum laude*)
Burger, Danike (Industrial Engineering)
Burger, Johan De Vrye (Mechanical Engineering)
Burkart, Adrian Helmut (Engineering Management) (*cum laude*)
Cillie, Johan Hendrik (Mechanical Engineering) (*cum laude*)
Da Silva, Gabriel Santos (Mechatronic Engineering) (*cum laude*)
De Beer, Janke (Electrical Engineering)
De Bruyn, Jeandre (Industrial Engineering)
De Villiers, Paul-Roux Hendrik (Engineering Management)
De Villiers, Stefan Juan (Civil Engineering) (*cum laude*)
Deel-Smith, Kimberley Kathleen (Engineering Management)
Defty, Travis Wade (Mechatronic Engineering) (*cum laude*)
Dhoda, Yusuf Yacob (Electronic Engineering)
Dube, Lucky (Electrical Engineering)
Gardiner, Cheslyn (Civil Engineering)
Gerber, Ian Paul (Electrical Engineering) (*cum laude*)
Goosen, Ockert Johann (Mechatronic Engineering)
Hanekom, Johannes Gysbert (Industrial Engineering) (*cum laude*)
Hattingh, Johannes Andries (Civil Engineering)
Heyns, Migaël Gabriel (Civil Engineering) (*cum laude*)
Holzapfel, Tim (Engineering Management)
Jacobs, Kenneth Harry (Electronic Engineering) (*cum laude*)
Janse van Rensburg, Johannes Jacobus (Civil Engineering)
Kirchner, Hugo (Civil Engineering)
Kloppers, Balthazar Johannes (Engineering Management)
Krüger, Petrus Alwyn (Engineering Management) (*cum laude*)
Lackner, Thorge (Engineering Management) (*cum laude*)
Lambrechts, Johannes (Electronic Engineering) (*cum laude*)
Lourens, Daniel (Civil Engineering) (*cum laude*)
Lubbe, Frederik Karl (Engineering Management)
Masikati, Adquate Lonely (Industrial Engineering)
Masupe, Vanessa Obakeng (Industrial Engineering)
Mckechnie, Tristan (Industrial Engineering) (*cum laude*)
Mdungazi, Sean (Chemical Engineering)
Moelich, Migaël (Civil Engineering)
Mupazvirho, Munyaradzi Keith (Electrical Engineering)
Muthua, Alex Gituanja (Electronic Engineering)
Nel, Aldré (Civil Engineering) (*cum laude*)
Netshivhumbe, Rudzani (Chemical Engineering)

Nguza, Tanduxolo Clive (Civil Engineering)
Olivier, Tianca (Civil Engineering) (*cum laude*)
Oosthuizen, Jandre Daniel (Civil Engineering) (*cum laude*)
Pillay, Selicia (Civil Engineering) (*cum laude*)
Rae, John Angus Kevin (Civil Engineering) (*cum laude*)
Schacht, Justin Eduard (Civil Engineering) (*cum laude*)
Shidhika, Fenni Magano Tweetheni (Mechanical Engineering)
Snel, Zander (Civil Engineering) (*cum laude*)
Sonnenberg, Manuel Hartmut (Engineering Management) (*cum laude*)
Spencer-Hicken, Scott (Engineering Management) (*cum laude*)
Swanepoel, Nita (Industrial Engineering) (*cum laude*)
Theron, Werner (Chemical Engineering)
Van Breda, Ilicia Martie (Engineering Management)
Van der Westhuizen, Markus (Engineering Management)
Van Zyl, Minette (Engineering Management) (*cum laude*)
Voss, Ashleigh Jean (Civil Engineering) (*cum laude*)
Weber, Ian Robert (Electronic Engineering)
Whitehead, Aidan John (Civil Engineering)
Wolf, Dieter Erhard (Engineering Management) (*cum laude*)

Postgraduate Diploma in Engineering Nagraadse Diploma in die Ingenieurswese

Brundyn, Lisa Tamar (*cum laude*)
Chigumo, Maclean Tendai
Cloete, Dana
Cumming, Aedan (*cum laude*)
De Beer, Daniel William (*cum laude*)
Dewberry, Ashleigh Jane (*cum laude*)
Heynes, Laurencia Claudia (*cum laude*)
Madondo, Mzwandile Simon
Makaure, Simbarashe
Marakalala, Morongwa Caiphus
Matiwani, Mzukisi Paul
Miya, Zamani
Mpendu, Lebohang Esther
Nxitywa, Abulele
Ogunmodede, Oluyinka Adewuyi
Okoye, Chinenye Joy
Phamotse, Thandiswa
Sadie, Eugene Van Dyk
Tladi, Sehlaemang David
Van der Merwe, Gert Johannes
Van der Merwe, Gideon Jacobus (*cum laude*)
Van Wyk, Abraham Erasmus
Venter, Gustav Barend (*cum laude*)
Yanda, Zephyrin Kabeya

Bachelor of Engineering Baccalaureus in die Ingenieurswese

Aartsma, Robert Henk (Civil)
Abbott, Reuben Eduan (Mechatronics)
Ackermann, Madeleine (Mechatronics)
Adams, Kelly Taylor (Industrial Engineering)
Agenbag, Hercules Le Febre (Civil)

Allkin, Andrew Jonathan (Electrical and Electronic)
 Amos, Jade Bronwyn (Chemical)
 Appel, Johannes (Mechatronics)
 Aspeling, Anneri (Mechatronics)
 Badat, Sa'ad Mohamed (Mechatronics)
 Barnard, Juan Charl (Mechanical)
 Becker, Michelle (Electrical and Electronic)
 Beretta, Sabrina Anne (Chemical)
 Bester, Christiaan Willem (Civil)
 Bezuidenhout, Michael (Chemical)
 Bisaal, Dhajila (Chemical)
 Bloem, Helen Suzanne (Industrial)
 Bootha, Dawid Frans (Mechatronics)
 Booyens, Martin (Electrical and Electronic)
 Bosch, Divan (Civil)
 Botes, Jacques (Mechatronics)
 Botha, Arno Marthinus (Electrical and Electronic) (*cum laude*)
 Botha, Sven Lamey (Electrical and Electronic)
 Botha, Willem Martins (Civil)
 Bouwer, Johannes (Industrial)
 Bouwer, Mieke (Mechatronics)
 Boyes, James (Civil)
 Braxton, Alexander William (Industrial)
 Breetzke, Jon James (Mechanical)
 Breytenbach, Gerhardt (Industrial)
 Brink, Anna Elizabeth (Industrial)
 Brink, Italia Anri (Industrial)
 Brits, Laurence Armand (Civil)
 Brown, Ridhaa (Mechatronics)
 Bruwer, Francois Daniel (Industrial)
 Burger, Corne (Mechatronics)
 Buys, Taine Seth (Mechatronics)
 Ceres, Umar (Mechanical)
 Chandrapaul, Chad (Industrial)
 Chen, Lee Hon (Mechanical)
 Chikunichawa, Tinashe Ashley (Chemical)
 Cilliers, Abraham Albertus (Electrical and Electronic)
 Cilliers, Jeane-Andr  (Mechatronics)
 Cilliers, Tian (Mechatronics) (*cum laude*)
 Clynick, Adrienne (Industrial)
 Coetzee, Dujuan (Electrical and Electronic)
 Coetzee, Uri Lim (Electrical and Electronic)
 Collins, In  (Industrial)
 Conradie, Philippus M ller (Industrial)
 Cooke, Lauren Lee (Mechatronics)
 Cotterrell, Ross Glenn (Civil)
 Cromhout, Claudia (Industrial)
 Cronje, Tiaan (Mechanical)
 Da Silva, Patrick Mark (Electrical and Electronic)
 De Beer, Heinrich Gersbach (Mechatronics)
 De Beer, Sebastian Marcellino (Mechatronics)
 De Bruijn, Jan-Louis Wagener (Civil)
 De Bruijn, Lea (Mechatronics)
 De Jongh, Mila (Mechatronics)
 De Kock, Milan (Industrial)
 De Kock, Wico (Civil)
 De Villiers, Marlize Helene (Industrial) (*cum laude*)
 De Wet, Janel Lillian (Electrical and Electronic)
 Derrocks, Allison Kirsten (Civil)
 Dillon, Sarah (Industrial)
 Dippenaar, Nicolaas Johannes (Civil)
 Dirksen, Craig Dylan (Civil)
 Dixon, Ben-Jason (Industrial)
 Dlamini, Zinhle (Mechanical)
 Dreckmeyr, Emi (Electrical and Electronic)
 Du Plessis, Esri (Mechatronics)
 Du Plessis, Gustav (Chemical)
 Du Plessis, Hennie (Mechanical)
 Du Preez, Kristy (Mechatronics) (*cum laude*)
 Du Toit, Divan Juan (Industrial)
 Du Toit, Fryhoff Albertyn (Industrial)
 Du Toit, Janie (Industrial)
 Du Toit, Tian (Mechatronics)
 Duraan, Rebekka Johanri (Mechatronics) (*cum laude*)
 Eastes, Benjamin Jacobus (Electrical and Electronic)
 Edmonds, Holly Jane (Industrial)
 Edwards, Barend Jacobus (Electrical and Electronic) (*cum laude*)
 Eksteen, Dylan Charl (Mechatronics)
 Engelbrecht, Jardo (Industrial)
 Erasmus, Leon (Mechatronics)
 Everts, Andrew (Electrical and Electronic)
 Fataar, Sa'eed (Mechatronics)
 Finaughty, Jayden Paul (Mechatronics)
 Fortuin, Liza (Mechatronics)
 Fouche, Andre (Mechatronics)
 Fuller, Ruan (Civil)
 Gardiner, Benjamin William (Mechatronics)
 Garrett, Matthew James (Industrial) (*cum laude*)
 Geldenhuis, Paul Jandre (Electrical and Electronic)
 George, Nathan Daniel (Mechatronics)
 Ghersevich, Daniela (Electrical and Electronic)
 Giliomee, Francois (Mechanical)
 Giliomee, Pieter Spamer (Industrial)
 Gouws, Pieter-Jan (Mechatronics)
 Green, Joshua Kyle (Mechanical) (*cum laude*)
 Grey, Alexandra Mary Cameron (Industrial) (*cum laude*)
 Grobbelaar, Daniel Bernard (Industrial)
 Grobler, Franco (Electrical and Electronic)
 Groenewald, Heinrich Anton (Electrical and Electronic)
 Groenewald, Michael (Electrical and Electronic)
 Grotepass, Kai (Electrical and Electronic) (*cum laude*)
 Harraway, Frank Robert (Electrical and Electronic) (*cum laude*)
 Hawkins, Hailey Donna (Civil)
 Hendricks, Danielle Elizabeth Anne (Mechanical)
 Henkerman, Zharea (Mechatronics)
 Hermanus, Garren Ryan (Chemical)
 Herreilers, Julian Thomas (Electrical and Electronic)
 Hickling, Ewan Kenneth (Chemical)
 Hugo, Louis Pieter (Mechatronics)
 Ikin, Ross Patrick (Civil)
 Ipser, James (Civil)
 Isebeck, Mikayla Jane (Electrical and Electronic)
 Jabaar, Thaakira (Chemical)
 Jackson, Darren Bert (Electrical and Electronic)
 Jackson, Laura Abigail (Industrial)
 Jacobs, Bradley (Mechanical) (*cum laude*)
 James, Rowan Leith Connock (Civil) (*cum laude*)
 Janse van Vuuren, Cuyler (Civil)
 Jansen van Vuuren, Ane (Industrial)
 Jefferies, Devin Wayne Patrick (Mechatronics) (*cum laude*)
 Jeffery, Salma (Chemical)
 Jenkinson, Kamillah (Mechatronics)
 Jermyn, Josh (Mechanical)
 Johnson, Nina Jade (Industrial)
 Jones, Lloyd Linton (Mechatronics)
 Jordaan, Hel ne (Electrical and Electronic) (*cum laude*)
 Jordaan, Teo Johannes Hendrik (Electrical and Electronic)
 Joubert, Dawid Johannes (Civil)
 Kamaldien, Ashwin (Industrial)
 Kampfer, Christiaan (Civil)
 Kanhukamwe, Tafadzwa Nathan (Mechanical)
 Kapnoudhis, Andre (Industrial)
 Kasozi, Adam Matovu (Civil)

Kennedy, Joshua David (Mechatronics)
 Khan, Mu-Een (Mechanical)
 Khumalo, Siyamthanda Nzuzo (Industrial)
 King, Eduard Norman (Industrial)
 King, Robert Daniel (Civil)
 Kingwill, Luke Eric Vincent (Mechatronics)
 Kirby, Philip David (Electrical and Electronic)
 Kleynhans, Philip (Civil)
 Knight, Michael Sean (Electrical and Electronic)
 Koekemoer, Reuben (Mechatronics)
 Koenig, Jodie Gabrielle (Mechatronics)
 Kohler, Zoe Meagan (Mechatronics)
 Kolela, Mulanga Forgiveness (Mechatronics)
 Kong, Xiangyiming (Electrical and Electronic)
 Kotze, Estrelita Tatiana (Electrical and Electronic) (*cum laude*)
 Kotze, Willem Adriaan (Civil)
 Kriel, Riel Hugo (Industrial)
 Kruger, Joel Timothy (Electrical and Electronic)
 Krumbock, Vaughan David (Industrial)
 Kuhn, Carlo (Chemical)
 Kulumba, John Paul (Industrial)
 Labuschagne, Dawid Pierre (Mechatronics)
 Labuschagne, Kyle Casper (Mechatronics)
 Lacock, Stephan (Mechatronics) (*cum laude*)
 Lamprecht, Jamie-Llewellyn (Industrial)
 Landsberg, Wehann (Industrial)
 Lategan, Jan Jacobus (Civil)
 Le Cornu, Jeandre Nicolas (Chemical)
 Le Roux, Morne (Mechatronics)
 Legg, Tristan Josef (Electrical and Electronic)
 Leslie, Grant James (Mechatronics)
 Lewis, Christi (Chemical)
 Liebenberg, Johan (Civil Engineering)
 Livingstone, Daniel (Mechanical)
 Loots, Benco (Electrical and Electronic)
 Lotriet, Andries Phillipus (Electrical and Electronic)
 Lotter, Aidan (Electrical and Electronic)
 Louw, Moraig Mary Anne (Industrial)
 Louw, Oliver (Mechanical)
 Louw, Una (Mechatronics)
 Low, Emily Jacqueline (Civil)
 Lubbe, Jacobus Stephanus (Civil)
 Mack, Caroline (Industrial)
 Malatsi, Kamogelo Desire (Mechatronics)
 Maphathe, Phumzile (Mechanical)
 Marais, Charl Francois (Mechatronics)
 Marais, Charles Nicolaas (Electrical and Electronic)
 Marais, Elizma (Electrical and Electronic)
 Marais, Michael Wahl (Mechatronics)
 Maritz, Karini (Industrial)
 Marshall, Thomas Kelly (Industrial)
 Martin, Janic Coby-Lee (Electrical and Electronic)
 Mason, Simon (Mechatronics)
 Mathebula, Pardon (Chemical)
 Matona, Thato (Electrical and Electronic)
 Mayosi, Sanele (Industrial)
 Mboweni, Matimba Quality (Industrial)
 Mc Goldrick, Amanda Leigh (Industrial)
 Mccleave, Stuart Michael (Mechatronics)
 McDougall, Ralph Johannes (Electrical and Electronic) (*cum laude*)
 McLeod, Angus Reay (Mechanical)
 Melim, Micaela Do Amaral (Mechanical)
 Menze, Weziwe Ntombi (Industrial)
 Meyer, Jordyn (Civil)
 Mildenhall, Ryan (Mechatronics)
 Minnie, Nicholas Derrick (Mechatronics)
 Mitchell, Emma Elizabeth (Mechanical)
 Moelich, Arend Wessels (Mechanical)
 Mokhethi, Moipone (Civil)
 Moller, Daniel Francois (Mechatronics)
 Moller, Liann (Civil)
 Moore, Emma Rae (Mechatronics)
 Moore, Stuart Alan (Civil)
 Mosia, Tshepang Modill (Civil)
 Mouton, Jacques Christiaan (Electrical and Electronic)
 Moyo, Tanatswa Luka (Mechanical)
 Mtati, Nomakhaya (Civil)
 Muir, Nicole (Mechatronics)
 Murphy, Abigail (Civil)
 Murray, Keaton Fred (Mechatronics)
 Musekene, Rinae (Civil)
 Mwamba, Beatrice Walelu (Chemical) (*cum laude*)
 Myaka, Zethembiso Immaculate (Industrial)
 Naidoo, Jevan Logan (Mechatronics)
 Naidoo, Sharna Luxmi (Industrial)
 Naude, Ethan Russel (Civil)
 Naude, Juliana Elizabeth (Chemical)
 Nel, Jeanri (Industrial) (*cum laude*)
 Nel, Tiaan (Civil)
 Ngxowa, Sikelela (Electrical and Electronic)
 Nienaber, Linda (Civil)
 Nkomo, Evans Panashe (Civil)
 Norval, Chris (Civil)
 Ntloko, Welekazi S'thandwa (Industrial)
 Ntsheni, Thato Ngwanaditle (Industrial)
 Oatley, Ross James (Mechanical)
 Ockhuis, Liam Sean (Chemical)
 Odayan, Myran (Mechatronics) (*cum laude*)
 Olivier, Jacobus Frederik (Chemical)
 Oosthuizen, Gert Cornelis (Industrial)
 Oosthuizen, Samuel Kennedy (Mechanical)
 Oosthuizen, Theunis (Electrical and Electronic)
 Oosthuizen, Zander Hanro (Chemical)
 Otshudi, Grace Ombaku (Mechanical)
 Parker, Ryan Neil (Industrial)
 Pelham, Brianna Morgane (Industrial)
 Phetla, Siphwe Hosea (Electrical and Electronic) (*cum laude*)
 Pietersen, Dewan (Mechanical)
 Pillay, Gabriel Owen (Mechatronics)
 Poole, Sarah Joanne (Industrial)
 Poonah, Brandon (Electrical and Electronic)
 Potgieter, Gregory Josef (Mechatronics)
 Potgieter, James (Mechatronics) (*cum laude*)
 Powell, Luca (Electrical and Electronic) (*cum laude*)
 Power, Robert (Industrial)
 Pretorius, Joshua Chance (Industrial)
 Pretorius, Brendan George (Mechatronics) (*cum laude*)
 Pretorius, Chene (Mechatronics)
 Pretorius, Francia (Industrial)
 Pretorius, Pierre Johann (Mechanical)
 Prins, Gary Adrian (Chemical)
 Prinsloo, Benno Christie (Mechatronics)
 Raats, Daniel James (Mechanical)
 Ramsahai, Arshiv (Mechanical)
 Ras, Luan Evert (Mechatronics)
 Raubenheimer, Sarah Anne (Industrial)
 Rautenbach, Daniel (Industrial)
 Rawlinson, Karla (Chemical)
 Rice, Kelci Susan (Industrial)
 Richardson, Elizabeth Helen (Civil)
 Roberts, Jone (Mechanical)
 Robertson, Mogammad Raees (Mechanical)
 Robus, Keegan (Industrial) (*cum laude*)

Rodrigues, Jason Angelo (Chemical)
Rousseau, Hubert Francois Leo (Civil)
Roux, Herman (Mechanical)
Samuels, Ross Lance (Electrical and Electronic)
Scheepers, Pieter Hermanus (Electrical and Electronic)
Schneider, Matthew Dylan (Mechanical)
Schommarz, Phillip Dirk (Electrical and Electronic) (*cum laude*)
Schreuder, Chris-Mari (Electrical and Electronic) (*cum laude*)
Schreuder, Hugo Amos (Industrial)
Schreuder, Rikus (Industrial)
Schuster, Nikola (Electrical and Electronic)
Seebregts, Ryan Baldwin (Electrical and Electronic)
Sheni, Dauda Nanman (Mechatronics)
Shuttleworth, Daniel Joshua (Electrical and Electronic)
Sinyage, Rendani Michelle (Chemical)
Slabber, Dirk Andre (Mechatronics)
Slabber, Ryno (Electrical and Electronic)
Smart, Dylan Kyle (Mechanical)
Smart, Sam Allen (Mechatronics)
Smit, Divan (Mechatronics)
Smit, Petrus Jurgens (Electrical and Electronic)
Smith, Andrew Colin Campbell (Mechanical)
Snyman, Alet-Mari (Chemical)
Soma, Nivash (Chemical)
Sono, Khumo (Civil)
Spangenberg, Mari (Industrial)
Sparg, George Brian (Mechanical)
Spies, Jessica Sarah (Industrial)
Steenkamp, Anja (Mechatronics)
Steenkamp, Marike (Civil)
Steere, David Franz (Electrical and Electronic)
Steyl, Frances (Mechatronics)
Steyn, Lizé (Electrical and Electronic)
Stofberg, Anrich (Chemical)
Stolze, Yuka (Industrial)
Strauss, Hendrik Jacobus (Electrical and Electronic)
Sundermann, Mikyle Fritz (Civil)
Swanepoel, Heinrich Marc (Mechatronics)
Swanepoel, Ine (Industrial)
Swanevelder, Simonn (Industrial)
Terblanche, Jacques (Mechanical)
Theron, Brendon Craig (Mechanical)
Theron, Danie (Civil) (*cum laude*)
Titus, Bartholomeuw Al-En Francis (Mechanical)
Travers, Ethan Anthony (Mechatronics)
Troskie, Munae (Chemical)
Truter, Kristie (Industrial)
Twilley, Rowan Craig Emslie (Electrical and Electronic)
Uys, Corne Louwrens (Mechatronics)
Valentini, Asher (Mechatronics)
Van Biljon, Stéphan (Electrical and Electronic) (*cum laude*)
Van den Berg, Llewellyn (Industrial)
Van den Berg, Pieter Leon (Chemical)
Van den Berg, Ronald Nelson (Industrial)
Van den Heever, Maymarie (Industrial)
Van der Bergh, Christoffel Johannes (Electrical and Electronic)
Van der Merwe, Francois Harvey (Mechatronics)
Van der Merwe, Lukas Johannes (Electrical and Electronic)
Van der Merwe, Schalk Willem (Mechatronics)
Van der Spuy, Sybrand Johannes (Mechanical)
Van der Walt, Jean Louis (Electrical and Electronic) (*cum laude*)
Van der Walt, Jessica (Industrial)
Van der Walt, Yvette (Industrial)
Van der Westhuizen, Thomas (Chemical)
Van Deventer, Dewald (Mechatronics)
Van Graan, Wessel Brewis (Electrical and Electronic)
Van Greunen, Luca (Chemical)
Van Heerden, Chelsea (Industrial)
Van Loggerenberg, Maritha (Chemical)
Van Niekerk, Willem Adriaan Nel (Mechanical)
Van Rooyen, Russel Ralph (Mechatronics)
Van Schalkwyk, Adriaan Pieter (Industrial)
Van Stavel, Erin-Leigh (Industrial)
Van Tonder, Johann Ruben (Electrical and Electronic)
Van Tonder, Rudolph Ulrich (Civil)
Van Wyk, Carla (Civil)
Van Wyk, Luke John (Civil) (*cum laude*)
Van Wyk, Mila (Chemical)
Van Wyk, Pieter Andries (Electrical and Electronic)
Van Zyl, Albert Harm (Electrical and Electronic)
Van Zyl, Jana (Electrical and Electronic)
Van Zyl, Jenna (Industrial)
Van der Walt, Jaime' (Civil)
Venter, Wikus (Mechanical) (*cum laude*)
Vermaak, Johannes Arnoldus (Civil)
Vermeulen, Zara Stefanie (Civil)
Verwey, Nicolaas Stewart (Civil)
Viljoen, Sasckya (Industrial) (*cum laude*)
Vink, Magdalena Katharina (Civil)
Visser, Hendrik Johannes (Mechatronics)
Visser, Nicolaas Floris (Electrical and Electronic) (*cum laude*)
Visser, Ryno (Mechatronics)
Volkwyn, Jethro John (Mechanical)
Von Holdt, Kate Sophie (Civil)
Vorster, Rudolph Heinrich (Chemical)
Vorster, Stefan (Mechanical)
Vorster, Zanelle (Mechatronics)
Voss, Matthew Grant (Mechanical)
Wagner, Francesca Mae (Industrial)
Weaver, Keegan Matthew (Mechatronics)
Wehmeyer, Caleigh (Industrial) (*cum laude*)
Weilbach, George David (Mechatronics)
Wilkinson, Gina Lauren (Chemical)
Willemse, Brendan (Mechanical)
Williams, Christopher Joshua (Chemical)
Wilson, Beatrix (Mechatronics)
Wilson, Kyle Daniel (Mechanical)
Witbooi, Liam Bernard (Mechatronics)
Wolmarans, Andrea (Civil)
Woods, Joshua Anderton (Mechatronics)
Woods, Samantha Lynn (Electrical and Electronic)
Wust, Jacques (Electrical and Electronic) (*cum laude*)
Xenakis, Danielle Emily (Industrial)
Yeo, Edward Clive (Mechanical) (*cum laude*)
Zetler, Aaron Joshua (Industrial)



HOME

Faculty of Engineering | Fakulteit Ingenieurswese

Johan Booyesen

Mr Johan Booyesen is the departmental manager of the Department of Electrical and Electronic Engineering. His contribution over 20 years has resulted in the continued growth of this department, both in doubling our research output and in playing a central role in the upcoming refurbishment of the Department. He is an encyclopaedia of institutional knowledge and can rightly be regarded as the backbone of the department; students, staff and management come and go, but he is the constant, ensuring the smooth operation of the Department. Mr Booyesen is an exceptional individual and an example to all in his professionalism and selfless dedication to Stellenbosch University. He is a true ambassador of Stellenbosch University.

Mnr Johan Booyesen is die departementele bestuurder van die Departement Elektriese en Elektroniese Ingenieurswese. Sy bydrae oor 20 jaar het gelei tot die voortgesette groei van hierdie departement, sowel met betrekking tot die verdubbeling van ons navorsingsuitsette as sy sentrale rol in die opkomende herinrigting van die Departement. Hy is 'n ensiklopedie van institusionele kennis en kan met reg as die ruggraat van die Departement beskou word; studente, personeel en bestuur kom en gaan, maar hy is die konstante wat die gladde werking van die Departement verseker. Mnr Booyesen is 'n besonderse individu en sy professionaliteit en onbaatsugtige toewyding tot die Stellenbosch Universiteit is 'n voorbeeld vir almal. Hy is 'n ware ambassadeur van die Universiteit Stellenbosch.

Steven Bradshaw

Professor Steven Bradshaw is a distinguished professor at the Department of Process Engineering who has made significant contributions over a period of more than 30 years through his teaching, research, industry interactions, as well as academic leadership and management. He remains actively involved with curriculum renewal and module development, and has received the Rector's Award for Teaching Excellence twice. He was the winner of *The Engineer* Technology and Innovation Award in 2008 and the SAIMM Gold Medal in 2016. Professor Bradshaw is recognised as being in the top 2% of researchers in the field of mineral processing and extractive metallurgy globally based on his research contributions.

Professor Steven Bradshaw is 'n uitgelese professor aan die Departement Prosesingenieurswese wat merkwaardige bydraes oor 'n tydperk van meer as 30 jaar deur sy onderrig, navorsing, industrie interaksies asook akademiese leierskap en bestuur gelewer het. Hy bly aktief betrokke by kurrikulumhervorming en module-ontwikkeling, en het die Rektor se Toekenning vir Uitnemende Onderrig reeds twee keer ontvang. Hy was die wenner van die *The Engineer* Tegnologie- en Innovasie-toekenning in 2008 en die SAIMM Goue Medalje in 2016. Professor Bradshaw word op grond van sy navorsingsbydraes wêreldwyd in die top 2% van navorsers op die gebied van mineraalprosessering en ekstraktiewe metallurgie gereken.



HOME

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.

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