

2022

ANNUAL REPORT

TECHNOLOGY TRANSFER OFFICE



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Department of
Research and Innovation

Departement Navorsing- en Innovasie
Kgoro ya Dinyakišišo le Mphafatšo

Make today matter

UP TECHNOLOGY TRANSFER OFFICE

A snapshot of UP's TTO

The University of Pretoria (UP) strives to be a university that is known for its international competitiveness and local relevance through continuous innovation. UP's Technology Transfer Office (TTO) aims to ensure that its internal and external stakeholders, as well as its clients, receive an elevated level of service. The TTO is committed to contributing to economic growth within South Africa, with positive social impact in the country and beyond its borders.

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Looking back at 2022

This annual report provides evidence to demonstrate the TTO's good performance and relevance to society. It focuses on invention disclosures received by the TTO, patent applications filed, and workshops attended and organised in 2022. It covers the progress of the TTO for the period 1 January 2022 to 31 December 2022.

A highlight was the World IP Day celebration, which took place at the UP-Javett Art Centre in May. The theme, in alignment with the international theme of the World Intellectual Property Organisation (WIPO), was "IP and youth: Innovating for a better future".

This theme aimed to explore the potential of young people to find new and better solutions to support the transition to a sustainable future, and to support how innovative, energetic and creative minds are driving positive change in societies.

The TTO's vision is aligned with that of the University of Pretoria. It is supported by the University, and the University continues to appreciate the commercial and non-commercial benefits it brings.

The TTO celebrated its 14th year of operation in 2022, during which time it marketed its services to inventors in need of assistance by presenting its services at intellectual property (IP) workshops and departmental seminars and symposia.

It is hoped that this will accelerate a culture change and increase the number of invention disclosures it receives. It continues to see its internal stakeholders as its most important stakeholders. It is thus crucial that meetings are organised with researchers in different faculties on an ongoing basis. Continued positive relations

with researchers have been crucial to growth and have improved the overall quality of the invention disclosures the TTO receives.

The staff of the TTO attended events such as the Southern African Research and Innovation Management Association (SARIMA) conference, the Innovation Summit and the BioAfrica Convention.


The TTO also held meetings with external stakeholders to gain an understanding of their needs and to establish good relationships as successful and meaningful technology transfer is demand driven.

In 2022, the TTO signed one license agreement and filed 21 patent applications. This is less than the number of applications filed in 2021, when it filed 36 applications because the TTO now spends a lot of time conducting due diligence, and does not file patents merely for the sake of filing. It only files applications that are worth protecting.

Furthermore, the TTO received 15 invention disclosures in 2022, and granted seven international and eight national patent applications. One trademark application was registered in South Africa. Meetings with researchers took place, some of which resulted in new invention disclosures.

It is the TTO's wish to be able to generate its own funds so that it can give university researchers strong incentives to encourage them to walk the commercialisation route. Since 2000, the TTO has seen a huge increase in the number of research contracts signed.

The income generated from research contracts in 2022 exceeded that generated



in 2021. This clearly indicates that the University is becoming more research-intensive, and is well on its way to realising its goal of being a leading research-intensive university in Africa, recognised internationally for its quality, relevance and impact.

As part of its marketing strategy, the TTO produced two newsletters and an annual report in 2022.

The TTO has benefitted from significant support from NIPMO. Telling stories of how its activities touch and benefit people's lives around the world will always be important to it. Thus, it will continue to produce these newsletters.

Universities need to transform to stay in the game. At UP, we are guided by our overarching vision, UP 2025, and its five key strategic goals. In 2022, the University embarked on its last five-year strategic plan that would lead it to 2025 and beyond. At UP, researchers continued to come up with new inventions in 2022.

Since its establishment in 2009, the TTO has received tremendous support from NIPMO. NIPMO's contribution is greatly acknowledged. It is the TTO's objective to ensure that its internal and external stakeholders, as well as its customers, receive a high level of service.

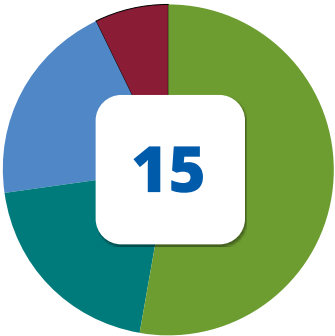
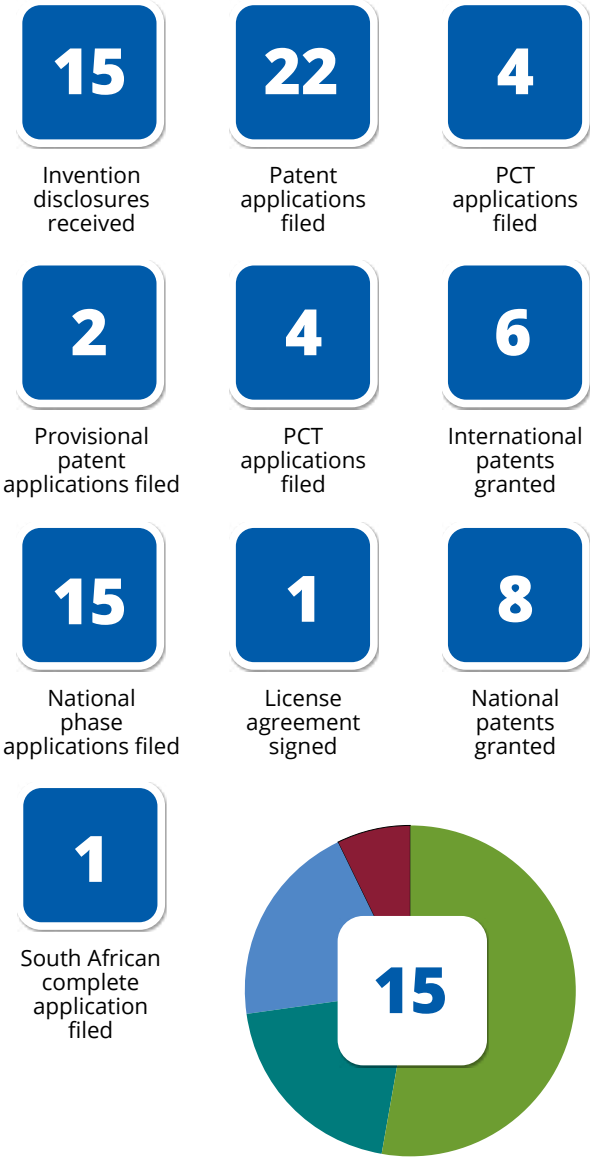
The TTO is committed to helping create economic growth within South Africa, and social impact around the world.



TTO's performance

INVENTION DISCLOSURES

The TTO received 15 invention disclosures in 2022. For nine years in succession, the TTO has received the highest number of invention disclosures from the Faculty of Natural and Agricultural Sciences. This faculty was again more innovative than the other faculties at the University as its researchers submitted the highest number of invention disclosures to the TTO. The Faculty of Engineering, Built Environment and Information Technology, and the Faculty of Health Sciences submitted an equal number of invention disclosures.



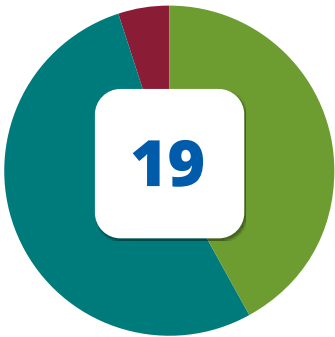
- 8 ■ Natural and Agricultural Sciences
- 3 ■ Engineering, Built Environment and Information Technology
- 3 ■ Health Sciences
- 1 ■ Veterinary Science

Invention disclosures per faculty in 2022

PATENT APPLICATIONS FILED AND GRANTED

22

The TTO filed 21 patent applications in 2022. This includes provisional patent applications (South Africa), PCT international and PCT national phase applications. Four PCT applications were filed, while previously filed PCT applications entered the national phase. No new patent applications were filed from the Faculty of Health Sciences.

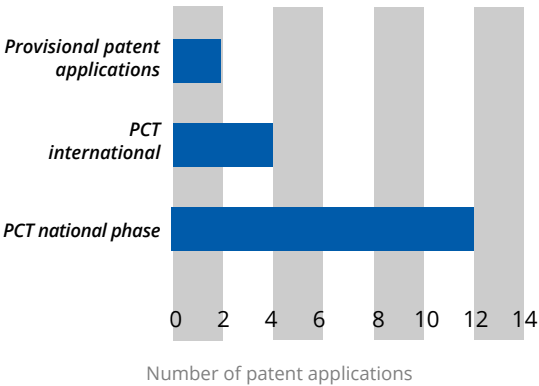


- 8 ■ Natural and Agricultural Sciences
- 10 ■ Engineering, Built Environment and Information Technology
- 1 ■ Veterinary Science

Patent applications filed per faculty in 2022

4

Four PCT applications were filed in 2022. This is the same number as those filed in 2021. Two South African provisional patent applications were also filed. Bioscience-related inventions continued to dominate UP's patent portfolio, followed by engineering-related inventions. The number of patents granted in 2022 was higher than those granted in 2021.



Types of patent applications filed in 2022

PATENTS GRANTED IN 2022

- **Bayesian Blade Tip Timing (BTT):** Dawie Diamond, Prof Stephan Heyns and Johannes Oberholster (Engineering, Built Environment and IT)
- **BTT instantaneous resonance:** Dawie Diamond, Prof Stephan Heyns and Johannes Oberholster (Engineering, Built Environment and IT)
- **BBT reduced sampling method:** Dawie Diamond, Prof Stephan Heyns and Johannes Oberholster (Engineering, Built Environment and IT)
- **Annular pyrolysis apparatus (endothermic apparatus and processes):** Prof Mike Heydenrych (Engineering, Built Environment and IT)
- **Fly ash-based cladding tile:** Prof Elsabé Kearsley, Stuart Grant Hofmeyer (Engineering, Built Environment and IT)
- **Gull configuration:** Reinhard Joachim Huyssen (Engineering, Built Environment and IT)
- **Planar mechanism:** Douw Gerbrand Marx (Engineering, Built Environment and IT)
- **An electrical protection system and a method thereof:** Patrick Manditerza, Prof Ramesh Bansal (Engineering, Built Environment and IT)
- **Method and kit for identifying gene mutations:** Prof Michael Pepper, Cheryl Stewart, Green Robin and Masekela Refiloe (Health Sciences)
- **Myrsine skin care:** Prof Namrita Lall (Natural and Agricultural Sciences)
- **Anti-cancer activity of *Helichrysum odoratissimum* (extract and compositions of *Helichrysum odoratissimum* for preventing and treating skin cancers):** Prof Namrita Lall and Danielle Berrington (Natural and Agricultural Sciences)
- **Why stress tolerance:** Prof Don Cowan and Dr Jasmin Mertens (Natural and Agricultural Sciences)



TRADEMARK APPLICATIONS

One previously filed trademark application was registered in 2022. It was for a product called “Finest varsity meals”, and was registered by Prof Lise Korsten in the Faculty of Natural and Agricultural Sciences.



LICENSE AGREEMENTS

Since the establishment of the TTO in 2009, the dominant route for the commercialisation of IP at UP has been licensing. During 2022, networking with partners in relevant companies took place, but was not as active as those that took place during the years prior to the Covid-19 pandemic. One licence agreement was signed.

Workshops and other events

Workshops and other events organised by the TTO in 2022 included the World IP Day celebration, the IP in Genetics Workshop and the IP and Research Commercialisation Workshop on the Health Sciences Campus.

WORLD IP DAY



The World IP day celebration took place on 12 May 2022 at the UP-Javett Art Centre. It was organised in conjunction with TuksNovation, UP's high-tech incubator. The theme was "IP and youth: Innovating for a better future". It was a very successful event, which was attended by over 40 postgraduate students. The programme gave young people insight into how IP and its associated rights can help transform their ideas into reality. Most of them were really inspired. Ms Jetane Charsley, Chief Director at NIPMO, attended the event and gave a presentation on the IP Rights Act and NIPMO. The other presenters were Adv. Lawrence Baloyi, Head: Innovation and Contract Management, and directors of some of the University's start-up companies: African Applied Chemical, Kebalepile Technologies and Blyde Botanicals. They are also alumni of the University.

INTELLECTUAL PROPERTY LECTURE



The Technology Transfer Manager gave a one-hour guest lecture on IP to Genetics honours, and Biochemistry and Microbiology students during the second semester. The focus of the lecture was on more than just genetics. This was followed by a one-hour interactive session. She prepared a set of 20 questions, which the students were expected to answer. These included questions like whether a postgraduate student can be a sole inventor at UP and what the difference is between a participant, an IP creator and a beneficiary. The workshop, which has been taking place since 2018, was attended by over 50 students.

IP & RESEARCH COMMERCIALISATION WORKSHOP



The UP TTO, in collaboration with the Faculty of Health Sciences and the Mohn Centre for Innovation and Regional Development at the Western Norway University of Applied Sciences (HVL), presented an IP and Research Commercialisation Workshop on the Health Sciences Campus on 22 September 2022. The guest speaker was Prof Inger Beate Pettersen, who was visiting the University of Pretoria from HVL in Norway. As a professor at the Mohn Centre for Innovation and Regional Development at HVL since 2012, and programme leader of the master's programme in Responsible Innovation and Sustainable Value Creation, she was able to provide some background on research-based commercialisation and innovation from a northern-hemisphere perspective. The workshop was attended by over 30 researchers.

UP LIBRARY NARRATIVE PRESENTATION



The UP Library asked the TTO Manager to prepare a recorded narrative presentation for postgraduate students. The 30-minute presentation has been posted on the UP intranet. Whenever postgraduate students come up with inventions and are not sure of where to go for assistance in terms of IP protection, want to know how they will benefit if they disclose the IP to the TTO or need any other information on IP, they will therefore be able to obtain most of the answers by listening to the narrative presentation.

WORKSHOPS, COURSES AND PRESENTATIONS

The TTO staff members attended a number of workshops in person and online during 2022.

Courses and workshops attended during 2022

- Training request on intellectual property; attended by Dr Simon Thanyani (18 January 2022) – virtual training
- DTI IP colloquium; attended by Ms Refilwe Ngoato (23 and 24 February 2022) – virtual event
- 2021 GAP Innovation competition; attended by Ms Refilwe Ngoato (24 February 2022) – virtual event
- Dimensions Database: Grant module training; attended by Mr John Visagie (3 March 2022) – virtual training
- Executive Leadership Workshop; attended by Ms Refilwe Ngoato and Carol Nonkwelo (16 and 17 March 2022) – Cape Town
- Inteum Webinar; attended by Ms Refilwe Ngoato and Mr Edmond Makgaretsa (23 March 2022) – virtual event
- Crowdhelix collaboration platform; attended by Mr John Visagie (7 April 2022) – virtual event
- Crowdcast: Innovation League 2021/22 Awards; attended by Ms Refilwe Ngoato (21 April 2022) – virtual event
- World Intellectual Property Day; attended by Ms. Refilwe Nagoato, Adv. Lawrence Baloyi, Dr Simon Thanyani, Ms Stanly Ehlers, Mr John Visagie, Mr Tshepo Khubai, Mr Bongani Masombuka and Mr Edmond Makgaretsa (12 May 2022) – Javett-UP Art Centre
- Innovation Bridge Portal; attended by Mr Edmond Makgaretsa (17 May 2022) – CSIR International Convention Centre
- Inteum Inteum Advanced Financials webinar; attended by Ms Refilwe Ngoato and Mr Edmond Makgaretsa (18 May 2022) – virtual event
- Inteum Advanced Financials webinar; attended by Ms Refilwe Ngoato and Mr Edmond Makgaretsa (18 May 2022) – virtual event
- Erasmus+ Capacity Building in Higher Education; attended by Mr John Visagie (23 June 2022) – virtual event
- Southern African Research and Innovation Management Association (SARIMA) Conference; attended by Mr Bongani Masombuka and Mr Edmond Makgaretsa (1–4 August 2022) – Wanderers Country Club, Johannesburg
- Crowdhelix open webinar; attended by Mr John Visagie (23 August 2022) – virtual event
- Intellectual Property Management Basics 2022; attended by Mr Edmond Makgaretsa and Mr Tshepo Khubai (27 and 28 September 2022) – virtual event
- Enspire Science – lump sum funding in Horizon projects; attended by Mr John Visagie (29 September 2022) – virtual event
- IP Valuation Course; Dr Simon Thanyani (2–4 November 2022) – virtual event
- WIPO South Africa Summer School on IP and Transfer of Technology; attended by Dr Simon Thanyani (21 November–2 December 2022) – University of Limpopo
- LES IP evaluation course; attended by Mr Bongani Masombuka (22 November 2022) – virtual training
- World Science Forum South Africa; attended by Dr Simon Thanyani, Mr Thabang Qumza and Mr Tshepo Kubhai (6–9 December 2022) – Cape Town

WORKSHOPS, COURSES AND PRESENTATIONS

The TTO Manager, Ms Refilwe Ngoato, was invited to visit the Western Norway University of Applied Sciences (HVL) from 29 May to 2 June 2022. The University of Pretoria cooperates with HVL on several projects.



This includes the International Partnerships for Excellent Education, Research and Innovation (INTPART) project: Developing entrepreneurial mindsets across cultures: A Norway-South Africa collaboration (2019 to March 2023) and the Department of Computer Science (DIKU) at the University of Copenhagen project: Engineers in interdisciplinary teams solve the challenges of the future.

The visit to HVL, Bergen, included visits to cluster facilitators, incubators and technology transfer office in the region. During the visits and workshops, she delivered presentations on IP at UP, and projects with potential for collaboration.

This was followed by a return visit to UP by the Norwegian researcher who had hosted the TTO in Norway, Prof Inger Beate Pettersen, from 15 to 22 September 2022.

Ms Refilwe Ngoato
TTO Manager



MEETINGS WITH RESEARCHERS

At least 10 meetings with researchers took place during the period under review with a view to increasing the number of invention disclosures the TTO receives per annum. Most of the meetings were in person. More meetings will take place in 2023 with a view to increasing the number of invention disclosures. Staff of the TTO will also attend faculty days and seminars in different departments and faculties

Human Resources

The Senior Administrative Officer's contract was extended for another year in accordance with the recommendation of the University's Human Resource Division. He joined the TTO on 1 March 2021. The TTO will be advertising two positions in the near future: one for a junior marketing officer and one for a business development specialist.



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