

TTO NEWS

**World IP Day
reaches for gold
Celebrating UP's
innovators
Recognition for UP's
top creator of IP**



UNIVERSITEIT VAN PRETORIA
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YUNIBESITHI YA PRETORIA

Department of Research and Innovation

Departement Navorsing en Innovasie
Kgoro ya Dinyakišišo le Tšweletšopele

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Letter from the editor



This year marks the celebration of the 10th anniversary of UP's Technology Transfer Office. Established in 2009, it aims to ensure that its internal and external stakeholders, as well as its clients, receive an elevated level of service. It is committed to contributing towards economic growth within South Africa, with positive social impact within the country and beyond its borders.

A highlight was the hosting of the TTO's first benefit-sharing event, with the theme: Celebrating UP's innovators. At this event, four researchers whose inventions had been commercialised received royalties for their inventions.

The TTO also participated in World IP Day, an annual event initiated by the World Intellectual Property Organisation (WIPO). This event is celebrated by intellectual property (IP) professionals all over the world. This year's event raised awareness of IP in sport.

The University is proud to report that one of its most productive researchers, Prof Namrita Lall of the Department of Plant and Soil Sciences in the Faculty of Natural and Agricultural Sciences, was identified as a top IP creator by NIPMO. This is further testimony of the support provided to ensure that the University's researchers can achieve the goal of continuous innovation.

We invite our researchers to contact the TTO for advice to turn their inventions into products that can be commercialised.

Adv Lawrence Baloyi
Head: Innovation and
Contract Management

World IP Day celebration hits a six

World IP Day is an annual event celebrated by intellectual property professionals all over the world on 26 April. To commemorate this event, the University of Pretoria's Technology Transfer Office (TTO) hosted an exciting celebration at the High Performance Centre (hpc) on 25 April 2019.

Each year, the World Intellectual Property Organisation (WIPO) chooses a specific theme for World IP Day. This year's theme was **"Reaching for gold: intellectual property and sports"**. The aim of the TTO's event was to make the University of Pretoria's students and staff members aware of the use of innovation to foster the development of sports technology, materials, training and equipment to enhance sport.

Dr Nthabiseng Taole, the University's Director of the Department of Research and Innovation (DRI), welcomed the

guests to the event. She mentioned that there are countless examples of inventions and intellectual property in sport and singled out two of them. She talked about the cricket ball, which was invented in 1780. William Goldwin, an English schoolteacher and vicar, wrote about the modern cricket ball's predecessor as early as 1706 in the first description of the game, and it has not stopped evolving. An example of this evolution is the pink day/night cricket ball that was first used in Australia in November 2015 and has been widely used ever since.



Dr Taole also referred to the first recorded version of the swimming goggles, which the Persians conceptualised during the 14th century. They made these goggles from polished tortoise shells. In the 18th century, Polynesian skin divers improved the design by using deep wooden frames. The first patent was awarded to Mr CP Troppman for use in underwater swimming. The US Patent Office also awarded a patent to Rev M O'Flanagan in 1930 after his goggles had been in use since 1927. Unlike Troppman's goggles, O'Flanagan's goggles were manufactured and sold for local use.

These two examples remind one of how the innovation process helps one enjoy sport.

During her welcoming address, Dr Taole welcomed staff members of the DRI and Prof Peet du Toit, Head of the Exercise and Neuroscience Research Group at the University of Pretoria's Institute for Cellular and Molecular Medicine. She also welcomed students and two representatives from the National Intellectual Property Management Office (NIPMO), which sponsored the event. NIPMO provides the TTO with technology transfer and capacity-building funding.

Prof Du Toit was the first speaker. He spoke about the brain as a tool to enhance the performance of athletes and introduced the groundbreaking Limitless You programme. His research group has partnered with Neuro-link, an international consultancy that specialises in the neuroscience of learning, to develop the programme.

This intellectual property has been disclosed to the TTO. Limitless You is a large-scale, highly customisable performance benchmarking suite with a unique scientific focus on the improvement of the holistic individual. Prof Du Toit highlighted the brain's role in the movement, health, wellness and physical fitness of athletes. Going for gold means that one should not lose sight of the bigger picture. Many internal and external factors influence an athlete's performance, which is why the Limitless You programme also



considers sleep, diet and emotional motivators, among other things. Prof Du Toit walked the audience through the assessment tool that forms part of the Limitless You programme and explained how clients are assessed and a customised intervention plan is developed for each individual.

The Limitless You assessment tool also creates an opportunity for research within the research group, as exciting case studies emerge during profiling. Prof Du Toit mentioned that more than 50 students have received their honours degrees through this programme, and many articles have been published.

The Limitless You assessment tool can be used in companies and schools to develop employees and learners. The research group has developed a manual that will help bring more physical activity to schools. Other parts of this innovative technology include agility kits for use in schools.

After his explanation of the technology and intellectual property, Prof Du Toit demonstrated the brain's power by engaging the audience in visual, auditory and movement exercises. Representatives of Neuro-link also addressed the audience and showed them a few brain agility exercises.

After the brain exercises, Laser Adventures facilitated a sports quiz during which participants competed to win one of 10 prizes. They also presented an activity race that included archery, mini soccer and laser clay pigeon shooting.

Energy levels were high, and the participants showed good sportsmanship in their quest to be crowned as the winner. Although everyone could not win a prize, each participant received a sports drink, water bottle and towel as a token of appreciation.

Adv Lawrence Baloyi, Head: Innovation and Contract Management, presented the prizes to the winners.

Each of the 10 sports quiz winners received a string backpack with a small sport-themed prize. First prize for the activity race was R1 500; second prize was a hamper with sports products; and third prize was a sports store voucher.

Adv Baloyi concluded the event by thanking everyone who had attended. He also thanked Prof Du Toit for his enlightening presentation and expressed the hope that this technology could be taken to new heights through the University's technology transfer process. He thanked NIPMO for supporting the event. He also acknowledged the effort of Ms Refilwe Ngoato and her team for organising the event, and Laser Adventures for their contribution to a successful event.

He briefly explained the role of the TTO in the technology transfer process.

The event was a successful celebration of the brilliance, ingenuity, curiosity and courage of individuals who are fuelling change in the world of sport, shaping our future and growing the economy.

Driving innovation forward with technology development

Ms Refilwe Ngoato, Technology Transfer Manager at the University of Pretoria's Technology Transfer Office (TTO), was invited to deliver an address at the second Annual Intellectual Property and Technology Commercialisation Colloquium held in Pretoria from 8 to 9 April 2019.

Her expertise on issues related to the protection of new technologies was deemed essential in providing inputs towards the Colloquium's plenary session discussions. In this regard, she was asked to share her perspective through a 15-minute presentation on intellectual property (IP) in technology development.

This year, the Colloquium's theme was "Propelling innovation towards full-scale industrialisation and inclusive growth". The event was hosted in partnership with the Companies and Intellectual Property Commission (CIPC), an agency of the Department of Trade and Industry

(the dti). The Colloquium is an annual event that brings together various players within the National System of Innovation (NSI) ecosystem to discuss issues of IP development and the commercialisation of new technologies.

The Colloquium aims to provide a platform for NSI actors on IP and technology commercialisation to exchange ideas and experiences in addressing the challenges that inhibit successful commercialisation. It also covers critical areas such as IP management, the commercialisation process, venture capital funding, knowledge for equity structures, and

creating channels and access to the market.

Attendees included practitioners from industry such as technology brokers, technology consultants, commercialisation specialists, merchant banks, non-practising entities, venture capitalists, incubators and fund finders. Other peripheral role-players such as lawyers, accountants and patent attorneys also attended the event.

The Colloquium aimed to attract the participation of high school and tertiary students, to instil in them an interest in intellectual property.



TTO staff member receives professional development scholarship

Ms Mashudu Nxumalo, Senior Administrative Officer at the University of Pretoria's Technology Transfer Office (TTO), was awarded an AUTM Scholarship for New Technology Transfer Professionals from Developing Economies 2019.

The Association of University Technology Managers (AUTM) is a non-profit organisation for technology transfer professionals with more than 3 000 members employed at more than 800 universities, research centres, hospitals and government organisations around the world.

The scholarship is awarded to five early-career technology transfer professionals who work in countries with developing economies. It aims to

enhance learning opportunities for new professionals. Scholarship recipients can choose to complete a professional development course at AUTM or attend the AUTM Annual Meeting with the funds they receive.

Ms Nxumalo decided to attend the Annual Meeting in Austin, Texas, from 10 to 13 February 2019.

Recipients have to be employed as technology transfer professionals in an

academic or non-profit institution in an eligible country and should have less than two years' experience as a full-time technology transfer professional.

Other South African recipients were Mr Wasiu Afolab from the University of Cape Town and Ms Thandiwe Maretlane from Stellenbosch University. Mr Juan Cevoli from PLAPIQUI in Argentina and Mr Bo Dong from Guangdong Academy of Agricultural Sciences in China were the international recipients.



Photo courtesy of AUTM.

Ms Mashudu Nxumalo (left) is congratulated by Dr Richard Chylla, Chair of the Association's Annual Meeting. Dr Chylla is a Certified Licensing Professional (CLP) and a Registered Technology Transfer Professional (RTTP).



Celebrating UP's innovators

In celebration of the 10th anniversary of UP's Technology Transfer Office, it hosted its first benefit-sharing event with the theme: Celebrating UP's innovators. At this event, four researchers whose inventions had been commercialised received royalties for their inventions.

The event was hosted on 28 June at the Head Office of HearX Group, a company that was formed to commercialise one of UP's inventions.

In alignment with the Intellectual Property Rights Act, the TTO sought to ensure that human ingenuity and creativity at the University of Pretoria are acknowledged and rewarded. According to this Act, the creators of intellectual property (IP) at an institution are granted a specific right to at least 20% of the revenues that accrue to the institution for their IP.

Inventors at the University of Pretoria whose technologies have been commercialised were therefore honoured at the event and received a share of the royalties awarded to the institution. The recipients of royalty cheques, together with the titles of their inventions, are as follows:

- Prof Nico Labuschagne and Prof Lise Korsten (Faculty of Natural and Agricultural Sciences): *Trichoderma* isolates
- Prof De Wet Swanepoel (Faculty of Health Sciences) and Prof Herman Myburgh (Faculty of Engineering, Built Environment and Information Technology): Mobile health hearing screening solution (audiometric device and method)

The event was opened by Dr Nthabiseng Taole, Director of the Department of Research and Innovation (DRI), who welcomed guests and explained the purpose of the event. Adv Lawrence Baloyi, Head: Innovation and Contract Management at DRI discussed the role of technology transfer at the University.

As a case study of the successful commercialisation of IP (and host

of the event), Mr Nic Klopper, CEO of HearX Group provided guests with an overview of the journey to achieving success.

Prof Tawana Kupe, the University's Vice-Chancellor and Principal, delivered the keynote address.

This was followed by Dr Taole and Adv Baloyi who presented the royalty cheques. They also presented certificates of recognition on behalf of the University to researchers whose patents had been granted since the institution of the Intellectual Property Rights Act on 2 August 2010.

Mr Mmboneni Muofhe, Deputy-Director-General (DDG): Technology Innovation at the Department of Science and Technology (DST), presented certificates of recognition on behalf of NIPMO.



Mr Nic Klopper, CEO of HearX Group, shares anecdotes along the journey to achieving success.



Event stakeholders (from left): Dr Nthabiseng Taole, Director: Research and Innovation (UP), Prof Tawana Kupe, Vice-Chancellor and Principal (UP), Mr Mmboneni Muofhe, DDG: Technology and Innovation (DST) and Adv Lawrence Baloyi, Head: Innovation and Contract Management (UP).



Representatives of HearX Group (from left) with the Vice-Chancellor and Principal, Prof Tawana Kupe (middle): Prof De Wet Swanepoel (lead inventor), Mr Nic Klopper (CEO), Prof Herman Myburgh (co-inventor) and Mr David Howe (developer).



Celebrating UP's innovators (from left): Dr Nthabiseng Taole, Prof Tawane Kupe, Prof Lise Korsten, Prof Nico Labuschagne and Mr Mmboneni Muofhe.



Certificate recipients from the Department of Plant and Soil Sciences with Prof Namrita Lall (second from right).



Adv Lawrence Baloyi, Head: Innovation and Contract Management at the University of Pretoria.



Prof Tawane Kupe, Vice-Chancellor and Principal, delivers the keynote speech.

SoYhum reigns supreme

Ms Keneiloe Kganane, a research assistant at the University of Pretoria's Department of Consumer and Food Science, was awarded first place for South Africa in the final pitch competition of the Newton Fund Leaders in Innovation Fellowships (LIF) programme at the Royal Academy of Engineering in London.

Ms Kganane represented SoYhum, a new biscuit range made from sorghum, Africa's climate-smart ancient grain. The LIF programme, which the Royal Academy offers as part of the UK Newton Fund, aims to build the entrepreneurial capacity and commercialisation skills of innovators from selected partner countries.

The LIF programme also aims to achieve the Sustainable Development Goals (SDGs) of the United Nations (UN), and to tackle global challenges by establishing better links between academia and industry to develop and commercialise solutions to real-world problems. The programme, which is currently in its fifth year, brought together researchers, entrepreneurs and innovators from Kenya, India, the Philippines and South Africa to participate in an intensive two-week training programme at the Royal Academy of Engineering in London from 9 to 23 February 2019.

Ms Kganane says it was an honour to be awarded first place. The recognition validated the Department's collaborative efforts. The wheels of change require the collective participation of government, research institutions and business to propel technology into the future. In the South African context, the cooperation of these role players will boost the sorghum industry's revival, which is the motivation for the creation of sorghum-based snacks such as SoYhum. Innovations such as these could have a significant economic impact and highlight the significance



The LIF 5 South African cohort.



The head judge of the final pitch competition, Prof Sir Saeed Zahedi (left), congratulates Ms Keneiloe Kganane.

Photo credit: Layton Thompson.

of agricultural development and food technology advancement in solving global challenges for food security, sustainability and climate change. The point of science is to solve problems, and the LIF programme demonstrated the need for learning, partnership



The first three places were awarded to Ms Keneiloe Kganane (first), Dr Petro Erasmus (second) and Ms Ntokozi Ntleko (third).

and innovation in meeting 21st-century challenges head-on.

Ms Kganane would like to thank the Newton Fund, the Royal Academy, the Technology Innovation Agency (TIA) and Oxentia UK, Oxford's Global Innovation Consultancy.

NIPMO recognises top intellectual property creator

The National Intellectual Property Management Office (NIPMO) has identified Prof Namrita Lall of the Department of Plant and Soil Sciences in the University of Pretoria's Faculty of Natural and Agricultural Sciences as a top Intellectual property (IP) creator for the period of 1 April 2011 to 31 March 2018.



Prof Namrita Lall, holder of the NRF/DST Chair in Plant Health Products from Indigenous Knowledge Systems at the University of Pretoria.

The NIPMO Intellectual Property Creators Awards aim to promote the conversion of research and development outputs into products, processes and services that are of benefit to society.

Much of the commercialised IP of Prof Lall and her team is based on the traditional knowledge and indigenous plant resources that have been used by communities for centuries. The focus is on the identification of plant species with biologically active compounds, and the characterisation and standardisation of traditional recipes for reformulation as medicines and cosmetics. According to Prof Lall, the country's indigenous flora can revolutionise the cosmetics industry through the development of cosmeceuticals (cosmetics that have a pharmaceutical effect in the same way as topical medicines do).

At the awards ceremony, the recipients received certificates and grants – called Intellectual Property Creators' Incentives – to be used by their institutions' technology transfer offices to advance the disclosure of their top IP creators to the next stage in the innovation value chain.

Speaking at the awards ceremony in Pretoria on 28 March 2019, the Minister of Science and Technology, Ms Mmamoloko Kubayi-Ngubane, said the Department of Science and Technology (DST) would continue to strive to ensure increased funding for basic research.

She added that it was important to put mechanisms and platforms in place to help increase the country's capacity to innovate.

"The establishment of NIPMO was an attempt by the South African government to incentivise and promote innovation within publicly financed research institutions," she said.

South Africa has a total of 37 higher education institutions and science councils. IP creators from 29 of these institutions were acknowledged at the awards, while 25 institutions received monetary awards.

The Head of NIPMO, Dr Kerry Faul, said that NIPMO looks to establish and support technology transfer offices at all higher education institutions. "These form a critical part of developing a knowledge base that can drive technology transfer in the higher education sector," Dr Faul added.

Adapted from: Department Science and Technology. 2019. Intellectual property creators hailed as agents of positive change. [Online] Available at: <https://www.dst.gov.za/index.php/media-room/latest-news/2789-intellectual-property-creators-hailed-as-agents-of-positive-change>. Accessed 13 June 2019.

TTO staff members visit Hycat Oil

On 20 February 2019, four members of the University of Pretoria's Technology Transfer Office (TTO) visited the fuel plant of Hycat Oil Pty (Ltd) in the Engineering II Building on the Hatfield Campus.

These staff members were Adv Lawrence Baloyi, Head: Innovation and Contract Management, Mr Thabang Qumza, Commercialisation Coordination Manager, Dr Simon Thanyani, Research Contracts Manager, and Ms Refilwe Ngoato: Technology Transfer Manager.

The cost of fuel affects every part of our daily lives, and in South Africa, the need for affordable fuel is highlighted due to the lack of natural oil resources, which leads to currency dependence on fuels like diesel, petrol and illuminating paraffin.

The University has developed a fast pyrolysis unit (similar to gasification, but at lower temperatures) that can convert

lignocellulosic biomass into oil in a single reactor. In the absence of oxygen, this unit rapidly heats the biomass with a catalyst to split the biomass into char, syngas and oil.

Current research shows that using the University's reactor design, paired with a proprietary catalyst, can produce fuel with an energy value of 40 MJ/kg. This is twice the energy value of existing pyrolysis oils, and is comparable to existing mineral heating oils. It is also hoped that this invention will solve the challenges that acidity poses to pyrolysis biofuels. The catalyst can remove all acidity from the fuel. This advantage opens the first market into heating fuel oil, confirmed at 10 000 tons per month in South Africa, or R600 million per year.

The goal is to commercialise the technology through Hycat Oil by building small (container) and large pyrolysis units and selling them to farmers and rural customers so that they can produce fuel.

Technology transfer must be seen as an essential step in successful research. The TTO values the University's intellectual capital and is proud to be a part of the commercialisation process of these pyrolysis units.



A visit from NIPMO strengthens ties

Representatives of the National Intellectual Property Management Office (NIPMO) visited the University of Pretoria's Technology Transfer Office (TTO) on 15 April 2019.

The visit's purpose was to meet the TTO's staff members, to share the latest developments, to see how the TTO is doing and to determine how it can be further supported.

NIPMO functions as an agent within the Department of Science and Technology (DST). Its primary activity is to see to it that intellectual property (IP) and IP rights that are created with public funds are protected.

The TTO staff members took the opportunity to thank the NIPMO representatives for all the funding and support the TTO has received so far.



Staff members of the University's Technology Transfer Office together with representatives of the National Intellectual Property Management Office (NIPMO).

French delegates visits the TTO

The University of Pretoria's Technology Transfer Office (TTO) hosted French knowledge and technology transfer expert, Dr Christophe Haunold, on 9 April 2019.

He was accompanied by Ms Marion Gues, the Scientific Programme Officer at the Embassy of France in South Africa, Mr Ayanda Noma, Director: Innovation and Technology Transfer at the University of South Africa (Unisa), and Mr Mathieu Becue, Attaché for Innovation.

The Southern Africa Research and Innovation Management Association (SARIMA) hosted Dr Haunold from 8 to 12 April 2019. During his visit, he expressed an interest in understanding South Africa's National System of Innovation (NSI) and the institutions that support innovation and technology transfer in the country. SARIMA suggested he visits UP's TTO to achieve this goal. Dr Haunold is the Director of the TTO at the Institut National de Toulouse in France. He is the

current Vice-President of ASTP-Proton and was president of the Curie Network (the French national association for public research valorisation and transfer) between 2011 and 2014. The purpose of his visit was to explore collaborations

between SARIMA and the Curie Network on Innovation and Technology Transfer (I&TT) matters.

While he was in South Africa, he gave two talks as part of the I&TT Directors' Forums.



Staff of the Technology Transfer Office hosting Dr Christophe Haunold and the delegation from both France and South Africa.

Renowned IP expert visits the TTO

The University of Pretoria's TTO was fortunate to have an opportunity to host Mr Richard Nugent, Head of IP Strategy at Coller IP in Belfast, Ireland, for a visit in April 2019.

Mr Nugent came to South Africa to give a presentation at the second Annual IP and Technology Commercialisation Colloquium in Pretoria from 8 to 9 April 2019 (see page 4 for more about the Colloquium). During his time in South Africa, Mr Nugent decided to visit the University of Pretoria's TTO to investigate how Coller IP can collaborate with it.

He was accompanied by two representatives from the South African Department of Trade and Industry: Ms Nontombi Marule, Director: Innovation, and Mr Mashudu Netshiswinzhe, Assistant Director: Innovation and Technology. Coller IP provides comprehensive IP business



Staff of the Technology Transfer Office hosting Mr Richard Nugent, Head of IP Strategy at Coller IP in Belfast, Ireland.

services through packages that are specifically designed to help businesses to understand, review and implement actions to enhance the value that IP

adds to their business. The TTO is proud to be associated with such an esteemed technology transfer colleague.

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