Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

July 2025 Julie

Food Science | Voedselwetenskap
Newsletter | Nuusbrief

forward together
sonke siya phambili
saam vorentoe

Dear Reader,

Winter has arrived in Stellenbosch. The streets are quieter, and the vineyards have settled into their seasonal slumber, a perfect time for reflection on the first half of 2025.

The year began with some challenges. We had hoped to return to our labs by the end of February, but due to the extent of the damage to our building's roof, the timeline shifted. Despite the dedication of the repair team, winter rains brought significant delays, and our move-in date was postponed to July. We're eagerly anticipating our return to the labs. True to form, the Department of Food Science met these obstacles with resilience and energy.

In March, we proudly celebrated the graduation of three MSc and four PhD candidates. A special congratulations to Prof Glen Fox, who received the Doctor of Science (DSc) degree, a rare and distinguished honour, awarded only twice at Food Science, since 2001.

We are equally proud to share that Prof Marena Manley has been awarded the 2025 Tomas Hirschfeld Award by the International Council for Near Infrared Spectroscopy (ICNIRS), making her the first South African to receive this prestigious recognition.

Our academic staff and students have represented the department at several international conferences and workshops, building valuable networks and flying the SU flag high. We also extend a warm welcome to Dr Shivon Siphali, who joined us as technical officer in February, and is already making a meaningful impact across several modules.

While we miss Prof Pieter Gouws during his research leave, we know his ongoing collaborations and research projects will greatly benefit the department. We look forward to sharing his updates in our December edition.

Our final-year NPD students, under the guidance of Dr Debora van der Merwe, are once again rising to the challenge of developing innovative food products. A heartfelt thank you to our industry partners who continue to generously support our students. Amidst all this, Debora also completed The Nutrition Institute's Diploma of Nutrition with an impressive 93% average — congratulations on this exceptional achievement.

As the vineyards rest, so do we , but briefly, before we step into the second half of 2025 with renewed energy.

Stay warm, and we'll see you again in December.

Warm regards,

Anchen Lombard

Food Science Department

March 2025 Graduation

Graduation Ceremony – March 2025

Graduates and academic staff from Stellenbosch University's Department of Food Science attended the March 2025 graduation ceremony.

Degrees awarded at the ceremony included:

- **1 BSc in Food Science**: Anelisa Hoboyi
- **3 MSc in Food Science**: Susan Featherstone, Jacques Olivier, and Carli Pretorius (*cum laude*)
- **4 PhD in Food Science**: Anja Lauscher, Buhle Maphosa, Manda Rossouw, and Elisma van Zyl
- **1 DSc in Food Science**: Prof Glen Fox

Congratulations to all our March 2025 graduates!
A special congratulations to **Prof Glen Fox**, recipient of the *Doctor of Science (DSc)* degree; an esteemed senior doctoral qualification that has only been awarded twice since 2001.

Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

Prof Glen Fox

Supervisor: Prof Marena Manley

Prof Glen Fox is an internationally renowned researcher in the field of barley quality and a leader in the development of innovative methods to assess barley quality beyond standard compositional analysis. In recognition of his contributions, Prof Fox currently holds the prestigious Anheuser-Busch Endowed Professorship in Malting and Brewing Science at the University of California, Davis, USA—one of the three most esteemed academic positions in Malting and Brewing Science globally. The Department of Food Science is honoured that Prof Fox chose Stellenbosch University (SU) to complete his Doctor of Science (DSc) in Food Science. A DSc is a senior doctoral degree, and this is only the second time it has been awarded in Food Science at SU since 2001.

The quality of barley, as a raw material, significantly impacts the efficiency of the malting and brewing processes. Over a period of 30 years, Prof Fox has used various technologies to elucidate the complexity of carbohydrates and proteins in barley.

At The University of Queensland, Prof Fox developed a robust research programme in which he demonstrated that quantitative analysis (i.e., content) of barley grain or malt does not adequately explain malting and brewing performance. He challenged the prevailing reliance on content-based assessments and showed through subsequent research that qualitative analysis (i.e., composition) offers a more accurate indicator of barley quality and its influence on malting and brewing performance. Prof Fox has published more than 20 scientific papers investigating starch structural properties and their roles in gelatinisation and the generation of fermentable sugar profiles in brewing. In addition, two book chapters authored by Prof Fox demonstrated how proteomics is a powerful tool for understanding the full range of proteins expressed in barley and during malting, particularly enzymes that impact brewing efficiency through the conversion of starch into sugars.

The research compiled in his DSc dissertation, supervised by Prof Marena Manley, deepens the understanding of complex qualitative barley analysis and its central role in driving processing efficiency and product quality—surpassing the explanatory power of simple quantitative metrics such as starch or protein content. His findings help maltsters and brewers refine their processes without negatively affecting beer flavour. Furthermore, the research is intended to assist plant breeders and industry stakeholders in adopting new methods and technologies and in interpreting these emerging data more effectively to enhance their operations.

Dr Anja Laubscher

Supervisor: Dr Paul Williams

Co-supervisors: Dr LJ Rose

The use of near infrared spectroscopy for the analysis of fumonisins in maize

This study investigates near-infrared (NIR) spectroscopy for the rapid analysis of fumonisin B1 (FB1), a carcinogenic mycotoxin produced by *Fusarium* fungi in maize. While preliminary studies is solution achieve FB1 detection at 4mg/kg with high accuracy, direct quantification in maize proves challenging. However, indirect analysis using NIR spectroscopy successfully classifies Fusarium–contaminated ground maize at South-Africa's regulatory limit of 2mg/kg for fumonisins. These findings demonstrate the potential of NIR spectroscopy as a rapid screening tool for fumonisin contamination, advancing analytical capabilities for food safety.

Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

Dr Buhle Maphosa

Supervisor: Dr AA Tsige

Co-supervisors: Profs UL Opara, OA Fawole (external), GO Sigge

Experimental and Modelling-Based Evaluation of Alternatives to Improve the Thermal Performance of Solar Drying of Pomegranate Arils

This study presents a comprehensive and multidisciplinary approach to enhancing solar technology. By integrating extensive experimental investigations with advanced computational modelling, it offers valuable insights into optimizing solar drying systems. Through rigorous drying experiments and the development of virtual prototypes using computational fluid dynamics, the study bridges theoretical analysis with practical application. Beyond simulations and lab work, a hands-on approach was taken—cutting, rolling, metals, and welding in the workshop to bring innovative solar dryers to life and testing them. The findings contribute significantly to improving thermal performance, making solar drying more efficient and sustainable for agricultural and industrial applications.

Stellenbosch UNIVERSITY IYUNIVESITHI UNIVERSITEIT

AgriSciences
EyeNzululwazi ngeZolimo
AgriWetenskappe

Dr Manda Rossouw

Supervisor: Prof Marena Manley

Co-supervisors: Prof F Marini (external), Dr G van Huyssteen (external)

Multivariate statistical modelling of sensory quality and Arrhenius shelf-life prediction of favoured cider.

Accurate quality and shelf-life determination is important in flavoured cider production to ensure customer satisfaction and fulfil labelling requirements. This places capacity strain on sensory panels expected to perform large numbers of quality and shelf-life evaluations for new and existing products, To support quality and shelf-life assessment in industry, this study presents predictive models to estimate sensory quality from chemical profiling and fingerprinting data, with subsequent Arrhenius kinetic modelling shelf-life prediction using the modelled sensory scores. Batch variability and maturation-related chemical and sensory changes are characterized by means of multivariate and correlation techniques to explore relationships between sensory attributes and chemical composition.

Stellenbosch UNIVERSITY IYUNIVESITHI UNIVERSITEIT

AgriSciences
EyeNzululwazi ngeZolimo
AgriWetenskappe

Dr Elisma van Zyl

Supervisor: Prof PA Gouws

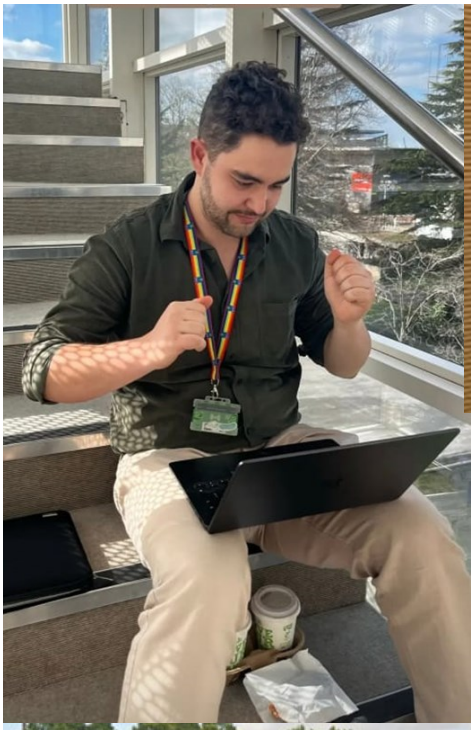
Co-supervisor: Dr S Hayward

The impact of enrichment bias on the detection and genomic charaterisation of *Listeria monocytogenes* sequence types

Listeria monocytogenes causes severe illness through contaminated food. Its persistence in food processing and clinical settings makes its study vital. Whole genome sequencing (WGS) has revolutionized outbreak investigations notably during the 2018 South African outbreak. This study examines enrichment bias on chromogenic selective agar that may affect WGS outcomes. A method was developed to visualize bias, laying the foundation for statistical sampling of selective agar plates. Fluorescent labelling was explored to demonstrate enrichment bias on sequence type level. The research emphasises the value of integrating statistical sampling into WGS workflows to improve accuracy in routine surveillance and outbreak investigations, thereby advancing food safety.

Stellenbosch UNIVERSITY IYUNIVESITHI UNIVERSITEIT

AgriSciences
EyeNzululwazi ngeZolimo
AgriWetenskappe



Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

Prestigious international award for Prof Marena Manley

Prof Marena Manley, of the Department of Food Science, has been named by the International Council for Near Infrared Spectroscopy (ICNIRS) as the 2025 recipient of the prestigious Tomas Hirschfeld Award (THA) – making her the first South African to receive this honour.

Funded by BÜCHI, the award has been presented during the 22nd International Conference on Near-Infrared Spectroscopy Conference (NIR2025) in Rome, Italy on 10th June.

Manley, a leading researcher in food science, has significantly advanced the application of NIR spectroscopy and hyperspectral imaging, particularly in cereal grain research. Since joining SU in 1997, she has supervised over 75 postgraduate students, published 135 peer-reviewed papers, and helped position the University as a leading NIR spectroscopy research hub in Africa.

Currently a full professor in SU's Faculty of AgriSciences, Manley has been instrumental in advancing NIR spectroscopy and hyperspectral imaging research. Her pioneering work has significantly influenced the understanding and application of these technologies, particularly in the characterisation of heterogeneous cereal samples.

She also played a key role in establishing Africa's only Vibrational Spectroscopy Unit equipped with advanced hyperspectral imaging capabilities. Her efforts have not only elevated SU as a hub for NIR spectroscopy research in Africa, but also garnered international recognition, reflected in her impressive H-index (metric for productivity and impact of a scientist or scholar) of 39 (Scopus) and 47 (Google).

Prof Manley has served in various leadership roles within ICNIRS and continues to contribute to the global spectroscopy community. In addition to this international recognition, she is a recipient of several national awards, including the SU's Chancellor's Award (2022) for her role as an educator and research excellence – specifically for contributing to the advancement of NIR spectroscopy and hyperspectral imaging in South Africa and further afield.

Prof Marena Manley receive the Tomas Hirschfeld Award from Prof Dolores Pérez Marín, President of ICNIRS, and Marcel Plans Pujolras of BÜCHI. (Middle photo)

ICNIRS Conference 2025

“Shining light through the centuries” **Ilke Olivier**

A very exciting academic journey started on 7 June for myself, Shae Barnes and Jana Schreuder together with Prof. Marena Manley and Dr. Paul Williams. We embarked on a mission to attend the 22nd International Conference on Near Infrared Spectroscopy – NIR2025 held at *Auditorium della Tecnica* in Rome, Italy. The process began early this year with abstract submissions in February as a requirement to attend the conference. Weeks of hard work went into creating posters to present (myself, Shae Barnes, Carli Pretorius, Naomi Douglas, and Anja Laubser) while Jana Schreuder worked hard on her flash presentation.

The Italian Society of NIR Spectroscopy (SISNIR – *Società Italiana di Spettrosocopia* NIR) worked extremely hard the past two years to make this biennial conference a reality. The SISNIR board consists of Monica Casale (President), Federico Marini (Vice-President), Silvia Grassi (Secretary), Cristina Malegori (Treasurer), and Rosalba Calvini (Communication manager). Prof. Marini is affiliated with Stellenbosch University as an extraordinary professor and annually visits the Department of Food Science to present a chemometrics course to postgraduate students and collaborate in research.

This was my first conference ever and I did not know what to expect when arriving. The conference started on 8 June and ended on 12 June. We had the privilege to listen to young researchers as well as professors across several countries presenting the newest research in NIR spectroscopy and hyperspectral imaging. NIR2025 covered all aspects of NIR spectroscopy spanning from methodological and technological advances in NIR spectroscopy (e.g., NIR imaging and miniaturised devices) to applications in various fields (from agri-food analysis and quality control to clinical practice or pharmaceutical technology), including chemometric modelling of spectroscopic data and hyperspectral images.

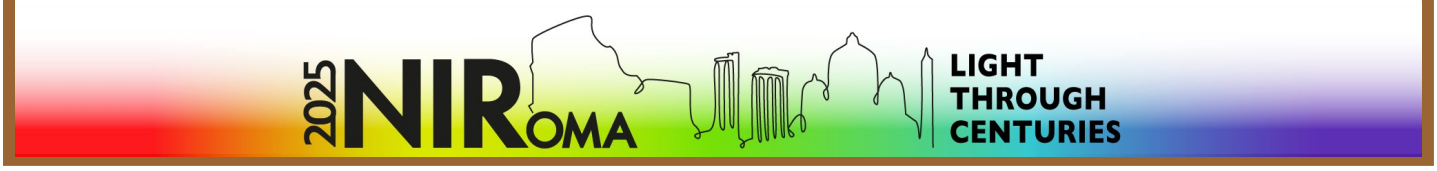
The conference featured plenary lectures from leading scientists in the field, as well as contributed lectures and poster presentations of high scientific quality promoting an inspiring environment to share and discuss the latest findings. NIR2025 also had a large exhibition area in which we were able to meet the leading vendors in the sector and to see their latest innovations.

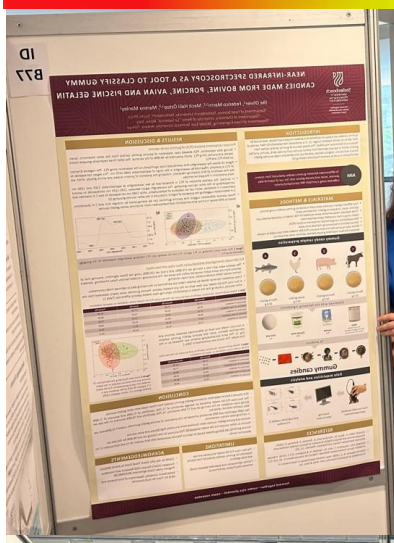
It was such an honour to see Prof. Manley receive the Tomas Hirschfeld Award at the conference and to listen to her journey in NIR spectroscopy. This award was given to her for making a significant innovative and scientific contribution to the field of NIR spectroscopy.

During the tea and lunch breaks, we were spoiled with an abundance of pasta, delicious food, and desserts. These moments provided a valuable opportunity to network with international postgraduate students, exchange ideas, and offer advice on challenges we’ve encountered in our research projects. A special highlight was meeting authors of journal articles we often cite in our theses. On 11 June, a conference dinner was held where researchers could further connect and network in a relaxed setting.

In the evenings after the conference sessions, we embraced Rome’s hospitality by visiting one of the world’s Seven Wonders, the Colosseum, and taking part in a pasta-making class.

We returned safely to Cape Town with grateful hearts and thankful for the opportunity to share our research and grow our LinkedIn connections! This unforgettable experience was made possible by the ICNIRS John Shenk Travel Grant, awarded to me, Jana Schreuder, and Shae Barnes.





Photos from top left: Ilke Olivier, Prof Marena Manley and Shae Barnes at the NIR 2025 poster presentations;

Shae Barnes, Jana Schreuder, Prof Marena Manley, Ilke Olivier at the 2025 NIR Conference,

joined by Prof Federico Marini (photo bottom left) and

Prof Yuki Ozaki from Kwansei Gakuin University, Japan. (photo bottom right)

NIR2027 will be held in Nagoya, Japan from 29 November to 3 December 2027

Shivon Siphali joined the FS team in 2025

Shivon Sipahli, an alumnus of the Durban University of Technology (DUT), joined the Department of Food Science in February 2025, serving as Assistant Technical Officer.

She previously held undergraduate lecturing and technical roles at DUT, followed by a role as Laboratory Manager in the Atmospheric Chemistry Group at the North-West University.

Shivon provides technical support for NPD, Packaging, Nutrition and Introduction to Food Science. She also has keen research interests in nutraceuticals. Outside the lab, Shivon enjoys outdoor adventures, reading, and learning new skills.

We are absolutely thrilled that this hardworking and well trained, person joined our Food Science Team. We cannot believe we ever coped without her quiet and skilled way of just letting things happen!

Welcome to Stellenbosch Shivon and we hope you have a prosperous career with us at Food Science, SU.

Konica Minolta sponsorship

We are proud to announce that the Department of Food Science has received a generous donation of a CR-400 Konica Minolta colorimeter from National Brands Ltd, a subsidiary of AVI Limited.

This state-of-the-art instrument will greatly enhance both our teaching and research in food quality assessment. By gaining hands-on experience with industry-standard technology, our undergraduate and post-graduate students will bridge the gap between theory and practice—developing advanced skills that are directly relevant to their future careers in the food industry.

Ms Zareenah Abader and Dr Shivon Sipahli recently attended an in-depth training session on the CR-400, hosted by the Narich team. We extend our sincere thanks to Narich for their generous support, technical expertise, and assistance in facilitating this donation.

We look forward to seeing our students bring new colour to their research.

SU welcomes second cohort of SUNRISE fellows

Drs Diane Rip and **Femi Caleb** were selected for the 2025 cohort of the **Stellenbosch University Research and Innovation Strategic Excellence (SUNRISE) programme**. The 2025 cohort of 29 fellows was selected out of 80 applications received from all faculties at Stellenbosch University.

The programme supports mid-career academics on the path to professorship and is aligned with the national Department of Higher Education and Training's Future Professors Programme. SUNRISE offers scholars the support, mentorship, and opportunities needed to deepen their expertise and pursue academic excellence.

In the words of Prof Deresh Ramjugernath who addressed the fellows at the launch for the first time in his new role as Rector and Vice-Chancellor - "SUNRISE is not simply a leadership development initiative. It is a strategic, future-oriented investment in the very fabric of our academic enterprise." He further remarked that there's a valuable opportunity to renew the professoriate - driven by purpose, strategic intent, and a strong commitment to diversity.
More information - https://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=11250.

Both Drs Rip and Caleb are excited to be embarking on this journey and look forward to the growth opportunities and support afforded in this great network.

Brave New Voices: Communicating Food Safety to the Public

Dr C Lamprecht

We have always known that we have the best food science students in the world. (And no, I am not biased at all…) It does not matter what challenge they are presented with - whether it is the development of a new food product, or a challenging post-graduate research question - the Maties@FoodSci always manage to excel.

This semester, inspired by a suggestion from one of our industry partners, we challenged our third-year students to be bold and explore new territory—territory few food scientists have ventured into before. Their mission? To develop a food safety communication strategy tailored for a non-scientific South African audience, using the WHO's Five Keys to Safer Food as a foundation. The outcome was a rich collection of creative ideas and communication tools designed for diverse South African groups, including young adults, primary school children, families, soup kitchen volunteers, and informal food vendors.

After an engaging—and, if I may add, thoroughly entertaining—afternoon of presentations, the following three projects were selected as the winners.

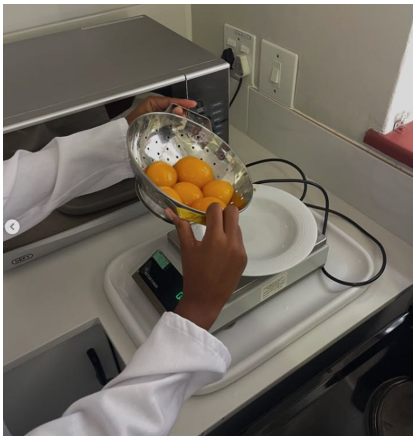
1st place: An innovative and interactive Food Safety board game targeting both young and old (in principle based on a well-known murder mystery game). Developed by Nadine Oosthuizen, Marcelle Wattrus, Mariska du Plessis and Andrea van Wyk.

2nd place: An animation video about lunch box safety targeting primary school learners and their care givers. Developed by Anke du Preez, Kylie Joubert, Suné Kuhn, Elizabeth le Roux, Nina Louw & Linmarie Marais.

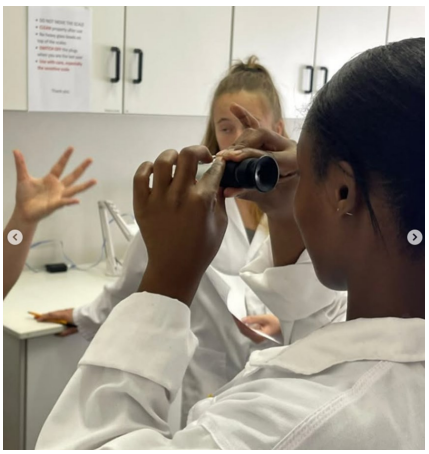
3rd place: A fun and educational food safety presentation for primary school learners, combining multimedia and hands-on interaction to keep young minds engaged. Developed by Gowa Abrahams, Radeyah Peters, Regina Pole, Koketso Skhosana, Johan Krige & Chaska Haas.

A huge congratulations to all our third-year students who took part. You have truly outdone yourselves—showcasing not only your potential as future food scientists, but also your remarkable talent as science communicators. We are incredibly proud of you!

We visited the undergrad labs during the first semester … hope you like the photos!



Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT



Empowering African Research through Spectroscopy and Chemometrics: JKUAT hosted Transformative Workshop led by Stellenbosch University Expert, Dr Paul Williams

In a major stride toward strengthening research capacity and regional collaboration in Africa, Jomo Kenyatta University of Agriculture and Technology (JKUAT) hosted a transformative 4-day workshop on Spectroscopy and Chemometrics, facilitated by renowned expert Dr Paul Williams from Stellenbosch University, South Africa. Held at the iconic iPIC building, the event attracted a vibrant audience of lecturers and postgraduate students from food science, agriculture, and engineering.

The workshop, from 19 to 22 May, 2025, introduced participants to essential concepts and practical applications of spectroscopy techniques, including UV-VIS, IR, and NIR spectroscopy and multivariate data analysis through chemometrics. The program combined engaging lectures, live demonstrations, and hands-on sessions using cutting-edge equipment and software tools such as MATLAB and Evince. It emphasized the growing importance of these tools in research and quality control across diverse sectors.

Prof. Daniel Sila, who led the JKUAT organizing team, highlighted the critical role of spectroscopy and chemometrics in advancing research and innovation in food science, agriculture, and engineering. “These techniques allow us to move beyond traditional quality assessment and embrace rapid, accurate, and non-destructive methods,” he said.

Participants had the opportunity to visit key research facilities at JKUAT, including the Food Fortification and Chemistry laboratories. During the tours, Prof. Sila showcased various advanced instruments, some of which were acquired with support from the Japan International Cooperation Agency (JICA). These facilities underscore JKUAT’s commitment to fostering a research-driven academic environment

The workshop also served as a springboard for deeper collaboration between JKUAT and other African institutions, including Stellenbosch University. In line with this, a strategic planning session on May 23 brought together representatives from JKUAT, Stellenbosch University, and LUANAR (Lilongwe University of Agriculture and Natural Resources) to discuss future joint proposals, student exchange opportunities, and long-term research roadmaps.

Dr. Williams expressed optimism about the emerging partnerships, stating, “This workshop is just the beginning. There is immense potential for African universities to lead globally in applying spectroscopy and chemometrics to solve real-world problems.”

The initiative was supported by the Africa-ai-Japan Project under JICA, which continues to champion collaboration, capacity building, and technological advancement in African universities. More such workshops and joint ventures are in the pipeline, aiming to create a strong network of institutions dedicated to high-impact research and innovation.

https://www.jkuat.ac.ke/project/africaai/?p=18377

Photo below: Prof Hiroshi Koaze, Dr Paul Williams, Prof. Robert Kinyua and Prof Daniel Sila




International School of Chemometrics (ISC) 2025

Ilke Olivier

From 28 April to 23 May 2025, I had the privilege of attending the International School of Chemometrics (ISC) 2025, hosted at Københavns Universitet in Copenhagen, Denmark. On 1 February, I received an email from the ISC organisers, Prof. Rasmus Bro and Prof. Jose Manuel Amigo, informing me that I was one of five recipients of the ISC grant. I was absolutely thrilled about this opportunity, as the grant allowed me to attend all the lectures free of charge. With additional funding from the Department of Science, Technology and Innovation (DSTI) and Stellenbosch University (SU), I was able to attend the school.

ISC 2025 had a record breaking number of postgraduate students (mostly PhD students), with 75 attendees from all over the world. I was one of only four students representing the African continent (South Africa and Morocco). We were provided with course slides, exercises, datasets, software toolboxes, and refreshments during the morning tea breaks. Classes ran daily from 09:00 to 16:00, followed by hands-on sessions with our own data and additional lectures from 16:00 to 18:00, based on student requests.

The first week of the school focused on programming, where participants could choose between MATLAB, Python, or R. The second week covered a basic chemometrics course, including data structure, PCA, preprocessing, linear algebra, and regression. The third week delved into intermediate topics such as multivariate curve resolution, variable selection, and design of experiments. In the final week, we explored advanced subjects like classification and/or optimisation, deep learning and/or metabolomics, and concluded with a session on common pitfalls in chemometrics. As part of the academic component, we could also present a poster and an oral presentation about our poster during the course. We also had representatives from the field of Raman spectroscopy who demonstrated how Raman spectroscopy works. The school equipped us with valuable skills and a deeper understanding of chemometrics, which will help me in successfully completing my MSc in Food Science thesis.

To encourage networking and cultural exchange, Dr. Beatriz Quintanilla Casas organised a social program twice a week during the final three weeks. We explored the city and had good conversations.

The course ended with a pizza lunch and many sad goodbyes as the end of an unforgettable learning journey ended. Attending ISC 2025 not only deepened my understanding of chemometric techniques but also allowed me to build valuable international connections, gain new perspectives, and grow both academically and personally. I am incredibly grateful for this opportunity, which will undoubtedly enrich my MSc research and future career in the field of food science.

Centre of Food Safety's international travels

Denise Coetzee

Denise Coetzee attended a research visit to Phageguard in Wageningen, the Netherlands, to train in the use of their product, PhageGuard L, for her PhD project on biocontrol in Hydroponic systems. A heartfelt thank you to the Phageguard team for the the warm welcome, advice and in-depth training.

Denise checking experimental results in the Phageguard lab with Kerlijn Vogel and Michelle Gouws.

The CFS and Phageguard team (photo right)

PhD students Denise Coetzee and IK Opara attended the PhD Academy *Rethinking Rural Futures in an Age of Climate Change: Migration, Adaptation, and Sustainability Transitions* at Venice International University 12-17 May. The PhD Academy, led by Duke University, the University of Exeter, and Stellenbosch University, under the scientific coordination of Dr. Kerilyn Schewel, took place over 6 days and consisted of seminars, general discussion sessions, transversal skills sessions and students' research presentation. It also included a visit to the I&S farm in Sant'Erasmo and the 2025 Biennale. Denise and IK were lucky enough to receive Erasmus mobility grants to attend this workshop in person.

Denise and IK in Venice (photo left)

The workshop attendees and faculty after the visit to I&S farms on Sant'Erasmo (photo right)

IAFP 2025 and the Netherlands

Prof Gouws, Dr Rip and two PhD students, Michelle Gouws and Denise Coetzee, from the Centre for Food Safety attended the International Association for Food Protection's European (IAFP) symposium in Madrid in May. Michelle presented a poster highlighting the prevalence of *Clostridiodes difficile* in food-producing animals and wild game within South Africa. Meanwhile, Denise presented a poster on the antibiotic resistance profiles of environmental bacteria isolated from leafy greens in South Africa. It was an insightful conference and an amazing experience to network with industry experts.

On their recent research visit to the Netherlands, the CFS team had a chance to catch up with some Department of Food Science alumni. Thank you to everyone who was able to attend! It is an amazing experience to see how different the journey of a food scientist may be and the opportunities this degree has provided. To Dr Elisma van Zyl and her husband Bertie, also a big thank you for not just hosting Denise and Michelle but going above and beyond, and to both of them and Martine Beukes for organising the canal excursion.

Photos from left to right: Department of Food Science alumni canal excursion in Amsterdam;

Prof Gouws and Michelle with Sara Erasmus, SU alumnis at Wageningen university.

Prof Pieter Gouws enjoying the European sunshine and Dr Elisma van Zyl, a CFS alumnis, who was kind enough to host Denise and Michelle.

IAFP European Symposium, Madrid

Dr Diane Rip

The International Association for Food Protection (IAFP) European Symposium continues to shape the future of food safety by bringing together experts from across Europe's industry, government, and academic sectors. This year's symposium, held from 6 - 8 May 2025 in Madrid, Spain, offered a valuable platform for sharing ideas, research, and best practices. Key sessions focused on innovation in resilience and sustainability, the application of advanced food safety tools such as whole-genome sequencing, and strategies for pathogen control. A strong emphasis was also placed on strengthening collaboration between academia, industry, and regulatory bodies.

Our department was proudly represented by **Dr Diane Rip**, **Prof Pieter Gouws**, **Michelle Gouws** (PhD), and **Denise Coetzee** (PhD), who presented posters at the event. Each of them appreciated the opportunity to engage with international experts, gain new insights, and expand their professional networks. Michelle presented on '*Clostridioides difficile* isolated from food-producing animals and game in South Africa', while Denise shared findings on the 'Antibiotic susceptibility profiles of environmental bacteria isolated from leafy greens throughout the supply chain in the Western Cape of South Africa'.

In between sessions, they also had the chance to enjoy Spanish cuisine and explore some of the local sights, and connect with fellow South Africans and symposium attendees, Raymond Hartley and Ilse Liedemann from Microchem Lab Services (Pty) Ltd (by AGQ labs).

Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

Research visit to Leiden University Medical Center's *Clostridioides difficile*

M Gouws

Dr Diane Rip, PhD student **Michelle Gouws**, and **Prof Pieter Gouws** visited Leiden University Medical Center (LUMC) in the Netherlands during May.

At LUMC, they believe that 'Science is the driving force behind innovative healthcare'. The center comprises of multiple research groups (i.e., Microbiome, Animal Welfare, Proteomics, etc.), while still running fully equipped diagnostic laboratories with state-of-the-art equipment to streamline their processes. The LUMC *Clostridioides difficile* research group also currently has the largest biobank of the pathogen and actively manages a donor faeces bank to facilitate essential treatment of critical *C. difficile* infection cases.

While visiting the LUMC *C. difficile* research group, led by Prof Ed Kuijper – the leading expert on *C. difficile* worldwide, Michelle had the opportunity to present a short talk on her research **(Title: The prevalence of *Clostridioides difficile* in farm environments, food-producing animals, and game in the Western Cape, South Africa**). Good discussions to foster future collaboration followed, with experts providing valuable insights. Prof Kuijper encouraged the continuation of the *C. difficile* research at the Centre for Food Safety and suggested to incorporate *Clostridium perfringens* studies in the near future.

The 2025 NPD journey

The 2025 New Product Development (NPD) journey is well underway, centered around the theme **"GOING GREEN"**—creating truly sustainable and innovative food products that go beyond the buzzwords.

At this stage, we won't reveal too much, except to say that the theme is broad and presents a real challenge. However, we have full confidence in our students' creativity and scientific expertise.

To support and equip them for the task ahead, a 'Bringing ideas to life', NPD workshop—highly valued by the students—was held. In addition, the class along with Drs Debora van der Merwe and Shivon Sipahli, participated in a number of inspiring field trips. These included a visit to Farmer Angus, the passionate regenerative farmer at Spier; the Babylonstoren NPD labs and farm shop; Makers Landing; the Organic & Natural Products Expo Africa; and the Africa Food Show at the CTICC in Cape Town.

Thank you to the following individuals who generously donated their time to guide and inspire our students in achieving their goal of developing a new food product according to the brief.

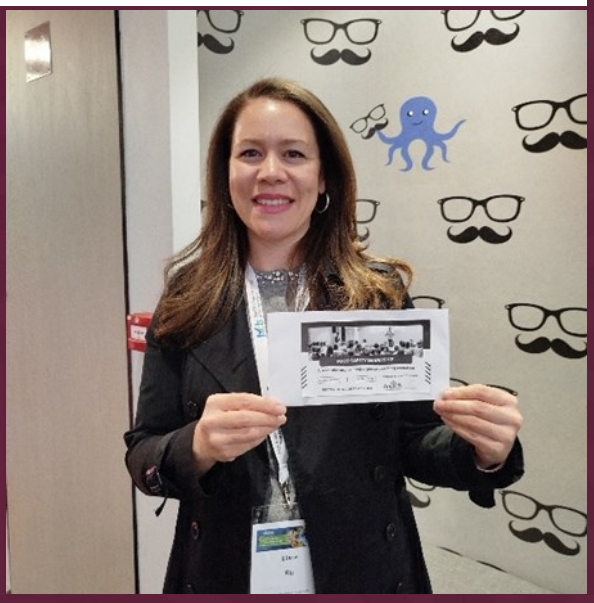
- Ernst Kleynhans, Babylonstoren
- Hanneli van der Merwe, Synercore
- Bitta van Staden, Sensient Colour
- Angela Coetzee, Sustainability Institute
- Kyle Loff
- Karen Horsburgh, FACTS
- Gary Pon, Ingredion
- Tania Rabie, IN2FOOD
- Anneke van Niekerk, Food Fine print
- Karin Caarstensen, Woolworths
- Jeff Rossouw, Heat & Control

Food Safety Summit

Dr D Rip

The Food Safety Summit, a much-anticipated annual event hosted by Anelich Consulting (Prof Lucia Anelich) brought together a diverse group of stakeholders, including industry leaders, academics, government representatives, and key decision-makers, all united by a shared commitment to food safety throughout the supply chain. This year's theme, *Safe Food in a Changing World*, explored emerging challenges and opportunities in food safety, with a strong emphasis on technological advancements such as AI, as well as localised concerns like food safety in South Africa's townships.

Over 3-4 June, our team was well represented at the Summit. **Dr Diane Rip** and **Prof Pieter Gouws** attended in person, while **Kyle Corbett** (PhD) delivered a compelling virtual presentation on precision food safety. His talk focused on *Listeria monocytogenes* diversity in two South African food facilities with differing sanitiser practices, offering key insights into future monitoring and sanitation strategies. Dr Rip was awarded a spot in an exclusive one-day Food Safety Leadership Training and Group Coaching Workshop held in August in Johannesburg - an exciting opportunity to further enhance leadership in this critical field.



Food and Agriculture Organization of the United Nations

World Health Organization

SUSTAINABLE DEVELOPMENT GOALS

7 June 2025

World Food Safety Day

Food safety: science in action

Strengthening the Potato Value Chain in Africa: Stellenbosch University Joins Trilateral Collaboration

Drs J Marais & P Williams

In March 2025, Dr Jeannine Marais and Dr Paul Williams, Stellenbosch University's Department of Food Science participated in a pivotal mission to Malawi as part of a growing trilateral partnership with Jomo Kenyatta University of Agriculture and Technology (JKUAT) in Kenya and Lilongwe University of Agriculture and Natural Resources (LUANAR) in Malawi. The collaboration, supported by the Japan International Cooperation Agency (JICA) under the AFRICA-ai-JAPAN Project Phase 2, is focused on strengthening the potato value chain through innovative scientific and technological interventions.

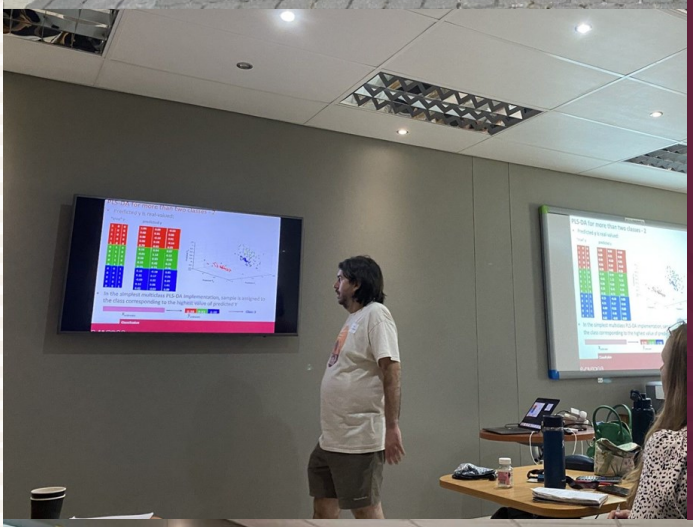
The five-day workshop in Malawi enabled researchers from JKUAT and Stellenbosch University to gain valuable on-the-ground insight into potato production in Dedza, visit LUANAR's agricultural research stations and laboratory facilities, and engage directly with farmers, extension officers, scientists, and industry stakeholders.

This collaboration exemplifies the power of knowledge exchange and interdisciplinary partnership. JKUAT contributes cutting-edge agricultural innovation, LUANAR brings in-depth knowledge of local systems and socio-economic contexts, and Stellenbosch University offers advanced food science expertise and strong industry linkages.

For the Department of Food Science at Stellenbosch, this initiative opens exciting new avenues for research, student engagement, and international cooperation. By contributing to the development of sustainable solutions along the potato value chain, SU is helping address pressing challenges of food security, rural livelihoods, and agri-processing innovation in the region.

As the project moves forward, the Stellenbosch team remains committed to building lasting partnerships and delivering impactful science that makes a difference, from farm to fork.

Photo: Participants from Jomo Kenyatta University of Agriculture and Technology (JKUAT), Lilongwe University of Agriculture and Natural Resources (LUANAR), Japan International Cooperation Agency (JICA), and Stellenbosch University (SU) during the Malawi workshop on collaborative research in the potato value chain.



Unlocking the Power of Chemometrics

Prof Marena Manley welcomed staff and students from the Food Science Department, alongside professionals from various industries for a two-day in-depth Chemometrics course presented by Prof Federico Marini from the University of Rome.

Meet the Team:

Madison Beley (Chairperson)

Jordan Brown (Vice-Chairperson)

Anshia Oudtshoorn (Secretary)

Kyle Labuschagne (Treasurer)

Linmarie Marais (Head of Events & Engagement)

Joline van Zyl (Assistant Head of Events)

Bronwyn September (Assistant Head of Events)

Zeenat Ahmed-Mohamed (Head of Communications & Branding)

Chelsea Murehwa (Content Creator & Marketing)

Niel van Heerden (Industry & Governance Representative)

Taku Kubwalo (Student Affairs Officer)

Stellenbosch Students Shine on the World Stage at 2025 WorldStar Student Awards

We are proud to celebrate the success of our talented Food Science students who achieved outstanding recognition in the 2025 WorldStar Student Awards – the most prestigious international student competition in packaging design, hosted by the World Packaging Organisation (WPO).

The WorldStar Student Awards recognise the creativity, innovation, and technical skill of students worldwide who are involved in packaging design – whether structural or graphical. Entry into the competition is by invitation only, requiring students to first receive recognition at a national level through an award endorsed by a WPO member organisation. Winners are then selected by an international panel of 54 expert judges from 30 countries, who evaluate each submission against a rigorous set of criteria.

This year's competition saw a remarkable 237 entries from 23 countries – and South Africa made an especially strong showing. Our country submitted the **highest number of entries** – 51 in total – all of which were finalists or winners in the national Student Gold Pack Awards.

Stellenbosch University's Department of Food Science is particularly proud of two of our student teams who received international recognition:

- The **Bob's Bread Spread** team was awarded a **WorldStar Student Certificate**, acknowledging the creativity and viability of their packaging concept.

- The **Ama-Phutu** team earned a **Bronze Award in the Save Food Packaging Special Category**, which recognises packaging innovations that meaningfully reduce food loss and waste in the supply chain. Their solution received the third-highest score globally in this impactful category.

With **45 awards overall**, South Africa was the top-performing country in the 2025 edition of the competition – a testament to the innovation and hard work of our students and institutions.

These awards not only showcase the talent and dedication of our students but also affirm our department's continued commitment to sustainability, innovation, and excellence in packaging and food product development. We extend our heartfelt congratulations to all the winners and thank our academic mentors and industry partners who make these achievements possible.

Well done to our 2024 NPD students!

Debora van der Merwe Aces Her Studies

Dr Debora van der Merwe began her academic journey with *The Nutrition Institute's Diploma of Nutrition* in January 2024, inspired by a lifelong interest in nutrition and a passion for healthy living. She passed the course with an impressive 93% average.

The course not only deepened her understanding of the topics she teaches, but also equipped her with practical tools to develop nutritionally enhanced food products and explore research in this area. This learning experience has strengthened her ability to bridge nutrition science with innovation and real-world application.

Congratulations on achieving these excellent results and for setting a great example to your students — balancing a busy career, household, and part-time studies with such success.

We are incredibly proud of you and all that you have accomplished.

We are very proud of the Food Science Association's ongoing Food Drive initiative to support our students in need.

Another successful Fun Run was recently held, where the entry fee was a donation of non-perishable food items, sanitary products, and toiletries.

A heartfelt thank you to all the Food Science students and staff who contributed so generously.
Your support truly makes a difference!