

Academic Achievers' Awards 2016



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Toekennings vir
Akademiese Presteerders

Difoka tša Thuto tša Bao
ba Atlegilego

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The University
of Pretoria
congratulates
our academics
on exceptional
academic
achievement
in 2015.



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Welcome | Verwelkoming | Kamogelo



Professor Cheryl de la Rey

Vice-Chancellor and Principal, University of Pretoria
Visekanselier en Rektor, Universiteit van Pretoria
Motlatšamokhanseliri le Hlogo, Yunibesithi ya Pretoria

The Academic Achievers Awards function is one of the highlights on the University's annual calendar. At this gala occasion, we celebrate excellence in the core functions of the University and we pay tribute to our academic stars and NRF rated researchers. In a time of turbulence for universities in South Africa where the focus seems to be wholly on the politics of universities and their funding, it is especially gratifying to turn the spotlight to the pursuit of academic excellence in its various manifestations of teaching, research and engagement. In times of uncertainty where the challenges may seem to loom large, it is imperative that we remain firmly focussed on enhancing the academic excellence that defines our institution. Through their passion and commitment our academics featured in this publication daily shape and drive the University of Pretoria's vision of being a leading research-intensive university in Africa, recognised for developing people, creating knowledge and making a difference locally and globally. Congratulations to all the 2016 Achievers and NRF Rated Researchers.

Die Toekenningsfunksie vir Akademiese Presteerders is een van die hoogtepunte op die Universiteit se jaarlikse kalender. Tydens dié gala-geleentheid vier ons uitnemendheid in die Universiteit se kernfunksies en bring ons hulde aan ons akademiese uitblinkers en NNS-gegradeerde navorsers. In 'n tyd van onstuimigheid vir universiteite in Suid-Afrika waar die fokus skynbaar uitsluitlik op die politiek en befondsing van universiteite is, is dit veral verblydend om die kollig te rig op die strewe na akademiese uitnemendheid in sy verskillende manifestasies van onderrig, navorsing en betrokkenheid. Wanneer reuse-uitdagings in onsekere tye oënskynlik op die voorgrond tree, is dit noodsaaklik dat ons gefokus bly op die uitbou van die akademiese uitnemendheid wat ons instansie definieer. Deur hul passie en toewyding vorm en rig ons akademiese wat in hierdie publikasie genoem word daagliks die Universiteit van Pretoria se visie om 'n toonaangewende navorsingsintensiewe universiteit in Afrika te wees wat vir die ontwikkeling van mense, die skep van kennis en die maak van 'n verskil plaaslik en wêreldwyd, erken word. Veels geluk aan al 2016 se Presteerders en NNS-gegradeerde Navorsers.

Moletlo wa Difoka tša Bašomedi ba Diakademiki bao ba Atlegilego ke wo mongwe wo o gogilego šedi mo tšhupamabakeng ya Yunibesithi. Mo tiragalong ye ya gala, re keteka bokgoni mo mešomong ya motheo ya Yunibesithi gomme re hlompha dinaledi tša rena tša thuto le banyakišiši bao ba lekaneditšwego ke NRF. Ka nako ya dikhuduego tša diyunibesithi tša Afrika Borwa moo nepo e bonagalago e theilwe dipolotiking tša diyunibesithi le thekgo ya ditšhelete ya tšona, go a thabiša go fetogela go nepišo ya bokgoni bja thuto mo ditiragalong tša go fapana tša go ruta, nyakišišo le go tšea karolo. Ka dinako tša dikhuduego moo ditlhohlo di ka bonagalago e le tše dikgolo, go bohlokwa gore re dule re hlokomešiša ka go tia go kaonafatša bokgoni bja thuto gomme re hlaloše yunibesithi ya rena. Ka phišego le boikgafo bja bona bašomedi ba diakademi ba rena bao ba akareditšwego phatlalatšong ye letšatši le lengwe le lengwe ba bopa le go otlela pono ya Yunibesithi ya Pretoria ya go ba yunibesithi ya ketapela ka nyakišišo ye e tseneletšego mo Afrika, yeo e lemogwago ka go hlabolla batho, go hlama tsebo le go dira phapano mo gae le lefaseng ka moka. Re lebogiša Banyakišiši bao ba Atlegilego bao ba lekaneditšwego ke NRF ba 2016.



Professor
Wiseman Nkuhlu

Chancellor, University
of Pretoria

Kanselier, Universiteit
van Pretoria

Mokanseliri, Yunibesithi
ya Pretoria

Chancellor's Award: Research

Kanseliersmedalje: Navorsing

Medale wa Mokhanseliri: Dinyakišišo

The Chancellor's Award is made in recognition of exceptional achievement in the field of research aimed at the advancement of science and the associated promotion of the interests of the University of Pretoria.

Die Kanselierstoekening word gemaak vir uitnemende prestasie op navorsingsgebied ter bevordering van die wetenskap en sodoende ook die belange van die Universiteit van Pretoria.

Sefoka sa Mokhanseliri se diretšwe go leboga phihlelelo ya go tšwelela ka magetla mosomong wa bonyakišiši woo maikemišetšo a wona e lego go hlabolla le go godiša dikgahlego tša Yunibesithi ya Pretoria.



Prof Slippers from the Department of Genetics in the Faculty of Natural and Agricultural Sciences, is a research leader in the Tree Protection Co-operative Programme and Centre of Excellence in Tree Health Biotechnology in the Forestry and Agricultural Biotechnology Institute (FABI).

His research focuses on the ecology, evolution and management of insects and fungi that affect tree health. He uses genetic, genomic and chemical tools to characterise global patterns of spread of invasive tree pests and pathogens, as well as their population dynamics, communication systems and mating strategies. He has made critical contributions to understanding structure and diversity in plant-associated fungal and insect communities, from population level to species and communities. This work has led to the discovery of numerous new pathogen and pest species, some of which threaten forestry world-wide. Prof Slippers has contributed to the development of biological control programmes for plantation pests, and also to the establishment of a major Biocontrol Research Centre at the University. Among the awards Prof Slippers has received are the Southern African Association for the Advancement of Science, British Association Medal (Silver) and the JE Vanderplank Award from the Southern African Society for Plant Pathology. He holds a B1 rating from the NRF. He has published more than 180 papers, including in high profile journals such as *Science*, *Trends in Ecology and Evolution* and *Trends in Plant Science*. He is the editor of a book on *Sirex noctilio*, a global invasive forest pest, and has authored a number of chapters in books. Prof Slippers has supervised a number of postdoctoral researchers, as well as 48 PhD and MSc students. He regularly contributes to national and international congresses as participant, invited speaker and organiser. He reviews papers for key journals in his field. He is an editor for *Plant Pathology* and issue editor for *Studies in Mycology*.

He is a founding member of the Global Young Academy (GYA) and South African Young Academy of Science (SAYAS) and has supported the establishment of young academies in Africa and elsewhere. He has served as co-chair of GYA. Prof Slippers is a Young Affiliate of The World Academy of Science (TWAS), from which he received the AU-TWAS Young Scientist national prize. He currently leads the Future Africa project at UP, which is focused on developing excellence in transdisciplinary science leadership in Africa.

He and his wife Jana are the heads of residence of TuksVillage, where they live with their daughters Yvonne and Mia.

Prof Slippers van die Departement Genetika in die Fakulteit Natuur- en Landbouwetenskappe is 'n navorsingsleier in die Samewerkingsprogram vir Boombewaring en die Sentrum vir Uitnemendheid in Boomgesondheidsbiotegnologie in die Instituut vir Bosbou- en Landboutegnologie (FABI).

Sy navorsing fokus op die ekologie, evolusie en bestuur van insekte en fungi wat boomgesondheid beïnvloed. Hy gebruik genetiese, genomiese en chemiese hulpmiddels om globale patrone van indringerpeste en -patogene van bome te karakteriseer, asook hul bevolkingsdinamika, kommunikasiesistels en paringstrategieë. Hy het belangrike bydraes gemaak tot die begrip van die struktuur van en diversiteit in plant-geassosieerde fungus- en insekgemeenskappe, van bevolkingsvlak tot spesies en gemeenskappe. Dit het gelei tot die ontdekking van talle nuwe patoogen- en pessesies, waarvan sommige 'n wêreldwye bedreiging vir bosbou inhou. Prof Slippers het bygedra tot die ontwikkeling van biologiese beheerprogramme vir plantasiepeste en ook tot die vestiging van 'n belangrike Navorsingsentrum vir Biobeheer aan die Universiteit. Van die toekennings wat prof Slippers ontvang het, sluit in dié van die Suider-Afrikaanse Vereniging vir die Bevordering van Wetenskap, die Britse Verenigingsmedalje (Silwer) en die JE Vanderplanktoekenning van die Suider-Afrikaanse Vereniging vir Plantpatologie. Die NNS het 'n B1-gradering aan hom toegeken. Hy het meer as 180 artikels in hoë-profielvaktydskrifte gepubliseer, insluitende *Science*, *Trends in Ecology and Evolution* en *Trends in Plant Science*. Hy is die redakteur van 'n boek oor *Sirex noctilio*, 'n indringerpes van woude wêreldwyd, en outeur van verskeie hoofstukke in boeke. Hy dra gereeld populêre wetenskapsartikels by vir tydskrifte, koerante en die radio. Prof Slippers was die toesighouer van 'n hele aantal postdoktorale navorsers asook 48 PhD- en MSc-studente. Hy is gereeld betrokke by nasionale en internasionale kongresse – as deelnemer, genooide spreker en organiseerder. Hy beoordeel artikels vir sleuteljoernale in sy veld. Hy is 'n redakteur vir *Plant Pathology* en 'n uitgaweredakteur vir *Studies in Mycology*.

Hy is 'n stigterslid van die Global Young Academy (GYA) en die Suid-Afrikaanse Jong Akademie vir Wetenskap (South African Young Academy of Science, SAYAS) en het ook die vestiging van ander jong akademieë in Afrika en elders ondersteun. Hy het as medevoorsitter van GYA gedien en is 'n Jong Geaffilieerde van Die Wêreldakademie vir Wetenskappe (The World Academy of Sciences, TWAS), wat aan hom die AU-TWAS Nasionale Toekenning as Jong Wetenskaplike gemaak het. Hy staan tans aan die hoof van die Toekoms Afrika-projek by UP wat fokus op die ontwikkeling van uitnemendheid in transdissiplinêre leierskap in Afrika.

Hy en sy vrou, Jana, is die koshuishoofde van TuksVillage, waar hulle saam met hul dogters, Yvonne en Mia, woon.

Prof Slippers ka Kgorong ya Leabela ka Lefapheng Disaense tša Tlhago le Temo, le moetapele wa nyakišišo mo Lenaneong la Go dirišana la Tšhireletšo ya Mehlare le Senthara ya Bokgoni ka Payotheknolotši ya Maphelo a Mehlare mo Instituting ya Payotheknolotši ya Kagodikgwa le Temo (FABI)

Nyakišišo ya gagwe e nepiša ekholotši, ebolušene le taolo ya dikhunkhwane le fankase tšeo di amago maphelo a mehlare. O šomiša leabela, tšenomiki le didirišwa tša go hlaloša dipatereno tša lefase tša go phatlalatša disenyi tša mehlare tša go selikiša le diphatotšene, gammogo le diphetogo tša diphedi, mekgwa ya kgokagano le mekgwa ya tswadišo. O kgathile tema ye bohlokwa go kwešiša sebopego le phapano ya semela seo se amanago le fankase le dihlopha tša dikhunkhwane, go tloga magatong a diphedi go ya go mehuta le dihlopha. Mošomo wo o dirile gore go utollwe diphatotšene le mehuta ya disenyi, tše dingwe di tšhošetša kagodikgwa lefaseng ka bophara. Prof Slippers o kgathile tema mo tšwelotšopeleng ya mananeo a taolo ya payolotši ya disenyi tša dimela, gape le go hlomeng ga Senthara ya Nyakišišo ya Taolo ya Payolotši mo Yunibesithi. Gare ga difoka tšeo Prof Slippers a di amogetšego ke tša Mokgatlo wa Borwa bja Afrika wa Tšweletšopele ya Saense, Mokgatlo wa Metale (Silibere) wa Britain le Sefoka sa JE Vanderplank go tšwa go Legotla la Borwa bja Afrika la Phatholotši ya Dimela. O na le tekanyetšo ya B1 go tšwa NRF. O phatlaladiše dipampiri tša go feta 180, go akaretša tša dijenale tša maemo a godimo go swana le *Science*, *Trends in Ecology and Evolution* and *Trends in Plant Science*. Ke morulaganyi wa puku ya *Sirex noctilio*, disenyi tša sekgwa tša go tshwenya tša lefase, gomme o ngwadile dikgaolo tše mmalwa dipukung. Ke mokgatha tema wa nako le nako wa diathekele tša saense tša go tuma tša dijenale, dikuranta le radio. Prof Slippers o lekotše banyakišiši ba mmalwa ba ka morago ga bongaka, le baithuti ba 48 ba PhD le MSc. O kgatha tema mehlakanong ya naga le ya ditšhabatšhaba bjalo ka motšearokolo, seboledi se se laleditšwego le mmeakanyi. O sekaseka dipampiri tša dijenale tša motheo ka karolong ya gagwe. Ke morulaganyi wa *Plant Pathology* le morulaganyi wa phatlalatšo ya *Studies in Mycology*.

Ke leloko leo le thomilego Akademi ya Bafsa ya Lefase (GYA) le Akademi ya Saense ya Bafsa ya Afrika Borwa (SAYAS) gomme o thekgile go thongwa ga diakademi tša bafsa ka Afrika le lefaseng ka bophara. O thušitše bjalo ka modulasetulommogo wa GYA. Prof Slippers ke Modirišani yo Mofsa wa Akademi ya Saense (TWAS), moo a amogetšego sefoka sa naga sa Rasaense yo Mofsa wa AU-TWAS. Gonabjale o etile pele protšeke ya Afrika ya ka Moso (Future Africa) ya UP, yeo e nepišago go tšwetšapele bokgoni ka saense ya dikarolo tša go fapana tša boetapele ka Afrika.

Yena le mosadi ga gagwe Jana ke dihlogo tša bodulo bja TuksVillage, moo ba dulago le barwedi ba bona Yvonne le Mia.



Professor **Bernard Slippers**



Vice-Chancellor's Book Award 2015

Visiekanselier se Boektoekenning 2015

Difoka tša Puku tša Motlatšamokhanseliri tša 2015

The University of Pretoria introduced the Vice-Chancellor's Book Awards to recognise and reward authors of scholarly books, monographs and collections. The prizes are awarded once a year in two categories, namely humanities and social sciences (broadly defined) and natural and applied sciences. In 2015 only one award, in the humanities and social sciences, was made. A book is considered to be scholarly if it presents the findings of an original, systematic investigation undertaken to gain new knowledge and insight, advances knowledge in a particular discipline and brings credit to the University. Scholarly books may be written in any of South Africa's official languages and translations of major works originally published in other languages are also considered. In order to qualify for nomination, books should bring credit to the University on account of their contribution to the advancement of the humanities, the social sciences or the natural and applied sciences.

Die Universiteit van Pretoria het die Visiekanselier se Boektoekennings ingestel om skrywers van vakkundige boeke, monografieë en versamelings te beloon. Die pryse word een keer per jaar in twee kategorieë toegeken, naamlik die geestes- en sosiale wetenskappe (breed gedefinieer) en die natuur- en toegepaste wetenskappe. In 2015 is net een toekenning, in die geestes- en sosiale wetenskappe, gemaak. 'n Boek word as vakkundig beskou as dit die bevindings van 'n oorspronklike, stelselmatige ondersoek aanbied wat gedoen is om nuwe



kennis en insig te bekom, kennis op 'n bepaalde vakgebied uitbrei en die Universiteit eer besorg. Vakkundige boeke kan in enige van Suid-Afrika se amptelike tale geskryf wees en vertalings van belangrike werke wat oorspronklik in ander tale uitgegee is, word ook oorweeg. Om vir benoeming in aanmerking te kom, moet boeke die Universiteit tot eer strek op grond van hul bydrae tot die vooruitgang van die geestes- en sosiale wetenskappe of die natuur- en toegepaste wetenskappe.

Yunibesithi ya Pretoria e tsebagaditši Difoka tša Dipuku tša Motlatšamokhanseliri go lemoga le go leboga bangwadi ba dipuku tša thuto, ditaodišo le dikgoboketšo. Difoka di abja gatee mo ngwageng ka magoro a mabedi, e lego, la bomotho le disaense tša leago (le hlalošwa ka bophara) le disaense tša tlhago le tirišo. Ka 2015 go abilwe sefoka se tee, ka bomothong le disaense tša leago. Puku e tšewa go ba ya thuto ge e tšweletša dikutollo tša mathomong, dinyakišišo tša peakanyo di dirilwe go hwetša tsebo ye mpsha le kwešišo, tsebo ye e tšweletšego mo karolong ye e itšego gomme ya tumiša Yunibesithi. Dipuku tša thuto di ka ngwalwa ka dipolelo tša semmušo tša Afrika Borwa gomme diphetolelo tša mošomo wo mogolo woo mathomong o phatlaladitšwego ka dipolelo tše dingwe le tšona di a lebeleledišišwa. Gore o be le maswanedi a go kgethwa, dipuku di swanetše go tumiša Yunibesithi mo go tšeeng karolo ga yona go tšweletšopele ya bomotho, disaense tša leago goba disaense tša tlhago le tirišo.

Professor Corinne Sandwith | Humanities and Social Sciences*A world of letters: Reading communities and cultural debates in early apartheid South Africa*

Corinne Sandwith's pioneering study recovers for our troubled times a rich historical tradition of public debate about literature and culture in South Africa. Moving away from a conventional emphasis on high culture and elite intellectual activity, she constructs a fragmented history from the margins drawing on periodical reviews, magazine articles, debating societies and theatre groups. This fine grained and richly archived 'invention' of a South African tradition of democratic humanism restores to its rightful place a vibrant parallel stream of dissent under early apartheid. Sandwith shows with remarkable clarity and passion how discussions of culture were a way of making of political claims characterised by irony, irreverence and satire. After reading her work we see more clearly and more truly the genealogy of our contemporary enterprise of a secular, egalitarian modernity.

About the author

Corinne Sandwith is an associate professor in the Department of English. She joined the staff at the University of Pretoria in June 2014, and in 2015, she received the UP Researcher of the Year award (Languages Cluster in the Faculty of Humanities). Published books and edited collections include *World of letters: Reading communities and cultural debates in early apartheid South Africa* (UKZN Press, 2014) and *Africa South: Viewpoints, 1958–1961* co-edited with MJ Daymond (UKZN Press, 2011). Her research interests include the history of reading, criticism and public debate in early apartheid South Africa with a particular focus on marginal print cultures and the dissident press. Other work explores the contemporary public sphere and the South/African postcolony, with a special interest in questions of violence, crime and the body.

Professor Corinne Sandwith | Geesteswetenskappe en Sosiale Wetenskappe*A world of letters: Reading communities and cultural debates in early apartheid South Africa*

In ons tye vol beroeringe herwin Corinne Sandwith se baanbrekersnavorsing 'n ryke historiese tradisie van openbare debatvoering oor letterkunde en kultuur in Suid-Afrika. Sy beweeg weg van die konvensionele klem op hoë kultuur en elitiese intellektuele aktiwiteit en konstrueer 'n gefragmenteerde randgeskiedenis gebaseer op tydskrifresensies en -artikels, debatverenigings en teatergroepe. Met hierdie fyn getekstureerde en ryklik geargiveerde 'fonds' van 'n Suid-Afrikaanse tradisie van demokratiese humanisme word 'n lewenskragtige, parallelle stroom van teenstand tydens die vroeë jare van apartheid in sy regmatige plek herstel. Sandwith toon met merkwaardige helderheid en passie hoe besprekings oor kultuur 'n manier was om politieke stellings gekenmerk deur ironie, oneerbiedigheid en satire te maak. Na die lees van haar werk sien ons die genealogie van ons eietydse onderneming van 'n sekulêre, gelykheidsgesinde moderniteit met meer klaarheid en waarheid.

Oor die outeur

Corinne Sandwith is 'n medeprofessor in die Departement Engels. Sy het in Junie 2014 by die UP-personeel aangesluit en in 2015 die UP-Navorsers van die Jaartoeënnings (Talegroep in die Fakulteit Geesteswetenskappe) ontvang. Haar publikasies sluit in *World of letters: Reading communities and cultural debates in early apartheid South Africa* (UKZN Press, 2014) en *Africa South: Viewpoints, 1958–1961* waarvan sy 'n mederedakteur saam met MJ Daymond was (UKZN Press, 2011). Haar navorsingsbelangstellings sluit in die geskiedenis van lees, kritiek en openbare debat in die vroeë apartheidjare in Suid-Afrika met 'n spesifieke fokus op randdrukkulture en die andersdenkende pers. Ander werk stel ondersoek in na die kontemporêre openbare sfeer en die Suid-Afrikaanse postkoloniale met 'n spesifieke belangstelling in vroeë rakende geweld, misdaad en die liggaam.

Profesa Corinne Sandwith | Bomotheo le Disaense tša Leago*A world of letters: Reading communities and cultural debates in early apartheid South Africa*

Nyakišišo ye mpsha e kaonafatša dinako tša rena tša mathata a setšo sa histori ya go huma ya dingangišano tša setšhaba ka dingwalo le setšo ka Afrika Borwa. Go tloga go kgatelelo ye e tlwaelegilego ka setšo sa godimo le mošongwana wa thuto wa bokgoni, o hlama histori ye e pšhatlegilego go tšwa go go bea mellwaneng mo ditshekatshekong tša dikgatišobaka, diathekele tša dikgatišobaka, mekgatlo ya dingangišano le dihlopha tša ditheetha. 'Tlhamo' ye e humilego le go hlokolwa ye e lotilwego bolotwadingwalo ya setšo sa Afrika Borwa sa botho bja temokrasie bjoo bo bušeditšwego lefelong la maleba mo bo swanetšego go ba gona moeleng wa papetšo wa go kgahliša wa dithulano ka fase ga kgethologanyo ya pele. Sandwith o bontšha ka tlhalošo ya go makatša le phišego ka moo dipoledišano tša setšo di šomišwago go dira dipolelo tša dipolotiki tšeo di nago le kgegeo, go se hlomphane le go dira batho ba bangwe mašilo. Ka morago ga go bala mošomo wa gagwe re bona gabotse le ka nnete lešika la tšweletšopele ya sebjalebjaale ya maitemogelo, temokrasie ya sebjalebjaale.

Ka ga mongwadi

Corinne Sandwith ke mothuša profesa ka Kgorong ya Seisemane. O thomile go šoma Yunibesithing ya Pretoria ka Phupu 2014, gomme ka 2015, a amogela sefoka sa Monyakišiši wa UP wa Ngwaga (Sehlopha sa Dipolelo ka Lioefapheng la Bomotheo). Dipuku tšeo di phatlaladitšwego le dikgobokanyo tšeo di rulagantšwego di akaretša *World of letters: Reading communities and cultural debates in early apartheid* (UKZN Press, 2014) le *Africa South: Viewpoints, 1958–1961* ye e rulagantšwego mmogo le MJ Daymond (UKZN Press, 2011). Dikgahlego tša gagwe tša nyakišišo di akaretša histori ya go bala, tshekatsheko le dingangišano tša setšhaba ka Afrika Borwa ya kgethologanyo ya pele ka nepo ye e itšego mo ditšong tša kgatišo yeo e nago le mellwane le kgatišo ya boipelaetšo. Mošomo wo mongwe o utulla karolo ya setšhaba ya sebjalebjaale mo ditabeng tša dintwa, bosenyi le mmele.



Professor **Corinne Sandwith**



Exceptional Academic Achievers

Uitnemende Akademiese Presteerders

Bašomedi bao ba Atlegilego Kudu:
Diakatemiki

This award is made annually to senior academics who have already achieved the status of professor, are regarded highly by their peers and have consistently excelled in the areas of under- and postgraduate teaching and learning, research, community service and administration over a period of time. Any academic who has been awarded an A-rating by the NRF in the year under consideration automatically qualifies as an Exceptional Achiever for as long as he or she remains an A-rated researcher.

Dié toekenning word jaarliks aan senior akademici gemaak wat reeds professorale status verwerf het, besonder hoë statuur onder hulle eweknieë geniet en oor 'n geruime tydperk volgehoue uitnemende prestasies op die gebied van voor-en nagraadse onderrig en leer, navorsing, gemeenskapsdiens en administrasie behaal het. Enige akademikus wat deur die NNS as 'n A-gegradeerde navorser geëvalueer is, in die jaar onder oorweging, word outomaties 'n Uitnemende Presteerder vir so lank as wat hy of sy die status van 'n A-gegradeerde navorser behou.

Sefoka se se abelwa bafahloši bao ba lego maamong a godimo a seakatemiki ebile ba šetše ba fihleletše maemo a boprofesa gomme ba hlompšha ke ba mephato ya bona gape ba tšwelapele go šoma ka bothakga ka magorong a go ruta le go ithuta go baithuti ba maphoskratšuweiti le go bao e sego maphoskratšuweiti, dinyakišišong, tirelong ya setšhaba le tshepedišong godimo ga nako ya go bonala. Mofahloši o mongwe le o mongwe yo a fihleletšego maemo a NRF a (A) o kgotsofatša dinyakwa tša go tsenela legoro la Moatlegi wa go Tšwelela ka Magetla ka dinako ka moka ge a ntše a le monyakišiši wa maemo a (A).



Prof Coutinho is a professor in the Department of Microbiology in the Faculty of Natural and Agricultural Sciences. Her research focuses on pathogenic bacteria and their interactions with their plant hosts. Despite causing economic losses in the South African agricultural sector since the early 1990s, these microbes have been largely ignored. To address the lack of plant pathologists trained in this field of plant pathology, she initiated a research programme in 2003 of which the initial focus was on the causal agent of bacterial blight and die-back in *Eucalyptus* spp.

This study led to the description of numerous new bacterial species, many of which are considered unconventional owing to their opportunistic nature. Understanding how these species, particularly *Pantoea ananatis*, cause disease symptoms led to the sequencing of the first plant pathogen genome in Africa. Comparative genomics, followed by the characterisation of virulence factors, including motility, quorum sensing and the Type 6 secretion system using a functional genomic approach, illustrated how this ubiquitous bacterium is able to survive in unconventional environmental niches, viz insect and human hosts, and also infect plants.

She has subsequently expanded her programme to include plant pathogenic bacteria of stone fruit trees, notably *Pseudomonas syringae*, as well as of vegetable crops. She has an h-index of 32 (Scopus) and 36 (Google Scholar) with 2 888 and 4 239 citations, respectively. She is a former president of the Southern African Society for Plant Pathology (SASPP) and is actively involved in two international societies, viz the Office of Education of the American Plant Pathology Society (APS) and as South African representative in the American Society of Microbiology (ASM). She frequently reviews manuscripts for publication in ISI-rated journals, as well as grant proposals from Australia and Europe.

Prof Coutinho is 'n professor in die Departement Mikrobiologie in die Fakulteit Natuur- en Landbouwetenskappe. Haar navorsing fokus op patogeeniese bakterieë en hul interaksies met hul gasheerplante. Hoewel hierdie mikrobies sedert die vroeë 1990's ekonomiese verliese in die Suid-Afrikaanse landbousektor tot gevolg het, is hulle tot dusver grotendeels geïgnoreer. Om die gebrek aan plantpatoloë wat in hierdie veld van plantpatologie opgelei is aan te spreek, het sy in 2003 'n navorsingsprogram begin waarvan die aanvanklike fokus op die veroorsakende agent van bakteriële siektes en vrektes in *Eucalyptus* spp was.

Hierdie studie het daartoe gelei dat talle nuwe bakteriespesies beskryf is, waarvan baie as onkonvensioneel beskou word as gevolg van hul opportunistiese aard. Pogings om te verstaan hoe hierdie spesies, veral *Pantoea ananatis*, siektesimptome veroorsaak, het gelei tot die volgordebepaling van die eerste plantpatogeengenoom in Afrika. Vergelykende genomika, gevolg deur die karakterisering van toksiese faktore, insluitende motiliteit, bakteriële onderlinge 'kommunikasie' en die Tipe 6 afskeidingstelsel deur middel van 'n funksionele genomiese benadering, het getoon hoe hierdie alomteenwoordige bakterie in staat is om in omgewingsnissse, te wete insek- en mensgashere, te oorleef en ook plante te infekteer. Later het sy haar program uitgebrei om plantpatogeeniese bakterieë van steenvrugtebome, veral *Pseudomonas syringae*, asook groentegewasse in te sluit.

Sy het 'n h-indeks van 32 (Scopus) en 36 (Google Scholar) met 2 888 en 4 239 sitasies, respektiewelik. Sy is 'n voormalige president van die Suider-Afrikaanse Vereniging vir Plantpatologie (Southern African Society for Plant Pathology; SASPP) en is aktief betrokke by twee internasionale verenigings, naamlik die Onderrigkantoor van die Amerikaanse Vereniging van Plantpatologie (Office of Education of the American Plant Pathology Society; APS) en as Suid-Afrikaanse verteenwoordiger by die Amerikaanse Vereniging vir Mikrobiologie (American Society of Microbiology; ASM). Sy beoordeel dikwels manuskripte vir SI-gegradeerde vaktydskrifte, asook beursvoorstelle uit Australië en Europa.

Prof Coutinho ke profesa ka Kgorong ya Maekropayolotši ka Lefapheng la Disaense tša Tlhago le Temo. Nyakišišo ya gagwe e nepiša dipakteria tša phathotšeniki le tsenelano ya tšona le monggae wa dimela tša yona. Ntle ga go hlola tahlegelo ya ekonomi mo lekaleng la temo la Afrika Borwa go tloga ka 1990, dipakteria di be di sa hlokomelwe ka bophara. Go šogana le tlhokego ya diphatholotši tša dimela tšeo di hlahlilwego lekaleng le la phatholotši ya dimela, o thomile lenaneo la dinyakišišo ka 2003, leo nepo ya lona ya mathomo e bego e le go moemedi wa sewelo wa bolwetši bja dipakteria le go hwa ga *Eucalyptus* spp.

Nyakišišo ye e hlaloša sehlopha sa diphedi tša dipakteria tše difsa tše mmalwa, tše dintši tša tšona ga se tša tlwaelega ka baka la go phatlala ka pela ga tšona. Go kwešiša ka moo sehlopha sa diphedi se, kudu *Pantoea ananatis*, di hlola dika tša bolwetši tšeo di dirago mohlwaela wa tšenome ya phathotšene ya dimela ya mathomo ka Afrika. Ditšenomiki tša papetšo, tšeo di latelwago ke pharologantšho ya mabaka a birulense, go akaretša mothilithi, le go akanya khwaramo le mokgwa wa tšweletšo ya Mohuta wa 6 go šomišwa mokgwa wa tšenomiki wa mohola, ge go bontšhwa ka moo pakteria ye e lego gona lefaseng ka moka e kgonago go phela mafelong a tikologo ya go se tlwaelege, go swana le dikhunkhwane le benggae ba batho, le dimela tšeo di hueditšwego.

O katološitše lenaneo la gagwe go akaretša dipakteria tša phathotšeniki ya dimela tša mehlare ya dienywa tša dithapo, kudu *Pseudomonas syringae*, gammogo le puno ya merogo. O na le tšhupane ya-h ya 32 (Scopus) le 36 (Moithuti wa Google) ka ditsopolwa tše 2 888 le 4 239. Ke mopresidente wa pele wa Lekgotla la Diphatholotši tša Dimela la Borwa bja Afrika (SASPP) gomme o swaragane le makgotla a mabedi a ditšhabatšhaba, e lego ka Ofising ya Thuto ya Lekgotla la Phatholotši ya Dimela la Amerika (APS) gomme bjalo ka motseta wa Afrika Borwa go Lekgotla la Maekropayolotši la Amerika (ASM). Nako le nako o sekaseka dingwalwa tše di swanetšwego go gatišwa ka dijenaleng tšeo di lekaneditšwego tša ISI, gammogo le tšhišinyo ya thušo go tšwa Australia le Yuropa.



Professor **Teresa Coutinho**

Prof Ebersöhn is the Director of the Centre for the Study of Resilience and a professor in the Department of Educational Psychology in the Faculty of Education.

An NRF-rated researcher, Prof Ebersöhn is regarded as a leading scholar and teacher in resilience and resilience promoting interventions in high-risk school settings. Her research is positioned in contexts characteristic of an emerging economy country in transformation. She combines emancipatory and intervention methodologies to investigate pathways to resilience as human-ecological and cultural adaptive responses to chronic and cumulative adversity. Her recognised scientific contributions include a generative theory (relationship-resourced resilience) describing an emic system to counter chronic adversity, as well as 'flocking', a word she coined to depict a collectivist indigenous psychology pathway to resilience.

Prof Ebersöhn is the appointed Secretary-General of the World Education Research Association (WERA). She served as Chair of the International Research and Scholarship Committee (Division C, Learning and Instruction, of the American Educational Research Association), and was the South African international representative to the Building Resilience in Teacher Education (BRITE) Project Reference Group, Murdoch University. She presented a plenary session in March 2016 as an invited speaker to the Global Development Network 17th Annual Conference in Lima and at a symposium on Indigenous Pathways to Resilience at the 2014 meeting of the American Psychological Association. She was visiting professor at Yale University and Edith Cowan University.

Her research focus has had a decided impact on curricula for teacher training in several higher education institutions in South Africa. With students, co-researchers and as a single author, Prof Ebersöhn has contributed more than 70 peer-reviewed articles, numerous book chapters and several edited and co-authored books. Her teaching and research outputs attest that higher education can effectively integrate research, teaching and learning as well as community engagement. Her pedagogy aligns with global citizenship and education as key strategies to restructure postcolonial conditions.

Prof Ebersöhn is die Direkteur van die Sentrum vir Veerkrachtigheidsstudies en 'n professor in die Departement Opvoedkundige Sielkunde in die Fakulteit Opvoedkunde.

As 'n NNS-gegradeerde navorsers word sy beskou as 'n toonaangewende vakkundige en onderriggewer in veerkrachtigheid en intervensies wat dit in hoë-risiko skoolomgewings bevorder. Haar navorsing is geposisioneer in kontekste wat tipies is van 'n ontluikende ekonomie in 'n land wat transformeer. Sy kombineer emansipatoriese en ingrypingsmetodologieë om weë na veerkrachtigheid te ondersoek as menslik-ekologiese en kulturele aanpassingsreaksies op chroniese en kumulatiewe teëspoed. Haar erkende wetenskaplike bydraes sluit in 'n generatiewe teorie (verhoudings-gebaseerde veerkrachtigheid) wat 'n emiese sisteem beskryf om chroniese teëspoed teen te werk, asook 'kuddevorming' ('flocking'), 'n woord wat sy geskep het om 'n kollektiewe inheemse sielkundige weg na veerkrachtigheid te beskryf.

Prof Ebersöhn is die aangestelde Sekretaris-Generaal van die World Education Research Association (WERA). Sy is voorsitter van die American Educational Research Association se internasionale navorsings- en beurskomitee (Afdeling C, Leer en Onderrig) en was Suid-Afrika se internasionale verteenwoordiger in die Building Resilience in Teacher Education (BRITE)-projekverwysingsgroep by Murdoch-universiteit. In Maart 2016 het sy 'n volle sessie as gasspreker by die Global Development Network se 17de jaarlikse konferensie in Lima aangebied en in 2014 by 'n simposium oor inheemse weë na veerkrachtigheid tydens die vergadering van die Amerikaanse Sielkundige Vereniging. Sy was besoekende professor by Yale-universiteit en Edith Cowan-universiteit.

Haar navorsingsfokus het 'n besliste impak gehad op die kurrikula vir onderwyseropleiding by verskeie hoërsonderwysinstellings in Suid-Afrika. Prof Ebersöhn het self, asook saam met studente en medenavorsers, meer as 70 portuurbeoordeelde artikels, talle hoofstukke in boeke en bydraes vir boeksamestellings gelewer. Haar onderrig- en navorsingsuitsette getuig dat navorsing, onderrig en leer, en gemeenskapsbetrokkenheid effektief met hoër onderrig geïntegreer kan word. Haar pedagogiek sluit aan by wêreldburger-skap en opleiding as sleutelstrategieë in die herstrukturering van postkoloniale omstandighede.

Prof Ebersöhn ke Molaodimogolo wa Senthara ya Twantšho le profesa ka Kgorong ya Saekolotši ya Thuto ka Lefapheng la Thuto.

Monyakišiši yo a lekanyeditšwego ke NRF, Prof Ebersöhn o tšewa bjalo ka moithuti wa ketapele le morutiši wa twantšho le go godiša ditsenagaro tša twantšho mo ditikologong tša dikolo tša ditikologo tšeo di lego kotsing. Nyakišišo ya gagwe e beilwe maamong mo pharologantšhong ya diteng tša naga ya ekonomi ye e sa golago ka diphetogong. O kopanya mekgwa ya go lokolla le ya go tsenagare go nyakišiša ditsela tša twantšho bjalo ka dikarabo tša ekholotši ya motho le kamantšho ya setšo mo kotsing ya go ya go ile le ye e golago. Go kgatha tema ga gagwe ga saense mo go lemogwago go akaretša teori ya tswalo (twantšho ya methopo ya kamano) ye e hlalošago mokgwa wa emiki go ya go kotsi ya karabo ya go ya go ile, gammogo le 'Sehlopha sa batho bao ba laolwago ke motho o tee' seo a se hlotšego go bontšha tsela ya twantšho ya saekolotši ya kgoboko ya mathomong.

Prof Ebersöhn ke Mongwaledi-Kakaretšo wa Mokgatlo wa Lefase wa Dinyakišišo tša Thuto (WERA) gomme e be e le modulasetulom-mogo wa Sehlopha sa Maatla sa Bohloki le Thuto sa WERA. O thušitše bjalo ka Modulasetulo wa Komiti ya Thekgo ya Ditšhelete tša Thuto le Dinyakišišo tša Ditšhabatšhaba (Karolo ya C, Go ithuta le Ditaello), wa Mokgatlo wa Dinyakišišo tša Thuto ya Amerika le moemedi wa ditšhabatšhaba wa Afrika Borwa mo Protšekeng ya Sehlopha sa Kakanyetšo mo Kagong ya Twantšho mo Thutong ya Barutiši (BRITE) Yunibesithing ya Murdoch. O abile mohlakano wo o feletšego ka Hlakola 2016 bjalo ka seboledi se se laleditšwego mo Khonferenseng ya Ngwaga ka Ngwaga ya bo 17 ya Netweke ya Tšweletšopele ya Lefase (Global Development Network) kua Lima le simphosiamong sa Ditsela tša Mathomong tša Twantšho mo mohlakanong wa 2014 wa Mokgatlo wa Saekolotši wa Amerika. O swere dipeano tša ditšhabatšhaba, go swana le go ba profesa ya moeng ya Yunibesithi ya Yale le Yunibesithi ya Cowan Edith.

Nepo ya nyakišišo ya gagwe e bile le khuetšo ya sephetho mo lenaneothutong ya tlhahlo ya barutiši mo diinstitusheneng tša thuto ya godimo tše mmalwa mo Afrika Borwa. Ka go kopanya boitshwaro le mmatlolo wa boleng bja go ruta, tsenogare ya tirišano ye a e hlotšego nakong ya go feta e file ditirelo tša saekolotši ya thuto go batho ba go feta 1000 ba bafsa. Go tlaletše, baithuti ba 118 ba MEd (Educational Psychology) ba fiwa dibaka tša tlhahlo ya boitemogelo.

Mmogo le baithuti le banyakišišimmogo, Prof Ebersöhn o kgathile tema mo diathekeleng tšeo di lekotšego ke badirišani tša go feta tše 70, dikgaolo tše mmalwa tša dipuku le dipuku tše mmalwa tše di rulagantšwego le go ngwalwa mmogo. O laleditšwe gape go tšweletša diphatlatšo tša gae le tša ditšhabatšhaba ka direrwa tša go swana le dikutollo ka tekanyo ya saekolotši ka fase ga maemo a phapano ya godimo ka go tirišo ya saekolotši; go fa ditiragalo tše di theilwego sehlopheng tša saekolotši mo dikolong tšeo di nago le methopo ye e ileditšwego; le barutiši bjalo ka bothobamatšwalo bao ba fago thekgo ya pele ya saekolotši ka diphapošing le dikolong.

Ditšweletšwa tša gagwe tša go ruta le dinyakišišo di bontšha gore thuto ya godimo e ka kopanya nyakišišo, go ruta le go ithuta, gammogo le go tšea karolo setšhabeng. Moeno wa mekgwa wa gagwe mo go ruteng le go ithuteng ga thuto ya godimo ke gore thekgo, tirišano le nnete di ka dira boleng, tšweletšo le kopano. Ka teori se se ra gore thuto ya gagwe e thekgana le bodudi bja lefase le thuto bjalo ka mekgwa ya motheo ya kagolefša ya maemo a ka morago ga bokoloni.



Professor **Liesel Ebersöhn**

Prof Kirsten has been Head of the Department of Agricultural Economics, Extension and Rural Development in the Faculty of Natural and Agricultural Sciences since 1997 and is one of the longest serving members of the UP Senate.

His research activities cover a number of themes, but remain focused on critical aspects of agricultural and land policy in South Africa. Over the past seven years Prof Kirsten has added another dimension to his research portfolio. He applies the principles of new institutional economics to agricultural value chains, and more specifically to the rules, contracts and incentives related to the functioning of supply chains of niche food products. Understanding the behaviour of the actors in these chains and finding mechanisms to prevent shirking and opportunistic behaviour are some of the aspects he investigates with a team of master's and PhD students.

In addition to his research activities, Prof Kirsten plays a prominent role as an ambassador for the University of Pretoria. He features and is quoted regularly in the agricultural and daily media and often comments on agricultural and land reform policy in South Africa – so much so that his name has become synonymous with local agricultural science and agricultural policy.

Prof Kirsten is one of six programme leaders in the DST-NRF Centre of Excellence in Food Security and has been the editor of *Agrekon* since June 2015. He serves on the editorial boards of three international journals, and on the Academic Board of the Collaborative Master's programme in Agricultural and Applied Economics (CMAAE) of the African Economic Research Consortium. He has coordinated the CMAAE Shared Facility at the University of Pretoria for the last nine years.

Prof Kirsten is the Co-Director of the Michigan State University-US Agency for International Development (MSU-USAID) Programme on Food Security. The Agricultural Research Council sponsors a collaborative centre (to the value of R2,5 million per year) for Prof Kirsten and the Department of Agricultural Economics, Extension and Rural Development to study the economics of agricultural science and technology policy.

Prof Kirsten is sedert 1997 Hoof van die Departement Landbou-ekonomie, Voorligting en Landelike Ontwikkeling en is ook een van die langs dienende UP-senaatslede.

Sy navorsingsaktiwiteite dek 'n hele aantal onderwerpe, maar die fokus is steeds op kritieke aspekte van landbou- en grondbeleid in Suid-Afrika. Prof Kirsten het in die loop van die afgelope sewe jaar 'n nuwe dimensie tot sy navorsingsportefolio toegevoeg. Hy pas die beginsels van die nuwe institusionele ekonomie op waardekettings in die landbou toe, en meer spesifiek op die reëls, kontrakte en aansporings verbonde aan die funksionering van voorsieningskettings van nis-voedselprodukte. Om die gedrag van rolspelers in hierdie kettings te verstaan en meganismes te vind om pligversuim en opportunistiese gedrag te voorkom, is van die aspekte wat hy in samewerking met 'n span meesters- en doktorale studente ondersoek.

Benewens sy navorsingsaktiwiteite speel prof Kirsten 'n prominente rol as ambassadeur van die Universiteit van Pretoria. Hy verskyn en word gereeld aangehaal in die landbou- en daaglikse media en lewer dikwels kommentaar oor landbou- en grondhervormingsbeleid in Suid-Afrika – in so 'n mate dat sy naam sinoniem is met plaaslike landbouwetenskappe en -beleid.

Prof Kirsten is een van ses programleiers in die DWT-NNS Sentrum vir Uitnemendheid in Voedselsekerheid en is sedert Junie 2015 die redakteur van *Agrekon*. Hy dien op die redaksionele rade van drie internasionale vaktydskrifte en op die Akademiese Raad van die Samewerkende Meestersgraad in Landbou- en Toegepaste Ekonomieprogram (Collaborative Master's in Agricultural and Applied Economics; CMAAE) van die Afrika Ekonomiese Navorsingskonsortium. Hy koördineer die afgelope nege jaar die CMAAE se gedeelde fasiliteit by die Universiteit van Pretoria.

Prof Kirsten is die mededirekteur van die Michiganstaatsuniversiteit-VS Agentskap vir Internasionale Ontwikkeling se Program in Voedselsekerheid. Die Landbounavorsingsraad het 'n borgskap ter waarde van R2,5 miljoen per jaar vir 'n samewerkingssentrum aan prof Kirsten en die Departement Landbou-ekonomie, Voorligting en Landelike Ontwikkeling toegeken om die ekonomie van landbouwetenskap en tegnologiebeleid te bestudeer.

Prof Kirsten e bile Hlogo ya Kgoro ya Diekonomi tša Temo, Koketšo le Tšwelotšopele ya Dipolaseng ka Lefapheng la Disaense tša Tlhago le Temo go tloga ka 1997 gomme ke wo mongwe wa maloko ao a šometšego Senate sa UP nako ye telele go feta ka moka.

Mešongwana ya gagwe ya nyakišišo e akaretša merero ye mmalwa, eupša e dula e nepiša makala a temo le dipholisi tša naga mo Afrika Borwa. Mo mengwageng ye šupa ya go feta Prof Kirsten o okeditše karolo ye nngwe potfoliong ya nyakišišong ya gagwe. O diriša ditheo tša diekonomi tša institušene tše difsa go mohlwaela wa mohola wa temo, kudu melaong, dikontrakeng le dikgoketšo tše di amanago le tšhomišo ya kabo ya phahlo ya ditšweletšwa tša dijo tša maleba. Go kwešiša maitshwaro a badiragatši mo phahlong ye le mekgwa ya go hwetša go thibela go hlokomologa le mekgwa ya go hwetša dibaka ke ye mengwe ya tšeo a di nyakišišitšego le sehlopha sa gagwe sa baithuti ba mastase le PhD.

Go tlaletša mešongwana ya gagwe ya nyakišišo, Prof Kirsten o kgatha tema ye bohlokwa bjalo ka motseta wa Yunibesithi ya Pretoria. O tsena le go tsopolwa nako le nako mo bobegaditabeng bja temo le bja tšatši ka tšatši gomme o swayaswaya gantši ka temo le peakanyolefsa ya naga ka Afrika Borwa – moo e lego gore leina la gagwe ke lehlalosešagotee la diasense tša temo tša gae le pholisi ya temo.

Prof Kirsten ke yo mongwe wa baetapele ba mananeo a tshela mo Senthareng ya Bokgoni ya DST/NRF ka Tšhireletšo ya DiJo gomme e bile Morulaganyi wa *Agrekon* go tloga ka Phupu 2015. O thuša botong ya barulaganyi ya dijenale tša ditšhabatšhaba tše tharo, le Botong ya Thuto ya Tirišano le lenaneong ya Mastase ka Temo le Diekonomi tša Tirišo (CMAAE) la Khonsotiamo ya Dinyakišišo ya Ekonomiyi ya Afrika. E bile mokgokaganyi wa CMAAE Dinolofatši tša Go abelanwa Yunibesithing ya Pretoria mo mengwageng ye senyane ya go feta.

Prof Kirsten ke Molaodimogolommogo wa Yunibesithi ya Mmušo ya Michigan – Mokgatlo wa Tšweletšopele ya Ditšhabatšhaba wa US (MSU-USAID) wa Lenaneo la Tšhireletšo ya DiJo. Khansela ya Dinyakišišo tša Temo e abile senthara ya tirišano (ya boleng bja R2.5 milione ka ngwaga) go Prof Kirsten le Kgoro ya Diekonomi tša Temo, Koketšo le Tšweletšopele ya Dipolaseng go nyakišiša ka diekonomi tša saense ya temo le pholisi ya theknolotši.



Professor **Johann Kirsten**

Prof Lubuma has been Dean of the Faculty of Natural and Agricultural Sciences since March 2015. He received his PhD from the University of Louvain in Belgium in 1985 and was a postdoctoral fellow at the International Centre for Theoretical Physics in Italy. Since then, he has worked in or visited many prestigious universities and research institutions.

Prof Lubuma's research interests include the numerical analysis of ordinary and partial differential equations, with an emphasis on differential equations models that occur in science, engineering and technology. In the past five years he has focused on modelling biological processes such as disease transmission, interacting species, mutant gene propagation and enzymatic reactions. Prior to his appointment as dean, he held the SARChI Chair in Mathematical Models and Methods in Bioengineering and Biosciences. This was a culmination of his continued efforts to create a world-class environment and facility in which multidisciplinary research activities are supported and can flourish.

Prof Lubuma has published widely in several prestigious journals and has attended several major conferences in his field. In 2015 alone, he published ten papers on mathematical biology and related areas in ISI journals. He has made numerous significant contributions to the theory of the nonstandard finite difference schemes, as well as to the design and implementation of several innovative numerical schemes replicating the dynamics of a wide range of differential equations that arise in applications. Prof Lubuma renders a vital service to the scientific community through his extensive involvement as editor and referee for several journals.

He has contributed to making science work in Africa. He has trained several postgraduate students and is involved in multiple regional centres of excellence.

Recent awards, honours and recognitions received by Prof Lubuma include the Sign of Honour from the Bulgarian Academy of Science, the South African Mathematical Society Award for Research Distinction, and fellowships of the African Academy of Sciences, the Academy of Science of South Africa, and the Suid-Afrikaanse Akademie vir Wetenskap en Kuns (South African Academy for Science and Arts). This is the fourth consecutive time that the University of Pretoria has recognised Prof Lubuma as an exceptional academic achiever. Prof Lubuma has a B2 rating from the NRF.

Prof Lubuma is sedert Maart 2015 Dekaan van die Fakulteit Natuur- en Landbouwetenskappe. Hy het sy PhD in 1985 aan Louvain-universiteit in België voltooi en was 'n postdoktorale genoot by die Internasionale Sentrum vir Teoretiese Fisika in Italië. Sedertdien het hy by talle vooraanstaande universiteite en navorsingsinstansies gewerk of hulle besoek.

Prof Lubuma se navorsingsbelangstellings sluit in die numeriese analise van gewone en parsiele differensiaalvergelykings, met 'n fokus op differensiaalvergelykingsmodelle wat in wetenskap, ingenieurswese en tegnologie voorkom. Die afgelope vyf jaar fokus hy op die modellering van biologiese prosesse soos die oordrag van siekte, interaksie tussen spesies, die voortplanting van mutante gene, en ensimatisiese reaksies. Voor sy aanstelling as dekaan het hy die SARChI-leerstool in Wiskundige Modelle en Metodes in Bio-ingenieurswese en Biowetenskappe beklee. Dit was die hoogtepunt van sy voortgesette pogings om 'n wêreldklas omgewing en fasiliteit te skep waar multidissiplinêre navorsingsaktiwiteite ondersteun word en kan gedy.

Prof Lubuma het wyd in verskeie vooraanstaande vaktydskrifte gepubliseer en talle hoog aangeskrewe konferensies in sy vakgebied bygewoon. In 2015 het hy tien artikels oor wiskundige biologie en verwante vakgebiede in ISI-joernale gepubliseer. Hy het talle beduidende bydraes tot die teorie van nie-standaard eindige differensiaalskemas gelewer, asook tot die ontwerp en implementering van verskeie innoverende numeriese skemas wat die dinamika van 'n wye verskeidenheid differensiaalvergelykings repliseer wat tydens toepassings na vore kom. Prof Lubuma lewer 'n belangrike diens aan die wetenskapsgemeenskap deur sy uitgebreide betrokkenheid as redakteur van en beoordelaar vir verskeie vaktydskrifte.

Hy dra daartoe by om die wetenskap in Afrika te laat werk. Hy het verskeie nagraadse studente opgelei en is betrokke by 'n hele aantal streeksentrums vir uitnemendheid.

Onlangse toekennings, eerbetonings en erkennings wat prof Lubuma ontvang het sluit in die Ereteken van die Bulgaarse Akademie vir Wetenskap, die Suid-Afrikaanse Wiskundige Vereniging se Toekenning vir Onderskeidende Navorsing en genootskappe van die Afrika-akademie vir Wetenskappe, die Wetenskapakademie vir Suid-Afrika en die Suid-Afrikaanse Akademie vir Wetenskap en Kuns. Dit is die vierde opeenvolgende keer dat die Universiteit prof Lubuma erken as 'n uitnemende akademiese presteerder. Hy het 'n B2-gradering van die NNS.

Prof Lubuma e bile Hlogo ya Lefapha la Disaense tša Tlhago le Temo go tloga ka Hlakola 2015. O hweditše PhD go tšwa Yunibesithing ya Louvain kua Belgium ka 1985 gomme e be e le modirišani wa ka godimo ga bongaka mo Senthareng ya Ditšhabatšhaba ya Fisika ya Teori ka Italy. Go tloga moo, o šomile goba o etetše diyunibesithi tša go hlomphega le diinstitušene tša nyakišišo.

Dikgahlego tša dinyakišišo tša Prof Lubuma di akaretša ditshekatsheko tša dipalo tša dipalelo tša phapano ye nnyane, ka kgatelelo ya dimmotlolo tše di diregago ka saense, boentšenero le theknolotši. Mo mengwageng ye mehlano ya go feta o nepišetše tshepedišong ya mmotlolo wa payolotši go swana le phetetšo ya ditwatši, diphedi tše di tsenelelanago, phatlalatšo ya leabela la mutante le dikarabo tša diensime. Pele ga ge a thwalwa bjalo ka hlogo ya lefapha, e be e le Modulasetulo wa SARChI ka Mmotlolo wa Mmetse le Mekgwa ya Boentšenero bja Payolotši le Disaense tša Payolotši. Se e be e le mafelelo a maatla a gagwe ao a tšwelago pele go hlola tikologo ya maemo a godimo lefaseng le dinolofatši tšeo mešongwana ya nyakišišo ya dikarolo tše dintši e thekgwago le go tšwela pele.

Prof Lubuma o phatlaladitši ka bophara mo dijenaleng tša maemo a godimo gomme o tsenetše dikhonferense tše dikgolo mo karolong ye. Ka 2015 fela, o phatlaladitše dipampiri tše lesome ka payolotši ya mmetse le dikarolo tše di lebanego le yona ka dijenaleng tša ISI. O kgathile tema ye kgolo mo teoring ya dikema tša go fapana tša go se tlwaelege, gammogo le go moakanyetšo le tirišo ya dikema tša dipalo tša tšweletšopele tšeo di bušetšago dikarolo tšeo di fetogago tša mohlwaela wa bophara wa dipalelo tša go fapana tšeo di tšwago mo ditirišong. Prof Lubuma o aba tirelo ya saense ya setšhaba ka go tšea karolo kudu bjalo ka morulaganyi le moahlodi wa dijenale tše mmalwa.

O kgathile tema go dira gore saense e šome mo Afrika. O hlahlile baithuti ba dialogadigolwane ba mmalwa gomme o swaragane le disenthara tša bokgoni tše dintši tša selete.

Difoka tša kgauswinyane, ditlhompho le ditemogo tšeo di amogetšwego ke Prof Lubuma di akaretša Leswao la Tlhompho go tšwa go Akademi ya Saense ya Bulgarian, Sefoka sa Lekgotla la Mmetse sa Afrika Borwa sa Karolo ya Nyakišišo, le ditirišano tša Akademi ya Afrika ya Disaense, Akademi ya Saense ya Afrika Borwa, le Suid-Afrikaanse Akademie vir Wetenskap en Kuns (South African Academy for Science and Arts)(Akademi ya Saense le Setšo ya Afrika Borwa). Le ke lekga la bone ka go latelana mo Yunibesithi ya Pretoria e lemogago Prof Lubuma bjalo ka mošomi wa akademiki yo a atlegilego kudu. Prof Lubuma o na le tekanyetšo ya B2 go tšwa NRF.



Professor **Jean Lubuma**

Prof McKechnie is a professor in the Department of Zoology and Entomology in the Faculty of Natural and Agricultural Sciences. He is a member of the DST-NRF Centre of Excellence at the Percy FitzPatrick Institute of African Ornithology, and currently holds a B3 rating from the NRF.

Prof McKechnie researches the evolutionary physiology of birds and mammals. Current focus areas include the sources and significance of avian metabolic diversity, heat tolerance and evaporative cooling capacity in arid-zone birds; the ecology and evolution of heterothermic responses such as torpor; and the use of stable isotopes in animal ecology. Much of this work is done in the context of developing physiologically informed, mechanistic models of birds' responses to climate change. Prof McKechnie and Dr Susie Cunningham (UCT) are the principal investigators of the Hot Birds Project, a multidisciplinary research programme involving ornithologists at UP, UCT, Nelson Mandela Metropolitan University, and collaborators at several overseas institutions, including the University of New Mexico.

Prof McKechnie is an associate editor of the journals *Climate Change Responses* and *Emu – Austral Ornithology*, and serves on the advisory board of the *Journal of Comparative Physiology B*. He regularly writes for semi-popular magazines, and is a scientific advisor of *African Birdlife* magazine. He has twice received the University of Pretoria's Exceptional Academic Achiever award, and is a founding member of the South African Young Academy of Science.

Prof McKechnie is 'n professor in die Departement Dierkunde en Entomologie in die Fakulteit Natuur- en Landbouwetenskappe. Hy is 'n lid van die DWT-NNS Sentrum vir Uitnemendheid by die Percy FitzPatrick Instituut vir Afrika-voëlkunde en het tans 'n B3-gradering van die NNS.

Prof McKechnie doen navorsing oor die evolusionêre fisiologie van voëls en soogdiere. Huidige fokusareas sluit in: die bronne en betekenis van metaboliese diversiteit in voëls; hittedoleransie en verkoelingskapasiteit deur verdamping in voëls in droë gebiede; die ekologie en evolusie van heterotermiese response soos traagheid; en die gebruik van stabiele isotope in diere-ekologie. Baie van hierdie werk word gedoen in die konteks van die ontwikkeling van fisiologies gegronde, meganistiese modelle van voëls se response tot klimaatsverandering. Prof McKechnie en dr Susie Cunningham (UK) is die hoofondersoekers van die Hot Birds-projek, 'n multidisiplinêre navorsingsprogram waarby voëlkundiges van UP, UK, Nelson Mandela Metropolitaanse Universiteit en medewerkers by verskeie oorsese instansies, insluitende die Universiteit van Nieu-Meksiko, betrokke is.

Prof McKechnie is 'n mederedakteur van die vaktydskrifte *Climate Change Responses* en *Emu – Austral Ornithology*, en dien op die adviesraad van die *Journal of Comparative Physiology B*. Hy skryf dikwels vir semi-populêre tydskrifte en is 'n wetenskaplike adviseur vir *African Birdlife*. Die Universiteit van Pretoria se Uitnemende Akademiese Presteerder-toekenning is reeds twee keer aan hom toegeken en hy is 'n stigterslid van die Jong Wetenskapakademie van Suid-Afrika.

Prof McKechnie ke profesa ka Kgorong ya Thutadiphoofolo le Entomolotši ka Lefapheng la Disaense tša Tlhago le Temo. Ke leloko la Senthara ya Bokgoni ya DST-NRF mo Instituting ya Onitholotši ya Afrika ya Percy FitzPatrick, gomme gonabjale o lekanyeditšwe go B3 ke NRF.

Prof McKechnie o nyakišiša fisiolotši ya dinonyana le diamuš. Dikarolo tša nepišo ya bjale di akaretša methopo le bohlokwa bja phapano ya metapoliki ya abiane, go kgotlelela phišo le maatla a tšidifalo ya moyafalo mo dinonyaneng tša lefelong leo go se nago meetse; ekholotši le ebulušene tša dikarabo tša hetorethemiki go swana le go hloka kgahlego, le tšhomišo ya difapantšhi tša go se fetoge mo ekholotšing ya diphoofolo. Bontši bja mošomo wo bo dirilwe ka mabaka a go tšwetšapele thuto ya fisiolotši, dimmotlolo tša go itiriša tša ka moo dinonyana di arabelago go fetoga ga klaemete. Prof McKechnie le Ngaka Susie Cunningham (UCT) ke bona banyakišišibagolo ba Protšeke ya Hot Birds, lenaneo la dinyakišišo tša makala a mantši tseo di amago dionitholotši go la UP, UCT, Yunibesithi ya Nelson Mandela Metropolitan, le badirišani go tšwa diinstituting tše dintši moše wa mawatle, go akaretša Yunibesithi ya New Mexico.

Prof McKechnie ke Mothuša Morulaganyi wa dijenale tše *Climate Change Responses* le *Emu – Austral Ornithology*, gomme o thuša mo botong ya *Journal of Comparative Physiology B*. Nako le nako o ngwalela dikgatišobaka tša go se tume kudu, gomme ke moeletši wa tša saense wa kgatišobaka ya *African Birdlife*. O amogetše Sefoka sa Bašomedi ba Diakademiki bao ba Atlegilego kudu ba Yunibesithi ya Pretoria gabedi, gape ke leloko leo le theilego Akademi ya Bafsa ya Saense ya Afrika Borwa.



Professor **Andrew McKechnie**

Prof Nel is a professor and virologist in the Department of Microbiology and Plant Pathology in the Faculty of Natural and Agricultural Sciences. He has established a world-renowned research programme that focuses on arriving at a better understanding of the rabies virus and other lyssa viruses with a view to improved treatment and control of rabies. His research relies on state-of-the-art methods in molecular biology, including viral diagnostics, vaccinology, immune contraception, viral pathogenesis, host-virus ecology, molecular epidemiology and virus evolution. To date his work has been published in more than 150 papers in scientific journals and books.

Prof Nel is a permanent member of the World Health Organization (WHO) Expert Advisory Panel on Rabies and served as a member and Chair of the most recent *WHO expert consultations on rabies* that were published in 2005 and 2013, respectively. He is a member of the International Steering Committee of the Bill and Melinda Gates Foundation/World Health Organization (BMGF/WHO) programmes for the control of rabies (2009 to date). Prof Nel has acted as scientific advisor and coordinator of the Southern and Eastern African Rabies Group since 2003. With his team at the University of Pretoria and their global collaborators (including intergovernmental agencies, NGOs and industry), he established the Pan African Rabies Control Network in 2015. He is an active member of the Technical Expert Panel of the International Atomic Energy Agency and the UN's Food and Agriculture Organization and has served on rabies committees of the World Organization for Animal Health.

Prof Nel has assisted the Global Alliance for Rabies Control – the leading international non-profit organisation dedicated to rabies – in various capacities since 2008 and took over the leadership of the Alliance in September 2014. His team's research contributes greatly to the shaping of the global rabies research agenda, which is ultimately focused on the total elimination of dog rabies in those parts of the world where the disease remains a terrible scourge, including the entire African continent and most of Asia.

Prof Nel is 'n professor en viroloog in die Departement Mikrobiologie en Plantpatologie in die Fakulteit Natuur- en Landbouwetenskappe. Hy het 'n wêreldbekende navorsingsprogram gevestig wat daarop fokus om die hondsdolheidvirus en ander lyssa-virusse beter te verstaan ten einde die behandeling en beheer van hondsdolheid te verbeter. In sy navorsing maak hy staat op die allernuutste metodes in molekulêre biologie, insluitende virale diagnostiek, vaksinologie, immuunvoorbereiding, virale patogenese, gasheer-virusekologie, molekulêre epidemiologie en virusevolusie. Sy werk is tot dusver in meer as 150 artikels in wetenskaplike joernale en boeke gepubliseer.

Prof Nel is 'n permanente lid van die Wêreldgesondheidsorganisasie (WGO) se Ekspertadviespaneel oor Hondsdolheid en hy was voorsitter van die mees onlangse *WHO expert consultations on rabies*, wat in 2005 en 2013 gepubliseer is. Hy is 'n lid van die Internasionale Bestuurskomitee van die Bill en Melinda Gates-stigting/Wêreldgesondheidsorganisasie (BMGF/WGO) se programme vir die beheer van hondsdolheid (sedert 2009). Prof Nel is sedert 2003 wetenskaplike raadgewer en koördineerder vir die Hondsdolheidgroep van Suider- en Oos-Afrika. Saam met sy span by die Universiteit en hul wêreldwye medewerkers (wat interregeringsagentskappe, NRO's en nywerhede insluit) het hy in 2015 die Pan-Afrika Beheernetwerk vir Hondsdolheid ingestel. Hy is 'n aktiewe lid van die Tegnieke Ekspertpaneel van die Internasionale Atoomenergieagentskap, van die VN se Voedsel- en Landbouorganisasie en het op hondsdolheidkomitees van die Wêreldorganisasie vir Dieresondheid gedien.

Sedert 2008 was prof Nel die Wêreldalliansie vir die Beheer van Hondsdolheid – die toonaangewende internasionale nuwinsorganisasie op die gebied van hondsdolheid – in verskeie hoedanighede behulpsaam en in September 2014 het hy die leierskap van die Alliansie oorgeneem. Sy span se navorsing gee in 'n groot mate vorm aan die wêreldagenda vir navorsing oor hondsdolheid, wat uiteindelik gemik is op die algehele uitwissing daarvan in die dele van die wêreld waar dit steeds voorkom, insluitende Afrika en die grootste deel van Asië.

Prof Nel ke profesa le mobirolotši ka kgorong ya Maekropayolotši le Phatholotši ya Dimela ka Lefapheng la Disaense tša Tlhago le Temo. O thomile lenaneo la go tuma lefaseng leo le nepišago go kwešiša gabotse baraese ya rebisi le dibaerese tše dingwe tša lyssa ka nepo ya kalafo yeo e kaonafaditšwego le taolo ya rebisi. Nyakišišo ya gagwe e theilwe mekgweg ya sebjalebja le ka payolotši ya molekhula, go akaretša le pheko ya baerale, basinolotši, thibelo yeo e bolohegilego, baerale ya phathotšenesisi, ekholotši ya baerale ya monggae, ephitimolotši ya molekhula le ebolešene ya baerale. Go fihla leholo mošomo wa gagwe o phatlaladitšwe dipampiring tša go feta tše 150 ka dijenaleng tša saense le dipukung.

Prof Nel ke lelolo la go ya go ile la Phanele ya Keletšo ya Bokgoni ka Rebisi ya Mokgatlo wa Lefase wa Maphelo (World Health Organization (WHO) Expert Advisory Panel on Rabies) gomme e bile lelolo le Modulasetulo wa WHO expert consultations on rabies yeo e phatlaladitšwego ka 2005 le 2013. Ke lelolo la mananeo a taolo ya rebisi a International Steering Committee of the Bill and Melinda Gates Foundation/World Health Organization (BMGF/WHO) (go tloga ka 2009 go fihla leholo). Prof Nel e bile moeletši wa saense wa motšwaoswe le mokgokaganyi wa Sehlopha sa Rebisi sa Borwa le Bohlabela bja Afrika (Southern and Eastern African Rabies Group) go tloga ka 2003. Le sehlopha sa gagwe Yunibesithing ya Pretoria le badirišani ba bona lefaseng (go akaretša mekgatlo ya botseta, Mekgatlo yeo e sego ya Semmušo (NGOs) le intasteri), o thomile Netweke ya Taolo ya Rebisi ya Pan Afrika (Pan African Rabies Control Network) ka 2015. Ke lelolo leo le tšego karolo la Phanele ya Bokgoni ya Mokgatlo wa Enetši ya Atomo wa Ditšhabatšhaba le Mokgatlo wa Temo le Dijo wa UN gomme thušitše dikomiting tša Mokgatlo wa Lefase wa Maphelo a Diphoofole.

Prof Nel o thušitše Mokgatlo wa Lefase wa Taolo ya Rebisi (Global Alliance for Rabies Control) – mokgatlo wa ketapele wa ditšhabatšhaba wa go se dire letseno woo o kgafetšego go rebisi – ka maatla a go fapafapana go tloga ka 2008 gomme wa tšea boetapele bja Mokgatlo ka Lewedi 2014. Sehlopha sa gagwe sa nyakišišo se kgatha tema ye bohlokwa go ageng lenaneo la nyakišišo ya rebisi ya lefase, yeo e nepišago go tloša go ya go ile rebisi ya dimpša mo dikarolong tša lefase moo bolwetši e lego bothata, go akaretša kontinente ya Afrika le bogolo bja Asia



Professor **Louis Nel**

Prof Taylor is a professor in the Department of Food Science in the Faculty of Natural and Agricultural Sciences and Theme Leader for Nutritional Science in the Institute for Food, Nutrition and Well-being.

His life mission is to research the nutritional quality and processing of local cereal grains, especially sorghum, maize and millets, with the aim of improving food security and developing the agrofood industry in sub-Saharan Africa. This mission also involves the development of practical technologies based on the research findings and their implementation in the local food processing industry.

In recent years, his research has focused on understanding the science behind wheat gluten functionality in dough-based foods and developing technologies to replace it. The aim is to enable the production of affordable, nutritious staple foods using grains other than wheat, which are generally better adapted to cultivation in sub-Saharan Africa. His research group has achieved notable success in the development of high-quality biscuits from sorghum blended with legumes. The group has also developed methods to produce gas-holding, wheat flour-like doughs based on zein, a maize prolamin-type protein.

A related aspect of the group's research is to use the storage proteins of maize and sorghum, which are uniquely hydrophobic and inert, to encapsulate micronutrients and nutraceuticals for oral delivery to the small intestine. Recent findings show that encapsulation of sorghum condensed tannins in microparticles made of sorghum protein can attenuate blood glucose levels by inhibiting the digestion of starch. Such microparticle nutraceuticals have potential as a simple and affordable non-drug therapy for the prevention and alleviation of type 2 diabetes.

In 2012, Prof Taylor was elected as a fellow of the Academy of the International Association for Cereal Science and Technology (ICC) and in 2015 he was elected as Honorary (Life) President of the ICC. He is a B1 rated researcher.

Prof Taylor is 'n professor in die Departement Voedselwetenskap in die Fakulteit Natuur- en Landbouwetenskappe en Temaleier vir Voedselwetenskap in die Instituut vir Voedsel, Voeding en Welstand.

Sy lewensmissie is om die voedingsgehalte en prosessering van plaaslike graangewasse, veral sorghum, mielies en mannakoring ('millets') na te vors met die doel om voedselsekerheid te verbeter en die landbouvoedselbedryf in Afrika suid van die Sahara te ontwikkel. Hierdie missie behels ook die ontwikkeling van praktiese tegnologieë gegrond op navorsingsbevindings en hul implementering in die plaaslike voedselprosesseringsbedryf.

Die afgelope jare was sy navorsing daarop gefokus om die wetenskap onderliggend aan koringgluten se funksionaliteit in deeg-gebaseerde voedsels te verstaan en tegnologieë te ontwerp om dit te vervang. Die doelwit is om dit moontlik te maak om, benewens koring, bekostigbare, voedsame stapelvoedsels te produseer wat oor die algemeen beter aangepas is vir verbouing in Afrika suid van die Sahara. Sy navorsingsgroep het opmerklike sukses behaal met die ontwikkeling van 'n hoë-kwaliteit beskuitjie wat uit 'n mengsel van sorghum en peulgroentes bestaan. Die groep het ook metodes ontwikkel om gashoudende, koringmeelagtige deeg te ontwikkel wat gebaseer is op seien, die prolamientipe proteïene in mielies.

'n Verwante aspek van die groep se navorsing behels die gebruik van die storingsproteïene van mielies en sorghum, wat uniek hidrofobies en onaktief is, om mikrovoedingstowwe en nutraceutiese produkte te enkapsuleer sodat dit mondelings geneem kan word en steeds die dunderm sal bereik. Onlangse bevindings toon dat die vasvang van gekondenseerde sorghum-tanniene in mikropartikels vervaardig uit sorghumproteïene bloedglukosevlakke kan verlaag deurdat dit die vertering van stylsel inhibeer. Sulke mikropartikel-nutraceutiese produkte het potensiaal as 'n eenvoudige, bekostigbare nie-geneesmiddel terapie vir die voorkoming en verligting van tipe 2 diabetes.

Prof Taylor is in 2012 gekies as 'n genoot van die Akademie van die Internasionale Vereniging vir Graanwetenskap en -tegnologie (Academy of the International Association for Cereal Science and Technology; ICC). In 2015 is hy gekies as Ere Lewenslange President van die ICC. Hy is 'n B1-gegradeerde navorser.

Prof Taylor ke profesa ka Kgorong ya Saense ya Dijo ka Lefapheng la Disaense tša Tlhago le Temo le Moetapele wa Morero wa Saense ya Phepo mo Instituting ya Dijo, Phepo le Go phela gabotse ga batho.

Maikemišetšo a gagwe a bophelo ke go nyakišiša boleng bja phepo le go šogana le leroro la dithoro, kudu mabelethoro, lefela le leotša, ka maikemišetšo a go kaonafatša tšhireletšo ya dijo le go tšweletšapele intasteri ya dijo tša maphelo ka Afrika ya borwa bja Sahara. Maikemišetšo a a akaretša gape tšweletšopele ya ditheknolotši tša tirišo tšeo di theilwego dikutollong tša nyakišišo le go tsenya tirišong mo intastering ya go šogana le dijo tša gae.

Mo mengwageng ya kgauswinyane, nyakišišo ya gagwe e nepišitše mo kwešišong ya saense ya ka moo bolepu bja korong bo šomago ka gona mo dijong tšeo di theilwego go hlaleng le go tšweletšapele ditheknolotši go ema legato la yona. Maikemišetšo ke go kgontšha tšweletšo ya dijo tša theko ya fase tša phepo go šomišwa dithoro sebakeng sa korong, tšeo ka kakaretšo di amantšhwago le tlhagolo ka Afrika ya borwa bja Sahara. Sehlopha sa gagwe sa dinyakišišo se fihleletše katlego ye bohlokwa mo tšweletšopeleng ya dipeskete tša boleng bja godimo go tšwa go mabelethoro ao a hlakantšwego le morogodiphotlwa. Sehlopha se tšweleditše gape mekgwa ya go tšweletša seswaragase, dihlama tšeo o ka rego ke folouro ya korong tšeo di theilwego godimo ga zeine, mohuta wa proteine ya go tšwa lefeleng.

Lekala leo le amanago le nyakišišo ya sehlopha ke go šomišwa proteiene ya lefela le mabelethoro, tšeo di lego haetrofobiki le go hloka matšato, go akaretšago dimaekronyutrient le dinyutrasethikhale tša go išwa ka molomo go ya lelaneng. Dikutollo tša kgauswinyane di bontšha kakaretšo ya mabelethoro a thanini ya bothata yeo e dirilwego go tšwa proteining ya mabelethoro e ka fokotša swikiri ye e lego mading ka go fokotša tšhilego ya setatšhe. Ditsekana tšeo tše di nnyane tša dinyutrasethikhale di na le bokgoni bjalo ka terapi ya go se be ya seokobatši ya bonolo ya theko ya fase. Gape e kaonafatša taepitisi ya mohuta wa 2.

Ka 2012, Prof Taylor o kgethilwe bjalo ka modirišani wa Akademi ya Mokgatlo wa Ditšhabatšhaba wa Saense le Theknolotši tša Leroro (ICC) gomme ka 2015 o kgethilwe bjalo ka Mopresidente wa Tlhompho (Bophelo ka moka) wa ICC. Ke monyakišiši yo a lekanyeditšwego go B1.



Professor **John Taylor**

Prof Frans Viljoen is a professor in and Director of the Centre for Human Rights in the Faculty of Law. His research area is international human rights law, with a focus on the African regional human rights system that was established under the auspices of the African Union.

As Director of the Centre, he has been responsible for steering and supervising its advocacy of and training projects in the African regional human rights system, and secured donor funding to support the Centre's projects. In 2015 the Centre introduced the first on-line master's programme in the Faculty: the LLM/MPhil (Sexual and Reproductive Rights in Africa). Six international conferences have been hosted by the Centre and it has established a number of Human Rights clinics that prepare policy interventions in respect of real-life situations related to human rights in Africa. In 2012, the Centre received the Human Rights Prize of the African Union's Commission on Human and Peoples' Rights for the promotion and protection of human rights in Africa.

Prof Viljoen has published widely on international human rights law, including the book, *International human rights law in Africa* (Oxford University Press, second edition, 2012), numerous articles in peer-reviewed journals and ten chapters in international compilations of essays. He has co-edited two volumes of essays. He holds a B1 rating from the NRF.

He is editor-in-chief of the *African Human Rights Law Journal*; co-editor of the English and French versions of the *African Human Rights Law Reports*; and founding member of the editorial committee of Pretoria University Law Press (PULP). He has been the academic co-ordinator of the LLM/MPhil (Human Rights and Democratisation in Africa) programme for most years since 2000. The programme is presented in collaboration with twelve partner law faculties across Africa. Every year, around 30 students from all over Africa are selected for the programme. Through their subsequent activities, these alumni have made significant contributions to greater awareness and knowledge of human rights in Africa.

In the last five years, ten students completed their doctoral studies and graduated under his supervision; he co-supervised two completed doctoral studies; and he was the grant holder of two post-doctoral fellows. He has visited and taught at a number of international institutions, including Oxford University, Essex University, Abo Akademi in Finland, the University of Peace in Costa Rica, Addis Ababa University, and Eduardo Mondlane University in Mozambique.

Prof Viljoen is 'n professor en Direkteur van die Sentrum vir Menseregte in die Fakulteit Regsgeleerdheid. Sy navorsingsgebied is internasionale menseregteregtegewing met die fokus op die streeksmenseregtestelsel in Afrika wat onder toesig van die Afrika-Unie tot stand gebring is.

As Direkteur van die Sentrum is hy verantwoordelik vir rigtinggewing aan en toesig oor die Sentrum se bewusmakings- en opleidingsprojekte rakende die Afrikastreek se menseregtestelsel en het hy ook fondse van skenkers bekom ter ondersteuning van die Sentrum se projekte. Die Sentrum het in 2015 die eerste aanlyn meestersprogram in die Fakulteit geloods, te wete die LLM/MPhil (Seksuele en Reprodusieregte in Afrika). Ses internasionale konferensies is reeds deur die Sentrum aangebied en daar is ook 'n aantal menseregteklíníe tot stand gebring om beleidsintervensies oor werklike menseregte-situasies in Afrika voor te berei. In 2012 het die Sentrum die Menseregteprys van die Afrika-Unie se Kommissie oor Mense- en Volkeregte gekry vir sy bevordering en beskerming van menseregte in Afrika.

Prof Viljoen publiseer wyd oor internasionale menseregteregtegewing, insluitende 'n boek getitel, *International human rights law in Africa* (Oxford University Press, tweede uitgawe, 2012), talle artikels in portuurbeoordeelde vaktydskrifte en tien hoofstukke in internasionale essaybundels. Hy was mederedakteur van twee essaybundels. Die NNS het 'n B1-gradering aan hom toegeken.

Hy is hoofredakteur van die *African Human Rights Law Journal*; mederedakteur van die Engelse en Franse weergawes van die *African Human Rights Law Reports*; en 'n stigterslid van die redaksionele komitee van Pretoria University Law Press (PULP). Sedert 2000 is hy gereed die akademiese koördineerder van die LLM/MPhil (Menseregte en Demokratiesing in Afrika). Die program word in samewerking met 12 regs fakulteitvennote in Afrika aangebied. Daar word jaarliks sowat 30 studente van oral uit Afrika vir die program gekies. Na voltooiing van die program maak hierdie alumni betekenisvolle bydraes tot 'n groter bewussyn en kennis van menseregte in Afrika.

Die afgelope vyf jaar het tien doktorale studente hulle studie onder sy toesig voltooi en hy was medetoesighouer van twee doktorale graduandi en die beursohouer van twee postdoktorale genote. Hy het besoek gebring en klasgegee aan verskeie internasionale instellings, insluitende Oxford-universiteit, Essex-universiteit, Abo Akademi in Finland, die Vredesuniversiteit in Costa Rica, Addis Ababa-universiteit en Eduardo Mondlane-universiteit in Mosambiek.

Prof Frans Viljoen ke profesa le Molaodimogolo wa Senthara ya Ditokelo tša Batho ka Lefapheng la Molao. Karolo ya nyakišišo ya gagwe ke molao wa ditokelo tša batho wa ditšhabatšhaba, ka nepišo ya mokgwa wa ditokelo tša batho tša selete sa Afrika tšeo di thomilego ka fase ga thekgo ya Kopano ya Afrika.

Bjalo ka Molaodimogolo wa Senthara, o bile le maikarabelo a go laetša le go lekola thekgo ya yona le tlhahlo ya diprotšeke mo seleteng sa Afrika sa mokgwa wa ditokelo tša batho, le go hwetša moabi wa tšhelete go thekga diprotšeke tša Senthara. Ka 2015 Senthara e hlomile lenaneo la mastase la on-line ka Lefapheng: LLM/MPhil (Sexual and Reproductive Rights in Africa). Dikhonferense tša ditšhabatšhaba tše tshela di swerwe ke Senthara gomme e thomile dikliniki tše mmalwa tša ditokelo tša batho tša Afrika. Ka 2012, Senthara e amogetše Sefoka sa Ditokelo tša Batho tša Khomišene ya Ditokelo tša Batho le Setho ya Kopano ya Afrika ka kgodišo le tšhireletšo ya ditokelo tša batho ka Afrika.

Prof Viljoen o phatlaladitše ka bophara ka molao wa ditokelo tša batho wa ditšhabatšhaba, go akaretša puku ya *International human rights law in Africa* (Kgatišo ya Yunibesithi ya Oxford, kgatišo ya bobedi, 2012), diathekele tše mmalwa ka dijenaleng tše di lekotšwego ke badirišani le dikgaolo tše lesome ka dikgoboketšong tša ditšhabatšhaba tša ditaodišo. O rulagantše mmogo divolume tše pedi tša ditaodišo. O na le tekanyetšo ya B1 go tšwa NRF. Ke morulaganyimogolo wa *African Human Rights Law Journal*; morulaganyimogolo wa Seisemane le Sefora wa African Human Rights Law Reports; le leloko leo le hlomilego komiti ya barulaganyi ya Kgatišo ya Molao ya Yunibesithi ya Pretoria (PULP) E bile mkgokaganyi wa thuto wa lenaneo la LLM/MPhil (Human Rights and Democratisation in Africa) mengwaga ye mentši go tloga ka 2000. Lenaneo le abja ka tirišano le badirišani ba lesomepedi ba mafapha a molao go phatlalala le Afrika. Ngwaga ka ngwaga, baithuti bao e ka bago ba 30 go tšwa Afrika ka moka ba kgethelwa lenaneo le. Ka mešongwana ya bona ya go latela, baithuti ba ba maloba ba kgathile tema ye kgolo temošong ye kgolo le tebo ya ditokelo tša batho ka Afrika. Mo mengwageng ye mehlang ya go feta, baithuti ba lesome ba phethile dithuto tša bongaka gomme ba aloga ka fase ga tekolo ya gagwe; o lekotšemmogo dithuto tša bongaka tšeo di phethilwego; gomme o na le thekgo ya ditšhelete ya badirišani ba babedi ba ka morago ga bongaka.

O etetše le go ruta diinstituting tše mmalwa tša ditšhabatšhaba, go akaretša Yunibesithi ya Oxford, Yunibesithi ya Essex, Akademi ya Abo ka Finland, Yunibesithi ya Peace ka Costa Rica, Yunibesithi ya Addis Ababa, le Yunibesithi ya Eduardo Mondlane ka Mozambique.



Professor **Frans Viljoen**



Exceptional Young Researchers

Uitnemende Jong Navorsers

Banyakišiši ba baswa bao ba Atleilego Kudu

This award is given to exceptional young achievers in the field of research, as seen against the University's strategic goals of achieving academic excellence, international competitiveness and local relevance. Any person who has been evaluated by the NRF as a P-rated researcher automatically enjoys Exceptional Young Researcher status.

Hierdie toekenning word op grond van uitnemende prestasie aan jong akademici op die gebied van navorsing gemaak, gesien in die lig van die Universiteit se strategiese doelwitte van akademiese uitnemendheid, internasionale mededingendheid en plaaslike relevansie. Enige persoon wat deur die NNS as 'n P-gegradeerde navorser geëvalueer word, verkry outomaties die status van 'n Uitnemende Jong Navorser.

Banyakišiši ba baswa ba go Atlegilego go fetiša Sefoka se se abelwa baatlegi ba go tšwelela ka magetla lekaleng la dinyakišišo, bjalo ka ge go laeditšwe ka lenaneong la maano a Yunibesithi a go fihlelela bothakga, phenkgišano ya boditšhabatšhaba le maswanedi a selegae. Motho mang le mang yo a lekotšwego ke NRF bjalo ka monyakišiši wa maemo P o kgotsofatša dinyakwa tša gotsenela legoro la Monyakišiši o Moswa wa go atlega go fetiša.



Prof De Bruyn is an associate professor in the Department of Zoology and Entomology in the Faculty of Natural and Agricultural Sciences and a research associate and executive member of its world renowned Mammal Research Institute (MRI). In addition he is the Principal Investigator and Field Operations Manager for the MRI's Marion Island Marine Mammal Programme (MIMMP).

His research focus is mainly on the population ecology of large mammals, both aquatic and terrestrial, with a specific interest in the fundamental drivers of population regulation in top marine predators. Population level research on these study subjects (large wild mammals) requires dedicated, long-term monitoring and knowledge of various data collection procedures in the field. A pivotal interest is therefore the improvement of field methodology to facilitate the assessment of certain life history characteristics. Prof De Bruyn has a keen interest in innovations in photogrammetry, as directed at measuring animal morphometrics and body size. He is also interested in the implications of animal behaviour for variation in life history parameters. His research outputs are not restricted to these fields, and he has produced research outputs and peer-reviewed opinion correspondence on a range of ecological topics.

Prof De Bruyn was awarded a Y1 rating by the NRF in 2014/2015. He is an associate editor of the journal *African Zoology*, a regular reviewer for the international journals *Biology Letters*, *Animal Behaviour*, *Marine Mammal Science*, and has published more than 65 articles in international journals such as *Nature*, *Biological Reviews*, and *Molecular Biology & Evolution*. He has spent two overwintering expedition years as a biologist on sub-Antarctic Marion Island, and undertook relief expeditions to Gough Island as a member of South African national expedition teams. He also undertook summer expeditions to the remote Bouvet and King George islands (in the maritime Antarctic), as an invited member of Norwegian and German expedition teams, respectively. He is a member of the Scientific Committee of Antarctic Research (SCAR)'s Expert Group on Birds and Marine Mammals (EGBAMM). In addition, he is experienced in terrestrial field work in Africa, having worked as a field guide, ranger and researcher in various national parks and nature reserves in southern Africa. He is an active member of several professional societies, including the Society for Marine Mammalogy (USA), the Royal Society of South Africa (Northern Branch committee member and Treasurer), the Zoological Society of Southern Africa and the South African Wildlife Management Association.

Prof De Bruyn is 'n medeprofessor in die Departement Dierkunde en Entomologie in die Fakulteit Natuur- en Landbouwetenskappe en 'n navorsingsgenoot en uitvoerende lid van dié Fakulteit se wêreldberoemde Soogdiernavorsingsinstituut (SNI). Hy is ook die Hoof-ondersoeker en Veld Operasionele Bestuurder vir die SNI se Marioneiland Marienesoogdierprogram (MIMMP).

Sy navorsing fokus hoofsaaklik op die bevolkingsekologie van groot mariene en landsoogdiere met 'n spesifieke belangstelling in die fundamentele dryfkragte onderliggend aan bevolkingsregulering in top mariene roofdiere. Bevolkingsvlaknavorsing oor hierdie studieonderwerpe (groot wilde soogdiere) verg toegewyde, langtermyn monitering en 'n kennis van verskeie prosedures vir veld-datainsameling. 'n Sentrale belangstelling is dus die verbetering van veldmetodologie ten einde die assessering van sekere eienskappe van lewensgeskiedenis te fasiliteer. Prof De Bruyn is baie geïnteresseerd in innovasies in fotogrammetrie soos van toepassing op die meting van diere se morfometrie en liggaamsgrootte. Hy is ook geïnteresseerd in die implikasies wat dieregedrag vir variasie in parameters van lewensgeskiedenis inhou. Sy navorsingsuitsette is egter nie tot hierdie velde beperk nie – hy het ook navorsingsuitsette en portuurbeoordeelde opiniekorrespondensie oor 'n verskeidenheid onderwerpe in die ekologie geproduseer.

In 2014/2015 het die NNS 'n Y1-gradering aan prof De Bruyn toegeken. Hy is 'n mederedakteur van *African Zoology*, 'n gereelde beoordeelaar vir die internasionale vaktydskrifte *Biology Letters*, *Animal Behaviour* en *Marine Mammal Science* en het meer as 65 artikels in internasionale joernale soos *Nature*, *Biological Reviews* en *Molecular Biology & Evolution* gepubliseer. Hy het twee oorwinteringsekspedisiesjare as bioloog op sub-Antarktiese Marioneiland deurgebring en steuneksedisies na Gough-eiland onderneem as lid van Suid-Afrikaanse nasionale eksedisiespanne. Hy het ook somereksedisies na die afgeleë Bouvet- en Koning George-eilande (in maritieme Antarktika) meegemaak as genooide lid van Noorweegse en Duitse eksedisiespanne, respektiewelik. Hy is 'n lid van die Wetenskaplike Komitee van Antarktiese Navorsing (SCAR) se Ekspertgroep oor Voëls en Mariene Soogdiere (EGBAMM). Daarbenewens is hy ervare in grondveldwerk in Afrika aangesien hy as veldgids, veldwagter en navorser in verskeie nasionale parke en reserwate in suider Afrika gewerk het. Hy is 'n aktiewe lid van verskeie professionele verenigings, insluitende die Vereniging vir Mariene Soogdierkunde in die VSA, die Noordelike Tak van die Koninklike Vereniging van Suid-Afrika waarvan hy 'n lid en tesourier is, die Dierkundige Vereniging van Suider-Afrika en die Suid-Afrikaanse Vereniging vir Wildlewebestuur.

Prof De Bruyn ke mothuša profesa ka Kgorong ya Thutadiphoofolo le Entomolotši ka Lefapheng la Disaense tša Tlhago le Temo le mothuša dinyakišišo le lellokophethiši la Institute ya Dinyakišišo ya Diamuši (MRI) ya go tuma lefaseng. Godimo ga moo ke Monyakišišimogolo le Molaodi wa Dinyakišišontle tša MRI tša Lenaneo la Diamuši tša Lewatle tša Sehlakahlaka sa Marion (MIMMP)

Nepo ya gagwe ya nyakišišo e go ekholotši ya diphedi tša diamuši tše dikgolo, ka moka tša meetseng le tša naga, ka kgahlego ye e itšego ya mo ketapeleng ya motheo ya taolo ya diphedi go dibata tša godimo tša lewatle. Nyakišišo ya legato la diphedi mo dithutong tše tša nyakišišo (tše dikgolo, diamuši tša lešoka) di nyaka ditshepedišo tša karolo tša boikgafo, tekolo ya nako ye telele le tsebo ya kgoboketšo ya data ya go fapana. Kgahlego ye bohlokwa ke kaonafatšo ya karolo ya thutamoruto go kgonagatša tekanyo ya dipharologantšho tše dingwe tša histori ya bophelo. Prof De Bruyn o na le kgahlego ye kgolo mo dikaonafatšong tša fotokrametri, bjalo ka ge e laeditšwe mo tekolong ya dimofometriki le bogolo bja mmele. O na le kgahlego gape mo tirišong ya maitshwara a diphoofolo mo phapanong ya mellwane ya histori ya bophelo. Dipelo tša nyakišišo ya gagwe ga se tša kgaoletšwa dikarolong tše, gomme o tšweleditše dipelo tša nyakišišo le dikgokaganyo tša dikgopolotš tše di sekasekilwego ke badirišani mo mohlwaeleng wa direrwa tša ekholotši.

Prof De Bruyn o abetšwe tekanyetšo ya NRF ya Y1 ka 2014/2015. Ke mothuša morulaganyi wa jenale ya *African Zoology*, tshekatsheko ye e tlwaelegilego ya dijenale tša ditšhabatšhaba, *Biology Letters*, *Animal Behaviour*, *Marine Mammal Science*, gomme o phatlaladitše diathekele tša go feta tše 65 mo dijenaleng tša ditšhabatšhaba go swana le *Nature*, *Biological Reviews*, le *Molecular Biology & Evolution*. O feditše leeto la mengwaga ye mebedi a tšireletša diphedi marengeng bjalo ka mopayolotši mo Sehlakahlakeng sa borwa bja Antarctic Marion, gomme a tšea maeto a mabedi a kimollo go ya Sehlakahlakeng sa Gough bjalo ka leloko la sehlopha sa leeto la setšhaba la Afrika Borwa. O tšere gape maeto a selemo a dihlakahlaka tša kgole tša Bouvet le King George (mo lewatleng la Antarctic), bjalo ka leloko leo le laleditšwego la mmogo sehlopha sa leeto la Norwegian le German. Ke leloko la Komiti ya Saense ya Nyakišišo ya Antarctic (SCAR) ya Sehlopha sa Ditsebi ka ga Dinonyana le Diamuši tša Lewatle (EGBAMM). Go tlaletšwa seo o na le maitemogelo a nyakišišontle ya naga ka Afrika, bjale ka ge a šomile bjalo ka mohlalhi wa lefelo, mohlakomedi le monyakišiši mo diphakeng tša setšhaba le malotatlhago mo borwa bja Afrika. Ke leloko la mafolofolo la mekgatlo ya profesene ye mmalwa, go akaretša Lekgotla la Diamuši tša Lewatle (USA), Lekgotla la Magoši la Afrika Borwa (leloko la komiti le ramatlotlo wa Lekala la Leboa), Lekgotla la Thutadiphoofolo la Borwa bja Afrika le Mogkatlo wa Taolo ya Bophelo bja Lešoka wa Afrika Borwa.



Professor **Nico de Bruyn**

Dr Le Roux is a senior lecturer in the Department of Plant Science in the Faculty of Natural and Agricultural Sciences.

His research focuses on understanding the ecological consequences of biotic interactions, with the aim of improving predictions of the impacts of climate change. While the influence of negative interactions between species have traditionally been viewed as important, his research is highlighting how positive (in other words, facilitative) interactions may be playing a far greater role in structuring ecological communities than previously thought. Indeed, results from his research in Finnish Lapland and on sub-Antarctic Marion Island have shown how plants under abiotically stressful conditions benefit strongly from growing in association with other plants, whereas the reverse is commonly observed in more moderate environments.

Dr Le Roux presents several undergraduate and postgraduate modules, covering both traditional and contemporary topics in ecology. He has been involved in the development of the Statistics for Biological Sciences module in collaboration with other ecologists and colleagues in the Department of Statistics, to address the important gap in postgraduate statistical skills in several research fields. Dr Le Roux currently supervises a research team of seven postgraduate students conducting research in the sub-Antarctic and the Drakensberg.

He received a Y1 rating from the NRF in 2015, and serves on the editorial board of *Plant Ecology* and *Austral Ecology*, both of which are international ISI-rated journals. He has published 36 peer-reviewed articles in international journals (eliciting 515 citations), and has written three book chapters. Reflecting the integrative nature of ecological research, Dr Le Roux collaborates widely, both locally and internationally.

Dr Le Roux is 'n senior lektor in die Departement Plantkunde in die Fakulteit Natuur- en Landbouwetenskappe.

Sy navorsing fokus op die verstaan van ekologiese gevolge van biotiese interaksies met die oog op die verbetering van voorspellings oor die gevolge van klimaatsverandering. Waar die invloed van negatiewe interaksies tussen spesies tradisioneel as belangrik beskou is, toon sy navorsing hoe positiewe (maw fasiliterende) interaksies moontlik 'n veel groter rol in die strukturering van ekologiese gemeenskappe speel as wat voorheen gedink is. Resultate van sy navorsing in Finse Lapland en op sub-Antarktiese Marioneiland het getoon dat plante onder abiotiese stresvolle omstandighede grootliks daarby baat om in assosiasie met ander plante te groei terwyl die teenoorgestelde algemeen waargeneem word in meer gematigde omgewings.

Dr Le Roux bied verskeie voor- en nagraadse modules aan wat sowel tradisionele as eietydse onderwerpe in die ekologie dek. Hy is betrokke by die ontwikkeling van 'n module oor statistiek in die biologiese wetenskappe in samewerking met ander ekoloë en kollegas in die Departement Statistiek met die doel om die belangrike tekorte in nagraadse statistiese vaardighede in verskeie navorsingsvelde aan te spreek. Dr Le Roux tree tans op as toesighouer van 'n span van sewe nagraadse studente wat navorsing in die sub-Antarktiese streek en die Drakensberge doen.

Die NNS het in 2015 'n Y1-gradering aan hom toegeken en hy dien op die redaksionele raad van *Plant Ecology* en *Austral Ecology* wat albei internasionale ISI-gegradeerde vaktydskrifte is. Hy het 36 portuurbeoordeelde artikels in internasionale vaktydskrifte gepubliseer (wat 515 sitasies tot gevolg gehad het) en het drie boekhoofstukke geskryf. As 'n weerspieëling van die integrerende aard van ekologiese navorsing werk dr Le Roux saam met 'n wye spektrum van medewerkers, sowel plaaslik as internasionaal.

Ngaka Le Roux ke mofahlošimogolo ka Kgorong ya Saense ya Dimela ka Lefapheng la Disaense tša Tlhago le Temo.

Nyakišišo ya gagwe e nepiša go kwešiša ditlamorago tša ekholotši ya tsenelelano, ka maikemišetšo a go kaonafatša kakanyo ya khuetšo ya phetogo ya klaemete. Mola khuetšo ya tsenelelano yeo e sego botse gare ga diphedi e bego e tšewa go ba ye bohlokwa mathomong, nyakišišo ya gagwe e bontšha ka moo tsenelelano (ka mantšu a mangwe, kgonagatšo) ye botse e ka ba go e raloka karolo ye bohlokwa ka go bopa ditšhaba tša ekholotši go feta ka moo go bego go gopolwa pele. Ka nnete, dipelo go tšwa nyakišišong ya gagwe kua Finnish Lapland le Sehlakahlakeng sa borwa bja Antarctic Marion e bontšhitše ka moo dimela tša ka fase ga maemo a kgatelelo ya abiothiki di holegago go goleng ka kgokagano le dimela tše dingwe, mola lehlakore le lengwe le etšwe tlhoko ka ditikologong tše di lekanetšego.

Ngaka Le Roux o aba dithutwana tša boithutelatikrii le tša dialogadigolwane, a akaretša direrwa tša ekholotši tša peleng le tša bjale. O be a swaragane le tšweletšopele ya thutwana ya Dipalopalo tša Disaense tša Payolotši ka tirišano le ditsebi tša ekholotši le badirišani ba bangwe ka Kgorong ya Dipalopalo, go šogana le sekgala se bohlokwa mo mabokgoning a dipalopalo mo dikarolong tša nyakišišo tše mmalwa. Ngaka Le Roux gonabjale o lekola sehlopha sa banyakišiši sa baithuti ba 7 ba dialogadigolwane bao ba dirago nyakišišo borwa bja Antarctic le Drakensberg.

O amogetše tekanyetšo ya Y1 go tšwa NRF ka 2015, gomme o thuša mo botong ya *Plant Ecology* le *Austral Ecology*, ka moka ga tšona ke dijenale tša ditšhabatšhaba tše di lekanyeditšwego ke ISI. O phatlaladitše diathekele tše di sekasekilwego mmogo tše 36 ka jenale ya ditšhabatšhaba (tša hwetša ditsopolwa tše 515), gomme o ngwadile dikgaolo tša dipuku tše tharo. Ge a tšweletša mokgwa wa tsenelelano wa nyakišišo ya ekholotši, Ngaka Le Roux o dirišana ka bophara, ka moka mo gae le ditšhabatšhabeng.



Dr **Peter le Roux**



Exceptional Supervisor Award

Toekenning vir Uitnemende Toesighouer

Sefoka tša Molekodi wa Go ikgetha

This award recognises the contribution of members of our academic staff who excel as supervisors of postgraduate research students. The award is made on the grounds of exceptional performance measured in terms of the students' academic achievement. Evidence of excellent mentorship and guidance provided to young researchers and academic scholars are also taken into consideration.

Hierdie toekenning gee erkenning aan die bydrae van ons akademiese personeel wat uitblink as toesighouers van nagraadse navorsingstudente. Die toekenning word gedoen op grond van besondere prestasie gemeet aan die studente se akademiese prestasie. Bewyse van uitstekende mentorskap en leiding aan jong navorsers en akademiese vakkundiges word ook in ag geneem.

Difoka tše di lemoga tema yeo e kgathilwego ke maloko a badirišani ba thuto bao ba šomilego gabotse bjalo ka balekodi ba baithuti ba nyakišišo ya dialogadigolwane. Difoka di dirwa ka mabaka a phethagatšo ya go ikgetha yeo e lekanywago go ya ka diphihlelelo tša thuto tša baithuti. Bohlatse bja tlhahlo ye botsebotse le tlhahlo ye e filwego banyakišiši ba bafsa le baithuti ba thuto le bona ba lebeledišišwa.



Prof Meyer is a professor, Head of the Department of Mechanical and Aeronautical Engineering, and Chair of the School of Engineering in the Faculty of Engineering, Built Environment and Information Technology. Prof Meyer has been at the University of Pretoria for 14 years.

His area of research is convective heat transfer, which relies on the engineering sciences of heat transfer, fluid mechanics and thermodynamics. He has supervised 44 master's and 20 PhD students. His masters students' final marks are consistently over 75%, and all have completed their degrees within two to three years. Prof Meyer has consistently supported the professional development of his postgraduate students by encouraging them to present papers at international conferences, and co-authoring papers with them to raise their profiles and standing. His students have consistently won UP Vice-Chancellor's Awards for excellent dissertations, and several have won external awards for excellent research. They are unflinching in their praise for his dedication to their research, to achieving high standards, and their wellbeing.

Prof Meyer is professor, Hoof van die Departement Meganiese en Lugvaartkundige Ingenieurswese en Voorsitter van die Skool vir Ingenieurswese in die Fakulteit Ingenieurswese, Bou-omgewing en Inligtingtegnologie. Hy is al vir 14 jaar verbonde aan die Universiteit van Pretoria.

Sy navorsingsterrein is konvektiewe warmte-oordrag, wat steun op die ingenieurswetenskappe van warmte-oordrag, stromingsleer en termodinamika. Hy was tot dusver die studieleier van 44 meesters en 20 PhD studente. Sy meesters studente se finale punte is deurgaans hoër as 75% en almal voltooi hulle grade binne twee tot drie jaar. Prof Meyer ondersteun die professionele ontwikkeling van sy nagraadse studente konsekwent deur hulle aan te moedig om referate by internasionale konferensies aan te bied en hy tree as mede-outeur op om hulle profiel en statuut te verhoog. Sy studente wen gereeld UP Visekanselierstoekennings vir uitstekende skripsies, en verskeie het toekennings van buite gekry vir uitstaande navorsing. Hulle is altyd vol lof vir sy toewyding aan hulle navorsing, aan die bereiking van hoë standaarde en hul welsyn.



Professor **Josua Meyer**

Laureaattoekennings vir Uitnemendheid in Onderrig en Innovasie

The Laureates are awarded to nominated projects that display teaching practices with clear purpose and intent, with strong alignment between the different elements in the broader context, that address identified needs or gaps with the aim of innovation to optimise teaching and learning. These nominations show significant evidence of impact on student learning, are sustainable and can be replicated in other contexts. These projects contribute to best practice in teaching and display significant evidence of innovation that addresses the identified challenges.

Die Laureaattoekennings word gemaak aan genomineerde projekte wat bewys lewer van onderrigpraktyke met duidelike doelwitte en goeie belyning tussen die verskillende elemente in die breër konteks, wat spesifieke behoeftes of gapings aanspreek en innovasie ten doel het om onderrig en leer te optimaliseer. Hierdie nominasies lewer betekenisvolle bewys van impak op studente-leer, is volhoubaar en kan in ander kontekste herhaal word. Die projekte dra by tot beste praktyk in onderrig en toon innovasie wat geïdentifiseerde uitdagings aanspreek.

Ba Laureates ba abetšwe go kgetho ya diprotšeke tšeo di bontšhago ditirišo tša go ruta ka maikemišetšo ao a bonagalago le go ikemišetša, ka peakanyo ya go tia gare ga dikokwane tša go fapana ditikologong ka bophara, tšeo di šoganago le dinyakwa tše di lemogilwego goba dikgoba ka maikemišetšo a botšo a go kaonafatša go ruta le go ithuta. Dikgetho tše di bontšha bohlatse bjo bohlokwa bja khuetšo mo go ithuteng ga baithuti, e a thekgwa gomme e ka dirišwa ditikologong tše dingwe. Protšeke tše di kgatha tema go tirišo ye botse ya go ruta gomme di bontšha bohlatsebjo bohlokwa go botšo bjo šoganago le ditlhotlo tše di lemogilwego.



Prof Patricia Forbes, an associate professor in Analytical Chemistry, has a passion for teaching the next generation of chemists and believes in encouraging students to develop an understanding of key fundamental concepts via active and inquiry-based learning.

Modern commercial scientific instrumentation used to analyse samples is built so as to be rugged and to provide reproducible and accurate analytical results. As a consequence, user interaction with the actual instrument components is usually very limited. This has a concomitant disadvantage in the training of students, as opportunities for hands-on learning are very limited and therefore a student's understanding of what goes on in the 'black box' of instruments may be very poor or even incorrect. This is particularly true in respect of spectrophotometry, which utilises light to determine what a sample contains and in which quantities. Spectrophotometry is an important component of many tertiary science courses and is applied in numerous industries, for example to analyse pharmaceuticals and food products.

To address this problem and the demands resulting from increasing student numbers and limited resources, Prof Forbes developed an educational spectrophotometer (called the SpecUP), which students can assemble from a kit and then use to generate analytically useful results. The SpecUP costs around R600 whereas an entry-level commercial instrument costs about R30 000, which means that more SpecUP instruments can be acquired. The SpecUP has a unique, open design with moveable components to enhance hands-on and inquiry-based learning. The SpecUP has been used in the CMY383 (Analytical Chemistry III) module at the University of Pretoria since 2014. The project has attracted funding from the African Laser Centre (which promotes photonics in Africa), the Royal Society of Chemistry, and the Department of Science and Technology. As a result, the SpecUP has been rolled out nationally to numerous institutions, including the universities of the Witwatersrand and Stellenbosch, Nelson Mandela Metropolitan University, Walter Sisulu University, Rhodes University and Tshwane University of Technology, in Africa (Tunisia, Namibia, Lesotho, Botswana, Kenya, Swaziland, Zimbabwe, Zambia, Ivory Coast, Egypt) and also to Turkey and Italy. To date, the SpecUP has given rise to a journal paper, five SpecUP workshops and five invited conference presentations.

Prof Forbes received the Chemical Education award of the South African Chemical Institute in 2014 and the prestigious international Wharton QS Reimagine Education Award for Presence Learning in 2015 for the SpecUP project.

Prof Patricia Forbes, 'n medeprofessor in Analitiese Chemie, het 'n passie vir die onderrig van die volgende generasie chemici en glo daarin om studente aan te moedig om deur aktiewe en ondersoekende leer 'n begrip van sleutelkonsepte te ontwikkel.

Hedendaagse kommersiële wetenskapsinstrumente vir die ontleding van monsters word gemaak om lank herhaalbare en akkurate analitiese resultate te lewer. Daar is beperkte interaksie met die komponente van die instrument wat studente se onderrig benadeel aangesien geleenthede vir praktiese leer beperk is. 'n Student se begrip van wat in die instrument se 'swart boks' aangaan kan beperk of selfs verkeerd wees. Dit is veral die geval met spektrofotometrie, wat lig gebruik vir die ontleding van 'n monster. Spektrofotometrie is 'n belangrike deel van talle tersiêre wetenskapskursusse en word in baie nywerhede gebruik, byvoorbeeld om farmaseutiese middels en kosprodukte te ontleed.

Prof Forbes het 'n spektrofotometer spesifiek vir gebruik tydens onderrig (genaamd die SpecUP) ontwikkel. Die SpecUP is 'n stel komponente wat studente aanmekeer kan sit en gebruik om analitiese bruikbare resultate te genereer. Die SpecUP kos sowat R600 per eenheid terwyl 'n intreevlakinstrument omtrent R30 000 kos, wat beteken dat meer SpecUP instrumente aangekoop kan word. Die SpecUP het 'n unieke, 'oop' ontwerp met sigbare, beweeglike komponente wat praktiese en ondersoekende leer moontlik maak en aanmoedig. Die SpecUP word sedert 2014 in die CMY383 (Analitiese Chemie III)-module by UP gebruik. Die projek het fondse van die Afrika-lasersentrum (wat fotonika in Afrika bevorder), die Koninklike Chemiese Vereniging en die Departement van Wetenskap en Tegnologie ontvang. Die SpecUP word nasionaal by die universiteite van die Witwatersrand, Stellenbosch, Nelson Mandela Metropolitaanse Universiteit, Walter Sisulu Universiteit, Rhodes Universiteit en Tshwane Universiteit van Tegnologie gebruik, elders in Afrika (Tunisië, Namibië, Lesotho, Botswana, Kenia, Swaziland, Zimbabwe, Zambië, Ivoorkus, Egipte) en in Turkye en Italië. Die SpecUP het tot dusver 'n joernaalartikel, vyf SpecUP-werkwinkels en vyf genooide konferensieaanbiedings gegenereer.

Prof Forbes het in 2014 die Chemie-onderrigtoekening van die Suid-Afrikaanse Chemie-instituut ontvang en in 2015 die hoog aangeskrewe internasionale Wharton QS Reimagine Education Award for Presence Learning vir die SpecUP-projek.

Prof Patricia Forbes, mothuša profesa ka Khemistri ya Analethiki, o na le phišego ya go ruta moloko wo o tlogo wa ditsebi tša khemistri gomme o kgolwa go hlohleletšeng baithuti go godiša kwešišo ya dikgopolo tša theo ya motheo ka go ithuta ka mafolofolo le go botšiša.

Go diriša saense ya kgwebo ya sebjalebja yeo e šomišitšwego go sekaseka dišupo ke go aga go no swana le go leka le go fa dipoele tšeo di ka sekwasewago gape di ka tšweletšwego gomme e le tša maleba. Bjalo ka dipoele, tsenelano ya bašomiši le dikarolwana tša sedirišwa tša nnete gantši e lekantšwe. Se se na le nyalelano yeo e sego botse mo tlhahlong ya baithuti, ka ge dibaka tša go ithuta ka go dira di lekantšwe ka moo kwešišo ya baithuti ya seo se diregago ka 'lepokising le leso' la didirišwa le ka ba leo le sego maleba gape le se la nepagala. Se ke nnete go lebeletšwe spektrofotometri, yeo e šomišago lesedi go laola gore sešupo se na le eng le bontši bja sona. Spektrofotometri ke karolwana ye bohlokwa ya dithutwana tša saense mo dikolong tša thuto ya godimo gomme e dirišwa diintastering tše dintši, mohlala go sekaseka ditšweletšwa tša dihlare le dijo.

Go šogana le bothata bjo, mmogo le nyakego ye e tšwago go nomoro ye e oketšegago ya baithuti le methopo ye e lekantšwego, Patricia o tšweletšwe spektrofotometri (seo se bitšwego SpecUP), seo baithuti ba ka se tšea go tšwa lepokisaneng gomme ba se šomiša go tšweletšwa dipoele tša mohola tšeo di sekasekilwego. SpecUP e bitša R600 mola sedirišwa sa matseno sa kgwebo se bitša R30 000, seo se ra gore didirišwa tše dintši tša SpecUP di ka hwetšwa gomme go tšea karolo ga baithuti le go ithuta gwa kaonafala. SpecUP e na le moakanyetšo wo o bulegilego wa moswananoši wa dikarolwana tša go šuta go kaonafatša thuto yeo e theilwego go direng le go botšišeng. SpecUP e be e šomišwa ka thutwaneng ya CMY383 (Khemistri ya Analethiki III) Yunibesithing ya Pretoria go tloga ka 2014. Protšeke e gokile thekgo ya ditšhelete go tšwa Senthareng ya Laser ya Afrika (yeo e tšwetšago pele difoteniki tša Afrika). Ka go realo, SpecUP e phatlaladišwe setšhabeng go diinstitšene tše mmalwa, go akaretša diyunibesithi tša Witwatersrand le Stellenbosch, Yunibesithi ya Nelson Mandela Metropolitan, Yunibesithi ya Walter Sisulu, Yunibesithi ya Rhodes le Yunibesithi ya Theknolotši ya Tshwane, le go gongwe mo Afrika (Tunisia, Namibia, Lesotho, Botswana, Kenya, Swaziland, Zimbabwe, Zambia, Ivory Coast, Egypt) le Turkey le Italy. Go fihla lehono, SpecUP e tšweletšwe pampiri ya jenale, ditlahlo tše 5 tša SpecUP le dikabo tša khonferense tše hlano.

Prof Forbes o amogetše sefoka sa Thuto ya Khemikhale sa Institute ya Khemikhale ya Afrika Borwa (South African Chemical Institute) ka 2014 le Sefoka sa Thuto se bohlokwa sa ditšhabatšhaba sa Wharton QS Reimagine (Wharton QS Reimagine Education Award) sa Go ithuta Gonabjale ka 2015.



Individual winner | Individuele
wenner | Mofenyi yo mote

Professor **Patricia Forbes**

Team teaching IFRS rookies

Astrid Schmulian and Stephen Coetzee are staff members of the Department of Accounting in the Faculty of Economic and Management Sciences. A decade ago, South African departments of accounting were populated by chartered accountants with little academic postgraduate qualifications, teaching to a rule-based test, with limited training in research. Entering this environment, Astrid and Stephen became restless and reached beyond South Africa's borders. They sought out leading minds in accounting education and attended several prominent accounting research conferences. Inspired by an International Financial Reporting Standards (IFRS) teachers' workshop in London and research by Stanford's Prof Mary Barth, they introduced Framework-based teaching. Astrid and Stephen strive to be student centered and started teaching as a team. Their classes have evolved into controlled chaos – boot camps, case studies, discussions, debates, opinions and role plays. Funded by Deloitte, they entered the students' universe, embracing YouTube, flipping the content of rule-based lectures out of class into cyber space. They have implemented webinars for tutorials and consultation and crisis management when faced by disruptions to the formal academic programme.

Astrid and Stephen believe students learn actively through observing the lecturers interacting and through their own interaction with the lecturers, with each other and with the material, to think more critically, read more attentively, communicate more precisely – all while growing as independent thinkers and life-long learners.

Research informs Astrid and Stephen's teaching. Funding to support their research was received from the International Association of Accounting Education and Research (IAAER). They were the first South African-based authors to publish in *Issues in Accounting Education* (an A-rated journal in terms of the ABDC ranking list) and have published in other leading international journals on accounting education. Invitations to serve on editorial boards, take part in concurrent and plenary sessions, and act as reviewers for journals have extended their international networks. They have co-presented, with leading international academics, accounting education in the Department's course work master's degree. Through their supervision of students and also through their own doctoral studies, their local research community in the field of accounting education expands continuously. Today they are jointly ranked 8th on the Brigham Young individual accounting education ranking for 2015, making a significant contribution to UP's Top 5 institutional position in terms of this ranking.

Span onderrig IFVS-nuwelinge

Astrid Schmulian en Stephen Coetzee is verbonde aan die Departement Rekeningkunde in die Fakulteit Ekonomiese en Bestuurswetenskappe. 'n Dekade gelede was die onderrig van studente in Suid-Afrikaanse rekeningkundedepartemente toevertrou aan geoktrooierde rekenmeesters met min nagraadse akademiese kwalifikasies, beperkte opleiding in navorsing en 'n onderrig-model van reëls-gebaseerde toetsing. Na hul toetred tot dié omgewing het Astrid en Stephen in die buiteland toonaangewende innovatiewe in rekeningkundeonderrig opgesoek en verskeie hoog aangeskrewe konferensies oor rekeningkundenaspektore bygewoon. Geïnspireer deur 'n konferensie vir dosente van die Internasionale Finansiële Verslagdoeningstandaarde (IFVS) en navorsing deur prof Mary Barth van Stanford, het hulle begin met raamwerkgebaseerde onderrig. Astrid en Stephen streef daarna om student-gesentreerd te wees en het begin om as 'n span klas te gee. Hul klasse het in beheerde chaos ontwikkel – 'boot camps', gevallestudies, besprekings, debatte, opinies en rolspel. Met finansiering van Deloitte het hulle die studente se leefwêreld van YouTube betree en die inhoud van reëlsgebaseerde lesings uit die klas uit die kuberruim ingestuur. Hulle span webinare in vir tutorklasse, besprekings en krisisbestuur wanneer die formele akademiese program ontwrig word.

Astrid en Stephen glo studente leer aktief deur die dosente se interaksie te beleef, deur hul eie interaksie met die dosente, met mekaar en met die materiaal, om meer krities te dink, met meer aandag te lees en meer akkuraat te kommunikeer terwyl hulle groei as onafhanklike denkers en lewenslange leerders.

Astrid en Stephen se onderrig word deur navorsing gelei en hulle het finansiering vir hul navorsing van die Internasionale Vereniging van Rekeningkundeonderrig en -navorsing (International Association of Accounting Education and Research, IAAER) ontvang. Hulle was die eerste Suid-Afrikaansgebaseerde outeurs wat in *Issues in Accounting Education* ('n A-gegradeerde joernaal op die ABDC-ranglys) gepubliseer het, asook in ander toonaangewende internasionale joernale oor rekeningkundeonderrig. Uitnodigings om op redaksionele rade te dien, deel te neem aan gesamentlike en volle sessies en as beoordelaars vir vaktydskrifte op te tree, het hul internasionale netwerke uitgebrei. Hulle het rekeningkundeonderrig in samewerking met vooraanstaande internasionale akademici in die Departement se gedoseerde meestersgraad aangebied. Deur hul studieleiding aan studente en ook deur hul eie doktorsale studie brei hul plaaslike navorsingsgemeenskap op die gebied van rekeningkundeonderrig voortdurend uit. Hulle beklee tans saam die agtste plek op Brigham Young se individuele rekeningkunderanglys vir 2015 en maak so 'n beduidende bydrae tot UP se posisie as een van die Top 5 instansies op dié ranglys.

Sehlopha se ruta bao ba sa thomago IFRS

Astrid Schmulian le Stephen Coetzee ke maloko a badirišani ba Kgoro ya Sešupatlotlo ka Lefapheng la Disaense tša Ekonomi le Taolo. Nakong ya go feta, dikgoro tša sešupatlotlo sa Afrika Borwa di be di tletše ka bosebalamatlotlo ba bantši ba ba hlatsetšwego gomme go na le palo ye nnyane ya bao ba nago le mangwalo a thuto a dialogadigolwane, go ruta teko yeo e theilwego molaong, gomme ba se na tlhahlo ye ntši ka nyakišišo. Go tšena tikologong ye, Astrid le Stephen ba se khutše gomme ba ya ka ntle ga mellwane ya Afrika Borwa. Ba šogana le menagano ya ketapele ka thuto ya sešupatlotlo gomme ba tšenela dikhonferense tše mmalwa tše bohlokwa tša nyakišišo ya sešupamatlotlo. Ba hlhohleditšwe ke tlhahlo ya barutiši ya International Financial Reporting Standards (IFRS) (Maemo a Go bega Ditšhelete a Ditšhabatšhaba) ka London le nyakišišo ka Prof Mary Barth, ba tsebišitše le go ruta mo go theilwego Tlhakong. Astrid le Stephen ba phegetšwe go ama baithuti gomme ba thome ruta bjalo ka sehlopha. Diphapoši tša bona di gotše moo e lego gore di na le mathata a taolo – mananeo a go ithuta kante, dithutotiragalo, dipoledišano, dingangišano, dikgopolo le go tšea dikarolo. Ba thekgwa ka ditšhelete ke Deloitte, ba tsena lefaseng la baithuti, ba amogela YouTube, ba bušetša morago diteng tša bafahloši bao ba theilwego molaong kante ga phapoši mo sekgobeng sa saeba. Ba dirišitše diwepina mo dithutwaneng, dipoledišanong le taolong ya dikhuduego ge ba lebane le ditšhitišo tša lenaneo la semmušo la thuto.

Astrid le Stephen bona ba kgolwa gore baithuti ba ithuta ka mafolofolo ka go bona bafahloši ba tšenelana le ka tšenelano ya bona le bafahloši ba bona, ka go šomišana, le materiale, go nagana ka go tšenelela, go bala ka tlhokomelo, go kgokagana gabotse – ka moka ga ba gola ka go nagana ka go ikemela le baithuti ba nako ye telele.

Nyakišišo e tsebiša go ruta ga Astrid le Stephen. Thekgo ya ditšhelete go thekga nyakišišo ya bona e amogetšwe go tšwa go International Association of Accounting Education and Research (IAAER) (Mokgatlo wa Ditšhabatšhaba wa Thuto ya Sešupatlotlo le Nyakišišo). Ke bona bangwadi ba mathomo ba Afrika Borwa go phatlalatša ka go *Issues in Accounting Education* (jenale yeo e lekaneditšwego go A go ya ka lenaneo la tekanyetšo la ABDC) gomme ba phatlaladitše le ka dijenaleng tše dingwe tša ditšhabatšhaba tša ketapele ka thuto ya sešupatlotlo. Ditaletšo tša go thuša dibotong tša go rulaganya, go tšea karolo mehlakanong ya sammaletse le ye e feletšego, le go šoma bjalo ka basekaseki ba dijenale di katolositše dikgokagano tša bona ditšhabatšhaba. Ba abile mmogo, le dirutegi tša ditšhabatšhaba tša ketapele, thuto ya sešupatlotlo mo tikirring ya mastase ya go tšenela dithutwana tša go ngwala tlhahlobo. Ka go lekola baithuti ga bona le ka dithuto tša bona tša bongaka, nyakišišo ya bona ya gae ya setšhaba mo karolong ya thuto ya sešupatlotlo e gola nako le nako. Lehono ba beilwe mmogo maamong a bo 8 go thuto ya sešupatlotlo ya batho ba Bafa ya Brigham mo tekanyetšong ya 2015, ba kgatha tema ye bohlokwa mo go maamong a institušene a bo 5 a Godimo a UP go ya ka tekanyetšo.



Team winners | Spanwenners | Bafeni
ba sehlopa

Professor **Stephen Coetzee**
Ms | Me | Mmarena **Astrid Schmulian**

Teaching is their passion and motivates their research. Pedagogy should be informed by literature and teaching methods can only be improved if knowledge of other available methods is obtained and developed. Their research underpins their teaching and the two are irrevocably interwoven.

Onderrig is hul passie en motiveer hul navorsing. Pedagogie behoort deur die literatuur gelei te word en onderrigmetodes kan slegs verbeter word indien kennis van ander beskikbare metodes verkry en ontwikkel word. Hul navorsing is die basis van hul onderrig en die twee is onlosmaaklik verweef.

Go ruta ke phišego ya bona gomme ba hlohleletša nyakišišo. Serutiši se swanetšwe go tsebišwa ka dingwalo gomme mekgwa ya go ruta e ka kaonafatšwa ge fela tsebo ya mekgwa ye mengwe yeo e lego gona e hwetšwa gomme e tšwetšwa pele. Nyakišišo ya bona e thekga go ruta ga bona gomme bobedi ba kgokagana go ya go ile.



Community Engagement Award

Toekenning vir
Gemeenskapsbetrokkenheid

Sefoka sa Tlemagano ya Setšhaba

The Community Engagement Award was instituted in 2015 and will be awarded annually to one individual to recognise community engagement as a long-standing and valued tradition in higher education and an extensive, high-impact practice in teaching at the University of Pretoria. The criteria for the award are aligned to those for the MacJannet Award, which is administered by the international Talloires Network. The Vice-Chancellor and Principal, Professor Cheryl de la Rey, is vice-chairperson of the Talloires Network executive committee.

Die Toekenning vir Gemeenskapsbetrokkenheid, wat jaarliks aan een persoon toegeken word, is in 2015 ingestel om erkenning te gee aan gemeenskapsbetrokkenheid as 'n ou en gewaardeerde tradisie in hoër onderwys en 'n uitgebreide, hoë-impakpraktik in onderrig by die Universiteit van Pretoria. Die kriteria vir die toekenning is in lyn met dié vir die MacJannet-toekenning, wat deur die internasionale Talloires-netwerk geadministreer word. Die Visekanselier en Rektor, professor Cheryl de la Rey, is ondervoorsitter van die uitvoerende komitee van dié netwerk.

Sefoka sa Tlemagano ya Setšhaba se thomilwe ka 2015 gomme se tla abelwa motho o motee ngwaga ka ngwaga go leboga tlemagano ya setšhaba bjalo ka setlwaedi sa lebaka le letelele le seo se nago le mohola ka thutong ya godimo le mokgwa wa khuetšo ya godimo, ye e nabilego ka ga go ruta Yunibesithi ya Pretoria. Mabaka a sefoka a amantšhwa le a Sefoka sa Jannet, seo se sepetšwago ke Talloires Network. Motlatšamokhanseliri le Hlogo, Profesa Cheryl de la Rey wa UP, ke leloko la komitiphehiši ya Talloires Network.



University of Pretoria Law Clinic – Frik Grobler and Christo Fritz

UP Law Clinic empowers law students and clients

Over the past three and a half decades, the Law Clinic has taken pride in developing the knowledge, skills and values of final year law students by means of clinical legal education. With offices in Hatfield, Mamelodi and Hammanskraal, the Clinic provides access to the legal system to thousands of indigent South Africans who would otherwise be denied access to justice.

Student involvement in community engagement is accomplished by a dedicated student section headed by Christo Fritz and Frik Grobler. Their duties entail lecturing, supervising, guiding and evaluating the practical work of final year law students, as well as managing the section itself. Apart from their duties as lecturers and supervisors, Christo and Fritz engage directly with the community by representing clients in litigious and non-litigious matters. They also help to raise funds by presenting short courses to colleagues in the legal profession and producing research reports.

Christo Fritz holds an LLB from the University of Pretoria and is currently in his final year of LLM studies. He was admitted as an attorney and notary public in January 2012. After practising in the Free State for a brief period, Christo joined the Law Clinic in 2013. He has since completed advanced courses in sports law, labour law, indigenous law and business rescue.

Frik Grobler joined the Law Clinic as a candidate attorney in 2009. He obtained the degrees BCom (Law) and LLB from the University of Pretoria and holds an advanced certificate in alternative dispute resolution from the Arbitration Foundation of South Africa. He was admitted as an attorney of the High Court of South Africa in 2010 and as a notary public in 2014.

Universiteit van Pretoria Regskliniek – Frik Grobler en Christo Fritz

UP Regskliniek bemagtig regstudente en kliënte

Oor die afgelope drie en 'n half dekades ontwikkel die Regskliniek met trots die kennis, vaardighede en waardes van finalejaar regstudente deur middel van kliniese regsopleiding. Met kantore in Hatfield, Mamelodi en Hammanskraal bied die Kliniek toegang tot die regstelsel aan duisende behoeftige Suid-Afrikaners wat andersins nie toegang tot geregtigheid sou hê nie.

Die studente se gemeenskapsbetrokkenheid is te danke aan 'n toegewyde studenteafdeling onder leiding van Christo Fritz en Frik Grobler. Hulle gee klas, hou toesig, gee leiding, evalueer die praktiese werk van finalejaar regstudente en bestuur die afdeling. Benewens hul pligte as lektore en toesighouers, is Christo en Fritz direk betrokke by die gemeenskap deur kliënte in regsgedinge en nie-geregtelike aangeleenthede te verteenwoordig. Hulle help ook om fondse in te samel deur kortkursusse vir kollegas in die regsprofessie aan te bied en navorsingsverslae te lewer.

Christo Fritz het sy LLB aan die Universiteit van Pretoria behaal en is tans besig met sy finalejaar LLM-studie. Hy is in Januarie 2012 as prokureur en notaris toegelaat. Nadat hy vir 'n wyle in die Vrystaat gepraktiseer het, het Christo in 2013 by die Regskliniek aangesluit. Sedertdien het hy gevorderde kursusse in sportreg, arbeidsreg, inheemse reg en besigheidsredding voltooi.

Frik Grobler het in 2009 as kandidaatprokureur by die Regskliniek aangesluit. Hy het die grade BCom (Regte) en LLB aan die Universiteit van Pretoria behaal en het 'n gevorderde sertifikaat in alternatiewe dispuutresolusie by die Arbitrasiestigting van Suid-Afrika voltooi. Hy is in 2010 as prokureur van die Hooggeregshof van Suid-Afrika toegelaat en in 2014 as notaris.

Kliniki ya Molao ya Yunibesithi ya Pretoria – Frik Grobler le Christo Fritz

Kliniki ya Molao ya UP e matlafatša baithuti le badirelwa

Mo mengwageng ye meraro ya go feta le dipakeng tša seripagare, Kliniki ya Molao e ikgantšha ka go tšwetšapele tsebo, mabokgoni le maitshwaro a baithuti ba ngwaga wa mafelelo ka mokgwa wa thuto ya kliniki ya molao. Ka diofisi tšeo di lego Hatfield, Mamelodi le Hammanskraal, Kliniki e fa phihlelelo ya mokgwa wa molao go dikete tša MaAfrika Borwa a go hloka bao ba tla bego ba ganetšwa ka phihlelo ya toka.

Go tšea karolo ga baithuti mo setšhabeng go fihleletšwe ke karolo ya baithuti ya go ikgafa yeo e etilwego pele ke Christo Fritz le Frik Grobler. Mešomo ya bona e akaretša go fahloša, go lekola, go hlahlala le go lekanyetša mošomo wa tirišo wa baithuti ba molao ba ngwaga wa mafelelo, le go laola karolo ka bo yona. Ntle le mešomo ya bona bjalo ka bafahloši le balekodi, Christo le Fritz ba amana thwii le setšhaba ka go emela badirelwa ka ditaba tšeo ba ratgo go tšea magato a molao le tšeo ba sa ratego go tšea magato a molao. Ba thuša gape go kgoboketša ditšhelete ka go aba dithuto tša nako ye kopana go badirišani bao ba lego profešeneng ya molao le go tšweletša dipego tša dinyakišišo.

Christi Fritz o na le LLB go tšwa Yunibesithing ya Pretoria gomme gonabjale o ngwageng wa mafelelo wa dithuto tša LLM. O amogetšwe bjalo ka ramolao le ramolao wa setšhaba ka Pherekong 2012. Ka morago ga go šoma Freistata nako ye kopana, Christo o thomile go šoma kliniking ya molao ka 2013. O phethile dithuto tše di phagamego tša molao wa dipapadi, molao wa mošomo, molao wa setšo le tokollo ya kgwebo.

Frik Grobler o thomile go šoma Kliniking ya Molao bjalo ka ramolao ka 2009. O hweditše tikrii ya BCom (Law) le LLB go tšwa Yunibesithing ya Pretoria gomme o na le setifikeiti sa go phagama sa tharollo ya ngangišano ya tlhatlolano go tšwa Motheong wa Therišano wa Afrika Borwa. O amogetšwe bjalo ka ramolao wa Kgorokgolo ya Tsheko ya Afrika Borwa ka 2010 le ramolao wa setšhaba ka 2014.



Frik Grobler and Christo Fritz



2016 NRF-rated Researchers

2016 NNS-gegradeerde
Navorsers

Banyakišiši ba 2016 bao ba
lekaneditšwego ke Motheo wa
Dinyakišišo wa Setšhaba



A-rated researchers



Professor Nigel Bennett

Prof Bennett is professor of Zoology in the Department of Zoology and Entomology in the Faculty of Natural and Agricultural Sciences. He holds the Department of Science and Technology/National Research Foundation Research Chair in Mammalian Behavioural Ecology and Physiology, as well as the Austin Roberts Chair of African Mammalogy.

The focus of his research is ecology, animal physiology and behaviour, and he uses the African mole-rat as model animal. With his co-workers he has investigated the ecological and physiological factors that affect the control of reproduction and the evolution of sociality. His investigation into cooperative breeding in mammals is conducted from a variety of perspectives. The strength of this multi-faceted approach is that it has led to an integrated understanding of reproductive suppression in mole-rats, a level of understanding that has not been achieved for any other taxon. His research set the benchmark for our understanding of the phylogenetic and ecological constraints that regulate reproductive success and social evolution in mammalian species.

Prof Bennett's research record places him among the top researchers studying social regulation of reproduction in any group of mammals in the world. He is a fellow of the Zoological Society of London, a fellow of the Royal Society of South Africa and a member of the Academy of Science of South Africa. In 2015 he was awarded an NSTF ESKOM-sponsored award for his outstanding contribution to Science, Engineering and Information Technology as a developer of research capacity.

Prof Bennett is, among others, editor-in-chief of the *Journal of Zoology*, London. He has published 290 papers in international peer-reviewed scientific journals, co-authored a specialist book and penned twelve book chapters. Prof Bennett holds an A2 rating from the NRF.



Professor Pedro Crous

Prof Crous is Director of the Centraalbureau voor Schimmelcultures (CBS) (Fungal Biodiversity Centre), an institute of the Royal Dutch Academy of Arts and Sciences in Utrecht, the Netherlands, and professor at the universities of Stellenbosch and Pretoria, and Utrecht and Wageningen in the Netherlands. At the University of Pretoria he is a professor in the Department of Microbiology and Plant Pathology in the Forestry and Agricultural Biotechnology Institute (FABI), Faculty of Natural and Agricultural Sciences. Prof Crous received his DSc from UP in 2009.

As a phytomycologist his main interest lies in the evolution and phylogeny of plant pathogenic fungi, especially *Dothideomycetes*, *Diaporthales* and *Hypocreales*. In understanding and defining species, the importance of sex (recombination) cannot be ignored. His research has shown that many plant pathogens have both mating type genes, and may be having cryptic sex, which has serious implications for disease control and rates of evolution. He is interested in intra- and interspecies variation, and how this relates to host specificity and speciation. Prof Crous actively pursues integrating DNA data with morphology and ecology. In this regard he established MycoBank where all fungal names are captured, and now links taxa to their DNA data, cultures, specimens and ecology. A main aim of his research group is to determine genetic variation in species and populations, and to develop molecular tools that will enable rapid detection of such pathogens because of their consequences for quarantine and trade. His research group consists of postdoctoral researchers and students in several countries in Europe, Africa, Asia and South America.

Over the past six years he was elected as corresponding member of the Royal Academy for Overseas Sciences (2010), received the Founders' Award from the European Mycological Association (2011), was awarded honorary membership of the Mycological Society of America (2012) and became an elected fellow of the Southern African Society for Plant Pathology (2013). He received an A1 rating from the NRF.

As of 2016 Prof De Wet is SARChI Professor of International Constitutional Law in the Faculty of Law at the University of Pretoria. She has been an honorary professor in the Faculty of Law, University of Bonn, Germany since July 2015. Between 2011 and 2015 she was founding Co-Director of the Institute for International and Comparative Law in Africa and professor of International Law in the Faculty of Law at the University of Pretoria. Between 2004 and 2010 she was tenured professor of International Constitutional Law at the Amsterdam Centre for International Law, University of Amsterdam, a position she subsequently held part-time until December 2013. During the early years of her career, she held positions at the International Labour Organization (Geneva), the Swiss Institute of Comparative Law (Lausanne) and Leiden University. She was involved in part-time teaching at the University of Zurich and Brandeis University, and was extraordinary professor at North-West University (Potchefstroom Campus).

Prof De Wet completed her BL, LLB and LLD at the University of the Free State. She holds an LLM from Harvard University and completed her Habilitationsschrift at the University of Zurich (Switzerland) in December 2002. A revised version was published by Hart Publishing in 2004 under the title *The Chapter VII Powers of the United Nations Security Council* and has been cited by various international courts. She is currently working on a monograph on intervention by invitation and the use of force, scheduled for publication by Oxford University Press in 2019.

She has received various national and international scholarships and awards, most recently an A2 rating from the NRF for the period 2016–2021. From October 2015 until the end of March 2016 she was a fellow at the Käte Hamburger Centre for Advanced Study ('Law as Culture') in Bonn. She has held various national and international editorial positions and is a member of the Scientific Advisory Board for Development Policy of the Max Planck Foundation for International Peace and the Rule of Law, as well as of the General Council of the International Society of Public Law (ICON-S). Her research examines the legal consequences that the exercising of public power by international organisations such as the United Nations and the African Union have for states and for those living in their territories. This includes the problems states face in implementing binding decisions of international organisations while giving due effect to other international obligations and constitutional principles of fundamental importance.

Prof Xia is the Director of both the Centre of New Energy Systems at the University of Pretoria and the National Hub for the Postgraduate Programme in Energy Efficiency and Demand Side Management, and the incumbent of the Exxaro Chair in Energy Efficiency. Prof Xia obtained his PhD at the Beijing University of Aeronautics and Astronautics in 1989. He joined the University of Pretoria in 1998 and became a professor in 2000.

He has held a number of visiting positions at universities in France and China. He is a fellow of the Institute of Electrical and Electronics Engineers, an elected fellow of the South African Academy of Engineering, and an elected member of the Academy of Science of South Africa. He received an A2 rating from the NRF.

His research interests include non-linear feedback control, observer design, time-delay systems, hybrid systems, modelling and control of HIV/AIDS, control and handling of heavy-haul trains and energy modelling and optimisation.

Prof Xia is registered with the Engineering Council of South Africa as a professional engineer, and with the American Association of Energy Engineers as certified measurement and verification professional. He has been an elected board member of the Measurement and Verification Council of South Africa since 2014.



Professor Erika de Wet



Professor Xiaohua Xia

B-rated researchers



Professor Wlady Altermann

Prof Wlady Altermann is the incumbent of the Kumba-Exxaro Chair in Geodynamics in the Department of Geology since July, 2009. He has taught in many countries, including Germany, China, France, India, the USA and Australia.

At UP, he has led courses in the field of geology, economic geology, geodynamics of mineral deposits and has gathered around him the largest Carbon Storage Working Group in South Africa, cooperating closely with the South African Centre for Carbon Capture and Storage (SACCCS), the Council for Geoscience (CGS), the DST/NRF Centre of Excellence for Integrated Mineral and Energy Resources Analysis (CIMERA), the Karoo Research Initiative (KARIN) and with international institutions. Prof Altermann is an internationally acknowledged Precambrian sedimentologist and bio-geologist. He is interested in and drives research projects on Precambrian geology, biogeology, the evolution of life, and sedimentary ore and coal deposits. He has drafted a new vision for the Department of Geology, which aims to develop a new research focus on geological carbon storage and the geology of conventional and unconventional energy resources. A cooperation agreement on this research, signed with the University of Oslo (UiO), Norway, in 2015 will enable UP students and lecturers to take part in an academic exchange programme. The first courses by UiO professors at UP will start in 2016.

Prof Altermann has served on several international science evaluation panels and editorial boards of international journals and as treasurer and council member of the Geological Society of Africa. He is the current Vice-President of this society and the chairman of the South African Committee for Stratigraphy (SACS). He received a B2 rating from the NRF.



Professor Helena Barnard

Prof Barnard is professor and Director of Research at GIBS where she is also responsible for the doctoral programme. Her research focuses on the intersection of international business and innovation. She is interested in how knowledge (and with it, technology, organisational practices and innovation) moves between more and less developed countries. Her work is driven by a concern that the field currently does not give adequate recognition to the following two elements: First, how hard it is for even competent entities from lower income countries to gain access to global economic opportunities and knowledge networks; and second, the fact that many connections take place at the level of the individual rather than through formal institutions. She researches at the level of the firm, eg migrating multinationals, as well as the level of the individual, eg through the diaspora and scientific collaborations. She has published in the *Journal of International Business Studies*, *Research Policy* and the *Journal of International Management*. She was on the scientific advisory committee of the Academy of Management's first conference outside North America (2012–2013), served as chair for the Newman award of the Academy of Management in 2014, and is a current member of the editorial board of the *Global Strategy Journal*. Prof Barnard received a B3 rating from the NRF.



Professor Christo Botha

Prof Botha is a professor in and, since 2006, Head of the Department of Para-clinical Sciences in the Faculty of Veterinary Science. His research in veterinary toxicology focuses on plant poisonings and mycotoxicoses, as well as environmental toxicology. At present he is investigating whether plant poisonings of animals can be prevented by vaccination. If livestock can be protected by immunisation the incidence and mortalities resulting from economically important plant poisonings would be curtailed. He is an appointed consultant at the Veterinary Toxicology Laboratory of the Agricultural Research Council -Onderstepoort Veterinary Institute and is a fellow of the American Academy of Veterinary and Comparative Toxicology. He co-authored the second edition of the textbook *Plant poisonings and mycotoxicoses of livestock in southern Africa*, which is prescribed to students in veterinary science. Prof Botha received a B1 rating from the NRF.

Prof Crewe is the Director of the Centre for the Advancement of Scholarship and a member of the Social Insects Research Group in the Department of Zoology and Entomology, Faculty of Natural and Agricultural Sciences. He spent many years researching chemical communication and social organisation in a variety of social insects. His currently researches social organisation and population dynamics in the honey bee with a view to ensuring the survival of this biological resource. He is a member of the Academy of Science of South Africa, a fellow of the African Academy of Science, and a fellow of the World Academy of Science. He was the recipient of the Harry Oppenheimer Research Award for 2012 and received the Gold Medal of the Academy of Science of South Africa in 2013. He has been a rated research scientist continuously for 30 years and his current rating is B2.



Professor Robin Crewe

Prof Dick is a professor in the Department of Information Science in the Faculty of Engineering, Built Environment and Information Technology. His main areas of research are print culture, intellectual freedom, and the history of reading. The University of Toronto Press published his most recent monograph, *The hidden history of South Africa's book and reading cultures*, which was also published by the University of KwaZulu-Natal Press. The book, described as 'path-breaking' and 'trailblazing', was reviewed in the *Times Literary Supplement*, *The Chronicle of Higher Education*, the *American Historical Review* and several other academic journals. From 2012 to 2014 he was the Chairperson of the National Council of Library and Information Services (NCLIS) in South Africa. He has been a visiting professor at Wayne State University and the University of Illinois in Urbana-Champaign, and an honorary research fellow at the University of Wisconsin-Madison's Centre for the History of Print and Digital Culture. Prof Dick is a member of the editorial board of Palgrave Macmillan's series, *New Directions in Book History*. He delivered the Alan Paton lecture at the University of KwaZulu-Natal in 2013. He received a B2 rating from the NRF.



Professor Archie Dick

Prof Du Plessis is an emeritus professor in the Department of Electrical, Electronic and Computer Engineering in the Faculty of Engineering, Built Environment and Information Technology. He is the Acting Director of the Carl and Emily Fuchs Institute for Microelectronics (CEFIM). His area of research is microelectronics, specifically the design of analogue integrated circuits and semiconductor optoelectronic devices.

He was a finalist in two categories of the 2014/15 NSTF-BHP Billiton awards, namely the TW Kambule award for research outputs over the last five to ten years, and the Special Photonics award for research outputs over a lifetime.

From 2004 to 2013 he was an International Distinguished Lecturer for Region 8 (Africa, Europe, Middle East and Russia) of the Electron Devices Society of the Institute for Electrical and Electronics Engineers (IEEE). In 2014/2015 he was a member of the international IEEE VLSI Technology and Circuits Committee that identifies new areas of interest to the electron devices and solid-state circuits communities.

Prof Du Plessis was appointed guest editor for a special edition of the International Society for Optics and Photonics (SPIE) *Journal of Nanophotonics* on silicon-based optoelectronics, as well as for a special edition of the *IEEE Transactions on Electron Devices* on silicon photonics in 2015. He received the B3 rating from the NRF.



Professor Monuko du Plessis



Professor Riël Franzsen

Prof Franzsen holds the South African Research Chair in Tax Policy and Governance and is also the Director of the African Tax Institute in the Faculty of Economic and Management Sciences. He holds a doctorate in tax law from Stellenbosch University. In 2013 he obtained a master's degree in creative writing from the University of Pretoria.

He specialises in land and property taxation and regularly acts as a policy advisor for the International Monetary Fund, United Nations and World Bank. He has worked in Africa (Egypt, Kenya, Liberia, Namibia, Rwanda, Tanzania and Uganda), Asia (Thailand), the Caribbean (Antigua, Dominica, Grenada, St Kitts and Nevis, St Lucia and St Vincent) and Europe (Croatia, Georgia and Romania).

He has acted as an instructor for the International Monetary Fund (IMF) (Austria, Singapore, St Lucia), Lincoln Institute of Land Policy (China, Slovenia) and the Network of Associations of Local Authorities of South-East Europe (Macedonia). He serves on the Board of Advisors of the International Property Tax Institute, regularly participates in local and international conferences and has authored many journal papers and book chapters on land and property taxation. In 2015 his first volume of poems was published. He received a B1 rating from the NRF.



Professor Jenny Hoobler

Prof Hoobler (PhD, University of Kentucky, USA) is Acting Head of Department and Doctoral Programmes Manager in the Department of Human Resource Management in the Faculty of Economic and Management Sciences. Broadly, her research interests lie in gender and diversity in the workplace; leadership; and intersections between work and family. She serves on the editorial boards of *Journal of Applied Psychology*, *Personnel Psychology* and *Journal of Organizational Behavior*. Over the past five years she has published 15 journal articles and received substantial competitive grant funding. Her 2010 paper on the family-work conflict bias for career women, published in the *Academy of Management Journal*, was a finalist for the prestigious Rosabeth Moss Kanter award for Best Published Research on Work and Family, across all nations, in 2010. Prof Hoobler was recently appointed to the Brain Trust group of academics at Catalyst, the leading think-tank for research on women and work, based in the United States. She received a B3 rating from the NRF.



Professor Andrzej Kijko

Prof Kijko is the Director of the University of Pretoria Natural Hazard Centre, Africa in the Department of Geology in the Faculty of Natural and Agricultural Sciences. As an internationally acclaimed researcher, he has been active in engineering geophysics, seismology, numerical and computational techniques and applied statistical methods for over 40 years, which resulted in more than 100 publications in academic journals. Most of his work in South Africa centred on the development of models of intraplate seismicity and their application in seismic hazard and risk assessment. His research focuses primarily on the expansion and adjustment of the mathematical methods used in natural hazard and risk modelling to accommodate poor and incomplete data in seismology. This has resulted in the development of a unique methodology that allows the use of instrumental observations of recent seismicity along with historic, paleo- and neotectonic information in seismic hazard assessment. The procedure has been applied in seismic hazard assessment of critical structures such as nuclear power plants, big dams and airports across the globe, as well as in the development of seismic hazard maps. These mathematical methods can be extended to assess the hazard for other natural hazard fields such as tsunamis and hail floods, and can be extended to man-made and financial hazards and risks. Prof Kijko received a B2 rating from the NRF.

Prof Rosinger is an emeritus professor in the Department of Mathematics and Applied Mathematics in the Faculty of Natural and Agricultural Sciences. He does research in special and general relativity, as well as quantum theory. One of the two major nonlinear mathematical theories he created is listed by the American Mathematical Society in their Subject Classification, under 46F30, Generalized functions for nonlinear analysis (Rosinger, Colombeau, nonstandard, etc) with his name associated with it. It concerns the solution of very large classes of nonlinear partial differential equations (PDEs) that, ever since Newton, have been producing the mathematical formulations of the basic laws of nature and are therefore fundamental to science and technology.

Prof Rosinger came up with the first complete solution to Hilbert's Fifth Problem, which had been unsolved since 1900. The second major nonlinear mathematical theory he created is the type independent solution method for very large classes of nonlinear systems of PDEs, with associated initial and/or boundary conditions.

He also formulated the first ever theory of genuine Lie semigroups, that is, of Lie semigroups that are not semigroups of Lie groups. This corresponds to coordinate transforms that are not invertible and, as such, present a major novelty. Prof Rosinger received a B3 rating from the NRF.



Professor Elemer Rosinger

Prof Sathekge is a professor in and Head of the Department of Nuclear Medicine in the Faculty of Health Sciences. He serves as Chairman of the Medical Research Council of South Africa. On the international front, he is the President of the International Society of Radiolabeled Blood Elements and has served as Secretary-General of the World Federation of Nuclear Medicine and Biology.

His research interest is in advancing molecular infection imaging and targeted radionuclide therapy. He serves on the editorial board of several journals, is frequently invited as plenary speaker and recently had the honour of delivering the Highlights Lecture at the World Federation of Nuclear Medicine and Biology Congress. Prof Sathekge has won various prestigious awards including the Ralph Kirsch Golden Pen Award for the most cited article published in the *South African Medical Journal*, the 2014 Top National SAMA-Bonitas Award: Fellowship in Art & Science of Medicine Award, the International Research Group in Immuno-Scintigraphy and Therapy Award and the Mahatma Gandhi Award from the Nuclear Cardiology Society of India. In October 2015 he was elected President of The Colleges of Medicine of South Africa. Prof Sathekge received a B3 rating from the NRF.



Professor Mike Sathekge

Prof Schoeman is professor and Head of the Department of Companion Animal Clinical Studies in the Faculty of Veterinary Science. He holds specialist qualifications in small animal internal medicine from the Royal College of Veterinary Surgeons in London and the European College of Veterinary Internal Medicine, as well as a PhD degree in Veterinary Endocrinology from the University of Cambridge.

His research straddles the nexus between endocrinology, critical illness and inflammation and he studies this in uniquely South African models of canine infectious diseases such as babesiosis, parvoviral diarrhoea, spirocercosis and snakebite. In conjunction with his postgraduate students, he has published more than 35 scientific articles on this topic in peer-reviewed journals over the past five years. In 2015 his contribution to this field received international recognition when he was invited to write a chapter on 'Endocrine responses to critical illness' in the definitive, USA-based, *Textbook of Veterinary Internal Medicine*. He has been a recipient of the UP Exceptional Young Researcher award and is a former chairperson of the Examination Board of the European College of Veterinary Internal Medicine. He received a B2 rating from the NRF.



Professor Johan Schoeman



Professor Wolf-Dieter Schubert

Prof Schubert is a professor in and Acting Head of the Department of Biochemistry in the Faculty of Natural and Agricultural Sciences. He is an extraordinary professor at the University of Cape Town (Medical Microbiology) and at the University of the Western Cape (Biotechnology).

His research focuses on the structure–function relationships of molecular disease mechanisms, innate immunity and enzymes which he analyses using molecular biology, biophysics and macromolecular X-ray crystallography.

In 2015 the NRF re-rated Prof Schubert in the B category (B2) and his recent high-impact publications appeared in *Cell*, *Immunity*, *PNAS*, *Structure*, *Molecular Microbiology*, *Journal of Biological Chemistry* and *Angewandte Chemie*.



Professor De Wet Swanepoel

Prof Swanepoel is a professor in the Department of Speech-Language Pathology and Audiology in the Faculty of Humanities. He holds adjunct positions at the University of Western Australia and the University of Texas, Dallas and is a senior research fellow at the Ear Science Institute Australia. Prof Swanepoel's work capitalises on the growth in information and communication technologies to explore, develop and evaluate innovative service delivery models and solutions to improve access to ear and hearing health care. He has published more than 100 peer-reviewed articles, books and book chapters and has received numerous national and international awards in recognition of his work, including the NSTF-BHP Billiton award (2013/14) for innovation and the 2015 Phillips Innovation Fellowship.

As an internationally recognised subject leader Prof Swanepoel received a B2 rating from the NRF. He is lead inventor of the award winning and patented hearScreen™ smartphone hearing test. He serves as associate editor of the *International Journal of Audiology*, as President-Elect of the International Society of Audiology and as Co-Chair for the Telehealth Task Force of the American Academy of Audiology.



Professor Fanus Venter

Prof Venter is a professor in and Head of the Department of Microbiology and Plant Pathology in the Faculty of Natural and Agricultural Sciences. He holds the Rand Water Chair in Water Microbiology and is the Director of the UP Water Institute. Through his research he is affiliated with the Tree Protection Co-operative Programme and Centre of Excellence in Tree Health Biotechnology at the Forestry and Agriculture Biotechnology Institute (FABI).

The main focus of his research is bacterial evolution, systematics and diversity. In his research programme he uses comparative genomics in an attempt to understand the functions, biology and evolution of bacteria associated with plants and aquatic environments. He has a special interest in the taxonomy of bacteria belonging to the genera *Burkholderia* and *Pantoea* and has been involved in describing several new species in these two genera.

Prof Venter serves on the Executive Board of the International Committee on Systematics of Prokaryotes and on the Council of the Southern African Society for Systematic Biology. He received a B3 rating from the NRF.

Prof Zimmer is a professor in the Department of Economics in the Faculty of Economic and Management Sciences. He specialises in economic theory and his research encompasses topics in decision theory, game theory, general equilibrium theory under asymmetric information, asset pricing, financial markets and banking regulation, Bayesian learning under ambiguity, and bounded rationality. He has published in leading journals on economic theory such as *Journal of Economic Theory*, *Journal of Risk and Uncertainty*, *Journal of Economic Dynamics and Control*, *Journal of Economic Behavior and Organization*, *Journal of Mathematical Economics*, and the *International Journal of Game Theory*. In addition, he has published in mathematical and psychological journals such as *Fuzzy Sets and Systems* and the *Journal of Mathematical Psychology*. He serves as an associate editor of the journal *Mathematics and Financial Economics* and has research affiliations with the Robust Finance Group at the University of Bielefeld (Germany) and the Institute for the World Economy (Kiel, Germany). He received a B3 rating from the NRF.



Professor Alexander Zimmer

Prof Zoubos is an associate professor in the Department of Physics in the Faculty of Natural and Agricultural Sciences. After completing a BSc in Physics at the University of Patras, Greece, he obtained a PhD in Theoretical Physics at Stony Brook University in New York, USA, in 2004. He held research positions at Queen Mary University in London and the Niels Bohr Institute in Copenhagen, Denmark, before joining UP in 2013.

His research is on high-energy particle physics, which he approaches from the perspective of string theory. A fundamental problem in describing particle interactions is that in many interesting situations the forces between particles are too strong for approximative methods to be applicable. String theory circumvents this by a process called gauge/gravity duality, whereby a strongly coupled system can be reformulated as a weakly coupled one. Combined with a feature called integrability, this allows for very precise calculational control of otherwise intractable theories. However, even those theories are often simplified models, far removed from actual theories of nature.

Prof Zoubos' specific research is concerned with extending the abovementioned methods to more realistic theories, with a view to eventually arrive at a better understanding of the strong nuclear forces that keep quarks bound together into protons and neutrons.

Prof Zoubos' expertise in this field was recognised by an invitation to contribute a chapter to the definitive *Review of AdS/CFT Integrability*, which appeared in 2011. He received a B3 rating from the NRF.



Professor Konstantinos Zoubos

C-rated researchers



Professor Terry Aveling

Prof Aveling is an associate professor in the Department of Plant Science, Faculty of Natural and Agricultural Sciences. She is a seed scientist and works on the fungi associated with diseases of seeds and transmitted by seed. This involves the detection and identification of seed-borne and seed-transmitted diseases, the characterisation of the causal agents, their transmission, their effect on seed germination and vigour and their control. Current research projects of the Seed Science Research Group, of which she is the leader, include studies on the identification of seed-borne pathogens on *Brassica* spp and other vegetables, herbs, pine, eucalyptus and acacia, and the evaluation of fungicides and alternative seed treatments to control these pathogens.

Prof Aveling received the SANSOR-Bayer Science for a Better Life Award in 2015 for her positive impact on the seed industry. She has been involved with the International Seed Testing Association (ISTA) for many years and was Vice-Chairperson of the ISTA Seed Storage Committee (2001–2007), Chairperson of the Seed Health Committee (2007–2010 and 2010–2013) and is currently Vice-Chairperson of this committee (2013–2016). Prof Aveling was appointed as Chairperson of the Seed Pathology Committee of the International Society of Plant Pathology (ISPP) in 2013 and holds this position to date. She received a C2 rating from the NRF.



Professor Armanda Bastos

Prof Bastos is a professor in the Department of Zoology and Entomology in the Faculty of Natural and Agricultural Sciences, and serves on the editorial board of *BMC Genetics*. Her research focuses on infectious diseases of wildlife and incorporates molecular diagnostic and phylogenetic approaches to determine prevalence, distribution and persistence of animal and zoonotic diseases. Integral to many projects is the custom development of diagnostic tests that address the high levels of host and pathogen diversity in sub-Saharan Africa, and the generation of data that guide the formulation of regionally relevant, conservation-cognisant disease control policies. She has supervised/co-supervised the research projects of 23 master's and 11 doctoral level students to completion and has published 71 scientific papers and four book chapters. She received a C1 rating from the NRF.



Dr Ryan Blumenthal

Dr Blumenthal is a senior specialist forensic pathologist in the Department of Forensic Medicine. His main field of interest is the pathology of trauma of lightning strikes (keraunopathology). He has been involved in the publication of numerous articles and textbooks on lightning strike and other electrothermal injuries. He has helped develop international standard operating procedures and guidelines for attending to lightning strike fatalities and victims of electrocution.

During the past five years he contributed a chapter to the *Handbook of forensic medicine* (edited by Burkhard Madea), which is currently considered to be the international benchmark in the field. He contributed to the sixth and seventh editions of Paul S Auerbach's *Wilderness medicine textbook*, which also enjoys international recognition. Through his Lightning Interest Group for Health Technology and Science (LIGHTS), Dr Blumenthal arranged three successful multidisciplinary congresses on lightning in South Africa and helped launch South Africa's own lightning website (www.lightningsa.org.za). In 2012 he won the Faculty of Health Sciences' award for Best Publication: Team Effort. In 2014 he was named one of the best scientific writers featured in the *Mail & Guardian's* 'Science Voices' supplement. In October 2015 he was invited to present Grand Rounds Lecture at Duke University, Durham, North Carolina, USA for his work on lightning strike victims. He received a C2 rating from the NRF.

Dr Coetzee is a senior lecturer in the Department of Genetics in the Faculty of Natural and Agricultural Sciences, and a research leader in the Forestry and Agricultural Biotechnology Institute (FABI). Dr Coetzee's research forms part of the work of the DST-NRF Centre of Excellence in Tree Health Biotechnology and the Tree Protection Co-operative Programme, which study the health of trees and woody plants in South Africa and beyond. Specific focus areas of his research include the systematics and molecular evolution of fungal tree pathogens, with particular emphasis on the taxonomy and phylogenetics of fungi that cause root rot in woody plants. In addition, he researches questions about the characteristics and evolution of the genomes of phytopathogenic fungi. Dr Coetzee's research resulted in 30 scientific papers being published in accredited journals at the time of his NRF rating evaluation. He received a C2 rating from the NRF.



Dr Martin Coetzee

Dr Collins is a part-time senior researcher in the Department of Veterinary Tropical Diseases in the Faculty of Veterinary Science. She specialises in the molecular characterisation of blood parasites and the development of molecular tests for detecting haemoparasites of veterinary importance.

Dr Collins was one of the principal researchers in the *Ehrlichia ruminantium* genome sequencing project, the first bacterial genome sequence to be completed in Africa. She supervised the development of a *Theileria parva*-specific quantitative real-time PCR (qPCR) assay, which has been implemented at the Onderstepoort Veterinary Institute as part of the control strategy for Corridor disease. Dr Collins was also involved in the development of qPCR tests for *T. equi* and *Babesia caballi* and in the molecular characterisation of these parasites. Her research revealed the existence of genetic and serological heterogeneity in *T. equi* and *B. caballi* in South Africa, which explains the failure of many molecular and serological tests to detect them in field samples in this country. She is currently researching bovine anaplasmosis in South Africa; her research group has tested a duplex qPCR that has indicated that the causative organisms, *Anaplasma marginale* and *A. centrale*, are widespread in South Africa's cattle population. The research also involves the characterisation of vaccine candidate antigens from *A. marginale*. She received a C2 rating from the NRF.



Dr Nicola Collins

Dr Dalerum is an extraordinary lecturer in the Department of Zoology in the Faculty of Natural and Agricultural Sciences and has been affiliated with the University since 2006. Previously he was a post-doctoral fellow at the University of Alberta, Canada, after having completed his PhD at Stockholm University in his native Sweden.

He is a terrestrial ecologist and his research focuses on predation processes, the biology and conservation of mammalian carnivores, and functional aspects of biodiversity. He utilises both empirical and theoretical methods in his research. At present he is conducting field research on the bat-eared fox (*Otocyon megalotis*), and is involved in several projects related to the management of large carnivores, as well as an extensive cooperative evaluation of the impacts of climate change on biodiversity in the Arctic tundras.

Dr Dalerum's research has been published in several high-profile journals such as *Biology Letters*, *Methods in Ecology and Evolution* and *Proceedings of the Royal Society B – Biological Sciences*. He received a C2 rating from the NRF.



Dr Fredrik Dalerum



Professor Gyebi Duodu

Prof Duodu is an associate professor of Food Chemistry and Food Engineering in the Department of Food Science, Faculty of Natural and Agricultural Sciences.

His research focuses on the health-promoting properties of African grains and their foods. He investigates the metabolomic profiling, chemistry and physiological actions of bioactive phenolic compounds of African grains using *in vitro*, *ex vivo* and *in vivo* studies.

Prof Duodu has served as Chair of Cereal Science and Technology – SA and currently serves on the Executive Committee. He is a member of the Bioactive Compounds Committee of the American Association of Cereal Chemists International and a member of the editorial board of the *Journal of Food Composition and Analysis*. Prof Duodu has been either the main author or a co-author of 39 articles in international peer-reviewed journals and five book chapters. He holds a C2 rating from the NRF.

Professor Adeline du Toit

Prof Du Toit currently holds positions in the Department of Information Science in the Faculty of Engineering, Built Environment and Information Technology and the Department of Business Management in the Faculty of Economic and Management Sciences. She has been an extraordinary professor in the Department of Information Science since 2013. Before joining the University of Pretoria, she was professor and Chair of the Department of Information and Knowledge Management (2002–2010) and Director of the Centre for Information and Knowledge Management (2002–2012) at the University of Johannesburg. She has published widely, nationally and internationally, and presented papers at many conferences, including keynote and invited presentations at a number of international conferences, mostly on topics in information management, knowledge management and competitive intelligence. She is an invited member of the New Club of Paris and a board member of the International Council for Knowledge Management, as well as a member of the editorial board of a number of local and international journals. More than 50 master's and doctoral students have completed their studies under her supervision. Prof Du Toit was awarded a C1 rating by the NRF.

(Photo not available)



Professor Lorraine
Du Toit-Prinsloo

Prof Du Toit-Prinsloo is an adjunct professor in the Department of Forensic Medicine in the Faculty of Health Sciences. Her research areas include paediatric forensic pathology, sudden and unexpected deaths and forensic toxicology. The application of molecular techniques in forensic medicine is an emerging field in South Africa and she currently co-supervises an MSc student who investigates post mortem genetic testing on cases of sudden infant death. This project is funded by the Genomics Research Institute Institutional Research Theme. She has acted as supervisor or co-supervisor of four MSc and eight BScHons students in medical criminalistics, and one MMed (Psychiatry) student, all of which completed their studies successfully. She has 23 peer-reviewed publications to her name.

Achievements include oral presentations at international conferences such as the 10th International Conference on Sudden Infant Death Syndrome (Portsmouth, United Kingdom), the International Society for the Study and Prevention of Perinatal and Infant Death (IPSID) 2012 Conference on Stillbirth, Sudden Infant Death Syndrome (SIDS) and Infant Survival (Baltimore), one oral and two poster presentations at the National Academy of Medical Examiners' conference (Baltimore) and one oral and one poster presentation at the International Academy of Legal Medicine conference (Dubai). In 2015 she received an award for her Extraordinary Contribution to Forensic Pathology from the Gauteng North Branch of the South Africa Medical Society. She received a C2 rating from the NRF.

Prof Fisher, professor emeritus in the Department of Architecture, Faculty of Engineering, Built Environment and Information Technology, researches the depth and scope of the South African cultural landscapes and built environment. The commentary of the panel of reviewers for his most recent NRF rating is summarised as follows: 'Reviewers concur that his contribution to the relatively small field of South African architectural history has been substantial, both in terms of his own writings and in terms of developing a new generation of South African architectural historians.'

He established the digital repository of the Department of Architecture at UP and ensured its substantial presence in the UPspace venture. A book on the Eclectic Dutch 'Wilhelmiens' period in C19 in the RSA and its wider influences in South Africa, of which he was a co-author, won a Regional Award for Architectural Research from the Mpumalanga Institute of Architects, and the President of the Pretoria Institute of Architects' Award for Heritage in Pretoria. The South African Institute of Architects submitted the work for the National Awards. He serves on advisory boards of various national tertiary institutions and is a member of the Education Committee and Recognition of Prior Learning Committee of the SA Council for the Architectural Profession, and also of its Validation Panel. He received the Gold Medal of the Heritage Association of South Africa in 2013 for his expertise in the public realm as advisor and committee member of various heritage bodies and committees. He received a C2 rating from the NRF.

Prof Gerber has been an associate professor in the Department of Informatics in the Faculty of Engineering, Built Environment and Information Technology since August 2015.

Her primary research interest is the development and use of models in all aspects of information systems. These modelling constructs include formal ontologies. She worked in industry for more than 15 years and her experience as system developer and technical project leader led to an interest in enterprise architecture and enterprise and systems engineering. At present she is interested in developing the entire field of enterprise engineering and innovation given disruptive technologies such as big data.

Her work experience includes software system design and development, and technical management. She has more than 35 accredited publications to her name and has co-supervised more than ten postgraduate students. After obtaining a degree in electronic engineering in 1987, she worked at the Council for Scientific and Industrial Research (CSIR) where she developed firmware for speech encoding/decoding devices. After obtaining her MEng at Wits (1992) she joined Unisa as a senior lecturer in 2001. She completed a PhD in Semantic Web technologies in 2007 when she rejoined the CSIR as principal researcher in ontology engineering and enterprise architecture. She has been affiliated with UP since 2012. She received a C3 rating from the NRF.

Dr Groot is an extraordinary senior lecturer in the Department of Materials Science and Metallurgical Engineering in the Faculty of Engineering, Built Environment and Information Technology.

His broad research areas are hydrometallurgy and electrometallurgy with a specific focus on leaching and electro recovery. Recently he has been researching the extraction of metals from secondary feed materials using hydrometallurgical methods. Secondary feed materials are, for instance, electronic scrap, slags and other waste products of recovery processes. The value of reworking such feeds lies in the recycling and conservation of resources. His research has been done in conjunction with colleagues in minerals processing who are familiar with methods for recovering gold and copper from electronic and electrical scrap. In his research on the recovery of manganese from ferro-manganese slag, he worked with colleagues in metallurgical mineralogy and pyrometallurgy. The latter work has resulted in the generation of a useful by-product for the cement and concrete industry.

Dr Groot is regularly involved in the examination of dissertations and theses. He also acts as an external examiner in written examinations and as a reviewer for the NRF, for several journals and for conference papers. He received a C3 rating from the NRF.



Professor Roger Fischer



Professor Aurona Gerber



Dr Dick Groot



Professor John Hall

Prof Hall is a professor in the Department of Financial Management in the Faculty of Economic and Management Sciences. He lectures in Corporate Finance at undergraduate and postgraduate level and supervises a number of master's and PhD students. His main research interest is shareholders value creation, as well as a related topic, capital budgeting and he has published a number of accredited articles on these topics. These publications led to an invitation by Prof Kent Baker, regarded by *The Journal of Financial Literature* as among the top one per cent of most prolific authors in finance during the past 50 years, to co-author two chapters on capital budgeting with another international scholar in a specialist subject reference work, *Capital budgeting valuation: Financial analysis for today's investment decisions*, published in the USA in 2011. After being approached and invited to co-author papers by an established and acclaimed researcher, Prof Hall's research topics and horizons broadened to include economic growth, stock market development and inflation. He often receives invitations to review manuscripts for publication in accredited journals. Prof Hall was awarded a C3 rating by the NRF.



Professor Johan Hanekom

Prof Hanekom is a professor in the Department of Electrical, Electronic and Computer Engineering and Head of Bioengineering, a research entity in the Department that focuses on the application of engineering methods in medicine and biology.

Prof Hanekom's main research focus is on the auditory system and cochlear implants. This medical device electrically stimulates the auditory nerve fibres of deaf individuals. It is effective from a clinical perspective, but cochlear implant users have far from normal hearing, and generally perform poorly in noisy conditions. Prof Hanekom believes that our understanding of the relationship between cochlear electrical stimulation patterns and electrically evoked auditory perception needs to be improved. His research includes computer modelling of processing in the normal auditory system and the electrically-excited auditory system, as well as psychoacoustic experimental work in which individuals with normal hearing and cochlear implant users participate.

He has received funding and support from the NRF, the Belgian government, and cochlear implant companies for his research. He has published around 40 articles in international journals, and has presented his work in some 70 conference papers. He is registered as a professional engineer and is a senior member of both the IEEE and the SAIEE. Prof Hanekom received a C1 rating from the NRF.



Professor Sheryl Hendriks

Prof Hendriks is a professor in Food Security and the Co-Director of the DST-NRF Centre of Excellence in Food Security. She is the founding Director of the Institute for Food Nutrition and Well-being (IFNuW) and Director of the Institutional Research Theme with the same name. Her research has contributed to developing the transdisciplinary understanding of food security as a complex societal problem, methodological innovation for dealing with complex problems; and brokering new directions in food security policy. This pioneered transdisciplinary research across multiple academic disciplines and government sectors at the national, continental and global levels. It has led to the development of multi-disciplinary teams and platforms, not only to develop a deeper understanding of food insecurity but also to translate scientific research into practical public policy guidance with demonstrated up-take and impact.

Prof Hendriks serves on multiple global food security advisory panels. Most notable is her contribution to the establishment of the United Nations Committee for World Security (CFS) High Level Panel of Experts on Food Security and Nutrition (HLPE) between 2010 and 2015. Prof Hendriks is leader of numerous national and international collaborative food security research projects. Students from 18 African countries have graduated under her supervision, contributing significantly to developing the food security capacity in Africa. She received a C1 rating from the NRF.

Dr Jacobs is a senior lecturer in the Department of Electrical, Electronic and Computer Engineering in the Faculty of Engineering, Built Environment and Information Technology. A former Fulbright scholar, he holds a PhD in Electronic Engineering from the University of Pretoria and a doctorate of Musical Arts from Yale University.

His areas of research include modelling and optimisation of microwave antennas, antenna arrays and filters; and machine-learning-based recognition of the finely graded timbre properties of musical instruments. He has authored or co-authored articles in leading international peer-reviewed journals such as *IEEE Transactions on Antennas and Propagation*, presented papers at numerous international and national conferences and workshops, and contributed book chapters. He is involved in ongoing research with international and national collaborators.

Dr Jacobs is an acclaimed concert pianist who has performed as soloist and chamber musician in South Africa's main classical music venues. He has undertaken national duo recital tours with a number of distinguished visiting musicians from Europe and the USA. He received a C2 rating from the NRF.



Dr Pieter Jacobs

Prof Janse van Rensburg is an associate professor and Head of the Section Sports Medicine in the Faculty of Health Sciences. She is extremely interested in the musculoskeletal aspects of the human body and strongly believes in the value of exercise in maintaining good health.

As a sports physician and rheumatologist she is regularly confronted with, on the one hand, an active and healthy population and on the other hand, disease-ridden, inactive arthritis patients. The positive effect of exercise on patients with rheumatoid arthritis became a driving force in an effort to offer a value-adding alternative to patients with this debilitating disease. This resulted in her doctoral study on the effect of exercise on patients with rheumatoid arthritis. She has a keen interest in research and has co-authored numerous research articles in international peer-reviewed scientific journals, with the emphasis on rheumatological conditions and issues relating to sports illness, injuries and performance.

Prof Janse van Rensburg is an avid sports person and has accompanied many sports teams as sports physician, both nationally and internationally. She is a fellow of the American College of Sports Medicine, the current Chairperson of the Exercise is Medicine South Africa global initiative and has received several awards during her academic career, the most important of which are the FIMS-Copamede Intercontinental Travelling Fellowship and the Dr Lisa Stroud Krivickas Clinician Scholar Travel award. She received a C2 rating from the NRF.



Professor Christa Janse van Rensburg

Prof Janse van Rensburg is an emeritus professor in the Department of Mathematics and Applied Mathematics in the Faculty of Natural and Agricultural Sciences. He presents undergraduate and postgraduate courses in the Department and supervises a number of doctoral and master's students.

His research reflects his interest in the interface between partial differential equations, continuum modelling and the finite element method. Of late his research has focused on mathematical models for vibrating systems.

Prof Janse van Rensburg has published more than 20 articles in international journals on topics ranging from mathematical analysis to applied mechanics and including the numerical approximation of solutions to model problems. He received a C2 rating from the NRF.



Professor Nic Janse van Rensburg



Professor Alexander Johnson

Prof Johnson is an associate professor and Head of the Department of Music in the Faculty of Humanities. His areas of research are music theory, composition and orchestration, and music analysis.

His compositions have frequently been performed and broadcast in South Africa and abroad (UK, USA, France, Corsica, Serbia, Croatia, Russia, Canada, Germany, the Netherlands, Italy, Switzerland, China, Poland, Tobago and Portugal). *Colour-keys for Clarinet in B flat* was commissioned by SAMRO for the First Unisa International Flute and Clarinet Competition held in Pretoria in 2014. It was performed by eight of the nine competitors, and has been performed internationally in Kraków (Poland), Venice and Naples (Italy). Prof Johnson's *Music for Children* was performed in 2012 and 2013 in Russia, Poland, the UK and USA. His *Two Afro-disiacs for String Orchestra* was commissioned by the esteemed Zürich Camerata String Orchestra, and performed by this orchestra in the Tonhalle and at the Hochschule für Musik, both in Zürich. His *Jazz Impromptu no 1* has been performed globally and is currently prescribed for the London Trinity College Licentiate (LTCL) examination. In 2014 Trinity College of Music, London, solicited a second piano piece from Prof Johnson for publication in their piano examination albums, which are distributed globally. Prof Johnson received a C2 rating from the NRF.



Professor Roy Johnson

Prof Johnson is a research associate in the Gordon Institute of Business Science (GIBS). He holds advanced degrees in Anatomy, Art and Dance (University of Oregon) and post-doctorates in Management Information Systems (University of Minnesota and Indiana University). His research focuses mainly on education, systems analysis and design plus project and knowledge management.

He has authored or co-authored numerous high-quality research journal publications and supervised or co-supervised fourteen PhD students in five countries. He served as Vice-President of Education (2005–2008) of the Association of Information Systems and also of Accreditation (2008–2011). In 2010 he co-chaired the European Conference on Information Systems (ECIS 2010) that was held in Pretoria. The conference brought South African researchers into contact with renowned academics from around the world.

The US State Department awarded Prof Johnson a Fulbright Scholarship to the University of Pretoria's Department of Informatics (2006–2007) and he subsequently received one of two second-year appointments (2007–2008). Prof Johnson has continued his association with the University of Pretoria and currently holds appointments at GIBS and the University of Innsbruck, Austria. He received a C2 rating from the NRF.



Professor Kerstin Jordaan

Prof Jordaan is an associate professor in the Department of Mathematics and Applied Mathematics in the Faculty of Agricultural and Natural Sciences. Her research interest lies in special functions and orthogonal polynomials. Her contributions to this field include solutions to the direct problem of orthogonal polynomials in several semi-classical contexts. She has also established herself as an international expert in the study of properties of zeros of various special functions and orthogonal polynomials.

Prof Jordaan's research has attracted talented postgraduate students and postgraduate fellows. She is the current President of the South African Mathematical Society, Vice-Chairperson of the Board of Directors of the South African Mathematics Foundation and an associate research fellow of the Africa Institute for the Mathematical Sciences. She is the co-editor of the newsletter of the Society for Industrial and Applied Mathematics for the Activity Group on Orthogonal Polynomials and Special Functions and serves on several scientific organising and awards committees associated with this international society. She received a C2 rating from the NRF.

Prof Jordaan is a professor and Head of the Department of Marketing Management in the Faculty of Economic and Management Sciences. Her research focus area is consumer information privacy and protection. A recent research bursary from the University of Angers in France allowed her to extend her research to information privacy in the digital environment. She is the South African marketing industry's representative for the Services SETA at the European Marketing Confederation's Academic Group, whose main aim is to extend research collaboration and sharing across nations. She co-founded the South African Consumer Satisfaction Index in 2012. She received an Assegai Award from the direct marketing industry for her contribution to marketing education in South Africa. She has facilitated several training and management programmes for companies and lectured at universities in the United States, Australia and the Netherlands. Prof Jordaan is the editor and/or co-author of eight books on marketing management. She is also Head of UP's Magrietjie ladies residence. She received a C3 re-rating from the NRF.



Professor Yolanda Jordaan

Prof Joubert is a professor in Biochemistry in the Faculty of Natural and Agricultural Sciences and Acting Director of the Centre for Bioinformatics and Computational Biology. His research focuses on bioinformatics, and particularly on genomics. Although he is involved in genomics studies of various organisms (animals, plants, insects, fungi, bacteria and viruses), his own research interest is understanding the effects of mutations in the human genome in cancers. He has recently co-authored papers in prestigious journals such as *Nature* and *Science*. He received a C2 rating from the NRF.



Professor Fourie Joubert

Prof Kok is an associate professor in the Department of Mechanical and Aeronautical Engineering in the Faculty of Engineering, Built Environment and Information Technology. He works in multidisciplinary optimisation and focuses mainly on problems in computational mechanics. The problems he solves usually involve non-linear structural responses, primarily owing to non-linear material behaviour. Prof Kok has experience in material modelling that ranges from plasticity work hardening models for metals, to creep behaviour of graphite in nuclear applications, to fibre-reinforced material models used in corneal biomechanics. Specific examples of material models currently under investigation include a mechanical threshold stress model to predict the flow stress of commercially pure titanium caused by different plastic strain rates and temperatures, superplastic forming flow stress models to predict localisation in titanium alloy sheet and recrystallisation models required to predict the effective grain size after hot deformation of steel. Prof Kok is serving his third consecutive term as President of the South African Association for Theoretical and Applied Mechanics. Over the past three years, Prof Kok has authored and co-authored 17 papers in international peer-reviewed journals. He received a C2 rating from the NRF.



Professor Schalk Kok



Professor Karl Kunert

Prof Kunert is a professor in the Department of Plant Science in the Faculty of Natural and Agricultural Sciences. He investigates bioactive compounds for protection against abiotic stress and has a specific interest in the processes responsible for premature plant senescence induced by abiotic stresses in the environment. Through his work in plant biotechnology, he wants to understand particularly the function of the protease-protease inhibitor system in legume nodule senescence. In his research, he combines skills in plant stress physiology and plant phenotyping in genetically modified soybean plants to obtain an enhanced lifespan and yield by preventing protease action by protease inhibitors. Since stress-induced legume nodule senescence is still a greatly uncharacterised research area, he specifically investigates such protease action in soybean nodules under both natural and stress conditions. As a result of his research activities documented in many international journals, he was awarded an Incoming Marie Curie Fellowship in 2012 to spend two years working on soybean improvement against abiotic stress at Leeds University's Centre for Plant Science. Prof Kunert received a C1 rating from the NRF.



Professor Ericka L'Abbé

Prof L'Abbé is a professor in the Department of Anatomy in the Faculty of Health Sciences. Her research is focused on forensic anthropology, with the emphasis on the estimation of ancestry and sex, as well as bone trauma. She works with national and international postgraduate students and has published numerous papers on forensic anthropology as it is applied in a South African context. In 2010 she became a certified diplomate of the American Board of Forensic Anthropology (DABFA, 84), which is considered one of the highest international achievements in the field. She received an Exceptional Young Researcher award from the University of Pretoria in 2011. In 2015, she and various colleagues published in *Scientific Reports* on the first evidence of perimortem traumatic injuries likely associated with a fall in a 2,0 mya fossil hominin, *Australopithecus sediba*. She and Prof SA Symes, of Mercyhurst University, USA, are working on a book entitled, *Bone fracture interpretations in anthropology and the forensic sciences*. She is a Fellow of the American Academy of Forensic Sciences and serves on their International Affairs Committee. She received a C2 rating from the NRF.



Professor Antoinette Lombard

Prof Lombard is a professor in Social Work and Head of the Department of Social Work and Criminology in the Faculty of Humanities.

Her research focuses on social development and welfare policy with the emphasis on integrated social and economic development and social inclusion of vulnerable groups through the lens of human rights. She has a particular research interest in the link between developmental social work and social enterprise, and entrepreneurship as anti-poverty and equality strategies in pursuit of a more just society. Her scholarly work promotes the developmental approach in social work and in particular the shift of social work to social development.

Prof Lombard received the James Billups International Social Development's Leadership award in 2013. In 2015, she was the second runner-up in the Department of Science and Technology's Distinguished Women in Science awards in the category Humanities and Social Sciences for her contribution to research and development. She also received the Research of the Year award 2015 in the Applied Social Science Cluster in the Faculty of Humanities.

Prof Lombard is the Chairperson of the Global Agenda for Social Work and Social Development, representing the International Association for Schools of Social Work. She received a C1 re-rating from the NRF.

In 2003 Prof Louw was appointed in the Chair in Agribusiness as associate professor in the Department of Agricultural Economics, Extension and Rural Finance in the Faculty of Natural and Agricultural Sciences. Before 2003 he spent 20 years in a senior position in the private sector. He lectures mostly at postgraduate level on strategy, marketing, risk and financial management, value chain management and project management in agri-business. Although this is a specialist field it has numerous applications in various areas.

Prof Louw's research covers diverse areas, including value chain analysis for a number of produce items in SA and the Southern African Development Community, value chain financing in SA and Africa, the formulation of strategies for agro-processing, policy issues regarding land restitution, risk management and capacity building for commercial banks in Africa, and the corporatisation of the Tshwane Fresh Produce Market.

He has done presentations on topics related to agri-business at a number of national and international conferences and is involved in private research organisations. Prof Louw received a C3 rating from the NRF.



Professor André Louw

Prof Mac Intyre is a part-time professor in the Department of Human Nutrition in the Faculty of Health Sciences. Her main research areas are the assessment of dietary intake in South African populations, with a specific focus on the development and testing of reproducible and valid culture-appropriate instruments for assessing nutrition in infants, children and adolescents. At present, she is supervising postgraduate research in the areas of the development and testing use of culture-specific food portion photographs for the quantification of dietary intake, school-based education on nutrition, education on nutrition for people living with HIV/Aids in Nigeria, and infant feeding practices. She is a collaborator in the Venda Health Examination of Mothers, Babies and their Environment (VHEMBE) study. Prof Mac Intyre received a C3 rating from the NRF.



Professor Una Mac Intyre

Prof Madekurozwa is a professor in the Department of Veterinary Anatomy and Physiology in the Faculty of Veterinary Science.

She is a leading researcher in avian reproduction. In 1998 she started a research project on the reproductive biology of ostriches, which developed into a European Union-funded collaborative project with the Faculty of Veterinary Medicine at Utrecht University in the Netherlands.

Her research resulted in the first ever report on precocious testicular activity in the immature ostrich, published in *Reproduction*, a leading international journal. She also observed and published several articles on the occurrence of seasonal, precocious ovarian and oviductal activity in immature female ostriches.

She was awarded a German Academic Exchange Service (DAAD) research fellowship by the German government in 2003, which enabled her to conduct research at the University of Munich.

Although Prof Madekurozwa still conducts research on the ostrich, she has broadened her focus over the past five years to include other avian species. In addition, she is currently involved in collaborative projects on the reproductive biology of the African giant rat, cane rat and jackal. Prof Madekurozwa received a C2 rating from the NRF.



Professor Mary Madekurozwa



Professor Christine Maritz-Olivier

Prof Maritz-Olivier is an associate professor in the Department of Genetics in the Faculty of Natural and Agricultural Sciences. Her research, based on five pillars, forms an integrated platform for the control of ticks and tick-borne diseases. Firstly, numerous antigens for tick vaccines have been validated resulting in a 74% reduction in engorged ticks. Secondly, she studies immune responses to tick infestation in African cattle breeds, allowing rational improvement of vaccine formulations. Thirdly, her genetic markers for cattle ticks paved the way for phylogeographical studies and pioneered the field of strain-specific vaccines. Fourthly, diagnostic tests for acaricide resistance have been developed and used in field studies to guide cattle farmers on effective dipping. Her group was the first to describe the nucleated states of *Babesia divergens* and to establish a drug screening platform for the species.

Prof Maritz-Olivier is co-initiator of the Bill and Melinda Gates Foundation CatVac project. She was one of the *City Press* Winning Women in 2015, received a travel award to Oxford University in 2013 and a Gauteng Department of Agriculture and Rural Development Biotechnology Research Award in 2012. She is President Elect of the international Society for Tropical Veterinary Medicine (STVM), an associate editor of the *International Journal of Parasitology* and advisor to the Portuguese Foundation for Science and Technology. To date Prof Maritz-Olivier has published 30 articles, one book chapter, two invention disclosures and one patent. She received a C2 rating from the NRF.



Professor Tshepo Matjila

Prof Matjila is an associate professor in and Head of the Department of Veterinary Tropical Diseases in the Faculty of Veterinary Science.

His research interest is the molecular characterisation of tick-borne pathogens of domestic animals and wildlife. At present he focuses on demonstrating a possible correlation between *Babesia rossi* genotypes and disease phenotypes of canine babesiosis. In addition, he identifies and isolates recombinant antigens that can be used to produce a vaccine against *B. rossi* infection and the resultant disease in canines.

In recognition of his expertise in canine babesiosis, he was invited to give a plenary address, 'Prevalence of canine babesiosis in South Africa', at the International World Veterinary Congress held in Cape Town in October 2011. In 2009 he received the Senior WO Neitz award from the Parasitological Society of Southern Africa (PARSA) for his PhD thesis, and he also won the award for the Best Veteran poster presentation at the 38th Annual Conference of PARSA, a society which he also served as trustee in 2011 and 2012. In 2014 he served on an NRF advisory panel, namely the NRF Bioinformatics and Functional Genomics Funding Programme. Prof Matjila received a C3 rating from the NRF.



Professor Walter Meyer

Prof Meyer is an associate professor in the Department of Physics in the Faculty of Natural and Agricultural Sciences. His research interests lie in the electrical characterisation of defects in semiconductors. His current focus is on the evolution of radiation induced defects after their induction and the modelling of the physics of these defects by means of density functional theory.

He is the author of more than 100 papers published in peer-reviewed journals and has an h-index of 14.

He has received grants from the NRF under the Competitive Support for Unrated Researchers, the Competitive Programme for Rated Researchers, and Technology and Human Resources for Industry Programme, and was a co-recipient in the National Nanotechnology Equipment Programme. He is a member of the South African Institute of Physics, a council member of the Southern Africa Association for the Advancement of Science (S2A3), and a member of the Suid-Afrikaanse Akademie vir Wetenskap en Kuns (South African Academy of Science and Arts). Prof Meyer received a C1 rating from the NRF.

Prof Mungatana is an associate professor in the Department of Agricultural Economics, Extension and Rural Development in the Faculty of Natural and Agricultural Sciences. He is a natural resource and environmental economist whose main research interest is the theory and application of revealed and stated preference approaches to understanding non-market values in the environment. He has also done research in natural resources accounting; integrated ecological-economic modelling; trade-off analysis between agriculture intensification and sustainable ecosystem services provision; water resources economics; and applied agricultural production economics. He serves as technical advisor for the Global Water Partnership, the United Nations Development Programme on the Economics of Climate Change Adaptation capacity building programme in Asia, and the Ecosystem Services Economics Unit, Division for Environmental Policy Implementation, United Nations Environmental Program, Nairobi (Kenya). Prof Mungatana received a C3 rating from the NRF.



Professor Eric Mungatana

Dr Naidoo is a senior lecturer in the Department of Informatics in the Faculty of Engineering, Built Environment and Information Technology. His research focuses on information technology (IT) investment decisions, the design, use and unintended consequences of IT, and IT careers. Dr Naidoo received a C3 rating from the NRF.



Dr Rennie Naidoo

Prof Naidoo is a professor in the Department of Paraclinical Sciences and Deputy Dean: Research and Postgraduate Studies in the Faculty of Veterinary Science. His area of expertise lies in the pharmacokinetic and pharmacodynamics modelling of the effects of drugs and/or herbal remedies in relation to their mechanism of action/toxicity.

At present a large part of his research is focused on the non-steroidal anti-inflammatory drug (NSAID) diclofenac, which was responsible for the near devastation of entire populations of vultures on the Indian subcontinent. While diclofenac was used predominantly as a veterinary drug, its inadvertent entry into the vulture food chain resulted in millions of birds dying with the overall population decline estimated to be near 99%. Through his work on various drugs in the NSAID class, he has played an important role in protecting endangered vulture species, not only from diclofenac, but also from drugs such as carprofen, phenylbutazone and ketoprofen. This was achieved because his research is available to environmental lobby groups for citing in discussions with drug regulators in Africa, Asia and Europe. He considers his greatest achievement in the last five years to have co-authored a manuscript on the impacts of drugs on the environment, which appeared in the *Journal of Science*. Prof Naidoo received a C1 rating from the NRF.



Professor Vinny Naidoo



Dr Jackie Nel

Dr Nel is a senior lecturer in the Department of Physics in the Faculty of Natural and Agricultural Sciences. Her research focuses mainly on the characterisation of electronic materials using Raman spectroscopy, electrical measurements and scanning probe microscopy. The scanning probe microscope in the Department of Physics is equipped to obtain an electrical characteristic map (current, capacitance, resistance) of the area while mapping the topography and other properties of the surface.

Dr Nel has authored or co-authored over 40 publications and has co-supervised five PhD or MSc students. She served two terms (2010–2014) as Honorary Secretary of the South African Institute of Physics, and in 2014/2015 she chaired the organising committee for the 6th South African Conference on Photonic Materials that was held at Mabula Game Reserve. The conference saw many young postgraduate students and researchers from around South Africa interacting with world specialists in photonic materials in a relaxed, informal setting. She received a C3 rating from the NRF.



Professor Nelus Niemandt

Prof Niemandt is an associate professor in and Head of the Department of Science of Religion and Missiology in the Faculty of Theology. His was Chairperson of the Executive of the General Synod of the Dutch Reformed Church in South Africa and was Moderator of the last general synod. He is deeply involved in ecumenism and church unity processes.

Prof Niemandt researches missional ecclesiology, missional leadership, ecumenism and missional theology. He has authored and co-authored numerous scientific articles in peer-reviewed journals and wrote ground-breaking books on missional ecclesiology and missional leadership. His book, *Nuwe drome vir nuwe werklikhede*, was runner-up for the Andrew Murray prize for theological literature. He received a C3 rating from the NRF.



Professor Annelize Nienaber

Prof Nienaber is a professor in the Department of Public Law in the Faculty of Law and lectures on aspects of medical law and bioethics, and international law at under- and postgraduate level.

During the past five years her research focused on two complementary fields: the law related to clinical research, and the broader field of bioethics. Her work on the law related to clinical research necessitates knowledge of related aspects in bioethics, as well as considerable knowledge and insight into health law and research ethics.

To date she has published a substantial number of peer reviewed research articles and two book chapters, most of which dealt with aspects of either the broader field of bioethics or, more narrowly, with the law related to clinical research. Because of her expertise in research law and ethics, she is the legal advisor and a deputy-chair of the Faculty of Health Sciences' Research Ethics Committee. She is an editor of the *African Human Rights Journal* and the assistant editor of two other law journals.

She has been invited on a number of occasions to deliver papers (including two key-note addresses) at national and international conferences. She received a C2 rating from the NRF.

Prof Pepper is a professor in the Department of Immunology in the Faculty of Health Sciences and is Director of the Institute for Cellular and Molecular Medicine, a Faculty of Health Sciences Research Theme as well as the South African Medical Research Council (SAMRC) Extramural Unit for Stem Cell Research and Therapy. He is professeur associé in the Department of Genetic Medicine and Development in the Faculty of Medicine at the University of Geneva, Switzerland.

Prof Pepper has worked extensively in the field of clinically-oriented (translational) molecular cell biology and his current focus is in the fields of stem cells and the human genome. Prof Pepper's research group has been guided by South Africa's high burden of disease, in particular HIV (a communicable disease) and obesity (a non-communicable disease). With colleagues in Switzerland, France and the USA, the group has developed a broad international footprint.

Prof Pepper is co-responsible for the Southern African Human Genome Programme and leads a project on the ethical, legal and social aspects of genetic and genomic research in South Africa for the Academy of Science of South Africa, of which he is a member.

Prof Pepper has won several awards for his research, both local and international, and has received prestigious funding grants such as the SAMRC University Flagship award and an Extramural Unit (both for stem cell research and therapy), and two NRF equipment grants. The NRF has accorded him a C2 rating.



Professor Michael Pepper

Prof Roos holds a dual appointment as Chief Specialist in Psychiatry at the Gauteng Department of Health and, as Head of the Department of Psychiatry in UP's Faculty of Health Sciences since 2001.

Since 1997 he has been involved in a collaborative project with the Human Genetics Laboratory at Columbia University, New York involving genetic research of schizophrenia in the Afrikaner founder population. The goal of the research is to identify genes associated with the risk of developing schizophrenia. This research group was one of the first to examine the role of rare genetic mutations in patients with schizophrenia and showed that rare, but highly penetrant de novo germline mutations contribute to a vulnerability to schizophrenia, especially in sporadic cases. In 2012, the South African Society of Psychiatrists acknowledged his contribution to research in schizophrenia in the SA context.

He was awarded the Afrikaanse Taal- en Kultuurvereniging (ATKV) Award for best Afrikaans scientific article in 2012 and 2015 and the Douw Greeff Prize for the best scientific article of 2014 by the Suid-Afrikaanse Akademie vir Wetenskap en Kuns (South African Academy of Science and Arts). He received the C1 rating from the NRF.



Professor Louw Roos

Prof Schaap is an associate professor in the Department of Human Resources Management in the Faculty of Economic and Management Sciences. He is head of the Department's psychometrics programmes and lectures at undergraduate and postgraduate level.

The use of psychometric and related measurements has always been highly contentious in South Africa. After 1994, strict non-discriminatory labour practices were implemented in South Africa in terms of the Employment Equity Act 56 of 1998. This legislation prohibits the use of psychometric tests and similar assessments unless scientific evidence shows that the tests are reliable, valid, non-biased and can be applied fairly to all employees. The legislation poses enormous challenges to researchers in a country with 11 official languages, as language and cultural factors may affect test results.

More specifically, Prof Schaap's research focuses on the use of skill, behavioural and cognitive measurement in organisations and the extent to which measurements can be considered valid and reliable for diverse groups. He received a C3 rating from the NRF.



Professor Pieter Schaap



Professor John Soley

Prof Soley is professor of Anatomy in the Department of Anatomy and Physiology in the Faculty of Veterinary Science. His research interests include the ultrastructure of avian spermatozoa and the process of spermatogenesis, with emphasis on describing structural peculiarities that may assist in resolving phylogenetic questions. His work also focuses on comparing sperm defects in commercially important birds such as the ostrich and emu with those of various domestic and exotic mammalian species, and studying the comparative morphology of the upper digestive tract of ratites. On the basis of these studies, Prof Soley has been invited to present various keynote addresses, including the Norman R Adams Memorial Lecture at the Annual Meeting of the Reproductive Biology and Endocrinology Society of Western Australia in Perth in 2014, and the keynote address at the 9th Biennial Conference of the Association for Applied Animal Andrology (AAAA) in Newcastle, NSW, Australia, also in 2014. He will present a lecture on invitation at the 10th Biennial Conference of the AAAA in Tours, France in June 2016. The recognition his work enjoys was reflected in the publication of a paper entitled, 'A novel transient structure with phylogenetic implications found in ratite spermatids', in *BMC Evolutionary Biology* in 2013. The paper has been tagged as 'highly accessed' with 2 325 hits to date. He received a C3 rating from the NRF.



Professor Michael Somers

Prof Somers is the Director of the Centre for Wildlife Management and holder of the Eugène Marais Chair of Wildlife Management. He is an associate professor in the Department of Animal and Wildlife Sciences in the Faculty of Natural and Agricultural Sciences. He is a core team member of the DST-NRF Centre of Excellence for Invasion Biology, and a member of the Mammal Research Institute.

Although he works on various aspects of wildlife management, he specialises in the ecology of African carnivores. The present focus of his research is on what affects the distribution and abundance of carnivores, especially in the presence of increasing human pressure. Prof Somers received a C1 rating from the NRF.



Professor Arien Strasheim

Prof Strasheim is an associate professor in the Department of Human Resource Management in the Faculty of Economic and Management Sciences, and she lectures quantitative research methods at undergraduate and postgraduate level.

Her main research focus area is on statistical methodological issues in the analysis of survey data. Specifically, her interests include extended uses of multi-level structural equation modelling for analysing the psychometric properties of scales, such as dimensionality, discriminant and convergent validity and measurement equivalence when studying multiple groups. These multivariate statistical methods are used to develop attitudinal and behavioural models for modelling data from employees or post-modern consumers in the digital age. In the field of organisational behaviour and marketing, her study interests include greening in organisations, cultural intelligence, talent development, resilience, cognitive style and social interaction among individuals and in teams, leadership and the links among employee attributes and their effects on individual and organisational performance. She received a C2 rating from the NRF.

Prof Taljard teaches in the Department of African Languages in the Faculty of Humanities. Her language of specialisation is Sepedi, and her fields of expertise are corpus linguistics, human language technologies, lexicography and terminology. She is the language champion for Sepedi in the Oxford Global Languages Initiative, which is run by Oxford University Press, UK. The aim of this initiative is to make large quantities of high-quality linguistic and lexicographic data freely available to lesser-resourced and digitally under-represented languages. She was appointed by the Minister of Arts and Culture to serve on the Human Language Technologies Expert Panel in the National Department of Arts and Culture.

Prof Taljard is a member of the national technical committee, TC37, on the standardisation of terminology and other language and content resources. This South African technical committee is a mirror committee of the International Standards Organization Technical Committee, ISO/TC 37. She is involved in the establishment of a multilingual, Open Education Resource Term Bank, for which a grant was received from the Department of Higher Education. She serves on the board of the African Association for Lexicography. Prof Taljard received a C1 rating from the NRF.



Professor Elsabé Taljard

Dr Terblanche is a senior lecturer in the Department of Agricultural Economics, Extension and Rural Development in the Faculty of Natural and Agricultural Sciences. His main area of research is agricultural extension and the role of extension professionals in providing an excellent, professional service to farmers. His research subjects include the influence of group dynamics on the functioning of study groups of farmers and the role of leadership in group functioning in agricultural development. He has critically reviewed and analysed agricultural extension and advisory services in Africa.

Dr Terblanche delivered the best scientific paper at the 2015 annual South African Society for Agricultural Extension (SASAE) conference in White River, Mpumalanga entitled, 'Improving the livelihoods of wool producers in a sustainable manner by optimising the wool sheep production systems within the communal farming area of the Eastern Cape: A vision that is future directed'.

In 2013 he received the SASAE gold medal for his outstanding contributions to the promotion of the science and scientific practices of agricultural extension at the annual SASAE conference in Bloemfontein. He received a C3 rating from the NRF.



Dr Fanie Terblanche

Prof Venter is an associate professor in the Department of Civil Engineering in the Faculty of Engineering, Built Environment and Information Technology. He is a registered professional engineer and a member of the South African Institution of Civil Engineering (SAICE) where he serves on the editorial panel of the *SAICE Journal*. He also serves on several research advisory boards, including that of the Gauteng City Region Observatory. His research has won best paper awards at the Southern African Transport Conference (2011 and 2012), the SAICE Traffic and Transport Division (2013), and the 12th and 14th international conferences on Competition and Ownership in Land Passenger Transport (2011 and 2015). Prof Venter's research interests centre around three areas. Firstly, the development of cost-effective methods for data collection and transport modelling, especially in the context of limited financial and human capacity in developing countries. This includes the use of new technologies such as mobile (GPS) tracking and smartphone-based crowdsourcing approaches for tracking mobility patterns. Secondly, he studies the social and economic impacts of transport, including ways in which transport policies affect the accessibility and quality of life of urban residents. Thirdly, he focuses on the operational design and deployment of public transport, especially bus rapid transit and urban rail in African cities. He received a C2 rating from the NRF.



Professor Christo Venter

Y-rated researchers



Dr Babatunde Abidoye

Dr Abidoye is a senior lecturer in the Department of Agricultural Economics in the Faculty of Natural and Agricultural Sciences. He has a PhD in Economics and Statistics from Iowa State University, USA. His research and teaching interests lie in econometrics, specifically the application of Bayesian econometric methods; environmental economics, specifically climate change and choice modelling; and agricultural economics, specifically commodity markets modelling, trade policy and poverty analysis. He has worked with various international agencies, including the World Bank, the United Nations Development Programme (UNDP) and the European Commission, to aid understanding of how policies can be used to alleviate poverty in Africa and Asia.

Dr Abidoye has published in top international journals, including the *American Journal of Agricultural and Resource Economics*, the *Journal of Agricultural Economics*, the *Journal of African Economies* and *Agrekon* in South Africa. Dr Abidoye has refereed articles in these and other international journals.

Dr Abidoye's 2012 article in the *Environmental and Resource Economics Journal* was recognised for excellence by the European Association of Environmental and Resource Economists (EAERE). His paper, 'Adoption of genetically modified crops in South Africa: Effects on wholesale maize prices' published in *Agrekon*, was the most downloaded article published in the whole of Routledge Social Science Journals in 2014. He received a Y1 rating from the NRF.



Dr Daniela Bezuidenhout

Dr Bezuidenhout is a senior lecturer in the Department of Chemistry in the Faculty of Natural and Agricultural Sciences. In 2014 she was appointed as Scientific Editor: Inorganic Chemistry of the *South African Journal of Chemistry*, and in 2015 as Chair of the South African Chemical Institute, Gauteng North Section.

Dr Bezuidenhout is an organometallic carbene chemist. She focuses on the rational design and synthesis of novel carbene ligands and metal complexes directed towards organic synthesis and catalysis, and for application as opto-electronic materials.

After completion of her studies at the University of Pretoria, Dr Bezuidenhout was awarded the 2010 Sasol Postgraduate Medal of the South African Chemical Institute for her doctoral thesis. In 2011/2012, she was the recipient of a prestigious Fulbright scholarship and an Oppenheimer Memorial Trust award for a postdoctoral fellowship at the University of California, San Diego. Since her return to the University of Pretoria in 2012, she established an independent research group, was one of three finalists for the Nedbank South African Water, Energy and Food Forum's Water-Energy-Food Nexus Research Award 2013, and was named a Sasol Young Academic Achiever for 2014/2015. She is one of the inaugural fellows of the Tuks Young Research Leaders Programme. She received a Y1 rating from the NRF.



Professor Femida Cassim

Prof Cassim is an associate professor in the Department of Mercantile Law. She obtained a postgraduate LLB and an LLM in Company Law (both *summa cum laude*) from the University of the Witwatersrand, and a PhD in Commercial Law from the University of Cape Town. She is an admitted attorney and notary public of the High Court of South Africa, and a qualified medical doctor with an MBBCh (*cum laude*) from the University of the Witwatersrand.

Prof Cassim has been actively engaged in research on company law, and especially on the Companies Act 71 of 2008, which resulted in a radical overhaul of the South African company law system. She is a co-author of three leading books on company law. Her research projects have proved to be significant contributions to the legal, commercial and accounting community. In particular, the chapters she contributed to the scholarly work, *Contemporary Company Law*, are relied on extensively by leading corporate law firms, attorneys, advocates and even the judiciary, and have recently been quoted and cited with approval in four judgments of the High Court of South Africa and two judgments of the Supreme Court of Appeal, the highest court in this country. Professor Cassim received a Y2 rating from the NRF.

Dr Crole is a senior lecturer in the Department of Anatomy and Physiology in the Faculty of Veterinary Science where she teaches Veterinary Comparative Anatomy and Veterinary Histology to undergraduate and a number of postgraduate students. Her research covers comparative macro-anatomy, histology and electron microscopy. She is an active member of the Anatomical Society of Southern Africa and the Microscopy Society of Southern Africa.

Dr Crole's area of expertise is in the upper digestive tract of commercially farmed ratites. She has published a number of key papers in this field, including the first definitive evidence of a sense of taste in ratites and the description of a novel anatomical mechanism that prevents these birds from choking. Her master's students are working on parts of the anatomy of threatened South African wildlife such as Temminck's ground pangolin and the southern white rhinoceros.

She has received numerous awards including Young Lecturer of the Year, Young Researcher of the Year, best presentations at national conferences and a Certificate for Education Innovation. She received a Y1 rating from the NRF.



Dr Martina Crole

Dr Dangbegnon is a research fellow in the Department of Physics in the Faculty of Natural and Agricultural Sciences.

He has a special interest in the development of novel material for energy storage, namely a new design of carbon nanomaterial and metal oxides/hydroxides nanostructures for use in high performance supercapacitors.

His research has generated more than 15 ISI accredited papers over the past three years and led to the graduation of two postgraduate students. He has received several local and international scholarships, including the Goodfellow PhD student award for the most outstanding work in material science. Dr Dangbegnon received a Y2 rating from the NRF.



Dr Julien Dangbegnon

Dr Esposito is a senior lecturer in the Department of Production Animal Studies in the Faculty of Veterinary Science. She obtained her PhD in reproductive physiology in dairy cows at Federico II University, Naples, Italy in collaboration with Cornell University, USA in 2010.

Before her appointment at the University of Pretoria in 2012, Dr Esposito worked as a research assistant at the University of Queensland, Australia. Her current research focuses on uterine and metabolic health in farm animals; the effect of dietary supplements on reproduction, metabolism and product quality in farm animals; in vitro maturation and fertilisation of oocytes; and embryo culture. She received a Y2 rating from the NRF.



Dr Giulia Esposito



Dr Willem Fourie

Dr Fourie is a senior lecturer in the Department of Dogmatics and Christian Ethics in the Faculty of Theology. He is a social ethicist with an interest in reflecting on the ethics of systems, processes and institutions in southern Africa. His research is contextualised in terms of the significant economic and political changes that societies across southern Africa continue to experience. He seeks to both develop an appropriate African ethical theory, while seeking to understand the linkages with the societal dynamics in southern Africa. He is an Alexander von Humboldt Fellow and recently had the opportunity to develop these research emphases further at Humboldt University in Berlin, Germany. He received a Y2 rating from the NRF.



Dr Salisu Garba

Dr Garba is a senior lecturer in the Department of Mathematics and Applied Mathematics in the Faculty of Natural and Agricultural Sciences. His research area is mathematical biology/epidemiology, which involves the application of mathematical theories and methodologies. It is aimed at gaining insight into the qualitative behaviour of autonomous and non-autonomous (non-linear) dynamical systems arising from mathematical modelling in the biosciences and bioengineering with a particular interest on the transmission and control dynamics of human diseases of interest in public health. Dr Garba received a Y2 rating from the NRF.



Dr Michelle Greve

Dr Greve is a senior lecturer in the Department of Integrated Soil and Plant Sciences in the Faculty of Natural and Agricultural Sciences. Her research reflects her interest in biogeography, ie understanding how patterns of diversity and distribution of organisms have come about, what these patterns reveal about their evolutionary drivers, and how this information can be used for determining priorities in conservation, with a particular focus on the southern hemisphere. Her work has contributed significantly to the understanding of the region's biogeography while advancing the field of biogeography conceptually.

Dr Greve has published in journals such as *Nature Communications*, *Global Ecology and Biogeography* and *Journal of Biogeography*, and her work has featured in *Science* and the popular media. She currently holds a grant from the South African National Antarctic Programme, which is aimed at understanding the determinants and risks of alien invasions across the islands of the sub-Antarctic region. In addition, she focuses on understanding the interaction and interdependence between trees and birds at different scales across southern Africa. Dr Greve received a Y1 rating from the NRF.

Dr Helbig is a senior lecturer in the Department of Computer Science in the Faculty of Engineering, Built Environment and Information Technology. She is a member of the Department's Computational Intelligence Research Group.

Her research focuses on applying computational intelligence algorithms to solve optimisation problems with multiple objectives, where at least two objectives are in conflict and at least one objective or constraint changes over time. For these kinds of problems, referred to as dynamic multi-objective optimisation problems, a single solution does not exist and therefore the goal of the algorithm is to find an optimal set of trade-off solutions for each changing environment.

She is the Vice-chair of the IEEE Computational Intelligence Society (CIS) Task Force on Evolutionary Multi-Objective Optimization, a member of the IEEE CIS Emergent Technologies Technical Committee, a sub-committee member of the IEEE CIS Women in Computational Intelligence and the Chair of the IEEE CIS South African Chapter.

Dr Helbig has been awarded the CSIR Meraka Institute Emerging Researcher Excellence Award in 2013. She received a Y1 rating from the NRF.



Dr Mardé Helbig

Dr Hlatshwayo is a senior lecturer in the Department of Physics in the Faculty of Natural and Agricultural Sciences. He did his MSc in Nuclear Physics and his PhD in Material Science/Solid State Physics, and more specifically the diffusion of silver in 6H-SiC at various temperatures, which is important in understanding the release of silver from fuel in the pebble bed modular nuclear reactor (PBMR), where chemical vapour deposited (CVD)-SiC is the main barrier to fission. He was able to provide new insight into the long-standing anomalous silver transport problem in PBMR fuel particles by proposing a new model for this diffusion.

After completing his PhD, he collaborated with Dr M Msimanga from iThemba LABS in Gauteng, Dr V Skuratov from Dubna in Russia and Dr S Pretrovic from Vinca in Serbia. He has presented papers at local and international conferences and published more than twenty articles and contributed to six conference proceedings.

He has an h-index of 6 according to Google Scholar, Thomson Reuter's Web of Science and Scopus. He has successfully supervised two honours and two master's students and is currently supervising four PhD students and one MSc student. He received a Y2 rating from the NRF.



Dr Thulani Hlatshwayo

Dr Kleyn is Manager of the Open Scholarship Programme and a Research Fellow in the Department of Information Science. Her research focuses on the need for alternative approaches to book publishing, book history, creative writing, and studies in literary value. These research fields form part of a larger literary system as opposed to the existing perception that the field of literary studies can survive on value judgments alone. A more inclusive system can ensure the survival of very small fields of literature that are under much pressure. Dr Kleyn has compiled two volumes of creative writing by South African debutantes under the age of 30, written a handbook on creative writing as well as a book on the people of the Tankwa Karoo. She received a Y2 rating from the NRF.



Dr Leti Kleyn



Professor Eileen Koekemoer

Prof Koekemoer is an associate professor in the Department of Human Resource Management in the Faculty of Economic and Management Sciences and is registered as an Industrial Psychologist with the Health Professions Council of South Africa. She serves on the postgraduate committee of the Department and is committed to quality research. Her areas of research include work-life interaction, career success and the wellbeing of employees. Over the past five years she has published 17 journal articles and received substantial Thuthuka grant funding for her projects. She is involved in various research projects that investigate the interaction between employees' work and family life and how it influences their career success and/or wellbeing. She is a section editor of the renowned *South African Journal of Industrial Psychology*. She received a Y2 rating from the NRF.



Dr Elizabeth le Roux

Dr Le Roux is a senior lecturer in the Department of Information Science in the Faculty of Engineering, Built Environment and Information Technology. She coordinates the degree in Publishing Studies and researches the history of publishing and books in South Africa. Since 2013 she has been co-editor of *Book History*, the leading journal in the field. She published her first book, on the history of the university presses in apartheid South Africa, in 2015. She received a Y1 rating from the NRF.



Dr Reza Malekian

Dr Malekian is a senior lecturer in the Department of Electrical, Electronic and Computer Engineering in the Faculty of Engineering, Built Environment and Information Technology. Before joining UP, he was an assistant professor in telecommunications engineering and a senate member at the University of Information Science and Technology St Paul the Apostle in Macedonia.

Having 11 years' experience in teaching and research in both the university and the industry sectors, he has maintained an active research programme and provides guidance and mentoring to several undergraduate, master's and doctoral students, as well as postdoctoral fellows.

Dr Malekian's research is focused on communication networks and the design and development of industrial applications using advanced sensor technologies and the Internet of Things under industry and government funding. He is particularly interested in intelligent transportation, mine safety, water management, fruit monitoring, and e-health.

He is registered as a chartered engineer with the Engineering Council of the UK, a professional member of the British Computer Society (BCS), a member of the IEEE, and a member of the Association for Computing Machinery (ACM). He serves on the editorial boards of various international journals and on the management committee of Autonomous Control for a Reliable Internet of Services, European Cooperation in Science and Technology. Dr Malekian received a Y2 rating from the NRF.

Dr McIntyre is a research fellow in the Department of Zoology and Entomology in the Faculty of Natural and Agricultural Sciences. He is a behavioural ecologist with a particular interest in how animals adapt behaviourally to changes in the environment. Most of his work focuses on marine and semi-aquatic mammals (including elephant seals and freshwater otters). Since these animals are mostly very difficult, if not impossible, to observe directly in the field, he often relies on so-called bio-logging techniques which involves attaching small data loggers to study animals in order to get detailed information on their behaviour. Dr McIntyre was awarded a fellowship by the Alexander von Humboldt Foundation and spent a year in Germany (2012 to 2013) pursuing his research interests, before returning to the University of Pretoria to take up his current fellowship. He received a Y1 rating from the NRF.



Dr Trevor McIntyre

Dr Phulukdaree is a lecturer in the Department of Physiology in the Faculty of Health Sciences. She recently obtained her PhD in Medical Biochemistry from the University of KwaZulu-Natal and, as a young student, excelled in biomedical research, getting her honours degree *cum laude* and her master's degree *summa cum laude*. On the basis of her academic achievement, she was invited to join the Golden Key International Honour Society and awarded a scholarship by the Andrew W Mellon Foundation. She published her first research article in an ISI-rated journal in 2010, and subsequently many articles resulting from her PhD, postdoctoral and collaborative studies. Dr Phulukdaree has been a reviewer for several ISI-rated journals since 2012 and was invited to serve on the NRF's reviewing panel for master's and doctoral innovation scholarships and postdoctoral research scholarships in 2013 and 2014. She was an invited speaker at the 2nd International Conference on Predictive, Preventive and Personalised Medicine and Molecular Diagnostics. Her research focuses on evaluating the molecular mechanisms involved in chronic inflammatory diseases such as heart disease, diabetes mellitus, and Parkinson's and Alzheimer's disease, which are major contributors to the high mortality rate associated with non-communicable diseases in South Africa. She received a Y2 rating from the NRF.



Dr Alisa Phulukdaree

Dr Stander is a senior lecturer in the Department of Physiology, Faculty of Health Sciences. He specialises in computer-aided drug design and, more specifically, on the incorporation of in silico molecular dynamics and docking software to develop medicinally relevant compounds. With his postgraduate students, he aims to use cell biology and bioinformatics knowledge to enter newly designed compounds against cancer and malaria into Phase I clinical trials.

Dr Stander has thrice won the Best Publication by a Young Researcher award, most recently in 2012. He received recognition for Best Publication in the Faculty of Health Sciences in 2011 and 2014. He has a Google Scholar h index of 7 (150 citations) and a Thomson Reuter's Web of Science h index of 5 (113 citations). He received a Y1 NRF rating from the NRF.



Dr André Stander



Dr Kerstin Tönsing

Dr Tönsing is a senior lecturer at the Centre for Augmentative and Alternative Communication in the Faculty of Humanities. She does research on augmentative and alternative communication (AAC), a field concerned with providing other modes of communication to those who cannot communicate adequately through speech. She is specifically interested in how communication and expressive language development can be scaffolded by means of graphic symbol-based AAC systems.

In 2010 a presentation based on aspects of her PhD study earned her a prize as runner-up for best student presentation at an international conference. She is researching the design requirements of AAC systems for implementation in multilingual and multicultural contexts in collaboration with the Human Language Technologies research group of CSIR's Meraka Institute. Her work has been published in international accredited journals. She received a Y2 rating from the NRF.



Dr Cheryl Tosh

Dr Tosh is the Science Editor in the Faculty of Health Sciences. Her NRF rating was awarded on the basis of her research on top predators on sub-Antarctic Marion Island. She completed her PhD in 2010 and was a research fellow with the Department of Zoology and Entomology until 2015.

Her research interests include the environmental correlates of the at-sea behaviour of southern elephant seals and the role of killer whales in the Marion Island ecosystem. Marion Island represents a natural laboratory from which to assess the influence of climate change on various species. Changing ocean environments will influence the food resources available to top predators. Southern elephant seal movements can be categorised as either foraging or transiting, based on a correlated random walk movement model. Changes in foraging behaviour over time may be linked to the breeding success of populations and ultimately population increase or decline. Foraging behaviour can be linked to bathymetric features, oceanic fronts and meso-scale sea level anomalies. The resident killer whale population at Marion Island provides important opportunities for studying social systems and ecological interactions among species. This work has been published as scientific articles and presented at international conferences. Dr Tosh received a Y1 rating from the NRF.



Dr Ronald van der Bergh

Dr Van der Bergh is a lecturer in the Department of Ancient Languages and Cultures in the Faculty of Humanities. His research interests are the textual criticism of the New Testament, narratology, and the writings of the early church. A point of intersection of these interests is the study of the reception of biblical texts as they are found in New Testament manuscripts. These manuscripts provide physical evidence of how biblical texts were received in late antiquity. He has authored a number of articles and recently (2014) completed his doctorate on the textual tradition of Old Testament quotations in the Acts of the Apostles in a specific New Testament manuscript, Codex Bezae Cantabrigiensis. In 2014 he was named Faculty of Humanities Language Cluster Researcher of the Year. He has been serving as co-chair of the steering committee of the Working with Biblical Manuscripts (Textual Criticism) Programme Unit of the International Meeting of the Society of Biblical Literature since 2015. He received a Y1 rating from the NRF.

Dr Van der Merwe is a senior lecturer in the Department of Genetics in the Faculty of Natural and Agricultural Sciences. His research focus is on the population genetics, phylogenetics and genomics of important fungal tree pathogens such as *Fusarium circinatum* (the pine pitch canker pathogen) and species of *Chrysosporthe* that cause stem cankers on susceptible *Eucalyptus* trees. He is actively engaged in the community, serves on the executive of the Southern Africa Association for the Advancement of Science (S2A3), and is the Vice-Chairperson of the South African Genetics Society. He received a Y2 rating from the NRF.



Dr Albé van der Merwe

Prof Van Schoor is an associate professor and section head in the Department of Anatomy in the Faculty of Health Sciences. His research focus is neuroanatomy and related regional anaesthesia. Twelve of his 21 published peer-reviewed articles are on this topic and he was an invited guest speaker at the Regional Anaesthesia and Pain Therapy Society of South Africa Congress in 2014, at various conferences on pain intervention and regional anaesthesia, and at the Symposium for Paediatric Anatomy of the International Federation of Associations of Anatomists (2009).

He has presented his research at the American Association of Clinical Anatomists, the British Association of Clinical Anatomists, and the Anatomical Society of Southern Africa. Over the past five years his postgraduate students received nine awards at various local and national scientific conferences for their research. In 2014 he received a merit award for Best Clinical Publication by a Young Researcher in the Faculty of Health Sciences at the University of Pretoria. He became an inaugural fellow of the Tuks Young Research Leader Programme in 2015. He received a Y1 rating from the NRF.



Professor Albert-Neels van Schoor

Dr Van Staden is a senior lecturer in the Department of Science, Mathematics and Technology Education in the Faculty of Education. She has an interest in educational assessment, specifically the assessment of reading literacy. She worked on the Progress in International Reading Literacy Study (PIRLS) 2006, an international large-scale comparative study on reading literacy, and acted as the co-national research coordinator for the study in 2011 in South Africa. She is a member of the Suid-Afrikaanse Akademie vir Wetenskap en Kuns and was elected member of the Onderwyskommissie of the Akademie for the term 2015 to 2017.

In 2014 she received a Knowledge, Interchange and Collaboration grant from the NRF to attend the World Education Research Association (WERA) Focal Meeting in Edinburgh, Scotland, where she presented evidence of differential item functioning for different languages of the test that came to light in the prePIRLS 2011 overall results. Dr Van Staden was elected as an inaugural fellow for the African Science Leadership Programme in 2015 and appointed as WERA network coordinator for work in reading literacy and associated reading interventions for high-risk children from disadvantaged communities. She received a Y2 rating from the NRF.



Dr Surette van Staden



Dr Gusti van Zyl

Dr Van Zyl is a senior lecturer in the Department of Mathematics and Applied Mathematics in the Faculty of Natural and Agricultural Sciences. His research area can broadly be described as functional analysis. Roughly speaking, functional analysis is the study of vector spaces. In contrast to two- or three-dimensional space, which we encounter in daily life, the vector spaces studied in Functional Analysis are usually of 'infinite dimension'. This is a natural setting for studying problems such as the classical question of which functions can be decomposed as sums of sine waves.

Within functional analysis Dr Van Zyl is mainly concerned with tensor products and, more recently, with possible relationships between backwards semigroup causality and the pricing of financial derivatives. In the area referred to as tensor products of Banach spaces, he has found and proved new relationships between the real-scalar and complex-scalar cases of certain well-known methods to transfer the norms (distance functions) from the individual Banach spaces to the tensor product thereof. He has also done research with colleagues in electronic engineering at UP and at the CSIR, related to stochastic processes describing noise in satellite image modelling. In 2015 the NRF awarded him a Y2 rating.



Professor Elmar Venter

Prof Venter is an associate professor of Accounting and he is dedicated to continued research in the field of financial accounting. He is a chartered accountant (CA(SA)) and achieved the overall first position in South Africa for the final professional examination in 2004. Apart from research, his responsibilities at UP include teaching Financial Accounting at undergraduate and postgraduate levels and supervising postgraduate research students,.

In 2011, Prof Venter completed his PhD in Accounting at the University of Auckland, New Zealand. His thesis dealt with the pricing and value relevance of earnings components in a setting where earnings disaggregation is mandatory. He publishes in leading international journals such as *The International Journal of Accounting*; *Accounting, Auditing and Accountability Journal*; and *Abacus*, as well as in a number of South African journals. In 2013 he was one of only five emerging researchers from across the world who was invited to join the Deloitte International Association for Accounting Education and Research Scholar Program. He holds an Y1 rating from the National Research Foundation.



Dr Nico Wilke

Dr Wilke is a senior lecturer in the Department of Mechanical and Aeronautical Engineering in the Faculty of Engineering, Built Environment and Information Technology. He specialises in structural and particulate flow design optimisation applications. In particular, his research focuses on developing design optimisation frameworks that utilise efficient numerical implementations of structural and particle flow analysis capability. The particle flow analysis is centred around developing the discrete element method that exploits the graphical processor unit (GPU) hardware architecture. Central to research on the design optimisation framework is the development of self-aware and self-exploring computing environments of the design space of a design optimisation problem. Dr Wilke chaired the Inverse Problems in Engineering mini-symposium at the 4th International Conference on Engineering Optimization in Lisbon, Portugal in 2014.

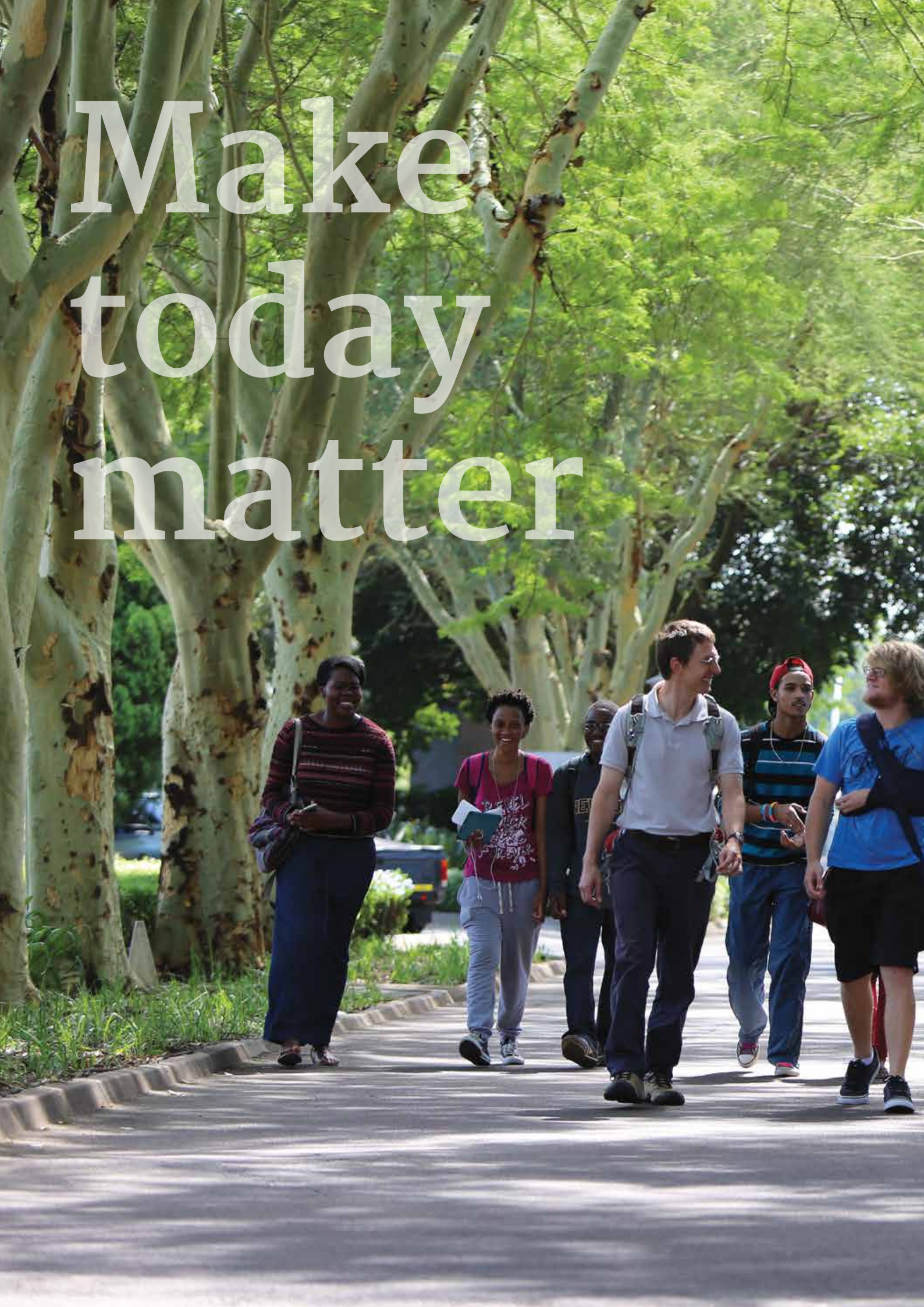
He was inaugurated as a Tuks Young Research Leader Fellow in 2015 and received a Y2 rating from the NRF.

National Research Foundation rating categories

The evaluation and rating of individuals is based primarily on the quality of the research outputs of the past eight years (2007-2014) and is undertaken by national and international peers/reviewers.

Definitions of rating categories

Category	Definition	Sub-category	Description
A	Researchers who are unequivocally recognised by their peers as leading international scholars in their field for the high quality and impact of their recent research outputs	A1	A researcher in this group is recognised by all reviewers as a leading scholar in his/her field internationally for the high quality and wide impact (ie beyond a narrow field of specialisation) of his/her recent research outputs.
		A2	A researcher in this group is recognised by the overriding majority of reviewers as a leading scholar in his/her field internationally for the high quality and impact (either wide or confined) of his/her recent research outputs.
B	Researchers who enjoy considerable international recognition by their peers for the high quality and impact of their recent research outputs	B1	All reviewers concur that the applicant enjoys considerable international recognition for the high quality and impact of his/her recent research outputs, with some of them indicating that he/she is a leading international scholar in the field.
		B2	All or the overriding majority of reviewers are firmly convinced that the applicant enjoys considerable international recognition for the high quality and impact of his/her recent research outputs.
		B3	Most of the reviewers are convinced that the applicant enjoys considerable international recognition for the high quality and impact of his/her recent research outputs.
C	Established researchers with a sustained recent record of productivity in the field who are recognised by their peers as having: <ul style="list-style-type: none"> produced a body of quality work, the core of which has coherence and attests to ongoing engagement with the field and demonstrated the ability to conceptualise problems and apply research methods to investigating them 	C1	While all reviewers concur that the applicant is an established researcher (as described), some of them indicate that he/she already enjoys considerable international recognition for his/her high-quality recent research outputs.
		C2	All or the overriding majority of reviewers are firmly convinced that the applicant is an established researcher (as described).
		C3	Most of the reviewers concur that the applicant is an established researcher (as described).
P	Young researchers (normally younger than 35 years of age), who have held the doctorate or equivalent qualification for less than five years at the time of application and who, on the basis of exceptional potential demonstrated in their published doctoral work and/or their research outputs in their early postdoctoral careers are considered likely to become future leaders in their field		Researchers in this group are recognised by all or the overriding majority of reviewers as having demonstrated the potential of becoming future leaders in their field, on the basis of exceptional research performance and output from their doctoral and/or early postdoctoral research careers.
Y	Young researchers (40 years or younger), who have held the doctorate or equivalent qualification for less than five years at the time of application, and who are recognised as having the potential to establish themselves as researchers within a five-year period after evaluation, based on their performance and productivity as researchers during their doctoral studies and/or early postdoctoral careers	Y1	A young researcher (within five years from PhD) who is recognised by all reviewers as having the potential (demonstrated by research products) to establish him-/herself as a researcher with some of them indicating that he/she has the potential to become a future leader in his/her field OR A young researcher (within five years from PhD) who is recognised by all or the overriding majority of reviewers as having the potential to establish him-/herself as a researcher of considerable international standing on the basis of the quality and impact of her/his recent research outputs
		Y2	A researcher in this group is recognised by all or the overriding majority of reviewers as having the potential to establish him-/herself as a researcher (demonstrated by recent research products).



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