

ON SMU
FOCUS

THE BEST
OF 2024 EDIT

This year, SMU has continued to break boundaries, demonstrating why it remains at the forefront of health sciences education and innovation. From pioneering global research to groundbreaking achievements, 2024 has been a year to remember. This edition celebrates the legacy and continued impact of SMU as a premier institution in South Africa.

contents



SMU AT 10

- 4** Honouring our legacy, shaping the future
- 26** 10 reasons why SMU stands out as a leading health sciences university
- 30** Capping a year of unprecedented achievements and triumphs

ACADEMIC EXCELLENCE

- 6** School of Science and Technology in spotlight as student triumphs in GirlCode Hackathon
- 8** SMU takes global lead in MRI education, marking major milestone for SA radiography
- 14** SMU academic at the forefront of setting standards for clinicians and forensic scientists
- 18** Shaping the global scientific landscape with cutting edge research
- 20** Groundbreaking patent reinforces SMU's reputation as a leading health sciences institution
- 22** SMU pioneers scarless thyroid surgery in South Africa
- 24** Dr Mkhwanazi honoured with prestigious Douglas Award



BE INSPIRED

- 10** From SMU lecture halls to government leadership
- 12** The impact of SMU on South Africa's healthcare landscape
- 16** Shattering stereotypes: Paving the way for diversity in nuclear medicine
- 28** Sports Officer wins Administrator of the Year Award, highlighting SMU's holistic student development

Editor's NOTE



Dear Reader,

As we close out the 2024 academic year, we reflect on a period filled with remarkable achievements, transformational growth, and enduring resilience at Sefako Makgatho Health Sciences University (SMU). This special edition of our staff publication, *The Best of 2024*, is a tribute to every individual who has contributed to SMU's legacy and future. It is a proud and celebratory review of a year in which we have demonstrated excellence in education, research, and community impact while marking the 10th anniversary of our transition from the Medical University of Southern Africa (MEDUNSA) to SMU.

This year has truly been one of distinction. Our esteemed schools have led groundbreaking research, our students have shown exemplary leadership and dedication, and our alumni have continued to make meaningful strides in the health sciences field. SMU's stature has shone brightly in international rankings, affirming our place on the global stage. These achievements reflect our commitment to academic excellence and our unwavering dedication to addressing some of the most pressing health challenges in South Africa and beyond.

Our journey from MEDUNSA to SMU is a testament to our resilience, adaptability, and forward-thinking approach to health sciences education. Over the past decade, we have expanded our vision, modernised our facilities, and created a university culture that promotes inclusivity, critical thinking, and service to the community. As we look back, we honour the legacy of MEDUNSA and celebrate the pioneering spirit that continues to drive SMU forward.

This publication highlights some of the finest achievements of 2024 – accomplishments that have fortified our position as a premier institution in health sciences. These stories represent the heart of our university: a community deeply committed to transforming healthcare, empowering future leaders, and fostering social change.

Our ambitions do not end here. As we celebrate a decade of SMU, we also set our sights on the future. Our aim is to build on our strengths and grow as a globally competitive university. Through strategic partnerships, a commitment to excellence, and an emphasis on innovation, we will continue to enhance SMU's impact and relevance on the world stage.

To be part of SMU is to be part of a community that uplifts, inspires, and redefines possibilities. Thank you to our dedicated staff, our brilliant students, our distinguished alumni, and every individual who upholds our mission. As you read through *The Best of 2024*, may you feel a profound sense of pride and accomplishment in our shared achievements. Together, we are building a legacy that will shape the future of healthcare and position SMU as a leader in health sciences for generations to come.

Here's to a remarkable 2024 and to many more decades of making a difference.

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Honouring our legacy, shaping the future



As Sefako Makgatho Health Sciences University (SMU) marks its 10th anniversary in 2024, the institution pauses to reflect on a transformative journey that began long before its renaming, evolving from the Medical University of South Africa (Medunsa) into a premier institution for health sciences. The milestone brings into sharp focus the university's role in shaping South Africa's healthcare sector and the countless contributions its alumni have made to society, health innovation, and leadership.

Founded as Medunsa in 1976, the institution was dedicated to training healthcare professionals, with an initial focus on serving underserved communities. Medunsa quickly became a critical pillar in the South African healthcare landscape, especially during the apartheid era, producing doctors, nurses, and other medical professionals who would go on to serve in regions of the country where healthcare was scarce. The university's commitment to medical training that prioritised access and equity laid a foundation of social responsibility, one that continues to define SMU today.

In 2014, Medunsa was officially reconstituted as SMU, in honour of Sefako Makgatho, a respected anti-apartheid leader and former president of the African National Congress. The renaming signalled a new chapter, symbolising a dedication to healthcare and the ideals of

transformation and inclusivity. The shift was part of a broader strategy to reposition the institution as a world-class health sciences university, reinforcing its commitment to producing healthcare professionals equipped to meet the needs of a democratic South Africa and an interconnected world.

Over the past decade, SMU has built on Medunsa's legacy, expanding its academic offerings and enhancing research initiatives. It has become renowned for producing health practitioners who excel in various fields of health sciences and research. The university's dedicated schools have pushed boundaries in clinical research and innovation, often addressing health challenges specific to South Africa, such as tuberculosis, HIV/AIDS, and maternal health. Today, SMU graduates are skilled practitioners and leaders in politics, policy-making and health advocacy, shaping the framework of the nation's healthcare system.

Among SMU's distinguished alumni are individuals whose contributions have profoundly impacted both local and global health landscapes. Alumni occupy leadership positions in hospitals, NGOs, and government agencies, where they are instrumental in driving healthcare reform, advancing medical technology, and improving patient care standards. SMU's alumni network underscores the university's role as a training ground for excellence and leadership, from esteemed clinicians and surgeons to public health experts and healthcare administrators.

As SMU celebrates this pivotal anniversary, it continues to innovate and adapt to meet the evolving demands of the healthcare sector. Recent achievements include increased international collaborations, new investments in cutting-edge facilities, and a growing focus on interdisciplinary research to address global health issues. Furthermore, the university's commitment to social responsibility remains unwavering. SMU's ongoing outreach programmes and community health initiatives testify to its dedication to improving lives, especially within disadvantaged communities.

Looking ahead, SMU is set to expand its influence further, aspiring to attract students and scholars from across Africa and beyond. It remains a beacon of academic excellence and a driver of social progress in South Africa, committed to equipping future healthcare professionals with the skills and compassion needed to tackle the complex health challenges of the 21st century.

As 2024 draws to a close, SMU's 10th anniversary reminds of how far the university has come and affirms its place as a cornerstone of health sciences in South Africa. With a legacy rooted in resilience, transformation, and excellence, SMU stands poised to continue shaping the future of healthcare for decades to come.



The university's commitment to medical training that prioritised access and equity laid a foundation of social responsibility, one that continues to define SMU today.



School of Science and Technology in spotlight as student triumphs in GirlCode Hackathon

Sefako Makgatho Health Sciences University (SMU) student Tsholofelo Sekome has made history, leading her team to first place in the highly competitive GirlCode Data Science Hackathon. Her project, PrincessCare, an AI-powered platform tackling menstrual health access for young women, earned top honours among a talented pool of participants, spotlighting SMU's Science and Technology School as a leader in cutting-edge, socially impactful tech education.

Sekome, a Bachelor of Science student in Mathematical Sciences, brings an unwavering passion for education and community improvement to her studies and projects. Her commitment reflects the high calibre of SMU's Computer Science and Information Technology (CSIT) department, which has equipped her with the skills to take on real-world challenges in technology. Under the mentorship of Mosima Masethe, a dedicated CSIT Lecturer, Sekome has honed her data science and web development abilities, channelling these skills into the transformative PrincessCare platform.

"Winning the hackathon wasn't just about the prize; it was about proving that young women can lead in tech and bring meaningful change," Sekome shares. She and her teammate, Reatlilwe Maroga, designed PrincessCare as a menstrual health-tracking app and an e-commerce platform that empowers women to purchase products while supporting menstrual care for underserved communities. The project's alignment with Sustainable Development Goals for health, education, and gender equality demonstrates Sekome's forward-thinking approach to tech innovation.

This achievement underscores SMU's strength in fostering technically skilled graduates capable of competing at the highest levels. "SMU students aren't just learning — they're leading," remarks Masethe. "Tsholofelo's achievement exemplifies the vision of our School of Science and Technology: to produce data scientists and innovators who make a lasting impact on society."

Sekome's journey to the top wasn't without obstacles. Initially focused on a water sanitation solution, her team faced early setbacks when two members dropped out, prompting a pivot towards menstrual health after receiving feedback from mentors. Yet, resilience and mentorship from SMU's academic community guided Sekome and Maroga to refine their vision, resulting in PrincessCare's compelling solution.

"Our goal with PrincessCare is to empower women with the tools to manage their health while addressing sanitation gaps in underserved communities. This project merges public health and technology in a way that can change lives," Sekome explains.

For the School of Science and Technology at SMU, Sekome's success marks just one chapter in a story of student excellence. With state-of-the-art data science, Artificial Intelligence (AI), and software engineering training, the school is positioned as a premier institution in South Africa, continuously producing skilled, innovative, and prepared graduates to address the country's most pressing issues.

Looking ahead, Sekome and her team plan to enhance PrincessCare by partnering with NGOs for product distribution, expanding features, and gathering user feedback to refine the platform further. Her vision for the future underscores SMU's mission to educate and inspire its students to become changemakers and leaders in their fields.

To young women aspiring to join the tech industry, Sekome offers profound advice: "Stay curious and confident. Build projects that challenge you, and surround yourself with communities that support you. Believe in your abilities — resilience and dedication will lead you to success."

Sekome's landmark win at the GirlCode Hackathon showcases the strength of SMU's curriculum, the expertise of its faculty, and the tenacity of its students. In a rapidly evolving world, SMU's School of Science and Technology continues to stand as a beacon for high-quality, competitive education in the STEM fields.

SMU takes global lead in MRI education, marking major milestone for SA radiography

Khomotso Motiang, Lecturer in the Department of Radiography at Sefako Makgatho Health Sciences University (SMU), has been awarded the prestigious International Society of Magnetic Resonance Radiographers and Technologists (ISMRT) Future Leaders Fellowship. This fellowship, an initiative developed in collaboration with the Bill & Melinda Gates Foundation, aims to advance MRI education in Africa and other globally underserved countries, positioning Motiang at the forefront of driving innovations in MRI education. This recognition highlights her exceptional contributions to the field and solidifies SMU's standing as a leader in health sciences education.

The ISMRT Future Leaders Fellowship is a highly competitive global initiative that supports emerging leaders in the field of MRI. Through this Fellowship, Motiang gains access to cutting-edge MRI resources, mentorship from global experts, and an international platform to drive innovations in patient care and radiographic research. As part of the Fellowship, Motiang is working to establish the ISMRT-South African Division, which will bring together radiographers and educators from across the country to collaborate and share best practices.

"I am deeply honoured by this opportunity," says Motiang. "The Fellowship equips me with the knowledge and resources to enhance MRI education in South Africa, where access to equipment for student training is often limited. I am committed to empowering the next generation of radiographers and ensuring they have the skills to excel, even with scarce resources."

Motiang's commitment to advancing education in radiography is evident not only in her personal achievements but also in the success of her students. In 2024, she supervised a team of final-year students who won the Best Under-graduate Oral Presentation at the university's Research Days. Her efforts underscore the critical need for improved MRI training infrastructure to equip future health professionals better and enhance patient outcomes.

Joining SMU in 2022, Motiang's passion for teaching quickly garnered recognition, earning her the 2023 Vice-Chancellor's Teaching Excellence Award in the Emerging Category. Her academic journey includes presenting at three international conferences and fifteen national events, showcasing her expertise and dedication to professional growth. Her hard work and determination led to her winning the Best Oral Presentations in Forensic Imaging and MRI Tracks at the 2023 Society of Radiographers of South Africa Congress. This recognition opened doors for her to present in Singapore and Hong Kong in 2024, further solidifying her international standing in the field.

Motiang's journey to global recognition is also a testament to her resilience. Despite the challenges of securing funding for professional development, she persevered, securing sponsorship through the Society of Radiographers of South Africa. Her commitment to growth continues to shape her professional trajectory and the future of radiography in South Africa.

Continues to page 9...



"I feel an immense sense of pride and responsibility to make a lasting impact in my field. This Fellowship is not just a personal achievement but a step toward advocating for the radiography profession and connecting with a global community of innovators," says Motiang.

Her success highlights the exceptional calibre of scholars at SMU and the university's ongoing efforts to employ top talent in critical healthcare fields. It reflects SMU's dedication to fostering diversity and advancing excellence as its distinguished scholars continue to make local and international waves.



From SMU lecture halls to government leadership

In a historic achievement for both Limpopo and Sefako Makgatho Health Sciences University (SMU), alumna Dr Phophi Ramathuba rose to become the province's first woman Premier, a testament to SMU's tradition of nurturing trailblazing leaders who shape society. Ramathuba's rise highlights her remarkable personal journey and SMU's legacy of excellence and its impact in producing high-calibre professionals who embody compassion, resilience, and service.

Ramathuba's journey from the village of Ha-Mashamba to the provincial legislature is a powerful narrative of ambition fuelled by education and the values instilled by SMU. Born at Elim Hospital in 1973 and raised by teacher parents, she learned early on that resilience and hard work could break down barriers. Her parents' dedication to education ignited her own ambition, and, as she recalls, her father insisted she learn both academic and practical skills, like milking goats—a reminder that capability knows no gender.

At SMU, Ramathuba found the ideal setting to channel her commitment to public service. Graduating with an MBChB, she laid the foundation for a distinguished career. SMU's rigorous academic environment honed her leadership skills, while her activism with the Student Representative Council (SRC) and the South African Student Congress (SASCO) empowered her with a vision for societal impact. She became a prominent advocate for healthcare professionals' rights, founding the South African Medical Association Trade Union (SAMATU) and later serving as President of the South African Medical Association (SAMA). Her impressive credentials, which include advanced studies in Medical Pharmacology and Health Management, showcase SMU's dedication to producing well-rounded leaders who continue to inspire in their fields.

Ramathuba's career has consistently reflected SMU's commitment to social responsibility and leadership in healthcare. Beginning her professional journey as an intern at Mokopane Hospital, she rose through the ranks to become CEO of Voortrekker Hospital and, later, Limpopo's MEC for Health. Her experience at SMU undoubtedly prepared her for the complex challenges of these roles, where she implemented transformative policies in healthcare access and governance.

In her maiden speech as Premier, Ramathuba drew on the core values of compassion and integrity: “We are on course with a plan for inclusive economic growth, job creation, and building a capable, ethical, developmental state.” Her vision aligns closely with SMU's ethos of empowering individuals who serve communities and uplift society, and her leadership style—emphasising ethical governance and strategic growth—reflects the institution's dedication to excellence and integrity.

As Premier, Ramathuba envisions economic prosperity and infrastructural development in Limpopo, from launching Special Economic Zones (SEZs) to initiating a high-speed rail project. Her focus on education and skill development has already secured R130 million in apprenticeship programmes, echoing SMU's mission to promote education that leads to real-world impact.

Ramathuba's remarkable path from SMU's classrooms to the Premier's office exemplifies the university's legacy of excellence. “SMU became the theatre that prepared me for leadership,” she reflects. Her story is a compelling reminder of SMU's role as a crucible for leaders who make lasting contributions across South Africa and beyond.





The impact of SMU on South Africa's healthcare landscape

As Sefako Makgatho Health Sciences University (SMU) reflects on its tenth anniversary, it mirrors its achievements and the remarkable individuals who have significantly shaped South Africa's healthcare services. SMU stands as a beacon of excellence in health sciences education, playing a pivotal role in nurturing the careers of its distinguished alumni, who are making substantial contributions to the country's healthcare system.

Among these inspiring figures is Dr Fhatuwani Godfrey Mbara, the Chief Executive Officer of Dr George Mukhari Academic Hospital (DGMAH) and a proud SMU alumnus. Mbara's journey from humble beginnings in the village of Ha-Budeli in Venda to a prominent leadership role exemplifies the transformative power of education. Growing up in a modest household, he faced financial struggles, especially after his father stopped working in 1985. With no formal qualifications, his mother became the primary breadwinner, earning a meagre R400 per month from domestic work to support three children. Witnessing her resilience instilled in him a determination to rise above his circumstances.

Since its establishment, SMU has produced a distinguished cadre of graduates like Mbara, equipped with comprehensive knowledge and practical skills to address critical health challenges in South Africa. Many alumni have ascended to leadership positions, advocating for improved health services and innovative practices that directly benefit the public. Mbara's heartfelt message to SMU stakeholders reflects this ethos: "I would not have acquired the postgraduate and other qualifications that I have earned had it not been for SMU's leadership. SMU should continue to produce more great leaders and more healthcare professionals because there will never be a point where there is no need for this kind of service."

Mbara's strategic decision to enrol at SMU, recognising the financial challenges posed by other institutions, was

instrumental in his academic success. With the support of a National Student Financial Aid Scheme (NSFAS) bursary, he focused on his studies without the overwhelming burden of financial strain. His dedication paid off as he graduated with distinction, establishing a reputation as a committed scholar.

In alignment with its mission to enhance the country's health system, SMU actively collaborates with various health institutions to ensure its programmes remain relevant and responsive to community needs. The university's strategic partnerships facilitate research initiatives and community outreach programmes, bridging the gap in healthcare access for underprivileged populations. This commitment to making education accessible is evident in its various support systems designed to empower students from historically disadvantaged backgrounds through scholarships and mentorship programmes.

As Mbara leads DGMAH, he embodies the values instilled in him during his time at SMU, promoting accountability and compassion in his leadership philosophy. Under his stewardship, he envisions significant changes, prioritising staff morale and improving infrastructure to enhance patient care. His forward-thinking approach includes fostering partnerships with local businesses and enhancing the hospital's research output, recognising that effective healthcare delivery requires collaboration and innovation.

As SMU continues to honour its past while looking to the future, the story of Mbara serves as a powerful testament to the university's role in nurturing talent and shaping South Africa's healthcare landscape. His journey illustrates the profound impact that dedicated education can have on individuals and communities, driving forward the narrative of healthcare excellence in South Africa.

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SMU academic at the forefront

of setting standards
for clinicians and
forensic scientists



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"My research provides South African standards that serve as resources for clinicians in patient management and for forensic scientists in solving cases."

Sefako Makgatho Health Sciences University (SMU) proudly stands as a bastion of academic excellence in health sciences, led by luminaries like Professor Anna Catherina Oettlé. A Full Professor in the Anatomy and Histology Department, Oettlé has garnered significant recognition for her pioneering work in 3D imaging and forensic anthropology. Her recent C2 rating from the National Research Foundation (NRF) marks her as a leading force in medical research, underscoring SMU's reputation as a centre for high-calibre academic and scientific contributions.

Oettlé's career, spanning both clinical practice and academic research, has been a journey driven by a commitment to advancing anatomical knowledge. Her formative years as a medical doctor, coupled with her distinction-earning MSc in Anatomy from the University of Pretoria, established her expertise. This unique background has allowed her to approach research with a critical perspective rooted in clinical application. "Anatomy isn't merely descriptive; understanding anatomical variations is essential for patient management and clinical accuracy," she explains, highlighting the foundational value of her work for both academics and practitioners.

Among Oettlé's many contributions is her work in 3D imaging, which has deepened the understanding of structural variation in the human body. From studies on dental structures and bone microstructure to detailed measurements of skeletal features like the pelvis, femur, and mandible, her research has advanced knowledge in clinical diagnostics, orthodontics, and forensic anthropology. Her age-phase classification system based on sternal rib ends, cited over 130 times, is widely used in biological profiling. Her research into the midline lingual canal has transformed dental approaches, while her findings on structural changes in the posterior mandible are making waves in both orthodontics and dentistry.

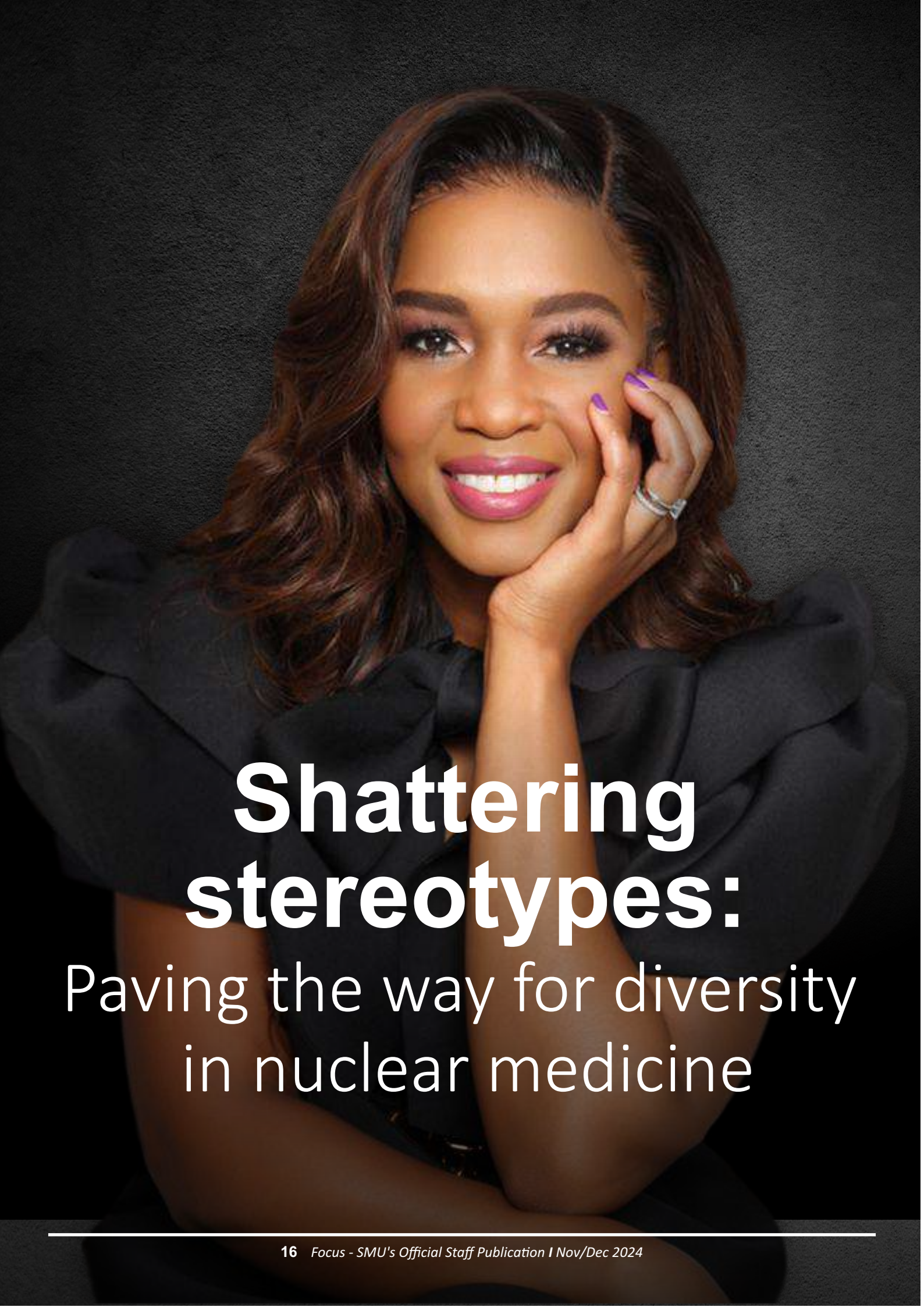
Notably, Oettlé's work has become instrumental in forensic science, where her research aids in the reconstruction of biological profiles and facial features—tools essential for identifying unknown victims in criminal cases. "My research provides South African standards that serve as resources for clinicians in patient management and for forensic scientists in solving cases," she notes, emphasising the societal impact of her work beyond academia.

Oettlé's career is also marked by her dedication to collaboration, both locally and internationally. Partnering with engineers has proven essential for data acquisition, while connections with leading French researchers from institutions such as the University of Bordeaux have broadened her work's reach. "Collaborating with engineers has been particularly rewarding," she says, "as they bring expertise in mathematical modelling, which has enriched my research output." Her collaborative efforts amplify not only her personal research but also SMU's reputation as a globally connected academic institution.

Beyond her contributions to research, Oettlé is deeply invested in mentorship, guiding numerous postgraduate students and postdoctoral fellows toward becoming independent researchers and educators. "The most rewarding part of mentorship is seeing people grow and develop into independent researchers and teachers," she shares. Known for her supportive yet rigorous guidance, Oettlé's mentorship style champions SMU's mission to foster the next generation of scientific leaders and innovators.

Looking ahead, Oettlé remains committed to advancing her research in 3D imaging and biological profiling. With technology in the field evolving rapidly, she aims to keep SMU at the cutting edge of these advancements. She is currently applying for funding to acquire new scanning equipment and hopes to further expand her collaborations with engineers to refine 3D measurement techniques. "I hope to stay at the forefront of these developments," she says, envisioning a future where SMU is recognised as a leader in forensic and clinical research innovations.

For students fortunate enough to work with Oettlé, the opportunity to learn under such an esteemed scholar provides a gateway to practical, high-impact research experience. Engaging with her cutting-edge projects, students gain insights into research methodologies that bridge theoretical learning with real-world applications. Oettlé's commitment to research and academic excellence reinforces SMU's position as a premier institution in health sciences, inspiring a culture of inquiry, perseverance, and a relentless pursuit of knowledge that continues to benefit students and the broader medical community alike.



Shattering stereotypes:

Paving the way for diversity
in nuclear medicine

In a landmark appointment that exemplifies Sefako Makgatho Health Sciences University's (SMU) commitment to fostering diversity in critical skill areas, Dr Dineo Tsabedze was appointed to head the Department of Nuclear Medicine, a field traditionally dominated by men. As both the Academic and Clinical Head of Nuclear Medicine at SMU and Dr George Mukhari Academic Hospital (DGMAH), Tsabedze symbolises SMU's vision of inclusive leadership by women in pivotal healthcare roles, reinforcing its commitment to nurturing top talent.

With an impressive academic background, including a PhD and a Master of Medicine in Nuclear Medicine (Cum Laude) from the University of the Witwatersrand, Tsabedze brings a blend of clinical expertise, academic rigour, and compassionate leadership to her new position. Her contributions to nuclear medicine and her groundbreaking research—marked by 26 published papers, international conference presentations, and multiple awards—showcase her expertise and underscore her impact in a field often led by men.

Tsabedze's leadership philosophy, based on kindness, humility, and inclusivity, creates a supportive atmosphere in the department. Her approach ensures that each member has a voice, from the administrative staff to radiopharmacists and radiographers. "When people feel valued, they naturally align with the department's goals," she explains, embodying a collaborative leadership style that is both inspiring and effective. Her inclusive approach resonates deeply with SMU's vision to cultivate an environment where diverse talents thrive, especially in high-impact fields.

Her plans to elevate the Nuclear Medicine Department span across patient care, education, and research. She has initiated operational changes, including a review of standard procedures to cut waiting times and revisions to imaging protocols for more efficient patient-centred care.

Tsabedze is equally focused on enhancing the academic and research output within the department. She has set a minimum publication standard, ensuring that her team contributes meaningfully to the field's knowledge base. By encouraging interdepartmental research collaborations and hosting weekly seminars and journal clubs, she creates a culture of continuous learning and professional growth, positioning SMU as a key player in nuclear medicine advancements.

A champion of new technologies, Tsabedze is leading her department towards precision medicine, focusing on disease-specific treatments and patient-tailored therapies. Her vision includes harnessing artificial intelligence to improve diagnostic imaging and personalised treatment, setting a progressive course that aligns with SMU's goals for pioneering healthcare innovation.

Tsabedze's role is a milestone in SMU's journey towards fostering female leadership in critical fields. Through her achievements, SMU is advancing nuclear medicine and setting a new standard for gender diversity in healthcare leadership. Her work stands as a beacon for aspiring women in medicine, exemplifying the transformative impact of inclusive leadership and the importance of diverse representation in the most specialised areas of healthcare.

In recognising Tsabedze's role, SMU celebrates a new chapter in its mission to empower South Africa's top talent in fields that demand excellence and empathy. Her story, marked by resilience and leadership, reflects SMU's dedication to promoting equity and innovation, positioning the university as a forward-looking institution committed to shaping the future of healthcare.



Shaping the global scientific landscape with cutting-edge research

Dr Clarissa Naidoo, a Postdoctoral Researcher in the Department of Biology and Environmental Sciences at Sefako Makgatho Health Sciences University (SMU), is redefining the future of green nanotechnology. At the 2024 SMU Research Day, she was awarded first place in the postdoctoral research category for her groundbreaking work on the biosynthesis of silver nanoparticles (AgNPs) using *Tabernaemontana ventricosa*, a medicinal plant indigenous to

Continues to page 19...

South Africa. This innovative research positions Naidoo at the forefront of sustainable health solutions and reinforces SMU's reputation as a leader in impactful scientific research.

Naidoo's research addresses the growing demand for nanoparticles in medical, agricultural, and environmental applications. Her work stands out for its novel approach to nanoparticle synthesis, using plant-based methods that are more environmentally friendly than conventional chemical processes. By leveraging the unique biochemical properties of *T. ventricosa*, Naidoo has developed a sustainable method for creating AgNPs, significantly reducing the environmental footprint typically associated with traditional synthesis techniques.

The application of advanced characterisation techniques such as Scanning Electron Microscopy (SEM), Energy-Dispersive X-ray (EDX) analysis, and Fourier Transform Infrared (FTIR) spectroscopy confirmed the successful synthesis of AgNPs. The nanoparticles exhibited a diverse range of shapes, including spherical, ovate, and triangular, with sizes ranging from 16 to 80 nm. Importantly, they demonstrated exceptional stability—an essential feature for their potential therapeutic applications.

The bioactivity of the AgNPs was assessed, with promising results. The nanoparticles demonstrated significant antibacterial properties, effectively combating multiple bacterial strains, which can be attributed to the antimicrobial compounds naturally present in *T. ventricosa*. More strikingly, the research also revealed the cytotoxic potential of these nanoparticles, with an IC₅₀ value of 0.39 µg/mL in inhibiting the growth of HeLa cancer cells. This suggests that the plant-derived AgNPs could serve as potent agents in cancer treatment, providing new possibilities for future oncological therapies.

Naidoo's study represents the first documented instance of AgNP synthesis from *T. ventricosa*, marking a pivotal moment in the exploration of plant-derived nanoparticles. Her research opens exciting new avenues for antibacterial and anticancer applications and highlights the importance of selecting the right plant sources for nanoparticle synthesis. Furthermore, her findings lay the groundwork for future studies into the specific phytochemicals responsible for nanoparticle formation, which could enhance the efficacy and safety of plant-based therapies. This innovative research has far-reaching implications. Not

only does it contribute to the field of nano-technology, but it also advances the understanding of plant biochemistry and its potential applications in medicine. Naidoo's work exemplifies SMU's commitment to integrating cutting-edge science with environmental sustainability, positioning SMU as a hub for research that addresses pressing global challenges.

The impact of Naidoo's work extends beyond the realm of nanotechnology. By developing sustainable, bio-inspired solutions, she is advancing a new era of medical and environmental research. Her contributions underline the value of integrating scientific innovation with ecological responsibility—principles that are at the core of SMU's broader research mission. Through her work, Naidoo is not only advancing health sciences but also helping to shape a future where sustainable, plant-based solutions play a central role in medicine.

As SMU continues to make strides in research excellence, Naidoo's achievements exemplify the university's role in shaping the global scientific landscape. With a focus on innovative, eco-friendly solutions to health and environmental issues, her research enhances SMU's reputation as a world-class institution for cutting-edge, socially responsible science.

Naidoo's contributions also underscore SMU's increasing prominence on the global research stage. As the university continues to foster excellence in research, particularly in health sciences and sustainability, the groundbreaking work of academics like Naidoo demonstrates SMU's leadership in driving scientific innovation with real-world impact. Her research not only positions her as a leader in nanotechnology but also highlights SMU's dedication to producing research that makes a meaningful difference in the world.

Through such achievements, SMU continues to cement its place as a premier institution in health sciences, advancing both the local and global scientific communities with research that balances innovation with sustainability.

Groundbreaking patent reinforces

SMU's reputation as a leading health sciences institution



Sefako Makgatho Health Sciences University (SMU) registered its first-ever patent in 2024, a significant milestone that underscores its commitment to research and innovation in the health sciences sector. The patented drug, Raloxifene Hydrochloride Hydrate Solvate, has the potential to revolutionise the treatment of postmenopausal osteoporosis and breast cancer, reinforcing SMU's position as a leader in health sciences education and research.

This groundbreaking patent is the culmination of the extraordinary journey of Emmanuel Kiyonga, a Master's student in the School of Pharmacy. Kiyonga's story of perseverance is a testament to the university's ethos of overcoming adversity through education and innovation. Originally from Kampala, Uganda, he faced numerous challenges during his educational journey, including financial difficulties that saw him expelled from various

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schools. Undeterred, he moved to South Africa in 2009 and enrolled at SMU, where he pursued his Bachelor of Science in Occupational and Environmental Health and later transitioned to a Bachelor of Pharmacy.

Under the mentorship of esteemed faculty members, Kiyonga dedicated himself to research focused on drug formulation, culminating in discovering a novel compound with enhanced solubility and dissolution properties. This innovative research earned him accolades, including the Young Scientist Award at the Academy of Pharmaceutical Sciences of South Africa and recognition during SMU's Research Week.

The journey from research to patent was supported by SMU's Technology Transfer Office, which facilitated funding from the Technology and Innovation Agency (TIA) to develop Kiyonga's groundbreaking work further. The patent signifies a major achievement for Kiyonga and highlights SMU's robust infrastructure for nurturing innovative research that can lead to real-world applications.

Kiyonga attributes his success to his challenging background: "My greatest motivators to pursue education were the extreme poverty I grew up in and the limited opportunities I faced. Education is a weapon; when used correctly, it can change the entire scope of a generation." His achievements exemplify the resilience and determination encouraged within SMU's academic community, inspiring current and future students to pursue their dreams relentlessly.

In response to this significant institutional achievement, SMU's Deputy Vice-Chancellor for Academic

and Research, Professor Tandi Matsha-Erasmus, expresses pride in Kiyonga's innovation. "This patent promises to revolutionise clinical management for post-menopausal conditions, reflecting our dedication to advancing health sciences," she states, acknowledging the collaborative effort of the university's Innovation Evaluation Committee and industry partners.

The achievement reinforces SMU's mission to foster a culture of research and innovation that directly impacts healthcare outcomes. Professor Mapaseka Seheri, Director of Research and Innovation, notes the commercialisation potential of Kiyonga's work, stating: "This should serve as an encouragement to other students that with dedication and discipline, the sky is the limit."

Kiyonga's journey resonates with many students at SMU, serving as an inspirational narrative of triumph against the odds. His success is a reflection of SMU's unwavering commitment to nurturing talent and pushing the boundaries of health sciences research.

As the first patent registered by the university, this achievement not only solidifies SMU's position as a premier health sciences institution but also opens doors for future innovations that have the potential to transform healthcare in South Africa and beyond. With a strong focus on research and development, SMU is poised to remain at the forefront of health sciences education, paving the way for the next generation of healthcare leaders.



SMU pioneers scarless thyroid surgery in South Africa

In a landmark achievement for South Africa's medical landscape, Sefako Makgatho Health Sciences University (SMU) made headlines in 2024 by performing the country's first Trans-Oral Endoscopic Thyroidectomy Vestibular Approach (TOETVA). This revolutionary procedure, led by Specialist General Surgeon Dr Winnie Mathe and under the mentorship of Professor Zack Koto, marked a significant advancement in minimally invasive surgery and positions SMU as a premier institution in health sciences education and practice.

The TOETVA technique allows for thyroid surgery without visible scars, utilising natural orifices to access the thyroid gland. This innovative approach not only eliminates the traditional cervical scar but also offers patients a quicker recovery time and reduced postoperative pain. "Patient selection is crucial for TOETVA; we focus on those fit for anaesthesia with small, single-lobe thyroid tumours," explains Dr Mathe, highlighting the precision and care involved in this groundbreaking procedure.

The first patient—a 29-year-old woman diagnosed with a solitary thyroid nodule—benefitted from the TOETVA surgery, which resulted in minimal blood loss and a swift recovery. "The patient was discharged the very next day with no complications," Mathe confirms. This successful operation underscores the exceptional capabilities of SMU's medical professionals and showcases the institution's commitment to pushing the boundaries of surgical innovation.

As a key player in South Africa's healthcare education, SMU has consistently championed advancements in medical practice. The TOETVA surgery exemplifies the exceptional skills of its scholars, specialists, and doctors, who are dedicated to improving patient outcomes while addressing the complexities of healthcare delivery in the nation.

In a broader context, SMU's accomplishments in 2024 reflect a steadfast commitment to healthcare excellence. The university not only equips its graduates with the necessary skills but also fosters a culture of innovation and research that directly benefits the South African healthcare system. Koto emphasises the need for improved infrastructure at SMU, stating, "Imagine what we could achieve with a proper academic hospital. Our next project is the liver transplant programme."

The pioneering efforts of Mathe and her team in performing the first TOETVA surgery in South Africa set a new standard in thyroid surgery and exemplify the crucial role SMU plays in shaping the future of health sciences. As the university continues to lead in surgical innovation, its scholars and specialists are at the forefront of a healthcare revolution, providing South Africans with access to advanced medical care while enhancing the nation's health system.

SMU is not just an institution; it is a driving force in the transformation of healthcare in South Africa, setting the stage for future medical breakthroughs and inspiring a new generation of healthcare professionals committed to excellence.

Dr Mkhwanazi honoured with prestigious Douglas Award

In a milestone achievement, Dr Nsizwenye Ntokozo Mkhwanazi of Sefako Makgatho Health Sciences University (SMU)'s General Surgery Department made history as the first Black African to receive the coveted Douglas Award from the College of Medicine of South Africa (CMSA).

Mkhwanazi's achievement highlights the exceptional calibre of medical training and support at SMU. Under the mentorship of esteemed faculty such as Professor Zack Koto, SMU's Department of General Surgery continues to nurture world-class surgeons prepared to tackle South Africa's most pressing healthcare challenges.

Reflecting on his journey, Mkhwanazi credited his accomplishment to the robust learning environment fostered at SMU, stating: "This achievement is not just mine but represents the vision and guidance provided by Professor Koto and others who came before us. The support at SMU made this success possible." His work, further enhanced by the guidance of Koto and inspired by predecessors like Professor Madiba, stands as a testament to SMU's commitment to fostering excellence in medical education.

Mkhwanazi's passion for surgery and his intensive preparation have prepared him for high-stakes, complex medical scenarios. He emphasises the dedication required for surgical mastery, explaining how he turned daily study into a lifelong habit. "It didn't matter where I was; I made time for my studies," he shares, acknowledging the unyielding support of his wife, Dr Lee Phala-Mkhwanazi, throughout this rigorous journey.

Currently training in colorectal surgery at Groote Schuur Hospital, he is driven by his desire to bridge healthcare gaps, particularly in oncology. He sees an urgent need for advanced treatments, including precision oncology and minimally invasive surgical methods, to combat the rising rates of colorectal cancer in Africa. "My goal is to make robotic and precision oncology a reality for our communities," he states, underscoring his commitment to integrating cutting-edge surgical techniques into local practice.

Mkhwanazi's work exemplifies the transformative impact of SMU's educational approach. SMU produces skilled surgeons and pioneers solutions to improve healthcare access across South Africa and beyond. With visionary programmes, global partnerships, and a legacy of high-impact medical education, SMU is firmly positioned as a premier institution on the global stage.

The award-winning registrar's message to future scholars and medical professionals is one of resilience and self-belief: "Daily efforts and the support of family and mentors are essential. Academic success can seem impossible, but it's within reach with dedication and a relentless work ethic."

Mkhwanazi's journey, backed by SMU's innovative curriculum and distinguished faculty, stands as a powerful testament to the institution's role in shaping South Africa's future healthcare leaders.



10

REASONS

WHY SMU

STANDS OUT

AS A LEADING

HEALTH SCIENCES UNIVERSITY

The 2024 academic year at Sefako Makgatho Health Sciences University (SMU) has been one of remarkable achievements, further solidifying its position as a premier institution in health sciences education. From groundbreaking research by academic staff and accolades earned by students to notable career advancements among alumni, SMU has made significant strides in fostering a transformative environment. These accomplishments reflect SMU's commitment to excellence and innovation, marking the university as a beacon of academic excellence. Here are ten reasons why SMU is a standout institution in the realm of health sciences:

Continues to page 27...



1

High-Calibre Academic Staff

SMU boasts an accomplished team of academic professionals who bring a wealth of expertise and dedication to teaching, research, and service. Their commitment to fostering the next generation of health leaders is evident in both their professional achievements and unwavering support for students.

2

Innovative Research Initiatives

The university is at the forefront of research in health sciences, focusing on areas that address pressing healthcare needs in South Africa and beyond. Research led by SMU faculty and students is creating meaningful impact, particularly in community health and healthcare access.

3

Student Success and Recognition

SMU students are frequently recognised for their leadership, innovation, and academic achievements. From excelling in national competitions to engaging in social advocacy, our students exemplify the values and aspirations of SMU.

4

Strong Alumni Network

The university's alumni are making strides in the healthcare sector, both locally and internationally. Their accomplishments and contributions to the field serve as an inspiration to current students and a testament to the quality of education at SMU.

7

Cutting-Edge Facilities and Resources

SMU's state-of-the-art facilities include advanced laboratories, simulation centres, and a medical library, offering students access to the resources they need to excel in their studies. These facilities support a hands-on learning approach, preparing students for real-world challenges.

6

Commitment to Community Health

One of SMU's core values is service to the community. The university encourages students and staff to participate in outreach initiatives that provide essential healthcare services to under-resourced communities, fostering a culture of compassion and responsibility.

5

Comprehensive Health Sciences Programmes

SMU offers a wide range of programmes that cater to the diverse needs of the health sector. From medicine and nursing to public health and biomedical sciences, our curriculum is designed to equip students with the skills and knowledge required for success in today's healthcare environment.

8

Focus on Diversity and Inclusion

The university takes pride in fostering a diverse and inclusive environment, welcoming students from a variety of backgrounds. This commitment enriches the learning experience and prepares students to work effectively in diverse healthcare settings.

9

Strategic Industry Partnerships

SMU has cultivated partnerships with leading healthcare providers, research institutions, and industry players. These collaborations provide students with valuable exposure to the healthcare industry through internships, research opportunities, and hands-on experiences.

10

Global Recognition and Rankings

SMU continues to achieve recognition in national and international rankings, reflecting the institution's commitment to quality education and research. The university's focus on excellence ensures that graduates are well-respected within the healthcare community. With these attributes and achievements, SMU remains a distinguished institution, providing students with an education that is not only rigorous but also socially relevant. The university's forward-thinking approach equips graduates to make meaningful contributions to the healthcare sector, shaping a healthier future for all.

Sports Officer wins Administrator of the Year Award, highlighting SMU's holistic student development

Sefako Makgatho Health Sciences University (SMU) continues to affirm its reputation as a centre of excellence, not only in academic achievement but also in fostering a comprehensive and dynamic student experience. In a significant recognition of its staff's commitment to excellence, SMU Sports Officer Busisiwe Sijora was honoured with the prestigious Administrator of the Year award at the 2024 Gauteng Women in Sport Awards. This award recognises individuals who have made exceptional contributions to sports administration, advanced women's opportunities in sports, and fostered inclusivity and capacity building within the field.

Winning this accolade is no small feat. Sijora faced fierce competition from some of the province's most respected sports administrators, and her victory is a testament to her dedication and the rigorous standards of SMU's Sports and Recreation Department. Her triumph underscores the university's ongoing efforts to provide holistic student development, empowering students through academics and sports, leadership, and community engagement.

"I was humbled and honoured to receive this recognition," says Sijora. "It validates the hard work and passion I put into sports administration and motivates me to continue pushing the boundaries for growth and inclusivity in sports. This award is a reflection of the support I've received from SMU and the community, and it encourages me to keep striving for excellence."

Sijora is committed to staying ahead of industry trends through professional development, constantly seeking insights from international sports management practices, and engaging with mentors and senior administrators. Her drive for personal and professional growth directly benefits SMU, as she continually adapts and improves the sports administration process, ensuring that student-athletes receive the highest level of support.

Her ambitions for the future of SMU's sports programmes include enhancing inclusivity, building partnerships for better resource mobilisation, and advocating for gender equality in sports. She is

particularly passionate about mentorship, aiming to expand programmes that cultivate leadership skills among student-athletes, helping them reach their full potential and prepare for life beyond university.

“Mentorship is crucial in developing well-rounded leaders. By guiding our student-athletes, we equip them with the skills for sports and the life skills necessary to excel in any field,” she adds.

Beyond her role at SMU, Sijora's influence extends to several leadership positions within the sports community, including Vice-Chairperson of USSA Football, Secretary of USSA Handball, and EXCO Member of the South African Handball Federation. She also created a WhatsApp group to support sports graduates by sharing job opportunities and networking resources—a testament to her dedication to giving back and uplifting others in the sports industry.

With a career that spans over a decade, Sijora's awards reflect her exceptional contributions: from multiple Administrator of the Year accolades to recognition for her outstanding service. Her commitment to positive change within the sports community mirrors SMU's broader vision to provide students with opportunities for growth, development, and success in all spheres of life.

As SMU continues to push boundaries in academic excellence, social development, and sports, the university is committed to its mission to nurture well-rounded individuals. With leaders like Sijora at the helm, SMU is not only preparing students for careers in health sciences but is also moulding future leaders who will excel in any arena they enter. This holistic approach to student development is what sets SMU apart as an institution that strives for nothing less than excellence.



Capping a year of unprecedented achievements and triumphs

2024 has been a historic year coinciding with the university's tenth anniversary. Sefako Makgatho Health Sciences University (SMU) has achieved remarkable success, solidifying its position on the global academic stage. This milestone year was punctuated by two prestigious recognitions: a significant advancement in the Webometrics global university rankings and an inaugural placement in the country's top ten universities in the Times Higher Education (THE) World University Rankings.

SMU's notable progress in the Webometrics rankings demonstrates its increasing influence in digital engagement and research visibility, moving up almost 200 spots from 3,058th to 2,869th place globally. Nationally, it is now listed among South Africa's top eighteen institutions in these rankings, a significant feat for a young university. The Webometrics rankings, which evaluate a university's digital presence, transparency, and the impact of its research output, have underscored SMU's commitment to expanding its digital footprint and contributing to research that addresses global health challenges.

Simultaneously, SMU made an impressive debut in the THE World University Rankings, placing it in the top echelon of institutions in South Africa. This inclusion, aligning perfectly with SMU's core mission of delivering world-class healthcare education, emphasises its dedication to quality teaching, impactful research, and a progressive approach to internationalisation. SMU's presence in this prestigious ranking highlights its evolution from a young, local university into a globally recognised institution in a sector where academic rigour, innovative research, and community service intersect.



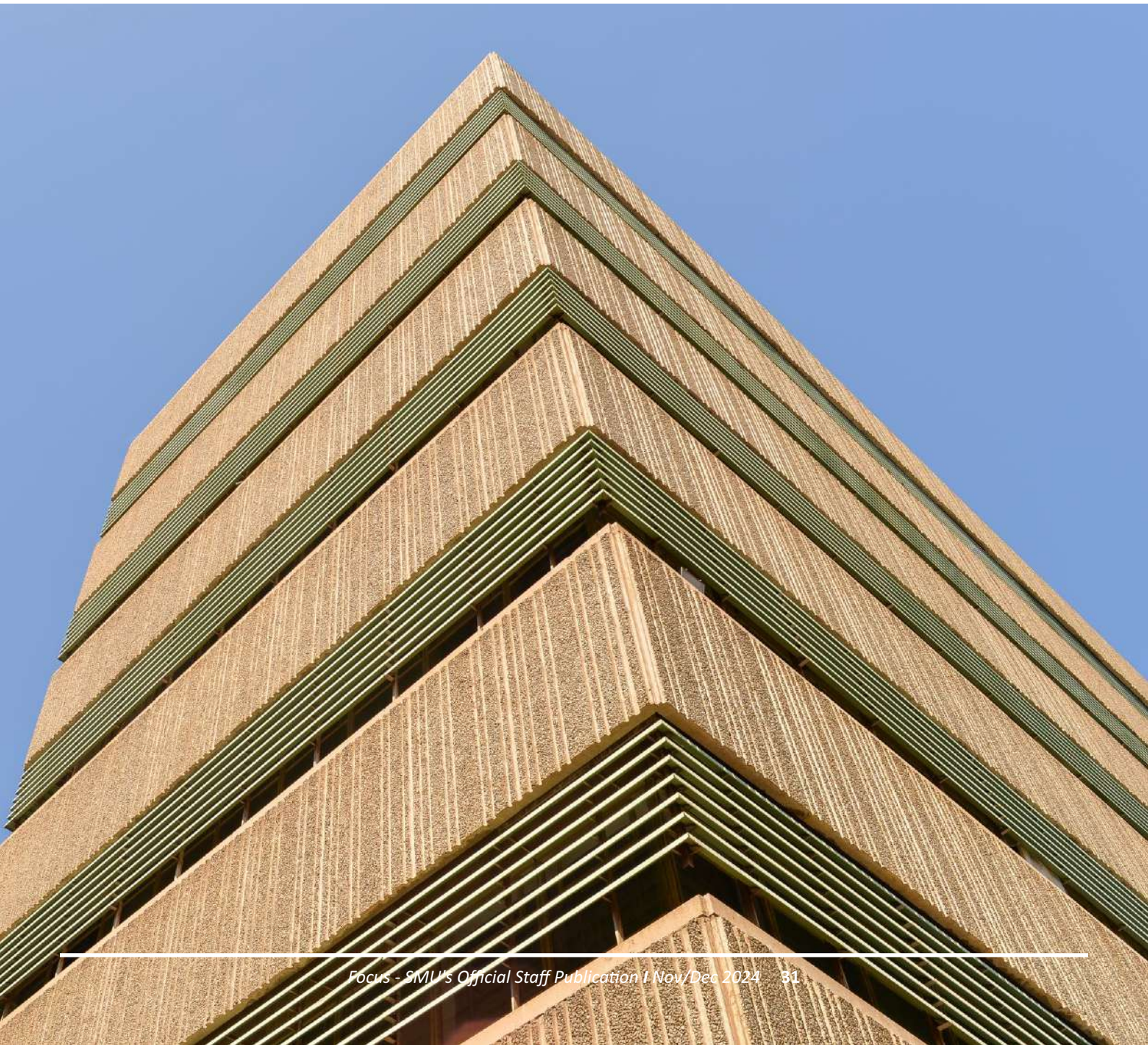
SMU's place in prestigious rankings marks its rise from a young local university to a globally recognised leader in academic excellence, research innovation, and community impact.

The timing of these achievements reflects a fitting tribute to the visionaries who established SMU as an institution dedicated to shaping the next generation of healthcare leaders. A key contributor to SMU's recent success is its commitment to community-centred healthcare, as evidenced by projects that promote local engagement and address pressing public health issues. This year, SMU launched several initiatives to bridge the gap between academic theory and practical application, enabling students and staff to make real-world impacts in surrounding communities. The institution's focus on inclusive education and training that resonates with community needs has strengthened its reputation for academic excellence and societal relevance.

As SMU celebrates a decade of academic excellence, its outlook remains forward-focused. Plans for expansion in

research capabilities, infrastructure, and partnerships indicate that SMU aims to continue climbing the global ranks and furthering its impact locally and internationally. The strategic positioning and partnerships with global health institutions reflect its ambitious roadmap for the coming years.

In a banner year that has coincided with its 10th anniversary, SMU's remarkable strides in global rankings and the recognition of its academic community stand as a powerful reminder of what can be achieved with dedication and a clear vision. The university's focus on nurturing talent, fostering innovation, and serving society has paved the way for a future where SMU stands as a beacon of health sciences education and leadership on the continent. As it moves into its next decade, SMU's commitment to making a global impact remains stronger



Happy Holidays

As we wrap up a successful 2024,
we want to express our gratitude for your hard work and dedication at SMU.
Enjoy a well-deserved break, and may the holiday season bring you peace and joy.
Here's to a 2025 filled with continued growth, new achievements, and building
on our incredible progress together.

Ndzi mi navelela nguva ya tiholideyi ya ntsako swinene na lembe ra 2025 lerinene.

Ri vha tamela mashudu mavhuya a khalanwaha ya holodei ya madakalo
na 2025 wo vha farelaho zwivhuya.

Re le lakaletsa matlhogonolo mo setlheng sa malatsi a boikhutso
le ngwaga o mosha wa 2025 wa boitumelo.

Warmest wishes for a happy holiday season and a wonderful 2025.

Die warmste wense vir 'n geseënde vakansieseisoen en 'n wonderlike 2025.

