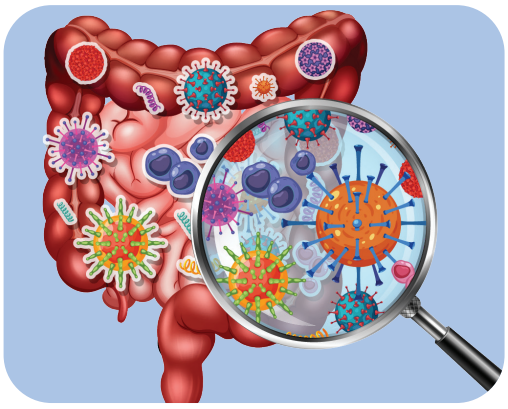
Speak to scientists

Did you know that millions of tiny bacteria and microbes live in and on our bodies? This community of organisms is called a microbiome. Scientists are discovering just how important the microbiome is. It plays a role in everything, from how we feel to how well we digest food and fight off diseases. Other animals and plants also have their own microbiomes!

The Science Spaza gang chatted to Dr Charissa Camille Naidoo, Dr Rachiel Gumbo and Lauren Martin from Stellenbosch University's Division of Molecular Biology and Human Genetics and Department of Psychiatry within the Biomedical Research Institute (BMRI) about their exciting research into the microbiome.



The microbiome is a community of millions of tiny organisms living in and on our bodies

Dr Charissa Camille Naidoo

Tuberculosis (TB) is South Africa's biggest cause of death. My research helps find out if the treatment for TB impacts certain bacteria in the microbiome and how these changes to the microbiome influence our health. We also want to know if a special diet helps the microbes in the gut microbiome return to normal faster after TB treatment.

I've loved science since school, especially maths and life science. My dad was a big inspiration for me. He worked very hard and never gave up, even when things were tough. He encouraged me to use what I learned to help people in South Africa. I studied biomedical sciences at the University of KwaZulu-Natal in Durban, because I wanted to find new ways to diagnose and treat diseases.

One of my biggest challenges was not having enough money for further studies. But I worked really hard during my honours degree and graduated with high marks. This led to my getting a bursary for more studies, which was a big help!

Dr Rachiel Gumbo

Tuberculosis (TB) affects both humans and animals! I study TB in wildlife. The main part of my research is developing new tests that tell us if an animal has TB or not. Knowing if an animal has TB is really important. It means we can stop the spread of TB to other wildlife populations.

An exciting part of my work is studying the microbiome of African Lions. We want to know how TB impacts their health. We do this by looking at any changes in the bacteria of lions' faeces (yes, poop!) when they have TB. This tells us how TB affects their health and also how the disease spreads. By understanding how TB impacts lions, we can help protect both the animals and the environment.

I have always dreamed of being in a lab coat, doing experiments and discovering new things. I grew up in an underprivileged environment, but I was determined to get the best education. I worked hard to get good grades and managed to get funding for my studies.

Lauren Martin

With my research, I want to find out if drinking alcohol when a woman is pregnant has an impact on the microbes in a pregnant woman's gut. These microbes are passed from a mother to her baby during pregnancy and birth. They play an important role in the growth and development of the baby. We believe that the alcohol damages the microbes that help the baby's brain to develop. Now we want to understand how drinking alcohol during pregnancy changes the gut microbiome and plays a part in the development of foetal alcohol spectrum disorders (FASDs), leading to physical, mental and attitude disabilities. South Africa has one of the highest rates of FASD in the world. Even though there's no cure for FASD, my research aims to find ways to reduce the symptoms and improve the quality of life for the child and their family.

I've always been interested in science, especially life science. When I was growing up, my dad took me on nature walks, taught me about animals and plants, and even gave me little quizzes to see what I had learnt. At first, I wanted to be a medical doctor, but after I did not get into medicine, I decided to study human life sciences at Stellenbosch University. There, I discovered my passion for genetics!

Scientists' advice for you

"Don't be afraid to try new things. Finding a mentor can really help guide you. Also, volunteering at a local lab can give you a taste of what being a scientist is like and help you learn more about it." ***Charissa***

"Don't let your background or anyone's doubts stop you. You'll face challenges, but keep pushing forward and believe in yourself." ***Rachiel***

"Even if things don't go as planned, take every chance to learn and follow what interests you. Your path might have twists and turns, but each step will bring you closer to finding what you're meant to do." ***Lauren***

Scan here to watch a video about these researchers and their exciting work.

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