



# Newsletter

Food Science • Voedselwetenschap

December 2020



Dear Students, Colleges, Alumni and Friends of Food Science

Against all the odds of 2020, we have reached this point of the year, but still facing many uncertainties. Throughout it all everyone continued to do their bit and contribute to “getting through this”. The staff and food science students again rose to the occasion.

Due to the pandemic, this year saw the New Product Development project and presentations take on a whole new dimension. But the students excelled, and the presentations attracted a record number of “attendees” – one of the advantages of on-line meetings. Congratulations to Maricel and her fourth-year students!

This year also saw the appointment of Dr Stefan Hayward as a lecturer in the department. Dr Hayward will expand the department’s expertise in food biochemistry and will also contribute to the brewing activities in the department. Welcome Stefan – we hope you will thoroughly enjoy your time in the department.

Alex Rust and Carla Dippenaar were both acknowledged and rewarded for academic excellence, while the department’s outputs were again acknowledged in the Shanghai Academic subject rankings – again the only South African food science department to feature in the top 300.

No year would be complete without the Intervarsity Brewing competition and our brewing team again showed they are producing some really wonderful beverages. We look forward to tasting more of their success!

Graduation in this strange year sees 44 BSc (9 cum laude) degrees, 5 MSc (3 cum laude) and 2 PhD’s being conferred, with more to follow in April 2021.

I like to end off by thanking all the food science staff, postgraduate and undergraduate students for all their efforts in still making 2020 a successful year! I wish them and all of you a very safe, healthy and restful Festive Season. See you all again in 2021.

Kind regards

Prof Gunnar Sigge

HOD, Food Science

Stellenbosch

(Photo credit for the front page photo: Anna-Peipina Unsplash)



# Ashley Ferreira takes IMBEWU to a new level

Ashley Ferreira, final year Food Science student, entered the “WWF & Sanlam Disaster and Agricultural Risk Innovation Challenge”, hosted by the Stellenbosch University LaunchLab, Faculty of AgriSciences, WWF SA and Santam.

The challenge was to “identify promising innovation, implemented to address issues of disaster and agricultural risk management, installation of early warning and detection systems in the following solution space: water, fire and agricultural specific risks using innovations and technologies”.

She pitched her group’s final year NPD (New product development) project, IMBEWU, as a business model in the hopes that she would get funding to produce and commercialise the product. IMBEWU is a theoretical shelf-stable meat analogue produced from mango seed kernels. It will strive to alleviate hunger and malnutrition in South Africa, while supporting more sustainable food production.

There were more than 50 entrants, of which she made it to the final 8. Ashley had to present her final pitch at an event held at the Protea Hotel Stellenbosch on 26 November 2020. We are proud to announce that Ashley was one of three winners, who won R50 000 towards the development of this business idea.



Ashley Ferreira with her prize and newly developed product IMBEWU, a meat alternative, made from Mango seed kernels.

Photo and text provided by Ashley Ferreira



## ShanghaiRanking's Global Ranking of Academic Subjects 2020 - Food Science & Technology

Food Science at Stellenbosch University is still ranked in the 76-100 category of Food Science & Technology departments, and number one in South Africa. No other SA Food Science Department features in the Top 300.

Full rankings list here - <http://www.shanghairanking.com/Shanghairanking-Subject-Rankings/food-science-technology.html>



## Alex Rust and Carla Dippenaar awarded by the Rector of Stellenbosch University for excellent academic achievement

Stellenbosch University (SU)'s top students who excelled in areas such as academics, leadership and social impact were honoured with Rector's Awards for Excellent Achievement during an online event on Thursday evening, 01 October 2020.

Two Food Science MSc students were included in this elite group.

Alex Rust was the recipient of the **SU Medal for Top Magister Student** in the Faculty of AgriSciences.

Alex's project title was, "Honey authentication: effect of irradiation and ageing on near-infrared (NIR) spectroscopy classification models". Alex officially graduated in April 2020, *in absentia*.

After finishing and defending her thesis in February, she spent six months in the Netherlands and ended up completing a Dutch language course while waiting to be repatriated. Surely 2020 was not the best of years for making long-term plans, but she is still hopeful to find a position in the food and agriculture industry to do meaningful work. In her spare time, Alex enjoys doing any hobby that involves working with her hands. Lately, this has been a lot of sewing and trying to bake a decent sourdough raisin bread.

Carla Dippenaar, currently busy with her first year, MSc studies at Food Science with the title, "Bio-guided fractionation and identification of major phenolic  $\alpha$ -glucosidase

inhibitors of *Cyclopia subternata*", also received a Rector's award for academic excellence. Carla is one of three candidates within the Faculty of AgriSciences who were honoured with this prestigious award.

When she is not hard at work, Carla loves nature and hiking in the beautiful mountains of Stellenbosch. Travelling and seeing the world is a big dream of hers. She plans on working and travelling abroad for a few years.

Congratulations Alex and Carla with this achievement.



Photo top: Alex Rust

Photo bottom: Carla Dippenaar

Photos provided by students

## Dr Stefan Hayward appointed as lecturer at Food Science, SU



On 1 September 2020 Dr Stefan Hayward was appointed as part-time lecturer at Food Science, SU.

Stefan matriculated from Outeniqua high school, George, in 2006 whereafter he studied BSc Molecular biology and Biotechnology. After graduating in 2010, he continued his studies in Biochemistry specialising in protein biochemistry and enzyme technology in food systems.

Stefan graduated BSc. Hons (Cum Laude) in 2011. Both his MSc (2012 – 2013) and PhD (2014-2016) studies were on food industry-related projects funded by the DuPont® Sub-Saharan Africa Innovation centre. During this time, he acted as quality assurer for DuPont® Sub-Saharan Africa. Amongst his duties were the development of novel activity assays which are used for global quality assurance of en-

zyme-based products. He was also involved with the setup of various enzyme based additive trials for major food producing companies.

After completion of his PhD, under supervision of Professor Pieter Swart, he was employed in the Department of Food Science at Stellenbosch University as a Post-doctoral researcher where his research was based on quality assurance of ingredients used in the Brewing industry. At the same time, he was also employed by Innovative Research Solutions (Pty) Ltd. as a research scientist. With one foot in academics and the other in the Food Industry, this innovative, hardworking, young researcher is determined to ensure that the Biochemistry 353 module remains relevant.

Although Stefan understands food on a higher level than most, he still loves a good old-fashioned braai. He also enjoys hiking and beer brewing in his spare time.

Dr Stefan Hayward, welcome to the Department of Food Science.

We are privileged to have you on our team .



## Maties do it again – SAB intervarsity brewing and tasting category winners

This year took on many challenges but let us not forget the humble beers, the unsung heroes and the foes of many a home-brewer. With the 12<sup>th</sup> SAB intervarsity and brewing competition being held this year as a virtual event at South African Breweries (SAB) headquarters in Bryanston. The Stellenbosch University brewing team once more set out to achieve prestige and honour befit of a king.

Due to the Covid-19 pandemic competition categories this year were highly lockdown motivated with the Lockdown beer category being one of the highlights – only ingredients that were available during lockdown level five could be used. The other categories were for an Indian pale ale (IPA), lager (sessionable being fashionable), fruit beer and lastly for the African premium ale category in which only African grown ingredients could be used. All beers were then professionally judged by master brewers from SAB and professional judges from the Beer Judge Certification Program (BJCP) making it a registered competition in South Africa.

At this year's SU won best beer for the lager and lockdown categories and placed third in the African premium ale category. The lager was a Schwarzbier with a light hop character and true fashionability almost forgotten in the modern craft brewing era. For the lockdown brew the team decided that a ginger beer or pineapple beer has seen too much hype over the year and rather decided to make an apple and berry cider from fruit concentrate with a refreshing pallet suitable for a summers day. For the African premium ale, however, the team took inspiration for diastatic power from sweet potatoes, polenta and sorghum – with the rather hasty addition of malted barley to help in the lautering process.

This year saw the Central University of Technology (CUT) winning best IPA and also winning the overall best of show for the IPA. The Stellenbosch University team will once more like to see the brewing trophy in our display cabinet so we set out the challenge for all the other university teams to bring their A-game for the next SAB intervarsity brewing and tasting to be held in 2021. This year CUT and the University of the Freestate were once more part of the organisation and logistics and they made for a great virtual event.

This competition showcases the talent that South African universities have to offer and allows their students to learn new skills, i.e. brewing science, biochemistry, food chemistry, malting science, food safety protocols and systems, research and development and also engineering principles. Not only is it a great platform to engage with the brewing sector it brings about a set of life skills and experience that are highly sought after by many of the stakeholders and industry partners involved in the competition. The competition also forms part of the SAB/ABInBev talent acceleration platform.

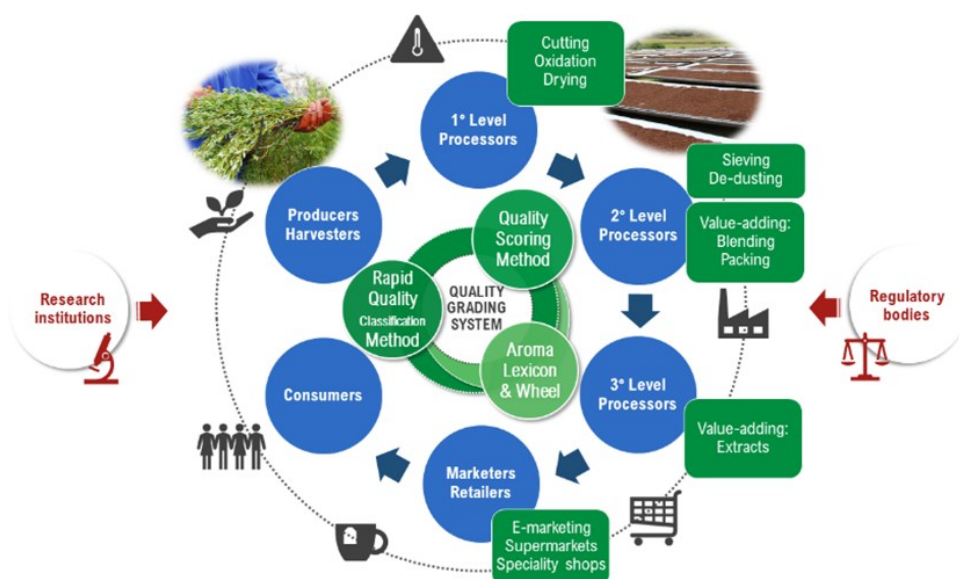
If any post graduate Stellenbosch University students would like to apply to be part of the SU brewing team for the upcoming year they can send their CV, proof of registration and short motivational letter to Dr Stefan Hayward ([stefanh@sun.ac.za](mailto:stefanh@sun.ac.za)).



The brewing team from left to right: Sebastian Orth, Dr Timo Tait, Dewald Vorster and Dr Stefan Hayward

Photo and article provided by Sebastian Orth

# A toolbox for grading the sensory quality of honeybush



Traditional honeybush tea is produced through the high temperature oxidation of the plant material of several *Cyclopia* species. Although the formal honeybush industry is still under-developed, honeybush tea has already achieved an international footprint, contributing to an increasing market share for herbal and speciality teas.

Honeybush tea has a vast growth potential provided that a consistent supply of a good quality product could be achieved. As demand is exceeding supply to a primarily export market, all production batches should meet optimum quality standards. The trade in inconsistent and inferior quality products could be detrimental for the sustainability and expansion of the honeybush industry.

*‘Sensory quality characteristics are important for overall product quality’ – Tea & Herbal Infusions Europe*



In her PhD study, Dr Brigitte du Preez addressed the lack of standardised sensory quality criteria and assessment methods within the honeybush industry. “Although progress made on sensory profiling and process optimisation by ARC Infruitec-Nietvoorbij in collaboration with SU has laid a sound foundation for the development of a quality grading system, translation of research outcomes was required to provide role-players in all industry sectors with the essential tools for reliable assessment, and effective differentiation and communication of honeybush sensory quality.”

The type of method and method development approach to be followed, were questions answered in her PhD journey. “The target industry sector and quality control application were considered in the selection and development of these methods, namely the commercial, research, and regulatory sector. All honeybush industry role-players throughout the value chain would contribute in delivering a final product of acceptable and consistent quality.”

*‘Nothing for the industry, without the industry...’*





Du Preez said that one of the highlights of her study were her correspondence with various industry role-players to determine the key sensory quality parameters and quality grading method requirements. Apart from a survey conducted, correspondence with processors, an international marketer of honeybush tea in Japan, an expert in SA herbal tea sensory quality control and the tea master of National Brands Ltd, all contributed to establishment of the sensory criteria for four quality classes: high, moderate, low and poor quality. “The support from the South African Honeybush Tea Association (SAHTA) and various role-players were invaluable to this study”, she emphasised.

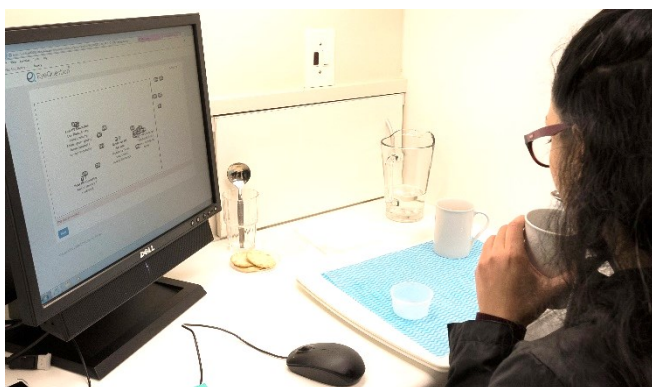
*‘To address the pressing need for quality grading of honeybush tea, a sensory analysis procedure that is user-friendly, quick, reliable and scientifically validated was vitally important.’*

Thousands of teacups later, three grading elements were validated to be used as tools for the evaluation, differentiation and communication the sensory quality of a processed tea batch. These elements were founded on a large dataset that was compiled from the sensory, colour and turbidity analyses of ca. 600 honeybush tea batches that represented high to poor quality tea.

Firstly, the existing honeybush lexicon was revised by replacing food products with universal and stable chemicals as references to equip honeybush processors and marketers world-wide in understanding and communicating honeybush sensory vocabulary such as ‘fynbos-floral’ and taints such as ‘medicinal’ and ‘smoky’.

A user-friendly quality scoring method was developed and validated with input from industry to classify honeybush according to different quality classes, based on the scoring of key sensory quality parameters, including infusion colour, aroma and taste. This method would aid honeybush processors in routine sensory quality control and could form a basis for regulatory control in terms of export control and certification.

Finally, rapid sensory methods were applied and validated as quality classification tools to quickly classify numerous production batches according to key sensory characteristics evaluated in the tea. In these methods tea batches are compared to either four tea references or descriptions representative of each of the four honeybush quality classes. Rapid sensory profiling methods have become one of the most dynamic areas of sensory science research in recent years, as more time- and cost-effective alternatives to classic Quantitative Descriptive Analysis.



The novel application of these methods in sensory quality control would aid tea packing companies in the rapid assessment of tea for batch blending purposes, as well as research institutions in time- and cost-efficient sensory evaluation of tea batches in e.g. the honeybush plant cultivation programmes of the ARC.

*‘Quality means doing it right when no one is looking’ – Henry Ford*

Du Preez expressed her gratitude towards her supervisors, Prof. E. Joubert (ARC Infruitec-Nietvoorbij), Dr. E. Moelich (SU) and M. Muller (SU), as well as Prof. M. Kidd (Centre for Statistical Consultation, SU), Marieta van der Rijst (ARC Infruitec-Nietvoorbij), SU Sensory Laboratory personell, trained sensory panel and the Department of Food Science for their invaluable contribution in doing exactly this.

[Article written by Dr B du Preez; Photos – Anton Jordaan]

You can also read an article, published by Times Live by clicking on this link.

<https://www.timeslive.co.za/sunday-times/lifestyle/food/2020-12-14-stellenbosch-doctoral-student-hits-honeybush-teas-sweet-spot/>



More to read about Brigitte’s PhD on the AgriSciences Faculty Website: <http://www.sun.ac.za/english/faculty/agri>

# Development of an anchovy (*Engraulis capensis*) based food for human consumption: A consumer-led approach

H Basson

In 2019 I dedicated myself to a master's degree. This was partly because the working life seemed too terrifying, but mostly because one specific project intrigued me. It was an opportunity to develop a product for Ntshonalanga Fishing (Pty) Ltd, the funding company located in Cape Town. Our client had a vision to direct the use of their anchovy catches, which are currently used for fishmeal production, toward a food product for human consumption. Owing to a passion for the Eastern Cape, his homeland, it was decided that low-income isiXhosa consumers would be the target market. Eastern Cape is home to many rural villages where communities, especially the children, are undernourished. Considering this, studies have shown the impact of small fish species on improved nutritional status in developing countries.

My knowledge regarding the pelagic fishing industry needed sharpening, therefore we arranged with fishermen from the West Coast that I would accompany them on a trawling voyage. Little did I know that we would only return to shore after a quota of 300 t was reached. Four days passed before I saw the St Helena harbor again, after which I had to rush home with a Ford full of fresh anchovies. Following the gutting, vacuum sealing and storing of 60 kg raw material, a product concept had to be designed.

Consumer acceptance is the key to successful food products. Therefore, the target market was directly involved in our consumer research. Two qualitative research methods were combined to focus on consumers' specific requirements. The triangulation of focus groups and participant observation successfully guided us towards a product concept. Focus groups involved bringing together consumers around a table to provide opinions regarding desired attributes of an anchovy-based product. Participant observations involved studying a group of consumers by observing the preparation and cooking of anchovy-based meals in a kitchen setting. Building on focus group results, observations refined the concept which allowed for specific tailoring of product ingredients, packaging type, size, flavour and consistency.

The final concept cannot be disclosed, since this study is under contract. However, consumers favoured a canned product. It was a huge breakthrough, but the real work was just beginning. After weeks of trial and error, a formula was developed and ready for production. I had the privilege to work with Susan Featherstone, Director of Safe-Food Consulting, to validate and optimise the product's retort process in a canning facility. After conducting heat penetration tests, samples were sent to accredited laboratories for microbiological and nutritional analyses. Microchem and Facts confirmed the safety and nutritional composition of the product.

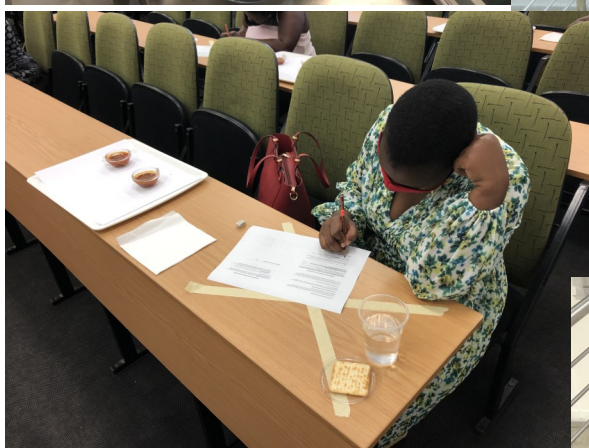
Finally, consumer acceptance had to be determined. After fighting numerous COVID-19 regulation battles and setting up painstaking protocols, we got the go-ahead for conducting a consumer analysis at the Food Science Department. A total of 78 untrained panelists from Kayamandi rated the samples through use of affective testing with nine-point hedonic scales. We were pleased with the results, since the product achieved good acceptability and the majority of panellists indicated that their children would also enjoy it. Commercialisation of this product will depend on Ntshonalanga Fishing (Pty) Ltd.

There is truly never a dull moment during the course of product development. All the ups and downs, lessons and dirty hands of the past two years was worth bearing. Afterall, a ship in the harbour is safe, but that is not what a ship is for.

Photos of the development process and team provided by Hamlin Basson.









# New Product Development at Food Science Stellenbosch University

We have become used to excellent quality Science and creativity by our students over the years. 2020 was no different. The only difference was it being a virtual event.

21 October 2020 was the big day for our final year students, when they presented their products to a record size audience of more than 400.

Although there were no actual products and we could not taste or see the products, the outstanding presentations and professional way answers were given made up for this.

Excellent quality and no shortcoming in innovation and knowledge.

Six groups presented their newly developed products, and the brief was to develop an affordable, innovative food product from a sustainable source.

Where does science meet NPD in addressing sustainable and affordable nutrition for the South African consumer?

HLUTHI – Chicken flavoured gluten meat substitute strips in a chakalaka sauce with red kidney beans

GEAR UP! – Chocolate flavoured drink made from maize, lentils, and sweet potatoes

BHINZI – A savoury flavoured bean and vegetable corned meat substitute

IMBEWU – A minced meat alternative made from mango kernel flour

KIDLI – Powdered milk alternative made from white kidney beans

NEW YOLK – A vegan liquid egg alternative made from green mung beans and up-cycled aquafaba

The competition was tough, and there was little difference between the groups.

At the end of the day there must be a winner.

The following groups walked away with prizes:

(A total amount of prize money of over R150 000 were awarded).

The **Synercore** prize for most commercially viable product; **Microchem** prize for product concept most liked by the audience and the **SAAFoST** prize for best overall presentation went to GEAR-UP! This group also won the **IPSA Goldpack**, gold medal for the best packaging concept.

The **FREY'S** prize for products sensory testing well demonstrated and clearly presented, **ENTECOM** prize for best HACCP plan as well as the **IPSA Gold Pack** silver medal for best packaging went to the KIDLI group.

The IMBEWU group won the following prizes:

**FOODSAFETYEXCEL** prize for best communication of integral food science concepts to a broad audience on a virtual platform, **INNOVUS** prize for most innovative product as well as the **FACTS** prize for the group best complying with the relevant SA food regulation. IMBEWU also won the **IPSA Goldpack** bronze medal for best packaging concept.

NEW YOLK won the **AgriSciences Faculty** prize for the group with the best implemented marketing aspects.

The department of Food Science would like to congratulate these students for a job well done.

We would also like to thank the judges, Friends of Food Science, Alumni from Industry and all sponsors of products and prizes.





GEAR UP!



NEW YORK



HLUTHI



BHINZI



KIDLI



IMBEWU



# THE GEAR UP! TEAM



KIM MANNIX



KIRSTEN BUCHANAN



CHRISTINA ENSLIN



JANA LE ROUX



KAYLEY MATTHYSE



LIZE MOOLMAN



MATTHEW WILLIAMS

# THE Kiddli TEAM



SHANNON ARENDSE



MARZANNE ENGELBRECHT



MEGHAN GOMES



GEORGIA GROBLER



NINA HESS



CHARLOTTE HUSBAND



MAHAM JABBAR



JANA VAN ROOYEN



# IMBEWU



ASHLEY FERREIRA



SAMANTHA DU TOIT



CHRISRIE OOSTHUIZEN



SHAKEENA WILLIAMS



YANNE MONGA



DENISE COETZEE



KAYLA BRAND



## THE BHINZI TEAM



Nadiya Henry



Monique van Heerden



Nadja Meyer



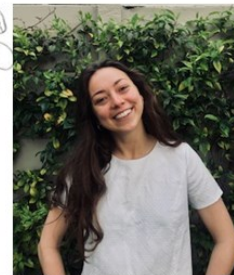
Liza Marais



Chantelle Dias Lobo



Emelda Kutumela



Bry-Leigh Rosenfels

## Hluthi Team



Wilana Barnard



Jana Becker



Ncediswa Cekiso



Lesley Cloete



Josephine Knappe



Andrea Moolman



Nicola Rautenbach

## New York team

Claire Ekron



Saskia Pillay



Courtney Beukes



Anja Laubscher



Huibri Smith



Mariné Brand



Keegan Harrison



# INGREDIENTS / SERVICES

sponsors



The Department of Food Science will not be able to host our annual NPD day without the help of our generous sponsors.

We appreciate your sponsorships and keen interest in our Department.

We are also very grateful towards all our Industry partners as well as our judges, who are always willing to share their knowledge and expertise.

Thank you for your time in doing this.

## Speakers and Podcasts:

Dr Hanelie Adendorff—SU

Bitta van Staden—Sensient

Karin Carstensen—WW

Gary Pon—Ingredion

Raymond Hartley—Microchem

Dr Fru Nche—Danone

Thea van der Merwe—Scistaff

Coleen Hanekom—Unilever

Itzik Levi—Tiger Brands

Andrea Marent-Hegewisch—Consultant

Dr Nikki Hogan—Synercore Holdings

Dr Anel Kirsten—Paarl Dietitians

Dr Tertius Cilliers—Synercore Holdings

Alex Zabbia—Synercore Holdings

Karin Horsburgh & Candice Sharp—FACTS



## NPD Judges 2020



**Coleen Hanekom**  
Research and Development Manager  
(Foods Africa) at Unilever



**Dr Fru Nche**  
Director R&I  
Danone Southern Africa



**Dr Nikki Hogan**  
R&D Manager  
Synercore Holdings (AFI)



**Karla Groenewald**  
Fresh Foods Product Development Manager  
The Shoprite Group of Companies



**Dr Debora vd Merwe**  
NPD Manager: Babylonstoren



**Lisa Ronquest-Ross**  
R&D Executive – Flavours & Ingredients – Africa MANE



**Karen Horsburgh**  
Dietitian at FACTS



**Rolf Uys**  
Business Owner, Food Safety Training, Consultant Entecom



**Dr Heidi Grimmer**  
CEO at YHO Sensory Space



**Chrisna Viljoen**  
Director at Food Safety Excel

## Packaging judges 2020



**Susan Featherstone**  
Safe food consulting, Director



**Ingrid Schoeman**  
Director: Packaging IS / Packaging Development Consultant



**John Fox**  
Enviromall, Eco-friendly packaging solutions

# *December 2020 Graduation*

## **Baccalaureus in die Natuurwetenskappe in Voedselwetenskap Bachelor of Science in Food Science**

Aaron, Iain Shawn  
Arendse, Shannon  
Barnard, Wilana (cum laude)  
Becker, Jana  
Bester, Sebastian Hendrik  
Beukes, Courtney  
Brand, Mariné  
Buchanan, Kirsten Anne (cum laude)  
Cekiso, Ncediswa Priscilla  
Cloete, Lesley Carmelita  
Dias Lobo, Chantelle  
Du Toit, Danielle  
Du Toit, Samantha Anne (cum laude)  
Ekron, Claire Jenna  
Engelbrecht, Marzanne  
Engelke, Alex Werner  
Enslin, Christina Elizabeth  
Ferreira, Ashley (cum laude)  
Gomes, Meghan Claire (cum laude)  
Grobler, Georgia (cum laude)  
Harrison, Keegan Ami  
Henry, Nadiya  
Husband, Charlotte Maria  
Ismail, Yusra  
Jabbar, Maham  
Johnson, Kaylin Leigh  
Knappe, Josephine Sophie Simone  
Kutumela, Emelda Naledi  
Laubscher, Anja (cum laude)  
Le Roux, Jana  
Mannix, Kim Teresa (cum laude)  
Marais, Liza  
Matthyse, Kayley  
Meyer, Nadja  
Monga, Yanne Kalombo  
Moolman, Petra Andrea  
Oosthuizen, Chrisrie De Wet  
Pillay, Saskia  
Rosenfels, Bry-Leigh Shaine  
Smith, Huibri  
Van Heerden, Monique (cum laude)  
Van Rooyen, Jana  
Williams, Matthew Mullasco  
Williams, Shakeena



## **Magister in die Natuurwetenskappe in Voedselwetenskap Master of Science in Food Science**

Stander, Jeanette Hermine  
Van Der Merwe, Emma (cum laude)  
Vermeulen, Marguerite Antoinette (cum laude)  
Volschenk, Pierre John (cum laude)  
Wabule, Daphine Enid

## **FAKULTEIT AGRIWETENSKAPPE/ AgriSciences Faculty**

Doktor in die Wysbegeerte  
Doctor of Philosophy

### **Du Preez, Brigitte Von Pressentin (Food science)**

Title: Development of a quality grading system for the honeybush (*Cyclopia* spp.) tea industry

Supervisor: Prof. Lizette Joubert, Agricultural Research Council, Stellenbosch

Co-supervisors: Nina Muller & Dr Erika Moelich

### **Shange, Nompumelelo Pumi (Food science)**

Title: The prevalence of *Campylobacter* and *Arcobacter* species in ostriches from South Africa

Supervisor & co-supervisor: Prof Pieter Gouws and Prof Louw Hoffman



Photo: Dr Brigitte du Preez left and Dr Pumi Shange right. More about these two PhD graduates elsewhere in this newsletter.

## Matie Food Science graduate Miss South Africa 2020 finalist

As a teenager, AgriSciences' alumnus Lebogang

Mahlangu dreamt of playing soccer for Banyana Banyana. As of right now the Food Sciences graduate has her sights set on becoming Miss South Africa 2020.

(Since the publication of this article, the Miss SA contest was held. Lebogang did not win the title of being Miss SA, but this young food scientist will make a difference in many people's life's. Congratulations for making it so far, in this tough competition. We are extremely proud of you Lebogang Mahlangu!)

She was recently named as one of the 10 finalists in this year's competition, to be held in Cape Town in October.

Says Lebogang: "I believe in the potential and value of the youth and women of our country. I know that if they are encouraged and empowered to take charge, we as a collective, we can create self-sustaining solutions to the problems facing our communities. Miss South Africa will give me a platform to champion this country's potential and help see it become a reality."

When she was a teenager, she went to Rosina Sebane Sport School, a boarding school in Pretoria North, where she excelled in soccer and was chosen to represent Gauteng. Being quite sporty, many people thought that physiotherapy would be a natural fit for her as a career choice. The idea of working in a hospital, however, got the better of her. Her mother then channeled her interest in food and nutrition – Lebogang is very particular about what she eats – towards studies in Food Science.

She's never been one to shy away from new opportunities, or of experiencing new cultures. That's one of the reasons why she opted for Stellenbosch for her studies, even though it's a long distance from her home in Soshanguve.

It's a choice she has never regretted. She says the sense of pride that people have in being from

Stellenbosch is one thing that she's taken with her since graduating in 2019. And she adds: "I admire how people from Stellenbosch love where they are from. But, you have to love where you're from, and be proud of it." Another habit she's taken with her to Durban, where she works as a product developer for Unilever, is to walk everywhere she can. Says the former resident of Nootgedacht and Metanoia: "I chose to live within walking distance of my job. It's a healthy habit I picked up on campus."

She played soccer for Maties and was a member of the AgriSciences Students' Representative Council in 2017/2018.

Describing herself as resourceful, adventurous and purposeful, she says: "I love the feeling of adrenalin and adventure. I enjoy exploring new hiking routes, running and exercising and am currently learning new soccer tricks!"

Through her studies in Food Science, she learnt about issues surrounding food security. In the process, she started dreaming of working for NASA, to help them develop foods with an extended shelf life that astronauts can enjoy.

She muses: "It would be great to be able to apply it to real-life situations too, to develop food that can be stored for a long time, yet is also tasty. It could provide people who are struggling with adequate storage facilities with healthy food alternatives." And she adds: "You can link food science to whatever is your purpose."

During her four years at SU, she developed a deep interest in social development and entrepreneurship. Also, while at Maties, she was crowned as a runner-up in the Miss Mamelodi Sundowns 2018/2019 competition. She used the prize money to set up a small bakery, Home Oven, in Soshanguve. Run by her father, at least 200 loaves per day are baked, along with other

confectionaries such as scones.

Lebogang says she hopes that through the Miss South Africa network, she will be able to connect with other young people with social-

entrepreneurial ideas and learn how they tackle social causes in their communities.

"We have more than enough potential. But our past has led to systematic socio and economic challenges that limit the potential of our people. I wish to champion this potential, especially in the youth and women of our country. I wish to contribute to a country where our people are self-sustaining."

About the relevance of beauty pageants in 2020, she says: "Women of our country and the world need every opportunity to empower themselves and other women. Pageants allow

women to speak to other women about the role and potential we have in creating a better world." And she adds: "I thought I could only be great in one thing. We should teach young girls that they are allowed to be everything that sparks joy in their hearts!"

Lebogang also dreams of meeting the Indian social entrepreneur, Muhammad Yunus, and counts her mother, Fridah Mahlangu, and Dr Precious Motsepe among her role models.

• Social media tags:

Facebook: Lebogang Mahlangu Instagram: @\_LebogangM

Article borrowed from the AgriSciences SU, October Newsletter



Lebogang Mahlangu, Ms SA 2020 finalist

Photo from Miss SA 2020 Finalist website



## Department of Food Science Prize winners for 2020

### 1. KITTY SIMMONS-PRIZE: R750

Mia Schutte

To be awarded annually to a third year BSc Food Science student with the highest average percentage in Food Science 214 and Food Science 244 (Commercial Food Processing and Preservation)

### 2. BESSIE RETIEF-PRIZE: R1000

Kim Mannix

To be awarded annually to a final year BSc Food Science student with the highest average in the undergraduate module, Sensory Analysis (FS 354).

### 3. MIMSIE SMIT-PRIZE: R1500

Kim Mannix

To be awarded annually to a final year BSc Food Science student with the highest average percentage in Food Science 344 module (Food of plant origin).

### 4. NONNA RABIE-PRIZE: R6000

Jesse Vosloo & Jana Schreuder

To be awarded annually to a second year BSc Food Science student for the best achievement in his/her first year in all Food Science modules.

### 5. DEPARTMENT OF FOOD SCIENCE-PRIZE: R800

Mia Schutte

Awarded annually to a third year BSc Food Science student. Involvement in and general interest in Food Science as a field of study.

### 6. DEPARTMENT OF FOOD SCIENCE-PRIZE: R700

Jacques Olivier

Awarded annually to a second year BSc Food Science student. Involvement in and general interest in Food Science as a field of study.

### 7. DEPARTMENT OF FOOD SCIENCE-PRIZE: R600

Mmabatho Moeketsi

Awarded annually to a first year BSc Food Science student. Involvement in and general interest in Food Science as a field of study.

### 8. JEANNE MARIE VAN DER POEL-PRIZE: R5500

Ashley Ferreira

Awarded annually to a final year BSc Food Science student. Involvement in and general interest in Food Science as a field of study.

### 9. MATTIE JOOSTE (UNDERGRADUATE)-PRIZE:

Kim Mannix

R12 000

To be awarded annually to an undergraduate final-year student in BSc Food Science for having obtained the highest average percentage for all modules over the first three year

### 10. SASKO-PRYS: R12 000.00

Mia Schutte

To be awarded annually to a third-year BSc Food Science student for the best achievement in all the first year and second year modules.

### SAAFoST PRIZES RECEIVED

The Aubrey Parsons Study Grant: R20 000.00

Kim Mannix

Academic Achievement Award: R2 000.00

Anika van der Mescht

Congratulations to all our prize winners!

## *On a more personal note ...*



The Arendse family and our Department were blessed with the birth of this little boy, Angelo Craig Arendse, born on the 8th of December 2020. A second son for Megan and Ashwin and the spitting image of his big brother Micah. We hope that Angelo will bring you great joy. Congratulations!

## *Prof Pieter Gouws also has reason to celebrate*



Prof Pieter Gouws's oldest daughter, Michelle Gouws graduated on 14 December with a BSc Agric Animal Science degree .

Michelle is no stranger at the Food Science department, as she assisted with research projects and lab work at the Centre for Food Safety. Prof Pieter Gouws is the deputy vice-dean for the Faculty of AgriSciences and a senior lecturer and researcher at The Department of Food Science, SU.

On the photo, with Michelle, is her younger sister, Lisa, dad Pieter and mom Lizelle Gouws.





# Student romance leads to two PhDs in one day

Engela Duvenage

There was jubilation all round in the Shange-Juba household when both Dr Nompumelelo Shange and Dr Roderick Juba received their PhD degrees together on the very same day – and both in the Faculty of AgriSciences. Dr Shange received her degree in Food Science, and Dr Juba in Conservation Ecology. The couple were married in September last year during a traditional wedding in Inanda near Durban.

"Because of Covid, we had to postpone our white wedding to next year," says Dr Shange.

The two hail from Inanda and Humansdorp respectively. They were second years, living in Erica and Helderberg residences, when their paths crossed in 2010 through mutual friends. After years of "just being friends" they started dating in 2016 when at long last both realised that they not only shared the same sense of humour, aspirations and work ethic, but are in fact soulmates and best friends.

For the past year or two, they successfully navigated the intricacies of a long distance romance caused by their shared career aspirations. While Dr Shange was based in Stellenbosch and Oudtshoorn, Dr Juba studied part-time towards his PhD, while working for Living Lands, an NGO involved in the holistic management of important catchment areas.

"I've learnt about persistence, perseverance and hard work from him," says Dr Shange.

"And I've learnt that she'll do anything to get things done, and that hard work is part of that," Dr Juba adds.

They are planning to take the world by storm together, and to pay their good fortune of a good education forward by motivating and helping others to do the same.

For her PhD in Food Science, Dr Shange investigated to what degree two emerging pathogens, *Campylobacter* and *Arcobacter*, are found in the ostrich meat industry. These pathogens can cause gastrointestinal infections in humans.

"Regulations that govern the contamination of any meat products with these species are not yet in place in South Africa, but my work could serve as a good baseline should government want to put guidelines in place," she says.

Dr Juba focused on the impact of invasive alien trees on riparian zones and the potential value that could be derived from harvesting its biomass.

Among others, he looked at the monetary value attached to producing value-added wood products made from invasive trees being chopped down.

"Bioproducts made from invasive plants, such as biochar and wood chips, can be used to varying degrees of success by wheat and canola farmers to improve soil quality," he notes.

(Photo and article borrowed from AgriSciences website)



Dr's Juba and Shange, Victoria street Stellenbosch