

TTO NEWS

Newsletter of the Technology Transfer Office of the University of Pretoria

Issue 12 ▪ November 2023

**World IP Day:
Women and IP**

**Creating awareness
about technology
transfer**

**Norwegian
research exchange**

**Leading the way
with innovation
outputs**



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

**Department of
Research and Innovation**

Departement Navorsing- en Innovasie
Kgoro ya Dinyakišišo le Mpshafatšo

Make today matter

Letter from the editor



In this edition of our TTO Newsletter, we are thrilled to showcase the dynamic and impactful initiatives driven by the University of Pretoria's Technology Transfer Office (TTO) in 2023. At the heart of our mission is to support researchers in their journey to bring innovative ideas to life, and this year has been no exception.

One of the core objectives of the TTO is to assist our talented researchers in their invention disclosures and the filing of patents. Equally important is our commitment to raising awareness about the vital process of technology transfer and the commercialisation of research. This dual approach is crucial to realising the full potential of the groundbreaking work conducted within our university's walls.

On 19 May 2023, we celebrated World IP Day with a memorable event hosted at Future Africa with the theme "Women and IP: Accelerating Innovation and Creativity". The event was a resounding success, emphasising the pivotal role women play in the world of innovation. It was an exciting programme designed to inspire our students and staff, highlighting the boundless possibilities for innovation that exist within our academic community.

International and regional knowledge exchange was another cornerstone of our endeavours in 2023. We had the privilege of welcoming two distinguished delegations from African regions as part of a benchmarking study tour. These interactions facilitated an invaluable sharing of experiences and expertise with members of the University's Innovation and Contract Management Division. Additionally, the TTO hosted a research exchange visit from prestigious research institutions and universities in Norway, as part of an international collaboration programme.

These interactions have enriched our global network, allowing us to learn and grow together on the global stage.

Furthermore, we are pleased to report that the TTO extended its reach to the Health Sciences and Veterinary Science campuses. In each of these locations, we organised IP and research commercialisation workshops. These workshops aimed to empower our researchers with the knowledge and tools required to transition their innovative ideas into commercially viable products. The positive feedback and active participation in these workshops underscore their importance in advancing innovation and research commercialisation.

As we progress on our mission to nurture a culture of innovation and entrepreneurship within our academic community, we invite all our researchers to connect with the TTO. Our dedicated team is here to provide guidance and support to help transform your inventions into market-ready products. The TTO is committed to serving as a vital bridge between research excellence and real-world impact.

We thank you for your continued support and keen interest in the University of Pretoria's technology transfer initiatives.

Stay tuned for more exciting developments, and let us continue to innovate, collaborate and transform ideas into reality.

Adv Lawrence Baloyi
Head: Innovation and Contract Management



Women and IP

World Intellectual Property (IP) Day is an annual event celebrated by IP professionals all over the world on 26 April. To commemorate this event, the University of Pretoria (UP)'s Technology Transfer Office (TTO) hosted an exciting celebration, in collaboration with Future Africa, on 19 May 2023. Each year, the World Intellectual Property Organisation (WIPO) chooses a specific theme for World IP Day. This year's theme was "Women and IP: Accelerating Innovation and Creativity". In alignment with the theme, a range of female professionals presented their innovations to the audience.

The Programme Director, Ms Zamile Mzizi-Khuzwayo, Coordinator of the UP Symphony Orchestras, introduced the Vice-Chancellor and Principal at the time, Prof Tawana Kupe, who delivered the opening remarks via a video recording. Ms Paballo Masite, Director: Fund and Incentives Management at the National Intellectual Property Management Office (NIPMO), provided the audience with insights into how IP and its associated rights can help transform ideas into reality.

Her presentation covered the legislative mandate of the Intellectual Property Rights (IPR) Act, as well as its purpose, objects and application. She also discussed NIPMO's role in the implementation of the IPR Act. Addressing the theme of the day, Ms Masite remarked that, collectively, we should renew efforts to promote inclusion and diversity in the management of IP, and ensure the development of innovation ecosystems that are accessible to all.

Dr Phuti Chelopo-Mgobozi, Innovation Specialist: Biosciences at the Innovation Hub, discussed innovations that have made a difference in South Africa. She also highlighted some innovations that originated from the University of Pretoria, including the Bi-Ko™ slow release insect repellent that is woven into fabric, developed by African Applied Chemical; medicines using indigenous plants to treat liver toxicity caused by tuberculosis treatment, developed by Letago Chemicals; a strip to test for COVID-19 using nanobodies, developed by MikroMab Diagnostics; and virus-like particle vaccines produced in a tobacco plant, developed by Antigenica.

Ms Ursula Baravalle, Director and Patent Attorney at Kisch IP Law delivered a presentation on IP protection and the benefits of research commercialisation.

She ensured that participants knew exactly what is meant by the term IP, and explained the importance of patent protection in the research commercialisation process.

The audience was excited to hear the personal testimony of a young woman entrepreneur, Ms Keneiloe Kganane. As an entrepreneur, she is the co-founder of SR Snacks (Pty) Ltd, a company that develops healthy snacks from climate-smart crops. She elaborated on her journey as an entrepreneur, starting with the research and development, through the process of registering a trademark, commercialising the product, and establishing a company through which the product can be marketed and sold. She also shared some of the lessons she has learnt, and challenges that need to be addressed.

This was followed by the testimony of an experienced entrepreneur – Prof Elsabé Kearsley – a professor in the Department of Civil Engineering. She recalled her encounters of taking an invention from

research to commercialisation. She has many years' personal experience with the registration of IP, and remarked that cutting-edge knowledge is required to solve the problems of the developing world.

Her first patent was registered more than 25 years ago, and she has registered several other patents since then. The aspects she addressed were very thought-provoking, as she challenged the audience to consider whether all ideas should be patented, what it is that makes an idea patentable, and the features of a successful patent. She also presented the notion to the audience that we may have a social responsibility to share our novel ideas with the public without patenting them if they are beneficial to society at large.

Following a question-and-answer session, Prof Sunil Maharaj, the University's Vice-Principal: Research, Innovation and Postgraduate Education, closed the event with some pertinent remarks, and the guests were treated to lunch and a tour of the Future Africa Campus.



Female innovators had the opportunity to exhibit their products to delegates at World IP Day.

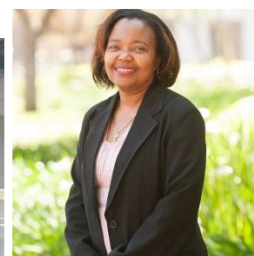
TTO STRATEGIC PLANNING SESSION

Staff members of the University's Technology Transfer Office (TTO) attended a two-day strategic planning session at the Intundla Game Lodge and Bush Spa on 27 and 28 March 2023. One of the outputs of the event was the development of a Stakeholder Management Plan.

Creating awareness about technology transfer

The TTO is committed to raising awareness about intellectual property (IP) and commercialisation among its stakeholders. It therefore conducts several activities aimed at increasing the number of invention disclosures and filed patent applications. This includes the annual World IP Day, IP and research commercialisation workshops in the faculties, presenting talks to postgraduate students and postdoctoral researchers, and exhibiting successful research commercialisation endeavours.

IP IN THE ACADEMIC ENVIRONMENT



**Ms Refilwe
Ngoato, TTO
Manager, UP**

For the past four years, Ms Refilwe Ngoato, the University's TTO Manager, has been presenting a lecture to BSc Honours students on IP in the academic environment. This year, the lecture took place on 23 May 2023, and resulted in a request to present it to senior postgraduate students and postdoctoral researchers as well on 30 October 2023.

In her presentation to raise awareness about IP, especially within the context of a tertiary institution such as the University of Pretoria (UP), Ms Ngoato mentioned some inventions that have changed our lives, including some that were invented quite by accident. She then introduced the students to the services offered by the University's TTO.

The students learnt what technology transfer entails, what is meant by the term "intellectual property", the key

forms of IP protection (patents, trademarks, copyright and design) and the legislation that governs IP and IP rights in South Africa. They were also introduced to the University's IP Policy, which states that students are required to assign any IP that may vest in them through their study obligations to UP. She reassured them, however, that UP ensures the appropriate benefit-sharing arrangements for students and staff members. Students can therefore share in the financial rewards from the commercial application of their IP.

Ms Ngoato explained what is required for an idea to be patentable and why the University recommends the patenting of novel and useful inventions. She also explained what cannot be patented, according to the Patents Act of 1978, particularly in the event of inventions related to plants and animals, and DNA sequences. She reminded the students that the Biodiversity Act of 2004 requires a permit for commercial activities related to indigenous biological or genetic resources. As a result, every application for a patent must be accompanied by a statement on whether the invention is based on or derived from an indigenous biological resource, an indigenous genetic resource, or traditional knowledge or use.

Her presentation was concluded with some examples of UP success stories, which encouraged the students to consider whether their research has the potential to be patented.

AFRICA WEEK



Special guests at the Africa Day exhibition included Prof Sunil Maharaj, UP's Vice-Principal: Research, Innovation and Postgraduate Education (photo left), and Mr Dhesigen Naidoo, former Director of UP's Department of Research and Innovation (photo right).

The University of Pretoria hosted its biennial science leadership event, Africa Week 2023, from 22 to 26 May. The theme of this event was Open Africa, Open Science. This is a prestigious event that brings together African and global leaders in science. The programme featured topical dialogues on the importance of science as a global public good through the lenses of the global open science movement and its relevance for the continent. The TTO participated in the event by exhibiting its services and products.



IP AND RESEARCH COMMERCIALISATION WORKSHOPS

The TTO presented two Intellectual Property (IP) and Research Commercialisation workshops in July and September, respectively. The first workshop was presented for postgraduate students and staff members in the Faculty of Health Sciences at the Prinshof Campus on 28 July 2023. The second workshop was presented for students and staff members in the Faculty of Veterinary Science at the Onderstepoort Campus on 15 September 2023.

The event on the Health Sciences Campus was opened by Prof Mike Pepper, Director of the Institute for Cellular and Molecular Medicine. Prof Pepper is also Director of the South African Medical Research Council (SAMRC) Extramural Unit for Stem Cell Research and Therapy, and is a research professor in the Department of Immunology.

Delegates were introduced to various aspects related to intellectual property and the commercialisation of research. Ms Mantwa Tshabalala from the National Intellectual Property

Management Organisation (NIPMO) discussed the Intellectual Property Rights (IPR) Act, while Ms Reratlwe Ramaloko from Mashabela IP Law discussed IP protection. Mr Thabang Qumza, the University's Commercialisation Manager, explained how the commercialisation of IP works, while Ms Refilwe Ngoato, the University's TTO Manager, delivered a presentation on the University's Standard Operating Procedure for Technology Transfer.

The event on the Onderstepoort Campus was opened by Prof Marinda Oosthuizen, Deputy Dean of the Faculty. Mr Thabang Jase, Director: Advisory Support at NIPMO, discussed the IPR Act, while Mr Tumelo Mashabela, Managing Director of Mashabela IP Law discussed IP protection. Mr Thabang Qumza, the University's Commercialisation Manager, discussed the commercialisation of IP, while Dr Simon Thanyani, the University's Contracts and Innovation Manager, delivered a presentation on research contracting at UP.



Both events featured the personal experience of Dr Mthokozisi Sibanda, an entrepreneur who developed the Bi-Ko™ slow-release insect repellent that is woven into fabric to prevent the transmission of malaria. He is a UP graduate and founder of African Applied Chemical. He spoke on the topic: From research to commercialisation.

INVENTOR PROFILE

Dr Mthokozisi Sibanda is the Director of the UP spin-out company, African Applied Chemical. He was the featured inventor at the TTO's IP and Research Commercialisation workshops at the Faculty of Health Sciences and the Faculty of Veterinary Science. His invention, known as the Bi-Ko™, originated in the University of Pretoria's Institute of Applied Materials (IAM). It enables insect repellents to last longer by reducing their evaporation. It has been applied to mosquito nets and hiking socks, thereby playing an important role in the fight against malaria.



Norwegian Research Exchange

As part of the Department of Research and Innovation's international collaboration programme, researchers and exchange students from research institutions and universities in Norway paid a visit to the University of Pretoria from 6 to 10 September 2023.

This collaboration includes projects of the International Partnerships for Excellent Education, Research and Innovation (INTPART) and the Norwegian Agency for International Cooperation and Quality Enhancement in Higher Education (DIKU). The delegates, who are part of an entrepreneurial ecosystem programme funded by the Norwegian Directorate for Higher Education and Skills (UTFORSK), came from the Nord University Business School, the Mohn Centre for Innovation and Regional Development, the VIS Innovation Incubator and the Western University of Applied Sciences (HVL), among others.

The programme included a visit to the University's Engineering 4.0 Building, as well as to its business incubator, TuksNovation. The visitors were introduced to the University's TTO, as well as some of the inventions emanating from the University of Pretoria that have resulted in the establishment of spin-out companies. These included HearX, which developed a mobile health hearing screening solution; Blyde Botanics, which



commercialised an invention related to indigenous knowledge-based cosmeceuticals and pharmaceuticals; and SR Snacks, which developed a range of healthy snacks from climate-smart crops.

They also learnt about the role of the Technology Innovation Agency (TIA) and

were taken to the Council for Scientific and Industrial Research (CSIR) where they underwent a campus tour and visited the CSIR's Technology Station in Electronics. They were taken to the Innovation Hub as well. The visit was concluded by a tour of the Cullinan Mine and a two-hour game drive in the Dinokeng Game Reserve.

Benchmarking visits

The TTO is acknowledged as an example of an office of technology transfer at a higher education institution that has efficient systems in place to support its stakeholders with their invention disclosures and patent applications. It therefore frequently receives benchmarking visits from other universities and institutions in Africa to learn from its successes.

DELEGATION FROM ESWATINI

On 28 September 2023, the TTO hosted a delegation from the Kingdom of eSwatini's Ministry of Information Communication and Technology, organised through the Directorate of Africa Bilateral Cooperation of the Department of Science and Innovation (DSI).

The purpose of the visit was to observe the systems in place in South Africa so that they could establish the efficient operationalisation of the Kingdom of eSwatini's Research, Science and Technology and the Royal Science and Technology Parks. The DSI hoped that this visit would enhance their understanding of technology transfer processes, and enable them to explore ways to strengthen the technology transfer ecosystem in eSwatini. By exchanging knowledge and ideas, both parties were able to foster collaboration and identify potential areas for improvement.

The guests were introduced to the TTO's services and operations by Bongani Masombuka, John Visagie, Shirnice de Wee, Tshwanelo Moroka and Tshepo Kubhai. They had several questions about the TTO, and the office's representatives responded to their questions. The delegation found the visit to the TTO to be an insightful and valuable experience.



eSwatini delegation and hosts

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY



Kenyan delegation and hosts

On 23 October 2023, the TTO hosted a visitor from the Masinde Muliro University of Science and Technology in Kakamega, Kenya, Prof Bhukala. He was on a benchmarking visit to the University of Pretoria as he is preparing to establish a research institution at his institution. He therefore benefitted immensely from a visit to the University's Division of Innovation and

Contract Management, where he learnt how the TTO office fits into the establishment of the University's broader Department of Research and Innovation.

Advocate Lawrence Baloyi, Head: Innovation and Contract Management, shared some insights about the services of the division and its operating procedures. Ms Refilwe Ngoato, Manager: TTO, introduced the TTO and its role in implementing UP's Intellectual Property Policy. Dr Simon Thanyani, Manager: Innovation and Contracts, described the University's support to researchers and students to establish agreements, obtain funding, establish collaborations and ensure compliance with various legislative and internal institutional policy requirements. Dr Thabang Qumza, Manager: Commercialisation, explained how the University supports researchers and students in the journey from research to commercialisation. Mr John Visagie, Manager: Industry and International Research Partnerships, explained the University's role in assisting researchers with their funding applications to various international funding agencies.

LEADING THE WAY WITH INNOVATION OUTPUTS

The Department of Higher Education and Training (DHET)'s Policy on the Evaluation of Creative Outputs and Innovations Produced by Higher Education Institutions, and its Implementation Guidelines recognise quality creative outputs and innovations. South African universities are required to submit their creative outputs and innovations annually, and these evaluated outputs are used to calculate each institution's subsidy from the DHET. The purpose of this policy is to encourage research productivity by rewarding quality research outputs at public higher education institutions.

Over the past two years, the University of Pretoria has topped all the universities in South Africa

in terms of innovation outputs. This is based on its submission of patents granted using an online system developed by the DHET together with the National Research Foundation (NRF), known as the Research Outputs Submission System (ROSS). This system is used to capture all research outputs produced by universities.

For creative outputs, the system captures work in the fields of fine and visual arts, music, theatre, performance and dance, design, film and television, and literary arts. For innovations, it captures outputs related to patents and plant-breeder's rights.

In the University's submission for 2021, it listed 34 items for subsidy claims. Of these, 23 were for creative

outputs and 11 for innovations in the form of inventions and patents. The submissions are evaluated by an advisory panel of the DHET, which comprises professionals from the higher education community and/or any individuals with a clear understanding of IP, in particular, patents and plant-breeders' rights.

The TTO plays an important role in supporting the University's researchers with their invention disclosures, the filing of patents and the signing of license agreements, which ultimately lead to the granting of national and international patents. It looks forward to ensuring that the University maintains its leading position in terms of innovation outputs.

DID YOU KNOW?



VULCANISED RUBBER

Rubber was an exciting, yet equally difficult substance when it was first introduced in France in 1736. Its potential was enormous, but it became sticky when hot, hard when cold, had a terrible smell, and decomposed quickly. It was Charles Goodyear, from Ohio, who discovered vulcanisation in 1839 due to his own clumsiness. For eight fruitless years, he had been researching methods to make the material more manageable when he accidentally spilt a mixture of rubber and sulphur on a hot stove. The material melted, but kept its elasticity, and became stronger and far less sticky. His discovery of the vulcanisation process did not only lead to the use of rubber tyres in the car industry, but also to the invention of a number of other rubber products.



KLEENEX

The word "Kleenex" was not always a synonym for a disposable tissue. The main material cellulose cotton was originally used during World War I as a replacement for the cotton in gas masks. In 1924, after the war, Kimberly-Clark marketed the material in the USA as facial tissues to remove make-up. Many letters were sent to the company by women, who loved the product, but who found it unfortunate that their husbands and children used the tissues to blow their noses. When research indicated that approximately 60% of customers used Kleenex for this purpose, the product was launched for a third time in 1930; this time as a disposable handkerchief. Sales doubled. All over the world, disposable tissues are now more popular than cotton handkerchiefs. Kleenex is made in 30 countries, and is marketed in more than 170 countries.