

PROGRAM VIR DIE VIERDE PLEGTIGHEID

DIE FAKULTEITE NATUURWETENSKAPPE, OPVOEDKUNDE, REGSGELEERDHEID EN KRYGSKUNDE

'n Vriendelike beroep word op alle aanwesiges gedoen om selfone af te skakel en nie die saal tydens die plegtigheid te verlaat nie en sodoende te verseker dat die verrigtinge sonder ontwinging verloop.

1. Akademiese prosesie kom die saal binne. U word versoek om te staan terwyl hulle die saal binnekom en te bly staan vir die sing van die Nasionale Lied.
2. Sing van die Nasionale Lied (kyk binneagterblad). Neem asseblief daarna u sitplekke in.
3. Konstituering deur die Visekanselier.
4. Verwelkoming deur die Visekanselier.
5. Voorstelling van kandidate wat kwalifikasies ontvang deur die dekane van die betrokke fakulteite en toekenning van kwalifikasies deur die Visekanselier.
6. Sluiting deur die Visekanselier.
7. Akademiese prosesie verlaat die verhoog.

Die aanwesiges word versoek om te bly staan totdat die akademiese prosesie uitgestap het.

PROGRAMME FOR THE FOURTH CEREMONY

THE FACULTIES OF SCIENCE, EDUCATION, LAW AND MILITARY SCIENCE

To help ensure that the proceedings run their course without disruption, will all those present kindly keep their cell phones switched off, and refrain from leaving the hall, while the ceremony is in progress.

1. Entrance of academic procession into the hall. You are requested to stand while it enters, and then to remain standing for the singing of the National Anthem.
2. Singing of the National Anthem (see inside back cover). Thereafter, please be seated.
3. Congregation formally constituted by the Vice-Chancellor.
4. Welcome by the Vice-Chancellor.
5. Presentation of candidates receiving qualifications by the deans of the respective faculties and conferment of qualifications by the Vice-Chancellor.
6. Closing by the Vice-Chancellor.
7. The academic procession leaves the stage.

Those present are requested to remain standing until the entire academic procession has left the hall.

ISICWANGCISO-NKQUBO SOMSITHO WESINE

IIFAKHALTHI EYOBUNZULULWAZI KWEZOBUGQI, EYEZEMFUNDO, EYEZOMTHETHO NEYOBUNZULULWAZI KWEZOMKHOSI

Ukuqinisekisa ukuba umsitho uqala ngaphandle kwesiphazamiso, bonke abakhoyo bayacelwa ukuba bacime iiselfowuni zabo, kwaye bangaphumi eholweni ngeli xesha umsitho uqhubekayo.

1. Kungena komkhosi wemithika eholweni. Niyacelwa ukuba nime ngeenyawo xa ungena, nihlale nime njalo ukuze kuculwe uMhobe weSizwe.
2. Kukulwa uMhobe weSizwe (Jonga kumphakathi weqweqwe lokugqibela). Emva koko, ningahlala phantsi.
3. UMsitho uvulwa ngokusesikweni nguSekela-Tshansila.
4. Ulwamkelo lwenziwa nguSekela-Tshansila.
5. Ukunikezelwa kwezingqini-mfundo kubafundi ziintloko zeefakhalthi (iidin) ezichaphazelekayo nokuthweswa kwezingqini-mfundo nguSekela-Tshansila.
6. Ukuvalwa koMsitho nguSekela-Tshansila.
7. Umkhosi wemithika uyalishiya iqonga.

Bonke abakhoyo bayacelwa ukuba beme ngeenyawo de umkhosi wemithika ube uphume wonke eholweni.

KANDIDATE WAT KWALIFIKASIES ONTVANG

Die grade, diplomas en sertifikate van kandidate wat nie by die gradeplegtigheid teenwoordig kan wees nie, word in hulle afwesigheid toegeken.

CANDIDATES RECEIVING QUALIFICATIONS

The degrees, diplomas and certificates of candidates who are unable to attend the graduation ceremony in person are awarded in absentia.

ABAFUNDI ABAFUMANA IZINGQINI-MFUNDO

Izidanga, iidiploma kunye nezatifiketi zabafundi abangakwazanga ukubakho ubuqu kumsitho wothweso-zidanga bathweswa bengekho benjalo.

DOKTORSGRADE

DOCTORATES

EZOBUGQIRHA

Fakulteit Natuurwetenskappe

Faculty of Science

IFakhalthi yezobuNzululwazi kwezobuGqi

PhD

AYLWARD, Janneke (Botany)

Comparative genomics of Knoxdaviesia species in the Core Cape Subregion

Several saprotrophic ophiostomatoid fungi occur only in the flower heads of Protea plants. The genome sequences of two *Knoxdaviesia* fungi, a generalist and specialist, were used to study their ecology in this niche. Once the Protea host has flowered, these fungi generate genetically novel offspring, resulting in highly diverse populations. The generalist grows on more substrates than the specialist and the substrate use of both *Knoxdaviesia* species is distinct from the profile of a related Protea pathogen. Specialisation on a single host genus and a single host species caused functional losses, ultimately reflecting the ecological adaptations of these fungi.

Supervisor: Prof LL Dreyer

Co-supervisor: Dr F Roets

BENADE, Eliska (Microbiology)

Binary interactions between bacteria and Candida albicans

Candida albicans is known to cause an increasing number of systemic invasive yeast infections among immunocompromised patients. To understand this yeast's ecology, it is imperative to know how *Candida* is able to survive in the presence of naturally occurring bacteria. Classical microbiological methods and analytical chemistry in combination with molecular biology revealed that under aerobic conditions some bacteria may kill *C. albicans* as a result of synergism between bacterial toxins and cell wall degrading enzymes. Under anaerobic conditions the same bacteria may not be detrimental to the yeast, while others may act as commensalists of the yeast.

Supervisor: Prof A Botha

Co-supervisor: Dr M Mouton

CRIPWELL, Rosemary Anne (Microbiology)

Expression of novel amylases in Saccharomyces cerevisiae for the efficient conversion of raw starch to bioethanol

The industrial production of bioethanol from starch is a mature technology. However, it is an energy- and cost-intensive process. Recent efforts have focused on the use of raw starch and granular hydrolysing enzymes to bypass the cooking of starch. An industrial Baker's yeast strain was engineered to produce an α -amylase and glucoamylase, which represented a novel enzyme combination. This strain was able to effectively hydrolyse raw corn starch and ferment the resulting sugars to ethanol in one step. High ethanol yields were obtained, presenting a potential "drop-in" solution to curb enzyme costs in industry.

Supervisor: Prof WH van Zyl

Co-supervisor: Dr SH Rose

DOBROWSKY, Penelope Heather (Microbiology)

Legionella species persistence mechanisms in treated harvested rainwater

Domestic rainwater harvesting has gained popularity as a supplementary water source; however, rainwater requires treatment. Solar pasteurisation at temperatures above 68°C reduced the level of the amoebae *Naegleria fowleri* and *Vermamoeba vermiformis*, while *Legionella* and *Acanthamoeba* were still detected at 93°C. *Legionella* sp. is the bacterium that causes Legionnaires disease, with the species *L. longbeachae*, *L. norrandica* and *L. rowbothamii* isolated from harvested rainwater. Gene expression analysis showed that *L. pneumophila* is able to replicate and survive in *Acanthamoeba* and in so doing persist at the high pasteurisation temperatures. Moreover, external pollutants that enter a rainwater tank aid in the survival of *Legionella* and *Acanthamoeba*.

Supervisor: Prof W Khan

Co-supervisors: Prof TE Cloete (Internal), Dr S Khan

ENGELBRECHT, Leon (Chemistry)

A ¹⁹⁵Pt Nuclear Magnetic Resonance and Molecular Dynamics simulation study of the solvation-shell structure of simple platinum(IV)chlorido complex anions in water and water-miscible solvent mixtures

The nature of solvation of simple chlorido complexes of the platinum group metals in water, organic solvents as well as binary mixtures of water and water-miscible organic solvents is of importance in the development of industrial solvent extraction processes and schemes for their chromatographic separation. A combined ¹⁹⁵Pt NMR spectroscopy and molecular dynamics computer simulation investigation of the proposed preferential solvation of the octahedral [PtCl₆]²⁻ complex in selected solvent mixtures has been carried out. The results are broadly consistent with preferential solvation of the platinum complex by the organic solvent component in such mixtures.
Supervisor: Prof KR Koch

GONZAGA DE MELO, Marilane (Geology)

Repeated partial melting events in the polymetamorphic Carlos Chagas batholith: implications for the tectono-metamorphic evolution of the Araçuaí orogen, south-eastern Brazil

Petrogenesis of a very large peraluminous granite, the >300 km long Carlos Chagas batholith, in south-eastern Brazil, was investigated. The study revealed that the batholith formed from the partial melting of metasediments at ~582 Ma and underwent partial melting and melt loss during two granulite facies events at ~560 Ma and ~527 Ma. The second anatectic event was only recorded in sheared rocks, which had been re-fertilised for melt production by rehydration following the first anatectic event. The study has documented three episodes of recycling of the continental crust during the Araçuaí orogeny.
Supervisor: Prof G Stevens
External Co-supervisor: Prof C Lana

GOVENDER, Yogeshni (Physiological Sciences)

Mitochondrial catastrophe during doxorubicin-induced cardiotoxicity: an evaluation of the protective role of melatonin

Doxorubicin is a valuable chemotherapeutic drug; however, its clinical use is limited due to detrimental side-effects such as cardiotoxicity. Therefore, there is a great need for treatments which are dually cardio-protective and oncostatic. In this study it was found that melatonin treatment confers a cardio-protective effect by maintaining mitochondrial function and dynamics, increasing cardiomyocyte survival and improving cardiac function during doxorubicin-induced cardiotoxicity. Furthermore, the combination of doxorubicin and melatonin treatment rapidly reduced tumor growth, suggesting that melatonin enhances the oncostatic activity of doxorubicin. The unique ability of melatonin to be both cardio-protective and oncostatic is a promising therapeutic option in the field of cardio-oncology.
Supervisor: Prof A-M Engelbrecht
Co-supervisor: Dr B Loos

GREEN, Gillian June (Computer Science)

Concept-based exploration of rich semi-structured data collections

Information retrieval is one of the fundamental ways in which users interact with computers, but when users have no clearly defined search goals, search must give way to browsing and exploration. Few tools for browsing large and rich semi-structured data sets are available. A generic framework that uses a novel combination of tag clouds and concept lattices to facilitate data exploration, analysis, and visualisation has been developed. The framework allows users to continuously update the set of retrieved documents. It is applied to software repositories and to a large collection of academic publication data.
Supervisor: Prof B Fischer

HAILEMICHAEL GOITOM, Aron (Chemistry)

Identification of the putative urinary intraspecific recognition pheromone of Caracal caracal

Sheep farming makes a considerable contribution to the South African economy, but is currently under pressure due to rapidly growing numbers of predators such as the caracal – (Afrikaans, rooikat). Sheep farmers found that this problem animal can be lured into traps using male or female caracal urine. The objective of this investigation was the identification of the attractants in the urine for the subsequent formulation of a synthetic attractant. The candidate identified 190 volatile organic compounds in caracal urine, including five macrocyclic ketones as urinary protein ligands that play an essential role in the pheromone communication in the caracal.
Supervisor: Prof BV Burger
Co-supervisor: Prof AJ de Villiers

HAYWARD, Stefan (Biochemistry)

*Purification and partial characterisation of lentil seed lipoxygenases and their impact in wheat (*Triticum aestivum* L.) bread making*

Soybean lipoxygenase is currently used as bleaching agent in white bread. A large percentage of soybean flour is produced from genetically modified plants and thus it was necessary to evaluate purified lentil seed lipoxygenases as an alternative source. Lentil seed lipoxygenase was isolated, purified, and partially characterised. The purified enzyme was subsequently successfully applied as bleaching agent and dough improver during the production of white bread. The availability of the purified enzyme will decrease the overall production costs of bread and increase profitability.
Supervisor: Prof P Swart
External Co-supervisor: Dr FP Cilliers

HENDRIKS, Adriaan Jacobus (Physics)

Control of CO₂ vibrational dynamics via shaped-pulse coherent anti-stokes Raman spectroscopy

Temporally shaped laser pulses were used to induce coherent vibration of carbon dioxide molecules. Using a learning algorithm, laser

pulses were designed to selectively target bending- or stretching-vibration. The dependence of the learning algorithm efficiency based on different laser pulse parameter representations was explored. These experiments constitute first steps toward more sophisticated control of the quantum dynamics of molecules.

Supervisor: Dr H Uys

Co-supervisors: Dr CM Steenkamp and Dr A du Plessis

KIMAR, Charlene Patricia (Physiological Sciences)

Assessment of metabolic therapy for acute heart failure

Although acute heart failure (AHF) is the most common primary diagnosis for hospitalised heart disease cases in Africa, existing treatments have limitations. As increased fatty acid utilisation with heart failure triggers detrimental effects on the myocardium, this study investigated whether Trimetazidine (a drug that inhibits fatty acid oxidation) offers therapeutic utility. Trimetazidine treatment increased the function of diabetic rat hearts subjected to AHF, while acting as a unique anti-oxidant, and by lowering detrimental advanced glycation end-product accumulation in the heart. Trimetazidine offers promise as a therapeutic agent for diabetic individuals suffering from AHF.

Supervisor: Prof MF Essop

LE MAITRE, Nicholas Carlyle (Biochemistry)

Phylogenetics of the genus Erica and anthocyanin synthesis gene expression in Erica plukenetii

The relationships of 60% of the 850 species in the genus *Erica* were determined by generating a phylogeny from automated alignment of chloroplast and nuclear marker genes. This confirmed the European origin of *Erica* and revealed a monophyletic clade consisting of Cape fynbos species. Regional radiations from founder species occurred frequently. Red anthocyanin flower colour evolved in *Erica plukenetii* and in 13 other species complexes. Anthocyanin synthesis genes' transcription was found to be co-ordinately regulated in red-flowered plants whilst mutations in transcription factor binding sites were shown to result in downregulation of anthocyanin synthesis genes resulting in white flower colour.

Supervisor: Prof DU Bellstedt

External Co-supervisor: Dr MD Pirie

MAKAN, Ashwell Craig (Polymer Science)

Novel characterisation of decorative coatings using field flow fractionation and a multi-detector approach

The raw materials used in coatings perform an important role and impart various functions, e.g. finishing and feel (gloss or matte), ultraviolet protection against colour fading and resistance against scratches, stains and cracking. Water-based decorative coatings were critically characterised using classical size-exclusion chromatography and field flow fractionation with a multidetector approach. Various physico-chemical properties were investigated in order to explore potential links between the observed results and the physical properties of the resultant coating. Field-flow fractionation with its open

channel geometry has proven to be a novel technique to address any limitations encountered in column-based chromatography.

Supervisor: Prof H Pasch

MHLONGO, Sizwe Innocent (Microbiology)

Impact of inhibitors associated with lignocellulosic hydrolysates on the activity of recombinant cellulolytic enzymes

Digestion of plant waste by cellulase enzymes is limited by non-productive binding of cellulases to by-products. This results in low enzyme activities and recoveries. The aim of the study was to investigate the interaction between plant waste by-products and cellulase enzymes. Three major cellulase enzymes were evaluated against twelve plant waste by-products. Different trends in inhibition and deactivation suggest that the relationship between these components is largely dependent on their surface properties. Electrostatic and hydrophobic interactions were identified as the major forces mediating the binding to weak acid and phenol/furan compounds, respectively.

Supervisor: Prof WH van Zyl

Co-supervisors: Prof M Viljoen-Bloom (Internal) and Dr R den Haan

MÜLLER, Ronel (Chemistry)

Exploring the antimalarial mechanism of action: adsorption of diverse inhibitors to crystalline malaria pigment (haemozoin)

Chloroquine and quinine have been used as antimalarial drugs for decades. These quinoline compounds inhibit the formation of crystalline haemozoin. However, the mechanism has not been definitively resolved. A detailed computational investigation of the adsorption of diverse inhibitors (including quinoline, benzamide and benzimidazole compounds) to the two fastest-growing faces of haemozoin crystals was undertaken, and significant correlations between inhibition of crystal growth and adsorption energy were observed. Furthermore, a series of *bis*-quinoline compounds was synthesised to further probe the adsorption hypothesis. Important insights into drug target interactions were gained, which may be exploited in future rational design of novel antimalarials.

Supervisor: Dr KA de Villiers

External Co-supervisor: Dr SC Pelly

MUNERI, Ndivhuwo Olga (Biochemistry)

Engineering and application of glycosidase-derived biocatalysts in the study of mycothiol pathway enzymes

Glycosides are complex carbohydrates with various essential functions within all living organisms. However, generating these compounds synthetically poses several practical challenges and significantly hinders their study. An enzyme that normally specifically degrades α -N-acetylglucosamine (α -GlcNAc)-based glycosides was modified by mutation to create an α -thioglycoligase, an enzyme that is capable of synthesising α -GlcNAc thioglycosides when provided with suitable substrates. Using this new biocatalyst, several glycosides of biomedical and chemical interest were biosynthesised, including compounds with potential for the treatment of Sanfilippo syndrome

and/or the study of MshB, a mycothiol biosynthetic enzyme and potential target for the development of new anti-tuberculosis agents.

Supervisor: Prof E Strauss

External Co-supervisor: Dr M Moracci

NDLOVU, Thando (Microbiology)

Bioprospecting for novel biosurfactants and biosurfactant-producing bacteria in waste water

The rapid increase in the emergence of multi-drug resistant microorganisms has given rise to infections that are responsive to a limited consortium of antibiotics. The discovery of novel antimicrobial compounds is thus a priority. Biosurfactants exhibit broad spectrum antimicrobial activity and different classes of biosurfactants are utilised in agriculture, food and pharmaceutical industries. *Bacillus amyloliquefaciens* and *Pseudomonas aeruginosa* were isolated from waste water and produced biosurfactant (surfactin and rhamnolipid) compounds that displayed superior antimicrobial activity against a panel of antibiotic-resistant disease-causing bacteria and fungi. A new ultra-performance liquid chromatography method was also developed.

Supervisor: Prof W Khan

Co-supervisor: Prof M Rautenbach (Internal) and Dr S Khan

NEWMAN, Ethan Lando (Botany)

The convergence and divergence of floral traits are driven by the heterogeneity of pollinator and plant communities

It was found that at least 20 plant species are locally dependent for pollination on a little-known fly with a 70 mm long tongue. Despite this, several species had ranges that extended beyond that of their fly pollinators and the plants in these populations displayed morphological adaptations to different pollinators. Using novel experimental protocols, the evolution of floral form via pollinator selection was demonstrated. Plant species that co-occur can also drive divergence in floral traits when they compete for sites to place their pollen on the bodies of the flies.

Supervisor: Prof BC Anderson

PHIRI, Mpho Mapoloko (Polymer Science)

High solids coatings based on molecular brushes

Environmental legislation has strongly restricted the use of organic solvents in coating formulations. Several different approaches have been implemented to meet those strict requirements, such as water-borne latex coatings, powder coatings and high solids coatings based on hyperbranched polymers. Earlier work showed that molecular brushes in some cases behave as viscous liquids in the absence of solvent. This phenomenon was investigated in more detail and adopted in the development of a binder for solvent-free coatings. Crosslinking of the binder was achieved through the incorporation of linoleic acid side-chains that dry in a similar fashion as alkyd coatings.

Supervisor: Prof B Klumperman

Co-supervisor: Dr R Pfulkwa

PHOLO, Motlalepula (Plant Biotechnology)

Molecular analysis of plant growth promoted with low molecular weight compounds in relation to genetically altered photosynthetic carbohydrate partitioning in higher plants

Lumichrome is produced by the rhizosphere bacterium *Sinorhizobium meliloti* and has been shown to enhance plant growth in a variety of plant species. Application of lumichrome increased *Arabidopsis thaliana* plant size, biomass and photosynthesis. A transcriptomic comparison of treated and untreated plants revealed the up-regulation of genes involved in cell division and cell expansion. Proteomic analysis revealed increases in proteins related to photosynthesis and cytosolic glycolysis, but a decrease in starch biosynthesis-related proteins, including the small subunit of AGPase, APSI. Reverse genetic analysis indicated that APSI plays a key role in modulating the plant response to lumichrome.

Supervisor: Prof J Kossmann

Co-supervisors: Dr PN Hills and Dr JR Lloyd

VAN LAEREN, Laura Jane (Chemistry)

Investigation of thiazyl radical – metalloporphyrin complexes

Complexation between dithiadiazolyl radicals (DTDAs) and metalloporphyrins was investigated using a range of techniques. 4-Pyridyldithiadiazolyl coordinates to Co(II) tetraphenylporphyrin via the sulfur atom, resulting in a coordination polymer with a mixed oxidation state. Dissolution of this polymer occurs by cleavage of the N-Co bond, yielding a complex containing the rare dithiadiazolide anion. The interaction between a range of DTDAs and metalloporphyrins was investigated spectroscopically, revealing *inter alia* that electron-donating substituents on the porphyrin increased the association constant to DTDAs. Finally it was shown that DTDAs coordinate to haematin, a biologically significant metalloporphyrin, indicating the potential for the development of a new class of S-N based ligands for haematin.

Supervisor: Prof DA Haynes

Co-supervisor: Dr KA de Villiers

VAN NIEKERK, Gustavus (Physiological Sciences)

An evaluation of the hepatic proteomic signature in identifying cancer tolerance and resistance mechanisms in a mice allograft system

Plant biologists have long drawn the distinction between the ability to resist an infection, and the capacity to tolerate the consequence of being infected. The current study aimed to implement this tolerance/resistance (T/R) framework within an oncological setting by comparing the effect of chemotherapy, as well as different kinds of cancer on the expression of liver proteins on T/R. Altered metabolic pathways in response to these interventions which implies a role of the host in mediating cancer tolerance and resistance were observed. Altering metabolism may thus alter host tolerance and resistance to cancer.

Supervisor: Prof A-M Engelbrecht

Co-supervisors: Dr B Loos and Dr T Nell

VEZINET, Adrien Jose Claude (Geology)

Differentiation and stabilisation of the Archean continental crust, the example of the northern edge of the Kaapvaal craton (South Africa)

This study investigated the evolution of the granitoid basement along the northern margin of the Kaapvaal craton. The oldest common rocks are rafts of amphibolite, representing remnants of a mafic complex produced by partial melting of depleted mantle at ca. 2,97 Ga. These were recycled into TTGs (predominantly trondhjemite) between ca. 2,95 Ga and ca. 2,85 Ga, which were subsequently recycled to produce granites, which intrude the continental crust from ca. 2,85 Ga to ca. 2,75 Ga. The maximum metamorphic grade recorded by the TTGs is amphibolite facies, demonstrating that the granulite facies Bandelierkop formation was structurally juxtaposed with the TTG basement following the 2,69 Ga granulite facies event.

Supervisor: Prof G Stevens

External Co-supervisor: Prof JF Moyon

VIMERCATI, Giovanni (Zoology)

*Exploring the invasion of the guttural toad *Amietophrynus gutturalis* in Cape Town through a multidisciplinary approach*

What do you do when an invasive toad hits town? Begin to eradicate is the obvious answer, but how do we know whether this work is effective? Could it make the invasion worse? The candidate answered these questions by taking life-history information from toads, together with Cape Town's eradication data to build models predicting that strategies targeting tadpoles likely exasperate colonisation of new habitat. Additionally, he showed that it would not be possible to entirely predict the success of the invasion from traits of the source population of Durban toads. His work contributes toward eradication of this and other invasions.

Supervisor: Dr J Measey

Co-supervisor: Dr SJ Davies

Fakulteit Opvoedkunde

Faculty of Education

IFakhalthi yezeMfundo

PhD

DAMON, Nolan Brandon (Curriculum Studies)

The introduction of online mathematics assessment as an alternate assessment to facilitate mathematics learning of senior phase deaf and hard of hearing learners

This qualitative study investigated whether online mathematics assessment (OMA) can serve as an alternate assessment for deaf and hard of hearing (H/H) learners in the senior phase. The OMAs were designed making use of a quiz module in Moodle as well as WIRIS and GeoGebra plugins. Test items were based on the function concept. Findings suggest that OMA has the potential to provide teachers with insights into the cognitive functions and dysfunctions of deaf and H/H learners, and ways of enhancing these learners' understanding of the function concept.

Supervisor: Dr MF Gierdien

GROENEWALD, Johannes Hermanus (Higher Education)

Exploring the optimal role of residence heads in promoting student success: an institutional case study

A growing recognition that out-of-class environments and experiences can significantly contribute to or undermine student success in higher education has led to this study. It explored the optimal role of residence heads in promoting student success, with Stellenbosch University (SU) as the institutional case. Having developed a student success level framework, the candidate suggests the theoretical understanding and educational skills set residence heads would require at each level to optimally contribute to student success. The study points to the future residence head having to play a blended leadership and an intentional educational role.

Supervisor: Prof M Fourie-Malherbe

Co-Supervisor: Dr HL Botha

OMINGO, Mary Odinga (Curriculum Studies)

Towards sustainable lecturers' learning in private universities in Kenya

This study investigates how lecturers, based on their own accounts, learn to teach in formal and informal settings in private universities in Kenya. The study used social realism as a conceptual framework. Twenty-five lecturers and three academic directors were interviewed. The study found that learning in the two settings complement each other in a virtuous cycle. Lecturers as individuals and as a group contribute towards shaping their learning in the two settings. In both settings their learning is enabled and constrained by structural and cultural emergent properties, but these are mediated to lecturers' personal emergent properties through their reflexive deliberations.

Supervisor: Prof BL Leibowitz

Co Supervisor: Prof EM Bitzer

SANOTO, Deborah Vimbwandu (Curriculum Studies)

English Second Language learners in Botswana primary schools: exploring in-service education and training teachers' classroom practices

This study determined the reading experiences, habits and literature teaching practice of in-service teacher trainees in primary schools in Botswana. The findings indicate that the colleges of education curriculum did not lay a solid foundation because trainees were taught to see the significance of fostering critical thinking and an appreciation of reading in their pupils. The study concludes that an appreciation for literature starts with the teaching of literacy, in Setswana or in English, and is dependent on teachers developing particular everyday reading habits and practices.

Supervisor: Prof C van der Walt

TRAUT, Hester Jacoba (Curriculum Studies)

Creativity in initial teacher education: a case study in geography at Stellenbosch University

Creativity can fill the existing gap between content knowledge and pedagogy by providing for deeper learning and knowledge creation. This study reports on how creativity could act as a mediator between

acquired content knowledge and applied pedagogical practice of geography pre-service teachers. The contribution lies in showing that creativity can be developed alongside content knowledge and by means of pedagogical practice if students are encouraged to construe knowledge products and demonstrate teaching practices that value creativity. The results of this study show that pre-service teachers' creativity can and should be developed simultaneously with that of their curricular subject knowledge.

Supervisor: Prof PAD Beets

Co-Supervisor: Prof BL Frick

PhD (Sport Sc)

DE VILLIERS, Johanna Elsabe (Sport Science)

Growing feet: foot metrics and shoe fit in South African school-aged children and adolescents

The primary aim of the study was to investigate whether the foot metrics of South African children and adolescents are influenced by age, gender, race and body mass index (BMI). A secondary aim of this study was to establish if South African children and adolescents wear well-fitting shoes. Five hundred and eighty six children and adolescents between the ages six to eighteen years from schools within the Western Cape, South Africa, participated in the study. Results showed that 67% of the children and adolescents wore ill-fitting shoes when looking at the length of school shoes compared to the length of the feet, taking toe allowance into account. There was a significant difference in shoe fit for width between genders, with girls wearing more tight-fitting shoes than boys.

Supervisor: Prof RE Venter

External Co-supervisor: Prof A Zech

Fakulteit Regsgeleerdheid

Faculty of Law

IFakhalthi yezoMthetho

LLD

KRIEK, Carla (Private Law)

The scope of liability for product defects under the South African Consumer Protection Act, Act 68 of 2008, and common law – a comparative analysis

The *Consumer Protection Act* of 2008 introduced strict liability for harm caused by defective consumer goods. This represented a radical reform of South African product liability law, which had developed in the form of the fault-based Aquilian action. The Act's product liability framework gives rise to legal uncertainty in numerous respects. The candidate undertook a comparative analysis of this framework with reference to its common law background and similar regimes in the USA, EU and Australia, identifying relevant principles and approaches to assist South African courts and practitioners in the interpretation and application of the product liability framework. The candidate also recommends certain legislative amendments.

Supervisor: Prof MM Loubser

STRAUSS, Margot (Public Law)

A right to the city for South Africa's urban poor

In South Africa, spatial injustice holds profound implications for the democratic transformation of society, the planning and development of inclusive towns and cities, and the realisation of the constitutionally enshrined housing rights of vulnerable and marginalised urban inhabitants. This dissertation investigates the value and potential of the right to the city paradigm to develop the substantive content of the housing rights of South Africa's urban poor. The study adopts an interdisciplinary and multifaceted research framework informed by history, social theory, international housing law, and South African legislation, policy and jurisprudence. The ability of the right to the city paradigm to advance the substantive realisation of housing rights and promote spatial and social transformation in South Africa is demonstrated.

Supervisor: Prof S Liebenberg

VAN WYK, Sanita (Mercantile Law)

The impact of climate change law on the principle of state sovereignty over natural resources

The legal principle of sovereignty over natural resources is reconsidered as a means by which to address the lack of state compliance to climate commitments made in terms of the international legal climate change regime. The gravity of the effects of climate change justify a reinterpretation and reconfiguration of the principle of sovereignty over natural resources in terms of which the right of people to economic self-determination constitutes a basis upon which states can be held accountable to climate commitments made in terms of the Kyoto Protocol and the Paris Agreement.

Supervisor: Prof OC Ruppel

Fakulteit Natuurwetenskappe

Faculty of Science

***IFakhalthi yezobuNzululwazi
kwezobuGqi***

BACCALAUREUS IN DIE NATUURWETENSKAPPE (BSc)

BACHELOR OF SCIENCE (BSc)

AVGENIKOS, Moscos

BARKER, Adelé Mariska

BARTLETT, Matthew David Frederick

BASSON, Wouter Jacques

BAXTER, Anja

BENNIE, Lorenzo Douglas Maurice

BENSON, Sven Ronald

BLACK, Arnu

BLOEMETJE, Matthew Jason

BOTHA, Ciara

BOTHA, Gideon

BOWER, Jordan Robert

BOWERS, Sueneille Marise

BRUWER, Maria Helena

BURGER, Jana

BURGER, Maria Johanna

BUTTERWORTH, Ciara Blue

CAMMELL, Holly Frances

CARELSE, Gray-Lee

CILLIERS, Petrus Jacobus

COETZEE, Machiel Coenraad

COETZER, Llelani Mischke

DANIELS, Nicole

DE LA BAT, Ludwig Frederich

DENGA, Tshimangadzo Moreblessings

DIXON, Desmond Lewis

DU PLESSIS, Jan Abraham

DU PLESSIS, Megan

DU TOIT, Francois Johan

ERNSTZEN, Michelene Gail

EWALD, Christian Peter

FARRELL, Monica

FAURE, Lindsay Marie

FERNOL, Susan Alicia

FIELD, Reshay Jessime Roxanne

FOURIE, Serena Skye

GARDNER, Kathryn Lynda Debra

GILBERT, Chante Rozanne

GILFILLAN, David Graham

GROBBELAAR, Bronwyn

GROENEWALD, Darnelle

GROENEWALD, Desiree Elizabeth

HATTINGH, Madelaine

HENDRICKS, Angela

HENDRICKS, Lisa

HENN, Hendré

HENRY, Marie

HERMANS, Jodie

HOFFMANN, Kaelin

HOULISTON, Maxwell Graeme

HUGHES, Aidan Francis

HUGHES, Katherine Alexandra

HUMAN, Henning

JACOBS, Carlynn Melissa

JANSE VAN VUUREN, Handre

JOUBERT, Henriette Anderson

JULIUS, Logan Richardene

KEMPTON-JONES, Peter

KOEVORT, Matthew

KOTZE, Andre

LA FLEUR, Shane Lauren

LAMBERT, Ryan

LANGA, Nonsikelelo Amanda

LEACH, Paul Anthony

LEWIS, Wade Lyle

LOUW, Dominique Jean

LOUW, Phillip

LUKHELE, Siphon

MAHOMED, Uzayr

MAPOTSE, Phenyon

MAYER, Keziah

MENTZ, Liezl

MEYER, Luke

MEYER, Robin Ross

MOMBERG, Monique

MONTEVERDI, Christine Marie

MOTAU, Selebale Pheladi

MTYELA, Siyabulela

MUNDELL, Eben Bernard

NAIDOO, Sharanya

NAUDE, Alisa

NELL, Campbell van Heerden

NGOSA, Mumba

NTWANA, Nolusindiso Baphelele

O'DONNELL, Aiden Michael

O'RYAN, Carlynn

OOSTHUIZEN, Petrus Erasmus

PASCHA, Allicia Dominique

PEER, Zohra

PETERSEN, Cherwin

PIETERSE, Wilma

PITTAWAY, Ian Bennet

RAMSAY, Dylan

RANDERIA, Shehan

REICH, Max Hyman

REZELMAN, Gustav

RISPEL, Alzentia Samantha-Lee

ROSSOUW, Elrize

ROTHER, Alexandra Francis

SCHERMAN, Madri

SCHMUTZ, Lenke

SCHUURMANS-STEKHOVEN, Natasha Ann

SHELANE, Moipone Prudence

SOOKHOO, Jade Luxmee

STANDER, Allison Anne

STANFORD, Jenni Lynn
STEWART, Reeco Paul
STROEBEL, Graeme Brian
TERBLANCHE, Marius
VAN DER WALT, Pieter Johannes
VAN DER WESTHUIZEN, Marni
VAN DEVENTER, Francois
VAN EEDEN, Gerald Eduard
VAN NIEKERK, Nicolaas Jacobus
VAN ZYL, Carli
VAN ZYL, Frederik Jacobus
VENTER, Michaela Lucienne
VEY, Steven Richard
VISAGIE, Aiden Weidner
VISAGIE, Caitlin Lauren
WALFORD, Lauren
WELLS, Carlyn
WESSELS, Johanna Catharina
WHITE, Anthony Jack
WOOLFORD, Harley Alexander
WRIGHT, Bernard
ZWIEGELAAR, Elzanne

**BACCALAUREUS IN DIE NATUURWETENSKAPPE
CUM LAUDE (BSc CUM LAUDE)**

**BACHELOR OF SCIENCE CUM LAUDE
(BSc CUM LAUDE)**

PAGE, Martin Justin

**HONNEURS-BACCALAUREUS IN DIE
NATUURWETENSKAPPE (HonsBSc)**

BACHELOR OF SCIENCE HONOURS (BScHons)

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COENRAAD, Wendall Kurt (Fisika)
DE LANGE, Anja (Sielkunde)
DODDEMEADE, Chantelle (Sielkunde)
GABORONE, Mamosete Dorothy (Biochemie)
HATTINGH, Brandon Dane (Fisika)
JULIES, Jerobiam Marvin (Mikrobiologie)
KELLERMAN, Catharina Jacoba (Geo-informatika)
KENNED, Athina Mavourneen Christina (Geo-informatika)
KRUGER, Hermine (Fisiologiese Wetenskappe)
LEONARD, Karli (Wiskundige Statistiek)
MARINUS, Fiona Kerry (Fisiologiese Wetenskappe)
MILLAR, Danielle Ann (Fisiologiese Wetenskappe)
SIBANDA, Charmaine (Fisika)
SMITH, Caitlin (Sielkunde)

**HONNEURS-BACCALAUREUS IN DIE
NATUURWETENSKAPPE CUM LAUDE
(HonsBSc CUM LAUDE)**

**BACHELOR OF SCIENCE HONOURS CUM LAUDE
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ROMERO BENEITEZ, Nieves (Sielkunde)

**MAGISTER IN DIE NATUURWETENSKAPPE (MSc)
MASTER OF SCIENCE (MSc)**

AHMED, Essraa Taha Mirghani (Fisika)
BAILEY, Curtis Junior (Geo-informatika)
CHINAKE, Filister (Wiskunde)

CONRADIE, Tersia Andrea (Mikrobiologie)
DAIBER, Cara (Sielkunde)
FRAZENBURG, Madelaine Rachel (Plantkunde)
HENSBERG, Joshua Craig (Chemie)
JAMAH, Tokpa Darwolo (Wiskunde)
JANSEN VAN RENSBURG, Jacques Hendrik Jacobus (Plantkunde)
JOHNSTONE, Euan (Biochemie)
JOKONYA, Simbarashe (Polimeerwetenskap)
JOOSTE, Tracey Lee-Ann (Genetika)
KEMP, Renier (Polimeerwetenskap)
KENCHENTEN, Kirsten (Mikrobiologie)
KUGURU, Gibbs David Ngibuini (Genetika)
LECKIE, Laura (Chemie)
LEE, Nadine (Genetika)
MAGANGANA, Tandokazi (Plantkunde)
MATSWAIRE, Taguma Noble (Polimeerwetenskap)
MICHLER, Andre (Polimeerwetenskap)
MNISI, Evidence Bongani (Plantkunde)
MUSHFIELDT, Kristeena (Plantbiotegnologie)
NGUBANE, Nombuso Portia (Plantkunde)
OGUNDIPE, Temitope Richard (Fisiologiese Wetenskappe)
OLIVIER, Daniel Wilhelm (Biochemie)
PORTNOI, Michael Daniel (Geo-informatika)
PRINS, Ricardo (Plantbiotegnologie)
RUDMAN, Cleo (Dierkunde)
SAKWA, Liana-Lisa (Mikrobiologie)
SCHEEPERS, Melisse (Biochemie)
SHERIF, Abbas Mohamed (Fisika)
SMITH, Tanya (Fisiologiese Wetenskappe)
SWART, Liezel (Biochemie)
THERON, Andre (Geo-informatika)
THORP, Corey (Dierkunde)
VAN NIEKERK, Annick (Chemie)
VERHULP, Julie (Geo-informatika)
WALKER, Gareth Alexander (Plantkunde)
WHITING, Nicole (Polimeerwetenskap)

**MAGISTER IN DIE NATUURWETENSKAPPE
CUM LAUDE (MSc CUM LAUDE)**

MASTER OF SCIENCE CUM LAUDE (MSc CUM LAUDE)

ACKERMANN, Tarryn (Fisika)
ALDRICH, Dirk Jacobus (Genetika)
BARNARD, Lise (Biochemie)
BARNARD, Monique (Biochemie)
BARRY, Christopher James (Biochemie)
BENADE, Janina (Fisiologiese Wetenskappe)
BINGHAM, Julia Ruth-Kirsten (Sielkunde)
BOTH, Pieter Willem (Plantkunde)
CHIMES, Mark Jonathan (Wiskunde)
CLOETE, Ryan (Geologie)
CYGU, Steve Bicko (Wiskunde)
DE BRUYN, Andre (Fisika)
GIBSON, Emma Lauren (Operasionele Navorsing)
GREEN, Kathleen Alice (Wiskunde)
GROND, Marco Marten (Toegepaste Wiskunde)
JACOBS, Llewellyn Edward Oscar (Plantkunde)
JONKER, Hester Isabella (Biochemie)
KYOMUGISHA, Irene Byarugaba (Wiskunde)
LAGAT, Vitalis Kimutai (Wiskunde)

LEE, Zander (Fisika)
 LERM, Barbra-Ann (Mikrobiologie)
 LOOCK, Jean Christian (Geologie)
 LOVETT, Jason Andrew Charles (Fisiologiese Wetenskappe)
 McDONALD, Dane Euclid (Dierkunde)
 MULLER, Sybrand Jacobus (Geo-informatika)
 MUZA, Upenyu Lucky (Polimeerwetenskap)
 NIELSEN, Erica Spotswood (Dierkunde)
 OOSTHUIZEN, Maria Magdalena (Biochemie)
 PASSERIN D'ENTREVES, Niccolo (Fisiologiese Wetenskappe)
 PEARCE, Brendan Harold (Chemie)
 RAKOTONARIVO, Tsinjo Odilon (Wiskunde)
 RALL, Divan (Sielkunde)
 REBELO, Alexander Douglas (Dierkunde)
 REYNEKE, Brandon (Mikrobiologie)
 RUBOW, Janneke (Dierkunde)
 RUDNICK, Tarryn-Kim (Geologie)
 SAMMY, Chandre Jade (Chemie)
 TOMS, Jessica Anne (Dierkunde)
 VAN DER MEER, Yolandi (Biochemie)
 VAN ROOYEN, Desmare (Biochemie)
 VILJOEN, Ruan (Fisika)
 VISSER, Johan Georg (Fisiologiese Wetenskappe)
 WAGENAAR, Stefan (Polimeerwetenskap)
 WASO, Monique (Mikrobiologie)
 WEIDEMAN, Inge (Polimeerwetenskap)
 WEIGHILL, Ben (Dierkunde)

Fakulteit Opvoedkunde
Faculty of Education
IFakhalthi yezeMfundo

BACCALAUREUS IN DIE OPVOEDKUNDE
(ALGEMENE ONDERWYS) (BEd (AlgOnd))
BACHELOR OF EDUCATION IN GENERAL EDUCATION
(BEd (GenEd))

BECK, Merise (Grondslagfase)
 BOOYSEN, Afton-Lee Chante (Intermediêre en Senior Fases)
 FIELDING, Donna-Kita Sonia (Intermediêre en Senior Fases)
 JOHNSON, Sonia Joeleen Kathleen (Intermediêre en Senior Fases)
 MAKUPULA, Andisiwe (Intermediêre en Senior Fases)
 MDLUNGU, Yanga Tamia (Intermediêre en Senior Fases)
 MENGE, Maria Magritha (Intermediêre en Senior Fases)
 MULLER, Levine Chandre (Intermediêre en Senior Fases)
 SKOTA, Merly Phila (Intermediêre en Senior Fases)
 STRAUSS, Heiko (Intermediêre en Senior Fases)
 TSIRA, Vuyolwethu (Intermediêre en Senior Fases)

BACCALAUREUS IN DIE OPVOEDKUNDE (ALGEMENE
ONDERWYS) CUM LAUDE (BEd (AlgOnd) CUM LAUDE)
BACHELOR OF EDUCATION IN GENERAL EDUCATION
CUM LAUDE (BEd (GenEd) CUM LAUDE)

DREYER, Shannon Gail (Intermediêre en Senior Fases)
 NEL, Kathleen Alison (Intermediêre en Senior Fases)

NAGRAADSE ONDERWYSSERTIFIKAAT
(NagrOnderwysert)
POSTGRADUATE CERTIFICATE IN EDUCATION
(PGCertEd)

BROWNRIDGE, Kimlin Bianca
 CILLIERS, Talana
 DOKODA, Singata Cwayita
 ESTERHUYSE, Adrianus Jacobus
 LOUBSER, Nicola Mariaan
 MASHEGO, Nomathemba Charmaine
 SNYMAN, Danie
 SNYMAN, Nadia
 SYMINGTON, Lizene

HONNEURS-BACCALAUREUS IN DIE OPVOEDKUNDE
(HonsBEd)

BACHELOR OF EDUCATION HONOURS (BEdHons)
 CHILUNGO-JANA, Doreen (Opvoedingsbeleidstudie)
 DAVID, Rebekka Ndatila (Kurrikulumstudie)
 ENDJALA, Hilma-Ngutati (Onderwysbestuur)
 JACOBS, Saskea Loren (Opvoedkundige Ondersteuning)
 JOUBERT, Lisa (Opvoedkundige Ondersteuning)
 KHUMALO, Ntombikhona Heshp (Opvoedkundige Ondersteuning)
 MOLEPE, Refuoe Mavis (Opvoedingsbeleidstudie)
 NDATOMWIYO, Immanuel Natangwe (Onderwysbestuur)
 NDJUNGA, Servasius Manyandero (Kurrikulumstudie)
 RALPH, Savanna (Opvoedkundige Ondersteuning)
 SELELE, Mokhele Joseph (Kurrikulumstudie)
 SHILAMBA, Mirjam Ndeitodino (Kurrikulumstudie)
 VAN DER MESCHT, Mariska (Kurrikulumstudie)
 WALLER, Jolene Margarita (Opvoedkundige Ondersteuning)

HONNEURS-BACCALAUREUS IN DIE OPVOEDKUNDE
CUM LAUDE (HonsBEd CUM LAUDE)
BACHELOR OF EDUCATION HONOURS CUM LAUDE
(BEdHons CUM LAUDE)

VAN DER MERWE, Aliece Margot (Opvoedkundige Sielkunde)

HONNEURS-BACCALAUREUS IN DIE
NATUURWETENSKAPPE IN SPORTWETENSKAP
(HonsBScSportwet)
BACHELOR OF SCIENCE HONOURS IN SPORT
SCIENCE (BSc Sport ScHons)

KAPINGA, Aminata (Prestasiesport)
 SMITH, Daniel Campbell Lindsay (Prestasiesport)

MAGISTER IN DIE WYSBEGEERTE (MPhil)
MASTER OF PHILOSOPHY (MPhil)
 BONZET, René (Onderwys en Opleiding vir Lewenslange Leer)
 DU PLESSIS, Madelé (Hoër Onderwys)
 VAN SCHALKWYK, Rhoda (Onderwys en Opleiding vir Lewenslange Leer)

MAGISTER IN DIE NATUURWETENSKAPPE IN
SPORTWETENSKAP (MSc in Sportwetenskap)
MASTER OF SCIENCE IN SPORT SCIENCE
(MSc in Sport Science)

BOUCHER, Shannon John
 DE WAAL, Simon Jake
 MURPHY, Ian Desmond

**MAGISTER IN DIE NATUURWETENSKAPPE IN
SPORTWETENSKAP CUM LAUDE**

(MSc in Sportwetenskap CUM LAUDE)

MASTER OF SCIENCE IN SPORT SCIENCE CUM LAUDE

(MSc in Sport Science CUM LAUDE)

GROBBELAAR, Roné

TIDBURY, Gabriela Bella

MAGISTER IN DIE OPVOEDKUNDE IN

OPVOEDKUNDIGE SIELKUNDE (MEdPsig)

MASTER OF EDUCATION IN EDUCATIONAL

PSYCHOLOGY (MEdPsych)

BOTHA, Melany

RYAN, Vidette

MAGISTER IN DIE OPVOEDKUNDE IN

OPVOEDKUNDIGE SIELKUNDE CUM LAUDE

(MEdPsig CUM LAUDE)

MASTER OF EDUCATION IN EDUCATIONAL

PSYCHOLOGY CUM LAUDE (MEdPsych CUM LAUDE)

CONWAY, Cayley Louise

TRANGOS, Katherine Milota

MAGISTER IN DIE OPVOEDKUNDE (MEd)

MASTER OF EDUCATION (MEd)

AYOOLA, Ruth Oluwafunke (Opvoedingsbeleidstudie)

MDLALOSE, Dumisani Emmanuel (Kurrikulumstudie)

SNYDERS, Estelle Martha (Opvoedkundige Ondersteuning)

MAGISTER IN DIE OPVOEDKUNDE CUM LAUDE

(MEd CUM LAUDE)

MASTER OF EDUCATION CUM LAUDE

(MEd CUM LAUDE)

BARNARD, Jadri Elizabeth (Kurrikulumstudie)

BUCHOLZ, Alison Jane (Opvoedkundige Ondersteuning)

Fakulteit Regsgeleerdheid

Faculty of Law

IFakhalthi yezoMthetho

BACCALAUREUS IN DIE REGSGELEERDHEID (LLB)

BACHELOR OF LAWS (LLB)

ADAMS, Charné Clairissa

AINSWORTH, Matthew Hylton

BARNES, Johndre Fabian

BELL, Lloyd

BESTBIER, Petre

BLAAUW, Darrell

BOTES, Marlouise Elsa Joey

CLARK, Daniel James Arthur

CLOETE, Percephone Rejean

COETZEE, Bianca

CRONJE, Marisca

DA LUZ, Luciano Celestino

DE ROOS, Matthew David

DE ROOS, Sarah Kate

DE WET, Gerda

DIPPENAAR, Pierre Johannes

DLULA, Aphiwe Gift

DU PLESSIS, Lindie

EDWARDS, Nabeelah

ERASMUS, Johan Lionel

FOURIE, Mickayla

GAVA, Nadia

GORDON, Sinead Eileen

GUQA, Gugulethu

HENNING, Amelda

HEPBURN-BROWN, David

HODGSON, Daniel James

HORNE, Keenan Craig

HUTCHISON, Matthew

JAFTHA, Tristan Cole

JANSEN VAN RENSBURG, Danelle

JORDAN, Christopher Andrew

KLEIN, Christansha Revelia

KOORSSE, Michael Dean

KOTZE, Claire Dalina

KOTZE, Gert Steyn

KRUGER, Corlia

LOUW, Adriaan Hermanus

LOUW, Danielle

MALHERBE, Margeaux

McINTYRE, Brittany

MOSIANE, Edwin Kagiso

NEETHLING, Kirsten

ODENDAAL, May Elizabeth

PITT, Christina Lauren

POUWELS, Wouter Rasmus Arend

RAKHIVHANE, Mudzuli

ROMAN, Jo-Paula

RUDOLPH, Marc Johan

RUSHTON, Jane Katherine

RUTGERS, Joshua Leon

SCHRÖDER, Tim

SCOTT, Mimette

SIMPSON, Calvin Luke

STEVENS, Amy Maria

STRZELECKI, Raimund Manfred

THWAITES, Tacita

VAN WYK, Chante

VAN WYK, Nicole Natalie

VERCUIL, Emile Cupido

VILJOEN, Marilie

VISSER, Jurgen Lukas

WENTZEL, Zanelle

BACCALAUREUS IN DIE REGSGELEERDHEID

CUM LAUDE (LLB CUM LAUDE)

BACHELOR OF LAWS CUM LAUDE (LLB CUM LAUDE)

GORDON, Ashleigh Tayla

MAGISTER IN DIE REGSGELEERDHEID (LLM)

MASTER OF LAWS (LLM)

BAUER, Christoph

ESTERHUYZEN, Gabriel Johannes

HOWE, Hilda Comine

KWAKWALA, Chaona Lucious Agatha
LA GRANGE, Lizelle
LEAMY, Tyrone Martin
MABECE, Songezo
MITHA, Muhammad
MÜLLER, Katrin
SCHREUDER, Daniel Russouw
THEURI, Carole
VAN SCHALKWYK, Magrietha Johanna
VAN ZYL, Marique Linde
WILLIAMS, Leanne Kim

**MAGISTER IN DIE REGSGELEERDHEID CUM LAUDE
(LLM CUM LAUDE)**

MASTER OF LAWS CUM LAUDE (LLM CUM LAUDE)

VAN SCHALKWYK, Cecile
WALIGORA, Alexia

Fakulteit Krygskunde

Faculty of Military Science

**IFakhalthi yezobuNzululwazi
kwezoMkhosi**

BACCALAUREUS IN DIE KRYGSKUNDE (BMil)

BACHELOR OF MILITARY SCIENCE (BMil)

ARENDS, Natacha Roneldy
BOOYSEN, Shahida Elzaan
KGATLE, Nakedi Johannes
MALETE, Kgagudi Kopano
MATHIDI, Ndivhuwo Jacobeth
MATLOGA, Philemon Moraka
MOREMANE, Refilwe Samentha
MPANE, Tsholanang Eunice
MSWELI, Nokwazi Fidelia
NKHUMELENI, Vhutshilo Arnold
SANI, Marcia Ntombikayise
THUPAYAGAE, Tsamaasentle Canicious

HONNEURS-BACCALAUREUS IN DIE KRYGSKUNDE

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BACHELOR OF MILITARY SCIENCE HONOURS

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RAMOTSIE, Tseko Johannes (Militêre Geografie)

MAGISTER IN DIE WYSBEGEERTE (MPhil)

MASTER OF PHILOSOPHY (MPhil)

JUMAT, Jennifer Denise (Sekuriteitsbestuur)

MAGISTER IN DIE KRYGSKUNDE CUM LAUDE

(MMil CUM LAUDE)

MASTER OF MILITARY SCIENCE CUM LAUDE

(MMil CUM LAUDE)

DREYER, Adriaan Marthinus Francois (Tegnologie)

MEDALJES (Ter kennisname)

MEDALS (For your information)

IIMBASA (Ukwenzela ulwazi lwakho)

Fakulteit Natuurwetenskappe

John Todd Morrison-medalje:

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Meiring Naude-medalje:

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