



Stellenbosch

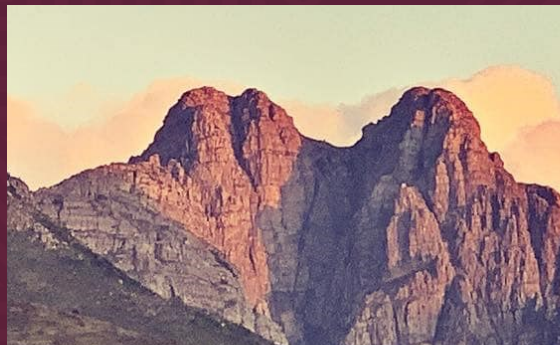
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December 2022 Desember



Food Science | Voedselwetenskap
Newsletter | Nuusbrief

forward together
sonke siya phambili
saam vorentoe



Finally, a Department of Food Science Newsletter again. And, it is a bumper edition and jam-packed with news and highlights of 2022.

The past year has been a challenging one and everyone is happy that we have made it to the end. The year 2022 is the year we had to transition from the Covid-19 pandemic to the "new normal". There have been many challenges to deal with during this year and not all of them were ones we'd like to have face us again.

Uncertainty, mental wellness, burnout, fatigue, and stress were just some of the obstacles, which I'll rather not go into detail about, but we'll acknowledge that they were real! I'm incredibly proud of the Departmental Staff and how they have all responded to maintain the level of service and support to our students.

The past year also had many highlights and we've tried to convey many of those in this newsletter. Covid-19 forced us into online teaching in a big way, but that has had positive effects on our technology infrastructure and functionality, we now have to include people using live-streaming capabilities. So much so that we could have 300 people online to watch our Final-year NPD presentations.

Another highlight was that the Department of Food Science was still the only food science department in South Africa and Africa to be listed in the top 200 food science departments worldwide on the Shanghai Ranking's annual Global Ranking of Academic Subjects 2022. This shows that amidst the challenges of the pandemic we were able to sustain our research outputs and remain relevant in publishing new knowledge.

International travel opened again for the first time and this was welcomed by staff and students alike. Research sabbaticals (read about Prof Manley's research travels) could finally be taken, postgraduate students and staff could participate and present (very successfully) at international conferences (details in the newsletter) and I was able to attend IFT Board Meetings in Chicago again. The excitement of international travel was palpable in the corridors again.

We're also very proud of Prof Marena Manley being awarded the Chancellor's Award for Sustained Research Excellence and wish to congratulate her on the very successful 25 years at Stellenbosch University.

Although the Food Science staff are tired and looking forward to a well-deserved holiday, there is a real sense of excitement about 2023 and building on our successes. Watch this space!

Wishing you a very happy, healthy, and restful Festive Season.

Prof Gunnar Sigge

HOD, Food Science, Stellenbosch University

Stellenbosch University Chancellor's Award (Research) for Prof Marena Manley

Through innovative and exceptional high impact research and sustained excellence, Prof Marena Manley has made an invaluable contribution to research at the Department of Food Science, the Faculty of AgriSciences and Stellenbosch University. She was recently awarded a Chancellor's Award (Research) at one of the SU Graduation Ceremonies, held on 6 December 2022.

When Prof Manley joined SU in 1997, she initiated research using and applying NIR spectroscopy at the Department of Food Science. She continued to establish the first NIR spectroscopy research group at SU as well as in South Africa, and continuously initiated innovative research within the Department. She subsequently initiated research applying a then cutting-edge technique - NIR hyperspectral imaging. Staying abreast of the latest technological developments, her research group was one of the very first groups performing and publishing research applying NIR hyperspectral imaging to cereals internationally. One of the first papers published in *Analytica Chimica Acta* (impact factor: 6.911), has been cited 221 times. Her research group was also the first to publish a review article on this topic in the high-impact *Critical Reviews in Food Science and Nutrition* journal (2018; impact factor 15.786, cited 56 times).

Prof Manley was soon internationally recognised for her research in NIR spectroscopy and spectral imaging and was invited to author and co-author five book chapters. Prof Manley obtained her first NRF rating in 2011 and is currently a B-rated scientist. The high impact of her research is evident by her H-Index (43 Google Scholar; 34 Scopus). She also published an invited review article in the prestigious *Chemical Society Reviews* journal (2014; impact factor 54.56; cited 520 times) journal which only publishes reviews of the very highest quality and international impact. Since 1997 she has supervised 53 Masters, 14 PhD and 5 postdoctoral fellows. She has published 121 peer-reviewed publications and presented papers at 89 international and 75 national conferences as well as invited keynote and plenary lectures at 26 conferences. Prof Manley received the Rector's Award for General Performance on two occasions and has also been recognised for Research Excellence by SU. Her excellent research has further been awarded by the South African Academy of Science and Arts (Medal of Honour of the Faculty of Natural Sciences and Technology; 2014) and Cereal Science Technology – South Africa (Prize for Sustained Excellence in Cereal Science and Technology Research and Development). Her research presented at Conferences has been awarded on five occasions.

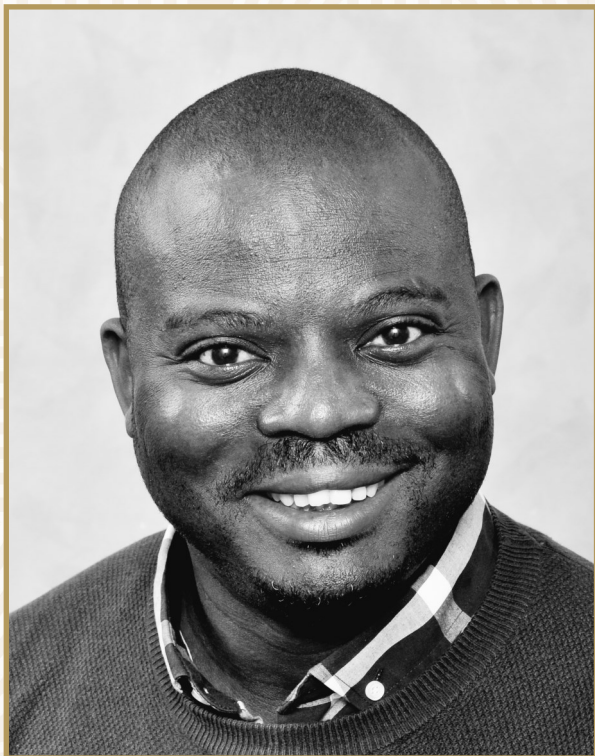
Throughout her career, Prof Manley has been contributing to international and national science communities by fulfilling leadership roles. She served on the committee of the International Council of Near Infrared Spectroscopy (ICNIRS) for 10 years as Secretary and Chair-elect. She organised the 15th International Conference on Near Infrared Spectroscopy (NIR2011) in Cape Town in 2011, and subsequently, the Second African-European Conference on Chemometrics (AFRODATA) in Stellenbosch in 2012. She also chaired the scientific committee of both these conferences and continued to serve on scientific committees of several international conferences. Locally, she has been serving on the South African Spectroscopy Society committee since 2012 and was the Chair and Immediate Past Chair of the Cereal Science Technology-South Africa committee – from 2013 to 2017. Furthermore, she contributes by means of evaluation of NRF funding and rating applications and regularly acting as peer-reviewer for several high-impact journals. Prof Manley has been invited to join The South African Academy of Science and Arts (M.Akad.SA.) and is a member of 6 other professional bodies. Since 2012, she has been serving the wider wheat community as the Chair of the Wheat Forum Cultivar and Technical Committee. This committee plays an important role by ensuring that new wheat cultivars that are released are to the benefit of the millers, bakers and most importantly, the farmers.

During the last 25 years, Prof Manley played a significant role as researcher, supervisor and academic leader in the Faculty of AgriSciences. Her research is characterised by innovation, sustained excellence, productivity and impact. Not only does her research provide practical solutions, it also substantially contributes fundamental knowledge. This was only possible due to mobilisation of funding (> R35 million) mainly as principal investigator and value was added to her research through international collaboration. As a senior academic, she also invests in teaching and academic leadership with the result that a substantial amount of her time is also invested to support and capacitate younger researchers and supervisors by means of informal and formal mentoring. She believes this to be her legacy, as the future of Stellenbosch University depends on talented young colleagues.

On the photos from left to right: Mr Gerrit Loots, Prof Marena Manley, Mrs Martie Manley and Prof Gunnar Sigge

(Photos provided)





Dr Oluwafemi J Caleb - former PhD graduate and until recently employed at the ARC Infruitec next door, has now been appointed at the University. His primary role is initially (next two years) to take over the running of the SARCHI Chair in Postharvest Technology from Prof Linus Opara, culminating in the transition to the Africa Institute for Postharvest Technology. Dr Caleb will also be officially affiliated to the Departments of Food Science and Horticulture. His affiliation to Food Science will include postgraduate supervision and undergraduate teaching at a later stage. At the postgraduate level, he will be tasked also to collaborate and supervise students with Horticulture.

Prior to his appointment at the University, he served as the Research Team Manager at the Agricultural Research Council (ARC), South Africa. During this period Dr Caleb managed diverse team actively involved in basic and applied research projects in Postharvest and Agro-processing technologies as well as community development programmes. He was awarded the most coveted and competitive Leibniz-DAAD Postdoctoral Fellowship (2014) and Alexander von Humboldt Foundation Fellowship (2015), both fellowships were hosted at Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Potsdam, Germany. His research interests include: (a) design and optimization of emerging non-thermal postharvest technologies and hurdle techniques for fruit and vegetables; (b) ethylene management along the postharvest value chains; and (c) the application of proteomic and metabolomic tools in the identification of important markers as indicators of postharvest quality, physiological stresses/disorders, or disease response in fresh produce. With the transition to the Africa Institute for Postharvest Technology, he believes that ***"there is no shortcut to any place worth going, and it is only with hope and persistence that can we shape the future, not with fear...so we just keep walking"***.

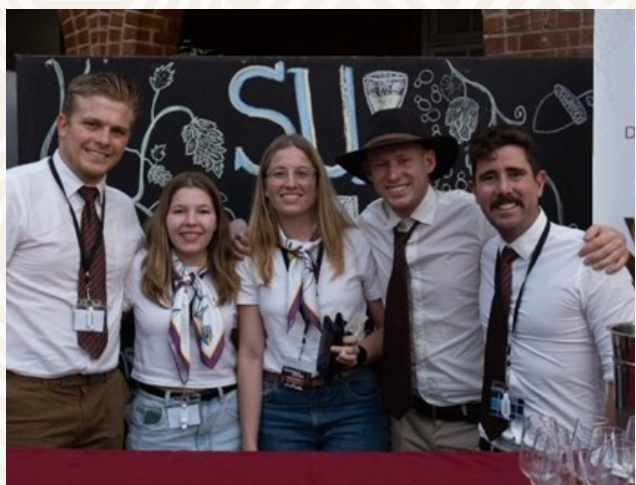


Best label design and some great tasting beers at the annual Brewing Intervarsity

Mia Schutte



The brewing team, Hamish Gebers, Mia Schutte, Kyle Corbett, Tarien Riekert and Dewald Botha



Accepting the 1st prize for label design from the FoodBev SETA representative.

The Maties brewing team, based at the Department of Food Science, represented Stellenbosch University at the SAB, CUT Intervarsity brewing competition in Bloemfontein in October. This annual event allows students from South African university brewing clubs to showcase their skills in brewing and label design, as well as providing an opportunity to network with members from the brewing and distilling industry. The team brought home several prizes, including 1st place for the label design and 3rd for 3 of the 5 beer entries. Sponsors of the event included SAB, Heineken, CBASA, Lallemand, G/ZITEC, Food Focus, Beer Association of South Africa, CAFSaB, FoodBev SETA, Cactus Craft, Anton Paar and PDTs.

Photos: Provided by the brewing team

2022 NPD 2022



NPD 2022, How to develop a new food product

On 13 October we hosted another very successful New Product Development (NPD) presentation day. It was good to have an auditorium, packed with Alumni, Industry representatives, sponsors, judges, US staff members, parents and students. The Covid pandemic ensured that we upped our game with online presentations and streaming skills and we are very grateful for the 300+ online attendees. It is a huge compliment to us that so many took the time to attend this highlight on our calendar.

We want to thank all involved in making this day and the whole process possible. Over the next few pages we want to give credit to all involved. Sponsors of prizes, services and ingredients; mentors and all the experts in the Food industry who donated their time and knowledge so generously. Without your kind generosity none of this would be possible.

By following the information below you will see the 2022 theme as well as the technical and marketing aspects students had to consider during the process of developing their product. They were randomly divided into 6 groups to work towards the end goal.

Dr Maricel Krügel has been the lecturer for the NPD module since 2016. With her hard work and go-getter attitude, Maricel took NPD to a whole new level of excellence, getting the Food Industry involved and motivating students to solve problems and be creative. Thanks to a huge team effort under her leadership, these students are very well equipped to go out into the workplace. Congratulations to all 6 teams with the level of excellence achieved in developing and presenting your products.

For the first time ever you will be able to watch the 2022 Presentations by following this link: (Copy link into new tab)

<https://youtu.be/7LzUY--2JZ8>

**Food with a
South African
twist...**

**An innovative
twisting idea!**

Requirements

- Show an innovative approach, either
 - ingredients used and / or
 - the processing
- Develop for the South African palate
- Include min x1 trend
- X1 Functional ingredient – a bioactive compound
- X1 Food ingredient added for a specific technical purpose
- Groups should approach all decisions **SCIENTIFICALLY**



Target market



Food trend



Benchmark



Costing



South African legislation



Food safety aspects

- Microbial limits
- HACCP Plan
- Shelf-life: min 7-days



Nutritional information

- Based on 
- In-house + 



Consumer research



Suitable packaging



John Fox
Enviromall, Eco-friendly
packaging solutions
Sales Director



Vanessa von Holdt
IPSA Student Gold Pack
Packaging Consultant

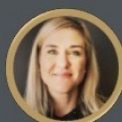


These people and institutions donated their time and knowledge to assist our students

From top to bottom

- Packaging judges
- Guest speakers
- Service donators
- Judges for Legislation and HACCP plans
- Judges for NPD prizes

- Dr Jaco Franken - Manager: Graduate School Economic & Management Sciences
- Melvi Todd - Elyxer Consulting
- Bitta van Staden & Wendy Beneke - Sensient Technologies
- Karin Carstensen - Woolworths
- Gary Pon - Ingredion
- Karen Horsburgh - FACTS SA
- Karin Botha - NSF
- Gerhardus le Roux - Microchem



Melvi Todd
Master of ceremonies



Microbial & Nutritional analyses



Allergen testing



IT
CLT



Andrea Marent-Hegewisch
Guest Lecturer



Cleaning equipment



Anina Steenkamp
FACTS SA
Regulatory Consultant



Gabriella Stevens
FACTS SA
Registered Dietician &
Regulatory Consultant



Karin Botha
NSF
Business Manager



Shelley Barnard
Cape Herb & Spice
Head of Sales,
Marketing &
Innovation



Pieter Kruger
Crown Food Group
Innovations
Development
Chef



Ashley Ferreira
In2Food
New Product
Developer



Leonie Wiseman
Synercore
R & D Manager



Tanya Rabie
In2Food
Prepared Foods
Category Head



Sponsors of ingredients



FINEST FRUIT UNDER THE SUN
SINCE 2002
AT SOURCE
HANDMADE FOODS
~ PTY • LTD ~



These institutions kindly donated ingredients for the development process.

At Source and Babylonstoren provided delicious snacks for the audience.

Thank you for your generosity!

Prizes to the value of R115 500 were donated to our winning groups in these categories



New Product development 2022 - **GOLD**
New Product development 2022 - **SILVER**
New Product development 2022 - **BRONZE**

**Total value
R115 500**

Complying best with the relevant South African regulations

Best HACCP plan

Product best liked by the audience

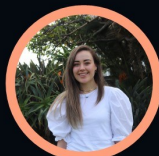
FS&T IPISA Student Gold Pack Award: Best Packaging Entry

GOLDEN HAZE



Back (left to right): Danelle Bosman, Carli Pretorius, Alaina Besselaar, Nastasia Nicolaou
Front (left to right): Antonio Grain, Danel Hennings, Jenna Willcocks, Naomi Douglas

Bo-Kaap Bites Team



Ansone Boshoff



JP Eksteen



Jodie Stoffberg



Kgalalelo Koloti



Nina De Villiers



Lara vd Merwe



Jana Schreuder

our team



TARRYN OHLSSON



ESME BROEKSMA



JANA GERRYTS



LARA COETZEE



LERATO NTSIME



LYDIA LANDMAN



RORY LUTZ

**HUM
MOES**

Spill the Beans



Jess



Iksha



Jana



Elaine



Toti



Nika



Kyle

Noble Nibbles



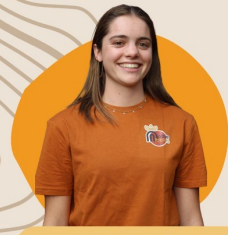
JESSE VOSLOO



PHOEBE DAVIN



SHAUN RILEY



JENNIFER DU TOIT



DONNE' VAN SCHOOR



LEAH BREDENKAMP



MICHAELA TRUMPELMANN

PAPACINI



Chulekazi Rangxa



Heidi Biehler



Jacques Olivier



Lottie van Niekerk



Madré Burger



Melissa Lange



Storm-Leigh Davids



Prizes winners

NPD 1st Prize For best product and presentation, R19 000/group: Papacini
 NPD 2nd Prize for best product and presentation, R13 000/group: Noble Nibbles
 NPD 3rd Prize for best product and presentation, R6000/group: Bo-Kaap bites
 NPD prizes were sponsored by Synercore, Innovus, Ina Paarman and Stellenbosch University



FACTS prize for the team that best complied with the SA regulations went to Bo-Kaap bites.

The prize allows each team member to attend one of the FACTS online workshops to the value of R3000/person

NSF prize for the group who had the best HACCP plan went to Golden Haze. This prize allows each group member to attend a 2 day, HACCP for processors course to the value of R4000/person

MICROCHEM prize to the value of R8000/group for the product best liked by the audience, went to Papacini



**WORLDSTAR
GLOBAL
PACKAGING
AWARDS**

The IPISA Student Gold Pack award for the Best Packaging design, to the value of R10 500 per group, went to HUMMOES. Papacini and Bo-Kaap were both finalist in this category.

Listen to Dr Maricel Krügel's RSG interviews by following the links below.

<https://omny.fm/shows/rsg-landbou/rsg-landbou-19-november-2022>

<https://omny.fm/shows/rsg-landbou/rsg-landbou-26-november-2022>



What's **BREWING** in the Sensory Science Lab?

It has been another exciting year for sensory research at the Sensory Research Facility, Department of Food Science. The tastebuds of our two trained sensory panels were challenged in the sensory characterisation of numerous food products for industry clients, as well as Food Science and Animal Science studies of MSc and PhD students.

Novel tea research projects in collaboration with the Agricultural Research Council (ARC) Infruitec-Nietvoorbij and the Department of Science and Innovation, resulted in the generation of interesting aroma and flavour descriptors such as 'date pudding', 'cooked oats', 'cooked root vegetables', and 'tobacco' (in a positive sweet sense).

The sensory laboratory has seen some new tea brews, apart from the ongoing research on our indigenous traditional (oxidised) rooibos and honeybush brews in collaboration with the ARC Infruitec-Nietvoorbij. These include novel research on green rooibos tea, green and traditional rooibos iced tea, and indigenous Diya red root and tepane black bush tea from Setšong African Tea Crafters.

Together with researchers from Rhodes University and ARC Infruitec-Nietvoorbij, Dr Erika Moelich was invited to present at an industry information workshop for honeybush harvesting and farming communities in Plettenberg Bay, where honeybush species such as *Cyclopia longifolia* grow naturally. Dr Brigitte du Preez was invited to share research outcomes from her PhD study, including sensory quality grading tools and an app developed for the honeybush industry, at the Indigenous Knowledge and Bio-Trade Indaba, University of the Free State, Bloemfontein.

A popular article entitled 'Harvesting SA's honeybush secrets' on honeybush research at ARC Infruitec-Nietvoorbij and collaborators, was published in the September 2022 issue of *Veld & Flora* of the Botanical Society of South Africa (<https://www.botanicalsociety.org.za>). Find out more about honeybush history and current research at <https://www.arc.agric.za/arc-infruitec-nietvoorbij/honeybush/Pages/default.aspx>.



Top f.l.t.r.: George Dico, technical assistant at the ARC Infruitec-Nietvoorbij, preparing honeybush tea batches for laboratory tests; Prof Dalene de Beer, specialist researcher in the analytical laboratory of the Plant Bioactives Group of the Post-Harvest and Agro-Processing Technologies Division, ARC Infruitec-Nietvoorbij. She is an associate professor at the Department of Food Science, Dr Brigitte du Preez, Nina Muller and Dr Erika Moelich from the Sensory Research Facility, Department of Food Science, SU. Photos by PHOTOWISE.



The Center for Food Safety, 2018 till now...



Since the establishment of the Center for Food Safety (CFS) at Stellenbosch University in 2018, with Tiger Brands as the main sponsor, the center has grown tremendously. Supporting postgraduate students and research in the field of Food Safety. We've seen numerous MSc and PhD students graduate. One of the biggest accomplishments is the valuable collaboration between the CFS and the Food Industry, addressing contentious issues.

In 2022 The CFS at Stellenbosch University received a second, generous donation from their leading industry partner, Tiger Brands, to continue to provide science-based solutions to food safety concerns in South Africa.

With this donation the CFS will continue to tackle all aspects of the food chain, with research into emerging food-borne pathogens, sanitiser efficacy, wastewater treatment, and farm-level management practices that contribute to the ever-rising concern of resistant pathogens already being done. With the One Health (WHO) mindset, the CFS hopes to provide practical solutions to real-world food safety problems, while continuing to work with various leaders within the industry at a national, and international level.



Together with University College Dublin (UCD), the CFS at Stellenbosch University has been successful in obtaining funds from the Science Foundation Ireland to develop a solar driven, sustainable, and universal approach for simultaneous purification and disinfection of wastewater.

Dr Demetra Achilleos, an expert in photocatalysis and solar-driven water treatment from the Department of Chemistry at UCD, leads a multi-disciplinary team of experts to specifically address challenges associated with the establishment of healthy communities (i.e., clean water and sanitation, and food safety). Prof Pieter A. Gouws (Partner Country Team Co-Lead), together with Prof Séamus Fanning (Centre for Food Safety, UCD) and Nick Andrews (Head of Food Safety and Quality, Dawn Farm Foods) form part of the team that will assess the effectiveness of the proposed solar-driven technology, to simultaneously purify and disinfect various water streams in Ireland and South Africa.

During October 2022, Prof Gouws attended several meetings at UCD to do detailed planning for 2023 and visit Dawn Farm Foods Factory in Naas, Ireland. The proposed research programme meets core strategic objectives of Stellenbosch University (SU), one of Africa's leading research-intensive universities. SU has been recognised as being **excellent, inclusive, and innovative**, actively advancing knowledge in service of society.

The proposed project will make use of solar-driven, green, and cost-effective technology to eliminate substances of emerging concern from any wastewater source worldwide. The impact of this research will be considerable, as the systems are anticipated to simultaneously purify and disinfect irrigation water and various wastewater streams, in a single step without the need for any additional harmful chemicals. Readily available worldwide, renewable solar energy and other waste resources will be used to safely purify highly contaminated irrigation water, a major issue in South Africa. Thus, good health and well-being will be promoted with the accessibility to clean water and sanitation while using an approach that does not rely on the use of fossil fuels, and so assisting in the climate change mitigation.

Copy link into new tab please

https://www.youtube.com/watch?v=yBnfnxRi_iw

Living with little Monsters

Dr M van den Honert and Prof P Gouws with MJ Lee



Living with little Monsters

An Illustrated Household Guide to Managing
the Hidden World of Microbes

Dr Michaela van den Honert
and Prof Pieter Gouws with Michael J Lee



Living with little Monsters officially launched



Stellenbosch University gathered in celebration of the launch of the book, '*Living with little Monsters*', a scientific household manual written for the everyday consumer which introduces the reader to a variety of potentially harmful microorganisms.

"There is no point in scientists having all this information about germs if they don't share it to make the world a better place." - Prof Stephen Forsythe: *Living with little Monsters*.

Bongiwe Mhlongo

Food scientists Dr. Michaela van den Honert and Prof. Pieter Gouws of the Centre for Food Safety (CFS) at Stellenbosch University have compiled the most recent scientific data to create a comprehensive list of descriptions of specific microbes that the everyday consumer should be aware of, including the good and the bad. By doing this, they can better enable regular consumers and their families to lead healthier, less dangerous lives daily.

The very recent and tragic coronavirus pandemic highlighted the critical need for a better understanding of microorganisms, whether viruses or bacteria, in order to develop better practices and reduce the risk of dangerous infections. Ideally, every household should understand how microorganisms can harm human and animal health.

"It is important that everybody has a basic understanding of the fact that there are microorganisms who live all around us, particularly in food safety. The book is a way of conveying information and sharing it with everybody", said Dr. van den Honert.

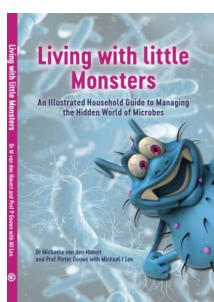
Consumer engagement and awareness are one of the Centre for Food Safety's main pillar. *Living with little Monsters* makes complex scientific principles easy to understand and includes various graphic illustrations to convey essential information in a practical way, so that it could easily be applied to everyday life of the consumer.

Michael Lee, a key contributor to the book enthusiastically states that, "Ignorance in the general population about this microworld is a recipe for disaster, that is why this book could become a life saver. With the help of *Living with little Monsters*, we can focus on forging a better co-existence with the microbial world."

"We wrote this book because we believe that everybody has a story to tell, and our story is sharing information about food-borne organisms and sharing information about food safety and related matters. There is so much more in the book, once you start reading you will realise that there is so much more that you need to know, and by reading the book you might change some of your habits." Prof Pieter Gouws added.

The dean of the Faculty of AgriSciences congratulated the authors for the excellent collaboration. "As I was reading through the book, I could not tell that the chapters were written by different authors, you worked very well as a collective team, the Faculty and University sincerely congratulate you." said Prof Danie Brink.

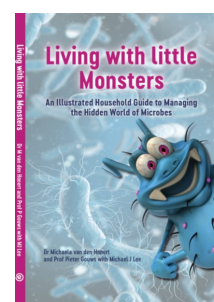
You can get yourself a copy of the book, it is now available for sale at Takealot (left) and Amazon (right). Place your order by scanning the QR codes.



Scan me!



Scan me!





The Book launch 2022



Mr Michael Lee, Ms Mareli van Zyl (Illustrator), Prof Pieter Gouws and Dr Michaela van den Honert authors of the newly published book, 'Living with little Monsters'.

Photos: Franna Lombard



Prof Pieter Gouws, Mr Johan Groenewaldt, Mr Danie Nel and Prof Danie Brink



Prof Gouws and Mr Raymond Hartley of Microchem



Research visit to Dublin, Ireland

Diane Rip

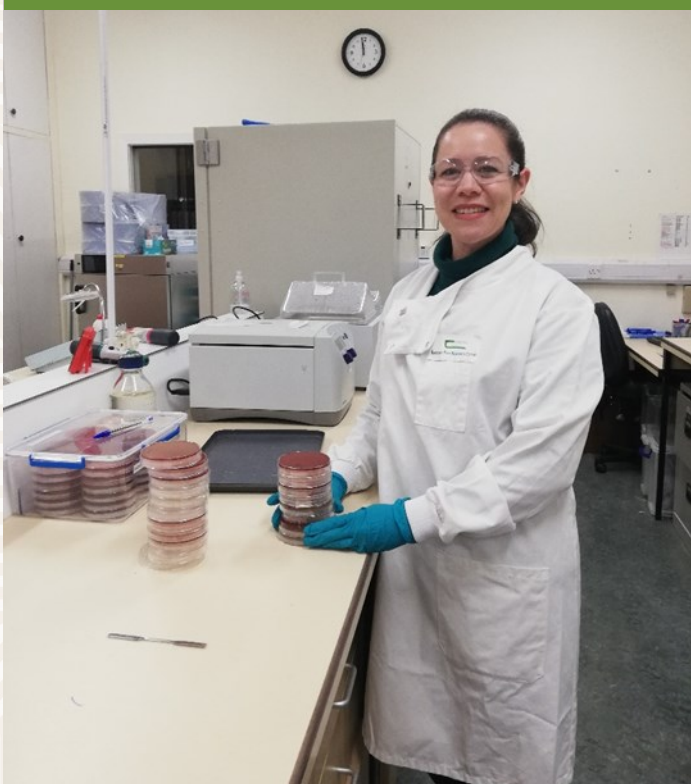
Dr Diane Rip visited the Teagasc Food Research Centre in Ashtown and the University College Dublin (UCD) during November-December 2022, to develop skills in the laboratory and foster international research collaboration. "The trip was amazing, there was networking and excitement for future work, with more research visits scheduled. The hosts were fantastic." The trip was sponsored by the CFS.

Photos above:

Diane at UCD, Dublin and St Stephen's Green Park - a historical park and garden, located in the centre of Dublin city

Photos below:

In the Laboratory at Teagasc Ashtown Food Research Centre and visiting the Jameson Distillery



Dr Moronga Mathipa joined the Food Science team

Since March this year, we've had a new member of staff at Food Science. Dr Moronga Mathipa's move to Stellenbosch and the Western-Cape was a bold one to the great unknown. She started working at Food Science as a Technical officer, being the lab manager for the undergrad lab and responsible for Food Science 478 and 488 practical classes. This is a daunting task at best at this Department, but this Polokwane lady is surely well equipped and ready for the challenge. Morongwa grew up in the village of Ga-Mothiba outside Polokwane. She furthered her studies at the University of Limpopo (UL).

Her academic record speaks for itself. She graduated in 2011 with a Bachelor of Science Molecular and Life Sciences, majoring in Microbiology and Biochemistry at the University of Limpopo. In 2012 she did a Bachelor of Science in Microbiology (UL) and completed her Master of Science in Microbiology in 2015 at the same institution. In 2018 she started her PhD, Doctor of Philosophy with the title, "Improvement of the quality and shelf life of traditionally produced sorghum juice by addition of ashes, dried powdered leaves and stem obtained from *Combretum* spp."

Earlier this year she travelled back home to attend her graduation ceremony at UL. Congratulations on this magnificent achievement and welcome to Food Science at Stellenbosch University.

We are honored to have you on our team!



Maricel passed SoEL short course with Merit

Dr Maricel Krügel was chosen as the representative of the AgriSciences Faculty to participate in the Scholarship of Educational Leadership (SoEL) course. The SoEL is a 12-credit short course, pegged at level 8 on the National Qualifications Framework (NQF). It is offered to Stellenbosch University leaders in education, over a one-year period in a blended learning mode.

Maricel had to choose a research topic in which she had to demonstrate the integration of relevant scholarly literature to inform her educational leadership practices. As the co-ordinator of the NPD module, she used this research opportunity to answer questions about her practice and leadership within this module. The research question asked was: *To what extent does the subject, New Product Development (NPD), being taught at the Department of Food Science, contribute to the competence level, expected by the food industry, of food science graduates who start working in NPD, research and development (R&D) and research and innovation (R&I)?* The developed questionnaire was sent out to alumni and was divided into four sections: (1) General questions; (2) Leadership and soft skills; (3) Functional excellence – food-specific or technical

skills; and (4) Sector awareness – typical business savvy/ understanding of the value chain.

We are proud to conclude that Maricel passed the SoEL short course with Merit (80-100%). The result of this study can hopefully be used as a base for recirculation to ensure that our future Food Science students are better equipped for the transitioning from university to the world of work. Maricel is also currently involved with the process of investigation of how to best introduce entrepreneurship as part of the AgriSciences programmes.





A research visit for sensory analysis in Malawi

Dr Jeannine Marais (Sensory Scientist: Department of Food Science) together with Dr Khalid Salie (Aquaculturist: Department of Animal Science) were invited to Lilongwe University of Agriculture and Natural Resources (LUANAR) as visiting research collaborators in September of 2022. Dr Marais is a co-supervisor for Mr. Vincent Mlotha for his PhD Agric degree, with the thesis title: 'Sensory analysis, consumer preference and meat quality of wild and farmed tilapia (*Oreochromis* species) on the Malawian market'.

The purpose of the 5-day visit was to discuss progress on research activities and the partnership between LUANAR and Stellenbosch University. The hosts were incredibly friendly and hospitable, with delicious, traditional meals provided every afternoon.

Dr Marais had the exciting opportunity to train a new sensory panel consisting of LUANAR employees, in addition to conducting descriptive sensory analysis on Tilapia fish fillets derived from five production systems as part of Mr Mlotha's PhD degree research. Chemical reference standards were used to train the panel on attributes related to Tilapia fish, such as 'Earthy', 'Musty/Moldy' and 'Fresh cut grass' (chemical reference standards were supplied by MANE).

A special thank you to the **Africa Centre of Excellence in Aquaculture and Fisheries Science (AQUAFISH)** at LUANAR for making the research visit possible.



Getrude Koopman says goodbye to Food Science



Getrude Koopman joined the Food Science team in 2018, as Departmental Secretary, when she took over the very busy, front office at the Food Science Department.

She was super efficient and we will remember her by that contagious laughter that brightened up room 1005.

Getrude left the Food Science Department to join Economics & Management Sciences at Stellenbosch University.

We hope that you enjoy your new position, Getrude.

May your future be bright and beautiful.

Prof Marena Manley return home, inspired after research exchanges at METU in Ankara, Türkiye and KU Leuven, Belgium

One of the advantages of being an academic is that we are given the opportunity to take research leave. I have benefited from such opportunities on three previous occasions. During my recent one-year research opportunity, I personally experienced the value of collaborating with international researchers and spending time in highly efficient international research groups.

I completed a three-month (April till June) secondment at Middle East Technical University (METU) in Ankara Türkiye as part of the project titled 'SuChAQuality' that is funded under European Commission Horizon 2020 Marie Skłodowska-Curie Actions Research and Staff Exchange Program. This project aims to develop alternative quality control methods for the sugar, chocolate and confectionary industries.

Associate Professor Mecit Öztöp from the Department of Food Enigeering hosted me as well as MSc student, Jana van Rooyen, in the ÖztöpLAB. With his unique kindness and energy, Assoc. Prof Öztöp has the very rare ability to lead his research group to top quality research in a very modest way. It was stimulating to be a part of the lively atmosphere and continuous, excited voices of his students wanting to learn on a daily basis. It was also special to be there when he and his research group moved into the laboratories of the newly built ÖztöpLAB, and also to be able to experience the opening function.

Prof Marena Manley at the Department of Food engineering, METU and with Assoc Prof Mecit Öztöp and his research group at the opening of the ÖztöpLAB-building.



Mr Selçuk Arslan (R&D and Quality Manager) explaining chocolate manufacturing





First week in May, I had the opportunity to present a keynote lecture (*The road less travelled: NIR (hyper)spectral imaging in cereal quality and safety*) at the 1st sensorFINT International Conference of the COST Action 19145 (European Network for assuring food integrity using non-destructive spectral sensors) in Izola, Slovenia. Two of my postgraduate students also attended. Jana van Rooyen (funded by SuChAQuality) presented a poster (*Application of ASCA to characterise effects of roasting temperature, -time and milling method on SWIR spectral data of whole and milled wheat*) for which she won a second prize. Sebastian Orth (funded by the DSI through the Cost Action) who was co-author on the poster also presented an oral (*Spectral sensors and a novel multiblock data fusion approach for barley pre-harvest germination discriminant analysis*).



Photos from sensorFINT Conference, Izola, Slovenia with Prof Marena Manley, Jana van Rooyen and Sebastian Orth presenting.

InnoRenew CoE, Izola, Slovenia

Photos provides



I concluded my visit at METU with a two-day online NIR spectroscopy training school presented with Prof Rosario Castillo from the University of Concepción, Chile.

During September to October I had the privilege to spend seven weeks (funded by SU and DSI) in the Laboratory of Food Chemistry and Biochemistry (LFCB) of Prof Jan Delcour and Prof Christophe Courtin. The opportunity to collaborate with, being in the environment and learning from these highly efficient researchers was greatly appreciated. It was also a privilege to take part in the academic procession of the Emeritus celebrations of Prof Delcour shortly after I arrived.



After valuable exchanges at METU and KU Leuven, I returned home with newly found energy, new research ideas and with several newly established collaborations and friendships. I am looking forward to the exchange of expertise when the Department of Food Science will host the postgraduate students from METU and other partners of the SuChAQuality project as well as further collaboration with Proff Delcour and Courtin.

Marena with Prof Jan Delcour (middle) and Prof Daneel Ferreira

From getting rewrites to Greece to Gauteng

Kyle Corbett

I didn't really realise what doing a post grad at Food Science would entail. All that I really remember was walking into Prof Pieter Gouw's office in October 2018, slightly bewildered after finding out that I was probably going to be writing second option for Chemistry 264. This would be the third year in a row after my terrible predicate mark. Anyways, I entered and began a discussion about doing an industry applied MSc thesis, that I kindly (and somewhat cheekily) requested "wouldn't be too academic".

Fast forward through passing undergrad after a Dean's concession exam for Biochemistry 345, in January 2019, and beginning my MSc two days later to a global pandemic and graduating a year later than planned (thanks COVID). What I thought would be a "quick and easy excuse for an extended gap - with a degree at the end," turned into an adventure of a lifetime.

At the Centre for Food Safety (CFS), we're uniquely equipped with fantastic relationships with industry, access to world class data from academia and industry and are trusted with tasks that top universities could only dream of. The applied nature of our work, that address the "meat and veg" of a food safety issue really shone through in August this year when our CFS research group (#squad) went forth to Greece to gain and share our knowledge, collaborate and forge relationships at the Food Micro 2022 research conference in Athens.

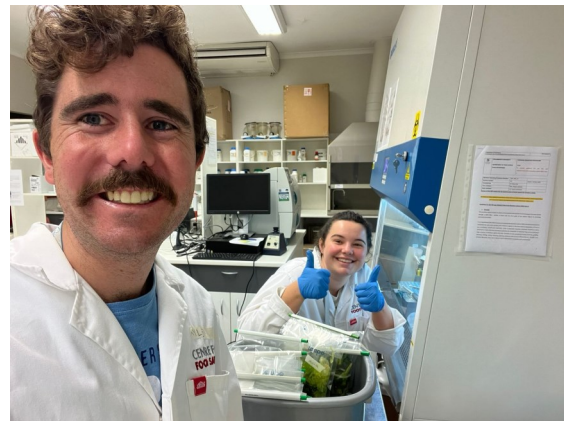
Food Micro 2022, proved to be one for the books (and memory bank); from meeting authors of much-loved journal articles, to making new mates from around the world, to hearing what global research groups are doing and how we're so aligned to global focuses was refreshing and inspiring. I also had the opportunity to share work from my MSc thesis on the prevalence of sanitiser resistant *Listeria monocytogenes* in South African Food Processing Environments, which saw some great questions and conversations from other global researchers who enjoyed the "industry collaborative edge" of presentation. It really brought me

renewed hope and inspiration as to why I chose to carry this work forward in the form of a PhD, and why Stellenbosch is so perfectly positioned for it.

Now, with the academics out of the way: the work of my PhD on controlling sanitiser resistant *L. monocytogenes* wouldn't be carrying an industry edge without collaborating with industry. This means, not resting on my laurels behind a desk or getting too carried away with lab work, but instead rubbing shoulders with teams on the factory floors (from all over SA - as far as Gauteng).

I'm incredibly thankful to the CFS and especially Prof Pieter Gouws and Dr Diane Rip for supporting me along this journey and for making it so enjoyable. Thoroughly looking forward to furthering this contribution towards safer food with you!

There's only so much that the books can show you, we need to think beyond words in an article and not lose touch with what's happening out there!



Two Food Science Alumni in the Ms SA top 10 for 2022



Lebogang Mahlangu (26) is from Soshanguve in Tshwane, Gauteng, and works as a procurement specialist for a multinational FMCG company. She has a BSc Food Science degree from Stellenbosch University. She works on an initiative called TalkEat, which encourages conversations with thought leaders to be shared and donates meals for every live Instagram conversation hosted. In 2021, 45 000 meals were donated. You'll find her at the gym, spa, or on the sports field in her spare time. (Photo left)



Tamsyn Jack (25), from Somerset West in the Western Cape, is an entrepreneur working with some of South Africa's leading start-ups and small businesses. She graduated with a Food Science Degree from the University of Stellenbosch. She describes herself as compassionate, brave and inquisitive. She loves listening to podcasts while getting ready for the day, and it is her dream to meet women's rights activist and actor Emma Watson. (Photo right)

Photos and information from the Miss South Africa Website

Post-Covid Student events

Jana Schreuder



The total return to campus in 2022, meant more student events could once again be hosted. Even attending practical classes were considered an event. The Food Science Association (FSA) organised two social events in 2022. The first was a welcoming braai for the newcomers to the Department, was held in March and in September the famous Food Science dance.

Décor, music and good food meant that students and academic staff could get to know one another outside the lecture halls. The event had a great turnout, with students from all year groups attending.



Braai time



Food Science students and staff, dancing the night away for a good cause.

After a long period of social distancing, the FSA brought back a long overdue departmental favourite, the Food Science Dance. This year the dance was hosted at Banhoek Chilli Oil Company, just outside of Stellenbosch. The students showed overwhelming interest and tickets were sold out within 72 hours! On 15 September 160 people attended the festivities at the enchanted forest-themed event, with black ties and sparkling evening dresses. It was a summer night filled with festive music, wine, and delightful company. The highlight of the evening was the mock-prizegiving for students, where those who consistently wear gym clothes to class, are most likely to never leave the department or those who have a particular knack for finding past papers, were recognised. The dance floor was filled with students throughout the evening and rumour has it that even the lecturers made guest appearances on the dancefloor. The proceeds from ticket sales were used to make a sizeable donation towards the Trolley Challenge. This project forms part of the Bridge the Gap initiative at Stellenbosch University and aimed to collect non-perishable food, sanitary products, toiletries, and funds for students in need. The Food Science department was recognised by the Agrisciences Faculty as the most noteworthy contributor towards the project during one of the weekly competitions set out by Prof Danie Brink, Dean of the Agrisciences Faculty. See next page for some dance action photos.



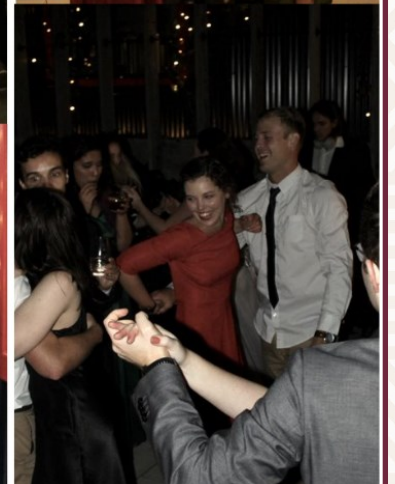
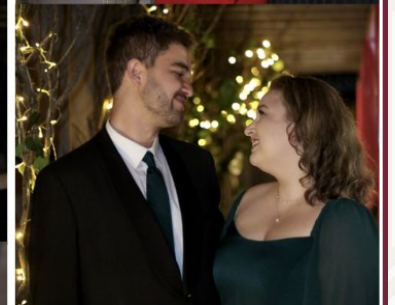
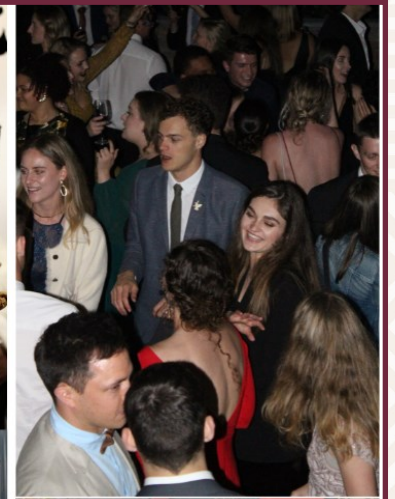
Winners of the 'Trolley challenge', Food Science, head of department, Prof Gunnar Sigge, students Jacques Olivier and Tarryn Ohlsson, and Getrude Koopman, Departmental secretary. Proceeds from the Food Science dance went to this worthy cause. (Photos, A Lombard)



IFT College Bowl

Four students from the department took part in the Institute of Food Technologists (IFT) College Bowl, a food-related trivia event. The Stellenbosch group was the first non-American participating team and competed online against groups from Cornell University, the University of Massachusetts, the University of Maine, and Rutgers University. Members of the Stellenbosch team were Jana Schreuder, Jacques Olivier (Team Captain), Madison Beley, Melissa Lange and Tarien Riekert (Team manager).

Food Science dance 2022



Three Food Science students at the Rector's awards 2022

A group of 73 Stellenbosch University (SU) students were recently honoured with Rector's Awards for Excellent Achievement in recognition of their accomplishments in various spheres of student and campus life.

Themed "Sustainable innovation: pursuing excellence together", the annual awards on Tuesday, 18 October 2022, acknowledge student excellence in academics, leadership, culture, social impact, sport, and service provision.

Innovators for the future

Top management, faculty deans and student leaders joined award recipients at the ceremony hosted at the Stellenbosch Institute for Advanced Study (STIAS).

SU Rector and Vice-Chancellor Prof Wim de Villiers congratulated this year's awardees, adding that they were the "innovators we need for the future". The Rector also expressed the hope that this recognition would encourage the recipients to continue doing meaningful work wherever their future journeys might take them. "I congratulate you on your hard work and dedication, not only over the past year, but also the tumultuous two pandemic years. You persevered, and achieved something quite extraordinary," De Villiers said.

Having received 124 applications and nominations this year, the Rector's Awards ceremony is a key event on the SU calendar, said Prof Deresh Ramjugernath, Deputy Vice-Chancellor: Learning and Teaching. "It's an opportunity to come together to celebrate the hard work and exceptional achievements of our students," he said. "However, at the same time, we must also acknowledge that our students' achievements are facilitated by our dedicated staff, who create a nurturing environment for students to flourish and thrive, and consequently meet their full potential. We are celebrating that full potential tonight."

On the right track

The keynote speaker, SU's former Deputy Vice-Chancellor: Research, Innovation and Postgraduate Studies, Prof Eugene Cloete, encouraged students to continue their innovation journey, as they were on the "correct trajectory." He highlighted clarity on goals and expectations as well as recognition of people's achievements as two vital requirements for promoting innovation and unlocking human potential. "If you do not acknowledge other people, you bankrupt them emotionally," Cloete said. He encouraged the award winners to take their potential to the next level by continuing to renew their knowledge, set new goals and raise their expectations.

Cloete concluded his address by underlining the importance of respect in achieving success in life. "I want you to live with respect. Respect is important because it creates the possibility for us to co-inhabit this planet. Respect means acknowledging that we all have different ways and that we need to create a space where we can all live together and to our full potential. May you have a spectacular future."

And the winners are ...

Academics (comprising the Rector's Award for Excellent Achievement as well as the SU medal for top master's student, by faculty)

AgriSciences

- Mia Olga Schutte - Excellent Achievement
- Karlene Lambrechts - Excellent Achievement
- Carla Dippenaar (top master's student)

Author: Corporate Communication and Marketing/Korporatiewe Kommunikasie en Bemarking - Sandra Mulder



Photo top left: Mia Schutte

Photo bottom left: Karlene Lambrechts

Photo right: Carla Dippenaar, receiving their rewards from Prof Wim de Villiers

Photos by Stefan Els and article from SU Website

Scandinavian excursions

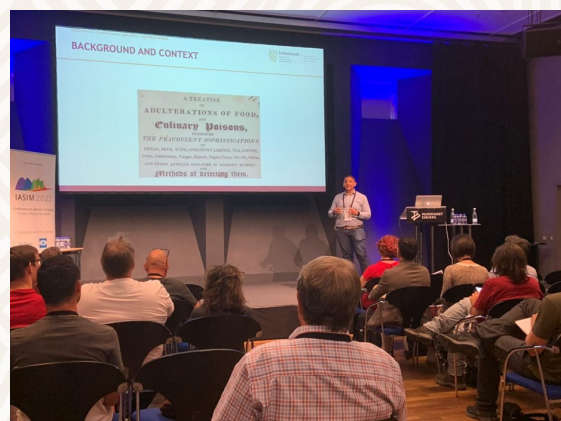
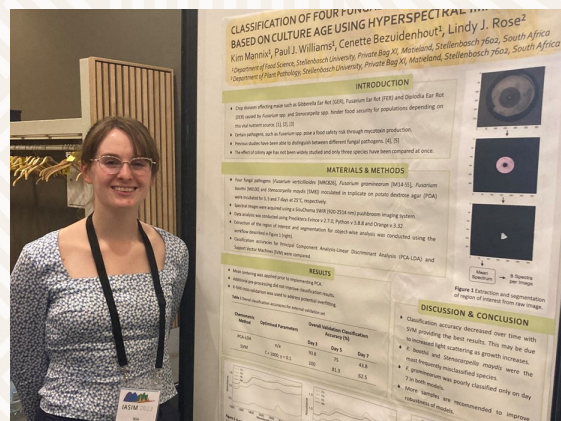
PJ William



As part of a South African Swedish University Forum (SASUF) project titled: "Remote sensing and multispectral imaging for plants and food stuff to meet UNs SDGs", Kim Mannix (photo right), 2nd year MSc student, and I visited Prof Erik Alexandersson (collaborator on the project) at the Swedish University of Agricultural Sciences (SLU) in Alnarp, Sweden, 29 June - 1 July 2022. In addition to collaborative meetings, visiting the campuses and interacting with staff and postgraduate students from the Department of Plant Breeding, we attended an AgriExpo ([Borgeby Fäلتdagar](#)), my first ever! Next one NAMPO 2023!

After the short stay in Alnarp and Malmö, we attended the International Association of Spectral Imaging (IASIM) conference in Esbjerg, Denmark, 3-6 July 2022. Here I presented part of Kiah Edward's PhD results in a talk titled: "NIR hyperspectral imaging: a means of capturing meat fraud" while Kim presented a poster titled: "Classification of fungal pathogens based on culture age using hyperspectral imaging". This was the first IASIM conference since COVID hit, so it was a great opportunity to network with colleagues and see friends again, and to see the latest developments in spectral imaging and its applications. I am already looking forward to the next one in Bilbao 2024!

I would like to acknowledge the funders, SASUF and the NRF, and collaborators for making the trip possible and enjoyable. (Photos provided by PJ Williams)



Department of Food Science and other prizes



The following students were awarded prizes and in a number of categories

Bessie Retief: Awarded annually to a final year BSc FS student with the highest average in the FS 354, Sensory Science module, to the value of R1000, went to **Heidi Biehler** for her 84% average.

Mimsie Smit: Awarded annually to a final year BSc FS student with the highest average percentage in FS 344, Food of plant origin module, to the value of R1500 went to **Iksha Bhowon** for her 83% average.

Nonna Rabie: Awarded annually to a second year BSc FS student for the best achievement in his/her first year in all FS modules. This prize to the value of R6000 went to **Marli Kotze** for her 90% average.

Jeanne Marie van der Poel: Awarded annually to a final year BSc FS student for involvement in and general interest in Food Science as a field of study, to the value of R5 500 went to **Jana Schreuder**.

The three Department of Food Science prizes for involvement in and general interest in Food Science as a field of study for first, second and third year students went to Lisa Clarke & Annatjie Mosima (R600 each), Madison Beley (R700) and Dané van Rooyen (R800).

Mattie Jooste undergraduate prize: This prize, to the value of R12 000, is awarded annually to a final-year student in BSc FS student for having obtained the highest average percentage for all modules over the first 3 years of study. This year it went to **Jess Vosloo** for her 81.25% average

Mattie Jooste postgraduate: Awarded to a PhD student for the best achievement in an MSc Food Science degree. This amazing, R16 000 prize went to **Marbi Schwartz** for her 82% average.

SASKO Prize: This prize, to the value of R12 000, is sponsored by SASKO and goes to the BSc FS student for the best achievement in all the first year and second year modules. This year went to Yvette Boshoff for her 83% average

The following students all received SAAFoST undergraduate bursaries to the value of R40 000

Anike Kemp, Esme Broeksma, Lottie van Niekerk, Nika Botha and Nicola Goosen



First-Year Achievement award

Marli Kotze, was the recipient of the First-year achievement award for best performing first year student in the AgriSciences Faculty.

The First-Year Achievement Awards aims to recognise lecturers who had a positive influence on the academic experience of first year students. It also recognises top performing first-year students within each faculty.

Marli nominated Prof Pieter Gouws, her Food Science 144 lecturer as the one who inspired and positively influenced her achievement.

In her own words she described her first year as a stressful one with lots of adjustments. It was Prof Gouws who made her realise what the importance and roll of a Food Scientist in our everyday lifes are. Prof Gouws said: " Humans can go for a while without the help of doctors and dentists, but we need a Food Scientist everyday. It is not only about developing new products, but also the constant discovery and development of the future of food."

These wise word made me realise that as Food Scientists of the future, we need to focus on the safety and sustainability of our food sources more than ever.

Congratulations to Marli and Prof Gouws. It is not the first time that both Food Science and Prof Gouws are recognised in this way.



Research experience across continents

Jana van Rooyen

At the end of March 2022, I travelled to Ankara, Türkiye to perform my first secondment as an Early stage researcher (ESR) of the SuChAQuality project. It is a Marie Skłodowska-Curie Actions (MSCA) Research and Innovation Staff Exchange (RISE) Project which allows seven academic partners and five industrial partners from nine countries across the globe to exchange knowledge. The project aims to develop alternative quality control methods for the sugar, chocolate and confectionary industries by using Nuclear Magnetic Resonance (NMR) relaxometry, Magnetic resonance imaging, Near infrared (NIR) spectroscopy, stable isotopes as well as various chemometrics approaches.

The secondment was based at the Food Engineering department at the Middle East Technical University (METU) and I was hosted by Dr Mecit Öztöp. It was my first research experience in a different laboratory and in another country. Working in the Öztöp Lab gave me the opportunity to attend a course on NMR relaxometry and work with analytical techniques that I was not familiar with. As a food scientist and being amongst majority food engineers for almost three months changed my perspective to now approach scientific problems through the eyes of a scientist as well as an engineer. Professor Marena Manley, soon joined me at METU as an Experienced Researcher (ER) where she presented a course on NIR spectroscopy to postgraduate students.

During this time Prof Marena (as she is fondly called by the METU students), Sebastian Orth (who travelled from South Africa) and myself attended the 1st International sensorFINT Conference on Non-destructive Spectral Sensors in Izola, Slovenia - a quaint Mediterranean fishing town between Italy (near Trieste) and Croatia. The Conference was held at the brand new InnoRenew Centre of Excellence (see photo below) - the largest wood structure in the country. Slovenia is the first country in the world to have been, in its entirety, declared a Green Destination of the World.

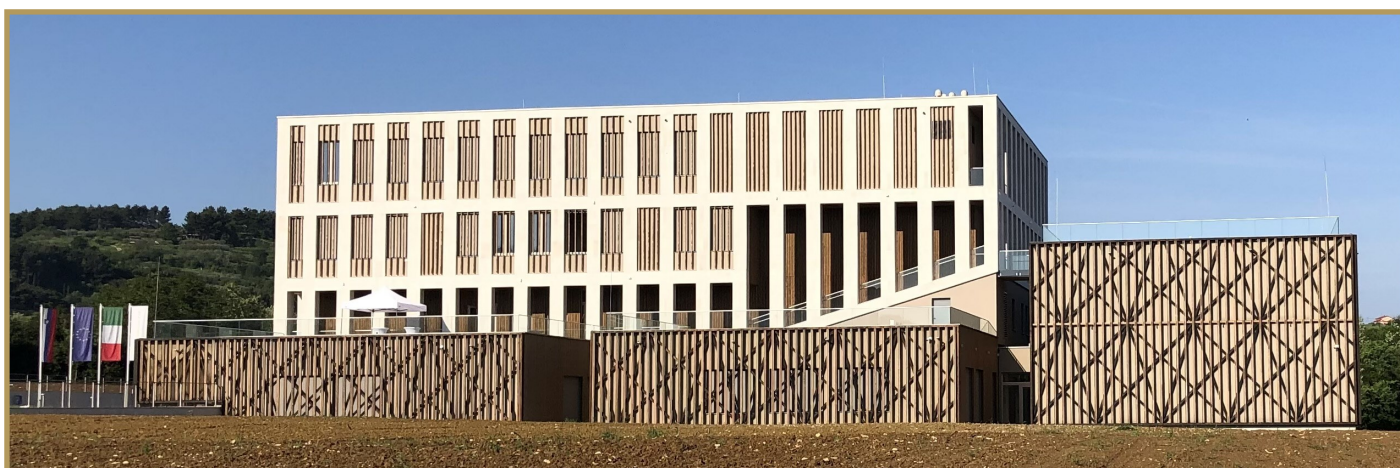
Prof Marena presented a Keynote, Sebastian an oral and I presented a poster. It was a first Conference attendance for both Sebastian and myself. What made it even more special was that I was awarded a second prize with my poster with Sebastian as co-author. Prof Marena and Sebastian were funded by the Department of Science and Innovation (DSI) as part of the sensorFINT Cost Action and I was funded by SuChAQuality.

At the end of May, the SuChAQuality team travelled to Belgrade, Serbia for the project Mid-Term Meeting hosted by SGI-IsoTec, an industrial partner based in Belgrade. The three-day meeting was held at the Majestic hotel where Work packages were discussed and research updates were presented by ERs and ESRs.

Furthermore, Prof Marena and I also worked at Tören, a chocolate factory located in Gaziantep in the south-eastern part of Türkiye. Two SuChAQuality staff members from Nottingham Trent University and a postgraduate student from METU joined us at Tören. In the course of this week, we became familiar with the production of chocolates and amongst other things, we identified new MSc research projects to be conducted on the production and storage of chocolates using alternative analytical techniques.

It was a great experience for me. Thanks to the project, I had the opportunity to live in a foreign country, experience new foods and cultures, meet new people and gain valuable knowledge not only in my field of study but also valuable life experiences. I am looking forward to upcoming secondments at Resonance Systems in Germany, the University of Warmia and Mazury in Poland, Nottingham Trent University in the United Kingdom, and METU in Türkiye.

(Photos provided by Jana van Rooyen)



Food Micro 2022



This year, the International Conference for Food Hygiene and Microbiology (ICFHM) hosted a Food Microbiology conference in Athens, Greece from 28-31 August 2022.

The theme was next-generation challenges in Food Microbiology.

Seven research outputs (MSc and PhD) from the Department of Food Science were presented at this conference; these included 2 oral presentations and 5 poster presentations.

Oral presentations		
Samantha du Toit (MSc)	Whole genome sequencing (WGS) and PCR-RFLP characterisation of <i>Listeria monocytogenes</i> isolates from ready-to-eat (RTE) hummus, fresh produce and the food processing environment (FPE) in South Africa	Dr Diane Rip (supervisor) Prof Pieter Gouws (co-supervisor)
Kyle Corbett (PhD)	<i>Listeria monocytogenes</i> and sanitiser resistance- benzalkonium chloride is old news	Prof Pieter Gouws (supervisor) Dr Diane Rip (co - supervisor)
Poster presentations		
Nadiya Henry (MSc)	Detection of carbapenem resistance determinants in environmentally isolated Gram-negative bacilli in the Western Cape, South Africa: Subsections of a One-Health approach to AMR	Dr Diane Rip (supervisor)
Kirsten Wessels (PhD)	Efficacy of bacteriophages FO1a and S16 in the reduction of <i>Salmonella</i> on chicken carcasses in a South African poultry processing environment	Prof Pieter Gouws (supervisor) Dr Diane Rip (co - supervisor)
Denise Coetzee (MSc)	Novel and emerging foodborne bacteria identified in commercial South African Ready-To-Eat (RTE) leafy greens during a study for the prevalence of <i>Listeria monocytogenes</i> and <i>Salmonella</i> species	Prof Pieter Gouws (supervisor) Dr Diane Rip (co - supervisor)
Rumbidzai Matenda (PhD)	Classification of <i>Listeria</i> species using near infrared hyperspectral imaging	Dr Paul Williams (supervisor) Dr Diane Rip (co - supervisor)
Corani Jankowitz (MSc)	Recovery of UV-C treated <i>Listeria monocytogenes</i> , <i>Salmonella enterica</i> and AMR <i>Escherichia coli</i> in different irrigation water sources.	Prof Gunnar Sigge (supervisor) Dr Corne Lambrecht (co-supervisor)

Let's go to Europe

Kirsten Wessels

I was lucky enough to attend two conferences in Europe this year. One was in Guimaraes, Portugal called VOM2022, sponsored by PhageGuard in the Netherlands. The second conference was FoodMicro2022 in Athens Greece, partly sponsored by the CFS.

While in Europe for these two conferences I was able to spend some time in PhageGuard's research and development lab to work on a chapter of my PhD. I used the spare time to do some personal travelling to France and Spain too. I am very grateful for all the amazing places I got to see and people I met. Thank you to Prof Pieter Gouws and Dr Diane Rip from Department of Food Science, and Gerrit Keizer from PhageGuard for making it all possible.

This is me at FoodMicro2022 with the rest of the CFS team as well as my visit at VOM2022, with the senior scientist Dr Barbara Marcelli at PhageGuard's lab in the Netherlands.



Rumbie in Greece and Belgium

Rumbidzai Matenda

My name is Rumbidzai Matenda, and I am currently a 2nd year PhD Food Science candidate. In August 2022, I was awarded the opportunity to present my work at the 27th International ICFMH FoodMicro2022 conference held in Athens, Greece. The subtitle of FoodMicro2022 was "Next Generation Challenges in Food Microbiology" and focused on rapid and effective ways to combat micro-organisms to ensure food safety. This was a very enlightening experience rubbing shoulders with "gurus" in the field of microbiology. The trip was funded by Stellenbosch University: Faculty of Agriculture, and the Postgraduate office under the postgraduate conference travel support fund.

For the second leg of the trip, I attended a short-term scientific mission under the SensorFINT Cost Action CA19145. I spent a month at Walloon Agricultural Research Centre (CRA-W) Gembloux, Belgium under Dr Fendendez-Pierna. With improved technology, there is no doubt the use of non-destructive methods of analysis and artificial intelligence is the future of food industries. It then becomes of paramount importance that young researchers are trained to tackle existing and emerging problems using these new technologies. I would like to thank the Department of Science and Technology (RSA) and Stellenbosch University for ensuring that the objective becomes a reality. During this time, I worked and trained under some of the best chemometricians and data analysts in the field of hyperspectral imaging, soaking in the immense knowledge. Apart from the academic knowledge I obtained, I also walked away with special friendships, an appreciation of the European culture and of course, a craving for the exquisite Belgian chocolates and waffles. My advice to fellow researchers is, we have the power to determine the future, let us utilise all the resources available for the best possible outcome.

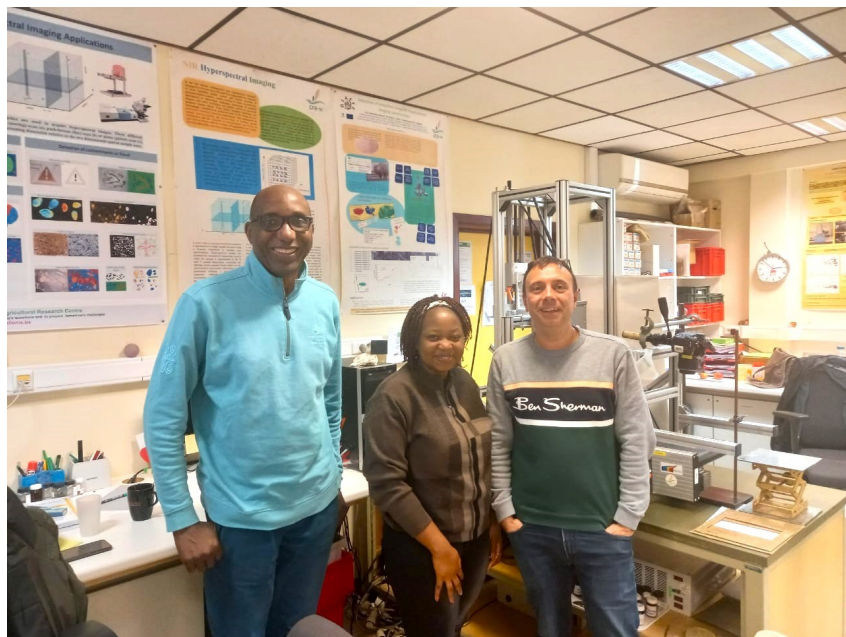


Photo left:

To my left, Mr Nicaise Kayoka Mukendi, Hyperspectral imaging specialist at CRAW
To my right, Dr Juan Fernandez Pierna
Project manager and chemometrician @ CRAW
CRAW, (Wallon Agricultural Research Centre)

Photos below:

Doing some site seeing with fellow students from CFS and my friend Rudo from Zimbabwe



Marbi Schwartz at EuroSense 2022

In September 2022, the European Sensory Science Society (E3S) and the ATJ Sensory Science Division of the Finnish Society of Food Science and Technology held the 10th European Conference on Sensory and Consumer Research. EuroSense is a successful event, gathering sensory and consumer researchers, both academics and from industry, worldwide. The meeting is a unique opportunity for discovering the latest innovations in the field and for networking, as well as meeting up with colleagues and friends in a relaxed atmosphere. The topic of the 2022 conference was 'A Sense of Earth', with a specific attention to innovative approaches to study sensory perception in relation to preference, choice, and other types of behaviour from a global perspective.

Ms Marbi Schwartz, a postgraduate student from the Department of Food Science, presented her Master's research in the form of a poster at this year's event in Turku, Finland. The poster was titled: A perfectly prepared steak is *rare* - Descriptive sensory analysis and physicochemical properties of beef striploin steaks as a *medium* to understanding the *rare* phenomenon known as a *well done* steak. Between all the interesting talks and workshops, networking during the poster presentations led to potential future collaborations with academics from an internationally renowned research university in Germany.

The most interesting talk she attended titled "human mozzarella", was by Lauri Reuter, who is a venture scientist determined to build a radically

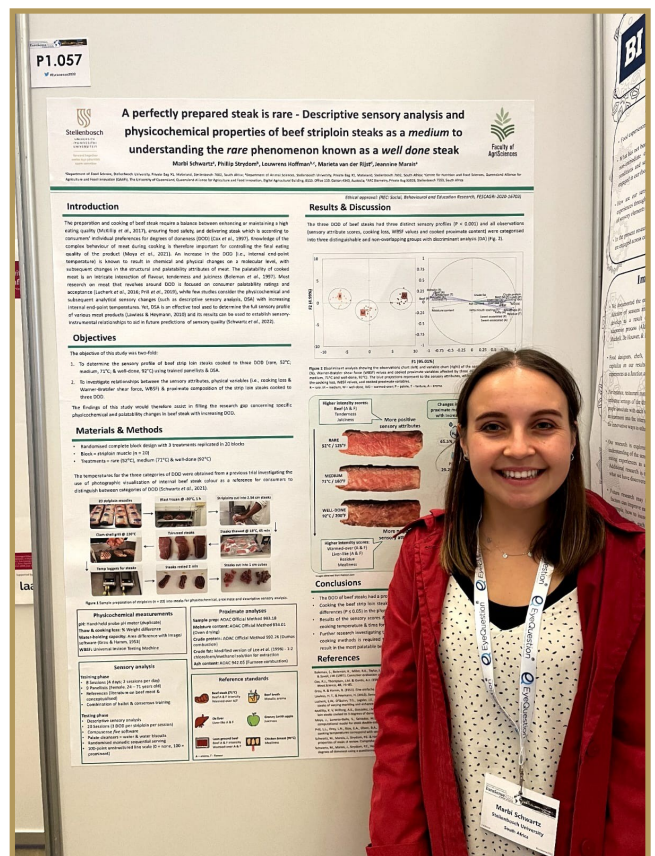


Photo and information supplied by Marbi

sustainable future for food.

She is looking forward to further collaboration, sharing information and building capacity in sensory science by attending more international conferences in the future.

Marbi is currently working on a fixed term contract at Distell until March 2023. She started her PhD, with Dr Jeannine Marais as supervisor in 2022.



Lillian Ruth Hayward was born on 18 September 2022.

She is the first born to her very proud parents,

Stefan and Helga Hayward.

Congratulations Stefan and Helga!

We hope that this lovely, little baby will bring both you and your family, great joy.

Enjoy the journey of parenthood.



Festive Feels

This year some of the postgraduate students decided to embrace the Festive season and bring some well-deserved holiday spirit to the department. Everyone decorated their seating area, making the entire room feel so festive and fun – nobody could enter their area without feeling the festive spirit! Of course, it quickly turned into an impromptu decorating competition (in the best of spirits, rather encouraging each other to get in touch with their inner holiday crafter). The two most festively decorated desks received olive oil from the Rio Largo Christmas collection, generously sponsored by Rio Largo and sourced by Mrs Daleen du Preez. Congratulations to Tarien Riekert and Michelle Gouws for the most festively decorated desks, but also thanks to all the other participants for making the seating area feel so joyous!



MATIES netball player from FS

Syntiche Kabuya is a second year Food Science student. She played netball for MATIES and in 2022 they won the USSA competition for the first time in 27 years!

In October 2022, MATIES also won the varsity netball competition for the first time ever.

Syntiche is not only an excellent netball player, but also a dedicated student. While she had to juggle her busy schedule between sport practices, matches and academia, she always made sure that all reports were handed in on time and never missed any deadlines.

Congratulations to you and your team, Syntiche!

Photo provided by Syntiche Kabuya

March 2022 Graduates at Food Science

Bachelor of Science in Food Science (BSc Food Sci)

Nametsegang Boutlwanye

Julia Munford

Francine Olivier

Eduard Zehrt

Master of Science in Food Science, (MSc Food Sci)

Carla Dippenaar (*cum laude*)

Marco Oosthuizen (*cum laude*)

Taish Ramkisson (*cum laude*)

Helène van Schoor

December 2022 Graduates

Bachelor of Science in Food Science (BSc Food Sci)

Chad-Lee Apollis

Jana Bergh

Alaina Besselaar (*cum laude*)

Kiara Bester

Iksha Bhowon (*cum laude*)

Heidi Biehler

Ansone Boshoff

Danelle Bosman (*cum laude*)

Nika Botha

Leah Maria Bredenkamp

Esme Broeksma (*cum laude*)

Madré Burger

Rewaldo Deymar Carolus

Lara Coetzee

Storm-Leigh Davids

Phoebe Davin

Nina de Villiers

Naomi Douglas

Jennifer du Toit

Jean-Paul Eksteen (*cum laude*)

Jana Gerryts

Antonio Patrick Grain

Danel Maria Hennings

Kyle Jansen van Rensburg

Kgalalelo Kamogelo Koloti

Judith Elisabeth Kotze

Elaine Kritzinger

Tlotlego Gaositwe Lakaje

Tabitha Lydia Landman

Melissa Jade Lange (*cum laude*)

Jessica Kate Lotter

Rory Basil Lutz

Nastasia Desiree Nicolaou (*cum laude*)

Lerato Ntsime

Tarryn Amber Ohlsson

Jacques Olivier

Elizabeth Catharina Pretorius

Chulekazi Rangxa

Nicola Winifred Rautenbach

Shaun Alexander Riley

Jana Schreuder (*cum laude*)

Micaela Trumpelmann

Lara van der Merwe

Christel Lottie van Niekerk

Donne van Schoor

Jesse Celeste Vosloo (*cum laude*)

Jenna Michelle Willcocks

Master of Science in Food Science, (MSc Food Sci)

Samantha Anne du Toit (*cum laude*)

Doctor of Philosophy in Food Science, (PhD Food Sci)

Trust Mukudzei

Melvi Todd

Kirsten Wessels

Trust Mukudzei Pfukwa

Bioprospecting South African indigenous fruit by-products as natural antioxidants in processed meat products

Convenience foods market growth, consumer sophistication and increased food losses due to oxidative degradation have increased demand for natural antioxidants in processed foods. This study evaluated the potential phenolic extracts from eight South African indigenous fruit by-products as natural antioxidants in processed meat products. Purified phenolic extracts from wild plum peel showed the highest antioxidant activity and its application at 450 ppm was less cytotoxic and reduces colour loss and oxidation, while maintaining sensory quality in beef patties relative to other extracts. Evidence suggest that wild plum peel extracts are a source of safe antioxidants in processed meat products.

Supervisor: Prof C Mapiye

Co-supervisors: Prof M Manley, O Fawole (external)



Mevi Todd

Multi-stakeholder perspective on food labels and the future of healthy eating

The value creation potential, and possible formats, of nutritional and health information on food labels in South Africa was investigated using a mixed-method approach. Interviews revealed strong evidence for economic value creation potential, but concerns were raised about equal distribution thereof, possibly tainting the opportunity. Health warnings and health star ratings on front-of-pack labels showed promise in assisting consumers in quickly identifying less harmful products, potentially assisting in healthier food choices and reducing the country's non-communicable disease burden. However, consumers who rely heavily on the informal food market with many unlabeled products will not benefit.

Supervisor: Prof E Joubert (external)

Co-supervisors: Prof G Sigge, T Guetterman (external)



Kirsten Wessels

Efficacy of bacteriophage Fo1A and S16 in the reduction of *Salmonella* on chicken carcasses in the processing environment

Antimicrobial-resistant *Salmonella* linked to chicken meat causes severe illness and substantial economic loss. A proposed alternative to antimicrobials is the use of bacteriophages. Although proven effective in the laboratory, there is little information on the performance of bacteriophages in a food-processing facility. In this study, bacteriophages were applied via a designed spraying system in-line during chicken processing immediately after chlorine spin chilling, and found that the combined hurdle concept was able to reduce *Salmonella* incidences. These results pave the way for the future of food safety in South Africa by providing an effective alternative to high chemical doses to control *Salmonella*.

Supervisor: Prof PA Gouws

Co-supervisor: Dr D Rip





Graduation 2022



Graduation 2022

PhD graduates, Kirsten, Trust and Melvi, celebrating with supervisors, friends and family



Dear Alumni & Friends of the Food Science Department,

We wish you a blessed season and prosperous 2023.

I want to thank you all for your interest and support throughout the year.

We are truly blessed with talented students and a staff team that work together so well, under the careful guidance of our HOD, Prof Gunnar Sigge. Our students and staff makes it easy to be proud of and to report on.

It was a joy to put this newsletter together, knowing that it was a team effort.

A special thank you to Petro Du Buisson for her special care and sharp eyes!

I hope that you all have a peaceful, safe holiday.

Kind regard

Anchen Lombard

Food Science, Stellenbosch University