Alumni magazine of the University of Pretoria | Alumnitydskrif van die Universiteit van Pretoria

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Tukkie

Autumn/Herfs/Lehlabula 2015 Volume 21 Number 1

Lesse in e-onderrig

More than 10 000 graduates capped

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Engineering, Built Environment and Information Technology

Department of Electrical, Electronic and Computer Engineering

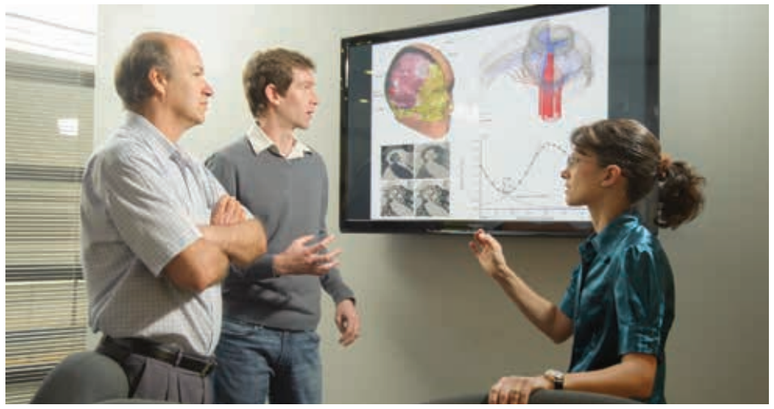
Postgraduate degree programmes

The Department of Electrical, Electronic and Computer Engineering has taken a number of steps to transform its postgraduate programme from a traditional on-campus teaching programme to one in which the majority of honours modules are presented in a block week format.

The following postgraduate degrees are offered on honours, master's and PhD levels:

- Electrical Engineering
- Electronic Engineering
- Computer Engineering
- Bioengineering
- Microelectronics

During the honours degree (one year minimum), students complete four 700-level modules aimed at a specific research topic. During the master's degree (one year minimum), students publish a research article based on their research contribution, and write a full dissertation. During the PhD degree (two years minimum) students are expected to make a major contribution and publish two research articles in an accredited journal. Postgraduate degrees can be obtained through any of the nine research groups.



Overview of research groups

Advanced Sensor Networks (ASN)

Advanced sensor networks (ASNs) refer to the set of technologies and disciplines that allows distributed embedded systems to cooperatively sense, decide, learn and act in real-time to achieve certain goals. The application of ASN technology can result in intelligent environments that are able to monitor themselves and take proactive steps without human intervention. This group focuses on all these aspects of designing innovative ASN solutions.

Bioengineering

This group focuses on developing three areas of expertise targeted at research questions in cochlear implants. The first involves the electrode, the second aims to understand the relationship between stimulus and perception, and the third aims to enable normal-hearing people to listen to the sounds that cochlear implantees hear.

Control Systems

Automatic control is a truly ubiquitous technology which makes a modern life possible. It is not only restricted to physical systems, such as biological and financial systems, but can include topics related to the modelling and control of systems in mineral and metal processing, and process control and economic performance assessment.

Electromagnetism

This group specialises in a wide variety of microwave components and antennas. Current research revolves around the design and analysis of slot and planar antenna elements, the use of metamaterials in single antenna elements and antenna arrays, developing waveguide horn antennas of extreme bandwidth, the design and analysis of passive microwave components, and improving antenna measurement techniques.

Electronics and Microelectronics

This group specialises in the design of CMOS and BiCMOS integrated circuits, as well as the design and manufacture of novel silicon-based semiconductor devices. It currently designs circuits for 90 nm, 65 nm and 32nm processes, as well as 130nm SiGe BiCMOS for mm-wave. The use of silicon as a light emitter may eventually lead to integrated silicon photonic circuits.

Energy Systems

This group aims to be a world-class centre of excellence that addresses the research, education, development, and industrial applications of energy optimisation and management. The focus is on both supply-side and demand-side management. The cost-effective supply and end-use of energy are promoted through cooperated research within the energy group and the control group. This research forms an interface of energy systems, econometrics, control theory and financial mathematics.

Intelligent Systems

The Intelligent Systems Group (ISG) specialises in the theory and application of systems that perceive, reason, learn and act intelligently. The aim of the group is to create real-world intelligent systems applicable to the South African context.

Power

This group focuses on high-energy efficiency converters for applications in DC distribution systems, high-energy efficiency converters for electronic lighting systems, high-energy efficiency converters for renewable energy applications, loss and thermal modelling in converters and electric drive systems, the modelling of EMI noise generation and propagation in converters, and active rectifiers.

Telecommunication Systems and Signal Processing

This group incorporates two centres of expertise: the Sentech Chair in Broadband Wireless Multimedia Communication, and the Centre for Telecommunication Engineering for the Information Society (CeTEIS). The combined research focus is on any topic in the expansive field of wireline and wireless telecommunication technologies.

Registered students

Degree	Year				
	2010	2011	2012	2013	2014
Hons	111	80	77	93	103
Master's	75	71	66	78	77
PhD	25	27	35	47	56
TOTALS	211	178	178	218	236

Publications in accredited journals

	Year				
	2010	2011	2012	2013	2014
Journal articles	29	34	37	59	57

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Cover photo/ Voorbladfoto

Leaves turning yellow in Tukkie Avenue on the Hatfield Campus of the University of Pretoria announce the changing of the seasons.

Blare wat geel verkleur in Tukkielaan op die Hatfieldkampus van die Universiteit van Pretoria kondig die verandering van seisoene aan.

Opinions expressed in Tukkie are that of the individual concerned and not necessarily the view of the University of Pretoria. Tukkie is published by the University of Pretoria's Department of University Relations.

Menings in Tukkie is dié van die betrokke persoon en nie noodwendig die standpunt van die Universiteit van Pretoria nie. Tukkie word uitgegee deur die Universiteit van Pretoria se Departement Universiteitsbetrekkinge.

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Principal's message

Dear *Tukkie* reader

The first quarter of the academic year is a time when we celebrate two milestones in the cycle of academic life at the University. At the very beginning we open the academic year with a special ceremony to welcome our new first-year students, followed by two weeks of induction into their new way of life as a Tukkie student. Then we typically close the quarter for the Easter break as we begin our autumn graduation ceremonies.

This year was no different. It was a glorious summer day in January when we welcomed about 10 000 talented young minds for the 2015 academic year. The Amphitheatre overflowed into the Musaion with our excited new first-year students and their families. In welcoming our new students, I urged them to use each day optimally by focussing on their academic work, as having a degree from a good university has become more important than ever before in shaping a young person's future prospects.

Then as the trees in Tukkielaan began to turn yellow, the University's autumn graduation season began with the GIBS graduation in the Aula at the end of March. By the end of April, over 10 000 students had graduated with qualifications in professional fields such as business management, veterinary science, engineering, education and medicine among others. There were also 134 PhD degrees and five honorary doctorates. Graduation is really what a university is all about. As Vice-Chancellor and Principal I felt a deep sense of pride when I saw the joy on the faces of our graduates and their families. The University of Pretoria's annual TuksAlumni Laureate Awards give us a perspective on how our students fare after graduation. The six TuksAlumni Laureates honoured at the end of 2014 are profiled in this edition. This is just a snapshot of the contribution and impact being made by our graduates in South Africa and all over the world.

The month of April is also a time when we pay tribute to our academic staff who are responsible for ensuring the success of our students. At the annual academic achievers awards, we celebrated outstanding performance in teaching and research and this year we added the Vice-Chancellor's Book Awards to the range of achievements acknowledged, as well as the Community Engagement Award. Academic life has become increasingly multifaceted and it is important that we affirm the full range of responsibilities of our academic staff who are striving on a daily basis to enhance the stature of the University of Pretoria.

The many achievements reflected in this edition of Tukkie are a great source of pride to the University of Pretoria and I feel extremely privileged to have the opportunity to lead such an exceptional institution as the Vice-Chancellor and Principal. Thank you for your ongoing support.

Prof Cheryl de la Rey
Vice-Chancellor and Principal

Rektor se boodskap

Beste *Tukkie*-leser

Die eerste kwartaal van die akademiese jaar is 'n tydperk waarin ons twee mylpale in die Universiteit se siklus van akademiese lewe vier. Heel aan die begin open ons die akademiese jaar met 'n spesiale seremonie om ons nuwe eerstejaarstudente te verwelkom, gevolg deur twee weke van inskakeling by hul nuwe lewenswyse as Tukkie-studente. Daarna sluit ons tipies die kwartaal vir die Paasvakansie af met die aanvang van die herfspromosieplegtighede.

Hierdie jaar het weer so verloop. Dit was 'n heerlike somersdag in Januarie toe ons die ongeveer 10 000 talentvolle jong denkers vir die 2015 akademiese jaar verwelkom het. Ons opgewonde nuwe eerstejaarstudente en hul gesinne het uit die Amfiteater na die Musaion oorgespoel. Tydens my verwelkoming van ons nuwe studente het ek hul aangemoedig om elke dag ten volle te benut deur op hul akademiese werk te fokus, want om 'n graad van 'n goeie universiteit te besit, speel tans 'n belangriker rol as ooit tevore in die vorming van 'n jongmens se vooruitsigte.

Die bome in Tukkielaan het van groen na geel verkleur en die Universiteit se herfspromosieseisoen het terselfdertyd einde Maart met die GIBS-promosieplegtigheid in die Aula afgeskop. Teen die einde April het meer as 10 000 studente gegradueer met professionele kwalifikasies soos sakebestuur, veeartsenykunde, ingenieurswese, opvoedkunde en geneeskunde. Daar was voorts 134 PhD-grade en vyf eredoktorsgrade. Om 'n graad te kry, is die hoogtepunt van universiteitslewe. As Visekanselier en Rektor het ek 'n diepe gevoel van trots ervaar toe ek die vreugde op ons gegradueerdes en hul families se gesigte raaksien. Die Universiteit van Pretoria se jaarlikse TuksAlumni Laureaat-toekennings bied ons 'n perspektief op hoe ons studente ná graduering vaar. In hierdie uitgawe wy ons 'n artikel aan die ses TuksAlumni-laureate wat aan die einde van 2014 vereer is. Dit is maar 'n momentopname van die bydrae en impak wat ons graduandi in Suid-Afrika en oor die wêreld heen maak.

Aprilmaand is ook 'n tyd wanneer ons ons akademiese personeel wat vir die sukses van ons studente verantwoordelik is, vereer. Tydens die jaarlikse toekennings vir akademiese presteerders het ons uitnemende prestasie in onderrig en navorsing gevier en hierdie jaar het ons die Visekanselier-boektoekennings asook die Gemeenskapsbetrokkenheid-toekenning by die reeks erkende prestasies gevoeg. Die akademiese lewe word toenemend veelfasettig en dit is belangrik dat ons die volle spektrum verantwoordelikhede van ons akademiese personeel wat daagliks streef om die Universiteit van Pretoria se aansien te verhoog, bekragtig.

Die talle prestasies wat in hierdie uitgawe van *Tukkie* voorgehou word, is vir die Universiteit van Pretoria 'n groot bron van trots en ek voel uiters bevoorreg om die geleentheid te hê om so 'n uitsonderlike instelling as Visekanselier en Rektor te lei. Dankie vir u volgehoue ondersteuning.

Prof Cheryl de la Rey
Visekanselier en Rektor

UP welcomes new first-years

Some 10 000 new students with their parents, family and friends attended Welcoming Day at the start of the academic year.

Being accepted to study at the University of Pretoria (UP) and becoming a fully fledged Tukkie are the first steps in a journey of wonderful and varied experiences.

The first step on the road to success at Tuks began at Welcome Day which signalled the start of Orientation Week for new first year students. Throngs of students and their families braved the summer heat for a chance to hear first-hand what it means to be a Tukkie and how lucky they were to have been selected for university entrance. The campus was enthused with the University's call to "Make Today Matter" and students were inspired to do their best every day to create the future they desired.

In her welcome message to thousands of first-year students, Prof Cheryl de la Rey, the Vice-Chancellor and Principal of UP, said that the University prides itself on its track record of academic excellence and its mission to provide high-quality teaching to produce students who are ready to take on and add value to the world. 'Your success is important to us. Your next important challenge is to ensure that you graduate within the time allocated,' she said.

The Vice-Chancellor invited students to participate in Orientation Week and added that university life presents an opportunity to build new friendships and experience different things. She said that since the Tuks community is large and diverse, comprising students from all parts of South Africa and many other different parts of the world, there are many opportunities to make new acquaintances and form new friendships.

Reminding the first-years of what their priorities should be, she said that they should use their time wisely to achieve their goals. "I urge you to remain focused on your academic goals while ensuring that you lead a healthy, balanced life to realise your dreams." A good work ethic, well-rounded education and an interest in all aspects of society through art, culture, nature or sport are hallmarks of a Tukkie. ■

The best of the best choose to study at UP

UP is an institution of choice for top academic students and the story of Ruan Ras, who matriculated from the TuksSport High School with seven distinctions at the end of 2014, is inspiring.

The Vice-Chancellor and Principal, Prof Cheryl de la Rey (middle), Mr Neeltjie Wilkens (left), Deputy Chair of the TuksAlumni Board and Ruan Ras, representing the 2015 first-year students, after the planting of forest bushwillow trees on the Hatfield Campus during Welcoming Day.

At the traditional annual tree-planting ceremony on Welcome Day, the Vice-Chancellor and Principal, Prof Cheryl de la Rey, Mr Neeltjie Wilkens, Deputy Chair of the TuksAlumni Board, and Ruan, representing the first-year students, each planted a forest bushwillow on the Hatfield Campus to symbolise the 2015's first-years.

Ruan is an exceptional student who enrolled for architecture. He is also a swimming champion and a cancer survivor. He was diagnosed with Burkitt lymphoma in grade 9, but despite this setback, he was still the top student in his grade at the end of the year and the following year he started swimming again.

He was deputy head boy of the TuksSport High School and got distinctions in Afrikaans, English, maths, science, computer application technology and business studies and life orientation.

Other young UP graduates who have recently excelled include Benjamin Mbana, a UP graduate and recipient of the 2014 South African Ernst & Young (EY) Young Tax Professional of the Year Award, who was announced winner of the international 2014 EY Young Tax Professional of the Year Award in Amsterdam in December 2014.

The Cyril Ramaphosa Education Trust (CRET), supported by the Shanduka Foundation, recently honoured students in its bursary programme with CRET Awards for excellence in academics, leadership and service. Two students from UP were among the eight recipients of these awards. The Student of the Year Award went to Kabelo Precious Monareng, a student in economics. Catherine Reynders, an Education student majoring in mathematics, was recognised as one of the two top achievers in the programme.

A second-year BA International Relations student at UP, Thabang Manamela, won the National Young Leader Disability Award at the 2014 National Disability Awards for his 'academic excellence and for ensuring that the University's Disability Unit renders a quality service to disabled students'. The competition is an initiative of the Insurance Sector Education and Training Authority and is organised by the Department of Social Development in partnership with ACSA. Thabang received a tablet with Jaws software and a bursary of R102 000 from the Deputy Minister of Social Development, Ms Hendrietta Bogopane-Zulu at a ceremony held at UP. ■

10 000 graduates capped during Autumn Graduation ceremonies

By Sanku Tsunke

The University of Pretoria (UP), including its business school, the Gordon Institute of Business Science (GIBS), awarded degrees to 10 465 graduates at this year's Autumn Graduation ceremonies.

Qualifications ranging from diplomas and certificates to PhD degrees were awarded by the University in its nine faculties, with 2 412 degrees awarded in the Faculty of Economic and Management Sciences, the highest number of all faculties.

134 doctorates, 1 187 master's degrees and 2 957 honours degrees were awarded.

UP is the largest contact higher education institution in South Africa with almost 50 000 contact students and 12 000 distance education students. 28% of the 62 000 students are registered for postgraduate programmes. UP is committed to deliver on its vision of being a leading research-intensive university in Africa, recognised internationally for its quality, relevance and impact and also for developing people, creating knowledge and making a difference locally and globally.

Despite being the largest research-intensive university in the country, UP remains committed to increasing student access through planned growth in enrolment, particularly in areas where South Africa has a critical skills shortage. In 2015, UP saw a third of school leavers who had achieved six or more distinctions in grade 12 enrolling as first years.

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During the Autumn Graduation ceremonies the University recognised individuals who have made notable contributions in their field of expertise by awarding them honorary doctorates:

- **Prof Karl E Klare** is from the School of Law at Northeastern University, Boston, USA. He has published and lectured extensively on labour and employment law and human rights and has worked on several legal projects in South Africa. He works closely with South African legal scholars on issues related to the concept of 'transformative constitutionalism'. Prof Klare was honoured by UP in view of the enormous influence his scholarship has had, and continues to have, on the education and development of UP's students and staff. His work has been at the core of a number of undergraduate and postgraduate courses over the past two decades. A large number of postgraduate research projects at UP have had the notion of legal culture and his suggestion of transformative constitutionalism as their central focus.
- **Prof Jan de Groof** was recognised by an honorary docorate for his extensive work in education and law. He is regarded as one of the most influential role players in education law in the late 20th and the early 21st centuries and is a tireless campaigner for justice and good governance in education. He is a professor at the College of Europe (Bruges) and the University of Tilburg (the Netherlands).
- **Prof Marco Dorigo** is a research director of the FRS-FNRS – the Belgian fund for scientific research – and co-director of IRIDIA, the artificial intelligence laboratory of the Université Libre de Bruxelles, Belgium. He is also a fellow of the Institute of Electrical and Electronics Engineers (IEEE), of the Association for the Advancement of Artificial Intelligence (AAAI) and of the European Coordinating Committee for Artificial Intelligence (ECCAI).
- **Prof Howard Alper** is currently Chair of the government of Canada's Science, Technology and Innovation Council (STIC) and Distinguished University Professor at the University of Ottawa. His research spans organic and inorganic chemistry with potential applications in the pharmaceutical, petrochemical and commodity chemical industries. He has published 542 papers and holds 37 patents.
- **Prof Adrian Bejan** has a PhD degree in mechanical engineering and has pioneered numerous original methods in thermal sciences. He is ranked among the 100 most cited authors in the entire field of engineering. He is a member of the Academy of Europe and an honorary member of the American Society of Mechanical Engineers, the Romanian Academy and the Moldova Republic Academy of Sciences. The honorary doctorate is bestowed on Professor Bejan in recognition of the enormous scope and tremendous contributions he has made in the fields of thermodynamics, heat transfer and applied physics. ■

1. Prof Jan de Groof 2. Prof Karl E Klare 3. Prof Adrian Bejan 4. Prof Marco Dorigo receives the honorary doctorate medal from the UP Chancellor, Prof Wiseman Nkuhlu. 5. Prof Howard Alper

Twee vooraanstaande geestelikes vereer

Twee van Suid-Afrika se voorste geestelikes, Biskop dr Thabo Cecil Makgoba en dominee Freek Swanepoel, het gedurende die Herfsgradeplegtighede die Kanseliersmedalje ontvang ter erkenning van hul bydrae tot versoening in Suid-Afrika.

Ds Freek Swanepoel (links) en Biskop dr Thabo Makgoba het op 28 April die Kanseliersmedalje van die Universiteit ontvang by 'n gradeplegtigheid toegewy aan diplomas en grade van die Fakulteit Teologie.

Die Dekaan van die Fakulteit Teologie, prof Johan Buitendag, het gesê die toekenning van die Kanseliersmedalje deur sy fakulteit is die begin van die aanloop tot die Fakulteit Teologie se eeufeesviering in 2017 toe dit 100 jaar vroeër die eerste teologiefakulteit in die land was.

Prof Buitendag het gesê die eeufeesvierings sal nie op die geskiedenis van die fakulteit konsentreer nie, maar eerder op die uitdagings waarvoor dit in die volgende 100 jaar te staan sal kom. "Ons sien in die toekenning van eregrade aan uitgesoekte persone oor die volgende drie jaar 'n wonderlike geleentheid vir die bevestiging van ons huidige oriëntasie [ten opsigte] van inklusiwiteit en diversiteit deur die onderskraging van bewese akademiese uitnemendheid," sê hy.

Weleerwaarde dr Thabo Cecil Makgoba dien as Aartsbiskop van Kaapstad sedert 2008, tot dusver die jongste biskop in Suid-Afrika tot hierdie amp verkies. Hy het 'n BSc, 'n BA in Toegepaste Sielkunde (Honneurs) en 'n MEd (Opvoedkundige Sielkunde) aan die Universiteit van die Witwatersrand verwerf. Hy was dosent by Wits en Dekaan van die Knockando-koshuis op die onderwyskampus van Wits (voorheen die Johannesburgse Onderwyskollege – JCE) en was ook 'n senior lektor.

In Februarie 2012 is hy as Kanselier van die Universiteit van Wes-Kaapland ingehuldig.

Dominee Freek Swanepoel het sy teologiese studie aan UP voltooi en in verskeie sinodale kommissies gedien. Hy was voorsitter van die Raad van Kuratore vir die teologiese opleiding van die NG Kerk by UP.

Hy het die Algemene Sinode van 1994, ook bekend as die "Sinode van Versoening", as voorsitter gelei. Dit was die eerste (en tot vandag toe die enigste) sinode van die NG Kerk wat deur 'n dienende uitvoerende staats- en regeringsbeampte toegespreek is, naamlik voormalige president Nelson Mandela.

Ds Swanepoel het voor die Waarheids- en Versoeningskommissie verskyn om die belydenis van die NG Kerk ten opsigte van apartheid oor te dra. Tydens sy ampstermyn het die NG Kerk ook die eerste stappe geneem om weer lid van die Suid-Afrikaanse Raad van Kerke te word.

Debbie kry diploma op 51

Debbie Conradie se droom om met diere te werk is verwesenlik toe sy tydens die Herfsgradeplegtigheid die Diploma in Diereverpleegkunde (DipVetNurs) ontvang het. Hoewel sy vroeër in 'n rigting gestudeer het wat niks met diere te doen het nie, kon sy nie die droom van haar kinderjare om met diere te werk, prysgee nie, en in 2012 het sy vir die diploma by die Fakulteit Veeartsenykunde geregistreer. Sy het nooit toegelaat dat persoonlike terugslae of haar ouderdom haar keer om haar droom te verwesenlik nie. ■

Kwaliteit van presteerders bevestig UP-aspirasies

Een van die universiteit van Pretoria se vyf strategiese doelwitte is om 'n toonaangewende navorsingsintensiewe universiteit te wees. Die Universiteit gee elke jaar erkenning aan akademici vir uitsonderlike prestasies in navorsing deur die benoeming van uitsonderlike akademiese presteerders.

The University also honours its younger researchers through acknowledgement as exceptional young researchers. Achievement in teaching and learning is celebrated by making Teaching Excellence and Innovation Laureate Awards to exceptional individual and team teaching practices.

Die Universiteit van Pretoria Visekanseliersboektoekennings 2014

Vanjaar het die Visekanselier en Rektor, prof Cheryl de la Rey, vir die eerste keer toekennings gemaak aan vakkundige boeke in onderskeidelik die Geestes- en Sosiale Wetenskappe en in Natuur- en Toegepaste Wetenskappe.

Prof Jan Boeyens ontvang die toekenning vir sy boek van die Visekanselier en Rektor, prof Cheryl de la Rey. In die middel staan prof Anton Ströh, Vise-rektor: Institusionele Beplanning.

In die Natuur- en Toegepaste Wetenskappe is prof Jan Boeyens se boek *The chemistry of matter waves* met die toekenning bekroon. Die boek is die nuutste, bygewerkte werk in 'n reeks boeke en publikasies waarin prof Boeyens 'n saak uitmaak vir 'n nuwe benadering tot die kwantumbeskrywing van chemie. Die boek bied 'n diepgaande, ernstig vakkundige studie van die literatuur en onthul dat baie wetenskaplikes in handboeke verkeerd aangehaal word en selfs deur ander wetenskaplikes misverstaan word.

In die Geestes- en Sosiale Wetenskappe is prof Lorenzo Fioramonti se boek *Gross domestic problem* aangewys as die wenner. Die boek doen 'n kritiese analise van die diskoers oor en geskiedenis van 'n konsep wat aan die wortel lê van ekonomie en die manier waarop ons oor die wêreldgemeenskap en die welsyn daarvan dink.

Chancellor's Medal: Research

Prof Don Cowan, Director of both the Genomics Research Institute and the Centre for Microbial Ecology and Genomics, was awarded the 2015 Chancellor's Medal for Research. His research is focused on the microbiology of the extreme temperatures that are characteristic of desert soil and he collaborates with research laboratories in many other countries.

The Chancellor, Prof Wiseman Nkuhlu, hands the Chancellor's Medal: Research to Prof Don Cowan.

The following members of staff were singled out as Outstanding Academic Achievers:

Fakulteit Natuur- en Landbouwetenskappe

Prof Wlady Altermann

Prof Altermann beklee sedert 2009 die Kumba-Exxaro-leerstoel in die Departement Geologie. Hy het die grootste Koolstofbergingswerkgroep in Suid-Afrika byeengebring, wat nóú saamwerk met die Suid-Afrikaanse Sentrum vir Koolstofvaslegging en berging, die Raad vir Geowetenskap en verskeie internasionale instellings. In 2014 het hy, tesame met dr Roger Dixon van die Departement Geologie en prof Andrie Garbers-Craig van die Departement Materiaalwetenskap en Metallurgiese Ingenieurswese, 'n NNS Nasionale Toerustingprogram (NTP)/Nasionale Nanotegnologie-toerustingprogram (NNTP)-toekenning ontvang om die eerste SELFRAG-laboratorium vir hoëspanningpuls-rotskraak- en mineraalskeiding in Afrika – en een van net enkeles ter wêreld – in te rig.

Prof Walter Focke

Prof Focke is hoogleraar in die Departement Chemiese Ingenieurswese en Direkteur van die Instituut vir Toegepaste Materiale. Hy doseer Materiaalkunde en Materiaalingenieurswese asook Fase-ewewig-termodinamika op voorgraadse vlak en Polimeerprosessering en Polimeerbymiddeltegnologie op nagraadse vlak.

Prof Focke het heelwat befondsing ontvang vir sy navorsing oor veiliger metodes vir die beheer van malariavektormuskiete. Sasol het die ontwikkeling van 'n duursame polipropileenmuskietnet ondersteun. 'n Belangrike navorsingsoogmerk is om die aktiewe leeftyd van insekdoders wat deur die Wêreld¬gesondheids¬organisasie (WGO) goedgekeur is, te verbeter om hulle geskik te maak as alternatiewe vir die kontroversiële DDT, wat tans vir interne residuele sproei (IRS) gebruik word. Die Bill en Melinda Gates-stigting het navorsing befonds vir die ontwikkeling van 'n insekdodende verf vir IRS. Prof Focke se navorsingsgroep het gesamentlike befondsing van Mosambiek en Suid-Afrika ontvang om ondersoek in te stel na die gebruik van plaaslike kleisoorte as 'n middel vir die beheerde vrystelling van IRS-insekdoders. Huidige pogings fokus op die gebruik van natuurlike produkte en duursame insekdodende muurbedekkings.

Die Visekanselier en Rektor, prof Cheryl de la Rey saam met akademici wat vereer is as uitmuntende akademiese presteerders. Van links is prof Michael Pepper, prof Wlady Altermann, prof Walter Focke en prof Marion Meyer.

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Professor Rashid Hassan

Prof Hassan has been the Director of the Centre for Environmental Economics and Policy in Africa (CEEPA) since 1997. He is a senior fellow of the University of Bonn's Centre for Development Research (ZEF, 2012–2016) and has served on numerous national and international advisory boards and committees, including the Scientific Advisory Council of the Stockholm Environmental Institute (2014), the Council of the International Society for Ecological Economics, the Independent Science and Partnership Council (ISPC) of the Consultative Group for International Agricultural Research (CGIAR), the CGIAR Climate Change Challenge Programme (CCCP) and the Academic Advisory Panel for *The world development report on climate change*.

Prof Marion Meyer

Prof Meyer werk in die Departement Plantkunde, waarvan hy van 2001 tot 2013 die hoof was. Sy navorsing fokus op fitochemie in die algemeen en meer spesifiek op die metabolomika van die sekondêre verbindings van medisinale plante, dit wil sê die verbindings wat plante vervaardig om hulself teen patogene en herbivore te beskerm. Sy navorsingspan het talle nuwe sekondêre verbindings geïsoleer wat in vitro-aktiwiteit teen tuberkulose, erektiele disfunksie, malaria, MIV, herpes-virusse en ander patogene getoon het. Sy werk het tot vier patente gelei en hy speel 'n aktiewe rol in die professionele liggame op sy navorsingsgebied.

Prof Clarke Scholtz

Prof Scholtz, 'n professor in Entomologie in die Departement Dierkunde en Entomologie, se vernaamste navorsingsbelangstelling is die evolusionêre biologie en bewaring van miskruiers en verwante spesies. Hierdie navorsing word gesteun deur 'n groep van ongeveer tien nagraadse studente en veld- en laboratoriumpersoneel wat die Miskruiernavorsingsgroep (MNG) vorm. Hulle huidige navorsingsprojekte sluit in die gebruik van miskruiers as aanwysers van weidingstoestande op plase in die Noord-Kaap en, nader tuis, die uitwerking van miskruiers op grondverbetering in die rehabilitasie van mynhope in Mpumalanga.

Faculty of Heath Sciences

Prof Michael Pepper

Prof Pepper is a professor in the Department of Immunology in the Faculty of Health Sciences and the Director of the Institute for Cellular and Molecular Medicine, which was established on the basis of the Faculty of Health Sciences research theme of the same name. He is also an associate professor in the Department of Genetic Medicine and Development in the Faculty of Medicine at the University of Genève, Switzerland.

Prof Pepper has conducted extensive research on clinically directed (displacement) molecular cell biology, and in Genève he has made significant contributions towards understanding the mechanisms of angiogenesis and lymphangiogenesis. Since his return to South Africa his research has again been focused on stem cells and the human genome.

In the field of stem cell research, Prof Pepper's group works on both mature and pluripotent stem cells. In the case of the former, the group is guided by South Africa's heavy burden of disease, in particular HIV (a communicable disease) and obesity (a non-communicable disease). With regard to HIV the group – in collaboration with colleagues in Genève – is busy developing a gene therapy that is aimed at making the immune system HIV resistant. The group's research on obesity involves the study of the genetics of obesity and they have also developed a model of adipogenesis that lends itself to high-throughput screening for new inhibitors.

Prof Pepper and prof Michèle Ramsay of the University of the Witwatersrand, who is the chairperson of the South African Society for Human Genetics, are jointly responsible for the Southern African Human Genome Programme that was introduced in January 2011. ■

UP honours young researchers

At its annual Academic Achievers function held on 22 April, the University of Pretoria paid tribute to its exceptional young researchers.

Dr Irene Barnes

Dr Barnes is a research fellow in the Forestry and Agricultural Biotechnology Institute (FABI) and the Department of Genetics, and one of the research leaders in the Tree Protection Cooperative Programme (TPCP) in the Faculty of Natural and Agricultural Sciences.

Her research interests include investigating the taxonomy, phylogenetics and population biology of fungal pathogens that infect forest trees. More specifically, her focus has been on developing novel molecular diagnostic tools to accurately and effectively identify fungal species in South Africa and globally, and to delineate cryptic species within fungal complexes. She has pioneered techniques to generate microsatellite markers that are used to study the population genetics of important tree pathogens, such as species of *Ceratocystis, Dothistroma* and *Teratosphaeria*.

Prof Naushad Emmambux

Prof Emmambux is an associate professor in the Department of Food Science in the Faculty of Natural and Agricultural Sciences. While his research is broadly focused on African food biopolymers for nutrition and functional use, the main focus is on the chemistry of starch modification by using lipids for the 'clean-label starches' needed for the production of nano-materials; non-gelling high-viscosity starches for stabilisers and fat replacers; low glycaemic index foods; encapsulation of neutraceuticals; and biocomposites with other biopolymers. His main areas of interest are food chemistry, food rheology, spectroscopy, microscopy and nanotechnology. ■

Honoured as UP's Exeptional Young Researchers are Prof Naushad Emmambux (extreme left) and Dr Irene Barnes (far right) posing with Prof Stephanie Burton, Vice-Principal: Research (centre left) and Prof Cheryl de la Rey (centre right).

Applauding excellence in teaching and learning

Prof Tania Hanekom received the Teaching Excellence and Innovation Award in the individual category.

The University of Pretoria annually presents Teaching Excellence and Innovation Laureate Awards to projects displaying teaching practices that optimise teaching and learning and contribute to best practice.

Prof Tania Hanekom of the Department of Electrical, Electronic and Computer Engineering in the School of Engineering won the Teaching Excellence and Innovation Laureate Award in the individual category. She completed the B.Eng. (Electronic Engineering) degree in 1993 after which she obtained an M.Eng (Electronic Engineering)(cum laude) in 1996 and a Ph.D in Engineering in 2001. She joined the Faculty of Engineering, Built Environment and Information Technology in 1999. Her research is in biomedical engineering where she and her husband, Prof Johan Hanekom, form a research team who publish together and are internationally acclaimed in the field of cochlear implants for the deaf. Her research is focused on computational modelling of the electrode-neural interface in cochlear implants She holds a C2 rating from the National Research Foundation and is also registered as a professional engineer with the Engineering Council of South Africa.

Prof Hanekom was assigned to the undergraduate, engineering third-year module Microcontrollers EMK310 in 2005. The lectures for which she was responsible covered aspects of microcontroller system design, while practical assignments focused on simple microcontroller implementations without formal guidance in firmware development. At the time all test codes were written on paper, making grading ineffective and frequently inaccurate. Since the explosion of the digital device market during the past 20 years, it became essential to equip more engineering graduates with embedded design skills. It was therefore clear that the module had to be redesigned to address this need while empowering students to excel in the embedded design industry.

The main innovations in the module, which Prof Hanekom describes briefly below, were aimed at supporting effective teaching and learning in microcontroller systems within the context of large classes.

Prof Hanekom realised that the module had to be shaped to meet industry needs. Since embedded design includes almost every available technological innovation, she initially restructured the scope of the module to cover microcontroller architecture and programming, as well as the real-world interface with microcontroller systems. A systems-based approach was introduced to prepare students for and expose them to the challenges they will face in industry.

In support of a hands-on approach to skills development, students have been required to integrate and apply their engineering skill sets to solve technical problems. The presentation of the module was moved to a computer laboratory where students have access to industry-standard engineering tools and the lecturing style and assessment strategy were redesigned to support this approach.

Large student numbers place serious constraints on the ability to process and grade tests and examinations. Automatic grading software (AGS) was therefore developed for computerised support to grade students' code answers. With AGS, grading time becomes independent of student numbers, post-test grading time becomes negligible, and grading is consistent and accurate. The AGS is based on the Microchip MPLAB X SDK test bench and is possibly the only automatic grading system in the world that is based on this technology. A Scolarship of Teaching and Learning grant was awarded to fund further development of the AGS into a computerised tutoring system (CTS) that will provide students with 24/7 online access to and grading of previous tests and examinations to nurture firmware development skills. The beta version of the CTS was deployed in April 2015.

Due to the high standards that are maintained in the module, students started to dread it and it became essential to change students' perception to inspire excitement and anticipation. In 2013 the practical component of the module was redesigned to enable students to develop autonomous line-following robots that compete in the end-of-semester Race Day (http://www.ee.up.ac.za/main/emk310/index), which is organised as a professional event to celebrate students' achievements. Race Day created a positive change in students' attitude towards the module as it generated an opportunity to complete a comprehensive engineering project from first principles and to involve industry through sponsorship and attendance of the event. ■

A CORNERSTONE FOR INDEPENDENT LEARNING

Ms Thea Corbett and Ms Christine Kraamwinkel won the Teaching Excellence and Innovation Laureate Award in the team category for the implementation of an assessment model in the revised curriculum in foundation mathematical statistics that targets students' approach to learning.

In 2008 the University of Pretoria introduced a four-year programme in the Faculty of Natural and Agricultural Sciences (NAS) to increase access to science and science-based study programmes by setting lower entrance requirements and offering intensive support in order to prepare students for further studies in mainstream programmes.

The programme is aimed, among other things, at delivering subject content through a variety of methods to remedy possible gaps in students' knowledge, focusing on understanding and developing critical thinking and practical skills, and continuous assessment of progress to meet the required levels of academic performance.

The introduction in 2012 of an independent revised curriculum in foundation mathematical statistics allowed for the progressive implementation of an assessment model that specifically targets students' approach to learning through the appropriate structuring of a variety of assessment opportunities and constructive alignment to desired learning outcomes. It is based on a balanced mix of ideas, connections and extension levels of learning and thinking across a set of activities. This model can positively influence students' approach to learning towards adopting deep learning, which is the key to high

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levels of statistical literacy, reasoning, thinking and producing quality graduates.

The classification of assessment tasks requires extensive, advanced planning and the programme leader, Thea Corbett, says this reflective practice is informed by teaching and learning theories through sustained scholarly research. Bettie Basson, now retired, was instrumental in the launch of the programme in 2012 and is an inspiration and invaluable peer-review soundboard for her former colleagues. Christine Kraamwinkel joined the programme in 2011 as an assistant lecturer. She explains: 'As an undergraduate student, I was often frustrated at having to memorise work and being unable to perform to the best of my ability in exams. As part of this team I have had the opportunity to address those frustrations in order to enhance the learning experience for our students'.

At the centre of this innovation is enquiry-based project work – an activity that culminates in predominantly higher-level responses, such as connections and extensions, through constructively focused input from interactive large-group lectures, student-driven small-group tutorials and computer-based practical sessions. This yielded very satisfactory student results, overwhelmingly positive student feedback and healthy retention rates.

Ms Kraamwinkel has been employed in the Department of Statistics at UP as a junior lecturer since 2013, lecturing and assisting in the development of foundation modules in Mathematical Statistics on the Mamelodi Campus. She obtained a BSc in Actuarial Science in 2011 and completed her BSc (Hons) in Mathematical Statistics in 2012. During this time she was employed as a tutor/assistant in the Department of Computer Science (2008-2009) as well as for the Thuthuka Bursary Fund (2011) and Department of Statistics (2011-2012). She is currently working on completing her MSc in Applied Statistics by the end of 2015, focussing her research on the statistical problems encountered in wildlife and animal research.

Ms Corbett joined the Department of Statistics at UP as a lecturer in 2004 after 11 years of teaching Statistics at all undergraduate levels at the former Vista University. Teaching students who are not academically well prepared, but who are willing to work hard to succeed in obtaining their degrees, has been the focus of her career as a lecturer – something she deeply enjoys and for which she receives sustained feedback on her effectiveness and expertise as a teacher. As such she is repeatedly challenged to reflect on intuitive own experiences and a search to understand the nature of student learning experiences. Her approach to teaching is built on a strong passion for her subject, her student community and a desire for conceptual focus.

The challenge of working with others to build understanding has led to a research interest in shaping students' approach to learning – the topic of her dissertation for the master's qualification in Statistics Education through the Institute for Science and Technology Education at Unisa in 2015. The importance of developing a deep approach to learning in order to potentially deliver quality graduates who are capable of conducting their own, independent research, has also been the cornerstone of her teaching in the four-year programme at UP since 2008 and at the Mamelodi Campus specifically since 2010. ■

Thea Corbette (on the right behind the students) and Christine Kraamwinkel were the Teaching Excellence and Innovation Award laureates in the team category.

Recognising community engagement

In 2005, the Faculty of Engineering, Built Environment and Information Technology (EBIT) at the University of Pretoria (UP) implemented the compulsory Community-based Project Module (code JCP) for all undergraduate students. The decision to create this free-standing module was motivated by the need to accommodate community-service and service-learning projects within the curricula of all undergraduate programmes.

This module was accredited by the Engineering Council of South Africa (ECSA) in 2006 and 2012, and was, and still is the first of its kind for students in the disciplines of engineering, the built environment and information technology in South Africa. The module received recognition via the Education Innovation Awards (2006), was a finalist for the international MacJannet Prize (2010) and won the Marketing Advancement and Communication in Education (MACE) Excellence Award in the category: Integrated campaigns/ projects and the subcategory: Social responsibility citizenship development (2014).

According to Dr Martina Jordaan, who received UP's Community Engagement Award, what sets this service-learning module apart from most other modules of its kind is not only its scale and national impact or the blended approach to learning to deal effectively with large student numbers, but its long-term impact on alumni.

Dr Jordaan completed the degrees BPrimEd (Senior Primary), BA(Hons) (History), MA (History) and DPhil (History) at UP and subsequently obtained a Higher Education Diploma (Pre-primary) at the South African College for Teacher Education and a master's degree in Development Studies at the University of the Free State. As a senior lecture in charge of the Community-based Project Module she is solely responsible for curriculum development, lecturing, assessing the students and managing the module. The module was used as an example of a service-learning module for a non-service-related course

Dr Martina Jordaan receives the Community Engagement Award from Prof Norman Duncan, Vice-Principal: Academic.

in a national textbook in South Africa, as well as in two chapters in international textbooks, and three papers that focused on it were published in accredited and non-accredited journals. Dr Jordaan served on two professional boards and has, since 2006, presented 19 national and international conference papers and workshops, some of which were done on invitation.

The JCP is an eight-credit (80 hours) open-ended and project-oriented project. Annually approximately 1 700 students register for the module and since 2005 more than 13 000 students have worked on 4 260 projects (450 per year). Although the bulk of the projects are done

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in South Africa, some projects are undertaken in five other African countries and even further afield. The module requires students to spend at least 40 hours addressing a specific, identified need in a community before completing various assignments to reflect on their experiences. Popular student projects include teaching Mathematics and Physical Sciences at secondary schools, doing renovation projects, repairing old computers for schools and non-profit organisations, and teaching basic computer skills to community members.

Dr Jordaan assists the students in identifying appropriate projects and links student groups to community partners. Once students have completed their projects, on-site supervisors assess their work, verify the hours logged and approve their final YouTube project videos. The projects are then presented to Dr Jordaan, wiki reports are completed on clickUP, and the YouTube videos are published on the World Wide Web. In 2013 and 2014 the students' YouTube videos were watched by an average of 35 000 people per annum, which translates into excellent exposure for the University. ■

New NRF A ratings

The University of Pretoria now has 395 researchers who have been rated by the National Research Foundation. This includes 94 researchers who were re-rated or rated for the first time at the end of 2014. There are 38 researchers who were rated for the first time, two of whom received A ratings. The new A-rated researchers are:

Professor Andries Engelbrecht

Professor Engelbrecht is a professor, Head of the Department of Computer Science in the Faculty of Engineering, Built Environment and Information Technology, and the current incumbent of the South African Research Chairs Initiative (SARChI) Chair in Artificial Intelligence.

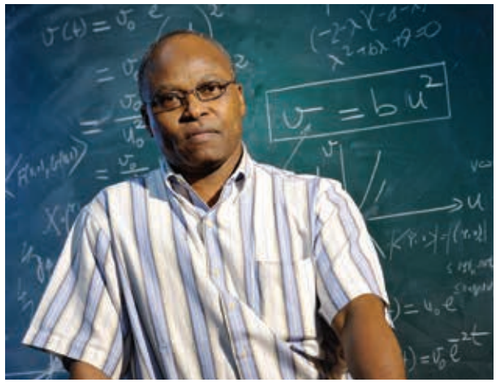
His research focuses mainly on computational intelligence and his particular areas of interest are computational swarm intelligence, evolutionary computation, artificial neural networks, artificial immune systems, and learning from zero-knowledge using competitive coevolution.

Prof Yves van de Peer

Professor Van de Peer is a part-time professor in the Department of Genetics in the Faculty of Natural and Agricultural Sciences. He is also a professor at Ghent University in Belgium and an adjunct professor at Western University in Ontario, Canada.

Professor Van de Peer, who is widely regarded as a world leader in bioinformatics, has unique expertise in algal and plant genomics and evolutionary analyses, with the emphasis on gene and genome duplication. ■

New deans appointed



Dean of the Faculty of Natural and Agricultural Science, Prof Jean Lubuma

New dean in the Faculty of Natural and Agricultural Sciences

Prof Jean Lubuma was appointed as Dean of the Faculty of Natural and Agricultural Sciences with effect from 15 March 2015.

Commencing his studies at the University of Kinshasa, DRC where he obtained his BSc and BSc (Hons) degrees, Prof Lubuma completed the MSc and PhD degrees in Mathematics at the Université Catholique de Louvain in Belgium.

He began his academic career in 1985 as lecturer and later senior lecturer at the University of Annaba, Algeria before completing a stint as a Postdoctoral Fellow at the Abdus Salam International Centre for Theoretical Physics (ICTP) in Italy. Thereafter he served as associate professor and professor at the University of Kinshasa, DRC before moving to South Africa for an academic appointment at the Mamelodi Campus of Vista University, where he served as senior lecturer, associate professor and professor. He joined the Department of Mathematics and Applied Mathematics at UP in 2000 as Professor and was appointed as Head of Department and Chairperson of the then School of Mathematical Sciences in 2004. He served as Head of Department until 2013, when he took up the SARChI Chair in Mathematical Models and Methods in Bioengineering and Biosciences.

Prof Lubuma is an NRF B-rated scientist who has supervised a number of master's and doctoral students to completion, has published extensively in prestigious journals in a variety of mathematical fields, and is widely recognised as a leading researcher who has initiated several successful research projects and obtained substantial research funding from national and international bodies. He has received a number of awards, including the UP Exceptional Academic Achiever Award for three consecutive periods, the South African Mathematical Society Award for Research Distinction in 2011 and the Bulgarian Academy of Sciences Sign of Honour awarded in 2013. He is co-editor of three scientific journals, a member of numerous national and international scientific bodies in the field of mathematics, and a Fellow of the African Academy of Sciences (AAS), the *Suid-Afrikaanse Akademie vir Wetenskap en Kuns* and the Academy of Science of South Africa (ASSAf).

Prof Nicola Kleyn, Dean of GIBS

GIBS' new dean appointed

Prof Nicola Kleyn, former deputy dean at the University's business school, the Gordon Institute of Business Science (GIBS), was appointed as dean of GIBS on 1 April 2015. In the first quarter of the year Prof Kleyn worked as dean elect alongside Prof Nick Binedell, former GIBS dean.

Prof Kleyn obtained her BCom, BCom (Hons) and MBA degrees at the University of the Witwatersrand, and held lecturing positions at Wits and Midrand Campus before becoming Head

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UNIVERSITEIT VAN PRETORIA
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Faculty of Engineering, Built Environment and Information Technology

Fakulteit Ingenieurswese, Bou-omgewing en Inligtingtegnologie / Lefapha la Boetšenere, Tikologo ya Kago le Theknolotši ya Tshedimošo

Department of Informatics: Postgraduate programmes

At the beginning of 2015, 27 new master's students and 20 new PhD students commenced their studies in the Department of Informatics.

BCom Hons(Informatics)

The Department offers an honours programme to students with an undergraduate degree in Information Systems (IS) and with the necessary commerce fundamental subjects. Students need at least 60% average for their third year IS subjects to be allowed to this degree. The modules offered cover topics like e-commerce, advanced database systems, project management, IS development, enterprise architecture, mobile computing, human computer interaction and data mining. The degree also includes a research component. The department welcomed 85 new honours students in 2015.

MCom(Informatics) and MIT(Information Systems)

These programmes are available to students in possession of a four year degree in IT/IS. Students with a commerce background enrol for the MCom degree whereas other students enrol for the MIT(Information Systems). This is the only difference between the degrees. An attainment of at least 65% for the honours degree in IT/IS (or equivalent) or fourth year is required. Although no course work is presented, students attend seminars which prepare them for the research dissertation. The seminars include topics like research methodology, IS theories and philosophy.

MIT Stream A degree

The Department of Informatics is also responsible for the administration of this degree. Graduates of the master's degree in IT will have the knowledge and skills to manage and lead information and information technology-related activities in an organisation in strategic, operational and project environments. This degree provides a broad IT perspective as well as good research and reporting skills. The MIT degree is ideal for a middle management officer in preparation for senior management. Half of the degree is course work and the other half a mini-dissertation. Only 40 students per year are selected for this degree.

PhD(Information Systems)

Students with a master's degree in IT/IS and with extensive working experience in the information systems field can apply for the PhD(Information Systems) . An attainment of at least 65% (average of all the courses and/or dissertation) for the master's degree in IT/IS (or equivalent) is required. Students are required to attend seminars where they are guided towards writing a research proposal. Candidates must obtain at least 65% for the research proposal and work done during the seminars in order to continue with the PhD programme.

Postgraduate diploma in digital innovation

This diploma was introduced in 2014 and is aimed at bachelor degree graduates and/or candidates with appropriate prior learning in one of the areas of music, publishing, multimedia and cultural heritage. Students are taught business, entrepreneurial skills and e-skills development. In addition, students gain additional digital skills in their field of expertise.

The first two students who received the Postgraduate Diploma at a graduation ceremony on Wednesday 15 April 2015 specialising in Publishing were Luzuko Buku and Buhlebenkosi Mbatha.

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of the Marketing Division in the Department of Business Economics at Wits. She spent a period of time in commerce, where she was head of learning and development at Investec, before returning to academia when she joined GIBS in 2000. She completed her doctorate at the University of Pretoria, before being promoted to associate professor in marketing at GIBS, where her particular interests are in the areas of marketing strategy, customer focus, branding and ethics. Thereafter, she served as Deputy Dean and Executive Director: Academic Programmes at GIBS.

Prof Kleyn has a number of peer reviewed publications, chapters in books and published conference proceedings to her credit. She has extensive business school experience and is a respected member of various national and international professional bodies in her field of specialisation and in the business education field.

New Head of UP Arts

Prof Theo van Wyk has been appointed as the new Head of UP Arts.

After being awarded a Bachelor of Music by the University of the Free State, he continued his studies through Unisa and obtained the University Performer's Licentiate (UPLM) for the organ before completing his honours and master's degrees

Department of UP Arts Head, Prof Theo van Wyk

cum laude at the University of Pretoria (UP) under the supervision of Prof Wim Viljoen (Head of the Department of Music). This was followed by a DMus, which made him the first person in South Africa to receive this degree in organ performance, as well as the first black South African to achieve this milestone in music studies.

Prof Van Wyk's vision for the Department is to 'ensure that we harness, cultivate, improve and integrate the wide range of talents, numerous priceless treasures and impeccable facilities of the University to the benefit of all students, personnel and the community at large, and ultimately employ the arts and our cultural resources to foster a sense of oneness, belonging and Ubuntu'. ■

Lesse in e-leer – internasionale kenners help skaaf aan nuwe onderrigmodel

Deur Nicolize Mulder

Lesse wat wêreldwyd oor aanlyn en digitale onderrig geleer is, is deur internasionale kundiges op die gebied tydens 'n konferensie by die Universiteit van Pretoria aangebied om te help om 'n nuwe onderrigmodel by UP te ontwikkel.

Die konferensie genaamd 'Flexible futures: shaping e-learning for higher education' het van 26 tot 30 Januarie geduur. Invloedryke internasionale sprekers soos dr Wayne Mackintosh, Direkteur van die Open Education Resource Foundation (OER), en dr George Siemens, die baanbreker agter groot, toeganklike aanlynkursusse (Massive Open Online Courses of MOOC's), het hul insigte met UP-akademici gedeel om rigting te gee aan die weg wat die instelling gaan inslaan om 'n meer gemengde onderrigmodel te volg wat meer aanlynkomponente insluit.

'Ons het 'n lang geskiedenis van onderrig en leer met tegnologie, insluitende die viering van 'n dekade van ten volle aanlynonderrig in 2014 vir die meestersprogram in Veeartsenykunde,' sê prof Wendy Kilfoil, Direkteur van die Departement Onderwysinnovasie aan UP, 'maar dit sal uitgebrei word ná 'n besluit deur die Universiteit om 'n meer hibriede onderrigmodel te volg wat ook meer aanlynkwalifikasies sal bied.

'Een van die redes hiervoor is om studente buite ons grense, veral in Afrika, te dien' sê prof Kilfoil.

Sprekers van die Universiteit van Edinburgh en die Universiteit van Macquarie in Sydney, Australië, is genooi om by die konferensie op te tree omdat albei navorsingsintensiewe universiteite is wat aanlynonderrig ten volle met hul hoofstroomonderrigmodelle versoen het.

Die konferensieprogram het ook UP se eie voorbeelde van uitstekende gemengde en hibriede onderrig met behulp van tegnologie ingesluit, waaronder 'n paneelbespreking oor die aanlyn-meestersprogramme en 'n ander paneel oor die Fakulteit Veeartsenykunde se OER-webwerf, AfriVIP. Die OER-tema is aangevul met dr Mackintosh se aanbieding oor OERu en prof Catherine Ngugi s'n oor OER-Afrika.

Volgens prof Cheryl de la Rey, UP se Visekanselier en Rektor, is onderrig en leer die lewensaar van enige universiteit en in hierdie opsig vaar UP goed.

Van links na regs staan prof Wendy Kilfoil, prof Sherman Young, dr Sue Rigby, prof Cheryl de la Rey, prof Norman Duncan, prof Laura Czerniewicz en prof Catherine Ngugi.

'Die belangrikheid van leer en onderrig kan in die Universiteit se strategiese plan, UP 2025, gesien word, waar twee van die vyf doelwitte in onderrig en leer, en die verbetering van toeganklikheid vir studente asook studentesukses en -diversiteit is.'

Prof de la Rey het bygevoeg dat tegnologiese innovasie nuwe geleenthede geskep het om toeganklikheid en sukses in onderrig en leer te verbeter. 'Dié vordering maak dit vir ons moontlik om weer oor UP se onderrig- en leermodel te besin.

'Sedert die Universiteit se aanvanklike besluit om 'n gemengde onderrigmodel te aanvaar, is die beskikbare tegnologie wat deur goeie dosente gebruik kan word om studente aktief te betrek met navraag-gebaseerde leermetodes, baie uitgebrei. Daarom is dit nou tyd vir 'n ander benadering in die vorm van meer radikale verandering.'

Sy het gesê die konferensie het UP die geleentheid gebied om weer oor sy toekomstige onderrigmodel te dink. Dit was 'n kans om UP se reaksie op die groeiende vraag na toegang tot universiteitsopleiding te heroorweeg, veral in 'n samelewing waar 18- tot 24-jariges se deelname aan hoër onderwys baie laer is as die optimale vlak wat nodig is om die land en die Afrika-streek se ekonomiese mededingendheid te verseker.

'Laat ons voortbeweeg vanuit ons sterk grondslag van uitnemendheid in en betrokkenheid by onderrig en leer deur die ruimte wat hierdie konferensie daargestel het, te gebruik vir ernstige besinning, kritiese betrokkendheid en die ontwikkeling van opwindende, innoverende benaderings tot onderrig en leer by UP,' het die Visekanselier gesê.

Verteenwoordigers van ander universiteite en hoëronderwysinstellings, die Departement van Hoër Onderwys en Opleiding en die Raad vir Hoër Onderwys het ook die konferensie bygewoon. ■

Prof Nico Theron van die UP Skool vir Ingenieurswese lewer 'n aanbieding.

Mapping the way for UP to realise its African dream

By Shakira Hoosain

Prof Tinyiko Maluleke describes his dream of becoming a dentist as “spectacular failure”. Instead, he has become one of South Africa’s highly rated scholars and influential opinionistas on matters facing society.

One would think that having obtained his PhD at 33, associate professorship at 36 and full professorship at 38, Prof Maluleke would have reached the pinnacle of academic success. He doesn't think so. "There are many books and many peer reviewed articles battling to come out of my brains. I owe myself these books", he says.

He has occupied various managerial posts at different South African universities namely the University of South African and the University of Natal. The positions have included deputy dean; dean; executive director of research and deputy registrar. At the University of Johannesburg he was deputy vice-chancellor before his appointment at UP, returning to his academic roots.

Currently, Prof Maluleke is a professor of African Spirituality and Culture at the University of Pretoria in the Faculty of Theology. He is also assisting the Principal and Vice- Chancellor, Prof Cheryl de la Rey, in the development and implementation of the University’s Africa Strategy. “I intend to do further research on African Higher Education systems and issues, including the African Diaspora that is something very close to my heart,” says Prof Maluleke. He has more than 80 peer reviewed publications to his name and is an NRF B-rated researcher.

Prof Tinyiko Maluleke

With a PhD in Theology, Prof Maluleke is well read in several areas of the humanities, including African literature, African politics, history, anthropology and psychology. His academic expertise lies in the intersection between religion, politics and culture. From this well-informed base he provides insightful commentary on socio-political developments in South Africa and in Africa. He is a regular columnist for the *Mail and Guardian* and the *Sunday Independent*.

Born in Soweto and raised between Soweto and a village in Limpopo, outside Louis Trichardt where he started his schooling. Maluleke was a learner at Lamola Jubilee Secondary School in Meadowlands, Soweto, where in 1976 he and other students stood at the frontline of what was to become one of the most decisive pivot points of South Africa’s history.

“Schools were battlefields between students and the police. Throughout the year we played cat and mouse games with the police…1977 was in many ways worse than 1976 because schooling was in a stop-start situation that often resulted in no schooling for long periods. Most schools did not write exams. And later that year, came the news that Steve Biko had died in detention. Student anger had reached new heights, and many of the older students looked for ways to skip the country to join liberation movements in exile.”

These memories are amongst those that changed Prof Maluleke’s life. Another is his recollection of working during holidays at the dentist’s offices in Johannesburg’s CBD where his father was employed as a labourer. The dental practice at the time served mainly black patients. Prof Maluleke recalls that he received R20 per day for a job which included holding down squirming patients as their teeth were being removed. “I also translated for the white dentist and his patients. However, noticing the disrespect with which my father was treated, made me determined not to end up in a job like his, and I thought I would rather become the dentist”.

Prof Maluleke never realised his dream to become a dentist, but his illustrious academic career has led him to be a member of the Academy of Science of South Africa (ASSAf), an NRF rated researcher, a member of the NRF board, a former member of the ASSAf Scholarly Publications Committee, a member of the CHE Institutional Audit Committee, a former member of the HESA Research Strategy Group, and the convener of the NRF Rating Specialist Panel for Religion and Theology.

From the front lines of one of the bloodiest battles of South Africa’s history in 1976 to mapping the way forward for UP to fulfill its dream of being a leading research-intensive university in Africa, Prof Maluleke’s research focuses on African identity issues, African philosophy and spirituality. ”I believe these are the lenses through which to search for solutions for some of the greatest social problems we face today. Topics such as forgiveness, resilience, spirituality, religious identity, the relationship between religion and politics in Africa are all within the scope of my current and future research. If race was the quintessential problem of the 20th century as WEB Du Bois said, I believe that religion will most likely be the problem of the 21st century. My research is located within the burning issue of our century".

The Vice-Chancellor and Principal of the University of Pretoria, Prof Cheryl de la Rey, in February convened a workshop for internal role players in the University to plan the way forward with regard to the UP Africa Strategy.

Prof Maluleke is assisting Prof De la Rey in the development of the Africa Strategy. He says the point of departure is recognising that we are Africa, we live in Africa and Africa lives in us, so that the University of Pretoria is by default an African University.

In line with UP 2025, the 2015 UP Institutional Plan provides a clear framework for the implementation of the University's internationalisation strategy, one of UP's five pivotal strategic objectives. The strategy is based on the premise that, through collaboration and partnerships globally, the University will be in a position to leverage increased visibility and impact nationally, regionally and internationally.

The primary focus is on Africa, enhancing postgraduate research opportunities and productive research partnerships focused on the key challenges that confront Africa, its people and the environment. Various factors, including UP's research capacity and reputation, the broad range of disciplines covered, UP’s high level of national and international connectivity, and its location, size and diversity ensure that the University is strategically placed to play a leading role in the type of science needed to address the complex problems confronting Africa. These problems include poverty, personal and social security, ecological health, climate change, and water, health, food and energy security. The University aims to position itself as the hub for continental and global research networks on major developmental and global challenges.

The University has a number of established formal institutional collaborative initiatives and agreements as well as individual relationships with academics, higher education and research institutions and industry on the African continent, spanning its core functions of research, teaching and learning and community engagement. ■

Tuks Engineering Leadership Academy fills skills need

Many people assume that engineers keep to themselves, work alone and do not interact much socially.

However, the truth is that engineers spend a large amount of time working in groups and interacting with people. Despite needing to be rational, logical thinkers with lots of technical knowledge, engineers do need soft skills to be able to deal with different types of people within an organisation or a team. The Tuks Engineering Leadership Academy (Tuksela) fills this need.

Tuksela's developmental programme builds leadership through working on interpersonal and intrapersonal skills. The objective is to be able to give young graduates leadership skills to supplement their technical knowledge and expertise. The programme increases the ability to adapt to the work environment and to manage people issues which can affect one's performance.

Tuksela works on a model of training similar to the Harvard Business School's where participants get knowledge through lectures by professionals and experts in developmental leadership. They do presentations, group work and communicate. Participants also have access to psychometric assessments, and individual coaching to understand themselves and the role they play in leadership.

The content and skills provided in the course are intended to help participants make the adjustment from university life to the "real" working, world. Participants will have increased communication skills and the ability to work effectively in groups, and to interact with a wide variety of people within the corporate environment, easily.

Tuksela is headed by a faculty team comprising of Clive Knobbs, senior lecturer in the Department of Mining Engineering, former President of the Chamber of Mines, CEO and chairman of Harmony Gold Mining Company; and Erna Gerryts, a psychologist, coach and mentor.

For more information, please contact erna.gerryts@up.ac.za ■

Mr Mike Teke, President of the Chamber of Mines on the left and Dr Andre Dougal, Head of the University of Johannesburg Mining School in conversation.

Kya Rosa welcomes alumni and visitors again

By Shakira Hoosain

One of the University of Pretoria's landmark buildings, Kya Rosa, was refurbished during 2014 and was re-opened at the beginning of the year.

The Vice-Chancellor and Principal, Prof Cheryl de la Rey, members of the executive, and alumni attended the event. At the opening, Prof De la Rey confirmed that, "Kya Rosa holds a special place at the University and in the hearts of alumni".

The refurbishment of Kya Rosa was part of a move to repurpose the space for greater and improved use and to serve practical needs. The various rooms can be used for meetings and waiting areas for guests. As part of the revamping of Kya Rosa, a great effort was made to ensure that it retains its characteristic look and feel.

Kya Rosa was the original building from which UP opened its doors of learning over a century ago. The house was originally on Skinner Street (now Nana Sita Street) in Pretoria. It was built by then newspaper editor Leo Weinthal, who would later go on to found *The Pretoria News*. The house is named after his wife, Rosa, together with the Zulu word for house, 'khaya'. This clever amalgamation of identities is what Prof De La Rey notes as indicative of the University's character in that it is forward thinking and amalgamates different cultures into its own. Prof De La Rey says that there is an increasing trend towards inclusivity in

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names, but UP's first building was before its time in embracing its African roots and heritage.

The building was moved from the city centre to the Hatfield Campus in the 1980s to take pride of place at the entrance. This job was given to architect Albrecht Holm and builder Jan Scheffer. The house was rebuilt using the original koppie-stone foundations, much of the brickwork, and all of the tiling. Tracery, cornices, light fittings and wall plastering were retained and reused. Leo Weinthal's interior colour-schemes and wallpaper designs were all restored.

Since the completion of renovations, photographs depicting various themes and historical moments in student life over the years, buildings and other important landmarks grace the walls. The pictures are grouped per room according to themes and have been carefully selected, printed and framed in consultation with UP Archives. In the central corridor a lively collection of photographs of student life over more than a century is displayed, while another room showcases UP's campus architecture and the history of Kya Rosa. Aerial photographs from different years show the expansion of the Hatfield Campus. Works of art celebrating UP's 50th birthday add colour and interest.

The interior of Kya Rosa has the walls lined with photographs depicting student life over the years.

Alumni present at the re-opening were represented by the TuksClub 60+ who handed a cheque to the Vice-Chancellor for the Tuks Scholarship Fund. The purpose of the fund is to ensure that future generations of students can benefit from the opportunity to study at UP.

Chairperson of the TuksClub 60+ and UP alumnus, Louis Cloete (left) handed over a cheque to the Vice-Chancellor for the Tuks Scholarship Fund.

The former Tukkies who constitute the TuksClub 60+ are all older than 60 and graduated long before most of the recipients of the Tuks Scholarship Fund were born. However, they have maintained a special bond with their alma mater.

Chairperson of the TuksClub 60+ and UP alumnus, Louis Cloete, said that the donation was like a drop of water that, on its own seemed insignificant. Yet, when a single drop is multiplied, it becomes a trickle that eventually swells to be a rivier that makes it possible to grow crops and provide cities with power.

The Tuks Scholarship Fund provides financial aid for academically sound students whose only barrier to studying is a lack of finance. All alumni are encouraged to make a monthly contribution to the Fund to leave a legacy so financially constrained students from all walks of life get the opportunity to proudly call themselves Tukkies too.

To find out more and to contribute to the Tuks Scholarship Fund, please contact Cheryl Benadie on 012 420 5026 or cheryl.benadie@up.ac.za. ■

Iron Age artefacts from the Unesco World Heritage Sites of Mapungubwe and K2 displayed as part of the Lerapo collection.

CURATION AND RESEARCH IN ACTION

Lerapo collection of worked bone and ivory from Mapungubwe

By Shakira Hoosain

When the word 'archaeologist' is mentioned, people often first think of fictional characters from films, such as Indiana Jones or Lara Croft. However, the real adventure with piecing together fragments of the past is an intensive amount of curatorial work and behind- the- scenes museum research, says Sian Tiley-Nel, Chief Curator of the University of Pretoria Museums.

A generous grant from the US Ambassadors Fund for Cultural Preservation has ensured that the precious Iron Age, archaeological bone and ivory tool collection from the Mapungubwe and K2 UNESCO world heritage sites could be further researched and conserved.

Intricately carved and decorated bone and ivory tools are the subject of the Lerapo (meaning bone in Sepedi) display. Due to the age and organic nature of the items, each artefact had to undergo stringent curation, conservation and research processes. The worked bone and ivory collection dates from 1020 -1290 AD and provides a fascinating insight into Iron Age civilisations in South Africa. The famous gold rhino which also hails from Mapungubwe is an example of extremely sophisticated metalwork and manufacturing. Bone and ivory are extremely rare archaeological finds, especially from this period of humanity's history. Organic collections of this nature are scarce amongst museums around the world and no other museum or university in South Africa has such a magnificent collection on public display.

The 'white gold' of Africa, carved elephant ivory, is also part of the collection. Ivory was worked to form bangles and other forms of jewellery by polishing the ivory to shine. It was also used for internal and international trade. Ivory is very sensitive to moisture and changes in temperature and its organic nature means it cracks and splits easily. The K2 ivory has survived for nearly a millennium and is also an extremely rare archaeological find. Some of the ivory were found in burial sites which suggest that it may also have held a symbolic meaning in addition to possibly being a status symbol of the time as well as a trade commodity.

Intricate decoration on worked animal-bone tools suggests that these could also held value beyond

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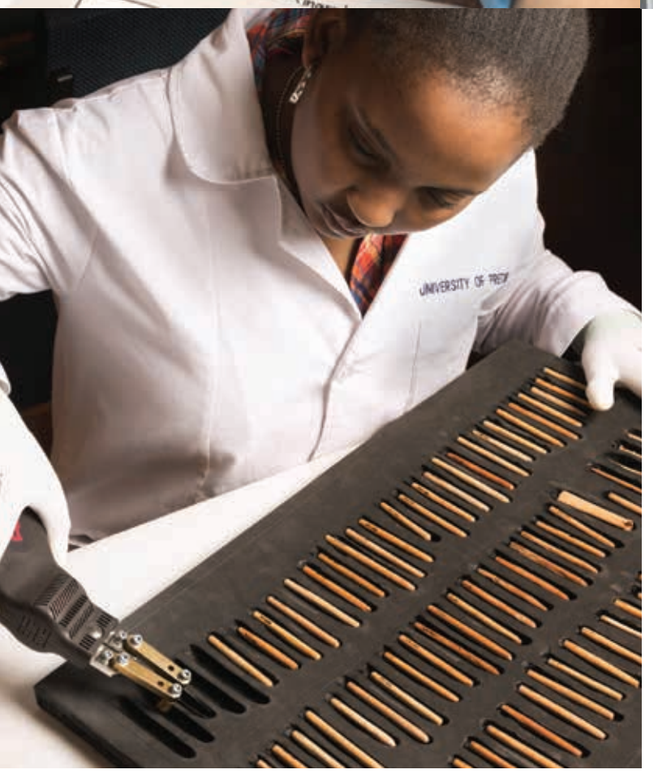
Vice-Chancellor and Principal Prof Cheryl de la Rey and US Ambassador to South Africa His Excellency Patrick Gaspard officially opened the display of the Lerapo collection.



Each one of the 360 bone tools and 14 ivory pieces was catalogued and detailed conservation notes were made.

utilitarian use. Crafting the tools was a time-consuming process as each tool had to be formed for its purpose by snapping a bone, or shaping it with a piece of metal or grinding it along a rock. The tools created included needles, awls, arrows and link shafts. All these tools assisted people with hunting, for food and making clothing. It was also used to make and decorate items such as sleeping mats and storage baskets.

According to Tiley-Nel, it took two years and more than 2 400 bench hours to complete the restoration, preservation, conservation and curation of the artefacts. Improved scientific methods of inquiry and better processes of preservation have been developed in the 80 years since the initial discovery, when many of the pieces were improperly handled and stored.

Unique environmental control factors that will minimise decay and specialised packaging, display and storage facilities were developed to ensure longevity of the collection. A faunal specialist in archaeozoology had to be brought in for further analysis.

The project calls for further research as very little has been published on conservation matters and what the findings represent, especially with regard to bone and ivory technologies of the past, and species identification. Because of the funding received, two graduate research assistants have been employed to ensure that the research, curation and preservation of the collection are adequately recorded and archived.

As many as 10 000 people visit the UP Museums annually and visitors will not be disappointed with this display and user-friendly information. For more information on the UP Museums call 012 420 5450 or email: museums@up.ac.za. The museums are open from Monday to Friday 10:00 to 16:00. ■

Eskom en Sasol belê in atmosferiese navorsing by UP

Deur Sanku Tsunke

In samewerking met Eskom en Sasol – die grootste verbruikers van steenkool vir kragopwekking in Afrika – het die Universiteit van Pretoria onlangs sy Laboratorium vir Atmosferiese Studies (LAS) bekend gestel. Die laboratorium is ’n nasionale sentrum van uitnemendheid wat infrastruktuur en opleiding van wêreldformaat vir studie in die atmosferiese wetenskappe bied.

Die laboratorium is op 20 Februarie bekendgestel en die opening is bygewoon deur onder andere ’n aantal prominente akademiese en industriële kundiges van verskeie binnelandse universiteite, beroepslui van Eskom en Sasol, die Suid-Afrikaanse Weerdiens, die Nasionale Vereniging vir Skoon Lug (NACA) en die Departement van Omgewingsake (DEA).

Die totstandkoming van dié laboratorium is die gevolg van Eskom en Sasol se navorsingsamewerking vir die ontwikkeling van skaars vaardighede in wetenskaplike studies. Hierdie vennootskap sal ook die uitruil van gegewens en inligting tussen die maatskappye bevorder.

Die partye het op verskillende vlakke aan talle navorsingsinisiatiewe saamgewerk om aandag aan omgewingskwessies van gemeenskaplike belang te gee, onder andere as- en pekelnavorsing, die uitwerking van atmosferiese emissies op ekostelsels, monitering en verslagdoening oor kwik, die kwaliteit van omgewingslug en nat en droë afsettingskoerse van swael- en stikstofverbindings.

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By die loodsing van die LAS was, van links na regs, dr Gregor Feig (President van die Nasionale Vereniging vir Skoon Lug); prof Egmont Rohwer (Hoof: Departement Chemie, UP); prof Hannes Rautenbach (Meteorologie-eenheid, UP); dr Steve Lennon (Groep Uitvoerende Hoof: Volhoubaarheid, Eskom); en mnr Rudi Heydenrich (Senior Vise-president: Navorsing en Tegnologie, Sasol).

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Prof Hannes Rautenbach, Hoof van die Departement Geografie, Geoinformatika en Meteorologie, sê dis die eerste universiteit wat kundiges op verskillende gebiede, soos meteorologie en chemie, bymekaarbring om die omvang van atmosferiese studies te vergroot.

Hy sê UP is ideaal geplaas om 'n toegespitste entiteit vir navorsing oor atmosferiese sirkulasie, atmosferiese prosesse en lugkwaliteit te huisves.

'Met Eskom en Sasol as vennote sal die Laboratorium vir Atmosferiese Studies (LAS) 'n nasionale sentrum van uitnemendheid, met 'n internasionale reputasie, wees wat infrastruktuur en opleiding van wêreldgehalte vir studies in die atmosferiese wetenskappe bied. Na verwagting sal die hulpbronne wat geskep word deur albei organisasies benut word en ook in die streek se dringende behoefte aan vaardighede voorsien'.

Prof Stephanie Burton, Viserektor vir Navorsing en Opleiding, het gesê dat samewerking met ander universiteite en met regerings- en privaatsektororganisasies vir UP belangrik is en UP kry erkenning vir sy eksterne nywerheidsvennootskappe.

Volgens haar sal die fasiliteit veral in die 21ste eeu relevant wees omrede die toenemende bewustheid van die broosheid van ons omgewing en ons planeet. Sy sê hierdie globale kwessies kan deur middel van wêreldwye en samewerkende optrede aangespreek word.

'Dit is te danke aan groot konsortiums van navorsingspanne wat wêreldwye netwerke vorm dat die probleme van die 21ste eeu wat ons in die gesig staar, veral wat atmosferiese studies betref, aandag kan geniet. Ons beskou dit as allerbelangrik en opwindend dat die Universiteit 'n rol in 'n wêreldwye inisiatief kan speel en op nasionale vlak 'n verskil kan maak,' aldus prof Burton.

Die LAS is in die Geografiegebou op die Hatfieldkampus. Dit beskik oor die modernste rekenaargeriewe, en minstens 20 studente kan op 'n slag daar werk. Die laboratorium se deur staan oop vir mense van oor die hele wêreld en op hierdie wyse dra dit tot die voortgesette ontwikkeling op die gebied van atmosferiese studies by. ■

Suid-Afrika ontwikkel krokodil-ekonomie

Suid-Afrika, wat reeds 'n groot uitvoerder van krokodilleer en onverwerkte velle is, mik om 'n wêreldleier in die krokodil-industrie te word.

Dr Jan Myburgh van die Fakulteit Veeartsenykunde se Departement van Parakliniese Wetenskappe en eksotiese leer-navorsingsentrum en sy kollegas moes navorsing doen om betroubare en effektiewe maniere te ontwikkel om die gesondheid van krokodilboerdery te monitor ter afwagting van 'n oplewing in die plaaslike bedryf.

"Die Departement van Handel en Nywerheid het meer as 'n jaar gelede 'n versoek gerig vir die ontwikkeling van 'n krokodilkluster om die uitsette van die plaaslike industrie te koördineer – wat UP as 'n tegniese medewerker insluit," sê prof Myburgh.

Met 'n toenemende globale bewustheid van die etiese behandeling van diere, was daar 'n behoefte om betroubaarder, effektiewer en minder indringende maniere te ontwikkel om die gesondheid van krokodille te monitor deur middel van die gereelde neem van urine- en bloedmonsters.

Die beste manier om 'n urinemonster van 'n krokodil te kry, is om die krokodil tydelik met 'n elektriese stroom te verdoof en daarna 'n hondagtige urinêre kateter binne sy kloaka te plaas. Dit laat die urine vryelik vanuit die urinêre kamer vloei.

"Elektriese verdowing is veiliger vir die krokodille en minder traumaties, in teenstelling met kalmeermiddels wat maak dat hulle in 'n bedwelmde, angstige toestand wakker word, vreesbevange water toe storm en dan dikwels verdrink," sê Myburgh. "Wanneer hulle van elektriese verdowing wakker word, is hulle kalm en wakker."

Bloedmonsters word deur middel van 'n naald en spuit verkry; direk vanuit 'n bloedvat agter die kop. Dit word ook gedoen terwyl die krokodil verdoof is.

"Krokodille is groot en kragtige diere wat daarvan hou om te byt, so daar is geen manier om monsters te kry sonder om hulle te immobiliseer nie. Hierdie metodes is die gerieflikste en help om hulle gesondheid akkuraat te monitor."

The certification mark of Karoo lamb.

UP works to help protect unique products

By Shakira Hoosain

What do rooibos, Honeybush and Karoo lamb have in common? These are the only three products that have been protected under a combination of Intellectual Property law, food labelling legislation and the Agricultural Products Standards Act in South Africa.

These three products are examples of what is known as geographic indicators (GI). This means that unless rooibos or honey-bush is planted and grown in South Africa, its name may not be used on a product because the name itself is an indicator of authenticity based on its geographic origins.

The same is true for Karoo lamb. If the lamb has not been reared in the Karoo region, it is not true Karoo lamb, and therefore cannot carry this name as a stamp of authenticity. Karoo lamb has grazed naturally and has fed on the Karoo bossies and veld grasses, but never on lucerne. These foods contain some of the qualities that give Karoo lamb its distinctive taste. Other well-known international products that are protected by GIs are Champagne, Parma ham, Roquefort cheese and Parmigiana Reggiano (Parmesan cheese), while non-European GIs include Basmati rice and Ceylon tea.

Prof Johann Kirsten, Head of the Department of Agricultural Economics at UP explains: "The project to protect Karoo lamb as South African GI was initiated through a grant from the French government in 2005/06 to investigate the potential of geographical indications in

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developing countries. The project commenced by first exploring the current lack of a suitable public system for protecting GIs in southern Africa. In contrast to the European Union, the current South African legal framework only provides for the protection of GIs as collective trademarks or certification marks. Second, an analysis was done of the local dynamics based on specific agro-food products. The need for a public system of protection also emanates from the significance of the wild resources found in South Africa and Namibia, which are often the only source of income for resource poor communities, and which is threatened by bio-piracy. It thus appeared important to assess the merits of developing an institutional framework for protecting GIs in southern Africa and to evaluate the needs for a *sui generis* legal system".

In this respect, Prof Kirsten was the mastermind behind the legislative process to get legal protection for Karoo lamb and also to establish a certification mark for this well-known iconic South African food.

Prof Hettie Schönfeld is an extraordinary professor in the Department of Animal and Wildlife Sciences; an associate of the Institute of Food, Nutrition and Well-being (IFNUW), and a project leader for the DST-NRF Centre of Excellence (CoE) in Food Security. She has expertise in meat science and following her honours year in BSc Food and Nutrition, she obtained a position at the Meat Industry Centre at Irene, Prof Schönfeldt explains: "I then continued my career in the meat industry, where I headed the Sensory Laboratory where we tested products by means of trained sensory panels. I was and still am involved in food composition as well, where the nutrient content of foods were analysed and I assisted, with my team, to develop new methodologies of analysis".

She maintains that with meat science, '... sustainability in particular is usually targeted by research on environmental aspects. However, sustainability is inherently a cross-cutting term, and to effectively align the meat industry towards sustainable development, other aspects, such as society, nutrition, economics and culture should be included'.

Prof Kirsten's interest in agricultural economics began because the field covers a wide variety of career options, from farming to politics, international trade and, in this case, even to law; heritage; culture and cuisine; and sensory science. This varied background has provided the link to enhance cross disciplinary studies in this field.

The University of Pretoria places a strong emphasis on collaborative research. Prof Kirsten says the issue of GIs is an important one and this project, which initially seemed straightforward, illustrated that any problem and question should involve many disciplines. According to him, 'South Africa's key challenges in the next few years are food, energy and water, which can only be addressed if we approach it from a cross-disciplinary perspective'.

Owing to the nature of the stringent requirements needed to establish a GI, a lot of substantial evidence is essential to convince law-makers that the product is unique and is shaped and developed by the region and its peoples. Prof

Prof Hettie Schönfeldt lent her expertise in meat science to the process to have Karoo lamb recognised as a unique product.

If it does not carry the certification mark, it is not Karoo lamb. Prof Johan Kirsten in a supermarket.

Schönfeldt's expertise in meat science was put to good effect. It was found that Karoo lamb is distinctive because Karoo lambs graze on unique forage. The researchers identified five plants exclusive to the Karoo region that influence the taste profile of the produce.

The quest to protect South African interests and to ensure that local communities who grow and harvest the produce are not marginalised by big companies creating their own versions elsewhere in the world, meant that the research done at UP in this field required the best minds from several disciplines to become involved.

Prof Kirsten says that this complex field of research required role players from various disciplines: '... animal scientists, to analyse the rumen of sheep to establish what bushes or grasses the sheep eat; botanists to establish the distribution of these plants across the region that is then used to set the boundaries of the region; sensory analysts, nutritionists and food scientists to establish the sensory characteristics of the meat and to confirm the link with the grazing plants; chemists to establish the difference between meat from sheep grazing on Karoo bushes and sheep on lucerne fields or grasslands; animal scientists and pasture scientists to confirm the production practices; animal types and production rules that will protect the identity of the product; as well as lawyers to draft the rules and protocols and government regulations.

'Agricultural economists are needed to analyse the economic benefits to farmers and consumers and to develop institutional systems that will govern this industry and to develop a traceability system to ensure that origin of each packet of meat can be guaranteed. We also need consumer scientists to understand the behaviour of SA consumers when confronted with such a niche product and to establish the willingness to pay a premium for this unique GI-type product. Then we need marketing expertise to develop a strategic marketing plan and a consumer awareness campaign so that people know what they are buying".

The research across all these fields has resulted in Karoo lamb finally being recognised as a unique product in its own right. ■

Prof Xiaohua Xia delivering the 17th expert lecture in the University's series. The subject was the modelling, control and optimisation of energy systems.

An option for addressing SA's electricity crisis

By Prof Xiaohua Xia

Energy efficiency and demand-side management (EEDSM) programmes cover the broad categories of conservation, load management, fuel switching, strategic load growth and self-generation. These programmes have proved to be an effective way of addressing the energy shortage in that they deliver the same service but consume less energy.

Prof Xia is the Director of the Centre of New Energy Systems (CNES) at the University of Pretoria. This article reflects the content of the 17th lecture in the University's Expert Lecture Series that Prof Xia delivered on 4 March.

Following the three Eskom power emergencies since November 2014, load shedding was implemented to address the electricity shortage. However, load shedding has a negative impact on the South African economy and living conditions of its people. Since the construction of new power capacity has been racked by delays and is unlikely to contribute to the grid in the short run, it is vitally important to find other short- to medium-term solutions to the energy crisis.

Eskom has implemented many EEDSM initiatives in the past decade in an attempt to bridge the gap between electricity demand and supply. Verified results indicated demand savings of more than 4 000 MW, which is the amount of power Eskom needs to save in its stage 3 load shedding. This saving can be achieved with an investment of R15 billion over ten years – less than one tenth of the projected investment in Medupi, which will have a full capacity of about 4 800 MW. If no EEDSM programmes had been introduced, South Africa would have been subjected to load shedding much earlier.

In the past, the focus of Eskom's EEDSM initiatives was, however, mainly on conservation and load management. Fuel switching and self-generation have not been fully explored. Under the current circumstances, EEDSM is still, and should always be, an option.

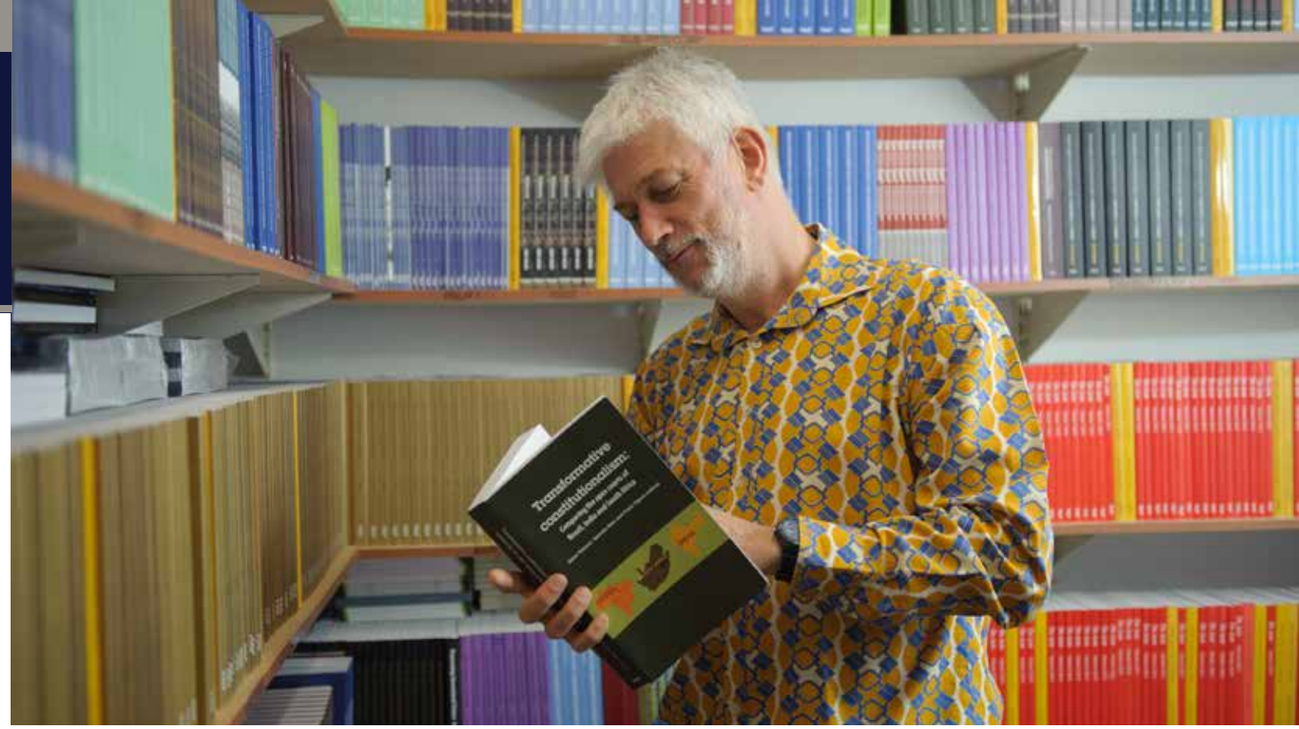
With solar heating being one of the best sources of renewable energy, a solar water-heating programme was started in 2008 to switch fuel usage away from electricity and to promote the uptake of one million units of solar energy by 2015. The targeted saving of the solar water-heating programme (miscalculated as equivalent to the generating capacity of an average-sized power plant) was not achieved.

The International Energy Agency, in its 2013 World energy outlook, reported that about half of the world's energy demand is for heat. The situation in SA is no different. According to Eskom, 40% of electricity consumed by SA's residential sector is used for heating water and 31% for operating kitchenware such as ovens, stoves and hotplates. According to a Japanese report, the SA industry demand for heat is estimated to constitute about 70% of the energy consumption in the industrial sector. An Eskom report states that the residential sector used 14 105 MW of Eskom's output in 2013 while other sectors used an aggregated 25 160 MW. If the heat demand had been supplied by sources other than electricity, a staggering 19 060 MW (with the residential sector accounting for 7 052 MW) would have been saved. This is more than four times the demand of Eskom's stage 3 load shedding. If the residential sector's energy demand for water heating could be supplied by natural gas or coal gas, a total demand of 5 642 MW could be substituted on the utility grid, which will allow Eskom to meet the country's power demands without load shedding.

Currently, the heat demand in SA is supplied largely by electricity. However, conversion efficiency from coal to electricity and then to heat is much lower than direct conversion from coal or gas to heat. Eskom's power plants have a marginal 35% efficiency, while that of direct conversion from coal or gas to heat can easily be more than 70%. Coal gasification plants are able to reach conversion efficiencies from coal to heat of around 75%, and from coal to gas and then to electricity of around 50%, which is by far the most efficient technology to generate heat and electricity from coal. While the capital cost of coal/gas/electricity technology, such as an integrated gasification combined cycle (IGCC), is about 25% higher than traditional coal-fired power plants, the semi-combustion process of coal gasification to satisfy the demand for heat is quite affordable. The cost of this process is less than half of Eskom's current EEDSM benchmark of R5 million/MW, and the operational cost is about one third of that of a conventional power plant. In view of South Africa's large coal reserves, clean coal gasification technology offers a very attractive option.

Self-generation offers another short- to medium-term solution for SA's electricity crisis. Using systems such as photovoltaics, wind turbines, co-generation systems and gas-fired turbines to supply part or all of customers' needs (heat/power) will provide a convenient way to reduce demand from the grid and consequently alleviate grid pressure and reduce transmission losses. Co-generation systems installed in industrial plants that produce high temperature waste heat, as well as captive power plants utilising biomass or gases, are good examples of self-generation.

EEDSM remains the best option to alleviate the current crisis. In future, we must focus more on fuel switching to satisfy heat demand and also on self-generation. ■



Prof Frans Viljoen of the Centre for Human Rights among books published by PULP.

Celebrating a decade of publishing

By Candice Molefe

Established in 2005, the Pretoria University Law Press (PULP) was created to address the problem of the shortage of indigenous legal material in Africa, especially in the field of human rights.

PULP is an independent, non-profit press based at the Faculty of Law's Centre for Human Rights (CHR).

PULP increases access to innovative, high quality and peer-reviewed texts with a focus on human rights and other aspects of public international law, especially in Africa. Prof André Boraine, Dean of the Faculty of Law emphasises that writing and publishing are foremost on the Faculty's agenda. To date PULP has published more than 130 books. It also publishes six law journals – the *African Human Rights Law Reports, Pretoria Student Law Review ; Botswana Law Journal,* the first open-access law journal of the Faculty of Law *De Jure*, the *African Human Rights Law Journal* and the *African Disability Rights Yearbook* – the last two are both open-access online journals..

Academic books and publications have been published in multiple languages such as English, Afrikaans, Arabic, French, Swahili and Portuguese for international distribution, which supports the call from the Vice-Chancellor and Principal, Prof De la Rey to position the University as a leading research-intensive university. It is in light of this vision that PULP works tirelessly to assist UP alumni to publish scholarly texts and materials. All the material can be downloaded on Open Access via PULP's website at no cost.

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PULP is a registered publisher with the Publishers Association of SA (PASA), the largest publishing industry body in South Africa, and all material goes through strict peer reviews to ensure accreditation and high quality output. The editorial board consists of Prof Charles Fombad, editorial manager and members Prof Frans Viljoen, Prof Christof Heyns, Danie Brand, Tshepo Madlingozi, Dr James Fowkes and Dr. Michaela Hailbronner.

Steering the day-to-day operations is Lizette Hermann while web-based operations are managed by Yolanda Booyzen, Senior Communications and Marketing Manager of the Centre for Human Rights. Sydney Mdlhophe manages the dispatch of books and the storerooms.

PULP was the combined brainchild of three of the current members of the editorial board and five books were published in its first year. One of these books was written by UP alumna, Dr Lilian Chenwi, a UP LLD graduate. The book, titled *Towards the abolition of the death penalty in Africa: A Human Rights Perspective*, was a reworked version of her doctoral thesis and has been cited in several other human rights publications. In this book she focuses on why African states retain the death penalty, the ways in which the current operation of the death penalty in African states conflict with human rights, and whether it is appropriate for African states to join the international trend for the abolition of the death penalty.

NRF A-rated scientist Prof André van der Walt was also an early contributor with a book titled *Property and Constitution* and, thereafter the edited volume *Transformative constitutionalism: Comparing the apex courts of Brazil, India and South Africa* by Prof Oscar Vilhena and Upendra Baxi. Prof Van der Walt currently holds the South African Research Chair in Property Law, which was awarded in 2007.

The latest publication, edited by Prof Charles Ngwenya and Dr Ebenezer Durojaye, is titled *Strengthening the protection of sexual and reproductive health and rights in the African region through human rights*. Rights-based frameworks are used to address some of the serious sexual and reproductive health challenges that the African region is currently facing. More importantly, insightful human rights approaches on how these challenges can be overcome, are also provided.

The book is considered the first of its kind and is an important addition to the resources available to researchers, academics, policymakers, civil society organisations, human rights defenders, learners and other persons interested in the subject of sexual and reproductive health and rights as they apply to the African region. Human rights issues addressed by the book include access to safe abortion and emergency obstetric care; HIV/AIDS; adolescent sexual health and rights; early marriage; and gender-based sexual violence.

The future sees PULP confirming its position as an outlet for scholars writing, especially on rule of law-related issues in Africa, as well as retaining its commitment to open access to all its publications. ■

A display of books published by PULP.

TuksAlumni vereer alumni met Laureaattoekennings 2014

The University's Vice-Chancellor and Principal, Prof Cheryl de la Rey with the 2014 group of TuksAlumni Association Laureates. In front from left to right are Prof De la Rey, Ms Irma Joubert, Dr Derize Boshoff, Dr Jane Olwoch and Dr Hinner Köster.
Back row: Dr Fannie Sebolela, Prof Roelf van den Heever and Mr Albertus Swanepoel.

Die TuksAlumni-vereniging het 2014 op 'n hoë noot afgesluit met die 41ste jaarlikse Laureaattoekennings aan alumni of vriende van die Universiteit.The TuksAlumni Association presented the 41st annual Laureate Awards to alumni or friends of the University on 21 November 2014. The Laureate Award is the highest award that can be bestowed by the Association on alumni or friends of the University. In 2014 the six recipients were all Tuks alumni.

Dr Derize Elizabeth Boshoff

Dr Boshoff het in 1992 die MBChB-graad met lof aan die Universiteit van Pretoria geslaag met onderskeidings in al vyf haar hoofvakke. In 1995 is sy tot nagraadse opleiding in Pediatrie (Kindergeneeskunde) aan UP toegelaat en is ook as kliniese assistent in die Departement Pediatrie by die Kalafong-hospitaal aangestel. Na sy die nasionale pediatrie-spesialiseksamen van die Kollege van Kindergeneeskundiges van Suid-Afrika voltooi het, het sy as kinderarts by die Kalafong-hospitaal gewerk en haar navorsingsverslag

Dr Derize Boshoff saam met prof de la Rey en dr Hinner Köster nadat sy die Laureaat-beeldjie ontvang het.

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voltooi. Sy het die graad MMed (Pediatrie) in 2000 verwerf.

As voorgraadse geneeskundestudent by Tuks het sy akademies uitgeblink en was ook 'n studenteleier. Sy het onder meer die Bern Meyer-prys vir besondere prestasie in Fisiologie ontvang, 'n interuniversitêre redenaarskompetisie gewen en die HW Snyman-prys vir Gemeenskapsgesondheid ontvang. Sy het van 1990 tot 1992 op die Mediese Studenteraad gedien en was redakteur van die Geneeskunde Studenteblad.

Van Januarie 2000 af tot Desember 2001 het sy as kinderkardioloog subspesialisasie-opleiding aan die Universiteitshospitaal in Leuven, België ontvang en het daarna tot einde 2007 'n voltydse aanstelling as spesialiskinderkardioloog gehad het. Sedert 2008 is sy 'n deeltydse konsultant-kinderkardioloog by twee streekshospitale in België, te wete Virga Jesseziekenhuis in Hasselt en die Ziekenhuis Oost-Limburg in Genk. Daarby doen sy ook nog diagnostiese en intervensionele hartkateterisering by kinders in die Universiteitshospitaal in Leuven.

In 2012 het dr Boshoff 'n doktoraat in Mediese Wetenskap behaal vir haar tesis met die titel "Endovascular balloon dilation and stent implantation in congenital cardiology: novel indications and evolving techniques" danksy die geleenthede wat sy gebied is om nuwe intervensies deur hartkateterisering saam met haar kollegas in Leuven uit te voer en te beskryf. Deur nuwe tegnieke en verbeterde keuring van pasiënte kan die prognose van kinders en volwassenes met aangebore hartprobleme nou dramaties verbeter word.

As spesialis geniet dr Boshoff wêreldwye erkenning danksy optredes as spreker by vele kongresse en deur die publikasie van navorsingsresultate. Sy is betrokke by die opleiding van jong Europese kinderkardioloë in intervensionele hartkateterisering.

Dr Boshoff het 'n lys van meer as 32 publikasies in internasionale vakverwante joernale agter haar naam, en van 23 van dié publikasies was sy die eerste of tweede outeur.

Me Irma Joubert

Me Irma Joubert is 'n bekroonde Afrikaanse skrywer van gewilde historiese romans, wat met 'n BA-graad en Hoër Onderwysdiploma van UP 35 jaar in die onderwys gestaan het. Sy het ook 'n BAHons van Unisa. Onder me Joubert se bekende romans tel *Tussen Stasies* (2007 en herdruk) en *Anderkant Pontenilo* (2009 en herdruk) en haar jongste werk, *Tolbos*, is in 2013 gepubliseer. Haar boeke is topverkopers in Suid-Afrika en Nederland en word nou ook in Duits en Engels vertaal.

Van links na regs verskyn me Irma Joubert, mnr Jan-Jan Joubert en dr Jackie Grobler.

Me Joubert is die kleindogter van twee bekende oud-Tukkies. Haar een oupa was die argitek Gerhard Moerdyk wat in 1939 'n MArch-graad van UP ontvang het. Haar ander oupa was die bekende ekonoom, dr Jack Holloway, wat van 1919 tot in 1925 klas gegee het aan die eertydse Transvaalse Universiteitskollege, eers as senior dosent en later as die eerste volle professor in Ekonomie.

Me Joubert het van 1970 tot 2004 skoolgehou en het onder meer Afrikaans aan die Springfield Onderwyskollege in Durban en die Madadeni Onderwyskollege in Newcastle gedoseer. Sy het voltyds begin skryf nadat sy in 2004 as onderwyser afgetree het. Sy het in 2005 'n Media24-toekenning verwerf vir haar spesialisskryfwerk oor disleksie wat in die tydskrif *Insig* verskyn het. Sy ontvang die ATKV-prosaprys vir *Anderkant Pontenilo*, terwyl drie van haar ander boeke ook finaliste vir die prys was. In Nederland het sy in 2013 die "Publiekprys vir vertaalde fiksie" vir haar roman *Kronkelpad* gekry. Ander boeke wat reeds uit haar pen verskyn het, sluit in, *Verbode Drif* (2006, herdruk 2009), *Ver wink die Suiderkruis* (2006, herdruk 2009), *Veilige hawe* (2009), *Persomi, kind van die brakrant* (2010), *Kronkelpad* (2011) en *Tuiskoms* (kortverhale, 2011).

Mnr Albertus Swanepoel

Mnr Swanepoel het in 1981 'n BA-graad in Beeldende Kunste aan die Universiteit van Pretoria verwerf en in 1982 'n diploma in mode-ontwerp by Leggatt se akademie vir ontwerp in Johannesburg voltooi. Vandag is hy 'n wêreldbefaamde hoede-ontwerper wat in New York woon en werk. Hy het sy loopbaan as mode-ontwerper in Johannesburg begin en was onder meer 'n assistent van die bekende ontwerper Marianne Fassler. Onder sy eweknieë word hy besonder hoog geag, nie alleen in die hoogs mededingende New Yorkse modewêreld nie, maar ook in die Ooste, Europa en dwarsoor die VSA.

Mnre Eben Kuhn, Albertus Swanepoel en me Pnina Fenster by die onthaal.

Van sy ontwerpershoede word gereeld by die klereversamelings van hoogaangeskrewe mode-ontwerpers ingesluit. 'n Paar van sy kliënte sluit Alexander Wang, Proenza Schouler, Tommy Hilfiger, Jason Wu, Diane von Furstenberg en Marc by Marc Jacobs in.

Sy hoede word ook wêreldwyd in gesiene modehuise verkoop, waaronder Barneys New York, Bergdorf Goodman en verskeie winkels in Japan en Hong Kong. In 2010 het hy hoede ontwerp vir die 1700 winkelgroep Target en het hy ook met JCrew, Stetson Hats en Gap saamgewerk.

In 1984 het hy sy eie vroueklerereeks met die naam Quartus Manna in Suid-Afrika begin vervaardig, gou opgang gemaak, in 1987 die Coty-toekenning as die top ontwerper van Suid-Afrika ontvang, en kort daarna (in 1989) na New York vertrek. In 1992 het hy ontwerpershandskoene in New York begin maak en aan winkels wêreldwyd verkoop. Sedert 2000 het hy in hoede-ontwerp begin spesialiseer.

Mnr Swanepoel het vir 'n paar jaar in New York vir 'n teaterhoedemaker gewerk en vir ses jaar vir Lola Hats waar hy 'n assistent was en waardevolle ervaring opgedoen het. Hy was in 2000 'n moderedakteur vir die tydskrif Martha Stewart Weddings.

In 2008 het hy tweede gekom in die CFDA/Vogue Fashion Fund-toekennings. Sy hoede is in 2009 in 'n hoede-uitstalling genaamd "Hats: An anthology by Stephen Jones" in die Londense Victoria en Albert Museum ingesluit. In dieselfde jaar is hy genomineer vir die CFDA Swarovski-modetoekennings. In Julie 2010 is hy by die Afrika-modetoekennings as die bybehore-ontwerper van die jaar benoem, en in dieselfde jaar is hy genomineer vir die prestigetoekenning as die Beste Globale Bybehore-ontwerper by die wêreldwye WGSN-modetoekennings in New York. Aan die einde van 2014 was hy 'n finalis in die Martha Stewart Made in America-kompetisie en het hy 'n hoedereeks in die Filippyne gaan bekendstel.

Sy hoede kry publisiteit in tydskrifte, onder meer *Vogue, Time Magazine, The New York Times, Harper's Bazaar, Elle* en *W Magazine*, en pryk ook in rolprente en televisiereekse in die VSA. Verskeie glanspersoonlikhede soos Julia Roberts, Kate Winslet en Niki Minaj tel onder sy kliënte.

Prof Roelf van den Heever

Prof van den Heever het die grade BSc, BScHons en MSc (almal cum laude) aan UP verwerf, asook 'n MS-graad aan die Stanford-universiteit in Kalifornië, en 'n MIng en PhD van die Universiteit van Kalifornië in Berkeley. Hy was die stigtershoof van die Departement Rekenaarwetenskap aan UP in 1977 toe hy 'n baanbrekersrol gespeel het om rekenaarwetenskap as 'n akademiese dissipline in Suid-Afrika te vestig. Hy het 'n leidende rol gespeel in die totstandkoming van die Universiteit se Skool vir Inligtingtegnologie in

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die Fakulteit Ingenieurswese, Bou-omgewing en Inligtingtegnologie in 1990.

Hy was die stigter van die Eenheid vir Programmatuuringenieurswese (EPI) (Unit for Software Engineering (USE)) wat in1982 in die Departement Rekenaarswetenskap van UP geskep is. In 1994 het hy die maatskappy EPI-USE Systems (Edms) Bpk saam met vyf ander entrepreneurs gestig. EPI-USE Systems (Edms) Bpk was 'n spontane uitvloeisel van die fondse wat via EPI se kontraknavorsing gegenereer is. Die fondse was gelykstaande aan R20 miljoen oor tien jaar in vandag se terme en dit is binne die departement hoofsaaklik vir akademiese doeleindes aangewend.

Prof Roelf van den Heever.

Die projek vir die onderrig van Mamelodi-leerders in Rekenaarwetenskap en die toekenning van beurse aan sommige van dié leerders om Rekenaarwetenskap aan UP te studeer, het in die middeltagtigerjare 'n aanvang geneem en is deur EPI befonds.

As voorsitter van EPI-USE Systems (Edms) Bpk het prof van den Heever die maatskappy oor 20 jaar ontwikkel tot 'n internasionale konglomeraat van maatskappye wat in 18 lande geregistreer is en inligtingstegnologiedienste in 110 lande en programmatuurprodukte in meer as 80 lande verskaf. Die moedermaatskappy word wêreldwyd gereken as 'n leier op die gebied van die aanwending van die relatief komplekse SAP-gebaseerde HCM-stelsel (Human Capital Management System). Die maatskappy se kliëntebasis sluit verskeie multinasionale ondernemings op die Fortune 500-lys in, soos ADP, Schlumberger, Proctor and Gamble, Sasol, BHP Billiton, Rolls Royce en Richemont.

Prof van den Heever is steeds die voorsitter van die adviserende raad van die internasionale netwerk van EPI-USE-maatskappye. 'n Groep begaafde oudstudente van die Departement Rekenaarwetenskap en ander Tuks alumni maak deel van die kern van die EPI-USE-groep uit.

In 2010 was hy die ontvanger van die jaarlikse SAICSIT ICT Pioneer-toekenning ter erkenning van sy bydrae tot sagteware-ingenieurswese en entrepeneurskap in inligtings- en kommunikasietegnologie in Suid-Afrika. Hy is 'n lid van die Vereniging vir Rekenaarwetenskapmasjinerie (Association for Computing Machinery (ACM)), VSA.

Prof Van den Heever was en is steeds op verskeie maniere by UP betrokke, onder andere as 'n raadgewer oor INSiAVA (Edms) Bpk by BE at UP, as 'n buitengewone professor in die Departement Rekenaarwetenskap en as lid van dié departement asook die Fakulteit Ingenieurswese, Bou-omgewing en Inligtingtegnologie se adviesraad. Hy is deur EPI-USE as donateur betrokke by die Roelf van den Heever-prys vir die beste honneursstudent in Rekenaarwetenskap.

Hy het 'n leidende rol gespeel in die totstandkoming van die South African Computer Lecturers' Association, (SACLA) in 1972, Web-Oriented Learning Centre (WOLC), 1977, wat tot EPI-USE LearningSolutions en EPI-USE Talent Management ontwikkel het, IT Coachlab (2001), wat tot die Coach Lab van die Innovation Hub ontwikkel het, A South African Sensor Net Initiative (aSASNI) in 2005, en hy was waarnemende besturende direkteur van INSiAVA van 2008 tot 2012. Hy was ook van 2009 tot 2012 'n lid van die beleggingskomitee van die SA IP-fonds.

Dr Jane Olwoch

Dr Jane Olwoch completed the PhD (Zoology) at the University of Pretoria on the impacts of climate change on ticks and tick-borne diseases in sub-Sahara Africa while working at UP. She was born in Rwanda but raised in Uganda after her parents had left Rwanda in 1959 as refugees. She studied Botany and Zoology at Makerere University in Uganda before completing her honours and master's degrees in Biology at the Medical University of Southern Africa (Medunsa).

Before her appointment as Managing Director: Earth Observation at the South African National Space Agency (SANSA) in June 2012, she was responsible for coordinating the BSc (Environmental Science) degree in the Department of Geography, Geo-informatics and Meteorology at UP. She has supervised or co-supervised more than 30 postgraduate students, and she continues to supervise PhD and master's students.

Dr Jane Olwoch (centre) with Prof Anton Ströh, Vice-Principal: Institutional Planning and Prof Carolina Koornhof, Executive Director: Finance.

Dr Olwoch has always been fascinated by nature, particularly how all things in nature are interconnected. This fascination evolved into a career in the environmental sciences and she is a climate change impact specialist with a background in biology and vector ecology. She has been involved in climate change research for the last ten years, and some of her work has been published in peer review journals and presented at numerous local and international conferences. She serves on the United Nation's Intergovernmental Panel on Climate Change and is a lead author for Chapter 11, entitled 'Climate change and human health' of the panel's report.

A team of remote sensing specialists, technologists and engineers delivers programmes that are globally competitive and locally relevant and benefit society under her leadership. She is responsible for engaging with and contributing to national and international stakeholders and key earth observation forums, such as the Group on Earth Observation (GEO) and the Committee on Earth Observation Satellites (CEOS). Currently she is the vice-chair of the CEOS Working Group on Capacity Development and Data Democracy.

Dr Fannie Sebolela

Dr Fannie Sebolela obtained certificates and diplomas in education at the former Vista University and his BA degree at Unisa. In 1995 he completed an honours degree in lexicography at UP, and this was followed by a master's degree and a doctorate in 2000. In addition, he completed an advanced certificate in education at the University of Johannesburg and a qualification in executive leadership at Wits.

Dr Sebolela is currently the Executive Head of Curro Academy in Soshanguve. He previously was principal of Khensani Primary School in Soshanguve, north of Pretoria, which was honoured by the Department of Basic Education. Dr Sebolela was named the winner in the Department's programme celebrating excellent teachers in the country for his outstanding leadership in primary school education in South Africa.

As the son of a single parent he realised even while still at primary school in Mabopane outside Pretoria that he would have to leave home and get a job if he wanted to make something of himself in life. In 1974 he started working as a gardener with Andries and Hantie de Klerk in Mayville, Pretoria, who supported and encouraged him in his academic career and whom he still regards as "parents".

Mr Andries de Klerk and Dr Fannie Sebolela.

During his 15 years as a school principal he received a number of prizes, such as Principal of the Year in his education district, service awards from the Gauteng Premier and MEC for

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education, and the best school in the province for the promotion of health. Between 2011 and 2014 the school also received awards from the Department of Agriculture, Forestry and Fisheries for the management of natural resources. In the annual national assessments (ANA) the school has been the top academic achiever in its district for the past three years with an achievement of above 90%.

He ascribes the success of the Khensani School, which has 1 200 learners, to its commitment to its vision and mission, as well as to his endeavours to make sure that the school remained unique and stood out from the rest. The learners did not pay school fees but were funded by sponsorships and donations from as far afield as Britain, Japan and Brazil. Owing to partnerships it was possible to build extra classrooms, a library, a laboratory, ablution facilities and other buildings on the premises. The school has also established partnerships with international schools, for example, Baverstock in Birmingham and Tithe Barn in Manchester, England.

Dr Sebolela motivated his learners through his leadership, by encouraging them regularly and by listening to recommendations. Achievers at the school were considered for bursaries to continue their school careers at the Pretoria High School for Girls or the Pretoria Boys' High School. Even parents were rewarded for being involved with their children and with the school. ■

Prof Rycroft tree uit

Die Universiteit van Pretoria Simfonie-orkes(UPSO) se dirigent van 12 jaar, prof Eric Rycroft het onlangs afgetree na 'n merkwaardige loopbaan as uitvoerende kunstenaar, dosent en dirigent. Prof Rycroft se laaste optrede as dirigent van UPSO was tydens die afskeidskonsert wat op 27 Maart in die Aula gehou is.

Prof Rycroft was vir 30 jaar lank verbonde aan die Konserwatorium by die Universiteit van Stellenbosch waarvan hy vir 15 jaar professor was. In 1995 is hy ook aangestel as hoofdirigent en musiekdirekteur van die Nasionale Kamermusiekorkes. Prof Rycroft het aan die Universiteit van Kaapstad en aan die Royal College of Music in Londen, VK, gestudeer. Hy was 'n leerling van Dorothy Delay, Yehudi Menuhin en Lionel Tertis en het heelwat internasionaal opgetree. In Suid-Afrika het hy as solis saam met al die professionele orkeste opgetree.

Die musiekresensent en joernalis, Paul Boekkooi, het na die afskeidskonsert geskryf dat prof Rycroft die UP Simfonieorkes "op 'n avontuurlike pad na musikale uitmuntendheid gelei het". ■

Prof Rycroft in aksie tydens die afskeidskonsert

'n Finale buiging: prof Eric Rycroft en UPSO erken die applous tydens die afskeidskonsert.

In memoriam

Prof Nathanaël Grobbelaar

(1928 to 2015)

Prof Nathanaël Grobbelaar

Prof Nathanaël Grobbelaar passed away on 4 January 2015. He was previously professor and Head of Department (1958 to1986) of Plant Physiology and Biochemistry and later of the Department of Botany at the University of Pretoria. He held the Bertha Stoneman Chair at UP from 1959 to1985.

Prof Grobbelaar matriculated at Pearson High School in Port Elizabeth. As the top scholar in the Eastern Cape he received a bursary and later obtained the degrees BSc in Chemistry and Botany at the University of Rhodes cum laude and MSc in Plant Biochemistry (1952) also cum laude, at the University of Pretoria. He was awarded a prestigious Rockefeller Fellowship and left for the USA where he completed his PhD in Plant Biochemistry in 1954 at Cornell University.

The results of Prof Grobbelaar's research on the biosynthesis of amino acids, including pipecolic acid, as well as his novel work on nitrogen exchange of cyanic bacteria and plants, can still be found in today's main international textbooks. He became an internationally recognised scientist for his work on the metabolic regulation of various plant metabolites, especially poisonous compounds, as well as for his cycad research.

He was a founding member of the *SA Journal of Botany,* which is now a highly rated international journal.

Prof Karel A Bakker

Prof Karel Bakker

Prof Karel Bakker, Head of Department Architecture, passed away on 19 November 2014 at the age of 58.

Prof Bakker completed his BArch degree at the University of Pretoria in 1981 as well as his MArch with distinction in 1993. A PhD (Arch) followed in 2000. His research fields were related to urbanism, heritage management and architectural history while his specialities included urban conservation, heritage impact assessment, conservation management plans, classical architecture, African architecture and the history of historical settlement.

Prof Bakker joined the University in 1986 and was appointed as Head of Department: Architecture in the Faculty of Engineering, Built Environment and Information Technology on 1 January 2009.

Dr Cival Mills

Dr Cival Mills, a UP alumnus who obtained an MBChB degree in 1999, passed away in Pretoria on 3 April 2015. He was both a brilliant student and an exceptional sportsman until December 2000 when a serious traffic accident and complications during a subsequent operation left him with locked-in syndrome, a neurological disorder characterised by complete paralysis of the voluntary muscles.

At the time he spent almost two years in hospitals and gradually unique ways to communicate with those around him were adopted. One of the early innovations was a buzzer, which he could use to communicate with the nursing staff at the hospital after it had been found that he could use his left thumb.

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Dr Cival Mills receives the TuksAlumni Laureate Award from Dr Piet Botha, then chairperson of the TuksAlumni Association in 2008.

Using the mobility in his thumb and an adapted laptop, he wrote a book detailing his struggle. This book, titled *This too will pass*, took two years to complete and was followed by another, *The truth about wheels*, in which he shared the comical side of his wheelchair experiences.

He also worked for short periods as a researcher at both Momentum Health and Discovery Health and developed an electronic voice simulator with which he could communicate. This innovative, self-designed, patented IT apparatus functions with controls that are activated by using the thumb and forefinger. Another device on which he worked is called a Thingy, which enables people with very limited hand mobility to use a computer.

Prof Kris Adendorff

Prof Kris Adendorff

Prof Kris Adendorff is op 26 Oktober 2014 in die ouderdom van 83 oorlede. Hy was 'n hoog aangeskrewe figuur in bedryfsingenieurswese in Suid-Afrika.

Kristian Adendorff is op 21 April 1931 in Pietermaritzburg gebore. Hy het die graad BSc Elektroniese Ingenieurswese in 1953 aan die Universiteit van Witwatersrand verwerf. Daarna het hy, in 1961 en 1969 onderskeidelik, 'n MBA en DBA aan die Universiteit van Pretoria behaal.

Hy het in 1959 by die Universiteit van Pretoria se Fakulteit Ingenieurswese aangesluit en was by die opleiding van bedryfsingenieurs in Suid-Afrika betrokke sedert die ontwikkeling van die graad.

Prof Adendorff het in 1991 uitgetree as professor by die Departement van Bedryfs- en Sisteemingenieurswese en hy was tot met sy afsterwe op deeltydse basis as Emeritus Professor betrokke. Hy het 'n sleutelrol vertolk in die vestiging van bedryfsingenieurswese as professionele studieveld in Suid-Afrika.

Prof Piet Oosthuizen

Prof Piet Oosthuizen

Prof Piet Oosthuizen, wat die Universiteit as Viserektor en ook as departementshoof en dekaan van die Fakulteit Regsgeleerdheid gedien het, is op 19 Oktober 2014 oorlede.

Hy het die grade BA (Regte) (1956) en LLB (1958) deur buitemuurse studie behaal en die LLD graad in 1981. Hy is in 1971 voltyds aangestel as professor en hoof van die Departement Prosesreg en Bewysleer. Vanaf April 1974 tot Desember 1980 is hy ook Dekaan van die Fakulteit Regsgeleerdheid, waarna hy op 1 Januarie 1981 as Viserektor: Akademies (Geesteswetenskappe) aangestel word. Op 1 Junie 1985 word hy Viserektor: Personeel en Studentedienste. Hy het in 1991 uit die akademie getree. ■

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- The Faculty is internationally recognised for its academic reputation, employer reputation and citations of research
- Networks exist with both local and international universities including, among universities in the USA, China, Australia and Europe.

A bright and exciting career in teaching choosing a career as an educator can truly be one of the most fulfilling choices you can make. Students of the Faculty of Education at the University of Pretoria are confident leaders who are equipped with a terrific set of educational and professional skills.

The University's Groenkloof Campus is home to more than 3 500 undergraduate education students and, from this group approximately 500 to 800 students annually enter the profession.

Education is a meaningful career and is the shortest route to long-term success for any nation, community, family or individual. As a professional field, it is one of those treasured sectors in which one can influence the future on a daily basis. Education also has the ability to span all scientific fields known in the world.

Education is the one sector that will make an impression on the lives of future doctors, engineers, accountants, lawyers, educators, philosophers, artists, musicians, sport heroes, politicians and royalty. This means that educators have to seek excellence in everything they do.

Undergraduate programmes

- BEd (Early Childhood Development and Foundation Phase) – Pre-primary to Grade 3. This is a four-year programme. Students with this qualification can become teachers and training officials in pre-primary or primary schools.
- BEd (Intermediate Phase) – Grades 4 to 6. This is a four-year programme. Students with this qualification can become teachers and officials in primary schools.
- BEd (Senior Phase) – Grades 7 to 9. This is a four-year programme. Students with this qualification can become teachers and training officials in primary or secondary schools.
- BEd (FET) – Grades 10 to 12. Presented as the following packages:
  - General
  - Human Movement Sciences and Sport Management
  - Economic and Management Sciences
  - Natural Sciences

Contact persons

Ms Melinda Joubert at melinda.joubert@up.ac.za
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www.up.ac.za/education

Postgraduate studies in the Faculty of Education

Knowledge is power – now and in the future. At the University of Pretoria's Faculty of Education educationists from a wide range of sub-disciplines are empowered to reach great heights in their careers. As a large tertiary institution for educational research and training South-Africa, the Faculty offers an innovative series of postgraduate programmes that cater for local and international students.

Postgraduate programmes

- Postgraduate Certificate in Education (PGCE) (Former HED)
- Postgraduate Certificate in Higher Education (PGCHE)
- BEd Honours Degree
- MEd Degree (Research and course work)
- PhD Degree

Qualifications are offered in the following fields

- Early Childhood Education
- Humanities Education
- Assessment and Quality Assurance
- Adult and Community Education and Training
- Computer Integrated Education
- Teacher Education and Professional Development
- Education Management, Law and Policy
- Educational Leadership
- Educational Psychology
- Learner Support, Guidance and Counselling
- Science and Mathematics Education
- Science and Technology Education

Closing date for applications

MEd Educational Psychology – last working day in July
All other applications – last working day in August

Prospective students are invited to contact Student Administration for information and forms:
Tel: 012 420 3080 / 420 2725 / 420 5679
E-mail: jeannie.beukes@up.ac.za or bronwynne.swarts@up.ac.za