



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA

# JuniorTukkie

November 2020 Edition

MAGAZINE

## Flourishing in the **ONLINE** **ENVIRONMENT**

### Inside this issue:

Discover the joy of hybrid learning

Heritage and Cultural Tourism  
and online tours

The new Engineering 4.0 Complex

Consider splendid careers in  
Natural and Agricultural Sciences

 Investec

[www.up.ac.za/juniortukkie](http://www.up.ac.za/juniortukkie)



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View the JuniorTukkie magazine online:  
[www.up.ac.za/juniortukkie](http://www.up.ac.za/juniortukkie) > JT magazine

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# Editorials



## Navigating our new online reality

The global outbreak of the coronavirus landed South Africa and many other countries in uncharted waters and necessitated the extreme lockdown measures recently experienced.

As necessary as these measures are, it cannot be denied that they unfortunately have dire socio-economic implications for South Africa as a whole. During the lockdown millions of citizens' livelihoods were threatened as they were unable to work to generate income for their families. The restrictions on gatherings caused by the pandemic has necessitated increased virtual engagements for most of us. Recently I was part of a team that championed the decision to move Promaths online. I also had to adapt very quickly to working remotely and online and would like to share some thoughts about this new reality.

- **Give it time:** Since I am a people's person, I was initially sceptical about working from home and having daily meetings online. However, as days, weeks and even months passed by, I learned to embrace the unavoidable, as did many of our Promaths learners whose lessons had been moved online in a space of six weeks. The way they have adapted to the new way of learning is truly impressive. I have been overly impressed by how they have become so accustomed to it over time, freely engaging with it as if it has always been their way of learning.
- **Opportunities abound:** As our ways of working, interacting and learning are being re-shaped around digital platforms, I would like to urge the entrepreneurs in all of us to creatively consider how we can take full advantage of the current level of digital transformation, for example by addressing other people's problems. As the saying goes, never waste a good crisis as it offers amazing opportunities to make a difference, and possibly also to earn a living.
- **Digital fatigue is real:** As exciting as this new development may be due to the opportunity it offers to constantly participate in video conferences, I would like to urge you to carefully consider the amount of time spent on all these digital platforms. Remember, digital fatigue is real! There is a reason why classrooms, offices and most other spaces are not filled with mirrors so that people can stare at themselves and each other all the time. We must regularly make time to stare into space and enjoy nature and other views to give ourselves much needed breaks.
- **Human connection and face-to-face engagement is needed at times:** Digital transformation may be a good way of engaging while personal contact is limited, but we need to create space for some face-to-face interaction, provided we follow the various lockdown-related guidelines. However, digital connections are not enough as our lives are enriched by the different kind of energy generated by physical connection with others.

As we navigate our way through the last quarter of 2020, we can only hope that 2021 will be a much better year!

Best wishes,

**Mr Setlogane Manchidi**  
Head: Corporate Social Investment, Investec



## COVID-19: The game changer The future is hybrid

We were all ready for a year packed with exciting JuniorTukkie events. Then COVID-19 became a reality, and we asked ourselves, what now? The answer was to go virtual, and it made total sense.

We captivated the audience with high-quality virtual content presented by experienced teachers and staff and were surprised by the large number of participants at each JuniorTukkie virtual event. All 2020 JuniorTukkie events were presented online, and in the foreseeable future, we will have two streams, physical events on campus and live stream events on the JuniorTukkie online platforms.

Although the online environment was reasonably unfamiliar to most of us, we quickly adapted to the new environment and learned new skills to host JuniorTukkie virtual events. More than 100 000 learners from all over the world benefited from the enrichment programmes presented via the JuniorTukkie YouTube channel and the Google Classroom platform. Since we had great success with the JT online projects, we are looking forward to a new world of hybrid learning—especially for Grade 10 to 12 learners in the subjects Mathematics, Physical Sciences, English, Life Sciences and Accounting. JuniorTukkie's own virtual classroom will give learners and teachers access to content from anywhere at any time. It will also sharpen digital skills and expand your knowledge.

Best wishes,

**Dr Petrus Lombard**  
Project Manager: JuniorTukkie

## Editorials

# Living in a visionary time

By Anthea Pretorius

The pandemic has created a world of uncertainty and, behind their masks, many people are feeling anxious, apprehensive and even fearful. Many are also desperately lonely and feel disconnected. Ours is not a world of guarantees. Ours is not a safe world.

Life as we knew it is gone. No-one knows what the new normal will be. In some respects, the way we live, work, play, travel and study has become extremely trying.

On her blog, Maria Shriver writes that people are 'tired and exhausted. Tired from trying to keep it all together. Exhausted from trying to figure out how to pivot, how to redirect, how to home school and how to care for everyone.

When we are exhausted and exasperated, we aren't helping lower the temperature of the world. When we are yelling and judging and shaming, we aren't moving humanity forward. We need to reset our personal temperatures. We are allowed to say "Stop, I'm flooded. I can't hear you anymore. Your words aren't landing. I will come back to the conversation when I have gathered myself."

Nevertheless...I believe that hope is not something we do, but something we have. Hope is active. Hope helps us as a human family to move towards deeper wisdom and a sense of unity, cooperation, respect and kindness.

## The universal drive towards self-actualisation

In order to occupy their special place within the universal space of possibility, all maturing humans need to be able to self-actualise. Self-actualisation is the realisation or fulfilment of one's talents and potential.

Every learner and every university student has dreams and every dream is

valid. Pursuing what we are passionate about gives impetus to our lives and our daily activities. We cannot afford to be fatalistic and despondent. Day by day, we craft the lives we want.

## Universities are enablers of potential

At university we do not only teach the core principles, processes and content of a specific field of study, but also equip students with vital skills—communication skills and problem-solving skills.

We want students to not only be successful in their chosen careers, but also to craft balanced lives of significance for their families, communities and society as a whole. Earning a living is one thing, but creating a meaningful life is something quite different. One way of enabling your own future success is to cultivate emotional intelligence.

*'Success is largely the failures you avoid. Health is the injuries you don't sustain. Wealth is the purchases you don't make. Happiness is the objects you don't desire. Peace of mind is the arguments you don't engage in.'*

(Anonymous)



## Editorials

### Signs of high emotional intelligence *by Justin Bariso*

In a recent Inc.com article<sup>1</sup>, Justin Bariso suggests that the following characteristics are typical of people with a high level of emotional intelligence: Self- and social awareness and the ability to recognise emotions and their impact on themselves and others.

Individuals with emotional intelligence ask questions such as: *How does my current mood affect my thoughts and decision-making? What is going on under the surface that influences what others say or do?*

- Emotionally intelligent people pause and think before they speak or act. Pausing prevents one from making a permanent decision based on a momentary emotion.
- Emotionally intelligent people experience intense emotions, but nevertheless strive to control their responses to situations and aim to live in harmony with their goals and values.
- They use criticism as opportunities to learn. They realise that even when criticism is not delivered in the best way and may be unfounded, it still gives one a glimpse into how others think.
- They display authenticity. They say what they mean and mean what they say. They adhere to their values and principles.
- They are able to show empathy. When we choose not to judge others, but display empathy instead, we connect

to them far better as we try to see things through their eyes.

- They offer others sincere praise, acknowledgement and appreciation. This builds trust and inspires others to be the best they can be.
- They give helpful and constructive feedback.
- Emotionally intelligent people apologise and are able to say they are sorry. By doing so, they demonstrate humility, which is a quality that draws others to them. People who are able to apologise sincerely demonstrate that they value relationships more than their egos.
- They have the ability to forgive offences and move on. If we do not forgive and forget, we never heal and our emotions hold us hostage.
- They keep their commitments, do not break promises and build a reputation for being reliable and trustworthy.
- Emotionally intelligent people are prepared to help others. They make time to listen, to help out. They are ready to become involved and pull their weight.

I am sure that you will agree that if we apply our minds to it, these traits are admirable and achievable.

**Note:** Justin Bariso will soon be releasing his book, *EQ, Applied*.

<sup>1</sup> [www.inc.com/justin-bariso/13-things-emotionally-intelligent-people-do.html?\\_lrsc=db7480a1-048b-4c11-9fa0-dd7c5ba722b5](http://www.inc.com/justin-bariso/13-things-emotionally-intelligent-people-do.html?_lrsc=db7480a1-048b-4c11-9fa0-dd7c5ba722b5)

Our world is filled with visionary thinkers and their stories inspire us to live visionary lives. All high achievers have to deal with defeat at times, as will we. But we need not feel defeated by circumstances, or, when this happens, we should not be tempted to quit.

In his book *Manuscript found in Accra*, Paulo Coelho makes the following interesting observation on defeat:

*'Does a leaf, when it falls from the tree in winter, feel defeated by the cold? Does a man who spent years preparing to climb the highest mountain in the world feel defeated on reaching that mountain and discovering that nature has cloaked the summit in storm clouds? Does a young man, rejected by his first love, declare that love does not exist?'*

**Read the article here:**  
[www.paulocoelhoblog.com/2020/09/30/defeat-2](http://www.paulocoelhoblog.com/2020/09/30/defeat-2)



### Don't hesitate *by Mary Oliver*

If you suddenly and unexpectedly feel joy, don't hesitate. Give in to it. There are plenty of lives and whole towns destroyed or about to be. We are not wise, and not very often kind. And much can never be redeemed. Still, life has some possibility left. Perhaps this is its way of fighting back, that sometimes something happens better than all the riches or power in the world. It could be anything, but very likely you notice it in the instant when love begins. Anyway, that's often the case. Whatever it is, don't be afraid of its plenty. Joy is not made to be a crumb.

Mary Jane Oliver was born on 10 Sept 1935 and died on 17 January 2019. She published more than 15 collections of poetry and won the National Book Award and the Pulitzer Prize. This poem appears on Janice Falls' blog:  
[www.janicefalls.wordpress.com/2019/12/15/dont-hesitate-by-mary-oliver](http://www.janicefalls.wordpress.com/2019/12/15/dont-hesitate-by-mary-oliver)



*‘Success doesn’t come from what you do occasionally;  
it comes from what you do consistently.’*

(Marie Forleo)



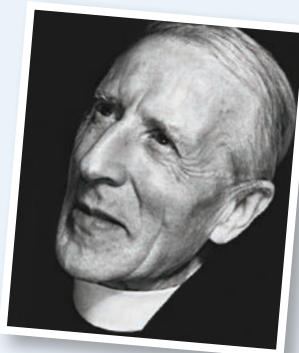


## Editorials

### Pierre Teilhard de Chardin was a remarkable human being

De Chardin was born on 1 May 1881 and died on 10 April 1955. He was a French philosopher, a Jesuit priest, a palaeontologist and a geologist. He believed the following:

- The most satisfying thing in life is to have been able to give a large part of one's self to others.
- Our duty, as men and women, is to proceed as if limits to our ability did not exist. We are collaborators in creation.
- When bad things happen to good people, how they respond to what happened is what counts.
- Love is the agent of universal synthesis. Love alone can unite living beings, because love connects us to the deepest part of who we are.
- The world is round so that friendship may encircle it.
- We are not human beings having a spiritual experience. We are spiritual beings having a human experience.



This piece appeared on Paulo Coelho's blog: [www.paulocoelhoblog.com/2020/10/28/character-of-the-week-teillard-de-chardin/](http://www.paulocoelhoblog.com/2020/10/28/character-of-the-week-teillard-de-chardin/)

*'We cannot have a healed society, we cannot have change, we cannot have justice, if we do not reclaim and repair the human spirit. To do our work, to come into deep knowing of who we are—that's the stuff that bringing down systems of oppression is made of. Without a willingness to be flexible, open, soft-bellied enough to be moved by the truth of the other in whatever given situation, then it is not transformative.'*

*For us to transform as a society, we have to allow ourselves to be transformed as individuals. And for us to be transformed as individuals, we have to allow for the incompleteness of any of our truths and a real forgiveness for the complexity of human beings and what we're trapped inside of, so that we're both able to respond to the oppression, the aggression that we're confronted with.'*

(Zen priest, activist and teacher angel Kyodo Williams is the founder of Transformative Change and the author of *Being Black: Zen and the Art of Living with Fearlessness and Grace* and *Radical Dharma: Talking Race, Love, and Liberation*.)

**Read Krista Tippett's interview with her here:**

[www.onbeing.org/programs/angel-kyodo-williams-the-world-is-our-field-of-practice/](http://www.onbeing.org/programs/angel-kyodo-williams-the-world-is-our-field-of-practice/)



### Using a 3D printer to create homes for the homeless

One billion people around the world have never known the security of a solid roof over their heads. That means that 20% of the world's population lack adequate and safe shelter.

Traditional construction techniques cannot keep up with the demand for housing. To compound matters, established building methods are time consuming, labour intensive and extremely costly.

To address this problem, entrepreneur Brett Hagler pioneered a new and sustainable solution, which he calls New Story. His aim is to end global homelessness and he is doing it using a 3D printer!

New Story has built more than 3 000 homes in Haiti, El Salvador and Guatemala, and is revolutionising the building industry with advanced 3D printing. Partnering with the construction technology company Icon, the New Story team uses a machine that prints a 500 square

foot house in just 24 hours, offering an affordable and resilient shelter to lower-income families. It is making all the difference in the world.

**New Story website**  
[www.newstorycharity.org](http://www.newstorycharity.org)

**Icon website**  
[www.iconbuild.com](http://www.iconbuild.com)

**Video**  
[www.beautifulnews.com/worlds-first-3d-printed-community](http://www.beautifulnews.com/worlds-first-3d-printed-community)





## News

# JuniorTukkie initiative goes V I R T U A L

The JuniorTukkie Project Team in the Department of Enrolment and Student Administration at the University of Pretoria, hosts several projects annually. This year, due to COVID-19 safety measures, we had to present our events online.



The purpose of the JuniorTukkie programme is to equip and upskill learners from Grade 9 to 12 with the necessary skills for responsible study and career choices through tertiary education. Two of the main events are the Grade 11 Empowerment Week and the Grade 12 Preparation Conference, both supported by Investec.

Participation in both projects is through a selection process where only a limited number of learners are invited to attend these events, based on academic achievement and additional criteria. Recordings of the Empowerment Week and Preparation Conference sessions are eventually made available on the JuniorTukkie YouTube channel for all Grade 11 and Grade 12 learners to benefit from.

This year, 198 Grade 11 learners qualified to attend the online Grade 11 Empowerment Week while 215 learners participated in the Grade 12 Preparation Conference. Initiatives like this expose learners to focused empowerment programmes to better equip them to study and succeed at UP.

The JuniorTukkie Empowerment Week is a unique initiative among South African universities, where Grade 11 learners from previously disadvantaged population groups are comprehensively

engaged in developmental projects to bridge the educational gap between school and university.

This is the thirteenth year that JuniorTukkie is hosting the Grade 11 Empowerment Week, and the twelfth year for the Preparation Conference. Investec supports both events.

The programme for the events includes a range of topics aimed at upskilling learners in the following areas:

- mathematical reasoning;
- physical sciences;
- study methods;
- time management;
- self-knowledge;
- abilities and strengths;
- areas for improvements;
- exploring careers;
- leadership;
- public speaking skills;
- entrepreneurship, and
- Grade 11 and 12 Mathematics and Physical Sciences classes.

Members of the **JuniorTukkie Student Ambassador's Society (JTSAS)** play an integral part in making these projects a success. These students study at the University of Pretoria. They have been members of the JuniorTukkie Club from their high school days and, once they become UP students, joined the JTSAS.

They are the workforce which makes every project happen by organising the many projects of the JuniorTukkie Office, including packing JT and undergraduate information brochures for school learners.

Not only do they participate in outreaches to school communities, but they also engage in community projects among students and the broader communities outside the University of Pretoria. These opportunities enhance their public speaking abilities and promote their development as leaders and mentors. The project management, administration experience and achievements contribute substantially to their future success and careers.

Students are welcome to join the **JuniorTukkie Alumni** in their third year of study. As a member of the JuniorTukkie Alumni, you will become part of an ever-growing and unique network of Tukkie who make valuable contributions to societies all over the world.

**For more info on the JT Alumni**  
 Dr Petrus Lombard or Ms Selena Davids  
 Email [jtprojects1@up.ac.za](mailto:jtprojects1@up.ac.za)

## News



# Recruitment and the JuniorTukkie initiative go from strength to strength

By Petrus Lombard



## Projects undertaken by the JuniorTukkie Student Ambassadors Society (JTSAS)

- JT 40 hours of community service
- Touching lives by inspiring future leaders
- Mandela Day outreaches
- JT Alumni project
- Assistance in the JT Office
- Assistance with JT virtual platforms
- International Enrichment Programme

## Enrichment programmes

- Grade 11 Empowerment Week (supported by Investec)
- Grade 12 Preparation Conference (supported by Investec)
- Grade 11 Summer School for Mathematics and Physical Sciences
- Grade 12 Winter School for Mathematics and Physical Sciences

## JuniorTukkie/Faculty information days and career fairs

- Faculty of Veterinary Science
- Faculty of Health Sciences
- Engineering, Built Environment and Information Technology Week
- Mamelodi Campus Career Fair
- Faculty of Natural and Agricultural Sciences Career Fair

16 years

The JuniorTukkie initiative was introduced in 2004 and is still going from strength to strength after 16 years.

2 605

In 2004, the JuniorTukkie Club had two members. Today its membership includes more than 2 605 learners in Grades 9 to 12, as well as first-to final-year students.

2 274

To date, the JuniorTukkie Office (supported by Investec) has hosted 14 Empowerment Weeks for Grade 11 learners. The events were attended by 2 274 learners.

2 194

The JuniorTukkie Office also hosted 12 Grade 12 Preparation Conferences, supported by Investec, which were attended by 2 194 learners.

8 724

Eleven Grade 11 Top Achievers' functions were attended by a staggering 8 724 learners.

3 114

Our fourth Grade 9 Information Session was attended by 724 learners and their parents, which brings the total learner attendance over the four years to 3 114.

374

The five UP School Leaders Conferences hosted since 2016 were attended by 374 head boys and head girls.

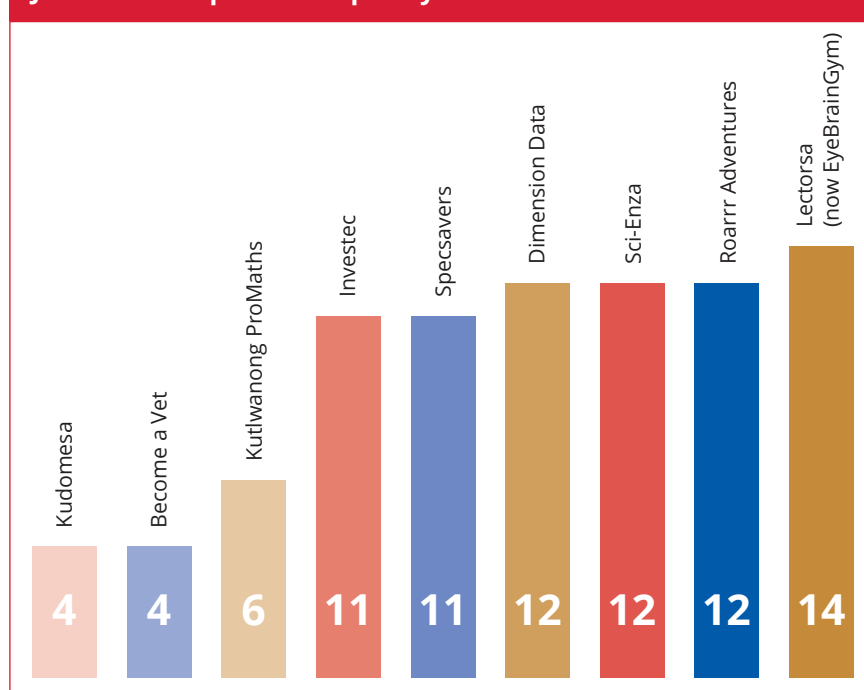
3 063

The JT APP has 3 063 users.



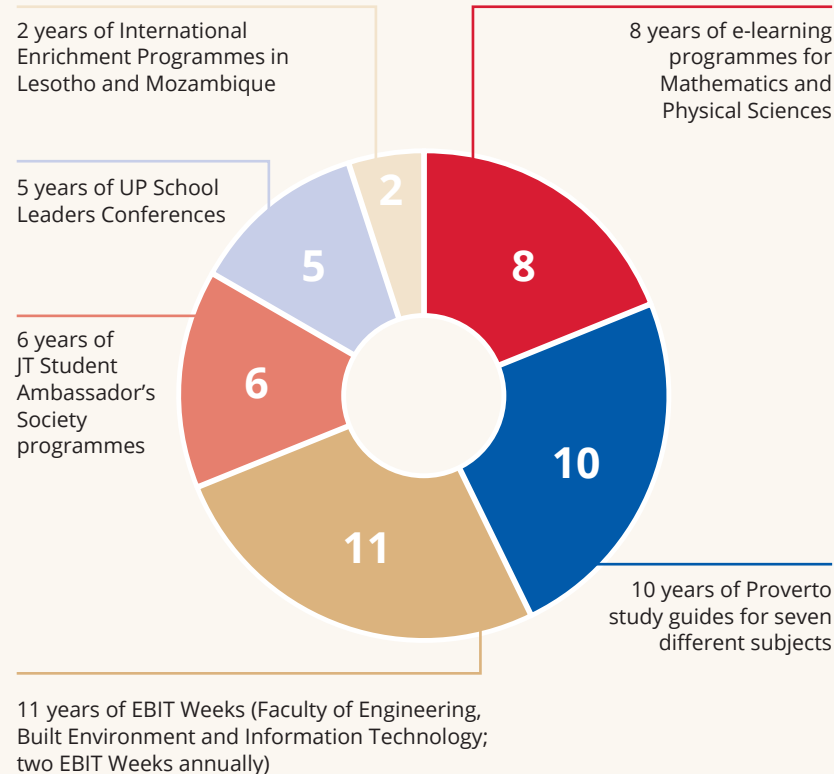
## News

### JuniorTukkie partnerships in years



### More impressive statistics

Other projects in which the JuniorTukkie team is involved include the following:



### Recruitment and JuniorTukkie in numbers

- In 2019, a total of 700 high schools nationally and in SADC countries were visited by UP student advisors.
- In 2019, **32 Information Sessions for Grades 9 to 12**, attended by 38 000 learners, were hosted in eight provinces.
- Since 2008 **Lectorsa** (now EyeBrainGym) has issued 2 730 online reading development programmes.
- 300 EyeBrainGym programmes will be given to JuniorTukkies who attended the Grade 11 Empowerment Week. These programmes will be given to them in their Grade 12 year in 2021.
- Over the years, **Specsavers** has tested the eyesight of 2 855 Grade 11 learners, of whom approximately 50% received spectacles free of charge. In 2020, 100% of the learners tested by Specsavers, received spectacles.
- Since it was launched two years ago, the **JT website** has had 966 512 total page views.
- The new JT App, launched in 2019, has 3 063 users.
- On 7 November 2020, the JuniorTukkie YouTube channel had 114 705 views and 3 093 subscribers.
- The first **JT magazine** was published in 2006. To date 34 issues have been published and the magazine has received numerous merit awards.
- The Grade 11 Summer and Grade 12 Winter Schools were first held in 2017. In 2020, the virtual schools attracted more than 100 000 views, mostly for the Grade 11 and Grade 12 Mathematics and Physical Sciences content.

### Annual JuniorTukkie bursaries and JT student achievements

- At the Grade 12 Preparation Conference, three learners each won a R10 000 bursary in a lucky draw.
- A total of 40 Grade 11 Empowerment Week bursaries to the value of R15 000 each were awarded.

JuniorTukkie uses the following social media:

- Facebook
- Twitter
- WhatsApp
- JT APP
- Email
- Sms
- JuniorTukkie YouTube channel
- Google classroom



[www.up.ac.za/juniortukkie](http://www.up.ac.za/juniortukkie)

## News

# One young man's spectacular initiative to offer dignity and warmth to the homeless

By Lyn Brandon-Podd Render



There is a lack of consensus on the total amount of homeless people living on the street. The Human Science Research Council states that between 100 000 and 200 000 people nationwide live on the streets.

World Homeless Day was commemorated on 10 October 2020. Estimates indicate that there are between 200 000 and 400 000 homeless people in South Africa. Exact figures are debated because of how homelessness is defined, but homeless people living under bridges or huddled against buildings is a common sight in our country.

Not knowing how to help in a meaningful and structured manner often leads to people doing nothing, but Bas Timmer, a young fashion designer from the Netherlands, took action after a friend's father died on the streets. He established the Sheltersuit Foundation, which believes that every human being

deserves warmth, protection and dignity. Sheltersuits are provided free of charge to homeless people and refugees, and while helping people in need, Sheltersuit also creates jobs and reduces waste.

After completing his studies at the fashion academy at ROC van Twente in the Netherlands, Bas started his own clothing line but felt uncomfortable about selling fashionable clothing at high prices while thousands of people could not afford warm and protective clothing to survive on the streets. At the age of 24, the death of a friend's father from exposure led him to take action, as he explained during his visit to South Africa in 2019.

## The Sheltersuit

Using his design skills, Bas conceptualised a wind- and waterproof coat, which he calls the Sheltersuit. The Sheltersuit enables people to survive the harsh conditions that come with living on the streets.

Water- and windproof jacket that can be transformed easily into a sleeping bag.

Equipped with a large hood, integrated scarf and large pockets.

This is a product for people in need.

Made entirely from upcycled materials.



## The Shelterbag

The Shelterbag is a flexible, lightweight and waterproof portable tent that protects the homeless and refugees living on the streets against extreme temperatures and rolls up into a carry bag.





## News



↑ Bas Timmer with a Sheltersuit recipient

*'We collaborate with local NGOs and shelters, and to date, the Foundation has supported over 10 000 homeless people in Europe, America, South Africa and the United Kingdom. We are keen to ramp up production in South Africa to provide shelter, warmth and dignity to South Africa's homeless people. We are partnering with relief agencies to help with the distribution of Shelterbags. Our goal is to employ 300 seamstresses, which will enable us to provide Shelterbags to 400 000 homeless people in South Africa within one year! Since production costs in SA are lower than elsewhere, additional Sheltersuit products can be manufactured here. SA is already supplying suits to the US, and we hope to double or triple the volume currently being produced.'*

*'UNICEF recently donated 3 500 Sheltersuits to refugees on the Greek island of Lesbos after their camp was destroyed by fire.'*

### Ten things you can do on World Homeless Day

1. Sleep outside in solidarity with the homeless on international World Homeless Day.
2. Collect and donate sleeping bags.
3. Host a fundraiser.
4. Become a regular donor.
5. Raise awareness about homelessness.
6. Share posts about the mission of the Sheltersuit Foundation.
7. Donate a Sheltersuit and/or a Shelterbag.
8. Become a distribution partner.
9. Chat to someone experiencing homelessness in your area and buy a homeless person a meal.
10. Volunteer your time or skills, or sponsor a Shelterbag at R600.00.

The Sheltersuit Sewing Atelier is located in Enschede in the Netherlands, where a team of 14 employees and 27 volunteers manufacture Sheltersuits. Bas offers employment to many immigrants to help them become financially and socially independent.

The outside of the suit is made of tent fabric donated by the company TenCate Outdoor Fabrics and the inside from upcycled material, lined with old sleeping bags that are donated or collected at festivals. By repurposing fabric, waste streams are reduced, and environmental awareness is stimulated.

Bas believes that by providing local entrepreneurs and humanitarians with the necessary tools, they are empowered to multiply the Sheltersuit effect globally.

A Sheltersuit branch has also been opened in Cape Town and currently employs seven previously unemployed women as seamstresses. The business plan includes developing additional production pods throughout South Africa.

#### Contact information

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[sa@sheltersuit.com](mailto:sa@sheltersuit.com)

**Website** [www.sheltersuit.com](http://www.sheltersuit.com)



## News

# Discovering the joys of **HYBRID** teaching and learning at UP

By Prof Gerrit Stols

As a result of the COVID-19 pandemic and subsequent lockdown, the University of Pretoria (UP) had to suspend all contact classes indefinitely. However, owing to its existing hybrid teaching and learning model, the University was well-positioned to offer classes online and has put in place continuity plans for teaching online when it is not possible for students to be on campus.

The guiding document that ensures the successful continuation of teaching, learning, assessment and student success is: *Teach Online: The UP Way (COVID-19)*.

The University introduced new UP study guide templates in 2019. These study guides provide detailed information to students on how to prepare for each lecture session, as well as detailed assessment plans. At the very least, the University requires that study guides should stipulate a detailed weekly work schedule so that students can work independently when required.

The University is committed to ensuring that our students complete their academic year successfully. The following systems are in place to support the effective offering of online teaching:

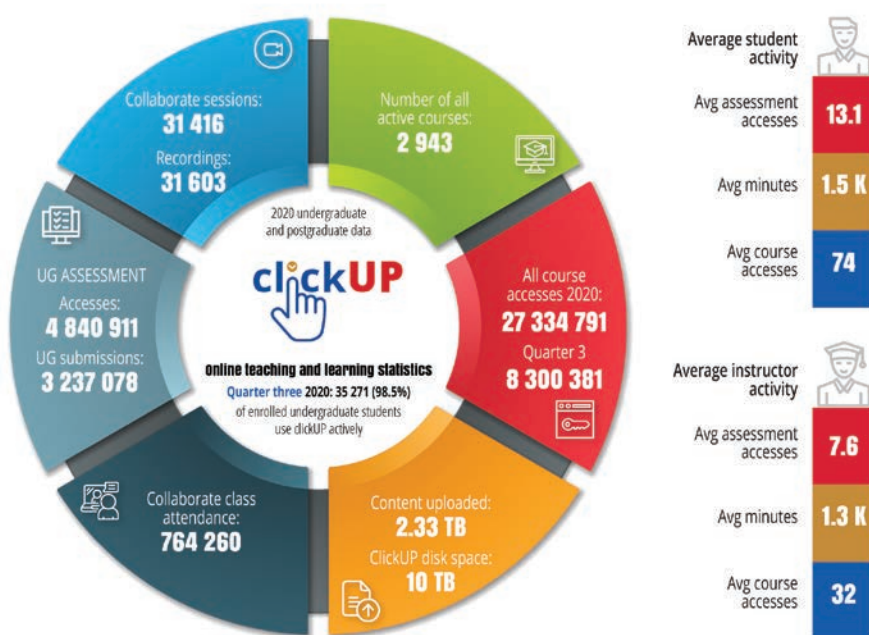
- clickUP (Blackboard Learn), a learning management system (LMS), has been used since 1998 to optimise and

support student learning, and by 2019 95.5% of all undergraduate modules had an online presence. Staff and students are familiar with the system.

- Blackboard Collaborate offers synchronous video conferencing that allows lecturers to add files, share applications and use a virtual blackboard to interact with students.
- Students in South-Africa are provided with zero-rated data access to all the UP services, including the LMS.

The Blackboard LMS data provides an overview of all student online teaching and learning activities. Undergraduate international students' activity data compares well with that of their peers.

The following infographic provides an overview of the use of the LMS in the second quarter:



30,4 % of all course accesses in 2020 happened in quarter 3





## Student support initiatives

Upon the announcement of the national state of disaster and the nationwide lockdown due to the coronavirus outbreak, the University of Pretoria had to send students home and close its doors indefinitely. However, UP was determined to use all its existing structures and resources to ensure that no student was left behind.

One of the interventions put in place to support students with their adaptation to remote online learning, despite their contextual realities, was telephone tutoring and access to hardcopy learning material.

The Deputy Principal: Academic gave the division for academic development in the Department for Education Innovation the mandate to explore the utility of these two interventions for students who were based in areas with internet connectivity challenges.

We leveraged on the data analytics capabilities of the learning management system, the Blackboard Learn-enabled clickUP system, to identify the students who had not participated in online learning since its launch on 4 May 2020. It was found that a total of 353 students had not accessed the Learning Management System—not even through an internet-enabled mobile device.

The faculty student advisors (FSAs) made telephone calls to the identified students to enquire why they were not participating in online learning. They were also asked whether they would be willing to participate in telephone tutoring if it were to be made available. The students confirmed their interest.

Of the students who were contacted by the FSAs, 121 could not be reached by telephone, and 117 provided reasonable explanations for their inactivity. The responses of the remaining 115 students were captured and analysed. Of those students, 29 indicated that they needed telephonic tutoring and 30 requested hardcopy learning material. The rest of the students' queries were marked as resolved after consultation with their relevant academic departments.

After the identification of additional students from the various faculties who required support, 54 students from six UP faculties received telephone tutoring in 37 modules during the remainder of the first semester. A total of 55 students received hardcopy learning material. The success of the additional support provided to the indigent students via telephone tutoring and/or hardcopy learning material can be ascribed to the agility and proactive assistance

demonstrated by the telephone tutors and staff in teaching and professional departments, as well as the management at UP.

With the onset of the national lockdown and online learning, advisory services necessarily also had to be moved online. To make the practice of online advising as effective as possible, all 21 faculty student advisors (FSAs) were provided with tablets and mobile data. The advising practice shifted, rather seamlessly, from face-to-face consultations on campus to Google Meet, WhatsApp, email and telephonic consultations. FSAs reported consulting with more than 1 800 students during July alone. The contact details of all the FSAs can be found at [www.up.ac.za/advising](http://www.up.ac.za/advising).

UP's flagship initiative FLY@UP, short for the Finish Line is Yours, also moved online, offering students various forms of online support and motivation, ranging from tips on how to survive lockdown and study effectively online to motivational voice clips from fellow students, as well as online workshops.

## Engineering, Built Environment and Information Technology

## UP Chemical Engineering joins fight against COVID-19 with hand sanitisers for paediatricians at Steve Biko Academic Hospital

By Dr Martina Jordaan

A University of Pretoria chemical engineering student who started a project to donate hand sanitiser to paediatricians at Steve Biko Academic Hospital has shown how, in difficult times such as these, community needs can be addressed by enabling teams with the required capacity to help by creating solutions.

When Jaco-Louis Venter, a fourth-year student at UP's Department of Chemical Engineering in the Faculty of Engineering, Built Environment and Information Technology (EBIT), became aware of the concerns of doctors at the Steve Biko Academic Hospital Department of Paediatrics and Child Health regarding the availability of hand sanitisers during the COVID-19 pandemic, he approached the staff of the University's Department of Chemical Engineering for help.

*'It is easy to become so caught up in your studies that you forget why you chose a specific career. I chose chemical engineering, as it creates many opportunities to contribute to society. I am very grateful for this opportunity to do something that might actually make a real difference,'* Venter said.

Generous donations were received from the lecturing staff's research supplies of ethanol and glycerol, and the departmental facilities were made available for the production of hand sanitiser by using the World Health Organization's recommended hand rub formula. With the assistance of Gerrie Claassen, the laboratory manager, Franco Pretorius, a master's student, and the staff of the Department, they were able to produce enough hand sanitiser to supply each doctor in the Department of Paediatrics and Child Health at SBAH with a bottle before the national lockdown.

The team is currently acquiring more supplies, and the aim is to continue production for as long as possible during the pandemic.

*'We appreciate the overwhelmingly positive response to our dilemma tremendously. These supplies will be of great help in the coming days,'* said Professor Izelle Smuts, a paediatric neurologist at SBAH.

Anyone who would like to contribute to the effort is invited to please contact UP's Department of Chemical Engineering at [chemeng@up.ac.za](mailto:chemeng@up.ac.za).



↑ Prof Izelle Smuts, a Paediatric Neurologist at SBAH and Jaco-Louis Venter, a fourth-year chemical engineering student



## Engineering, Built Environment and Information Technology

# EBIT students assist disadvantaged communities during COVID-19

This year the Community-based Project Module (JCP) came up against a challenge. The students have to work at least 40 hours in the community to pass the module successfully. With the COVID-19 lockdown students had to find alternative ways to do their community work.

A second-year mechanical engineering student, Andrew Nel, made face masks and delivered them to a non-profit organization, Child-line in Mpumalanga. The staff needed masks for themselves and some which they can distribute.

This is what Andrew said when reflecting on his project:

*'Not only did I learn how to sew, which I found to be quite fun, but I also got to experience the kindness of people. The staff at the Childline work hard to better the lives of children they receive at the centre, and this is very admirable.'*



↑ Andrew Nel



↑ Tyler Schwegler



↑ Emma Carson



↑ BEng (Industrial Engineering) students: Astrid Burgess, Karlene Kruger, Miguel Oberholzer and Lana Smit



↑ BEng (Electronic Engineering) students: Josias Esterhuizen, Philip Harding, Dino-Grant Olwage, Johandry and Attie Roos



↑ Shannon Julius and Candice Moodley realised that many South Africans from disadvantaged communities would struggle to acquire masks when the president called for the compulsory wearing of masks in public. They are both second-year mechanical engineering students who became concerned that people in the community were not aware of the essence of the pandemic and were not practicing social distancing or wearing masks. This is what led to these two students to decide on a 'mask' project for their JCP module. The students did not only sew masks but also made soaps and donated them to Khulisa Social Solutions, Life4U foundation, and CFCi Welfare.

*'We have learned that communities are struggling to adjust their daily lifestyles to fight this pandemic and hope that our project would help to increase awareness of the pandemic and promote safe practices in order to fight the spread of the virus. The process of sewing masks has taught us patience, and it is a process that demands focus and concentration. We were also sad to realise that this pandemic affects the poor and disadvantaged the most.'*

# Get ready for a career in the mining and minerals industry

Did you know?

## AFRICA

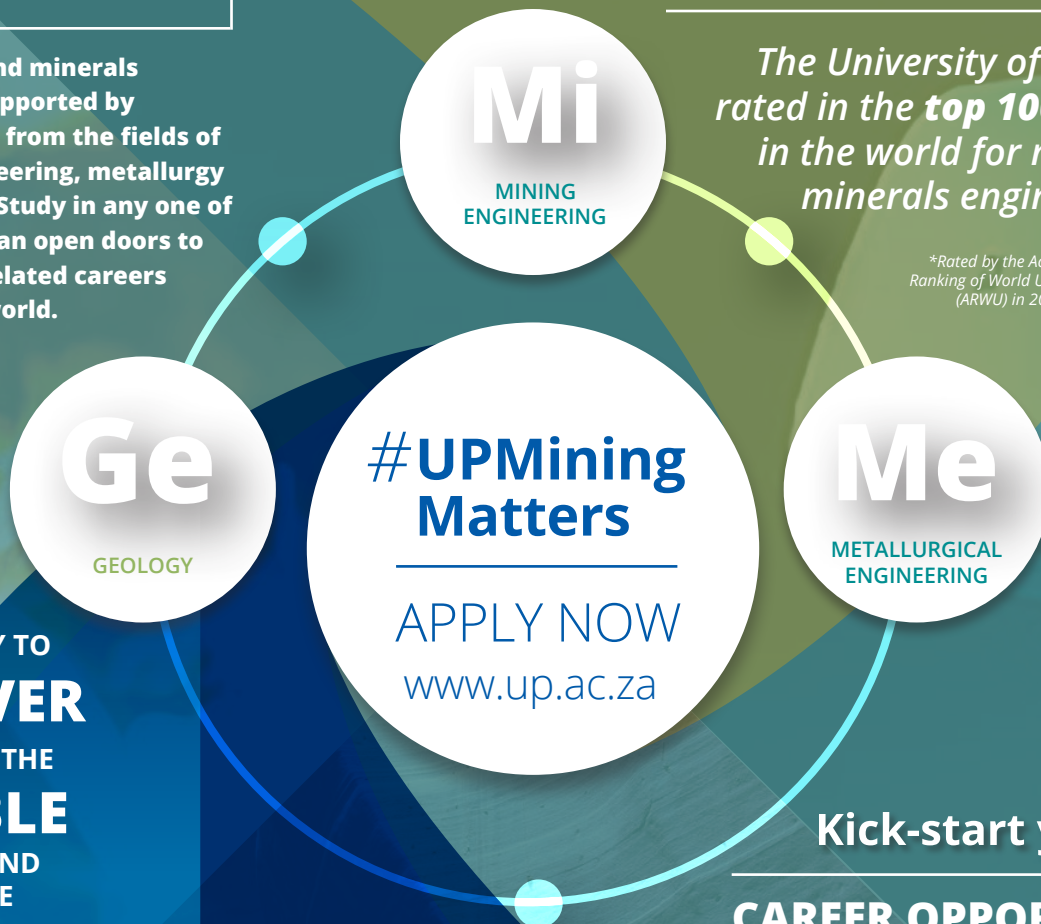
*has the largest minerals industry in the world.*

The mining and minerals industry is supported by professionals from the fields of mining engineering, metallurgy and geology. Study in any one of these fields can open doors to mining and related careers all over the world.

The Fourth Industrial Revolution (4IR) holds explosive possibilities for the mining and minerals industry. Not only are mineral resources crucial to meeting the growing demand for 4IR technology enablers like lithium-ion batteries, but the practical implementation of digital technologies can also bring about positive change in mine safety and environmental sustainability. Numerous opportunities have been identified in the fields of cyber-physical systems, the Internet of Things, cloud computing, robotics, artificial intelligence-based systems, additive manufacturing and virtual reality.

*The University of Pretoria is rated in the **top 100** universities in the world for mining and minerals engineering\**

\*Rated by the Academic Ranking of World Universities (ARWU) in 2019.



THE ONLY WAY TO  
**DISCOVER**  
THE LIMITS OF THE  
**POSSIBLE**  
IS TO GO BEYOND  
THEM INTO THE  
**IMPOSSIBLE**

**STEP 1** CHOOSE A FIELD

**STEP 2** APPLY TO UP

**STEP 3** MAKE A DIFFERENCE

**Kick-start your future!**

## CAREER OPPORTUNITIES

Mineral resource specialisation | Environmental impact studies | Economic geology  
Environmental engineering geology | Minerals examination (mineralogist) | Geological structures, soil and rock investigations | Geochemistry | Production engineering | Ore evaluation  
Minerals extraction (extraction metallurgist) | Metal component manufacturing | Plant management  
Mine management and administration | Mine marketing | Mine design | Mine feasibility studies  
Drilling, tunnelling and shaft sinking | Mine ventilation | Rock breaking and explosives  
Mining equipment design and manufacturing

## DEPARTMENT OF GEOLOGY

Faculty of Natural and Agricultural Sciences (NAS)



BSc (Geology)

BSc (Engineering and Environmental Geology)

## DEPARTMENT OF MINING ENGINEERING

Faculty of Engineering, Built Environment and Information Technology (EBIT)



BEng (Mining Engineering)

## DEPARTMENT OF MATERIALS SCIENCE AND METALLURGICAL ENGINEERING

Faculty of Engineering, Built Environment and Information Technology (EBIT)



BEng (Metallurgical Engineering)



## Engineering, Built Environment and Information Technology

# The brand-new Engineering 4.0 Complex

By Janine Smit

The newly built Engineering 4.0 Complex, which is managed by EBIT's Department of Civil Engineering under the leadership of the Head of Department Prof Wynand Steyn, houses several laboratories and research and training facilities, including a concrete laboratory, a timber laboratory and a training laboratory.

It is also the site of SANRAL's National Roads Materials Reference Laboratory, where independent reference testing

of materials for the road construction industry will take place, as well as an accelerated pavement testing track, which entails a dedicated lane on the N4 into Pretoria that can be monitored to study data related to traffic, pavement design and road construction. This will support cost-effective and innovative pavement engineering for Africa's infrastructure development.

In these laboratories, students will be exposed to hands-on research activities to support theoretical teaching. This will enable a better understanding of the civil engineering curriculum designed to prepare students for their work as civil engineers. Engineering 4.0 will share its vast technology and data science

resources with all the University's faculties via Future Africa, which is a platform for developing interdisciplinary and transdisciplinary research networks within the University and between the University and the global research community.

This initiative places the Faculty well on its way to earning acknowledgement as the country's leading expert in smart transportation. Since the focus is on the development of an integrated transportation system, the research is concentrated on reducing the energy consumption levels in transportation, maximising productivity in industry and creating a better quality of life for the country's citizens.



## Our School of Engineering is ranked No. 1 in South Africa and Africa

BEST GLOBAL UNIVERSITIES FOR ENGINEERING IN  
SOUTH AFRICA RANKING OF THE US NEWS AND WORLD REPORT





## Law

# What is the connection between cartoons, online games and videos and UP Law?

By Elzet Hurter



At some stage of our lives, most of us have been into cartoon binging, which could have included anything from *Tom and Jerry*, *The Simpsons*, *The Flintstones*, *Looney Tunes*, *Phineas and Ferb*, *SpongeBob SquarePants* to *South Park*. And then there is online gaming! *Iron Harvest* jumps to mind, and so do *WRC 9*, *Crusader Kings 3* and *Microsoft Flight Simulator*. Not to mention the remake of *Destroy all humans* ... Now you might be wondering: What does this have to do with studying Law at UP? The answer is: Nowadays – everything!

With the COVID-19 pandemic hitting the world like a storm and the consequent unavoidable move to virtual learning (also known as Emergency Remote Learning or ERT), UP Law had no choice but to adapt.

## The approach to online learning followed in Public Law

PBL 320 is a third year core module in International Law, PBL 310 is a third year core module in Administrative Law, and OMR 410 is a fourth year elective module in Environmental Law.

International Law regulates the relationships amongst countries. For instance, when Grace Mugabe wanted immunity for assault charges in South Africa, and when the Saudi Arabian journalist Khashoggi was murdered, legal relationships between countries were

implicated, and the International Law was applicable.

Administrative Law regulates the relationships between people in South Africa by way of public administration. So, when you apply for your identity document or passport, and your application is unfairly or unlawfully refused by an official, the Administrative Law can come to the rescue and help you hold the official accountable. This includes using the court process known as judicial review.

Environmental Law regulates our relationships with the environment: our use of water, the ways in which our waste is managed and the pollution we cause as a by-product of human existence. One of the biggest issues in Environmental Law at the moment, is the global climate crisis.

All of the modules follow the UP way of learning by dividing the study units into three phases: PREPARE, ENGAGE and

CONSOLIDATE. The module design on the UP online academic platform clickUP is aligned with this approach.

The PREPARE phase ensures that students peruse the study material and prepare for lectures. Reading materials are made available on clickUP and brought to life with relevant cartoons, memes and other graphics as well as YouTube videos. In PBL 320 and OMR 410 Powtoons (containing animated content) have been designed to ensure students have a basic understanding and overview of the applicable laws before engaging with its complexities during the main online lecture.

Comprehension questions guide students through the prescribed materials such as case law and scholarly journal articles; enabling students to engage at a deeper level with lectures. They are also a valuable preparation tool. Students have to complete these activities before embarking on the ENGAGE phase.



## Law

The ENGAGE phase enables students to self-assess their work to ensure that they have a thorough understanding of the content. The ENGAGE phase, therefore, refers to the students' engagement with the lecture made available on clickUP. In this phase, we use a mixed approach to lessen student fatigue and establish a change of pace by using narrated slideshows, podcasts, interview-style lectures and video recordings of lecturers explaining difficult content—simulating what students would experience in contact classes. In OMR 410 students share their thoughts about the materials via a discussion board on clickUP and engage in lively debates about the environmental problems we face today.

Since video recordings can be 'data-intensive' and Wi-Fi is expensive and not always easily accessible in South Africa, we generally convert video recordings to MP3-files that can be accessed via UP's free data link to ensure that no student

is left behind. By varying the modes of delivery in lectures and matching them to the content to be covered during a specific week, we hope to ensure that students will remain interested in and excited to engage with what is often rather tricky work. We aim to adopt a similar approach when contact classes resume.

The last phase of learning is CONSOLIDATION, during which students need to revise their work and ensure that they can apply what they have learnt. The CONSOLIDATION phase offers students the opportunity to test their understanding of the content of the lecture by answering a short quiz, tutorial questions or other assessment. In OMR 410 students are given the opportunity to participate in a voluntary Zoom question and answer session with their lecturers. During the Q&A session students engage in guided discussions, to ensure that they understand the key issues.

### The PBL 320 team consists of:

- Lecturers: Dr Martha Bradley and Prof Annelize Nienaber
- Educational consultant: Ms Faith Mathibedi
- Academic Associate: Ms Jessie Phyffer
- Assistant Lecturer: Mr Marno Swart
- Tutors: Mr Felix le Roux and Mr Mbongeni Ncube

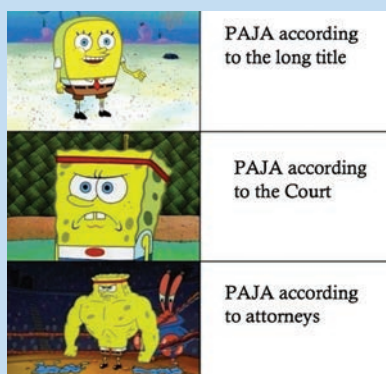
### The PBL 310 team consists of:

- Lecturer: Dr Melanie Murcott
- Academic Associate: Ms Doris Uwicyeza
- Tutors: Mr Felix le Roux and Mr Nicholas Herd

### The OMR 410 team consists of:

- Lecturers: Dr Melanie Murcott and Dr Martha Bradley
- Academic Associate: Ms Doris Uwicyeza

## Public Law online offering – Some exciting features



### Meme competition

To encourage students to link their knowledge of Administrative Law to real-world issues, such as the government's response to COVID-19, Dr Murcott introduced a meme competition in PBL 310. Students were encouraged to generate and submit memes about the course content and then voted for their favourite memes. Two joint first place winners received a cash prize of R500, and two joint second place winners received R300.

The memes were not only hilarious, but also informative and insightful. Dr Murcott and other members of the PBL 310 team generated a few memes of their own, and some students generated memes to show love and appreciation to the PBL 310 team.

➔ Meme by Ms Chelsea Swanepoel submitted for the PBL 310 meme competition. The meme is about the Promotion of Administrative Justice, Act 3 of 2000 (PAJA), the main statute that students learn about in the module.

### COVID-19 litigation and Administrative law

As so many areas of the South African government's response to COVID-19 touched on Administrative Law, Dr Murcott created interview style lectures with Mr Tim Fish Hodgson, an expert in human rights from the International Commission of Jurists. These lectures focus on lockdown litigation that took place against the government, including the ban on smoking, the re-opening of schools, the lifting of curfews and other restrictions imposed.

### Photo submissions

Environmental Law is a visual subject that requires students to consider their relationships with their environment, bearing in mind that the water we drink, the food we eat and the air we breathe all comes from the environment. OMR 410 students submit a written assignment together with photographs, which illustrate environmental issues, and include animal rights, climate change and environmental injustice. Dr Murcott believes that students learn the most when they are outside their comfort zones, thinking about the world and the law in a critical way. She says: 'By encouraging students to reflect on their relationships with the environment the hope is that they will begin to understand the law differently. This might result in a change in their behaviour, for instance, they may consume less meat realising the shocking contribution that factory farming makes to the global climate crisis.'

➔ Photo submitted by Ms Nicola Irving for OMR 410 with her assignment on the topic: 'Other living beings have rights, we just have not recognised them in law yet.'



## Law

### Powtoons<sup>1</sup>

During the time of COVID-19 and ERT, we have been fortunate enough to find a way to embrace the use of online platforms fully. Creating short animated videos in the form of Powtoons that highlight the most basic concepts of the topics covered in the course have two distinct advantages:

First, lecturers, academic associates and tutors had an outlet for their creativity, and secondly, students have been given a visual enactment of difficult and sometimes highly abstract concepts which has contributed to their understanding of the study material. It has been an enriching experience! And to top it all, if the Powtoons are not disseminated well in advance, our students have started reminding us that they are eagerly awaiting them!

Ms Jessie Phyffer, Academic Associate in International Law, is our resident creative Powtoonist.



### Our own video game and fully animated, partially 3D lecture – What students in PBL 320 can expect later this year and in the future

Creating the background narrative for the International Law video game once again allowed us to get our creative juices flowing in an attempt to familiarise our students with some of the more difficult concepts, such as the prohibition on the use of force in international law. The stresses of academic life can sometimes be overwhelming and may force lecturers to seek refuge in what is comfortable and routine. The fact that we were able to create something new, exciting and educational to help explain difficult concepts is a proud achievement for the Department of Public Law. We hope to expand the story of the video game over the next few years by including more of the themes in International Law.

Our video game will come to life because of the tireless work of Mr Dennis Kriel, Senior Instructional Designer/Educational Technologist from the Department of Education Innovation at UP.

#### Our first fully animated, partially 3D lecture—‘An introduction to international air law: Aerial sovereignty and the interception of civil aircraft’

International Law presents us with exciting subject matter, such as the Law of the Sea, the Law of Armed Conflict and the Air and Space Law. Dr Bradley teamed up with Mr André du Plessis from the Department of Education Innovation to produce our first-ever fully animated, partially 3D lecture on international air law. Air law is a highly specialised area of International Law,

which is technical and complex as it addresses the sovereignty of airspace that determines when and whether civilian and military aircraft may fly over the territory of a particular state. Since air law is so complex and specialised and given the fact that this will be the first time that students encounter space law, they will likely experience difficulties, especially with some of the more abstract concepts.

Our aim with the fully animated lecture, is to help students visualise the situations that are covered in the study material. They will be able to see a situation unfolding on their computer screens and this will make it easier to understand the steps required by international law in the case of an unauthorised over-flight. As UP Law embraces a hybrid approach to teaching, we hope to be able to create similar fully animated virtual lectures every two years to explain complex aspects of international law encountered by students for the first time in their studies.

We decided on this particular medium as it is often difficult for those students who lack an appropriate frame of reference to work from to envision technical subject matter, such as the interception of aircraft by military forces. The absence of a suitable frame of reference makes it difficult for students to connect abstract rules of law to what happens in ‘reality’. In this way, students can see how the law operates in real-life situations.

#### Computer games

To further enhance their online training, the Public Law team is developing an International Law computer game, which launched in November 2020.

According to Dr Bradley, the leader of the development team, this forthcoming revolution in online learning ‘is probably the most exciting part of our online offering’. The programme is being developed with the assistance of Mr Dennis Kriel, Senior Instructional Designer/Educational Technologist at UP.

The first instalment of this game will be implemented as a test run this year, but the PBL 320 team plans to roll out more ‘levels’ in the years to come. The script was designed by Ms Phyffer, an LLM student specialising in International Air and Space Law.

Dr Bradley and Ms Phyffer created the script with input from Ms Faith Mathibedi and Prof Annelize Nienaber, Head of the Department of Public Law, and worked closely with Mr Kriel regarding character development, etc.

‘Dennis, Jessie and I are passionate about this project as PBL 320 was originally a high-impact module, and we are trying to push the envelope with learning through gaming. Of course, we will learn a lot from our first release, which will enable us to improve future products’, an excited Dr Bradley said.

**‘We intend to use the PBL 320 game to help students gauge the complicated law on the “use of force” and are therefore pushing for its release in 2020. In these times, we need to be innovative! It is expected that this game will be most valuable and will create an opportunity in emergency remote teaching (ERT) to reach students who learn in different ways.’**

<sup>1</sup> Excellent and effective teaching demands a host of devices, techniques and strategies, not only to achieve cross-critical outcomes, but because variety is much needed. Cartoons are effective teaching tools for enhancing learning in education as it positively enhances constructive learning, cooperative learning and collaborative learning among peers.



## Law

### Feedback on Dr Martha Bradley's ERT engagements

'The fact that they actually use multiple platforms to engage with the students is highly commendable. They are making use of power tools, such as short video clips, Powtoons, games, narrated slideshows, YouTube videos and Q&A sessions, which offer a fantastic way to illustrate principles. In my view, in terms of facilitating teaching and learning, this is an excellent and clear progression to where UP is prepared to engage, consult, incorporate and articulate. This is a job well done by the lecturers and academic associates/tutors who have developed modules in these formats.'

– Prof Monray Marsellus Botha, former Deputy Dean: Teaching and Learning, UP Law

'The consistent efforts of the PBL 320 team to provide learning material that is clear, accessible, practical and well-designed has made the migration to an online learning system feel almost natural. Videos uploaded contain short introductions to build the necessary foundation and are followed by detailed lectures that consolidate all the reading and theory necessary for a given section. Continuous assessments help students to apply the theory learnt and also warn them if they are struggling with a topic. PBL 320 in its current online form provides a platform that enables a thorough understanding of the content taught and equips students with the tools they will need to tackle real-world issues in practice confidently.'

– Shaun Putter, third-year LLB student

### Feedback on Dr Melanie Murcott's ERT engagements

'As my lecturer, you have taught me a great deal, and I have really benefitted by completing this course. Your passion for your subject and your uncompromising approach to teaching have prepared me well for the corporate world. This year, to hone my skills, I took your advice and read case law and articles in full, and I am proud to say that I no longer find such material tedious. I also do not rely on fellow students' summaries any more. Thank you for not taking shortcuts while teaching Administrative Law, and thank you for reminding me why I chose to study law in the first place. Thanks to you, it all makes sense and has made me a better student. Continue inspiring others like me to reach for the stars, to tap into their inner resources and make the best of their time at varsity, keep restoring hope and, most importantly, continue making law cool again.'

– Keolebogile Kagung

'This semester has not been easy for anyone, but we were fortunate to have the best lecturer! You enabled me to complete the PBL 310 module and taught me many lessons that I will take with me into my legal career. Thank you for your dedication and inspiration! I look forward with great excitement to working with you in environmental law next year.'

– Timoney-Rae Janse van Rensburg

'I want to thank you (and your team) for the effort you have put into making distance learning achievable. Thank you for the enjoyable lecture videos that made the work easy to understand, and for the thorough tutorials providing additional explanations. You have enabled me to improve my marks and to engage with and understand the work truly.

Your hard work does not go unnoticed. You have made studying much less stressful and have enabled me to continue with my studies during the pandemic. The content of this module was well organised, and it was evident that it had been thoughtfully and thoroughly prepared. Thank you from the bottom of my heart!

– Mignonne Roestoff

'Thank you for giving me a fantastic experience during the past semester. Your passion for your subject is contagious and has ignited my interest in the study of law. I am even considering enrolling for a master's degree in constitutional and administrative law.

I want you to know that your efforts did not go unnoticed. Your entertaining memes also made the module enjoyable. The extra effort you put into sending us videos and records is much appreciated. When we started with online learning, I was anxious because I did not have all the necessary resources. However, with your help, I managed to obtain a distinction for this module, even without textbooks. This is quite a big deal for me!

I really respect and genuinely admire you. I appreciate your style, your sense of humour and how you present yourself. You have a fantastic personality! I am your biggest fan.'

– Lucia Phale

## Economic and Management Sciences

# THE NEW NORM: EMS students thrive online

This year has been like no other: as the world continues to grapple with the coronavirus pandemic, many current and prospective students are anxiously trying to lay the foundations of their future careers. In response to the 'new normal', the Faculty of Economic and Management Sciences has used technology to engage with and support students at various stages of their journeys in the Faculty. From lecturers virtually

meeting with prospective students and current students flourishing online in their academics and maintaining a vibrant student life to graduates receiving the degrees they have worked so hard for, it is evident that nothing is impossible in the online realm. Read more about all the exciting activities that have taken place in the Faculty.

### Prospective students meet their lecturers

#ChooseUP Day is one of the highlights on the Faculty's recruitment calendar as it introduces prospective students to lecturers and current students, who share valuable information about the various degree programmes offered.

The event is traditionally hosted on the Hatfield Campus but lockdown restrictions prevented on-campus activity this year and the usually jam-packed programme had to be adapted to a live streaming format. During the five sessions

presented, prospective students were able to learn more about the Chartered Accounting programme, as well as the various degrees offered in Economic Sciences, Financial Sciences, Management Sciences and Public Management and Administration.

**The recorded sessions are available here:**

**YouTube playlist** [bit.ly/UPEMSvideos2020](https://bit.ly/UPEMSvideos2020)

**Facebook** [www.facebook.com/upems](https://www.facebook.com/upems)



Faculty of Economic and  
Management Sciences  
Fakulteit Ekonomiese en Bestuurswetenskappe  
Lefapha la Disaense eka Ekonomi le Taolo

100  
1920 - 2020  
Advance

## Live stream sessions





## Economic and Management Sciences

### SPMA's first years rising to the challenge

'Being a new university student can present a daunting challenge, but 2020 threw an extra curveball to the first years and they have managed to catch that ball splendidly!' says Public Administration lecturer, Prof Gerda van Dijk from the School of Public Management and Administration (SPMA).

She says that the secret to increasing the pass rate for the module by 7% was knowing that students all have different abilities and access. Lecture content was made available in a variety of formats, such as videos, slideshows or voice-only recordings, so that students could use what works best for them. 'The ability to listen to lectures and Collaborate sessions again and again, I believe, assisted students with successfully retaining the material, while the case studies made the theory come alive in scenarios they could relate to,' says Prof Van Dijk. She adds that the assistance of the tutors was remarkable, not only in how they ensured continuous communication through the online discussion forum, but in their weekly tutorials.



↑ Words of encouragement to students from SPMA staff

### Online learning boosts student performance in Economics

'I have been teaching second-year Microeconomics for many years—almost forever. The course has the nasty label of "low pass rate module",' says Prof Jan van Heerden, professor in the Department of Economics.

To help students cope with the circumstances brought on by COVID-19, the Faculty appointed extra tutors, including telephone tutors, who would tutor some students who did not have access to the Internet.

'Pleasant was the surprise when the semester marks and the final results came out! The pass rate of the course was at least ten percentage points higher than the average of the previous 20 years. It was not only the tutors that made a significant difference: the students realised that they had to take responsibility for their own success,' says Prof Van Heerden proudly. 'They are young and adept at the technology. They jumped at the opportunity and took ownership of the course material that was prepared for them. The virus has accelerated us into 4IR.'

Ayanda Matsafu, a BCom (Informatics) Focus area: Information Systems student adds, 'I think my favourite part about attending classes online has been how much less stressful the 07:30 classes are! Even though it's been a hectic year, I'm just glad I will be able to finish the academic year, despite the pandemic.'



↑ Online learning need not be a daunting prospect

### Marketing practical goes online

This year, the third-year BCom (Marketing Management) students are working with AMKA Products (Pty) Ltd on their Jabu Stone haircare brand for their practical project. This brand promotes natural hair care to African people worldwide. The challenge posed to the students is to 'refresh' and reposition the brand to appeal to a younger target market. Students met the client virtually for a hands-on presentation about the brand.

Given the realities of COVID-19 and virtual classes, lecturer Prof Melanie Wiese had to think outside the box to ensure that students still had the opportunity to experience the brand and products. 'Each team leader received a "bag-drop" and had to capture the unboxing of the products for the rest of the team members. Students' first deliverable was a brand review and an infographic showcasing the target market, competitors and brand strengths and weaknesses,' says Prof Wiese.

The project concluded on a high note as student teams had the opportunity to pitch their ideas to Jabu Stone, founder of the brand, and AMKA representatives. The client was blown away by the creative ideas and remarked that the students' presentations were just as good as advertising agency pitches, if not better in some instances. The winning team, 'The Braidy Bunch' won R1 000 for each member with their slogan '#NaturalYourBest', having impressed with their detailed and innovative product strategy.



↑ Students with the founder of the brand, Jabu Stone (middle)

## Economic and Management Sciences



### Online accounting assessments—yesterday, today and tomorrow

At the turn of the century, Ronan Keating asked the romantic soul to leave no regrets: 'If tomorrow never comes...' The education space has experienced quite the opposite, as COVID-19 resulted in the fully online 'tomorrow' arriving 'today'.

True to their nature, lecturers in the Faculty of Economic and Management Sciences fully embraced the fast-tracking that is taking place. Having already begun coding online accounting assessments six years ago, Mr Fanie Walters, lecturer in the Department of Accounting at the University of Pretoria's Mamelodi Campus, was well-prepared to flourish in the 'online tomorrow', today.

By coding assessments on MyOpenMath, Walters was able to create dynamic, auto-graded assessments that gave

students an improved test-taking experience and allowed unlimited practice opportunities in the form of 'homework' assessments, as well as giving students immediate feedback. 'When tomorrow comes today, like it has, one can only be grateful for the preparation of yesterday,' Walters concludes.

'My online experience was naturally challenging at first; it literally got worse before it got better. Despite the many frustrations it came with, from laptop crashes to data struggles, it was not an impossible mission. It was literally a "survival of the fittest" experience, but here we are at the end,' says Pheny Khwinana, a BCom student.

### Exam 'operation' a huge success

This year we experienced COVID-19 lockdown rules and their impact on tests and exams. No more just turning up at the test or exam venue, grabbing your paper and scripts and sitting anywhere (provided there is a seat open between you and the next guy or girl). Oh, no! Writing an exam in 2020 was similar to undergoing a major operation in a sterilised operating theatre at a highly regarded hospital.

Before taking your trip to the campus (the hospital), you have to get a permit to come onto campus (think approval by the medical aid). At the gate, security officers (hospital check-in administrators) take your temperature and make sure you are wearing a mask. If you have a fever, the exam (your operation) is postponed and you are sent home immediately.

Should you gain access to the campus, you and your mask then proceed to the exam venue (the operating theatre—fortunately not on a hospital gurney) where everything has been meticulously sanitised. This includes your exam papers and blank answer scripts, which you receive in a sealed envelope (think all the instruments sealed in plastic in an operating theatre). As you approach the venue, security personnel check that you keep a safe social distance from your friends, and before you enter, you have to sanitise your hands (the site of the operation) thoroughly under the watchful eye of a strict,

masked invigilator, and show your student card to be checked in as present.

Inside the exam venue, seats (the operating tables) are spread out to ensure that you are socially distanced, and once you have collected your sanitised paper and blank answer scripts, you are allowed to proceed to your marked seat. At last, the operation is about to commence: sit on your sanitised seat, open the sanitised envelope, take out your sanitised exam paper and scripts and begin the procedure!



↑ A number of EMS students wrote on-campus exams



## Economic and Management Sciences

### Commercii champions a vibrant online student life

'COVID-19 has put a pause on student activities, but the show must go on!' says the 2019/20 Executive Committee of the EMS Faculty Student House, Commercii. They had to adjust to the new normal and find innovative ways to fulfil their objectives for the term.

With the goal of making an impact while staying safe and adhering to COVID-19 regulations, Commercii decided to undertake individual acts of service as well as arranging activities that students in the Faculty could participate in. These included collection of donations for students in need and a series of online events that tackled topics such as adjusting to online learning and keeping fit and healthy during lockdown by sharing exercise programmes and eating plans. Among the many exciting online engagements that Commercii organised for the students were a speed networking event with EMS alumni, a quiz night and an entrepreneurial showcase.

Thato Magano, a BCom (Statistics and Data Sciences) student and outgoing Commercii Executive Member, sums up her experience: 'As the semester is drawing to an end and I can finally breathe, I realise that online learning is actually difficult! I have nothing but respect for the students who do it full-time.'

One thing I have to take away from this season is how blessed I am. The only way I made it to the end was through the amazing support of lecturers, Faculty Student Advisors, Commercii, Student Health and family. Without them, I don't know how successful this season of my academic studies would have been.'



↑ Commercii Executive Committee 2019/20



↑ Tatjana Schoenmaker celebrates her graduation

### #UPGraduation2020 goes virtual

Graduation is arguably one of the most celebrated university traditions, and the University of Pretoria took an innovative step to ensure that students could still celebrate this milestone despite the lockdown restrictions.

During virtual graduation ceremonies held in April and September, students were awarded their degrees in absentia, enabling them to receive all rights and privileges associated with their degrees and to take the first steps in pursuing their career ambitions.

Many students took the opportunity to have informal celebrations with family and friends to commemorate the special occasion of graduation. Among this year's EMS graduates was swimming sensation Tatjana Schoenmaker, who received a BCom (Financial Sciences) degree during the autumn graduation. Her notable sporting achievements include winning the South African Sports Star of the Year and South African Sportswoman of the Year awards in 2019.

### EMS 2020 graduates in numbers



## Health Sciences

# Wearing of face masks when exercising: UP experts give their opinions

By Masego Panyane

Two University of Pretoria (UP) researchers, Professor Christa Janse van Rensburg, Head of Sports Medicine in the Faculty of Health Sciences and Dr Jessica Hamuy Blanco both feel that while it may pose some unique challenges, it is advisable to keep using cloth masks during exercise and have offered useful tips to gym and sports enthusiasts hoping to get back into action as the world adjusts to the new normal caused by the COVID-19 pandemic.

Their blog post, which has now been shared in the *British Journal of Sports Medicine*, also received a mention in the *UK's Trail Running Magazine* and *The New York Times*.

The two UP colleagues wrote the article to share their expert opinions and provide support in times of uncertainty. Prof van Rensburg explained: 'I am a sports enthusiast and like to be active. I am also a responsible citizen who needs to protect myself and others from becoming ill or spreading the disease. When the South African government regulated the wearing of masks in public spaces, questions arose around whether people should wear face masks when exercising. Clinicians like myself, who work in the field of sports medicine, need to provide the correct advice to their clients.'

'There are several things to be considered, including useful guidelines on athletes' safe return to sports, advice on how to gradually return to previous fitness levels, ensuring that nutrition and mental health are optimal and restful sleep. Athletes and professionals working in the field need to be aware of the symptoms of COVID-19, the protocols to follow when symptoms become evident, and the athlete's return to sports after recovery,' she said.

Their recommendations follow the publication of many community-based measures to control the spread of COVID-19, such as social distancing, hand hygiene and the wearing of non-medical face masks in public areas. To explain the rationale behind this, their blog post

reads: 'This recommendation is based on the concept of "source control" to prevent droplets produced by the person wearing the mask from spreading to other people or onto surfaces. It is much easier to reduce droplet spread by blocking larger droplets as they come out of a person's mouth than it is to block them once they have dissipated and become much smaller.'

On their blog, they also discussed the proper handling of items such as masks and buffs during exercise to avoid any further risk of infection.

One of the ways suggested by the clinicians is the use of two masks or buffs in case one gets wet during exercising. They also emphasised the importance of maintaining social distancing while exercising and ensuring the availability of hand sanitisers at all times.

The advice given in the blog was that someone suffering from a febrile illness should not be exercising at all, and definitely not while wearing a mask. Dr Blanco explained that the effect of the illness combined with that of wearing a mask could result in the person developing complications.

'When a person is ill and has a fever, various physiological mechanisms are at play that will increase the risk of serious complications caused by exercising. A fever is the result of an

altered temperature due to illness. This can affect the body's normal temperature regulation during physical activity and increase the likelihood of dangerous complications such as heatstroke. Both illness and physical activity, particularly at high intensities, can cause physiological stress on the body. When the two occur concurrently, there is a potential for a multitude of complications in almost every organ system. These include an increased risk of skeletal muscle breakdown, electrolyte abnormalities, hyper-responsive airways, altered heart rhythms and increased risk of sudden cardiac death,' she said.

She further stated that while we do not know what the future will hold for the world of sports, it is essential to adapt.

She concluded by adding: 'I think one of the most significant ways in which sports are likely to change, at least for the foreseeable future, is that we will have to sacrifice some of its entertainment value for the sake of safety. We have to do everything we can to limit public exposure. Fans who hope to attend live sporting competitions may have to wait a while before they can do so. The role of technology will have to be enhanced, which could open up new revenue streams as income from ticket sales will inevitably decrease. For the financial model of the professional sporting world to survive, new and innovative ways to engage with consumers will have to be explored. Professional sports involve a lot of travelling to and from events, and this will have to be appropriately adapted to limit viral spread. Regulations will have to be closely adhered to.'

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## Health Sciences

# UP and the University of Leeds collaborate on digital project to teach kids about COVID-19

By Xolani Mathibela

The University of Pretoria (UP) and the University of Leeds are working together on a project to determine whether children between the ages of eight and 12 years can learn about COVID-19 by reading a storybook or playing an online game.

Dr Nico Claassen, senior lecturer at UP's School of Health Systems and Public Health, is spearheading the research titled 'Managing the COVID-19 "infodemic": Development of a booklet and mobile game to be used as teaching tools to convey an OHS [occupational health and safety] message'.

Before children receive the storybook titled *Sibo stays healthy*, they are asked to complete an online survey by answering simple health and safety questions about the virus. 'They are given three days to read the book,' Dr Claassen explained. 'Fifty per cent of the participating children also receive the game to determine whether combining the reading of the book with playing the game adds value in terms of knowledge gained. After that, they complete the same questionnaire again. The results are compared to see whether they had learnt more from having read the book only, or from having read the book and playing the game.'

According to Prof Tiaan de Jager, Dean of the Faculty of Health Sciences, this is just one of many initiatives that were supported by the University of Leeds.

*Sibo stays healthy* is an addition to two former publications titled *Sibo fights malaria* and *Sibo goes bananas*, which focus on malaria prevention and the importance of a healthy lifestyle.

'The questionnaires are Google-based,' said Ginny Stone, author of the illustrated online book.

**'Sibo stays healthy is a digital reader, and the game is an app that can be played on desktop or mobile devices.'**

Dr Claassen hopes that reading *Sibo stays healthy* will improve children's knowledge about COVID-19 and address

misconceptions. According to him, the social behaviour of the public at large shows that COVID-19 is still not fully understood, despite the wide media coverage. The proposed approach makes use of the following framework suggested by the World Health Organisation: identify evidence, simplify knowledge, amplify actions and quantify the impact.

The booklet and digital application will address current challenges in information management by simplifying digital verification and social media messages and will demonstrate how to connect with the correct authoritative sources of health information. It will also address misinformation relating to social media in a non-threatening way and empower the public to question sources of information.



For more information about the project, go to <https://sibo.co.za/health-research-project>. Children who wish to participate must obtain permission to do so from their parents or guardians, who will not be allowed to assist the participants in answering the survey questions.

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## Natural and Agricultural Sciences

# 2020 Annual Aerial Survey of southern right whales

By Dr Els Vermeulen

While monitoring the South African population of southern right whales during the 41st Annual Aerial Survey conducted from 27 to 29 September 2020, the Whale Unit of the University of Pretoria's Mammal Research Institute made two significant findings.

First, the total of 136 southern right females and calves (68 pairs) and the 29 adults without calves (so-called unaccompanied adults) that were counted and photographed between Nature's Valley and Muizenberg were the second-lowest number of these whales recorded along our shores in October in the past 32 years. Second, the fact that this number is slightly lower than the 142 females with calves (71 pairs) counted between Hermanus and Witsand at the end of August this year, indicates that the female southern right whales continue to limit their time along our shores, which might harm the calves' chances of survival. The number of unaccompanied adults remained extremely low, as it has been since 2009.

Dr Els Vermeulen, Research Manager at the Whale Unit, gave the following explanation: 'In general, successful calving and migration in southern right whales rely on having an adequate body condition, and thus energy reserves, which is directly influenced by their feeding success. Therefore, a decrease in their feeding success might lie at the heart of these anomalous trends. This hypothesis is confirmed by new data, which indicates strong correlations between the prevalence of southern right whales along our shores and climate conditions and fluctuations in food availability in the Southern Ocean.

In fact, southern right whales have drastically changed their feeding locations in the past two decades. These findings point towards large-scale ecosystem changes in the Southern Ocean, which may be affecting several different top oceanic predators. Data further indicate that despite this shift, the changes may not be sufficient to ensure the maintenance of an adequate body condition, which will negatively impact the success of calving and migration.'

To receive regular updates on the status of the Whale Unit's southern right whale research, you can join their adopt-a-whale programme. Anyone can join the MRI Whale Unit community by symbolically adopting a whale and supporting whale research and conservation in South Africa. All funds raised go towards covering the cost of the Unit's fieldwork.

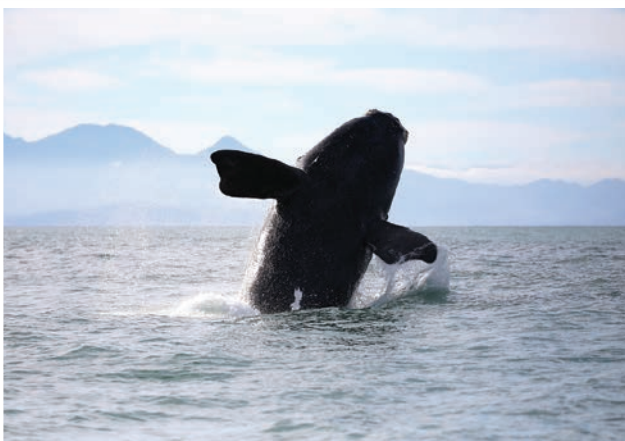
## Contact information for the MRI Whale Unit

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**Website** [www.adoptawhale.co.za](http://www.adoptawhale.co.za)

**Facebook** @MRIWhaleUnit



↑ Southern right whale breaching



↑ Dr Els Vermeulen photographing whales from the helicopter



1	2
Ia	Ila

# Periodic Table of the Elements

- **Pink** (left): the **s** block elements (consisting: hydrogen, alkali metals, alkaline earth metals).
- **Blue** (middle): the **d** block elements (they are the transition metals).
- **Yellow** (right): the **p** block elements (consisting: some metals, metalloids, non-metals, noble gases, and halogens).
- **Peach** (two rows at the bottom): the **f** block elements (they are the inner transition elements, consisting of actinides and lanthanides).
- Symbols printed in **solid black**: solids at 25°C.
- Symbols printed in **white with outline**: gases at 25°C.
- Symbols printed in **grey with outline**: liquids at 25°C.



Dmitri Mendeleev

1	H	1.0079	2.2	1s <sup>1</sup>
3	Li	6.941	9.0122	[He] 2s <sup>1</sup>

4	Be	9.0122	1.5	[He] 2s <sup>2</sup>
11	Na	22.990	1.0	[Ne] 3s <sup>1</sup>

12	Mg	24.305	1.2	[Ne] 3s <sup>2</sup>
19	K	39.098	0.9	[Ar] 4s <sup>1</sup>

20	Ca	40.078	1.0	[Ar] 4s <sup>2</sup>
37	Rb	85.468	0.9	[Kr] 5s <sup>1</sup>

38	Sr	87.62	1.0	[Kr] 5s <sup>2</sup>
55	Cs	132.91	0.9	[Xe] 6s <sup>1</sup>

56	Ba	137.33	1.0	[Xe] 6s <sup>2</sup>
87	Fr	223.02	0.9	[Rn] 7s <sup>1</sup>

88	Ra	226.03	1.0	[Rn] 7s <sup>2</sup>
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Atomic number	88
Symbol	Ra
Element name	Radium
Atomic mass	226.03
Electronegativity	1.0
Electron configuration	[Rn] 7s <sup>2</sup>

13	14	15	16	17	18
IIla	IVa	Va	VIa	VIIa	VIIIa

2	He	4.0026	1s <sup>2</sup>
10	Ne	20.18	[He] 2s <sup>2</sup> 2p <sup>6</sup>

8	O	15.999	3.5	[He] 2s <sup>2</sup> 2p <sup>4</sup>
16	S	32.066	2.4	[Ne] 3s <sup>2</sup> 3p <sup>4</sup>

17	Cl	35.453	2.8	[Ne] 3s <sup>2</sup> 3p <sup>5</sup>
34	Se	78.96	2.5	[Ar] 4d <sup>10</sup> 4s <sup>2</sup> 4p <sup>4</sup>

35	Br	79.904	2.7	[Ar] 4d <sup>10</sup> 4s <sup>2</sup> 4p <sup>5</sup>
52	Te	127.6	2.0	[Kr] 4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>4</sup>

53	I	126.904	2.2	[Kr] 4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>5</sup>
84	Po	208.98	1.8	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>4</sup>

85	At	210	2.0	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>5</sup>
116	Lv	293	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>6</sup>

117	Ts	294	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>7</sup>
118	Og	294	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>8</sup>

71	Lu	174.97	1.1	[Xe] 4f <sup>14</sup> 5d <sup>1</sup> 6s <sup>2</sup>
70	Yb	173.04	1.1	[Xe] 4f <sup>14</sup> 6s <sup>2</sup>

102	No	259	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>6</sup>
103	Lr	262.11	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>7</sup>

5	B	10.811	2.0	[He] 2s <sup>2</sup> 2p <sup>1</sup>
6	C	12.011	2.5	[He] 2s <sup>2</sup> 2p <sup>2</sup>

13	Al	26.982	1.5	[Ne] 3s <sup>2</sup> 3p <sup>1</sup>
14	Si	28.086	1.7	[Ne] 3s <sup>2</sup> 3p <sup>2</sup>

31	Ga	69.723	1.8	[Ar] 3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>1</sup>
32	Ge	72.64	2.0	[Ar] 3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>2</sup>

49	In	114.82	1.5	[Kr] 4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>1</sup>
50	Sn	118.71	1.7	[Kr] 4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>2</sup>

81	Tl	204.38	1.4	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>1</sup>
82	Pb	207.20	1.6	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>2</sup>

83	Bi	208.98	1.7	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>3</sup>
84	Po	209	1.8	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>4</sup>

113	Nh	286	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>3</sup>
114	Fl	289	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>4</sup>

65	Dy	162.50	1.1	[Xe] 4f <sup>10</sup> 6s <sup>2</sup>
66	Dy	162.50	1.1	[Xe] 4f <sup>10</sup> 6s <sup>2</sup>

98	Cf	251.08	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>6</sup>
99	Es	252.08	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>7</sup>

27	Co	58.933	1.7	[Ar] 3d <sup>7</sup> 4s <sup>2</sup>
28	Ni	58.693	1.8	[Ar] 3d <sup>8</sup> 4s <sup>2</sup>

29	Cu	63.546	1.8	[Ar] 3d <sup>10</sup> 4s <sup>1</sup>
30	Zn	65.41	1.7	[Ar] 3d <sup>10</sup> 4s <sup>2</sup>

45	Rh	102.91	1.5	[Kr] 4d <sup>8</sup> 5s <sup>1</sup>
46	Pd	106.42	1.4	[Kr] 4d <sup>10</sup> 5s <sup>0</sup>

77	Ir	192.22	1.6	[Xe] 4f <sup>14</sup> 5d <sup>7</sup> 6s <sup>2</sup>
78	Pt	195.08	1.4	[Xe] 4f <sup>14</sup> 5d <sup>9</sup> 6s <sup>1</sup>

80	Hg	200.59	1.5	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup>
81	Tl	204.38	1.4	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>1</sup>

110	Ds	271	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>6</sup>
111	Rg	272	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>7</sup>

108	Hs	277	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>6</sup>
109	Mt	268	1.2	[Xe] 4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>7</sup>

61	Pm	146.92	1.1	[Xe] 4f <sup>6</sup> 6s <sup>2</sup>
62	Sm	150.36	1.1	[Xe] 4f <sup>6</sup> 6s <sup>2</sup>

93	Np	237.05	1.2	[Xe] 4f <sup>6</sup> 6s <sup>2</sup>
94	Pu	244.08	1.2	[Xe] 4f <sup>6</sup> 6s <sup>2</sup>

19	K	39.098	0.9	[Ar] 4s <sup>1</sup>
20	Ca	40.078	1.0	[Ar] 4s <sup>2</sup>

37	Rb	85.468	0.9	[Kr] 5s <sup>1</sup>
38	Sr	87.62	1.0	[Kr] 5s <sup>2</sup>

55	Cs	132.91	0.9	[Xe] 6s <sup>1</sup>
56	Ba	137.33	1.0	[Xe] 6s <sup>2</sup>

87	Fr	223.02	0.9	[Rn] 7s <sup>1</sup>
88	Ra	226.03	1.0	[Rn] 7s <sup>2</sup>

89	Ac	227.03	1.0	[Rn] 6d <sup>1</sup> 7s <sup>2</sup>
90	Th	232.04	1.1	[Rn] 6d <sup>2</sup> 7s <sup>2</sup>

91	Pa	231.04	1.1	[Rn] 5f <sup>2</sup> 6d <sup>1</sup> 7s <sup>2</sup>
92	U	238.03	1.2	[Rn] 5f <sup>3</sup> 6d <sup>1</sup> 7s <sup>2</sup>

93	Np	237.05	1.2	[Rn] 5f <sup>4</sup> 6d <sup>1</sup> 7s <sup>2</sup>
94	Pu	244.08	1.2	[Rn] 5f <sup>6</sup> 7s <sup>2</sup>

95	Am	243.06	1.2	[Rn] 5f <sup>7</sup> 7s <sup>2</sup>
96	Cm	247.07	1.2	[Rn] 5f <sup>7</sup> 7s <sup>2</sup>

97	Bk	247.07	1.2	[Rn] 5f <sup>7</sup> 7s <sup>2</sup>
98	Cf	251.08	1.2	[Rn] 5f <sup>7</sup> 7s <sup>2</sup>



## Natural and Agricultural Sciences

### BSc (Engineering and Environmental Geology)

The degree offers further specialisation in engineering geology and hydrogeology. Engineering geology is the study of the behaviour of ground (soil and rock) and how likely it is to affect engineering works. It comprises geotechnical studies and relates to construction (eg founding or excavation) on and with geological materials (eg construction materials), and to the influences of geological, geomorphological and hydrological processes on construction and development. Hydrogeology refers to the occurrence, distribution and movement of water below the Earth's surface. The study of groundwater is generally both quantitative (eg water supply, safe abstraction and the influences of pumping) and qualitative (eg contamination, remediation and drinking water).

#### Who is the ideal candidate?

The programme requires a strong understanding of mathematics and mechanics. Genuine concern for Planet Earth, a desire to work outdoors and an interest in geology or geomorphology will be an advantage. Depending on your personality, you can choose how you would like to divide your time between doing fieldwork and working on a computer.

#### What makes this programme unique?

Very few universities offer professional qualifications in engineering geology and hydrogeology. UP offers both, which places it in a strong position on the interface between infrastructure development and subsurface water. The qualification complies with the requirements for professional registration.

ENGINEERING  
GEOLOGY



GEOLOGY



HYDROGEOLOGY

#### What career opportunities exist for graduates?

Engineering geologists work closely with civil engineers, mining engineers, town planners and environmental scientists. Your work will require you to identify geological hazards, source building materials and supply foundation solutions.

As a hydrogeologist you will be involved in the supply of water for urban, agricultural and industrial use. Nowadays many graduates work in contaminant transport and remediation, which involves identifying sources of pollution and finding suitable remediation solutions.

#### Which companies employ our graduates?

Our graduates are employed by civil and infrastructure industries, the mining industry and parastatals (Council for Geoscience; CSIR), as well as by government (Department of Water Affairs; the NHBRC; local governments).

#### Minimum admission requirements

Programme	Minimum requirements for NSC and IEB for 2022			
	Achievement level			APS
	English Home Language or English First Additional Language	Mathematics	Physical Sciences	
<b>BSc (Engineering and Environmental Geology)</b> [3 years] Closing dates: SA – 30 September Non-SA – 31 August	5	5	5	34



## Natural and Agricultural Sciences

### BSc (Meteorology)

The BSc (Meteorology) programme focuses on the study of atmospheric processes. An ideal candidate is someone who is fascinated by weather phenomena and is interested in all things concerned with natural science.

#### What makes this programme unique?

This is the only Meteorology programme offered in South Africa and the SADC region.

A student who has successfully completed the BScHons (Meteorology) degree will be regarded as a Class 1 Meteorologist by the World Meteorological Organisation.

The BScHons (Meteorology) degree, which is required to become a professional meteorologist, complies fully with the Manual on the Implementation of Education and Training Standards in Meteorology and Hydrology Volume I – Meteorology.

#### Researchers

They research all aspects of the weather and climate to improve man's understanding of atmospheric phenomena. Atmospheric modellers use supercomputers to solve complex flow dynamic equations of the atmosphere. The monitoring of air quality and the modelling of the impact of air pollution on society are two important aspects that need to be addressed. Research on climate change is receiving increasing attention.

#### Weather forecasters

The weather forecaster must analyse data and predict the weather by using models that are run on supercomputers. Weather forecasts are issued on different time scales, from very short-range forecasting to forecasts that are valid for months ahead, as well as seasonal forecasts.

Private positions for people with this qualification include presenting the weather forecast on television.

#### Which companies employ our graduates?

Meteorologists are employed by institutions involved in the study, interpretation and prediction of weather and climate-related phenomena.

Our graduates are employed at:

- The South African Weather Service (SAWS)
- International Weather Services and companies (for instance in New Zealand, Dubai and Australia)
- The Council for Scientific and Industrial Research (CSIR)
- Universities in South Africa and abroad

#### What career opportunities exist for graduates?

#### Climatologists

They manage essential data sets that contain large volumes of information gathered by the SAWS and other organisations.

#### Consultants

Some meteorologists who work as consultants in the private sector and at universities provide specialised research services.

#### Lecturers

A few academic positions for meteorologists and climatologists are available at South African universities.

### Minimum admission requirements

Programme	Minimum requirements for NSC and IEB for 2022			
	Achievement level			APS
	English Home Language or English First Additional Language	Mathematics	Physical Sciences	
<b>BSc (Meteorology)</b> [3 years] Closing dates: SA – 30 September Non-SA – 31 August	5	5	5	34

## Natural and Agricultural Sciences

### BSc (Plant Science)

Although plants are amazing organisms, we actually know very little about their potential uses. It is, however, well known that plants are the best factories for synthesising valuable natural products.

A degree in plant sciences is a three-year degree that broadly covers all relevant aspects of plant sciences. Further studies allow students to specialise in medicinal plant science, plant biotechnology or ecology and biodiversity.

In medicinal plant sciences, students learn about the discovery and use of plant medicines and phytotherapeutically important molecules obtained from plants. Students studying Plant Biotechnology learn about molecular tools and the use of model plants to study plant physiology. In the study of plant diversity and ecology, students learn about South Africa's rich and diverse vegetation and its origin, and how to facilitate conservation and management strategies for future generations.





## Natural and Agricultural Sciences

### Who is the ideal candidate?

The ideal candidate is someone who is inquisitive, has a broad interest in plants and the environment, conservation and in improving wellness and quality of life.

### What makes this programme unique?

The Department is dynamic, innovative, modern and relevant. Staff members undertake world-class research and 70% have received NRF ratings.

Much of the research (including soil science) is of an applied nature and contributes to the improvement of agricultural crops and methods, knowledge of plant diseases, the use of plant-derived compounds, biodiversity (including evolutionary systematics and ecology) and plant biotechnology.

### Which companies employ our graduates?

Our graduates are employed at:

- Medical Research Council (MRC)
- The Council for Scientific and Industrial Research (CSIR)
- The South African National Biodiversity Institute (SANBI)
- Pharmaceutical industries
- Tertiary institutions
- Government departments



## Minimum admission requirements

Programme	Minimum requirements for NSC and IEB for 2022			
	Achievement level			APS
	English Home Language or English First Additional Language	Mathematics	Physical Sciences	
<b>BSc (Plant Science)</b> [3 years] Closing dates: SA – 30 September Non-SA – 31 August	5	5	5	32

## Natural and Agricultural Sciences

### BScAgric (Applied Plant and Soil Sciences)

BScAgric (Applied Plant and Soil Sciences) is a four-year, full-time degree programme. It teaches the principles of plant-based agriculture within the disciplines of agronomy, horticultural science, pasture science and soil science. Graduates can embark on a diverse range of careers in the agricultural and environmental fields.

#### Who is the ideal candidate?

Students who have a keen interest in plants and soil, would like to improve their understanding of the environment and want to make a difference in the world are the ideal candidates for this degree.

Graduates make a direct contribution to sustainable food production, while simultaneously protecting our natural resources.

#### What makes this programme unique?

This programme is unique in terms of the combination of disciplines taught within the degree. Students are exposed to the various fields within plant production and soil sciences, which ensures that graduates are well-rounded and able to access a wide array of career opportunities, or make informed decisions on specialisation should they wish to continue with postgraduate studies.

Our graduates are highly sought after and often have to choose between several offers of employment. The degree is accredited by the South African Council for Natural Scientific Professions (SACNASP) and graduates can be registered as professional natural scientists.

#### What career opportunities exist for graduates?



##### Public sector

The Agricultural Research Council (ARC); government departments that address issues related to agriculture and rural development, water supply, conservation and the environment; the Council for Scientific and Industrial Research (CSIR); provincial departments of agriculture and nature conservation; the South African National Biodiversity Institute (SANBI); municipalities; South African National Parks; and national farming and food production agencies.



##### Entrepreneurial

Consultants to producers of crops, pastures, vegetables, medicinal and aromatic plants, and ornamental and cut-flowers; landscaping enterprises; managing own farms and nurseries for extensive (field) or intensive (tunnel/greenhouse) production systems involving various crops; and managing companies specialising in irrigation, reclamation and soil conservation.



##### Private sector

Companies involved in seed, fertilizer and plant protection research, development and marketing; environmental planning and management; nurseries; vegetable, fruit, ornamental and cut flower production; and irrigation.



##### Extension services involving knowledge transfer

Nature conservation; national and provincial departments of agriculture and the environment; environmental management and rehabilitation, including mine lands; nurseries; crop, turf grass and weed management; private companies servicing field crops, vegetables, medicinal and aromatic plants, fruit, ornamental and cut-flower production.



## Natural and Agricultural Sciences



'What I enjoyed most about this degree is that it exposed students to the diverse range of disciplines that form the basis of crop production, and that each discipline is unique yet connected to the others. Crop production is the perfect field for anyone who enjoys working on solving complex problems to have a meaningful impact on people's quality of life. My dream job is to continue with the work I am doing for my postgraduate studies, which is to find ways of making agricultural science accessible to smallholder farmers and the public in order to build a more equitable food system.'

– Richard Hay (MSc Student)

### Minimum admission requirements

Programme	Minimum requirements for NSC and IEB for 2022			
	Achievement level			APS
	English Home Language or English First Additional Language	Mathematics	Physical Sciences	
<b>BScAgric (Applied Plant and Soil Sciences)</b> [4 years] Closing dates: SA – 30 September, Non-SA – 31 August	5	5	5	32



## Natural and Agricultural Sciences

### BSc (Mathematical Statistics) | BCom (Statistics and Data Science)

Statistics is the science of extracting information from a variety of data sources utilising cutting-edge technologies that enable companies and institutions to remain abreast and to be globally competitive. Statistics and data science form the foundation on which so much future development takes place. Superb opportunities exist for students who are keen to distinguish themselves in this field. You will not only enjoy an extraordinary and rewarding career, you will also receive an above-average remuneration package.



#### Who is the ideal candidate?

An ideal candidate for this programme is someone with:

- Strong numerical skills
- Interest in computers and computer programming
- Logical reasoning ability and critical thinking skills
- Strong problem-solving skills



#### What makes this programme unique?

The Statistics programme can uniquely combine students' interest in mathematical statistics with their interest in, for example, insurance science, economics, mathematics and applied mathematics.

By completing this programme you will therefore be positioned at the forefront of analytical thinking and application in the statistical, computational and interdisciplinary environments of the future.



#### Which companies employ our graduates?

- Commerce companies (especially online shopping, customer analytics and recommender systems)
- Financial and banking companies
- Health companies
- Information technology companies
- Insurance and accounting companies
- Logistics and transport companies
- Pharmaceutical industries
- Research and development organisations
- Telecommunication companies
- Universities and other education bodies



#### Minimum admission requirements

Programmes	Minimum requirements for NSC and IEB for 2022		
	Achievement level		APS
	English Home Language or English First Additional Language	Mathematics	
<b>BSc (Mathematical Statistics)</b> [3 years] Closing dates: SA – 30 September Non-SA – 31 August	5	6	34
<b>BCom (Statistics and Data Science)</b> [3 years] Closing dates: SA – 30 September Non-SA – 31 August	5	5	32



## Natural and Agricultural Sciences

### Dr Seite Makgai

By Martie Meyer

After completing her doctoral studies under the supervision of Profs Andriëtte Bekker and Mohammed Arashi, Dr Seite Makgai, the first black African female lecturer in the Department of Statistics at UP, described her PhD journey as follows: ‘It was like participating in the TV show The Amazing Race – which meant that I had to keep running.’ She received her PhD in Mathematical Statistics during UP’s recent virtual graduation ceremonies.

In addition to supervision by Prof Bekker, the Head of the Department of Statistics, and Prof Arashi, she also worked with Dr Jaco Visagie as her co-supervisor and Prof Daan de Waal (University of the Free State) as a regular advisor. She has great appreciation for their support and guidance.

Currently Dr Makgai is a New Generation of Academics Programme (nGAP) lecturer and continues to collaborate with Profs Bekker and Arashi on postdoctoral research in the Department.

She is the first person in her family to obtain a PhD, but not the first doctor. ‘My sister is a medical doctor who also conducts medical research for pharmaceutical companies,’ she shared. ‘My parents were very interested in history and the arts, but their children chose to pursue very different directions. I did my undergraduate studies in Actuarial Sciences, then decided to continue my postgraduate studies in Statistics, which I had enjoyed during my undergraduate years, particularly since I had become aware of statisticians’ rare ability to develop mathematics to answer specific research questions. Distributional theory is a field in statistics

that focuses on building functions that explain and cater to research questions.’

‘My thesis is titled ‘From beta to Dirichlet Frontiers,’ and focuses on both theory and application. The theory is based on the beta and Dirichlet distributions. The well-known beta distribution is widely used in modelling proportions and probability outcomes, whereas the Dirichlet distribution is a multivariate extension of the beta distribution and is commonly used for modelling compositional datasets (such as the analysis of the proportions of coal quality, size and thickness in coal production). It is also used in the world of topic and text modelling (obtaining a topic from analysing the proportion or number of words/text in a document). The problem here is that these distributions cannot successfully model current world problems where there are outliers or extreme cases.’

When asked if she would advise anyone to do a PhD, Dr Makgai answered: ‘I would tell people to pay attention to their internal compasses to see where they should be and to grow wherever they are placed in life. However, if the prospect of completing a PhD should



Dr Seite Makgai

present itself, I would recommend that they take on the challenge.’

After a year of many challenges and surprises, she confessed that the realisation that she had successfully completed her PhD has not yet sunk in.

‘The person I was during my undergraduate years would never have believed in the possibility of graduating with a PhD. This achievement has given me another pair of eyes. It has taught me the importance of continuing one’s studies, showing an interest in what is around you, and most importantly, finding solid solutions to problems.’

*‘You always hold the rights to your effort, but never to your results. Results are entitled to no one. At best, they are on loan and must be renewed each day. All you own is the right to try. Stop asking, “What results do I want to have?” Start asking, “What lifestyle do I want to live?”’*

(James Clear)

## Humanities

# Crafting ONLINE TEACHING AND LEARNING avenues to ensure that students flourish



*By Francois Gilles de Pelichy*

The current national state of disaster has seriously disrupted academic life. Students and lecturers have had to adapt to online classes, which is not ideal, but everyone had to work with what was available.

The Faculty of Humanities' solution was to create a teaching and learning environment for students to flourish despite the challenges of access and finding suitable environments for studying and living.

In this short article, we would like to acknowledge the role our lecturers and tutors played during this period by highlighting how they helped our students manage their studies, giving them a fair chance of completing the academic year.

The sudden shift to online teaching presented the Faculty with several challenges. The most critical was to ensure that all our students could connect to the University's online platforms to access essential content. Like many other universities across the

country, UP secured an allocation of mobile data so that students could stay in touch with each other, consult with their tutors and lecturers, attend virtual classes, access eBooks and articles in the libraries and write their tests and exams. UP also delivered internet-enabled devices to students who could not access Blackboard, the online teaching and learning platform. However, this was only the first step!

Our Faculty's lecturers went to great lengths to support our students and ensure their success. In our Faculty, we focus on what it means to be human, which means we are uniquely equipped to understand what humans need—both physically and emotionally. Being emotionally available is time-consuming under normal circumstances, and even more so under lockdown conditions.

For instance, Dr Nisa Paleker, who teaches the first-year History module (GES 110), pointed out that with remote teaching, it takes longer to explain the material and to develop a rapport with the class. There are no facial cues to help a lecturer measure how quickly students grasp the content being taught and, as a result, lecturers need to be constantly available to meet students' expectations, which increased in the course of their extended isolation.

The Department of Historical and Heritage Studies introduced several measures to support students and staff, including hosting daily virtual engagements with lecturers and tutors, opening up dedicated discussion forums on the clickUP platform, holding weekly virtual tutorials and posting revision quizzes based on the content of specific



## Humanities

programmes. The Department also added an additional safety net for its students and started the Volunteer Virtual Peer Tutors initiative. These volunteers helped their fellow students with a variety of tasks, including hosting Q&A sessions, mentoring students on how to summarise their lecture material, becoming student buddies, sharing notes with students who could connect to class, and offering moral support. The shift to online teaching undoubtedly made students anxious, which is understandable, and moral support from lecturers, tutors and fellow students was, therefore, the core feature of all our Faculty's programmes.

Moving from contact lectures to online classes was not an easy task. Lecturers worked their way through several different options, and the majority

opted to develop a series of narrated PowerPoint lectures that students could download at their convenience and review as often as they liked.

As Prof Christiaan Bezuidenhout, lecturer for the third-year Psychocriminology module KRM 310, explained:

**'Lecturers had to ensure that all prescribed books, additional prepared class notes and question banks were made available to the students online to allow for very diverse tests and examinations while keeping the same assessment standards.'**

The class representatives also made a valuable contribution. They played a crucial role in helping lecturers and tutors gauge the feelings and needs of students and advised our staff on how to adapt their teaching strategies. Class representatives are influential leaders on campus, and their role has become even more vital during this period.

Helping students to adapt and thrive during these challenging conditions has been a difficult, but not impossible, task. The Faculty of Humanities has made, and will continue to make every effort to adapt and help our students succeed!





## Humanities



# Studying history, heritage and cultural tourism

*By Andrea du Toit*

The Department of Historical and Heritage Studies, established in 1908, is one of the oldest departments in the Faculty of Humanities and currently offers courses in history (GES) and heritage and cultural tourism (EFK).





## Humanities

### Why should I enrol for history?

Every person we meet and everything we touch has a past or a history. Understanding this history will:

- help you to appreciate key events that changed the past;
- teach you how those events shaped the present;
- provide a context for your other subjects;
- allow you to connect with your world; and
- equip you with a range of critical thinking and writing skills.

You can use the lessons from the past to develop a better understanding of why we are here and what we can do to create a better future!

### What can I do with this subject?

Studying history opens up opportunities for you to pursue a career in journalism, education, film-making, librarianship, politics, international relations, archiving, museums, tourism, curation, legal research, genealogy and public service.

### Why should I enrol for heritage and cultural tourism?

The degree in heritage and cultural tourism offered by the Department of Historical and Heritage Studies will equip you to work in the expanding tourism sector, which is one of Africa's most vibrant sectors. The skills you will learn in this field are considered to be "scarce skills" and will improve your chances of employment once you graduate!

### What can I do with a degree in Heritage and Cultural Tourism?

This degree equips you to work in many different fields, such as tourism management, tourist guiding, travel writing, hospitality, research, education, museum curation and journalism, or in the local, national, continental and/or international heritage industries.

### What does the degree entail?

Should you decide to enrol for a BSocSci (Heritage and Cultural Tourism) degree, you will be able to—in addition to your heritage and cultural tourism modules—major in history, archaeology, anthropology, geography, meteorology or languages.

Furthermore, depending on which programme you choose, you will also be able to include modules from business management and visual culture studies.

### What are the additional advantages of the BSocSci (Heritage and Cultural Tourism) degree?

Besides earning an academic qualification in heritage tourism, you also qualify as an accredited provincial cultural tourist guide in Gauteng Province once you have successfully completed your third year of study.

This accreditation is nationally recognised by the National Department of Tourism in South Africa.

### Where can I find more information?

For more information, contact the programme coordinator on the website given below. The website also contains a short video that will provide you with additional information on the degree in heritage and cultural tourism and the modules you will need to take for this programme.

#### Contact information

Ms Charlene Herselman or Mr CR Botha

**Tel** +27 (0)12 420 2323

**Email** history@up.ac.za

**Website** <https://www.up.ac.za/historical-heritage-studies>



### What are the minimum admission requirements?

Programme	Minimum requirements for 2022 for NSC and IEB	
	Achievement level	APS
	English Home Language or English First Additional Language	
<b>BSocSci (Heritage and Cultural Tourism)</b> [3 years] Closing dates: SA – 30 September Non-SA – 31 August	5	30

Candidates are encouraged to write the NBT. To qualify for admission, you must obtain an APS of at least 28 in the NSC.

**Careers:** Travel, tourism, tourist guide, management, hospitality, marketing, journalism, government, education and/or work in the broader museum and heritage fields locally, nationally and internationally.

## Humanities

# VIRTUAL INNOVATION:

## JuniorTukkie and UPCT go VIRTUAL

By Prof Karen Harris

The University of Pretoria Campus Tours (UPCT) forms a practical component of a module for the BSocSci (Heritage and Cultural Tourism) Honours programme, and is managed entirely by these postgraduate students.

The students offer an invaluable marketing service to the University. They have been called 'young ambassadors' for UP who impress academics and visiting dignitaries and introduce prospective students to the campus and what it has to offer. According to Prof Karen Harris, who initiated the idea some 18 years ago, students gain invaluable experience in primary research, marketing, finances, management and real-life tourist guiding in the operation of UPCT.

This year when COVID-19 cut short the services offered by UPCT on campus, a new version of UPCT was born—the interactive *UP Virtual Campus Tours*. The tours are offered on a Zoom platform and are interactive as the UPVCT tourist guide takes the visitors on a virtual visual tour custom-made to their choice of study with the option of asking questions as they tour the virtual campus. Tours are built around the individual needs of those who book tours with us.

JuniorTukkie has partnered with UPVCT to take these virtual interactive tours to all prospective students wanting to enrol at UP to give them an idea of what studying in the different faculties entails. Schools and families across the country can book virtual tours and be guided across campus with their own personal UPVCT tourist guide who will share information and answer questions.

This year UPVCT participated in the first-ever virtual EBIT Week and the Dean of the Faculty, Professor Sunil Maharaj,

expressed his sincere thanks to the team for putting together a creative and fascinating virtual tour offering for prospective EBIT students. 'As our Faculty motto is "Innovating our Tomorrow" the UPVCT team lived up to the motto by being really innovative. Well done!' he concluded.

The tours are between 20 and 45 minutes, depending on the number of questions guests have. UPVCT not only offers customised faculty tours to suit a chosen direction of study but also a general Campus Tour in which the tour guide introduces guests to all nine faculties and the campuses that form part of the University.

We would love to take you on a scroll through campus.

### Contact us on

[upcampustours@gmail.com](mailto:upcampustours@gmail.com) so that we can build a tour that is spot-on for you.



➡ The 2020 UPVCT team (from left to right): Sindi Gubula, Siobhan Jansen van Vuuren, Jabu Ntuli, Noelien Wilsnach, Nusrat Goolam Mahomed and Nompilo Molaqa





*‘You are where you are today because you stand on somebody’s shoulders. And wherever you are heading, you cannot get there by yourself. If you stand on the shoulders of others, you have a reciprocal responsibility to live your life so that others may stand on your shoulders. It’s the quid pro quo of life. We exist temporarily through what we take, but we live forever through what we give.’*

(Speech given at Howard University in 2002 by Vernon Jordan, lawyer and activist on the collaborative nature of life)

## Theology and Religion

# Partners break ground on teaching religion and sustainable development

By Dr Tanya van Wyk and Mr Dana Mahan



While much of the world was in a reactive state due to the pandemic, Dr Tanya van Wyk from the Faculty of Theology and Religion at the University of Pretoria was proactively investing in the lives of students at home and abroad.

As the Faculty's representative in its collaboration with the Research Programme on Religious Communities and Sustainable Development at Humboldt University in Berlin, Dr Van Wyk participated in an intensive digital course on Religion and Development for students from African and German universities, presented from 20 to 30 July 2020. During this intensive course, she was invited to present talks on gender justice and research ethics.

Participants in the course were from six different countries and collaborated virtually to explore empirical research methods applied in theory and practice, and relating to the subthemes of religion and sustainable development.

The main aim of the course was to examine the relationship between religion and decolonial development, ecology, politics, gender equality and peace through high-profile lectures and methodology courses dealing with participatory observation, research ethics, grant application writing and academic networking.

The applications of four students from the Faculty of Theology and Religion to attend the course were accepted and they had the opportunity to learn and collaborate in this way. They were Charel du Toit, Phenyo Montsho, Ninnaku Oberholzer and Jeanette de Wet,

who commented as follows on their experiences:

*'The wide spectrum of difference encompassing geography, discipline and faith was manifested in the eager opinions expressed and the critical contributions made.'*

– Phenyo

*'I appreciated the diversity of the group, which included participants from Nigeria, Ethiopia, Egypt and Germany.'*

– Ninnaku

*'The advanced research course offered me an opportunity to learn a great deal from a global, but also largely African perspective.'*

– Charel

*'It was good to learn that it is no longer contested that religion can, and already does play a vital role in sustainable development.'*

– Jeanette

The course is part of an ongoing collaboration between Humboldt University and the Faculty of Theology and Religion at UP, which includes a number of conferences, exchanges and research collaborations for current and future students just like you!

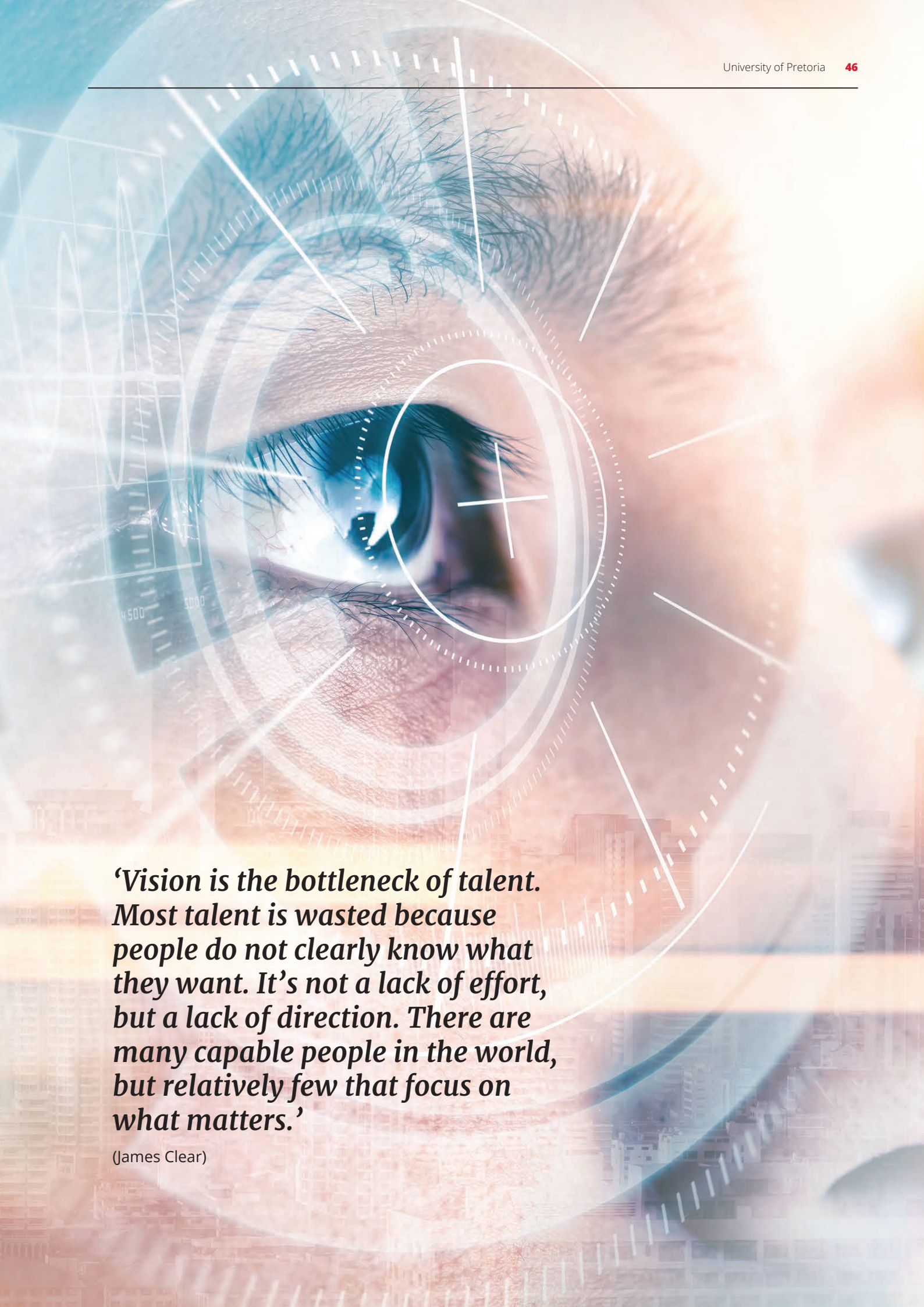


↑ Dr Tanya van Wyk



↑ Humboldt University in Berlin





***‘Vision is the bottleneck of talent. Most talent is wasted because people do not clearly know what they want. It’s not a lack of effort, but a lack of direction. There are many capable people in the world, but relatively few that focus on what matters.’***

(James Clear)



## Education

# Why preparing for a career in education at UP is a good choice

By Thabo Masenamela

Education is the career of choice for many matriculants from all over the country, and at the Faculty of Education at the University of Pretoria we have positioned ourselves to become the faculty of choice for educator training.

The Faculty produces quality teachers who are technologically literate and able to respond to the rapidly changing teaching environment, and the facilities on campus include a robotics lab where skills such as coding and robotics can be developed to equip our graduates for participation in the 4IR.

Education is a noble profession and teachers play an integral role in society. The profession offers you an opportunity to become a role model with the ability to shape and inspire young minds. Educators play different roles—apart from teaching learners, they often fulfil the roles of parents, social workers and friends, to name but a few.

In the pursuit of teaching excellence, the Faculty supports the University's hybrid teaching and learning model, which offers students an optimal blend of face-to-face and virtual (or online) learning opportunities, including virtual learning tools and products such as YouTube videos, mobile apps and narrated PowerPoint presentations that equip our teachers with 21st-century skills.

The BEd degree is the best option for those who wish to become fully qualified and professionally registered teachers. If you are passionate about teaching, you could consider one of the following programmes:

- Foundation Phase Teaching [Pre-primary to Grade 3]
- Intermediate Phase Teaching [Grades 4 to 6]
- Senior Phase and Further Education and Training Teaching [Grades 7 to 12]

The Foundation Phase is perfect for the teacher who enjoys working with young children and would like to be involved in promoting their development during the formative years. The Intermediate Phase teacher specialises in specific subjects and can address the developmental and remedial needs of children. The Senior Phase and Further Education and Training Teaching qualification offers accreditation in a wide range of school subjects.

From their second year onward, education students are placed in schools around Pretoria for a short period to do work-integrated learning (WIL) and gain practical teaching experience. In their fourth year, they spend fourteen weeks teaching at different schools. WIL allows our students to apply the theoretical knowledge gained through their studies in a working context and prepares them for their entry into the work environment.

Teachers who graduate from the University of Pretoria often receive offers of employment even before they complete their degrees, and mostly

find employment within six months after graduation. The reason for this is that our graduates are well prepared professionally, are adaptable and have the knowledge and ability to cope with the changing curriculum and societal needs. They are also highly competitive, creative and confident.

For students who wish to further their studies to specialise in a particular field, opportunities and funding are available through various support organisations. A career in education offers endless growth opportunities, and students are not limited to teaching at schools.

We offer our students firm support throughout their journey towards becoming qualified educators. Our FLY@UP campaign aims to ensure that students take responsibility for completing their degrees in the minimum period indicated for each programme. FLY stands for 'the Finish Line is Yours'. Students who have completed their undergraduate studies are strongly encouraged to pursue honours, master's and doctoral studies.

### Career opportunities in education

- Adult education teacher
- Child care centre manager
- Curriculum specialist
- District education manager
- Early childhood development practitioner
- Education and training specialist
- Education administrator
- Education consultant



## Education

## Admission requirements for the Bachelor of Education degree

Programmes	Minimum requirements for NSC and IEB for 2022	
	Achievement level	APS
<b>BEd (Foundation Phase Teaching)</b> [Pre-primary to Grade 3] [4 years] Closing dates: SA – 30 September, Non-SA – 31 August Applications can be closed earlier if the institutional targets are met.	4	28
<b>Careers:</b> Teachers and training officials in pre-primary or primary schools		
<b>BEd (Intermediate Phase Teaching)</b> [Grades 4 to 6] [4 years] Closing dates: SA – 30 September, Non-SA – 31 August Applications can be closed earlier if the institutional targets are met.	4	28
<b>Careers:</b> Teachers and training officials in primary schools		
<b>BEd (Senior Phase and Further Education and Training Teaching)</b> [Grades 7 to 12] [4 years] Closing dates: SA – 30 September, Non-SA – 31 August Applications can be closed earlier if the institutional targets are met.  An additional subject requirement for elective modules in <b>Economic and Management Sciences</b> is Mathematics, passed with an achievement level of 4 (50%–59%) in the final NSC/IEB examination.  Additional subject requirements for elective modules in <b>Physical Sciences or Life Sciences</b> are Physical Sciences, passed with an achievement level of 5 (60%–69%), and Mathematics passed with an achievement level of 5 (60%–69%) in the final NSC/IEB examination.	4	28
<b>Careers:</b> Teachers and training officials in primary or secondary schools		
<b>Higher Certificate in Sports Science Education</b> [1 year] Closing dates: SA – 30 September, Non-SA – 31 August Applications can be closed earlier if the institutional targets are met.	4	20
<b>Selection process:</b> <ul style="list-style-type: none"> <li>Applicants who indicate the Higher Certificate in Sports Science Education as their first- or second-choice will be considered.</li> <li>All applicants will be considered by the Student Administration of the Faculty based on the academic admission requirements.</li> <li>Applicants who meet the academic requirements will then be further considered for the different sports codes in deliberation with TuksSport, according to their sports achievements.</li> <li>Students who have been nominated by an official sports club of the University will enjoy preference for selection.</li> <li>Applicants who only obtained an Admission to Diploma study's endorsement at the end of Gr 12, may be considered for admission to the BEd Senior Phase- and FET Teaching degree (09133031), with specialisation in the elective combination of Human Movement Studies and Sport Management, if they complete the Higher Certificate in Sports Science Education successfully with a cumulative weighted average of at least 60% (excluding JRC 150 Sports Practical).</li> </ul> <b>Careers:</b> Sports coaching, sports and exercise industry		



## Veterinary Science

# Two distinctly different patients, the same excellent level of care

By Chris van Blerk

Since it was opened in March 2020, the Faculty of Veterinary Science's wildlife clinic has always been quite busy, and the new normal at this versatile and adaptable clinic is the arrival of unusual patients of all sizes on its doorstep.

It was not surprising when two very different patients, a lion and a little steenbok, received excellent care and treatment at the clinic of the Veterinary Academic Hospital (OVAH) during the same week.



↑ Dr Sumari Dancer prepares for Tequila's examination with Dr Jess Humphreys in the background



↑ Tequila also had an ultrasound

Tequila, the lioness from Lory Park Zoo in Midrand, arrived first for a thorough diagnostic check-up after she had been reluctant to get up and had not eaten for several days. She was darted at the zoo and transported to the OVAH, where a full examination was led by Dr Katja Koeppel and Dr Sumari Dancer. It included a radiograph, abdominal ultrasounds and blood work. To make it possible for the veterinarians to send her home as soon as possible, ClinPath at the Faculty assisted by completing their tests in an incredibly short time. The radiographs showed spinal lesions (indicating arthritis) in the lumbar region, for which she received medication. Tequila has now made a miraculous recovery.



↑ Little Bambie in theatre



↑ The little steenbok's repaired fracture

The little male steenbok (*Raphicerus campestris*) of about seven months, dubbed Bambie; arrived three days after Tequila with a comminuted fracture (a break or splinter of the bone into more than two fragments) of the right front metacarpal bone. He was referred to the clinic by Valley Farm Animal Hospital after having been brought there by some concerned residents of a retirement village in Pretoria East who had found him caught in a trap in an area adjacent to their property. This is an example of how increased urbanisation is changing the profile of wildlife in and around cities, resulting in habitat fragmentation.

The fracture was repaired in theatre, and after excellent care, especially by the Faculty's final-year students, Bambie was released into temporary foster care. In the meantime the little steenbok revisited the hospital to have the bandages changed. He will be confined for six weeks while the fracture heals, but he is doing well!



## Veterinary Science

# SA's springhare is a better hopper than Australia's kangaroos

By Prim Gower

While kangaroos are known for their well-developed hind limbs, which they use to hop across the Australian outback, it seems South Africa has its own unusual hopper—the springhare.

A new study published in the *Journal of Anatomy* suggests that 'the diminutive springhare is a bit better at hopping than its more famous Australian counterpart, at least when it comes to muscle-tendon design and its implications for fast and accelerative hopping'.

This is according to Dr Ned Snelling, a senior lecturer in the Department of Anatomy and Physiology at the University of Pretoria's (UP) Faculty of Veterinary Science, who collaborated with scientists from Harvard and Idaho Universities, as well as academics from the University of the Witwatersrand, to assess the muscle-tendon design of the hind limbs of springhares for comparison against 16 species of Australian hoppers.

'In the battle of the hoppers, the result was South Africa 1 and Australia 0,' Dr Snelling said. 'We have long known that springhares are actually a type of rodent, but what we did not know until recently is that they can claim some hopping prowess over Australia's rat-kangaroos, wallabies and kangaroos.'

The reason for studying the muscle tendons of the hind limbs is that they play an essential role in locomotion, mainly when hopping, with variations in position, arrangement and architecture facilitating profound distinctions between the animals' ability for speed, acceleration and energy costs. The study revealed that while the two groups have independently evolved to develop nearly identical hind limb body plans for hopping, the springhares are equipped with relatively large tendon structures built into the hind limbs, providing greater agility, manoeuvrability and acceleration capacities—attributes likely to be advantageous in predator-dense habitats in southern Africa.

Dr Snelling explained that springhares (placental mammals) and Australian hoppers (marsupial mammals with pouches for raising their young) last shared a common ancestor about 160

million years ago. The two groups then independently evolved into a hopping state, and this study shows that they also, quite remarkably, arrived at virtually identical hind limb body plans for hopping locomotion. 'In other words, the two groups independently evolved the same hind limb dimensions and postures for hopping locomotion.'

However, the study also revealed an important distinction between the two groups: springhares have evolved relatively thicker tendon structures, which most probably facilitate the rapid transfer of force from muscle to skeleton, enabling fast and accelerative hopping to outpace and outmanoeuvre predators.

Dr Snelling further explained that tendons are like lengths of elastic cord: 'If you pull on a thin elastic cord, much of the force is lost in the stretch, but if you pull on a thick elastic cord, more force is transferred to the other end.' The same applies to tendon design. The key hind limb locomotor tendons of springhares have a total cross-sectional area that is about 50% larger than that predicted for a hopper of its body size. These relatively thicker tendon structures mean that forces can be transferred more rapidly from the muscle to the skeletal attachment points in the feet, favouring speed and acceleration performance.

'Life is stressful if you're a springhare—danger lurks behind every bush and dune, and just about every predator has you on their menu,' according to Gabriela Veiga of the School of Physiology at Wits, who led the dissections. The ability to engage in fast, accelerative hopping could assist springhares in outpacing and outmanoeuvring predators, especially at night when they are foraging above ground. This might help to explain, for example, why cheetahs have the lowest hunting success rates when pursuing springhares in the southern Kalahari.

As in life, costs and benefits are traded off against one another, and although the springhare's relatively large tendon structure allow for fast, accelerative



↑ Springhares have relatively large tendon structures that allow for fast acceleration, but this comes at an energy cost for the animal.

hopping, they also incur higher energy costs for hopping locomotion, Dr Snelling explained. On the one hand, the relatively thinner tendons of the large Australian hoppers, particularly wallabies and kangaroos, come close to snapping during fast hopping. On the other hand, it is a risk that allows for substantial energy recovery—so much so that these animals seemingly defy the laws of physics and physiology by uncoupling energy costs from hopping speed.

'We know this because scientists have trained wallabies and kangaroos to hop on treadmills while wearing face masks to measure energy costs,' Dr Snelling said. 'This energy-efficient hopping is probably an adaptation that allows kangaroos to cover vast distances across the Australian outback without using too much energy.'

Then again, the relatively thicker tendons of springhares will not stretch as much during fast hopping, and so energy costs are comparatively higher and increase linearly with hopping speed. For springhares, the need for fast, accelerative hopping to survive in predator-dense habitats has taken greater priority during evolution.

The findings of this study show that South Africa's springhares are equipped with a hind limb muscle-tendon design that allows for faster and more accelerative hopping when compared with the more well-known hoppers of Australia.

## TuksSport



## 19-year old Sikhosana is confident to represent SA at Tokyo Paralympic Games

By Wilhelm De Swardt and Angelica van Dou | Photographer: Reg Caldecott

Nineteen-year-old Alwande Sikhosana is a firm believer that energy spent on the court is never wasted.

When the TuksTennis wheelchair tennis player is in action, he wants to get things done as quickly as possible. To him, it boils down to going for a big serve, and his aggressive approach is paying dividends. In his junior days, Alwande was ranked second-best in the world.

A new chapter is beginning for Sikhosana, who is turning 'pro'. He is sending a stern warning to experienced players to take note that he is playing to win. Should he have his way, he will be in action during next year's Tokyo Paralympic Games.

From a statistical perspective, the youngster is slightly ambitious, and we love it! As he is currently ranked 117th in the world, this means that he has to improve his ranking by nearly 80 positions. Sikhosana says he can do this as he was ranked 51st in the world in 2017.

'I only need to get the opportunity to start playing, and then my ranking will improve,' the TuksTennis player said.

He has reason to be confident. Before the COVID-19 pandemic, he was part of the South African men's wheelchair tennis team that has secured their spot in the 2020 BNP Paribas World Team Cup finals—an opportunity that would see him hold his own against older and more experienced players.

In 2017, he stunned four-time Soweto Open champion Leon Els to win his first men's singles title at Arthur Ashe Tennis Centre in Soweto.

**'My strength is definitely my serve. When I find my rhythm, I can put my opponent immediately under pressure. It opens the court, making it easy to win points. I don't want to 'run' around on the court if I don't have to.'**

Sikhosana admits that at first, he found the lockdown to be tough.

'I never thought there would come a time when I would only be able to train at home. It was challenging to come up with new ideas to keep fit and improve. In the end, it was all worth it. Physically I feel much stronger.'

'I also believe that I am mentally tougher. I had time to think about ways I can improve and how I should go about it.'

Tennis South Africa and TuksSport joined forces in 2019 to assist South Africa's best wheelchair tennis players.

'For me, personally, it is great news. The greatest benefit is having a proper support team. I am now being assisted by some of the best sports scientists and coaches. Being based at TuksTennis also means my logistical worries will come to an end. TuksSport is a one-stop facility as everything I need is within "walking distance",' an elated Sikhosana said.



### TuksSport Switchboard:

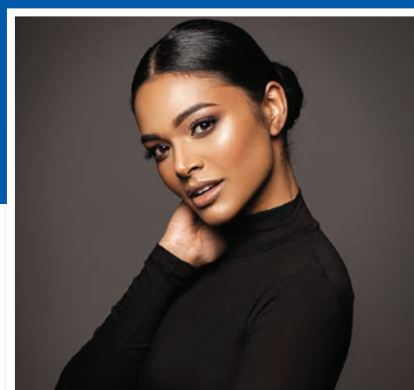
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(07:30-18:00, Monday-Friday)



## TuksSport

# Former Miss Tuks Varsity Cup sets her sights on being Miss SA 2020

By Wilhelm De Swardt and Angelica van Dou | Photographer: Willem Botha, Miss SA website



Doctor Karishma Ramdev started the year at the forefront fighting the COVID-19 pandemic, with dreams of making a difference in children's lives.

The former Miss Tuks Varsity Cup edged out hundreds of worthy opponents to the final 10 finalists in the Miss South Africa pageant for a second time. In 2018, she was one of the finalists. Ramdev has a good reason for doing so. To her, Miss South Africa is a torchbearer for an entire diverse nation.

**'Not only does she need to be relatable to people. Miss SA should also be able to understand people from different backgrounds as well as different walks of life. She is a woman of elegance and grace with a selfless heart who wants to serve her community and country. That is why I entered.'**

Ramdev never had any thoughts about being a beauty queen.

**'My biggest desire has always been to help people. Growing up, I saw the good that doctors put out into the world. That inspired me. So I decided to study medicine,'** says Ramdev.

She qualified as a doctor at UP in 2020. Eventually, she wants to be a reconstructive plastic surgeon so she can help children with cleft palates, a cause close to her heart.

What started it all was when the then Curlitzia (now called Curelitzia) Residence housing committee encouraged her to enter Miss Varsity Cup in 2015.

**'I only agreed because I wanted to do something for my residence. I had no idea as to what I was letting myself in for, but I decided to enjoy it every step of the way. To my surprise, I won.'**

The doctor has definite ideas as to what beauty is.

**'Being beautiful is not a thing of only physical appearance; it is about the way you see yourself and loving yourself wholeheartedly to know that you are enough, flaws and all.'**

Ramdev admits there was a certain irony to being crowned Miss Tuks Varsity Cup.

**'To be totally honest, I had not a clue about rugby when I entered the competition. I had never even watched any games or had an opinion about rugby. But when I was a contestant sitting in the crowd cheering for Tuks, I got hooked. Even after my reign as Miss Varsity Cup ended, I still came to watch when Tuks played.'**

**'During last year's Rugby World Cup, I became an avid supporter of Damian de Allende as he is really handsome. I remember the sheer excitement that I had watching the Springboks beat England in the final. That day filled my heart with pride to be a South African.'**

When she has time to spare, the doctor loves to read a good book or watch Netflix movies. 'I also have a

keen interest in art but haven't had the opportunity to attend any classes. Horse riding is another passion of mine. Being on the back of a horse makes me feel as if I am flying through the air.'

Ramdev credits her mom as being the most special person in her life. 'I have never met a woman who is as tenacious, intelligent and enduring, yet soft, loving and selfless as her. She has been the most exquisite influence, which has shaped me into the woman I am today. I would not be where I am today without her.'

TuksSport is an institution that supports sporting dreams across a range of participation levels. From recreational participation to elite professional athletes, our programmes are designed to help any person #UPYourSportingGame.

The balance of academics and sport at the University of Pretoria is central to student life. Attending matches and the exciting monthly on-campus activities allow students a glimpse into the culture of sporting excellence at TuksSport.

Find out what sporting codes are on offer on [www.up.ac.za/tuksport](http://www.up.ac.za/tuksport) and keep up with the latest by following TuksSport on social media @TuksSport.

**TuksSport**

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## TuksSport

# Wenda Nel well on her way to recovery after testing positive for COVID-19

By Wilhelm De Swardt and Angelica van Dou | Photographer: Reg Caldecott

TuksSport athlete Wenda Nel is well on her way to full recovery after having tested positive for the COVID-19 virus.

After some much-needed downtime, the 400 m hurdler is back in training. Judging by the ease with which Nel is sprinting down the track, it is hard to believe that she was ever ill. She is, however, not taking anything for granted. It is a case of taking it day by day.

'I have no plans to race this season. This means there is no rush to peak any time soon. I am very attentive to how my body reacts to whatever exercise I might be doing. If my heart rate gets too high, I will immediately stop and alert my coach, Hennie Kriel. He is, anyway, regularly assessing my progress.

'I honestly can say since I resumed training, there was never a time that I felt ill. It is hard to say why my heart rate 'spikes' at times. I don't think it is because of the COVID-19 virus. It could be because I am not yet quite as fit as I used to be. So, touch wood, I don't think I have sustained any long-lasting side-effects.

Nel has been a force in South African athletics since 2009. The TuksSport athlete won her first senior national title in 2010, and since went on to win another seven gold medals in the 400 m hurdles during the South African Championships.

Some of her career highlights were setting a personal best time of 54.37 s in 2015 in Beijing, finishing fifth the same year at the world championships and winning a bronze medal during the Gold Coast Commonwealth Games.

The Sport, Exercise Medicine and Lifestyle Institute (SEMLI) is leading an international research study to understand better the health impact of respiratory tract infections, including COVID-19 in athletes. According to the SEMLI's director, professor Martin Schwellnus, more than 50 athletes are already part of the project.

'Because COVID-19 is a new respiratory tract infection, we do not know much about it. In particular, we do not know much about its effect on athletes.

Specifically, we need information on the types and severity of the symptoms in athletes, how long symptoms last, and how athletes feel when they get back to training and competition after COVID-19.

'The Aware Research Project comprised a series of questions to better understand the athlete's state of health. The responses were assessed and athletes were advised on how to safely return to sport performance after recovery from COVID-19 or any other respiratory tract infection.'



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## TuksSport

# Lockdown was a blessing in disguise for Van Rensburg

By Wilhelm De Swardt and Angelica van Dou | Photographer: Andries Kruger

TuksSport's 800 m athlete Rynhardt van Rensburg will have specific numbers in mind from next year when he challenges the stopwatch.

'The aim is to consistently run times of one minute and 44 seconds or faster. It ought to be good enough to ensure I am up there with the front runners.'

It is a doable challenge Van Rensburg had set himself. In 2018 in the Netherlands, he ran a personal best time of 1:45.15. In 2020, his big breakthrough is still on the horizon. Since then, regularly as clockwork, as he got close to be reaching a peak, he got sidelined by injuries. Towards the end of last year, he was slowed down by a hip injury. This meant that frustration got a new meaning for him.

The Tuks athlete is almost grateful for the national lockdown. For the first time, his body had ample time to recover as he did not train for two months. He, however, made the most of the time away from the track. His Xbox skills have drastically improved.

Van Rensburg is still contemplating which race tactics will work for him. As a junior, he liked to race from the front, but when he started running against the 'elder statesmen', he opted for a more tactical approach. What confuses him slightly is that the day he ran his personal best time, he was racing from the front.

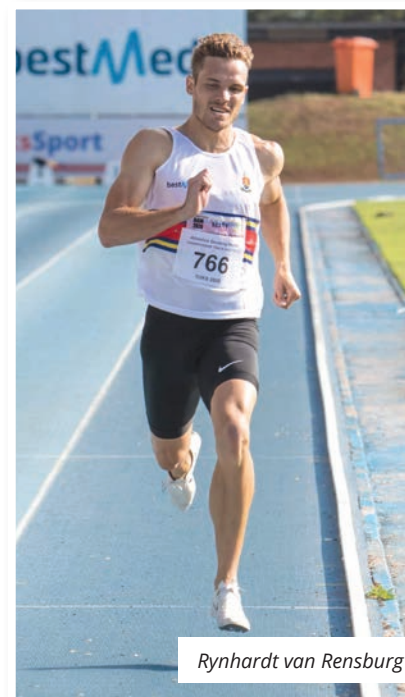
'Perhaps it is best not to overthink a race and take each race as it comes. When racing in Europe, it does not help to try and run from the front as usually there is a pacemaker for the first 400 metres. Leaving it too late, banking on your 'kick', is also a mistake. Nowadays every 800 m athlete can accelerate over the last 150 metres for the race.'

The TuksSport athlete has completed his degree in marketing and has chosen a career in coaching. This is something he is genuinely passionate about doing.

'High school coaches tend to push their athletes often too hard as it is all about winning medals. I can't entirely agree with this approach. For me, it will always be about the 'bigger picture'.

'I try and inspire younger athletes to be in love with the sport. If I can succeed, it hopefully will mean that they will still be competing at a senior level.'

Van Rensburg has represented South Africa at the 2015 World Championships in Beijing as well as the 2016 Rio Olympic Games.



Rynhardt van Rensburg



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[www.up.ac.za/tukssport](http://www.up.ac.za/tukssport)



## UP residences

# House Ukuthula is a house of peace

*By Siyanda Mnisi and Kiash Arjun*

House Ukuthula is an all-male residence that houses students from the Faculty of Health Sciences at the University of Pretoria. It was initially named Huis Vagus, which refers to the tenth cranial nerve (1995), was later renamed House Olympus and is now known as House Ukuthula, which means peace.



The residence is supported by four pillars, namely brotherhood, excellence, integrity and respect. As brotherhood suggests, whatever we do, we stand united. A resident of House Ukuthula does not require an incentive to do the right thing, such as helping others. That is how we maintain our integrity. We are totally committed to everything we undertake and continuously excel at the cultural or sporting events in which we participate.

Since House Ukuthula is home to fewer than 200 students, it is possible to know each other by name. We treat all the residents with respect, regardless of whether they are final- or first-year students. Our motto is *Virorum inlustrium*, meaning men of distinction, which indeed we are.

House Ukuthula's pride and joy is the sculpture of a falcon named Mercury, our winged messenger of peace, in the heart of the residence. He keeps us grounded, and whatever we do, we do

with him in mind. Our first-year residents are called 'Kuikens' (little falcons) and our seniors 'Olympians' (residents of Mount Olympus). Due to the significant influx of first-year students at the beginning of the year, they occupy Block D, which is the largest block in the building. At the end of their first year, students are allowed to choose the block (A, B, C, E and F) in which they would prefer to reside for their remaining years of study.

For the past six consecutive years, this residence has been the top achieving male academic residence. This attests to the fact that we have a solid mentorship system in place, as well as driven, hard-working students who use their resources wisely. The small capacity of the residence allows for the effective distribution of study resources and direct contact and communication between first-year and senior students.

While we are proud of our academic success, we actually do make time for fun. As men of distinction, we love to sing our hearts out at the UP A Capella competition and grace the amphitheatre with our incredibly choreographed dances at SteptUp. We also make our mark at inter-residence sporting events.

Although our campus is relatively far from the Hatfield Campus, our social events never fail to bring in the crowds, and our clubhouse is extremely popular. The aesthetics of the residence with its big lawn, swimming pool and breathtaking view of Pretoria at night will make you wonder whether this is really a student residence.

House Ukuthula is genuinely the cream of the crop when it comes to student residences. If you are a male student in the Faculty of Health Sciences, look no further than this residence when choosing your accommodation. Your academic concerns will be dealt with most effectively via our successful mentorship system, our diverse, fun-filled residence events will satisfy your social needs, and your cultural needs will be met by our enthusiastic participation in the UP A Capella and SteptUp competitions.

We are looking forward to seeing who chooses to be part of the future of our residence, and who will carry on the legacy of our men of distinction.

**Contact information**  
Instagram @House\_ukuthula



## UP residences



↑ House Committee 2020



↑ Residence 2nd Division Rugby League Winners 2018



↑ UP A Capella Winners 2018



↑ Step It UP 2019



↑ Step It UP 2018



## UP residences

# ERICA—a female residence with class and style

By Punky Modipa

Erica, our beautiful purple palace, is situated right next to the Hatfield Campus and gives easy access to the University and all social areas around Hatfield. This residence was established in 1969 and can accommodate 358 students.

Erica is a dynamic and stylish environment and the strong traditions that are passed on to our first-year students year after year are critical factors in our success. We place a high priority on integrity, loyalty, involvement, friendliness, service and an unquenchable spirit. Erica truly is our home away from home. We thrive through effective residence management and strive to offer all residents the best opportunities to develop their academic, spiritual, social and physical potential to the full.

We have a long history of achievements, which include winning Serenade three years in a row, from 2015 to 2017, as well as the 2018 and 2020 Insync competitions. Erica has a reputation for excellence, centered on Residence achievements—not only in sports and cultural residence activities but also in looking out for the wellbeing of students

by offering integrated activities such as Wellbeing Wednesdays and mentorship programmes, overseen by a house committee that ensures that all the activities are effectively implemented.

To be an Ericaner means to participate, to be present and to give your all—to your friends, your fellow Tukkies and your house. An Ericaner does all things with pride and purple passion. Erica is a place where you will meet lifelong friends and connect with people who will help you to thrive as a valuable member of society. Most importantly, its diversity and multicultural environment provide an optimal platform for students to embrace their capabilities and achieve their full potential.

Over the past few years, there have been several changes in the student culture of our residence, including the amendment of rules that no longer serve their

purpose. These changes have allowed Erica to evolve to become a socially conscious and inclusive residence.

We continue to strive for excellence through consistency and dedication, guided by our past, but not limited by it. We reflect the TuksRes vision, which is to listen and learn, and to live graciously in line with the established character of Erica.

Our differences unite us as every individual has a role to play. Students leave Erica as well-rounded individuals who can participate effectively in society.

**‘It is here our hearts forever will return.’—Purple love**

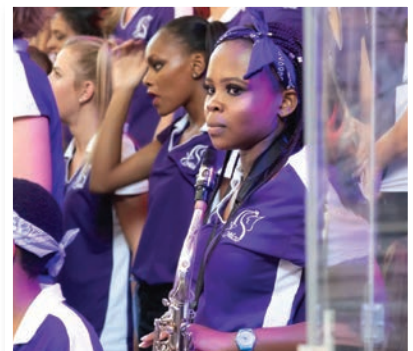
**Contact information**  
**Instagram** @erica\_residence



↑ TuksRes sporting event 2020



↑ Erica building



↑ Erica first year concert

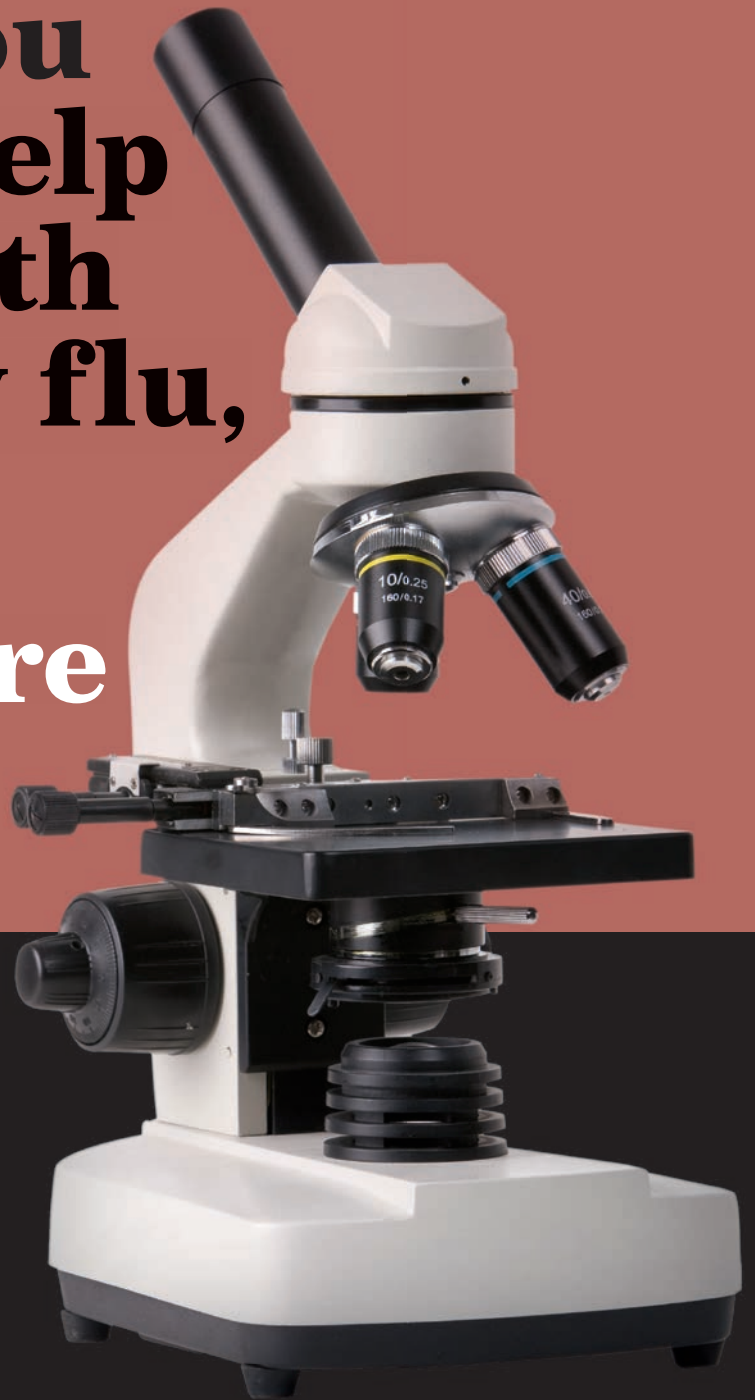


*‘All relationships are based on four principles:  
Respect | Understanding | Acceptance | Appreciation’*

(Mahatma Gandhi)



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