

TTIS NEWS

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Dr. Janine Chantson

Chief Director: Technology Transfer and Innovation Support

Welcome to the inaugural edition of the North-West University Technology Transfer and Innovation Support (TTIS) Newsletter!

As the custodians of innovation and knowledge exchange at NWU, we are delighted to introduce you to the rich tapestry of events and endeavours shaping our vibrant tech transfer landscape.

First and foremost, we extend a heartfelt welcome to all newly joined academic staff members who recently partook in our special Meet & Greet session. Your expertise and passion are pivotal to our mission of nurturing innovation and fostering impactful collaborations.

North-West University's collaborative ethos continues to shine brightly, exemplified by the remarkable achievements showcased in this newsletter. From groundbreaking research partnerships to the launch of innovative initiatives, NWU remains at the forefront of collaborative innovation.

Reflecting on NWU's milestone of turning 20 years, we at the TTIS office are particularly proud of the university's journey. It marks two decades of academic excellence and two decades of fostering innovation and driving transformative impact through technology transfer.

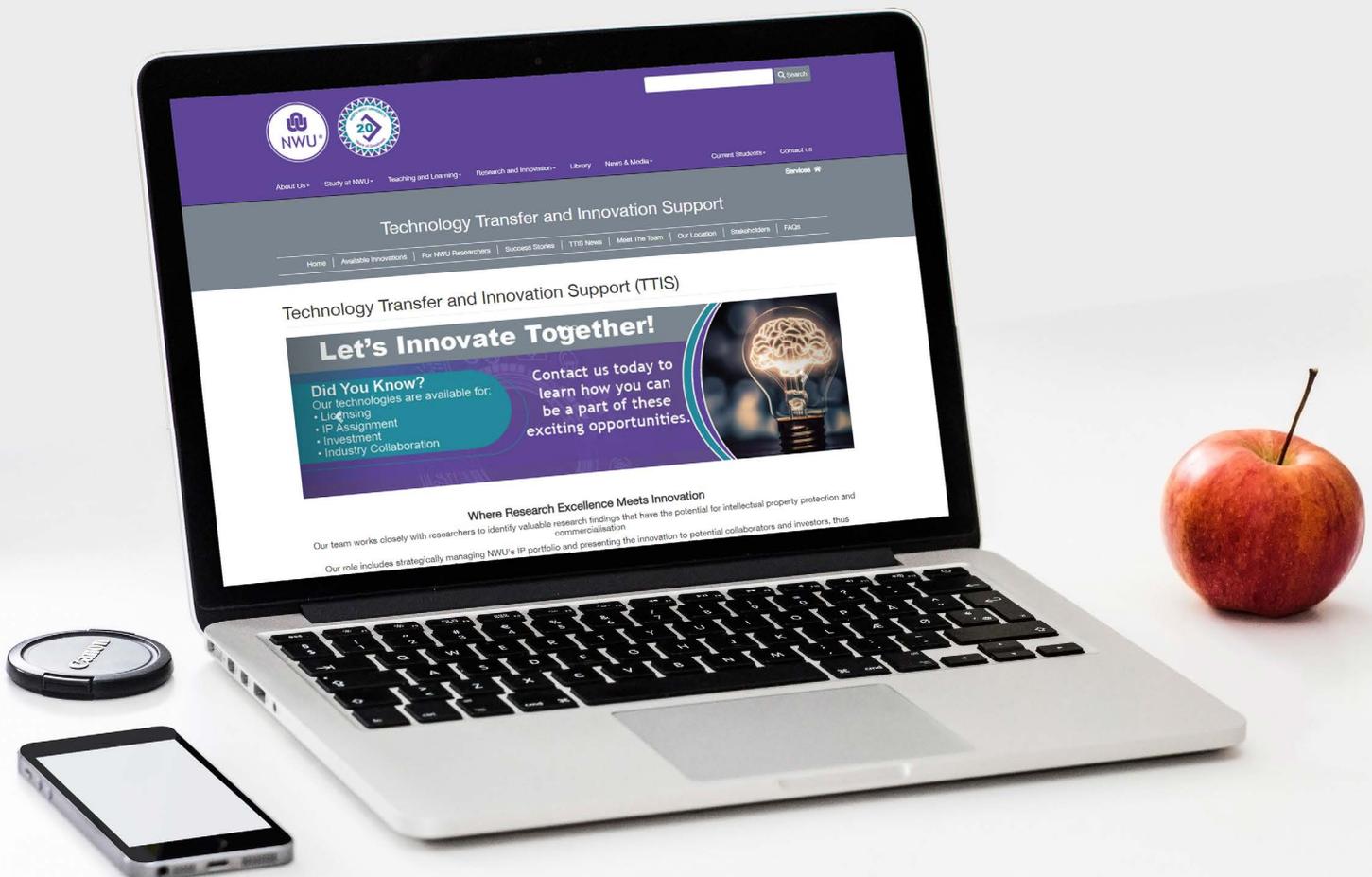
In celebration of World Intellectual Property Day 2024, we joined hands with esteemed institutions across South Africa to commemorate the significance of intellectual property (IP) in propelling progress and innovation. The launch of Prosper, an educational card game developed by NWU, is a testament to NWU dedication to addressing the sustainable development goals and in achieving social impact.

TTIS is dedicated to fostering innovation and protecting IP within the academic community. To ensure that researchers and innovators are well-informed about the services and opportunities available to them, TTIS conducted IP awareness sessions across various faculties.

In addition, the TTIS office welcomes you to indulge in “Coffee Proffie,” a special campaign to get to know our researchers and the fascinating research they are involved in.

As we embark on this thrilling journey of discovery and collaboration, we eagerly anticipate sharing more inspiring narratives and transformative initiatives with you in the editions to come.

Happy reading!
Dr. Janine Chantson



LET'S MAKE THE WORLD A BETTER PLACE!



The WORLD INTELLECTUAL PROPERTY DAY celebration at NWU

NWU hosted the annual World Intellectual Property Day (WIPD) celebrations in collaboration with the Companies and Intellectual Property Commission (CIPC), the Department of Trade, Industry, and Competition (the dtic), the Department of Science and Innovation (DSI), the National Intellectual Property Management Office (NIPMO), the Technology Innovation Agency (TIA), and the Small Enterprise Development Agency (SEDA). This event was held on 25 April at the Mahikeng Campus and on 26 April at the Potchefstroom Campus and served as a platform to raise awareness about the significance of intellectual property (IP) rights in shaping our daily lives.

WIPD, observed annually on 26 April, underscores the critical role of patents, copyrights, trademarks and designs in driving innovation and creativity. This year's theme, "IP and the SDGs: Building our common future with innovation and creativity", aligns with the United Nations' 17 Sustainable Development Goals (SDGs), which provide a framework for addressing

global challenges and fostering sustainable development. The focus on integrating IP with the SDGs highlights the indispensable role of intellectual property in advancing societal progress and addressing pressing global issues.

In the words of Prof Jeffrey Mphahlele, the deputy Vice-Chancellor for Research and Innovation at the NWU: "Intellectual property is the cornerstone of innovation, driving progress and shaping our collective future. Through collaboration and respect for IP rights, we pave the way for a more prosperous and sustainable world."

Prof Jeffrey Mphahlele, the Deputy Vice-Chancellor for Research and Innovation at the NWU.



The WIPD celebration sparked dialogue and collaboration, driving efforts to leverage innovation and creativity for a more sustainable future. In a rapidly changing world, protecting and promoting IP rights is crucial for building a better world for everyone.

Among the highlights on the Mahikeng Campus were presentations by two of our esteemed researchers, Dr Petro Erasmus and Prof Sydney Mavengahama, who captivated their audience with their practical endeavours towards SDGs 2 (Zero Hunger) and 4 (Quality Education).

Dr Erasmus, an educational psychologist, shared her heartfelt mission to dispel the fear surrounding maths. Receiving nods of agreement from the audience, she emphasised, “Everyone has a maths story – and sadly, most of us have had a less enjoyable encounter with maths at one time or another.” Dr Petro’s innovative approach involves introducing playful learning methods through her Whartels® Math game, utilising board games and soft toy puppets to make maths enjoyable for children and override their fear with fun.

Dr Erasmus’ research has led to the creation of a company, PENPlay, which offers the Let’s Really Play Maths Programme through which she hopes to reach as many children as possible in pursuit of quality education for all.

Prof Mavengahama shed light on the potential of ancient grains, such as millets, in combatting hunger. These grains, deeply rooted in our ancestral heritage, once served as staple foods before maize took precedence in modern diets. Highlighting their health benefits and resilience to climate change, Prof Sydney emphasised their significance in achieving food security.

The nutritional superiority of millets and ancient grains, with their high protein content and gluten-free nature, has propelled them to the forefront of health food markets globally. However, their underutilisation in Africa presents a significant opportunity for innovation and economic growth.



Prof Sydney Mavengahama, Eagi, Dr Janine Chantson: TTIS Chief Director, and Mafika

Prof Mavengahama urged young people in Africa to embrace commercial farming of these grains and develop novel products, emphasising the need for self-reliance in harnessing our indigenous resources.

The inherent adaptability of indigenous millets and ancient grains to African conditions offers a ray of hope amid the challenges of variable climate patterns. Prof Mavengahama affirmed, “We have all these grains at our fingertips. There is no excuse for us not to combat hunger on our continent.”

In Potchefstroom, two exhibitors highlighted the role of ancient grains in achieving zero hunger (SDG 2), building on Prof Sydney Mavengahama’s presentation in Mahikeng on the same topic.



Dr Petro Erasmus, Eagi, Dr Janine Chantson: TTIS Chief Director, and Mafika



Prof Jacques Berner showcasing live samples of ancient grains, including plants and seeds, to Prof Jeffery Mphahlele, DVC for Research and Innovation.

The first exhibitor was Prof Jacques Berner, a plant physiologist, and his students, Mr. Janco Oosthuizen and Mr. Zack Meyer. They showcased live samples of ancient grains, including plants and seeds. They are considering starting a seed production company specialising in ancient grains, aiming to make commercial production of these grains more common. Ancient grains offer more health benefits than maize and are more resilient to climate change. Prof Berner and his associates plan to collaborate with food product experts to create a demand for these crops.

The second exhibitor was Sense Food Product Development, a small business based in Potchefstroom. They showcased various food products made from ancient grains, using different production methods like extrusion. Run by NWU alumni Ms. Nadine van der Walt and Ms. Mandy van Zyl, Sense completed the value chain for



Ms. Nadine van der Walt and Ms. Mandy van Zyl

ancient grains, highlighting their potential in the food industry.

Through the presentations and exhibitions on both campuses, it became evident that ancient grains hold tremendous potential for combating hunger and promoting food security. By showcasing live samples and demonstrating a variety of food products, the exhibitors highlighted the versatility and nutritional value of these grains. Moreover, the discussions around seed production and food product development underscored the importance of collaboration and innovation in bringing these grains to the forefront of the agricultural and food industries.

Through WIPD celebration NWU reaffirmed its dedication to the United Nations SDGs. Mrs. Bibi Bouwman, Director for Sustainability and Community Impact at NWU, emphasised how these global objectives resonate with every facet of the university's activities.

Mrs. Bouwman elucidated on the integral link between NWU's projects and the SDGs. "We are presently overseeing 458 community engagement initiatives across our three campuses, ensuring they are aligned with one or more of the SDGs," she explained.

Mrs. Bouwman underscored the responsibility incumbent upon every NWU employee and student to contemplate the enduring impact of their endeavours on communities and the environment. Beyond providing quality education (SDG 4), she emphasised the broader scope, wherein research and innovation can offer solutions



Mrs. Bibi Bouwman, Director for Sustainability and Community Impact at NWU



to combat poverty (SDG 1), hunger (SDG 2), health disparities (SDG 3), unemployment (SDG 8), and other challenges outlined in the SDGs.

However, she stressed that meaningful engagement with communities is imperative. Mrs Bouwman's team is actively implementing systems and processes to facilitate such engagement and accurately gauge its impact. "In addition to doing what's right and effecting lasting change, we stand to earn international recognition in sustainability rankings, where NWU already holds a competitive position," she remarked.

Dr. Frans Smit, a senior lecturer in Chemistry, introduced Solagro's groundbreaking thin film technology at the event. This innovation expands the spectral range of photovoltaic (PV) cells to include ultraviolet (UV) light through down-conversion, enhancing solar panel efficiency by up to 10%. Notably, Solagro's approach, relying on organic compounds rather than expensive metals, addresses the cost and environmental concerns associated with traditional technologies.

The organic compounds utilised by Solagro are non-toxic, further enhancing the technology's appeal from environmental and health perspectives. Dr Smit highlighted the significant impact of this advancement, particularly in making solar energy more accessible and affordable, thereby supporting SDG 7 - ensuring access to affordable, reliable, sustainable, and modern energy for all.

By broadening the spectrum of light utilised by solar panels and improving their efficiency under various conditions, Solagro's technology promises substantial reductions in energy costs and quicker payback periods, facilitating broader adoption of solar energy worldwide. Its practicality and scalability offer a pathway towards achieving sustainable energy goals while addressing economic and environmental challenges.

The convergence of NWU's commitment to the SDGs and innovative technologies like Solagro's thin film underscores the pivotal role universities and research institutions play in advancing global sustainability agendas. As we continue to harness knowledge and innovation, such initiatives propel us towards a more equitable, resilient, and sustainable future for all.



Dr Frans Smit, a senior lecturer in Chemistry

NWU launches educational card game, PROSPER, to mark WORLD IP DAY

To celebrate World IP Day 2024, The North-West University has launched a new educational card game called Prosper. The game is all about using intellectual property (IP) to teach people about the United Nations' 17 Sustainable Development Goals (SDGs).

Prosper was created by the Bunt brothers (Dr Byron Bunt and Dr Lance Bunt), who work at the university. It is meant for teachers to use with learners and students aged 10 to 22. The game presents different challenges relating to making society better. Players discuss and choose solutions from the cards they hold. These solution cards are see-through, so when you put them on top of the problem cards, they complete the picture.

The Bunt brothers are not new to creating educational games. The elder brother, Byron, is an associate professor in the Faculty of Education, where he focuses on play-based, self-directed learning for History Education, and forms part of the UNESCO Chair in Multimodal Learning and Open Educational Resources. Lance is a Computer Science and Information Systems lecturer and a qualified graphic designer. The two brothers have been avid gamers their whole lives, and produced their first educational game, Dogs of War, in 2023. It covers the history of World War II in a gamified way, using playing cards that depict the main characters of the war as dog caricatures. The game is currently undergoing testing in class settings at the NWU.

Prosper presents different challenges relating to making society better, providing an engaging and interactive way to learn about the SDGs and the role of intellectual property in achieving them. Prosper is available on the **Merlot website**, allowing teachers anywhere to download, print and use it in educational settings. This will further the dissemination of knowledge about intellectual property and sustainable development.

The brothers are working with partners in Europe to create a digital version, which will also be available for free use under a Creative Commons licence. In addition, they are teaming up with the NWU Business School to create a commercial version aimed at management and leadership training.

"It is our humble contribution to getting the SDGs into education, and top of mind for tomorrow's problem solvers," say the Bunt brothers, expressing their motivation behind the development of Prosper.

Their efforts have earned them a nomination to the World Intellectual Property Day Changemakers' Gallery. This gallery features innovators, creators, entrepreneurs and IP practitioners who are using IP rights to accelerate the innovation and creativity we need to achieve the **Sustainable Development Goals** and build our common future.



Prosper box sleeve



Dr Byron Bunt and Dr Lance Bunt

TTIS BREWS COLLABORATION AND CREATIVITY WITH

COFFEE PROFFIE

The Technology Transfer and Innovation Support (TTIS) office at NWU hosted the first round of an innovative initiative titled “Coffee Proffie”, which is aimed at fostering collaboration and creativity among researchers and innovators. This unique campaign seeks to engage the academic community through an informal and interactive coffee-based platform for dialogue, with the overarching goal of enhancing comprehension of the NWU IP policy, identifying prospects for commercialisation, and strengthening connections between researchers, innovators, and the TTIS office.

Mr. Hannes Malan, Manager at TTIS, encourages researchers and innovators to take this opportunity: “Come for a cup of coffee and let’s explore new ideas, talk about the IP policy, and explore commercialization opportunities. Let’s talk about the impact of your research.”

The “Coffee Proffie” campaign represents a fresh addition to traditional engagement strategies, offering researchers and innovators at NWU a relaxed setting to exchange ideas and explore opportunities for collaboration. By leveraging the universal appeal of coffee as a catalyst for conversation, TTIS aims to break down barriers and facilitate meaningful interactions that can lead to impactful outcomes.

Through “Coffee Proffie,” TTIS endeavours to create a supportive ecosystem where individuals can freely share insights, brainstorm innovative solutions, and receive guidance on technology transfer and innovation support. By fostering a culture of cooperation and openness, the campaign aims to empower researchers and innovators to translate their ideas into tangible outcomes that benefit society.



Mr Johann Coetzee, Mr Ntiyiso Shabangu, Dr Simphiwe Nojijezza & Mr Hannes Malan



Mr Ntiyiso Shabangu and Dr Monray Williams



Mr Hannes Malan and Prof Frank Neumann



NWU TTIS explores **SOLAR INNOVATION** at Enel Green Power's solar power plant in the Northern Cape

As part of the ongoing efforts to foster innovation and industry partnerships, the Technology Transfer and Innovation Support (TTIS) team at North-West University recently led a group of academic staff specialising in solar-energy-related projects on an exciting tour of Enel Green Power's Adams Solar Plant in Kathu, Northern Cape.

Consisting of a sea of 611,000 panels, this solar power plant is a shining example of renewable energy production in South Africa. The Adams Solar Plant has an impressive production capacity of 82.5 MW, making it one of South Africa's largest solar power utilities. It started running in 2017. It uses thin-film PV tech to make a massive 170,000 GWh of electricity each year, enough to electrify 53,000 homes! Enel sells its electricity to Eskom through a power purchase agreement of 20 years.

The NWU team was received and guided through the plant tour by the Adams Plant's Operations and Maintenance Plant Supervisor, Mr Maxwell Sibanyoni, supported by his operations and maintenance team. During the visit, the team had the opportunity to explore the inner workings of the plant, examining elements, including the solar panel arrays, smart string boxes, pre-parallel boxes, inverters, transformers and the substation. This exhibition of the production process provided a valuable learning opportunity for all participants, deepening their understanding of solar power technology and its application on an industrial scale. It also provided insight into the operational and maintenance challenges presented by running such facilities in remote and arid locations such as Kathu.

Dr. Mesuli Mbanjwa, the Commercialisation Manager at TTIS, expressed appreciation to Enel Green Power for the opportunity and

Photo supplied by Enel. Adams Solar Plant in Kathu, Northern Cape

the cordial reception. “Visiting the Adams Solar Plant provided us with an invaluable learning experience,” said Dr. Mbanjwa. “We are grateful for the chance to experience this cutting-edge technology that is driving energy sustainability. We are excited by the prospects of collaborating with Enel Green Power in the future on sustainability and just transition projects.”

“Having the opportunity to showcase our operations and technology to the team from North-West University was truly rewarding,” remarked Maxwell Sibanyoni, the Operations

and Maintenance Plant Supervisor at Enel Green Power’s Adams Solar Plant. “Their enthusiasm and curiosity underscored the importance of collaboration between academia and industry in driving innovation in the renewable energy sector. We look forward to continued engagement with NWU.”

This trip wasn’t just about seeing how solar energy works now. It’s also about setting the stage for more exciting projects in the future. When universities and businesses team up like this, amazing things can happen in renewable energy.



Mr. Thapelo Thamaga: Principal Technician, Ms Tlotlo Lefenya: Lab Technician, Ms Abigail Phori: Lecturer (Physics) and Dr Mesuli Mbanjwa: Commercialisation Manager



North-West University Team with Enel Green Power’s Adams Solar Plant

NWU Tech Transfer specialist highlights the role of TTOs at the



2024 Conference in Maputo, Mozambique



*Mr Ntiyiso Shabangu,
Technology Transfer Specialist*

At the 2024 Southern African Research and Innovation Management Association (SARIMA) conference in Maputo, Mozambique, Mr. Ntiyiso Shabangu, Technology Transfer Specialist at North-West University Technology Transfer and Innovation Support (TTIS), underscored the crucial role of Technology Transfer Offices (TTOs) in conveying the impact of research to diverse stakeholders. His presentation resonated with the theme “It takes a village to raise a child,” an African proverb highlighting the communal effort needed for nurturing and development.

In his presentation, Mr. Shabangu emphasised that effective communication of research outcomes goes beyond sharing information; it is essential for securing funding, fostering collaborations, and demonstrating the societal benefits of research. Just as a child’s upbringing involves many contributors, TTOs play a pivotal role in this collective mission, actively disseminating research impact to stakeholders including policymakers, industry partners, investors, and the public.

Mr. Shabangu likened the role of TTOs to navigating a multicultural village, where complex research must be communicated to individuals with varied levels of understanding and backgrounds. He highlighted the need for tailored communication strategies that simplify complex ideas, ensuring a broad audience can appreciate the broader implications of advanced technologies.

He further noted that adopting a forward-thinking approach and leveraging technologies such as artificial intelligence (AI) can position TTOs as leaders in global research and innovation management. Customising communication strategies to the interests and backgrounds of different stakeholders helps ensure messages are effectively received.

Collaboration between TTOs and researchers is vital for successful communication. Building and maintaining trust in this partnership is essential for conveying research outcomes effectively. Mr. Shabangu shared examples of NWU’s innovative approaches, including news articles, digital platforms, IP awareness sessions, and the “Coffee Proffie” campaign, which have significantly improved outreach to various stakeholders.

Mr. Shabangu highlighted that, much like the communal effort needed to raise a child, TTOs are essential in bridging academia and society. By addressing communication challenges, implementing strategic recommendations, and prioritising effective outreach, TTOs are crucial in turning academic research into practical solutions that benefit society.

TTIS champions intellectual property awareness across NWU campuses



TTIS meets Pharmacen™



Faculty of Natural and Agricultural Science

The Technology Transfer and Innovation Support (TTIS) is dedicated to fostering innovation and protecting intellectual property (IP) within the academic community. To ensure that researchers and innovators are well-informed about the services and opportunities available to them, TTIS conducts IP Awareness sessions across various faculties.

Our IP Awareness sessions are designed to engage directly with faculty members and innovators at NWU. By visiting different departments, we aim to create a convenient platform for researchers to learn about the critical role of IP in their work and how TTIS can support them in their endeavours.

During these sessions, our experts provide detailed information on:

- **IP Protection:** Understanding the importance of safeguarding your innovations and the processes involved.
- **Technology Transfer:** Exploring the pathways to commercialising your research and bringing your innovations to market.
- **Funding Opportunities:** Identifying potential funding sources and how TTIS can assist in securing financial support for your projects.
- **Collaborations:** Learning about opportunities for collaboration with industry partners and other research institutions.

“Disclose your research to TTIS to seek assistance with Intellectual Property protection and unlock opportunities for commercialisation and collaboration, says Mrs Simphiwe Gumede, TTIS Commercialisation Specialist, encouraging all innovators and researchers at NWU to connect with TTIS for personalised support and guidance.





Mrs Mari Berner, Mr Ntiyiso Shabangu, Dr Thabisile Mpozana, Marné van Niekerk Monique Moses, Regaogetswe Mashigo and Dr Mesuli Mbanjwa

TTIS welcomes newly joined NWU academic staff during a special Meet & Greet session

North-West University's Technology Transfer and Innovation Support (TTIS) hosted its inaugural Meet & Greet event for newly joined academic staff members in Potchefstroom. The event, held to foster collaboration between academia and the TTIS office, attracted a diverse group of professionals eager to explore opportunities for innovation and knowledge exchange.

The Meet & Greet provided a valuable platform for new academic staff to connect with the TTIS team and learn about the resources and support available for fostering collaboration and driving innovation. It also served as an opportunity for personal introductions and discussions about subjects and research interests.

Dr Mesuli Mbanjwa, Commercialisation Manager at TTIS, delivered an inspiring keynote address that underscored the significance of collaboration in driving technological advancement.

"We're excited to welcome our new academic staff members to the NWU community, this Meet & Greet was just the beginning of our journey together. We look forward to exploring how we can support your research interests and collaborate on projects that have a meaningful impact," said Dr Mbanjwa.

The TTIS team will continue to engage with various academic staff members, ensuring inclusivity and support for all. By maintaining an ongoing dialogue, TTIS aims to facilitate meaningful collaborations that lead to impactful research outcomes and real-world solutions.

NWU'S COLLABORATIVE EFFORTS SHINE

The Malawi University of Business and Applied Sciences (MUBAS) officially opened its University Innovation Pod (UniPod) at its main campus in Blantyre. The inauguration of UniPod marked a big step forward in promoting innovation and entrepreneurship among Malawian students and researchers with the sponsorship of the United Nations Development Programme (UNDP).

The journey leading to the launch of UniPod began with a visit by a Malawian group – aiming to establish Malawi's first technology transfer office at MUBAS – to the NWU's Technology Transfer and Innovation Support (TTIS) office in 2022. This collaboration resulted in the creation of the MUBAS Technology Transfer Office within UniPod.

Dr Janine Chantson, TTIS chief director, attended the UniPod launch and caught up with the Malawian colleagues on the progress made since the collaboration started in 2022.

For the NWU and the TTIS office, the launch of UniPod represents more than just a ceremonial event.

It signifies a strengthened partnership focused on promoting innovation and driving socio-economic development in Malawi.

Dr Chantson emphasises the importance of collaborations: "The TTIS is pleased to have contributed to the shaping of the processes and frameworks of MUBAS's Technology Transfer Office. This collaboration is not just about working together. It shows a commitment to south-south cooperation and sharing expertise and resources for mutual benefit." Dr Chantson underscores the significance of such partnerships, highlighting their real impact in fostering local innovation ecosystems. She further emphasises that these collaborative efforts extend beyond mere cooperation, embodying a shared dedication to leveraging international partnerships for sustainable development and innovation.

Looking ahead, the partnership between the NWU and MUBAS serves as a source of inspiration, encouraging similar initiatives and strengthening ties between institutions across borders



Dr Madalitso Tsakama: Head of Research and Innovation, Unipod Malawi, Dr Janine Chantson: Chief Director NWU TTIS, Mr Isaac Chingota: Chief Technology Transfer Officer, National Commission for Science and Technology (NCST), Malawi and Mr Thomas Kaluvi: Technology Transfer Officer, NCST



Associate professor Nancy Chitera, MUBAS Vice-Chancellor; Prof Ishmael Kosamu, MUBAS Deputy Vice-Chancellor; and Dr Janine Chantson: Chief Director NWU TTIS.

MEET THE TEAM



Dr Janine Chantson



Mr Johann Coetzee



Dr Mesuli Mbanjwa



Mrs Yolandé Bullock



Mr Hannes Malan



Mrs Simphiwe Gumede



Mr Ntiyiso Shabangu



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