

**“A documentary  
opened my eyes...”**

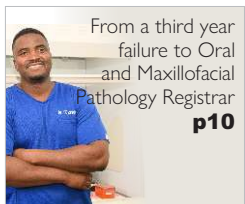
*- Dr. Kebareng  
Rakau-Nondela*

## The value of student-centred teaching

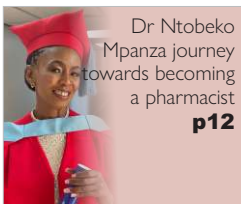
*Meet*

# Dr Godwin Ugwunnadi

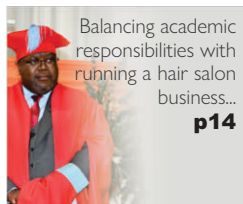
*- reflection on his journey  
towards becoming  
an NRF rated researcher*



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# Accept failures as teaching moments -

Dr Godwin Ugwunnadi's

*reflection on the journey towards becoming an NRF rated researcher*

**A**fter a rigorous evaluation process, which considers quality and the impact of his research outputs, SMU Mathematics and Applied Mathematics Research Associate, Dr Godwin Ugwunnadi has been awarded the National Research Foundation (NRF) C3 rating. The rating endorses him as an established researcher with a sustained recent record of productivity in the field as recognised by his peers in producing a body of quality work, the core of which has coherence and attests to ongoing engagement with his research field. He demonstrated the ability to conceptualise problems and apply research methods to investigate them. His rating is valid from 01 January 2024 to 31 December 2029.

His research publication record includes 69 publications with 124 total citations since 2011 in the MathSciNet. In the Web of Science database, with an h-index of 8 and 163 citations. Google Scholar shows an h-index of 9 with 451 citations since 2018. Additionally, on ResearchGate, his h-index is 10 with 473 citations and 90 publications. Focus on SMU reporter interviewed Dr Ugwunnadi about his NRF rating.

## **Congratulations on your NRF C3 Rating. What does this remarkable rating mean to you?**

The NRF C3 rating holds immense significance both personally and professionally. It represents a remarkable achievement as a researcher

*continues to page 3...*



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and validates years of dedicated effort. This prestigious recognition is multifaceted:

- **Personal Significance:** The rating affirms my dedication and expertise. It acknowledges the depth of my research contributions, spanning fixed point theorems, variational inequalities, and optimisation techniques. Personally, it validates the countless hours spent in pursuit of academic excellence. It's a gratifying affirmation of my commitment to advancing knowledge. Beyond research, the rating recognises my efforts in mentoring students and engaging with the community. It reinforces the importance of holistic academic engagement, motivating me to continue pushing boundaries and making meaningful contributions.
- **Professional Implications:** The impact extends beyond personal validation. It enhances my professional standing, positioning me as a respected authority in my field. Doors to prestigious opportunities swing open, inviting collaborations, conference participation, and impactful research endeavours. Within the academic community, visibility matters. The rating increases my visibility, facilitating networking and knowledge exchange. However, with recognition comes responsibility—I am now entrusted with mentoring, leading, and actively contributing to the academic ecosystem.
- **Finally,** I express sincere appreciation to the Department of Mathematics and Applied Mathematics at Sefako Makgatho Health Sciences University, Pretoria, for granting me this prestigious honour. Their unwavering support has been instrumental in my journey, and I eagerly embrace the responsibilities that accompany this distinction.

### How do you become an NRF-rated researcher?

Before seeking an NRF rating, it is crucial to assess the impact of your research and ensure that it aligns with international standards. Begin by evaluating your research output rigorously. Consider its significance, originality, and relevance within your field. Gauge the impact of your work—both locally and globally—by examining evidence such as citations, collaborations, and practical applications. Additionally, prioritize international collaboration. Network globally and seek partnerships beyond national borders. Collaborating with researchers from diverse backgrounds enriches your work and elevates its impact. Embrace multidisciplinary engagement, as diverse perspectives contribute to the quality and reach of your research.

### What are the benefits of being an NRF-rated researcher?

NRF-rated elevates your professional standing and responsibilities, and also brings financial support. In a general sense, the benefits can be summarized as follows:

- The rating serves as a benchmark of excellence both **nationally and internationally**. It enhances your visibility within the academic community and opens doors for collaboration and networking.
- As an NRF-rated researcher, you are entrusted with

**mentoring, leading, and actively contributing** to the academic ecosystem.

- Ratings allow researchers to apply for **longer-term funding** (up to 5 years) compared to the standard 2-year funding cycles.
- Beyond NRF funds, your rating can help you **leverage additional external funding** for your research projects.

### What is your research area of expertise?

My major research focus is on the study of approximation methods for solving fixed point equations of some nonlinear operators, optimization and variational problems, bilevel optimization problems, and numerical analysis for optimization problems in nonlinear and linear spaces.

### How did your research journey start?

My research journey commenced during my master's dissertation in 2009. At that time, I delved into the fascinating world of fixed points of generalized non-expansive mappings. This exploration led me to investigate approximation methods for solving variational inequality problems. Notably, I proved a strong convergence theorem for the modified viscosity iterative algorithm, which approximates common fixed points and addresses variational inequalities associated with strongly monotone operators. Subsequently, during my Doctoral studies, I continued to explore different approaches to approximate solutions for fixed point problems, particularly focusing on general operators using Bregman functions. Additionally, I studied efficient iterative methods such as the modified Mann iterative method, the modified CQ iterative method, and the Halpern iterative method. These experiences shaped my research trajectory and fuelled my passion for mathematical inquiry.

### What impact does Mathematics research have on society at large?

Research in mathematics has a significant influence on society in several areas. Here are some examples of how it affects our daily lives:

technical and Scientific Advancements: State-of-the-art mathematical research plays a pivotal role in significant scientific, engineering, and technical discoveries. For example:

- **Artificial Intelligence (AI):** AI systems rely on mathematical algorithms to perform tasks like recommendation engines, picture recognition, and natural language processing.
- **Manufacturing:** The use of mathematics in manufacturing processes enhances productivity, output, and quality.
- **Precision Medicine:** By integrating many data sources, mathematical and statistical techniques produce more accurate diagnoses and tailored treatment plans.
- **Cybersecurity:** To secure internet communication, cryptosystems and authentication techniques rely on abstract mathematical principles.

Logistics and Transportation: Planning, logistics, and

*continues to page 4...*

the development of autonomous cars are all influenced by mathematics.

- **Weather Forecasting:** The ability to predict weather accurately when it's required most is made possible by major improvements in mathematical and statistical methodologies.
- **Financial Markets:** The world economy is impacted by mathematical algorithms that direct financial traders. These algorithms are susceptible to small errors that have far-reaching effects.
- **Image Processing and Interpretation:** To help in domains like medical imaging and remote sensing, mathematical and statistical techniques transform raw data into interpretable images.
- **Scientific Collaboration:** To solve challenging problems, mathematicians work together internationally, exchanging ideas and experiences.

### What are some of your proudest research achievements?

- **Master's Dissertation: Convergence of Implicit and Explicit Methods:** During my master's program, I embarked on a rigorous exploration of fixed points of generalized no-expansive mappings. The convergence of implicit and explicit methods for common fixed points within finite families of asymptotically nonexpansive mappings became a focal point. This groundbreaking work laid the foundation for efficient approximation methods. The resulting paper, published in *Nonlinear Analysis: Hybrid Systems*, not only showcased my ability to contribute meaningfully to the field but also highlighted my analytical acumen.
- **Finite Families of Lipschitzian Demi-Contractive Semigroups:** The work on finite families of Lipschitzian demi-contractive semigroups demonstrated another strong commitment to advancing mathematical knowledge. This result underscored my analytical prowess and contributed to the broader field of Fixed-Point Theory and Applications.
- **The PhD Milestone: Bregman Quasi Pseudo Contraction Mapping:** The most significant achievement came during my Doctoral studies. I introduced the concept of **Bregman quasi-pseudo contraction mapping**, a powerful generalization encompassing related mappings. This breakthrough solidified my expertise and expanded the boundaries of knowledge in fixed point theory. The work resonated with the mathematical community, leaving a lasting impact.
- **Finally**, my master's and PhD programs provided the bedrock for all my subsequent research endeavours. The knowledge gained, whether, through rigorous coursework, mentorship, or independent study became the compass guiding my intellectual pursuits. Every subsequent achievement, whether in research publications, problem-solving, or mentoring, draws upon this strong foundation.

### Which research projects are you currently busy with?

Currently, my primary research focus centres on exploring

the application of variational inequality problems in various domains within pure and applied sciences. Specifically, I aim to bridge the gap between theoretical insights and practical implementation by analysing the analytical approximations of solutions to variational inequality and optimization problems.

To achieve this goal, I have established collaborations with researchers both within Africa and beyond, seeking out those with strong track records. Through these partnerships, we exchange ideas and draw from our collective experiences. Presently, our work has led to the development of novel methods for solving bilevel optimization problems in Banach spaces.

Looking ahead, I recognize the significance of the quasi-variational inequality problem in addressing Nash equilibrium problems. Therefore, my future research endeavours involve devising efficient techniques for solving quasi-variational inequality problems, split bilevel optimization problems, and split bilevel monotone inclusion problems. Additionally, I plan to rigorously examine the numerical implementation of these methods and explore their practical applications.

To realize these objectives, collaboration with researchers well-versed in Nash equilibrium problems and optimization is essential.

### What advice do you have for our readers who are interested in research?

Develop a sincere interest in the subject matter you are passionate about. The first step toward discovery is asking questions, and research is fuelled by passion. Go beyond your immediate comfort zone and have an open mind. Comprehend the core ideas about your field of study to establish a solid foundation. Recognize your field's underlying theories, practices, and instruments. More in-depth research will be facilitated by this understanding. Immerse yourself in the relevant literature. Read research papers, books, and articles. Stay informed about recent developments and breakthroughs. Engage with both classic works and cutting-edge research. Research is frequently a cooperative effort. Participate in workshops, attend conferences, and establish connections with other scholars. Novel ideas, pooled resources, and new views can result from collaborations. Research can be unpredictable and difficult at times. Accept failures as teaching moments.

Remain tenacious, adjust to setbacks, and have a resilient attitude. Appreciate the little accomplishments you achieve along the way. Finally, make sure your research adheres to ethical guidelines. Be open, truthful, and considerate. Give credit where credit should be given and properly reference your sources. Gaining the trust of the scientific community requires integrity. 🔍

# “A documentary opened my eyes...” -

*Dr. Kebareng Rakau-Nondela*

**B**orn at a small village called Seabe in Mpumalanga, with limited resources her parents (father was a teacher, and mother was a shop assistant), always emphasised the importance of education, especially her mother who had to leave school early to work and help support her family. Beyond her mother's prayer for all her siblings to be educated, having a child, along with her nephews and nieces, has further motivated her to pursue her dreams and demonstrate to them that it is possible to achieve their goals.

“I watched the Treatment Action Campaign documentary on HIV, its impact, and the need for antiretroviral drugs when I was still studying at the University of Free State. As an undergraduate student studying microbiology, the documentary, and the high number of HIV cases and deaths reported in South Africa at the time, made me curious about the virus itself and how to combat it. Later, after joining the Department of Virology at Sefako Makgatho Health Sciences University (SMU), I learnt that many other viruses besides HIV impose a significant health burden on the African continent. Recognizing the vast amount of work needed to address these viral diseases, I then told myself that I could make my contribution as well,” said Rakau-Nondela.

Dr Rakau-Nondela, recently, obtained her PhD in Medical Virology from SMU. Her research focused

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on mutations within the genes that regulate Histo-blood group antigens (HBGAs) and on identifying a peptide-protein that can block rotavirus from binding to these antigens. Rotavirus diarrhoea remains a significant health burden in developing countries despite vaccine availability. The virus infects cells by attaching to HBGAs, which vary among individuals and influence susceptibility to rotavirus diarrhoea.

She studied these HBGAs in Black South African children with rotavirus diarrhoea and compared them to children with non-rotavirus diarrhoea. Her findings provided new information about the distribution of these antigens in South Africa, a topic previously underexplored in the literature. This is important because these antigens serve as entry points for various pathogens, such as norovirus, HIV.

“We discovered mutations in the HBGA-regulating genes that are unique to individuals of African descent. Interestingly, we found no difference in the distribution of these gene mutations between children with and without rotavirus diarrhoea, suggesting that other factors or receptors might be involved in the virus's entry into host cells,” she shares.

Additionally, her study identified eleven substances that can bind to the HBGA binding site on rotaviruses using molecular docking analysis, preventing the virus from attaching to host cells. These substances have the potential to act as antivirals and help reduce rotavirus diarrhoea cases, especially in Africa where the burden is high.

She said it was not easy for her to balance PhD studies, work, and family. She had to learn early on how to plan, prioritise and streamline her life, especially after giving birth to her child. Fortunately, she has a dedicated support from her family and husband.

She said through various funding opportunities, she was able to present her research work at various conferences such as the 13th International rotavirus symposium, 14th African Rotavirus Symposium and 2024 Virology Africa Congress. These opportunities encouraged her to stay the course and to network with researchers in South Africa and beyond. Fortunately, she was also encouraged to apply for the DHET-nGAP lecturer programme, to which she was appointed in 2021 whilst still studying towards her PhD. The support she got from her supervisors and the Department was pivotal in her academic journey.

Her research niche focuses on the investigation of viral diarrhoeal disease through molecular characterisation


and whole genome analysis in the post-rotavirus vaccine licensure era; and to explore the host-receptor interactions and determine how variations in receptor expression contribute to rotavirus vaccine efficacy disparities. She also has a broader interest in viral diseases that significantly impact children.

“I am currently working on the detection and characterisation of viral enteric pathogens in persons older than 5 years seeking medical assistance with diarrhoea, a neglected population as the majority of the studies have focused on children under 5 years. Another study is to investigate Adenovirus infection in paediatric patients, a virus with many clinical manifestations of significant burden,” explains Rakau-Nondela.

Her love for education sparks interest in those she teaches or supervises, and she understands that academia requires one to be resilient. Her current goals include assisting the students she supervises to complete their degrees and publish the research work. So far, she has guided two Honours students to completion. She always strives to foster a mentoring relationship with her students, encouraging them to consult her for advice, job opportunities, and referral letters.

“I need to adjust my approach as a supervisor to accommodate students' personalities, strengths, and weaknesses. This can be challenging as students are not the same and require different types of support. Also, setting boundaries was challenging as I was both a student and a supervisor having to maintain a level of professionalism while being approachable. I have learnt to communicate my expectations and boundaries from the start so that we can have a good working relationship and be productive,” she asserts.

Looking back, she says her Honours supervisor and HOD encouraged her to pursue a career in academia. They recognized abilities in her that she had not yet realized, and their support played a significant role in guiding in her career. She realised that an MSc degree alone was not sufficient to achieve success and recognition in the academic field. Hence, pursuing a PhD was the next step in establishing herself in academia.

“My 10-year journey at SMU started in 2014 when I enrolled for an honour's degree, followed by an MSc and a PhD degree which I graduated in 2024. I was allowed to travel to the University of Cincinnati in the USA as a visiting scholar to learn techniques from our collaborators and to incorporate them into our laboratory,” concluded Rakau-Nondela. 

# I grew up surrounded by teachers...

## Reflects *Dr Lerato Kgosana*

**S**efako Makgatho Health Sciences University (SMU) continues to produce highly rated Health practitioners and Scientists. Dr Lerato Kgosana is one of the graduates who obtained a Doctor of Philosophy (PhD) in Medical Virology during the 2024 graduation ceremony. As a child, she never imagined that she would someday pursue a PhD because she used to think that it was something only the “smart” kids could achieve.

Dr Kgosana grew up in a small village called Mapela, Limpopo. While growing up, she was surrounded by teachers who motivated her to be a success. This triggered her childhood passion for education and her interest in medical sciences specifically on microorganisms and their impact on health.

“I chose SMU because of its leadership in rotavirus research in Africa through the Diarrheal Pathogen Research Unit. I wanted to contribute to the work they do, especially, in rotavirus surveillance and vaccine effectiveness monitoring. Medical Virology research is important because it helps us understand diseases in order to develop targeted treatment plans. The eradication of smallpox is one great example” explains Dr. Kgosana.

Her doctoral research focused on the association between the abundance of lipopolysaccharide bacteria, which is part of the normal commensal bacteria and the response to the rotavirus vaccine. The SMU Alumna and her team discovered that children with higher numbers of these bacteria showed a better response to the vaccine. Her study identified potential bacterial candidates that could serve as vaccine adjuvants or probiotics.

Dr Kgosana is currently a Lecturer at SMU's Department of Virology where, amongst other responsibilities, she lectures in Basic Virology and Advanced Virology, conducts laboratory experiments for the World Health Organization's rotavirus surveillance project, coordinates departmental seminars, and supervises post-graduate research. “I chose academia as it is well-positioned to address real-life problems of the world. Here we are constantly learning, exploring, and discovering new things. I am truly motivated to make a real difference in the world through my work. I have supervised only two honours students who have successfully graduated.

She further stated that, “My dedication has been key to the success of my students through setting clear goals and guidelines for balancing research, teaching, learning and all other activities” informed Dr Kgosana.

The Virology Lecturer mentioned that next on her agenda is working towards her associate professorship and finding better treatments for viral diseases. She is currently expanding her doctoral project by studying how bacterial lipopolysaccharides affect viral replication in human cell cultures. She indicated that it was quite challenging for her to get where she is today because balancing her studies, work, and family has been tough even though she managed to soldier on.

“SMU instilled values of efficiency and excellence in my approach to research, and I still live up to them to this day,” concluded Dr Kgosana. [Q](#)





“ My dad's approach to teaching inspired me to follow the Academic Route ” -

**Reflects  
Dr. Emelinah  
Hluphekile Mathe**

**B**orn in Tshikota township (Louis Trichardt), Limpopo Province, during the apartheid regime her family was moved to Waterval Township, near Elim Hospital in the former Gazankulu homeland. She attended school at Masedi Primary and progressed to St Brendan's Catholic School where she matriculated. She obtained a Bachelor of Science in Biochemistry and Zoology from the UNIVEN. This led her to pursue and complete a Bachelor of Science (BSc) Honours in Biochemistry at the University of Kwazulu-Natal (UKZN). Subsequently, she obtained her Master of Science (MSc) in Biochemistry at UNIVEN.

She is grateful to her BSc (Hons) supervisors for playing a critical role in her development as the lecturer she is today. “My studies at UKZN taught me that compassion does exist in academia. From my supervisors teaching me how to be computer literate, spending their lunch breaks with me, teaching me how to prepare a slide show for a presentation. They built my confidence when the presentation Isolation of glucose oxidase from *Aspergillus niger* got me a standing ovation at the Durban International Convention Centre (Durban ICC), during my BSc (Hons) in Biochemistry final presentation,” said Dr Mathe.

Dr. Mathe always wanted to be an Occupational Therapist. Still, when the opportunity came to enrol for PhD in Biochemistry, she grabbed it with both hands. During her second-level undergraduate studies, Dr Mathe's former lecturer Mr Bongani Mchunu (deceased) at the University of Venda (UNIVEN) introduced her to the discipline of Biochemistry. She became even more interested after the lecturer explained its importance in human life. The lecturer then took their class on an excursion to Coca-Cola, South African Breweries, and forensics and that inspired Mathe to pursue her career in this discipline.

“The purpose of the outing was for our class to understand the concepts covered during the lectures. My knowledge about the discipline became clearer, as I could understand what the course was all about and what type of jobs are offered after completing my studies. What I learned from my lecturer was that it is important to engage with your students and make them understand the theory taught in class and relate it to events in their daily lives. This allowed me to raise an important research question and pursue postgraduate studies to find solutions,” said Dr Mathe.

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She recently, obtained her PhD in Biochemistry at Sefako Makgatho Health Sciences University (SMU). Her study focused on an investigation of compounds within crude extracts from three selected medicinal plants for their ability to inhibit or down-regulate selected protein kinases involved in cancer pathways. The secondary metabolites derived from several medicinal plants activate various signal transduction pathways that can be of value in the treatment of diseases such as cancer. Cancer is one of the leading causes of death in the world. However, due to its prevalence, there is a need to discover novel anticancer drugs.

Dr. Mathe further stated that, “Currently, natural products are known to be a reliable source of drug discovery and play a significant role in cancer treatment by regulating different signalling pathways. Therefore, targeting signal transduction pathways with compounds from these natural products is a promising strategy for treatment in cancer progression. The data presented in my study suggests that the expression of these protein kinases levels proves that all three extracts of selected medicinal plants as compared to controls can regulate different signalling pathways (P13k/Akt, Jak2/Stat3, EGFR and MAPK pathways), thus preventing cancer progression.”

She explained that the presence of various phytochemicals in the selected plants in the current study is indicative/suggestive of their use in traditional medicine as potential antioxidant agents, or they could be natural materials/nutrients believed to have health-promoting or disease-preventing properties. The study has successfully demonstrated the ability of phytoconstituents possessed by the three selected medicinal plants namely, *Sutherlandia frutescens*, *Withania somnifera* and *Annona senegalensis* to inhibit or down-regulate some selected protein kinases involved in cancer signalling pathways.

“The study contributes to knowledge regarding the understanding of several mechanisms for anticancer properties in medicinal plants. Cancer Biology is my research niche area of interest which involves the study of the anticancer properties of selected medicinal plants against selected cancer cell lines. Chemotherapy drugs and other treatment methods for cancer have led to side effects and resistance. Natural compounds can be the best cost-effective treatment for cancer due to socio-economic challenges. We also investigate the effects of storage parameters and microbial contaminants found in the traditional herbal preparations that affect different diseases,” she enlightens.

The lack of infrastructure and equipment was one of the challenges that she encountered during her studies. Fortunately, a collaboration with the Tshwane University of Technology (TUT)'s Department of Biomedical Sciences laboratory allowed her to overcome challenges with cancer

cells and equipment to conclude her objectives. Both her supervisor and co-supervisor, lab staff, and postgraduate students working in the lab assisted her in overcoming some of the challenges. The SMU Department of Biochemistry and Biotechnology provided her with financial support to procure all the kits and consumables needed and relieved her from her teaching workload to successfully conclude her study.

“I lost my supervisor, the late Prof Alfred Mogale, who was instrumental in steering my study towards contributing to the body of science through the design of the research topic and analytic expertise and had to adjust to the new team of supervisors from TUT and SMU. COVID-19 happened and delayed the shipment of reagents and consumables. The teaching load, administrative roles, and supervision roles also had an impact, but some of the load was lifted, which made it possible for me to complete my studies. Balancing family life, late nights, early morning thesis writing sessions and weekends off in the lab were also challenging. Mentorship and family support was enough for her to triumph against all odds,” expresses Dr Mathe who is grateful to the late Prof Mogale's guidance in teaching her diligence, critical thinking, and attention to detail when it comes to conducting research.

She reminisces on how her career kick-started as a part-time lecturer in the Department of Biochemistry at UNIVEN. She then became a lecturer under MEDUNSA (now SMU). Throughout her PhD journey, she has presented at several research conferences. Recently, she presented some of her research findings at the 25<sup>th</sup> Indigenous Plant Use Forum (IPUF) held at Kruger National Park, South Africa from 29-31 August 2023 and has supervised five MSc students to completion.

“As a family, we used to watch documentaries and have thorough discussions about relevant careers, through lengthy conversations. My dad's approach to teaching inspired me to follow the academic route. He was a professional teacher and later became a chief educational specialist until he retired. I saw his passion for teaching and his joy when students performed well and excelled in their career paths. That encouraged me to be effective in someone's life. I got to know that academia is a vocation where an individual can lay the foundation and develop people,” concludes Mathe.🐼

# From a third year failure to Oral and Maxillofacial Pathology Registrar

**F**rom the humble beginnings at Ha-Mashamba village in Limpopo, emanated Sefako Makgatho Health Sciences University (SMU)'s Alumnus and Oral and Maxillofacial Pathology Registrar Thabiso Ravele. This God-fearing man is one of the graduates who continue to plough back into an institution that shaped his career from his undergraduate studies. As SMU celebrates its 10 years of academic excellence, Dr Ravele is a living testament of this excellence.

As a child, Dr. Ravele wished to become a farmer until one of his Lishavhana Secondary School teachers Mr Chabalala gave him a book called 'Biology for Life'. In this book, he came across drawings of human teeth and their distinct names, which triggered his eagerness to find out more about the course that entirely focuses on human teeth. "My uncle Dr Thiathu Ravele, who was then a medical student at MEDUNSA brought me application forms. Fortunately, I met the requirements for the dentistry programme; and this sums up how I applied. I was excited to receive an acceptance letter to study Bachelor of Dental Surgery (BDS) at then the University of Limpopo – Medunsa Campus in 2011.

As a boy from the village, I was overwhelmed that I was going to the big city; Pretoria and that I had made it despite the influx of applications the University received that year," informed Dr Ravele.

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His undergraduate studies were sluggish in the early years until his third year when he started to understand dentistry in depth. He remembers that he struggled to adjust in his first and second academic years due to bad time management. He used to cross-night with limited sleeping time and was tired most of the time. He was more forgetful when writing semester tests, and this motivated him to join study groups. He then started to manage his study and rest times efficiently.

“I failed my third year with 2 clinical quota points and it was painful because the bursary scheme did not cover my tuition for that academic year. To cover my tuition fee, I found a part-time job in Akasia, Pretoria on weekends to try and pay my fees. When it comes to values, the university has encouraged me to be open-minded, engage in critical thinking, and be in pursuit of knowledge without constraints. One must not limit themselves to learning because learning is continuous in all spheres of life. Black child, never limit yourself due to coming from a disadvantaged background. You have what it takes to achieve anything in this world,” he emphasised.

Successfully, the Oral and Maxillofacial Pathology Registrar graduated with his BDS at SMU in 2016, then obtained his Postgraduate Diploma in Forensic Odontology from the University of Pretoria in 2021. He is currently enrolled for a Master of Dentistry (MDent) in Oral and Maxillofacial Pathology at SMU.

His professional career started in 2017 when he was involved in community service as a Dentist at Witpoort Hospital's Dental department, in Limpopo. Some of his responsibilities included providing dental examination, diagnosis, treatment, and treatment of minor maxillofacial injuries; prioritizing urgent referrals and management of emergency cases (malignant and benign and trauma); providing outreach services for crèches, schools, and local clinics. In 2018, he was a Grade 1 dentist at the same hospital and was involved in supervising and teaching community service dentists.

He later occupied the same position at the Pietersburg Provincial Hospital's Oral Pathology Unit from 2019 to 2022, where he was responsible for the provision of age estimation services through Forensic Odontology to the

courts of law; clinical services, and taking biopsies in the Maxillofacial and Oral surgery (MFOS) clinic; application of Continuing Professional Development (CPD) accreditation for the Oral Pathology Unit; providing training in microscopic diagnosis of head and neck pathology, including Dermatology; and training in histopathology and report writing, amongst others.

He now serves as an Oral and Maxillofacial Pathology Registrar at SMU's Oral Health Centre (SMUOHS), providing accurate radiological and histopathological correlation; evaluation of specimens and description of grossing; microscopic histological diagnoses and histopathology case report writing and analysing immunohistochemistry and special stains, among others.

With advancing technology, Dr Ravele aspires to find ways to digitalize histopathological slides because it is to move with the times to ensure improved levels of efficiency. As part of his career growth, he indicated that he would like to learn more about molecular testing to help study the mechanism of dental diseases and treatments.



“Education remains key and rural health care matters. To contribute positively and to add value to SMUOHS, I hope to create a platform for community education, where our patients learn more about the pathogenesis of diseases and how to seek care. This is one thing that is very close to my heart,” concludes Dr Ravele.

Although he was raised by a single mother, his maternal grandparents played an integral part in nurturing him to become the man he is today.🗨️



# “Pharmaceutical language was frequently used at home...”

## *Dr Ntobeko Mpanza journey towards becoming a pharmacist*



*The Director of Pharmaceutical Economics at the National Department of Health (NdoH), Dr Ntobeko Mpanza recently graduated with her Doctor of Philosophy (PhD) in Pharmacy at Sefako Makgatho Health Sciences University (SMU), Ga-Rankuwa. The title of her thesis is, 'Correlation between medicines registered by the South African Health Products Regulatory Authority and used in South Africa in the context of the Burden of Disease spanning over six years.'*

**H**er interest in a career related to pharmaceuticals was influenced by her upbringing. She said her mother was a nurse and that her father majored in Chemistry during his undergraduate studies. Growing up in a family where education was highly prioritized and where pharmaceutical language was frequently used, naturally led her to pursue a similar career path.

Her research aimed to encourage evidence-based decision-making among pharmaceutical regulators and institutionalize critical thinking about the impact of their work at the consumer level. “The main goal of my study was to ensure that we dedicate research efforts to practicalize the endeavours of health professionals, making patients and consumers the main beneficiaries of the regulators' outputs when implementing pharmaceutical policies. The study investigated whether the medicines registered in South Africa align with the country's burden of diseases,” explained SMU Alumna.

The mother of two indicated that her study demonstrated that in South Africa, the registration of medicines is not perfectly aligned with the country's burden of diseases and that only 16% of medicines reach patients after registration. She further indicated that one of the most striking findings was the prominent position of mental

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health conditions, further stating that these conditions were most frequently associated with medicines dispensed in retail pharmacies nationwide, such as the antidepressant Aropax (active ingredient Paroxetine), antipsychotic Abilify (active ingredient Aripiprazole), and benzodiazepine Ativan (active ingredient Lorazepam for anxiety). These surpassed all other disease categories, including anti-infectives.

“After working at the NDoH for over 20 years, I began questioning the tangible value of our regulatory efforts for the general population. This curiosity sparked my research interest. Given my academic background, with a Master's degree, it was only logical to advance my studies to the PhD level,” informed Dr Mpanza.

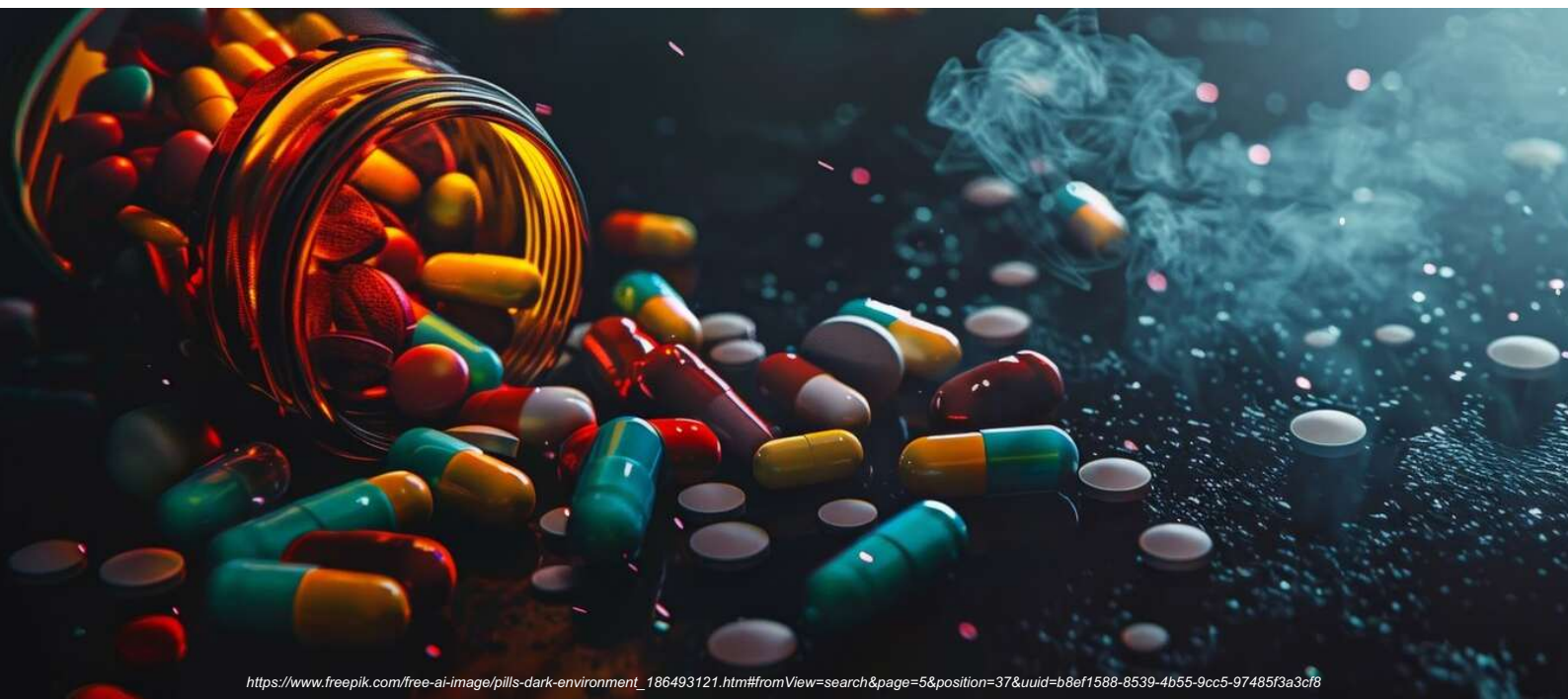
As to her choice of institution where she should further her studies, she stated that, “After completing my Pharmacy degree at Rhodes University, I have always been deliberate about pursuing my postgraduate studies at Medunsa. I hold the university in high regard, especially since the early 90s when many of my friends enrolled there for their medical studies. They consistently praised Medunsa for its rigorous preparation and superior training compared to other institutions. Having something associated with Medunsa, the now SMU on my resume has been a longstanding aspiration of mine.”

The SMU Alumna managed to tackle her studies, work, and family life through the support she received from her family. At the beginning of writing her research proposal, she adopted a disciplined routine of dedicating time to her studies before and after going to work. This routine helped her to stay connected to her studies and research objectives. It also prevented the need for intensive binge reading and study sessions throughout her research, as she maintained a continuous, consistent, and disciplined approach.

Dr Mpanza is with a member of the Ministerial Pricing Committee within the NDoH, where they conduct research and market intelligence on the pharmaceutical supply chain and, amongst others, prepare discussion documents for Committee meetings. She indicated that this administrative and technical support enables the Committee to make informed, evidence-based recommendations on policies impacting medicine pricing, which are then submitted to the Minister of Health for final decision-making.

She credits her interest in regulatory pharmacy to her time during her community service training at Mosvold Hospital's Pharmacy in Ingwavuma, Kwa-Zulu Natal where she was the first and only pharmacist ever to be employed in that facility. During her tenure she provided training to pharmacy assistants on the responsibilities and operational standards essential for professionals within the field, as well as the protocols necessary for effective pharmacy management. This experience made a lasting impression on her and highlighted the importance of prioritizing compliance with the regulations and guidelines set by the South African Pharmacy Council (SAPC), the Department of Health, and other regulatory bodies.

About the quality of supervision she received, Dr. Mpanza stated that, “I am incredibly fortunate to have had the most amazing supervisors during my PhD journey: Prof Moliehi Matlala and Dr Mthobi Keele. Despite the challenges and moments of doubt throughout my research, I can confidently say that I would not have chosen anyone else”. I aspire to return to teaching Mathematics and Physics to students, while also working towards increasing the number of pharmacists engaged and interested in regulatory pharmacy. It gives me great pleasure to, occasionally, get opportunities to lecture at institutions of higher learning, such as SMU”, Dr. Mpanza concluded. Q



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# Balancing academic responsibilities with running a hair salon business...

**D**r Mabina Mogale's journey into academia was unexpected, as he initially envisioned himself as a medical doctor or a businessman. Now, he considers his academic career to be the best job in the world. He credits his employer, SMU, for nurturing his intellectual curiosity, and acknowledges his colleagues and students for constantly challenging him to delve deeper into his subject matter. This curiosity has driven him to stay updated on the latest advancements in his research area, ultimately leading him to pursue a Doctor of Philosophy in Public Health.

Dr Mogale recalls his mentor, Dr Sam Ntuli, introducing him to Public Health while he was working in the Department of Biology at SMU. Dr Ntuli made a career in Public Health so intriguing that Dr Mogale quickly never looked back since then. Despite the significant challenges while pursuing his Doctoral studies, such as supervising 20 students, teaching five modules, and managing additional responsibilities during the COVID-19 lockdown (such as training students and staff on using Blackboard), he persevered and completed his PhD. Reflecting on this period, Dr Mogale shares, "Despite the challenges and the overwhelming workload, I believe I came out victorious."

Furthermore, it should be well noted that on the day of his PhD graduation, Dr Mogale, graduated with ten of his MPH students and three MPH students that he co-supervised. His doctoral thesis, titled *"Behavioural intention of healthcare professionals to use real-time continuous glucose monitoring among patients with type 2 diabetes,"* addresses the inadequacies in managing type 2 diabetes at the primary healthcare level. His research advocates for continuous glucose monitoring to ensure consistent patient monitoring and better management of diabetes.

Dr Mogale's academic journey in Public Health began after he completed his MPH on record time in 2006. However, he faced difficulties in career progression due to a lack of alignment between his MPH and his role in the Department of Biology. Despite these obstacles, he continued to gain experience by volunteering in Public Health, on a part time basis. Eventually, this led to a transfer to the Department of Public Health as a lecturer in 2013. There, he found his true calling, teaching Epidemiology and Biostatistics, and inspiring his students.

Born in Atteridgeville and raised by his grandmother and aunts, Dr Mogale's educational journey was marked by resilience. After losing his mother shortly after matriculating, he pursued 1 year of Medical Laboratory Science at Turfloop University (now the University of Limpopo). He reapplied to MEDUNSA (now SMU) the following year and completed a BSc degree.

Throughout his studies, he balanced his academic responsibilities with running a hair salon business to support himself financially. His hard work paid off, and he graduated with honours, eventually securing a position as a Senior Technical Officer in the Department of Biology.

In his role, Dr Mabina introduced significant improvements in the coordination and assessment of practicals, which contributed to the students' final marks. His contributions have had a lasting impact at SMU, and he takes great pride in his achievements. Today, he continues to inspire and guide his students, emphasizing the importance of dedication and resilience towards success.🔍

# Conversation on Advanced Surgical Techniques

**D**r Michelle Smith-Savu, the Medical Director at Research Institute against Digestive Cancer (IRCAD) Africa and a practising Bariatric and General Surgeon in San Diego, California, recently, visited Sefako Makgatho Health Sciences University's (SMU) Department of General Surgery (DGS). Her visit aimed to introduce SMU surgeons to various advanced surgical techniques and innovations that IRCAD Africa offers.

The IRCAD Africa Institution, nestled in Kigali, Rwanda, provides courses catering to various specialities. The courses range from advanced courses on Trauma Surgery for General Surgeons, Advanced Colorectal Surgery, Hernia Surgery, Bariatric Surgery, Respiration in Anaesthesia and ICU Settings, Wrist Arthroscopy, Ultrasound Surgery, and Elbow Arthroscopy, amongst many others.

Dr Smith-Savu brings various experiences to IRCAD Africa. As a Bariatric Surgeon, she specializes in obesity management

procedures. Her general surgery expertise encompasses open and minimally invasive techniques for gastroesophageal reflux disease, hernia repair, laparoscopic colon resection, and gallbladder surgery.

The expert visit involved all surgical disciplines and was structured into two sessions, focusing on open to all surgical specialities, providing a broad overview of what IRCAD Africa offers and Orthopaedics, and Obstetrics and Gynaecology, to address the specific training needs and challenges within these specialities.

In her address, Dr Smith-Savu provided valuable insights into robotic gastrointestinal (GIT) surgery, the application of artificial intelligence (AI) in surgery, and bariatric surgery. She also discussed short-term training programs available at IRCAD Africa, fostering collaboration and enhancing the skill set for both junior and senior surgeons.

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SMU's Head of the Department of General Surgery, Prof. Modise Zacharia Koto, who is also a faculty member at IRCAD Africa, expressed his appreciation for the visit. He acknowledged the value of exploring IRCAD Africa's advanced training programs and recognized the potential for future collaborations between the two institutions.

“The visit to SMU by the director of IRCAD Africa heralds a new era in our collective journey in minimal Access Surgery as SMU department of Surgery. Dr Michelle Smith is an absolute powerhouse in the field of minimal Access Surgery globally. She trained as a surgeon in the USA and did her fellowship in minimal access surgery at the famous IRCAD in Strasbourg in France. Dr Smith invited me to Rwanda as part of the International Faculty in minimal access surgery in June 2024 and her visit to SMU is part of the wider collaboration with world famous IRCAD institute in Rwanda, “says Prof.Koto. This is indeed the dawn of “The Democratization of minimal Access surgery globally.”

The DGS gained valuable insights into advanced surgical training programs and techniques. This exposure is expected to enhance the skills and knowledge of the department's surgeons, contributing to improved patient care and surgical outcomes.



# The South African Pharmacy Council's visit to SMU



**T**he South African Pharmacy Council (SAPC), as a professional body is mandated to quality assure various teaching and learning programmes related to Pharmacy. In terms of the Pharmacy Act, of 1974 (Act 53 of 1974), SAPC regulates pharmacists, pharmacy support personnel and pharmacy premises in South Africa. The SAPC, recently, conducted an accreditation and monitoring visit to Sefako Makgatho Health Sciences University (SMU), for the Pharmacist's Assistant (Basic): Part Qualification, Quality Council for Trades and Occupations (QCTO) Pharmacist's Assistant (Post-Basic): Part Qualification programmes.

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*The purpose of the visit was to evaluate SMU programmes, resources, and how students are assessed to ensure that they gain the skills they need and have opportunities for career advancement in pharmacy. The university established the Pharmacy Technician Development Programme (PTDP) as a third-stream income unit, aiming to develop short learning programmes (SLPs). Following accreditation, Pharmacist's Assistant (Basic) and Pharmacist's Assistant (Post-Basic) programmes will be integrated into the University PQM (Programme Qualification Mix), broadening the university's educational offerings. Furthermore, SMU seeks to increase access to education by providing these skills programmes, potentially impacting more students, and fostering a positive societal contribution.*

The SAPC delegation comprised a diverse group of experts, including Academic leaders, with practical pharmacy experience, subject matter specialists from academic

institutions, practicing pharmacists, and experts from the pharmaceutical sector. SMU representatives involved in the programme delivery participated in the evaluation. These included the Acting Head of the Department of Pharmacy Practice, Dr Nontobeko Mncwangi, the Manager of the third-stream income unit, Mr Mokesh Mathevula, staff members delivering the courses, and external stakeholders such as facilitators, assessors, and moderators.

The evaluation process assessed both theoretical and practical aspects of the programmes. The SAPC team visited SMU laboratories to verify if they meet the required standards for pharmaceutical sciences education. Moreover, discussions were held between the panel members and various stakeholders, including facilitators, course material presenters, assessors, and moderators. The SAPC delegates and SMU's Chief Executive Officer had a meeting and a report summarizing the evaluation was finalized.

This visit shows commitment to ensuring high-quality pharmacy education in South Africa. The collaboration with SMU will help the council prepare future pharmacy professionals with the necessary skills and knowledge to serve their communities effectively. 



# The value of student-centred teaching



**P**rofessor Liziwe Mugivhisa is proud to have successfully guided two Doctor of Philosophy (PhD), five Masters, and 27 Honours students to date. Prof Mugivhisa currently serves in the Department of Biology and Environmental Sciences in the School of Science and Technology (SST), where she lectures and supervises undergraduate and postgraduate students.

She believes in ensuring student-centred approach by introducing learning activities in small groups where students take responsibility for their learning and are actively involved in creating and shaping how they learn. She also uses blended learning to ensure that her students are accustomed to the new ways of learning through technology as required in the Fourth Industrial Revolution (4IR).

“I promote, encourage, and integrate independent learning and self-study which empower students to become lifelong learners who continually acquire new skills and competencies that will prove to be crucial and valuable in their future careers. I promote the progressive level of guidance and supervision of undergraduate and postgraduate students. For example, students at PhD level should show more independence in their learning compared to the undergraduates who have just joined the university and need more guidance. This empowers senior students to assist and mentor junior students in the lower levels. My strategy for assessing students aligns with

the expected competencies at each level. I expect students at higher levels to tackle assessments which require critical thinking compared to students at lower levels,” explained Prof Mugivhisa.

Her current research focuses on Environmental Management, Environmental Education, and Waste Management. The overall goal of her research work is to enhance food security, improve agricultural productivity, monitor and manage the impact of pollution on cultivated crops. She indicated that this research would improve the livelihoods of people in poor communities through improved agricultural productivity by using usually freely available and safe organic wastes for food production. In addition to her research, Prof Mugivhisa is also interested in educating and creating awareness on various environmental issues such as waste management and environmental pollution which affect the health of communities and the ecosystem.

Prof Mugivhisa is also a well-established researcher. In collaboration with academics from and outside of SMU, she managed to produce 40 publications which were published in accredited South African and international journals. Prof Mugivhisa's expertise in research goes beyond a decade. She has presented her research findings at five international and six local conferences. Through her dedication to research and networking, she not only continues to be a great ambassador of SMU but is also a significant role model to Black women.

Prof Mugivhisa did not only speak about good things but also shared some of her challenges within academia such as limited funding and facilities for postgraduate supervision and conducting research. She further indicated that some of her challenges include working with students who sometimes lose focus or get derailed, particularly postgraduate students and take longer than expected to complete their studies irrespective of the support and guidance they are offered. She also mentioned the constant pressure associated with teaching, conducting research, and having a strong research team that appeals to postgraduate students.

Prof Mugivhisa confirmed that although she completed her PhD at SMU, she also encountered challenges such as being a full-time lecturer, a mother, a wife and also having a social life. She was also faced with the challenges of conducting research, supervising postgraduate students, and participating in several community engagement projects while also conducting her study.

Out of all the turbulences she faced during her academic years, she managed to attain a PhD in Biology from SMU; a Master of Science (MSc) in Zoology (Aquatic Resources Management); a Bachelor of Science (BSc) Honours in Zoology and a BSc in Zoology and Chemistry all from the University of Transkei now, Walter Sisulu University (WSU). In addition to her many accomplishments, she holds a certificate for the Teaching Advancement at Universities (TAU) Fellowships Programme for the 2018 - 2019 cohort and a certificate in Higher Education Assessor and Moderator Development Course which was offered by Rhodes University.

Prof Mugivhisa did not know that she would someday become an academic. However, growing up in a family where both of her parents were teachers, becoming an academic was not foreign or unexpected. Her working at SMU since 2011 and being accepted to enrol as a PhD candidate in a reputable and prestigious institution like SMU were some of the opportunities, she will always be grateful for.

“The calibre of professionals like Prof Joshua Olowoyo, a well-established NRF-rated researcher motivated me to register for my PhD under his supervision and mentored me in the early years of my career as a researcher and an academic. The support and motivation from my Head of Department, Prof Piet King, and other colleagues in the Department of Biology and Environmental Sciences inspired me to pursue and register for my PhD at SMU and throughout my study,” shared Prof Mugivhisa.

The legendary professor applauds SMU for instilling Ubuntu in her which encompasses all the essential values such as respect for the self and others, humanity, and compassion.

“I advise students faced with challenges to consult and seek help from lecturers, the Centre for University Teaching and Learning (CUTL), and mentors who can support and encourage them. You should identify the root causes of your struggles so that you can be offered appropriate assistance. There is always a solution to any struggle and help is always available. Above all, you are never alone” motivated Prof Mugivhisa.





# Introducing Immersive Technology at SMU - CUTL

Tertiary teaching and learning systems, modes and strategies are increasingly moving towards virtual and immersive experiences. The Goldman Sachs Global research reports states that, “There are endless chances of practicing by using these technologies as they have unlimited resources, safe environment, and the possibility to keep trying is easily available, which should make employers later more confident about graduates' skills.”

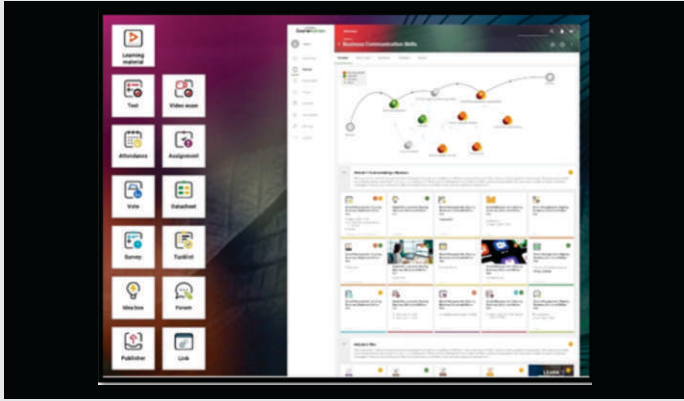
According to the Goldman Sachs Global Investment Research, the extent of opportunities for students to learn by using immersive technologies have been explored in numerous studies in the gaming industry but more recently its use in the medical professional's field has also been realized and explored. Research indicates that; “Using these technologies, medical professionals can improve their competencies, and they will be able to effectively transfer the skill acquired through simulations to the operation theatre.” As the value of access to immersive learning becomes known interest in its use rises. In this context, the World Education News predicts that “Virtual reality and related innovations could reach 15 million learners globally by 2025.”

In pursuit of keeping up with worldwide technological innovations three projects including curriculum

transformation, virtual technology as well as immersive reality were introduced at SMU in 2023. In this context, the university mandated Price Waterhouse Cooper (PwC) to present teaching and learning technologies and innovative methodologies for SMU. These solutions were offered as pilot studies or Proof of concept (POC) to selected staff and students in the School of Science and Technology. The pilot studies are currently conducted in collaboration with the CUTL Directorate at SMU and Price Waterhouse Cooper (PwC).

In February 2024, the first pilot or proof of concept (POC 1), was conducted in the Department of Chemistry. The pilot included an introduction to a Learner Management System (LMS) known as Course Garden.

**Figure 1: Course Garden Home Page**



The Course Garden LMS system promotes adaptive, self-paced, student-centered and collaborative learning. The first phase included working through the learning content in the form of readings, watching videos, doing assignments and completing quizzes by the students in their own time. The second phase included group work with peers and the third phase a presentation to the class on their respective projects.

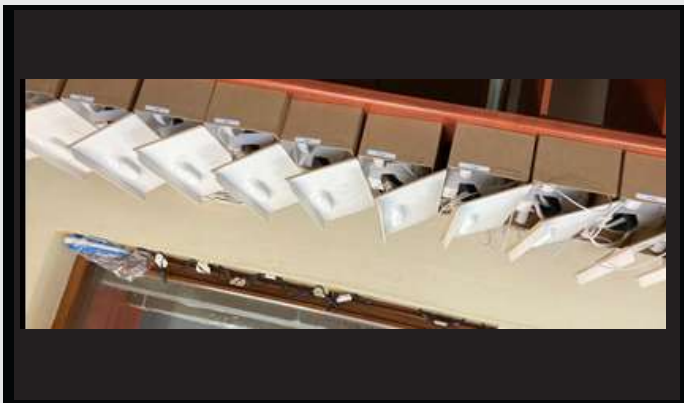
**Figure 2: Presentation of group work to class**



The second pilot (POC 2) offered students the opportunity to enter web based virtual labs with virtual reality devices to conduct 3D-simulated experiments.

For the 3D virtual simulation lab pilot project, twenty 3D Oculus Meta Quest 2 headsets were purchased. 120 e-mail addresses were created for the students to be shared. The first demo lesson for the VR Lab project took place in March when students logged into the VR Lab system and learned how to navigate the VR equipment. The interest and excitement of the students was contagious as they were trying out the new technology.

**Figure 3: Student demonstration session of VR Lab Software and VR devices**



Safe storage with charging facilities for the VR devices and a room for practice sessions were prepared in the MIAAVS building.

**Figure 4: VR Devices on charging stations and Lecturers attending VR immersive training sessions**



During May, lecturers attended training sessions on the use of the VR glasses as well as conducting experiments in the VR labs.

**Figure 5: Images of Virtual labs.**



For the third pilot (COP 3), an immersive workstation is opened for students in the meta verse environment. This pilot is the last pilot of the PWC project.

**The feedback from three different groups can be summed up as follows:**

The student's and lecturer's interest in using the VR devices was high. The lecturers emphasized the need of more practice and students emphasized the need of more lecturer support. Both mentioned that they saw the value of using the VR devices to improve their practice sessions to improve their skills in understanding and doing the experiments.

Students of the first study wanted more lecturer support and were not ready to work completely on their own. A recommendation for the future from the study is that a scaffolded teaching approach should be used for the self-paced learning environment. This means that lecturers need to be facilitators and assist students whenever they are needed. The use of VR glasses and the VR experiments are helpful, but more thought and planning need to be invested in rolling out the pilot to large classes as the space is restricted. Results will be helpful from the implementation phase of the pilot for the final roll-out.



# Collaboration for capacity development

As part of capacity development, Sefako Makgatho Health Sciences University (SMU)'s Department of Mathematics and Applied Mathematics in collaboration with the Tshwane University of Technology (TUT), University of South Africa (UNISA), University of Limpopo (UL) and Cape Peninsula University of Technology (CPUT), applied for funding and received R5 421 664 from the Department of Higher Education and Training (DHET)'s University Capacity Development Programme (UCDP).

The project aims to develop capacity among part-time lecturers and tutors in Mathematics and Statistics education. The Department used some of the money to buy laptops for part-time lecturers and tutors to pursue their research, community engagement, and teaching activities. The Department officially handed over twenty laptops to its part-time lecturers and tutors. Master of Science (MSc) in Mathematics student and tutor in the Maths department Mongezi Banda expressed how good it feels to be one of the recipients of the HP laptops. He indicated that the laptop he received is especially important because it contributed positively by investing not only in him but also in his colleagues and academics.

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“The laptop is amazingly fast and has a proper RAM which makes it easy for me to type my research without any obstacles. To the sponsors who did this for me, you are highly appreciated, and your efforts will not go in vain,” expressed Mongezi.



Master of Science (MSc) in Mathematics student Sindiswa Mguni indicated that the demand for technological resources has increased significantly since it is required in her MSc studies. The laptop is going to provide her with the necessary tools and capabilities to excel in her studies and fulfil the requirements.

“The reliability and durability of this new laptop provide me with peace of mind during this phase of my academic journey. It is not only going to benefit me with my

academic pursuits but will also prepare me for the professional world beyond graduation. In today's digital age, proficiency in using technology is essential in every field especially when doing things virtually. This investment is going to help me with equipping myself with the necessary skills and tools to succeed in my future career endeavours,” concluded Sindiswa.

# Exploring new and innovative approaches to transform teaching and learning

**S**efako Makgatho Health Sciences University (SMU) recently held a High-Performance Computing (HPC) ecosystem workshop. The HPC technology uses clusters of powerful processors that work in parallel to process massive, multidimensional data sets and solve complex problems at extremely high speeds. The workshop aimed to provide researchers and students with increased access to computational resources, placing emphasis on digital transformation and research excellence.

Digital technology has been shown to strengthen healthcare systems, improve the efficacy of public healthcare, expand the reach of care to underserved populations and improve health financing - all pertinent issues in South Africa and on the continent. Health Sciences and Science and Technology students are expected to adapt to and survive as professionals in this daunting

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healthcare and technology-enabled world. Through this workshop, SMU continues to explore new and innovative approaches to transform teaching, learning, and research and innovation, as well as the adoption of digital technologies as enablers.

The workshop featured presentations from a range of experts, which included, Dr Taurai Hungwe, Dr Happy Sithole, Mr Werner Janse van Rensburg, Mr. Bryan Johnston, and Ms. Mmabatho Hashatsi. The topics covered, incorporate HPC system administration training, Activating the HPC ecosystem, User onboarding and training, concepts and skills, Student cluster competitions and virtual laboratory training.

The Centre for High-Performance Computing (CHPC) within the Council for Scientific and Industrial Research (CSIR) provided technical guidance and training to SMU system administrators and lecturers on the HPC system, which will be available to the entire university community. The training included hardware deployment of the system, hands-on introduction to T440 and its overview, testing image, induction of pilot user(s), system setup, system usage and maintenance, creating users, compiling code, troubleshooting, server logs, submitting a job and handing over HPC system to system administrators.

"We are committed to utilizing the emerging technologies to enhance our teaching and learning, including assessment approaches. The development and implementation of hybrid approaches such as blended teaching and learning will not only assist the university in transforming its ageing and constrained traditional physical spaces into smart and

immersive online teaching and learning environments, but will also help us improve the wider academic experience as well as prepare students for the world of work in the 21st Century," says Dr Hungwe, HPC project lead and senior lecturer in the department of Computer Science and Information Technology, School of Science and Technology.

The workshop recommended the establishment of HPC school champions to promote the use of the HPC system within SMU's schools. Increased research output, such as publications, is expected to be a key performance indicator of the HPC program's success.

Dr Hungwe concluded by indicating that the HPC ecosystem will provide SMU students and lecturers with access to enhanced computational resources, ultimately enabling them to conduct more advanced research and improve learning outcomes. While the initial focus was on training system administrators and lecturers, student access will be available upon registration. Q



# “SMU is a construction site”:

*a reflection on the Sefako Makgatho Health Sciences University construction supplier day event*

SMU recently hosted the **Construction Supplier Day Event** as contractors, and regulators from various institutions gathered for an insightful workshop facilitated by the Supply Chain Management (SCM) at SMU. The aim of the event was to foster collaboration, innovation, and professional development. The workshop served as a platform for industry leaders and regulators to exchange ideas, discuss emerging trends, and address challenges in the construction sector.

The workshop commenced with an address by the Acting DVC: Operations, Prof Patrick Demana. He delved into the evolving landscape of construction, emphasizing the importance of sustainable practices, technological advancements, and community engagement in shaping the future of the construction industry. He further placed

emphasis on the fact that the University is open for business and looking forward to fostering collaboration with players in the industry. Integrity, value for money and professionalism in procurement were the buzz words.

“

“A critical aspect in his presentation was the fact that SMU has missed out on collaborating with major Infrastructure companies owing to its location, community disruptions as well as the unfortunate reputation of the past”, acknowledged Prof. Demana.

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Ms. Noxolo Tshutsha, Director: Supply Chain Management (SCM) took the session through SMU's procurement processes and the opportunities that are available within the University. She placed emphasis on the challenges that SMU is currently facing regarding the low response and poor participation to requests for quotations and tenders issued by the University, both on print media and the University website. She emphasized that compliance with bid requirements remains one of the biggest hindrances and shortcomings in tender responses, which results in prospective bidders being disqualified. She implored the attendees to utilize the contact details enclosed in the tenders where clarity is required. In closing, she listed the earmarked projects continuing with the theme that SMU is indeed a construction site.

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This was underlined by Mr Kojo Hudson who stated that the University is currently undergoing an infrastructure renewal phase, which seeks to upgrade and maintain infrastructure to continue supporting the academic project. In his presentation, he indicated that the University is growing in leaps and bounds, with new academic programmes in the horizon, which translates into various infrastructure projects.

The South African Revenue Services (SARS), represented by Ms. Mpho Motsemme from their Tax Base Broadening and Education Division focused on SARS Vision 2024 and the role that both SMU and contractors play in fulfilling this vision. She emphasized the critical role of contractors complying with tax filing requirements. She highlighted the potential legal and financial repercussions of failing to fulfill tax obligations. Furthermore, she discussed how accurate and timely tax filing ensures regulatory compliance, maintains financial transparency, and fosters trust with stakeholders such as clients, investors, and government agencies. A critical aspect that she emphasized was that tax compliance status remains one of the tools potential employers like SMU use to evaluate tender submissions. Moreover, she underscored the role of tax compliance in preserving the reputation and credibility of construction companies, ultimately contributing to long-term success and sustainability of the industry.

Another critical aspect discussed at the event relates to the legislative framework grading requirements within the different classes of works, including General Building (GB), Electrical Engineering Works – Buildings (EB), Electrical Engineering Works – Infrastructure (EP) and Civil Engineering (CE), amongst others.

In this context, Ms. Lischen Ndlovu gave practical examples of how grading is determined, indicating that the methods used are objective to ensure uniformity. She emphasized the role and the mandate of the Construction Industry Development Board (CIDB) as a regulatory board established by Act 38 of 2000. She further highlighted that its mandate is to transform the construction industry through inclusivity, and high ethical standards, and to amplify contributions made by industry participants towards South Africa's economy and society.

Mr. Sipiwe Hlatshwayo, from ABSA made a presentation on ABSA's Enterprise Development Programme. He delved into the topic of enterprise development, emphasizing its significance for the growth and sustainability of construction businesses. Keeping in line with the theme “SMU is a construction site”, Mr. Hlatshwayo commended the University for creating opportunities for contractors. He discussed various strategies and practices aimed at fostering the expansion and diversification of construction enterprises through funding opportunities, skills development and non-financial support. Overall, the

presentation aimed to inspire contractors to adopt a proactive approach to enterprise development, empowering them to navigate challenges, capitalize on opportunities, and achieve long-term success in the dynamic construction industry.

The final presentation was made by Mr. Mduduzi Msibi, from the Engineering Council of South Africa (ECSA) which is a statutory regulatory body established in terms of the Engineering Profession Act (EPA), 46 of 2000. The ECSA's primary role is the regulation of the engineering profession. Its core functions include the accreditation of engineering programmes, registration of persons as professionals in specified categories, and the regulation of the practice of registered persons. He gave a comprehensive presentation on the various engineering categories and how ECSA regulates the engineering sector.

One of the most enriching aspects of any workshop is the opportunity for participants to engage directly with experts, to seek clarity, and to delve deeper into topics of interest. The question-and-answer session served as a dynamic forum for lively discussion, knowledge sharing, and collaborative problem-solving. Robust discussions and questions were asked, wherein the experts, administrators and other stakeholders were readily available to provide feedback and answers, which enriched all attendees.

#### **Key Takeaways:**

- *Compliance is key:* The workshop underscored the importance of compliance and administrative consideration in preparing responses to tenders and quotations. Effective communication, mutual respect, and shared goals are essential for fostering productive partnerships and achieving project objectives.
- *Embrace innovation:* Embracing innovation is crucial for staying ahead in the ever-evolving construction landscape. Contractors must be initiative-taking in adopting new technologies, exploring sustainable practices, and embracing emerging trends to remain competitive in the market. The University is looking to invest in green energy; thus, it is imperative for contractors to innovate to respond to these changing needs.
- *Continuous learning:* Lifelong learning is fundamental for professional growth and development in the construction industry. Attendees were encouraged to seek out opportunities for continuous education, whether through workshops, certifications, or industry conferences, to stay abreast of industry developments and enhance their skill sets.
- *Collaboration and partnerships:* The Supplier Day event ignited an appetite for a discussion between SMU and ABSA for possible collaboration on the ESD programme. Furthermore, it also revitalized SMU commitment to empowering women in construction which was resolved during the Gender Responsive Procurement Symposium held last year.🔗

# SMU Alumna

## Dr Nteboheng Xaba

### Interview Q&A



**W**ho is Dr Nteboheng Xaba? Tell us about your early years, place of birth and schooling until Matric.

I was born in Paul Roux, a small village the Free State Province. I spent my first few years of life with my grandmother before moving to Gauteng province to live with my parents and start school.

I completed my primary school at Glenview Primary and subsequently completed my high school years at Bracken High School.

**How were you like at school? Where there any signs that you may end up being a medical doctor?**

I have always been an overachiever and a hard worker. I would ensure that I was in the top 5 achievers of my grade every term.

In high school, Grade 10 to be exact, I was awarded my honorary Full colours blazer. In order to receive this, I had to



maintain a minimum yearly average of 80% for 3 consecutive years. I also matriculated within the top 3 students of my grade, achieving 6 distinctions. This was a culmination of the support from my parents, teachers and the Karabo centre (additional Saturday and Sunday tuition).

### **What motivated you to study medicine?**

To be a doctor has always been my childhood dream. For most of my childhood I've habitually had a strong liking for medicine.

It is important to reiterate that every single healthcare provider is valuable in a unique way. My choosing one field over the other doesn't mean that I don't value those careers, but rather that they just weren't the right fit for me, personally.

### **How did you find studying at SMU?**

Empowering, liberating and transformative. Sefako Makgatho Health Sciences University (SMU) provides exceptionally good quality education while equipping you with world class skills. The opportunity of being taught by the likes of Prof. Mawela, Prof Koto and Prof Osuch, who are world renowned experts in their respective fields is a once in a lifetime opportunity that is enlightening. SMU is one of the very few universities that encourage one to be innovative and excel while the laid back environment quickly becomes a your home away from home.

Tell us about your favorite moments and memories at SMU Africa Day 2022! Residence 1A represented Cameroon. As a house committee member, I was responsible for planning the event for my residence. The attire, dance, food and decoration! This was fun! What seemed like a minute project became a massive event, the entire residence came together and united. We had laughed together, learned the Cameroonian culture, dance and a few important phrases. For a day, we were like little kids playing in the street, competing but most importantly, having fun. Seeing everyone so happy to represent this African country in the best way possible was an extremely heart-warming experience. I was humbled that we managed to pull it off.

### **You also went abroad through the Abe Bailey scholarship/bursary. Tell us about how this happened. How were you selected and what was your experience like abroad?**

I remember reading an article about an SMU student (now doctor) who got the bursary.

### **What did you learn out of the Abe Bailey experience.**

This entire trip had a culmination of big and small moments that inspired me. Ultimately, this tour itself has deeply inspired me. The vastness of the trip, the phenomenal people I travelled with. I was exposed to a side of the world that I've never seen before. I am inspired

to excel beyond any limits that I had previously set for myself. The world is enormous, endless. There is so much more beyond South Africa. I do not have to limit myself to South Africa alone. I am inspired to further my studies abroad.

### **When you graduated, surely, your parents were very excited. What can you say about parental support with regard to achieving your dreams?**

Parental support is an important part of my support system, but it's not the only part. Having both parents is an incredibly big blessing. It has played a massive role in achieving my dreams. I've been blessed with such calm, understanding and supportive parents who constantly show up whenever I need them most.

My message to parents is that your support matters. Showing up in your child's life matters! No event is too small for your presence. Show up and you'll see the results. Your constant presence is an important part of your child's success.

### **The video that we took and shared on SMU social media platforms with your parents was positively received by our followers. Over 1,3 million people viewed it on our Facebook page. Could you please explain how you feel about this?**

I am humbled. I am grateful that God has used me as His vessel. That really made me speechless.

### **Where are you currently working and how is the experience?**

Thelle Mogoerane Regional Hospital. There are consultants in each department and occasionally there are registrars that rotate here from the Wits circuit. They try to accommodate some academics by having topic presentations in some departments. A good place if you want to put the theory and skills you learned in medical school to good use.

All rotations had us do academic presentations, and ward rounds have a lot of teaching as well. They are very open to teaching those who are eager and interested.

You learn to survive and stay afloat although this is not ideal. It is doable though even though at times you will feel overwhelmed and exploited.

### **Do you think SMU trained you sufficiently to be able to perform your duties and help communities?**

Yes! Definitely.

### **Are you planning to further your studies in future?**

Yes!! And what better place to do so than at SMU.

### **What is your message to our readers?**

Believe in yourself.🙏



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