

# Faculty of Science

# News

Message from the Executive Dean of Science,  
Prof Azwinndini Muronga

## Retrospect: A Look Back at Last Graduation

The year has gone by at a fast pace and looking back, we have come a long way. A significant number of students in our faculty of science graduated with their undergraduate and postgraduate degrees in April this year. Looking back, it was so exciting to see our graduates finally being celebrated in the virtual graduation ceremony. This is one of life's great milestones and we are proud of their accomplishments. Of course, we were disappointed we did not get to watch them walk across the stage as we had always dreamed of. We all know the last part of their final year was not what they had planned or anticipated. Life has tossed them a curve. Having handled all the hurdles that came with the pandemic, we know they are well on their way to triumph over all curves to come. By walking across that virtual stage, they provided great hope to their community and the South African society at large. We were happy to see them celebrating their achievements on various social media platforms. They now have an opportunity to make their communities thrive with their success and ability to set goals and achieve those goals. Keep up the great work and I look forward to seeing the greatness that your future holds.

Some of the graduates shared their stories from the heart on how they overcome the university challenges.



### Perseverance is the mother of success

It took hard work and perseverance for Sibusiso Notwala to achieve his Bachelor of Science (Hons) in Physiology. He endured all the challenges that came with the unprecedented times of Covid-19. He looks back and thinks he graduated at the strangest times ever, but hard work, talent, drive, and vision will always outlast tough times. That's how he knows he is going to make the world what he wants it to be.

Notwala also holds a degree in Bachelor of Science (Biochemistry, Chemistry, & Microbiology). He chose his field of study because he is so passionate about medicine, and he aspires to be a Pharmacologist one day. He said studies have been very challenging emotionally and his journey of five years to achieve two qualifications feels surreal.

Like many, he has faced difficulties and

"I am at peace knowing that I have acquired what I have with so much support emotionally and mentally. Keeping up mentally is part of the undermentioned in BSc"

doubts in the field he has chosen. He was once at a turning point where he was not sure if he made the right decision or not.



Sibusiso Notwala

"To any student looking up to me, remain rooted, speak and consult to your spiritual background for faith and hope. These two tools are key in always remaining true to who you are both in principle and the action you go about achieving what you set as target for yourself."

He shared his favorite quote that inspires him.



Siyasamkela Makheta

### **The impossible journey is the one you never begin**

Chasing a dream requires effort, passion, and hard work. It was not an easy journey for Siyasamkela Makheta to attain his degree in Bachelor of Science (Biochemistry, Chemistry, and Microbiology). It took every situation he has encountered to bring him where he is now, and his journey molded him for the greater good.

He said the undergraduate degree in BSc was exciting especially in the first year because it exposed him to a wide range of study fields within science. However, he felt the pressure was too much especially for him who studied in rural schools with not enough resources, but he is grateful for the supportive staff who have been part of his journey.

"The pressure in the first year was just too much especially for me coming from a rural area and studied in rural schools with not enough resources, but the supporting staff like Lab demonstrators and the Lecturers were always there to offer support throughout the way.

### **Where there's a will, there's away**

Three years have gone by so fast and Asithandile Ntsondwa couldn't believe that she has finally graduated with her degree in Bachelor of Science (Environmental Sciences). She rose above her challenges.

She said the journey all the years has been stiff and especially for her as a person suffering from anxiety. There were so many things happening, having to undergo emotions that some people do not understand, and keeping up with academics was tough but she had to cultivate her resilience and make sure her mental health was standard.

"Varsity experience was very fun but also very challenging, I don't want to lie, People viewing from outside can think it was so easy

**"My mother said to me, ' If you are a soldier, you'll become a general. If you are a monk, you'll become a Pope. Instead, I chose to be a painter and wounded up as Picasso"**

Some of us only started performing practicals here in University, otherwise, practicals were just a theory."

He said the Nelson Mandela University Faculty of Science offered many options to all the branches in science and he was not limited. Hence, his overall experience was exciting and not just a walk in the park.

"The pressure to finish your degree will always

be there. Many of us got to repeat some of the modules from the first year because we were introduced to an environment that was completely foreign to us. Nevertheless, I told myself I will finish the course no matter how challenging it is"

He added that BSc does not only need geniuses but a person with focus and determination because everything is happening so fast.

Makheta is currently pursuing his studies in Bachelor of Science (Hons) Chemistry, and he aspires to be a successful businessman and an academic that shapes young minds, mainly from disadvantaged rural areas. He started his agricultural business because he believes Agriculture symbolizes hope.

"There was a point in time I lost many people close to me. I felt so defeated and hopeless. I needed hope and Agriculture became therapeutic in that way. You get to plant a seed not knowing whether it will grow or not, but you keep watering it until an embryo starts breaking the ground and shows on the surface and that is what kept me optimistic"

Makheta has assisted many students from rural areas through his organization, Transition from High School to University which they formed as University students to bridge the gap between the rich and the poor and assist high school learners with every information they need. They assist students mainly from the outskirts with applications and career choices through their career exhibitions.

"Nelson Mandela once said, 'Education is egalitarian', he referred to education as a symbol of equality. Like in a boxing ring, your status or skin color does not matter, you are all throwing punches and the playground is equal irrespective of your status or skin color. The same situation applies with school, no matter you are from a rich or poor home but when you have access to information then no skin color or financial status can stop you from reaching your goals."

**"Don't give up when things don't go your way but seek help from your Lecturers and friends. You can all finish your undergraduate degrees if you are passionate about what you study and dedicate your time to your studies." just a theory."**

because those three years went by so fast, but it was pretty hectic, there were so many ups and downs"

She said failing a couple of modules, yet she is used to being a Top Achiever was the most humbling experience ever. She had to take extra modules to recover the failed modules and that was the addition of workload on top of what she already has. Nevertheless, she was not demotivated, and she didn't give up but instead, the people around her kept fueling her light to burn even brighter.

She said the unwavering support she got from her grandmother and friends is unmounted and she is so grateful because they have contributed to where she is today.

"To the undergrad students and if anyone is looking up to me, I would

**“It was pretty hectic, but I made it, I met some nice people who have been motivating me to keep going and I am honestly grateful to have met these wonderful people”**

say, Keep going. As a person who came from high school as a Top Achiever and having to fail a couple of modules, it was really hard for me to take, it hit very hard. That is one of the lessons that the university has taught me, that it can put you down to your lowest and you have to find a way to bounce back and be the best you can be”

Asithandile is currently pursuing her studies in Bachelor of Science (Hons) in Botany and is currently a Science and Technology Editor for the university student newspaper. Despite all the challenges she has faced, Asithandile has been involved in many extracurricular activities. She is not a stranger to student leadership.

She became involved in extracurricular activities not only for her personal development but because she was passionate about it. That is what made it a bit easier to juggle both academic life and

extracurricular involvement. She loves positively impacting people’s lives and is always driven by a desire to leave a permanent mark wherever she goes so that when she is left, people would know that she walked that path.

“Obviously when you get to university, you are advised to not just be a student but also be involved in things, but then my involvement was not because I wanted extra skills on the side, but it was because I love interacting with people and leaving an impact in someone’s life.

I want to leave a mark so that when I leave, people would know I did that. It’s been pretty hectic, but I knew I am passionate about student issues and spreading the science because I love science, but I told myself I am going to keep going”



**Asithandile Ntsondwa**



**Tamera Morgan**

**Go confidently in the direction of your dreams.**

It is okay to fall and lose your spark but just make sure when you get up, you rise as the whole fire. That is exactly what Tamera Morgan did after going through so much traumatic experience in her first year. She is super excited about graduating with her degree in Bachelor of Science (Computer Sciences) majoring in Physics. It is indeed a milestone achieved.

Her first year of studies was one of the hardest years she has ever faced because it was for the very first time, she experienced bullying and sexual harassment. However, she is grateful for the assistance she got from one Professor in the Department of Computer Science who assisted her to obtain a protection order against a perpetrator.

“If it wasn’t for Prof helping me obtain a protection order, I couldn’t imagine how bad it could’ve gotten”, She said.

The traumatic incident did not only leave her with emotional scars, but it led to the repeating majority of her modules in the first year. Nevertheless, she believed that all these experiences happened for a reason even though she did not understand it at that moment, but they were building blocks to the person she has become.

“I am a firm believer in ‘everything happens for a reason, even if you don’t understand the reason at the moment,” She said, “And I believe the reason was to meet all the people I met in 2018”

Nonetheless, she bounced back and strived for more. From then on, she seized every opportunity she could get, and she won fantastic prizes through her involvement.

“My team and I won a weekend-long Hackathon which resulted in us winning X-box’s. ” She said, “ Then Elizabeth van der Merwe and I entered the Rosatom Atoms for Africa and won a trip to Russia, we both attended a Deloitte

Vacation School. “

Tamera was also invited to rub shoulders with experts and advisory board in the Department of Computer Sciences. She became involved in many things. She is one of the founders of Coders Who Care Initiative which they started with an aim of helping the community by getting more CA students involved in it. However, all their activities were disrupted by covid-19 last year, but they still have the goal in their heart.

“The latest endeavor will be attending the SANSA International Space Weather Camp in July which I’m very looking forward to,” she said. “My overall university experience started very rockily, but if it wasn’t for the rockiness, in the beginning, I don’t think I would’ve been so determined and driven throughout the years”

She praised the Physics and Computer Science Lecturers for being the most supportive and kindest people and She urged students to put their faith in their Lecturers.

“They made the entire degree so much more exciting, and I do think on the fact that the Third year didn’t end on how it should’ve due to Covid and I did miss that in my final year”. She added, “If you put in your 50% (at least) of your work, Lecturers will help you if you struggle. They care more than you think”

Tamera also encouraged students to be open to new connections.

“Also, don’t think a degree is something you get alone, University is not an isolated



experience, and even though Covid makes it hard to overcome that aspect, try, try and try to form friend groups. They are the people who know exactly what kind of stress you are going through, and that kind of sympathy goes a long way “

She is driven by a desire to leave a remarkable footprint in the field of Computer Science one day and she wants to do something that will help the world while making people's lives easier.

Her favorite quote is by Steve Jobs which says 'I want to put a ding in the universe'

"Despite his arguable bedside manner but I found his perseverance in life inspiring," she said.

**"I would love to go to the green computing field and my biggest goal is to land a job at Apple," She said, " I've always been passionate about Apple. What they are striving for and what they are capable of doing aligns with my vision. I think my talent would be of value in an environment such as theirs"**

## Botany Department Save Water to Save Life

*(Published on Reasons to Be Proud)*

With the University having to create all kinds of innovative ways to save water in this water crisis, the Botany Department has implemented a closed water distilling system for their research needs, saving an enormous amount of water.

"Scientific research requires researchers to use 'distilled water' instead of tap water as it makes for more accurate data, particularly with studies on nutrients and chemical analyses. About 300 litres of water are required to make 1 litre of distilled water, so the wastage was enormous," says Senior Laboratory Technician Andy Smith.

The Botany Department, therefore, tasked Engineering's eNtsa's Manufacturing Support Unit to design a closed system for them. Hendrik Nel of eNtsa designed the system whereby the water that would ordinarily have gone down the drain, now goes to a storage tank and is then recycled through the distillation unit.

Andy says the tank does have to be topped up from time to time, but the water-saving is substantial. says, Andy



Picture: Pexels

## From humble beginnings to greater heights

*(Write Up by Sanele Thwala: Originally published by symmetry magazine written by Heather Dugmore)*

From the rural area of Venda in Limpopo to the world in pursuit of science abroad. Prof Azwinndini Muronga featured on Symmetry magazine telling stories of his humble beginnings and the love of science. Despite the challenges he faced, he has defied all odds and was formed by those experiences to become one of the acclaimed champions of Science in South Africa. Presently, he is the Executive Dean of the Faculty of Science at Nelson Mandela University.

Prof Muronga reminisced his challenges during the times of apartheid and how his passion for science began. As a young boy at the age of six, he started looking after the family's livestock. On normal school days, his mother would take the livestock to the grazing field and when he comes back from school, he would take responsibility and look after the livestock, that is when he fell in love with science.

Prof Muronga learned the skill of multitasking in the grazing field. He used to take his books with him to the grazing field where he studied while looking after the livestock. He was born during the harsh times

in South African history where black people were oppressed and were separated in a system of Bantustans. Her mother funded her children's education by selling homemade beer. Although she was not educated her measurements of the ingredients were spot on. Even though Prof Muronga never tasted the "African beer", but he was so interested in how the brewing process happens. After he founded that there's a branch of science called chemistry, He then realized that it was done at home.

Prof Muronga's first career aspiration was to become a Medical Doctor, but he couldn't secure funding to pursue Medicine at the elite institutions of higher learning, but instead, he pursued a Bachelor of Science degree at the University of Venda and that is where his passion for science was cemented.

Read more on the following link [A champion of physics in South Africa | symmetry magazine](#)

# Top Three Mathematics Students awarded Flip Potgieter Maths Awards

By Catherina Steyn



Benjamin Rodgers (Left), Erich du Plessis (Middle) Lonwabo Jacobs (Right)

Benjamin Rodgers, Erich du Plessis & Lonwabo Jacobs who are doing their first year, second year, and third year respectively, were announced as Top students in Mathematics in the awards ceremony hosted by the Govan Mbeki Mathematics Development Centre (GMMDC).

The awards are named after Flip Potgieter who lectured Mathematics from 1976 to 2006 but was also well known for his passion to promote math and science, and his fight against apartheid. The Top students were selected after the final results were made known in March. This is the second year that the awards were presented to the top Mathematics students at Nelson Mandela University. Prof Werner Olivier (Director: GMMDC) announced the prize-winners and Dr. Martin Weight (Senior Lecturer: Mathematics) handed over the prizes to the top performers. Prof Willard Mbava (HOD: Mathematics and Applied Mathematics) gave a very insightful overview of the department and its mission and vision. The continuation of the Flip Potgieter Legacy Bursary to the recipient Lonwabo Jacobs was also announced at the same function.

We asked the students what they were currently doing, what they enjoy about their studies, and any advice that they had for other students.

**Benjamin Rodgers** won the award for being the best student in first year Mathematics. Currently, he is doing his second year of BSc (Computer Science) studies. He said he enjoyed his studies because of all the interesting topics he gets to learn about, be it a new concept in maths or a new algorithm in computer science. Rogers aspires to be a graphics programmer at a AAA game studio.

**“Don’t be afraid to take learning into your own hands - whenever there’s a topic you’re struggling with, don’t give up until you understand it!”**

-He said

**Erich du Plessis** won the award for being the best student in second-year Mathematics. Currently, he is doing his third and final year of B Sc General, majoring in physics and applied mathematics. He said what he enjoys the most about his studies is learning about how the world we live in works. It gives him a sense of wonder when he studies the natural laws of the universe and how they impact our own lives. He believes it is also extremely satisfying for him to be able to gain knowledge through his studies and use it to solve various mathematical and physical problems. Simply put, to me Science is the most interesting field of study there is.

“It is important to always engage with your lecturers. If you struggle with work, the best thing to do is to ask your lecturer for help. Not only will the lecturer help you to understand the work, but the mere act of trying to formulate a question to ask, forces you to actively engage with the work. Secondly, it is important to learn from your mistakes. Try different study methods and see which methods work for you and which don’t. There are many different paths to achieve a goal and you must find the one that works for you.”

-He said

**Lonwabo Jacobs** is the recipient of the Flip Potgieter Legacy Bursary, currently studying BSc Biochemistry, Microbiology, and Physiology

He enjoys his studies because it is something he enjoys doing, and I have always been interested in science-related courses, particularly those linked to biology. “Physiology is one of my favorite modules because it pushes me to think creatively and strengthens my analytical and problem-solving abilities,” he said.

Lonwabo said expecting to become an educated person solely by attending school is unrealistic. School is an important component of your education, but it is only one component. Many talents, such as adaptable thinking, cannot be learned just through formal education. Take a proactive approach to gain real-world experience while learning these types of abilities. You will not be able to earn a living until your expertise is useful, regardless of whether you have a degree or certification. Develop a skill to a reasonable level of proficiency. Never stop studying; education can teach you a lot, but the rest of the world has a wealth of knowledge.

**“Get some experience doing what you enjoy and be willing to try new things”**

-He said



## Special Feature:

# Take It with a Grain of Salt

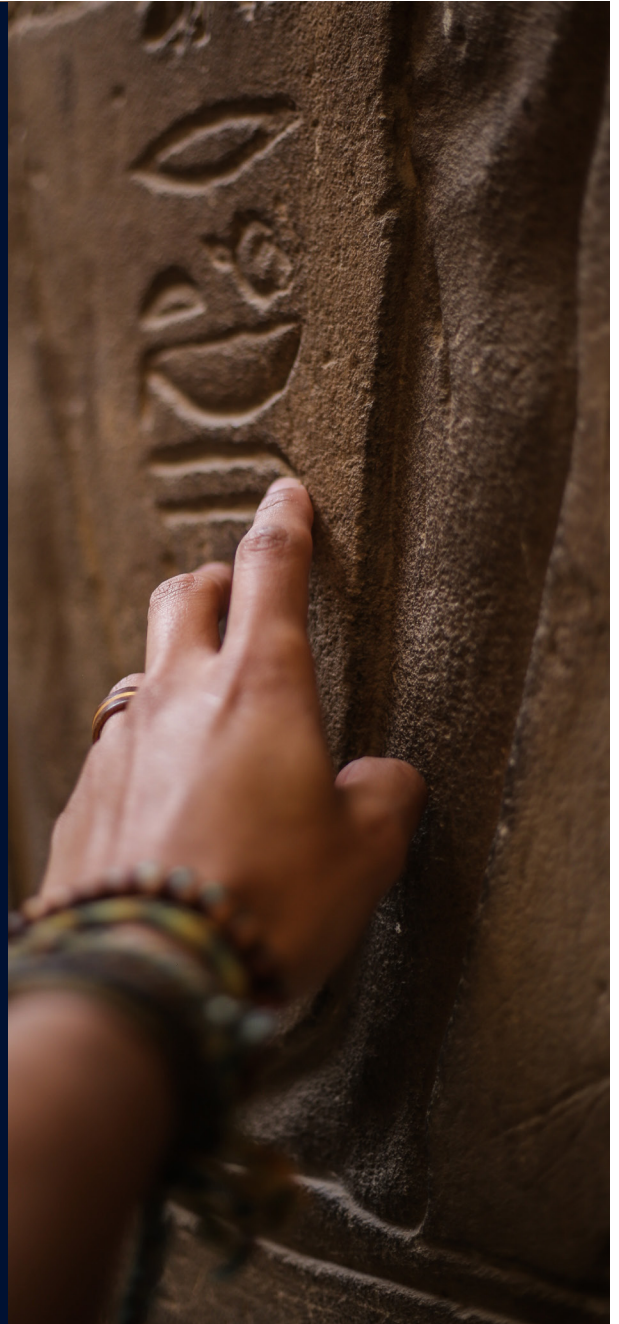
By Lindelwe Myeza

(Article originally published by Madibaz News )

According to archaeological analysis, spoken language might be as old as 600 000 years with the advent of Homo heidelbergensis and Homo neanderthalensis. Primitive as it might have been, language is a very important factor in the exchange of information and the understanding and describing of one's surroundings.

Modern humans (Homo sapiens) are thought to be about 200 000 years old, with most human advances occurring within the past 6000 years or so. Over the span of human history, the notion of what is believed to be true or false has always been a hot topic. Identifying what we can consider factual is very important in facilitating lasting scientific discovery. For thousands of years cultures like the Nyae Nyae! Kung Bushmen, Nguni tribes, and various other populations around the world used the night skies for the same general purposes of timekeeping and navigation, but they would all come to different conclusions as to what they are seeing.

Establishing something as fact helps put things into perspective in terms of how we understand the world around us at that place in time. A good example of this is the idea of an atom, 2500 years ago when Democritus suggested the smallest indivisible particle (atoms) it was an outlandish idea of Greek philosophy, and 2500 years later the concept of atoms as the building blocks of matter is a fact. Our ability to take measurements of our surroundings helps us identify what might be factual and what might not be. Observation, analysis, and classification are usually the processes at play when one is seeking to understand something, but that understanding is prone to change, and so are the definitions derived from it. The reason why it is no longer a fact that Pluto is a planet simply boils down to classification, because we now have the ability to measure and analyse our surroundings with high precision, we can better classify what we see in nature into much more concisely defined groups of objects, and Pluto just happens to not be part of the group anymore.



# New Staff: Science Marketing Team

## Sanele Thwala

Marketing and PR Coordinator

*"Let your light shine as an inspiration to humanity and be the reason someone believes in the goodness of people."* - Germany Kent

## Azile Athi Tabalaza

Marketing and PR Coordinator

*Favourite quote: "Leaders Never Use the Word Failure. They Look Upon Setbacks as Learning Experiences."* - Brian Tracy

## Get In touch with us



Nelson Mandela University Faculty of Science



Mandela Uni Science



science\_mandelauniversity



Nelson Mandela Uni Faculty of Science  
Learning and Teaching at Mandela University

*For any interesting Science articles that you would like to be featured, please contact:*

**Sanele Thwala:** Sanele.Thwala@mandela.ac.za

**Azile Tabalaza:** Azile.Tabalaza@mandela.ac.za