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Biology student obtains cum laude in her post-graduate studies

By Tumelo Moila

Cheryl Motshudi – Cum Laude Recipient

SMU alumna, Cheryl Motshudi, obtained a Master's of Science (MSc) degree, in Biology, which was conferred with cum laude. A feat that made Cheryl to be ardent in taking her academic journey to lofty heights, with plans afoot of becoming one of the best research scientist. “It was such an incredible milestone for me to obtain cum laude, and I do not take that lightly. I am even more motivated to take my studies to greater heights. Hence, I have decided to embark on enrolling for a PhD, that will assist me in becoming a better research scientist,” said Cheryl.

Her MSc thesis, from which she obtained a cum laude endorsement, is titled: *'In vitro antimicrobial activity of compounds isolated from Artemisia afra'. “*My Masters project was on the compounds that are present in the plant called *Artemisia afra,* commonly known as *'Umhlonyane'* or *'Lengana',* and the plant was also tested on different strains of bacteria, to investigate the antimicrobial properties that the plant might possess. The plant was also analysed to detect the different compounds that were present in the plant, and the percentage that each compound was found to be present in the plant,” she explains.

"The results that were deduced from the analyses, showed that the plant extracts had exhibited good antimicrobial activity, against some bacterial strains, and average antimicrobial activity for other bacterial strains," said Cheryl.

According to Cheryl, her MSc research assisted her to discover the multiple properties that medicinal plants contain, and hopefully add more knowledge to the vast world of science. “Biology exposed me to many different areas of learning, and I decided to further my studies in the study field which was aligned with phytomedicine and discovering properties of medicinal plants,” said Cheryl, who originally intended to study a different degree at SMU.

However, her love and passion for science grew immensely, and decided to take a different route, to the one she had initially intended to follow. “I would like to further explore and showcase my research skills on a larger scale, outside of a university setting, and hopefully publish my research in the process. Recently, I have been engaging with a few research scientists, on the extensive properties of the *Artemisia afra* plant, and if it can actually assist in the novel coronavirus pandemic”.

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She recommends that, “As a science graduate/student, I think it would be highly advantageous, if SMU establishes a partnership with different companies, which are rooted in different facets of science. This would give the graduates/students exposure, to the diverse employment opportunities, which are available outside of a university environment”.

“In conclusion, I am also very appreciative of individuals in the Biology department, especially my supervisor, Dr Monate Mkolo. Last but not least, my mother is my role model who inspires me a lot. She has always being my pillar of strength during my trying times throughout my studies, and I will forever be grateful for that. My postgraduate journey has become such a pleasant experience because of the efforts of the above mentioned,” closes Cheryl.

Environmental science student attains distinction in her MSc studies

By Tumelo Moila

Ms Senzeni Nyathi's passion for the environmental science, thrusted her to conduct an investigation on factors that affect the environment, through her MSc research, which was conferred with distinction. Her study focused on: *Seasonal variations in physico-chemical properties of leachate and perception of waste pickers on occupational health risks from selected dumpsites in Pretoria, South Africa.* “The main reason for choosing the topic for my MSc studies is my passion about factors that affect the environment, since the environment we live in can have a positive or negative impact on our health and other living organisms,” reasons Ms Nyathi, an SMU alumna.

She said one of the things that affect the environment is waste and how it is managed. “The discarded substances produce harmful substances called leachates, which present risks to both the environment, and human health.Since leachate from waste is composed of various harmful compounds, the findings of my study, were expected to provide baseline information, for those tasked with policy making, on the significance of treating leachate from dumpsites, to safe guard those working with waste on a daily basis and those who reside within the proximity of the dumpsites”.

“Through my research, I hoped to demonstrate how ineffective waste management systems, may lead to environmental pollution, and increased health risk for people, working with waste, and those who reside in the vicinity of landfill sites, and waste dumpsites,” emphasises Nyathi.
When asked on why she has a special interest in environmental studies, Nyathi said, “As a person who is passionate about environmental issues, my special interest is understanding the origins, functions, and interactions as well as natural history of communities of living organisms, different species and ecological units in relation to dynamic environmental processes”.

Her journey to attain distinctions in her MSc was initially marred with challenges of finding a balance of being a student, and executing her family duties. “However, with the help of my family, I quickly overcame the challenges. The department of Biology also played a greater role in my success, in particular, my supervisor Prof Joshua Olowoyo”.

The humble Nyathi is inspired by ordinary people she comes across in her life. “My role models are the ordinary people I come across in my everyday life, who endeavour to achieve their potential in life through difficult circumstances, never giving up for the sake of their families and other people in their communities. People with a clear sense of what is important to them and they put a lot of effort to improve and create things that make a difference in other peoples' lives”, she concluded.

Ms Nyathi also believes that SMU needs to improve its ranking in the country and internationally, through increased post-graduate outputs and publications.

Oral Hygiene students benefitted immensely through an international exchange programme

By Tumelo Moila

In the midst of the global coronavirus pandemic, a group of four Sefako Makgatho Health Sciences University (SMU) Oral Hygiene students, managed to complete a three month international exchange programme, between SMU and Jönköping University (JU), in Sweden. The quartet that comprises of Tshwarelo Makhwiting, Pfananani Mariba, Sharon Matlou and Itumeleng Ralesego, commenced with the programme, three weeks prior to the dawn of the South African national lockdown. Recently, the foursome returned home, through a repatriation process, under the national Department of International Relations and Cooperation.

At JU, their programme entailed health care improvement, oral health, clinical training, research, intercultural and international communication, as well as Swedish language. They qualified for the programme after they met the selection requirements within the Department of Community Dentistry, under the School of Oral Health Sciences.

After completing a mandatory 14 days quarantine period, they resumed with their academic activities at SMU, sharing their invaluable experiences, ranging from clinical to research activities. “It was one of the most incredible and unforgettable experiences in my life because everything went according to the plan. I attended the clinical sessions before they were stopped due to the COVID-19 pandemic. As a result of that, they immediately initiated the online teaching and learning. Academically, I have improved a lot, especially on my writing skills, as we were required to write several research assignments. Most importantly, I have learnt and developed skills on how students at JU dental clinic treat their patients,” shares Tshwarelo.

Pfananani said: “The experience was an invaluable contribution to my self-development both in education and life in general. I have also gained self confidence in my career and academic life, since I had to engage in class discussions, and presentations with fellow students from different countries. The most important thing for me was acquiring the clinical skills on patients' treatment. In future, with the knowledge and skills gained, I will build my own oral hygiene practice.”

Sharon wishes to further her studies in Sweden. “I enjoyed my stay in Sweden and wish that one day I can go back to further my studies there. My passion about oral hygiene career has grown tremendously. Although I am not yet done with my studies, I can confidently say that I am ready to start working, due to the knowledge and skills obtained at JU. Their clinical training is top notch, and Oral Hygienists are highly respected, as valued members of the multi-disciplinary oral healthcare team,” said Sharon.

To sum it up, Itumeleng said, “The exchange programme was an exhilarating experience and I recommend that the Oral Hygiene sophomore students should apply for this opportunity. As an aspiring clinician in the oral health sciences fraternity, I have learnt that one should always have a people centred care approach when addressing the patient's needs. Punctuality for clinical sessions is key in enhancing proficiency when managing patients. Interestingly, students at JU don't attend lectures in their final year, they focus on research work”.

The photo was taken before their departure to Sweden. Precisely three weeks before the South African national lockdown was announced.

The spectre of Gender Based Violence continues unabated even during the Lockdown as a result of Covid-19 – Writes Dr Moreoagae Randa

Gender-based violence, rape, and femicide is a crisis that is tearing our society apart and affects every community in the country. South Africa's national lockdown due to COVID-19 has increased the rate at which domestic violence occurs, leaving women and children vulnerable, in danger and with no chance of escape from their abusers during the quarantine. Before COVID-19, Gender based violence (GBV) was already one of the greatest human rights violations. Progressively so, gender based violence is surging as COVID-19 lockdowns continue. In South Africa, this continues to happen regardless of the fact that we have two major instruments that are meant to protect women against any form of violence, namely; the Domestic Violence Act No116 of 1998 as well as the Criminal Law (Sexual Offense and Related Matters) Act No 32 of 2007. The restricted public movements may have reduced certain types of crime and violence but increased others. Coronavirus does not know race nor gender, but the household hierarchy has classified it as a tool to exercise and exert power. The victims are stuck between the two pandemics: **Corona Virus and Gender Based Violence.**

Several reports revealed that the lockdown has had a positive impact in the lives of South Africans i.e. decreased criminal activities, that includes murder, robberies and hijackings but GBV remains a daunting problem or rather a challenge. The number of domestic violence cases reported to the South African police between March and April is said to have dropped drastically by 69.4%. The figures make it tempting to believe that in South Africa, unlike many other countries, lockdown in response to the COVID-19 pandemic reduced family and domestic violence. One can argue that the statistics of reported cases and the number of calls to hotlines and non-governmental organizations are not sources of information on the extent of violence experienced by women. The data only tells us who accessed services and reported the cases. On the contrary, reporting violence during the lockdown period may bring up serious complications as there is no privacy for the victim is never alone. This raises an important question about whether it was possible for women to access services under lockdown.

It is a fact that people are not used to be in confined spaces, being together for such long and uninterrupted periods. For those in abusive relationships and marriages, this means that the victims are confined to isolated homes, and this in turn gives the abusers the platform to exercise their coercive and physical violent behaviour. This is further exacerbated by the current economic stress, helplessness, anxiety, depression, frustration and being overwhelmed as they try to adjust to the changes which affects their lives.
However, the COVID-19 pandemic should not be used as an excuse, violence in any form is unacceptable, has no justification and it shouldn't be tolerated.

The lockdown has devastating effects as some of the victims may not even have the money as they are financially dependent on the abuser. Women are therefore, hit harder by socio-economic impacts of COVID-19. Not only does GBV affects the victims' health, but it also impacts on their general well-being. The negative effects of domestic violence on health amongst others includes reproductive problems, mental health problems, and death, impacting beyond the obvious harm, with potentially devastating consequences for women. On the other hand, the children in abusive homes are witnessing all the violence and this will definitely have a negative effect on their mental health.

The prevalence of mental ill health is amplified by violence, leading to other health problems that require extra human and material resources and excessive use of the available health care resources. It cannot be denied that the cost of violence against women is widespread and high. Increasing the annual gross domestic product is one of the aims of all governments. The cost of violence against women not only creates an economic burden, but also reduces the gross domestic product. Its impact on economic growth and poverty are substantial. Efforts to reduce poverty are hindered, and this will make achievement of the Sustainable Development Goal no 5 that is “Gender equality” which is set to be achieved by 2030 more difficult.

Whilst other countries are dominated by the coronavirus pandemic, South Africa as a country is experiencing a spike in femicide which caused a public outcry. In his address to the nation, South African President Cyril Ramaphosa stated that women and children have been murdered; and that 51 percent of South African women have experienced violence at the hands of someone with whom they are in a relationship. South Africa has the most progressive Constitution in the world regarding gender equality, yet the country has become the epicenter of some of the most gruesome and brutal cases of violence against women and children.

Considering that violence and injuries are the second most frequent leading causes of death in the country, which is not at war, South Africa faces an unprecedented burden of morbidity and mortality, accompanied by lost disability-adjusted life years. Wives die at the hands of their husbands, women killed at the hands of men who are their partners whilst girls and innocent children die at the hands of men. Many argue that strong political will should be built to end gender based violence. Patriarchal societal norms and values, and the conspiracy of silence that discourage women from speaking out all fuel Gender Based Violence. Breaking the silence is the first step to transforming the culture of GBV.

Everybody has a role to play to end violence against women, and its starts with respect. We need to stand together with the Lesbian, Gay, Bisexual, Transgender and Intersex (LGBTI) communities in this journey towards equality and embracing human rights for all.

South Africa is not a country at war, yet we are fighting within ourselves. We are our own worst enemies as a society. What is it that we are missing? What is it that must be done to keep women and girls safe?

Dr Moreoagae Randa is a lecturer at SMU Nursing Science Department in the School of Health Care Sciences.

Physics student contributes to the new body of knowledge

By Tumelo Moila

In the words of Billy-Guy Bhembe “Black child, it is possible”, we gain insight on 25 year old Ndivhuwo Tshivhenga, who recently obtained her BSc Honours in Physics meritoriously, with distinction. Born and bred in the vibrant streets of Soshanguve, in Gauteng, this young lady lets us in on her rather ''bumpy'' journey to achieving what she describes as the biggest highlight of her academic career.

Ndivhuwo's mission is to thrive in the field of Physics, and she is well on the way to doing this, because of her contribution to what is described as the new body of knowledge in this field. She not only aims towards broadening her horizons, by furthering her studies (in MSc and PhD), but she wants to take on as much industrial experience as she can, to enable her to become the best at what she does, as well as equip herself with the relevant skills to also empower other people.

“Obtaining my Honours cum laude was something I only dreamt of. The dream seemed far-fetched, taking into account all the challenges I was faced with, but with the right amount of perseverance and faith in the Most High, my dream became a reality,” said an ecstatic Ndivhuwo. She has not only become a beacon of hope to her family and friends, but to everyone else watching from a distance.

“My honours study contributed to the new body of knowledge in the research, and development of new phosphor materials. It is titled: *'The effect of Sm^{3+} co-doping on the structure, morphology and photoluminescence properties of $CaAl_2O_4$:0.1%Tb^{3+}, x%Sm^{3+} ( ) nanophosphor prepared by the citrate sol gel technique'*. I chose this topic with the help of my supervisor, Dr Rebecca Mhlongo, with the aim of determining the effect of Sm^{3+} concentration,” explains Ndivhuwo.

“The irony of this whole thing is that I basically had to start from scratch, as I had no idea what I was doing. This went from learning how to construct an article, to conducting proper research, and also fulfilling what was expected from me, but I quickly fell into the breeze of this, with the help of my supervisor, without whose guidance and patience, obtaining a mark of 84% would have been nearly impossible.”

She goes as far as making a passionate plea to the School of Science and Technology, to increase outings to science exhibitions/industries, which will give students much needed exposure. “That way we can get more insight on our intended career paths, further increasing our chances of success in the industry, and accomplishing more towards the never ending development of Physics,” said Ndivhuwo.

Psychology student acquires honours degree (cum laude)

By Tumelo Moila

SMU Alumna, *Oamogetswe Monnye's BSc honours (Psychology) degree, was conferred cum laude, in absentia, during the recently held Virtual Graduation Ceremony. “For acquiring cum laude, I give credit to my studying principles, my supervisor Mr Chris Van Rooyen, and fellow research group members (Samantha Chiloane, Phathutshedzo Ndou, Singita Risenga, Lindi Skhosana and Melita Tjale). As a group, together with our supervisor, we decided on the topic: *'Students' perceptions regarding e-learning at Sefako Makgatho Health Sciences University'*,” said Oamogetswe.

"As someone who previously worked as a student assistant at the SMU Information and Communication Technology department, I thought this is a chance to make positive contributions that may improve the e-Learning services. In this study, we were able to explore the perceptions of students regarding the e-Learning, which helped to recognize the challenges that students face, and how often do students use the e-Learning, and the various e-Learning tools available on campus. It was concluded that there's enough e-Learning tools on campus, but not enough computers to access them," she shares.

She acknowledges and feel grateful that SMU gave her a chance to further her studies. "I fell in love with SMU and it is close to my home (Segwaelane village, outside Brits, North West). I come from a family of academics, and furthering studies at tertiary is something that is instilled from a young age, among my family members," said Oamogetswe, who was raised by her grandmother, Mokgadi Mudau.

"Although my grandmother was born poor, she is a definition of wisdom. She usually tells me that she attended school up to grade 2, because there were no teachers to continue with the following grades. She raised me, whilst my mother was finishing school and working. In fact, when I was born there was no one to take care of me, so my grandmother left her domestic work to raise me, and she reminds me about that each and every day. She taught me how to read the bible, and follow the ways of God," Oamogetswe recalls the conversation she had with her grandmother.

According to Oamogetswe, her grandmother has a desire of witnessing Oamogetswe becoming a medical doctor. "She supports me to become a Doctor because she wants me to be her personal Doctor. So, I have decided to enrol for a medicine degree, in 2021 academic year. My grandmother is a friend that I needed in a parent, and even today, she teaches me the ways of being a woman. She is the mother and grandmother, I aspire to be in future," asserts Oamogetswe, who is currently taking a gap year before she proceeds with her medicine studies.

Oamogetswe obtained cum laude after her research, tests and examination marks were combined to give her an average of 79% in final marks.

SMU alumnus fulfills his childhood dream

By Tumelo Moila

Amid the COVID-19 pandemic, Matthew Femi Olayiwola fulfilled his childhood dream of attaining a PhD degree in Statistics, which was conferred in absentia, during the inaugural 2020 SMU Virtual Graduation Ceremony. A dream which he shared passionately with his parents, who initially had different views, regarding his career path.

"Completion of my PhD degree is a dream come true for me, and my parents, as I am the first person to attain this height in my lineage. I remember when I was applying to study at the university, my mom wanted me to become a medical doctor, while my dad wanted me to be a mathematician. I made a promise to my mom that since I do not like medicine, I will study up to the PhD level, to become a Doctor of Philosophy in Statistics, and she blessed me that day," said Dr Matthew Femi Olayiwola.

His PhD thesis is titled: *Cointegration relationships of average petrol price and consumption rate in South Africa. "*Applications of existing methods to new problems, and modifications of old models for more applications, are always of value in the disciplines of Statistics and Operations Research. This study does this, and also modifies the models where necessary. As such, new models are developed. Through this study, forecasting models have been developed, and it is hoped that the patterns in the relationships, would assist in the adjustment of existing time series, forecasting models that were used in the past. Scientific modelling for management purposes can improve efficiency in management, and is a proactive approach to improvement," he

narrates.

His career as a Statistician, started when he was admitted to the department of pure and applied mathematics at the Ladoke Akintola University of Technology (in Nigeria). He then changed to statistics after making a thorough enquiry about the career prospects in statistics. "I developed a special interest in statistics when I learnt that statistics has wider applications to real-life situations, which also cut across all professions. During my honours'study, I got to know that statisticians forecast future, and was so curious to learn more about this. I remember, Prof Oladoye Soladoye Adegboye telling us in class that, there are

three people in the business of future forecast, prophet; magician; and statistician," he said.

"After completing the Masters of Science degree, I decided to enrol for my PhD programme at SMU. I believed that the resources I needed for my research, were readily available at the institution. I also liked the support I received from my supervisor, and head of statistics department, Prof Solly Seeletse".

"I am passionate about becoming a lecturer at a university where I can use my knowledge to fully contribute to the body of knowledge through research. I am currently working on a paper titled: COVID-19 - awareness and impact in Africa".

He is grateful to the National Research Foundation (NRF), which played a critical role in funding his studies. "I am very grateful to the South African government and NRF for their non-discriminatory financial support given to all students, regardless of their country of origin, since I am a foreigner (from Nigeria). Hopefully, one day, I will be able to use my qualifications to give back to this great nation, South Africa, which enabled me to fulfil the promise I made to my mother fifteen years ago. God bless South Africa, its leadership and society at large".

SMU BSc graduate furthers his studies in UK

By Tumelo Moila

Jacob Busang during his BSc Honours graduation ceremony

SMU alumnus, Jacob Busang is currently pursuing his Master of Science (MSc) degree, in Medical Statistics, at the London School of Hygiene and Tropical Medicine (LSHTM), in the United Kingdom (UK). He acquired this elusive opportunity after submitting an application, and was successively offered the Masters Fellowship by TREATS consortium - Tropical Epidemiology Group (TEG), and LSHTM, for the academic year 2019/2020. "I applied and was offered the fellowship, after been encouraged and empowered by my then manager and role-model Prof Kennedy Otwombe, a biostatistician at Perinatal HIV Research Unit (PHRU). He played a pivotal role in shaping me up for my career as a statistician, and mentored me to be where I am now," shares Jacob.

His Masters Research project is titled *'Factors associated with participation in the HPTN071 (PopART) universal test and treat intervention'*. "The HPTN071 (PopART) Trial is a three-arm matched cluster-randomised trial of combination of HIV prevention, including universal testing and treatment for HIV. This was conducted in 21 urban or peri-urban communities in Zambia, and Western Cape Province (South Africa), from 2013 through 2018. The primary outcome was HIV incidence between months 12 and 36 measured in a population cohort," He explains.

"The main aim of my project is to understand what patient characteristics were associated with participation in the PopART intervention and to estimate the strength of these associations. So in all of these is just for me to apply and showcase the knowledge and skills acquired from this degree," said Jacob, who will return back to South Africa at the end of 2020, to execute a mandatory one-year work attachment at the TREATS study site.

Jacob, who obtained both his Bachelor of Science (BSc) under-graduate and Honours degrees (both conferred with cum-laude) at SMU, developed an interest in Medical Statistics during an internship programme. "After completing my BSc Honours in Statistics at SMU, I managed to get an internship at the National Research Foundation (NRF). I was placed as a Statistician at the PHRU. For a short period I had been on the internship programme, I was successfully channelled into the Medical Statistics, and that is how my interest and passion were developed".

His academic journey was not smooth sailing, as he encountered financial challenges along the way. "Most of my challenges were financially related. All these occurred just from day one of my registration, whereby my family could not be able to afford a mere registration fee. By just a leap of faith, I enquired with the SMU Financial Aid Office, if I could go ahead with registrations even though I could not afford it. They allowed me to register my degree. Later during the same year, I qualified for a merit bursary, and from there, I never paid any registration/tuition fees for the rest of my studies at SMU. I would like to express my sincere gratitude to SMU for not denying me an opportunity to study due to being financially disadvantaged. Today, I am able to 'swim with the sharks' over here (at LSHTM), and still standing strong. Moral of the story, do not undermine yourself because of your background," he emphasises.

Jacob appeals to his alma mater, to invest in research collaborations. "For my alma mater SMU to become a great university, it must invest in major research collaborations, both locally and internationally, through its five different schools. This includes collaborating with other public research institutions, university-industry collaboration. Ultimately, it will provide a huge amount of opportunities for students and staff in future".

"On a personal level, I hope to be part of one of the leading research institutions, doing essential research that brings about positive impact and change to society at large, and the health sector," indicates Jacob.

In conclusion, he shares a piece of advice with SMU BSc students/graduates. "We need to demystify the stereotypical views that are related to our BSc and how it limits our opportunities. We are living in a changing world and scientists will forever be needed in society, so the sky is the limit".