

VOEDSELWETENSKAP **FOOD** science

# *News letter*

*December 2017 Desember*



## A word or two from the boss



It is my absolute pleasure to add a foreword to this year's December Newsletter! I'm sure you will enjoy reading about the news since the last newsletter.

This year again has had many highlights – excellent student numbers and success, both at undergraduate (a record 49 BSc graduates at the December ceremony) and at postgraduate level. The quality of students we are fortunate to work with is a huge blessing. Four final year students have applied to do their MSc's at universities in Europe (or part of their MSc) – all four have been accepted and some have also been awarded academic merit scholarships to cover their tuition fees and more! This is wonderful recognition of the Stellenbosch University Food Science degree!

One of the highlights this year has been the success of the Final Year Product Development projects and presentations. The feedback from alumni, the food industry and other academics has been overwhelmingly positive (read more about the different products elsewhere in the newsletter). I'd like to congratulate not only the Final Year students, but also Dr Maricel Krügel and all the other staff that assisted her in this year's food product development module! The bar has been raised to new levels, and I'm already eagerly awaiting the presentations in 2018.

The success of the Department is solely as a result of the contribution of every single staff member! It is truly a privilege to have such a dedicated, hard-working, team-orientated set of colleagues – they are the ones who deserve all the credit for the Department's successes.

Sadly, at the end of this year, we are saying "goodbye" (but not farewell) to two staff members that have both left an indelible impression on this Department, but also much wider afield. Nina Muller our Sensory Scientist *extraordinaire* and Daleen du Preez our Super Secretary/PA/Events Organiser/Sponsorship Officer are retiring from Full-Time employment. We wish them both well in all their endeavours – they will be sorely missed, but never forgotten!

I would like to wish all our readers a wonderfully peaceful, relaxed, safe and joyous Christmas and New Year. I look forward to seeing everyone again in 2018 – the Centenary of the University – it will be an even better year!

Prof Gunnar Sigge

•Save the Date•Save the Date•Save the Date•Save the Date•Save the Date•Save the Date•

**7 August 2018**

In the Centenary Year of Stellenbosch University, the Department of Food Science will be hosting an Alumni/Food Industry event  
(format still to be confirmed, but please diarise the date!)

Follow us on Facebook for more information Follow us on Facebook

<https://www.facebook.com/Department-of-Food-Science-Stellenbosch-University-176233605770289/>





## What it was all about on 5 Oct ... NPD 2017

Product Development is a 4<sup>th</sup> year undergraduate module at Stellenbosch University and the aim of this research-based module is to allow students to gain insight into the entire food product development process. The students, who worked in randomly assigned groups for the entire year, had to integrate all fundamental food science and related disciplines' principles in order to research and develop the food products and appropriate packaging.

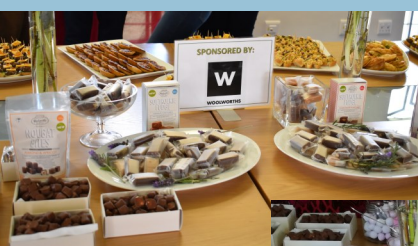
To address the increasing global challenge of food waste, the theme for 2017 was '*Profit rather than waste*'. Besides a list of other criteria, each research group had to identify and source a microbially good quality waste stream to incorporate into the product development process. Waste streams included, amongst others, grape pomace, bread, various vegetables, spent coffee grounds and banana peels.

The student groups worked extremely hard during 2017 to develop unique products whereby the '*More profit and less waste*' theme was successfully addressed. The Department of Food Science and members of the food industry that attended this year's product development presentations are extremely proud of the quality and professionalism with which the 51 students presented their results.

The Food Science Department would like to thank the South African food industry for their most invaluable research assistance and sponsorships, making this prestigious event possible.

Thank you to the audience (alumni, industry partners, sponsors, friends of Food Science, colleagues at US, fellow students and parents) for your support and attendance.

[http://www.rsg.co.za/images/upload/sound/klanke/20171125\\_RSG\\_LANDBOU.mp3](http://www.rsg.co.za/images/upload/sound/klanke/20171125_RSG_LANDBOU.mp3)







### **Bread2BREW Group1—SAAFoST prize for 'Best overall project & presentation'**

Robyn Bolters, Kendal Geach, Ashleigh Forster, Julie van der Merwe, Hermine Stander, Magdel Spanenberg, Juanine Langeveldt, Rochelle Keet  
[the link here.](#) will take you to their BLOG

**NPD 2017 NPD**



### **Nudels Group2—InnovUS most innovative product & NSF, best HACCP plan**

Adam van Heerden, Anika Wyngaard, Murray Elphick, Dr William Cloete (InnovUS), Aqeelah Martin, Paula Smit, Anke Barnaard, Madeleine Carstens, Prof Gunnar Sigge



**Twines Group 3— SAAFoST prize for Most commercially viable product, FACTS prize for most applicable regulations to food labelling in SA, SynNovation, most innovative product and MICROCHEM's product best liked by the audience.**

Alexandra Rust, Kayla-Anne Jordaan, Michelle McGoldrick, Mariet Louw, Haarisah Fakier, Kayla Steyn, Amanda Greentree, Shannon Riva





#### LUUKS Group 4

Carla du Toit, Tsepo Mokontela, Ilse Deist, Jondre Links, Marquerite Vermeulen, Anna-Mart Jansen van Rensburg, Michelle Schultz



#### Carroto Group 5

Ashlyn Meyer, Nelleke van Niekerk, Cildie van der Walt, Lesley-Ann Muller, Kaylin Johnson, Ida Carstens, Madeleine du Plessis



#### TerraBites Group 6

Ziaad Freeman, Dyveke Borg, Mariska Carstens, Celia Walters, Mary Gomes, Angel Makhubo, Muhammad Assim



#### Banaco Group 7

Back: Daphne Wabule, Mujeeb Chafeker, Thando Vilakazi, Front: Jana van Schalkwyk, Hesrie van Heerden, Ashley Mawson, Christina Coetzer



## A BIG word of thank you.

Dr M Krügel

Mr Raymond Hartley, managing director of Microchem made a huge contribution in terms of final microbiological and chemical analyses performed to the total value of almost R60 000 (free of charge). We believe that this partnership is vital and beneficial to the learning process of the students. Not only do they learn the procedure around these analyses, but they also learn to interpret the reports.

Dr Harris Steinman, managing director of FACTS also performed complimentary allergen tests, on the newly developed products. Once more, the students learned a lot and having the scientific proof, they could claim, with conviction, that their products were allergen free.

Thank you to Mr Ulrich Gernholtz from NSF who trained the students on the online specification program, Specport. For the first time each developed product had a complete specification, which enabled students to understand what a 'spec' is all about.

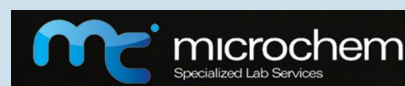
We are also very appreciative towards each one of the companies listed below for sponsoring ingredients for the development and final products.

There were also the sponsors that provided snacks at the NPD presentations on 5 October 2017.

Woolworths, Red Pepper Catering, Frozen Drinks, Afriplex, Aquabella and Cecilia's Farm. These delicious treats added a special touch to this special day.

A final big thank you to the sponsors of prizes on the day namely:

SAAFoST, Facts, Microchem, InnovUS, NSF and Synnovation.





## Institute of packaging SA Competition (IPSA)

The 4th year, NPD groups participated in the Institute of Packaging, South Africa (IPSA) competition. Each group had to develop appropriate packaging for their newly developed product according to specifications set by IPSA. By participating in this competition, the Food Science students gained a wider insight into the interesting world of packaging and was exposed to a potential career in packaging. The reports, the mock-up as well as the presentations of the groups were judged by experts in the packaging field. They were Mr John Fox, Mr John Byett, Ms Susan Featherstone, Ms Ingrid Schoeman and Mr Kiril Dimitrov.

Prof Gunnar Sigge on the photo below accepted the award on behalf of the 4th year NPD students from Bill Marshall, National Secretary at the Goldpack awards Banquet in Johannesburg.

<http://www.goldpack.org.za/?page=1>



## Successfully BLENDED

Dr Maricel Krügel successfully finished the seven week short course in Blended Teaching and Learning hosted by facilitators from the Centre for Learning Technologies. Blended Learning is not only the introduction of learning technologies into a blended approach but also a paradigm shift regarding learning & teaching. It is a change from a more traditional approach to a more flexible, transformative, knowledge and learning centred approach. Maricel successfully implemented all she learned into the module 'Functional Foods' that is part of the new online Food and Nutrition Security MSc degree. She based the online developed Functional Foods module on the conversational framework of Laurillard and used this platform as her capstone project for the short course. Various aspects had to be addressed in the final submitted report such as, an introduction, a problem description, the theoretical motivation, the alignment with the outcomes, examples of the electronic activities incorporated as well as a short conclusion. She submitted her final report to the Head of the Centre for Learning Technologies for evaluation. She is happy to announce that she successfully qualified for in-service funding by completing this course and successfully implemented what she had learned. Coffee and cake for all ... or did I hear Champagne?!



Dr Maricel Krügel







## Food Science & Engineering collaborates

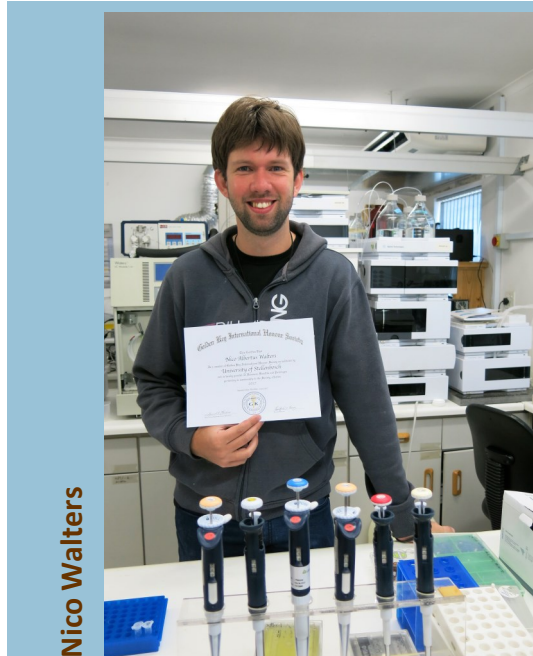
**M**arga Viljoen is a second year MSc student at the Department of Mechanical and Mechatronic Engineering and is doing her research with the BERG Biomedical Engineering Research group. She did some of her experimental work at the Food Science Department earlier this year, making use of the Instron 3345 apparatus.

The research is aimed at developing an experimental method, which is able to determine the material properties of very small and very elastic material samples. It originated from the need to study the deterioration of the tissue grafts used to construct bio-prosthetic replacement heart valves. These valves consist of tissue flaps (made out of biological tissues like bovine pericardium) which are sutured to a stent. They have many advantages over mechanical replacement valves, but they generally have a much shorter lifetime, which means that they can only be implanted in older patients in general.

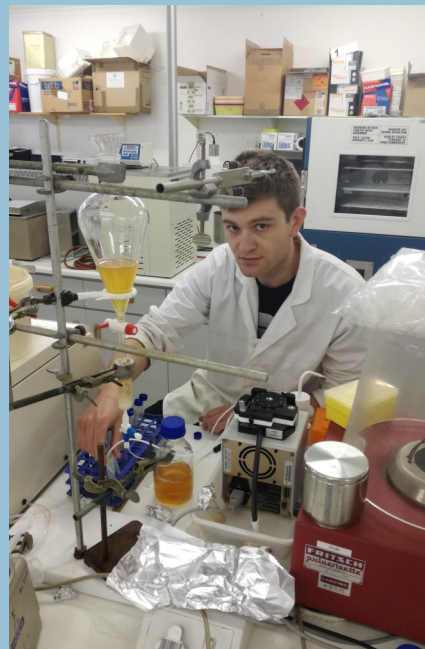
In order to develop the design of these valves in such a way that they can also be used in younger patients suffering from valvular heart disease, research needs to be done on how the biological tissue deteriorates over time, however this presents a problem: the material samples that can be cut from explanted tissue valves are so small that they are very difficult to do material tests on. Hence, the development of a new experimental technique is required.

The proposed technique uses digital image correlation to capture the displacement of a sample, which is being compressively loaded and then uses an inverse finite element method to iteratively determine a material model for the sample material.





Nico Walters



Neil Miller

## Food Science PhD students awarded for outstanding research

These 2 gentlemen are both first year PhD students from Food Science in collaboration with the ARC (Agricultural Research Council).

Neil Miller's PhD title under supervision of Dr Christie Malherbe (supervisor), Prof Lizette Joubert (co-supervisor) and Prof Marena Manley, is 'The development of a benzophenone-enriched extract of honeybush (*Cyclopia genistoides*) for a gastroretentive formulation with antidiabetic nutraceutical applications'.

Neil received a Rector's Award for the MSc student in the AgriScience Faculty with the highest marks based on his MSc marks of 2015-2016.

Nico Walter's PhD title is 'Nutraceutical potential of *Cyclopia pubescens* - unravelling its phenolic composition,' under supervision of Prof Dalene de Beer, Prof Lizette Joubert and Dr Paul Williams.

Nico was awarded the very prestigious membership to the Golden Key International Honour Society for academic excellence.

Golden Key International Honour Society was founded by a group of undergraduate students and faculty members at the Georgia State University in Atlanta, Georgia on 29th November 1977. It is an internationally recognised non-profit organisation.

Golden Key is affiliated with over 400 universities in 8 countries. These include Australia, Canada, India, Malaysia, New Zealand, South Africa, The Bahamas and The United States of America. The Society's mission is "to enable members to realize their potential through the advancement of academics, leadership and service." Membership is by invitation only and extended to the top 15% students, as identified by their universities across all degree programmes.

Golden Key is the world's largest honour society, is a mission-focused, values-based and demographics-driven organisation. With a rich traction, starting with Golden Key inauguration in 1976, Golden Key remains committed to scholarship offerings, career development, leadership development and community service. To read more about the Goldenkey membership click on this link <http://www.goldenkey.org.za/faq>



Chantelle Human (DST-PDP PhD) student in the ARC Plant Bioactives Group, supervised by Prof Dalene de Beer and Prof Lizette Joubert, won the Dreosti award at the recent SAAFoST Congress. SAAFoST awards this prize for the best oral presentation representing original research by a scientist younger than 35 years.

## PRIZE-GIVING EVENT 5 OCTOBER 2017

### **KITTY SIMMONS-PRIZE: R500.00**

**Emma Pietersen & Emma van der Merwe**

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

### **BESSIE RETIEF-PRIZE: R900.00**

**Kendal Geach**

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

### **MIMSIE SMIT-PRIZE: R1500.00**

**Clarice Gomes**

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

### **NONNA RABIE-PRIZE: R5000.00**

**Anika Van der Mescht**

**Presented by : Dr John Steer, son of Nonna-Rabie**

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

### **DEPARTMENT OF FOOD SCIENCE-PRIZE: R800.00**

**Michael Esterhuysen**

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

### **DEPARTMENT OF FOOD SCIENCE-PRIZE: R700.00**

**Mary-Anne Bigalke**

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

### **DEPARTMENT OF FOOD SCIENCE-PRIZE: R500.00**

**Marzanne Engelbrecht**

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

### **JEANNE MARIE VAN DER POEL-PRIZE: R5000.00**

**Daphne Wabule**

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

### **MATTIE JOOSTE (UNDERGRADUATE)-PRIZE: R11 200.00**

**Rochelle Keet**

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

### **MATTIE JOOSTE (POSTGRADUATE)-PRIZE: R16 800.00**

**Neil Miller**

To be awarded annually to a PhD student for the best achievement in an MSc Food Science degree

### **SASKO-PRYS: R12 000.00**

**Emma Van der Merwe**

**Presented by: David Howard, Manager Technical 2**

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

### **SAAFoST PRIZES RECEIVED 2017**

Koeppen Memorial Scholarship (PhD): R30 000

Lara Alexander

The Aubrey Parsons Study Grant: R20 000.00

Rochelle Keet

Academic Achievement Award: R2 000.00

Kate Turner

**Photos of the prize-winners on the next page**





Photo left: Prof Gunnar Sigge with the Department of Food Science prize winners. Mary-Ann Bigalke, Michael Esterhuyse, Marzanne Engelbrecht, Daphne Wabule.

## Bright SPARKS 2017



Emma van der Merwe, Prof Gunnar Sigge & Emma Pieterse



Carice Gomes & Kendal Geach



Prof Gunnar Sigge, Neil Miller, Rochelle Keet, and SAAFoST's representative, Jennifer Ricketts



Photo left: Emma van der Merwe with Prof Gunnar Sigge and Mr David Howard from SASKO.

Photo left: Dr John Steer, son of Nonna-Rabie presenting the Nonna Rabie prize to Anika Van der Mescht

Agronomists and Food Scientists of Stellenbosch University (SU), earlier in 2017 announced their partnership with the multinational beverage and brewing company Anheuser-Busch InBev SA/NV (AB InBev).

The R6 million funding received is set to allow them to tackle specific issues over the next three years related to the production of barley.

It will also include crops such as cassava and sorghum that is often used in beer making in many African countries.

Their endeavours are being funded through the new AB InBev Research Chair in Agronomy held by Prof Nick Kotze of the SU Department of Agronomy.

In a statement, Professor Nick Kotze said the bursaries worth R1 million will be provided to six undergraduate and four postgraduate MSc students at SU.

A further R1 million is being set aside to fund various research projects. Nikki Else, Research and Development Manager said Agriculture Africa at AB InBev, is the biggest investment yet in a South African university by AB InBev Research, or by SAB Miller, with which it merged in October 2016.

“We are excited about the partnership, and believe that the research will mitigate potential risks within the supply chain, demonstrating our commitment to South Africa whilst ensuring the required quality that meets the needs of our brewers and our customers,” said Else. “From the research, we hope to put forward recommendations to predict the storage potential of pre-germinated grains, to ensure that crops are not lost completely,” said Kotze.

Cassava and Sorghum research will also be conducted where several varieties will be evaluated against agronomic and quality criteria. Various trial sites in Africa for selected varieties will be identified in order to determine different climatic and soil conditions on production.

Else said, projects related to cassava and sorghum will help ABInBev increase its reach in Africa’s local beer market. “Through this project we hope to provide guidelines to producers in these countries on the production techniques that work best to grow quality sorghum.”

Another project involves Food Scientists at Stellenbosch University which will focus on the detection of a quality compound issue found in the cassava plant. The project consists of Prof Kotze, Dr Stefan Hayward and Prof Pieter Gouws of the Department of Food Science at Stellenbosch University, as well as Dr Else of AB InBev.

“Laboratory facilities to do such tests are not always available in the remote areas where cassava is typically produced,” explains Prof Gouws. “Therefore, we’d like to develop a kit that is easy and quick to use in the field.”

<https://www.iol.co.za/business-report/companies/stellenbosch-university-partner-with-ab-inbev-11196932>



Photo from left:

Francois Smit, (Manager of the South African Barley Breeding Institute, SABBI), Dr Stefan Hayward and Prof Pieter Gouws (of Stellenbosch University’s Department of Food Science), Dr Nikki Else (AB InBev) and Prof Nick Kotzé (AB InBev Research Chair in Agronomy and chair of the Department of Agronomy at Stellenbosch University).

## Stellenbosch Food Science made the TOP 100 in the annual ShanghaiRanking

ShanghaiRanking’s annual Global Ranking of Academic Subjects (GRAS) 2017 was released earlier this year by the ShanghaiRanking Consultancy. ShanghaiRanking has been publishing an Academic Ranking of World Universities (ARWU) by academic subjects since 2009. This release contains rankings of universities in 52 subjects across natural sciences, engineering, life sciences, medical sciences, and social sciences. In total, more than 4 000 universities are ranked annually.

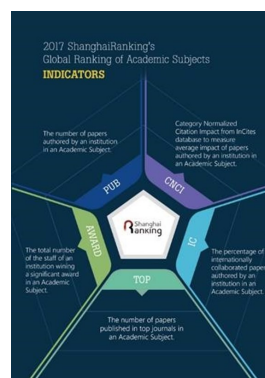
By May 2017, the committee have received more than 200 responses from academic leaders. The participants are from 54 universities, 45 subjects and 10 countries. The results highlight 94 top journals in 33 subjects and 27 top awards in 19 subjects.

We are proud to announce that Stellenbosch University’s Food Science Department was the only Food Science and Technology department on the African continent to be ranked in the top 100. Stellenbosch is ranked in the 76-100 category with a 46.7 Publication count.

The criteria or indicators being: Number of papers authored by an

institution in an Academic Subject; Category Normalized Citation Impact from InCites database to measure average impact of papers authored by an institution in an Academic Subject; The percentage of internationally collaborated papers authored by an institution in an Academic Subject; The number of papers published in top journals in an Academic subject and the total number of the staff of an institution winning a significant award in an Academic subject.

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





## Synnovation workshop hosted at Food Science, Stellenbosch University

At the annual Product development presentations, Ms Truida Prekel, owner of Synnovations, sponsored a prize for the most innovative product according to her team. This year the prize went to the TWINES group, but she ended up inviting both the TWINES and Nudles groups for a one day SynNovation workshop hosted at the Food Science Department. This is a wonderful opportunity to develop the creativity of this already creative group of young minds.

We are very grateful and proudly associated with the Synnovations group.



## Diane Rip on route to Bermuda

Dr Diane Rip has been selected as a recipient of the 2018 Malaspina International Scholar Travel Grant Award. The award will cover her travel, lodging and meal expenses to attend the 2018 ILSI Annual Meeting in Southampton, Bermuda on January 21 – 24, 2017.

Dr. Alex Malaspina, for whom the award is named, and a small group of scientists from academia and industry founded the International Life Sciences Institute (ILSI) in 1978. ILSI is a nonprofit, worldwide foundation that seeks to advance scientific understanding of nutrition, food safety, toxicology, risk assessment and the environment. ILSI brings experts from the private and public sectors together to improve the science used to ensure human and environmental health and safety. The Malaspina International Scholar Travel Grant Award is designed to enable academic scientists who are at an early stage of their careers to participate in the scientific discussions during the ILSI Annual Meeting, held in January each year.

[www.ilsi.org](http://www.ilsi.org)



Sarah kyk waar SA'ners se vleistande vandaan kom



Alec Basson

Suid-Afrikaners hou van hul vleis soveel so dat 'n maaltyd daarsonder nie as 'n maaltyd beskou word nie. En dis nie net hoender, lam, bees of vark nie; ander vleislekkernye word ook gereeld geëet. Vandag gebruik ons selfs verskillende name vir 'n verskeidenheid vleisprodukte.

Maar waar presies kom ons interessante vleisgeregte en maniere van vleis gaarmaak nou eintlik vandaan?

"Ons moet teruggaan na die koloniale tyd toe verskillende bevolkings-/etniese groepe met verskillende inkomste, kulture en persepsies van wat vleis is en hoe dit voorberei en geëet moet word in Suid-Afrika bekendgestel en ontwikkel is," sê dr Sara Erasmus en prof Louw Hoffman van die Departement Veekundige Wetenskappe aan die Universiteit Stellenbosch. Erasmus is 'n nadoktorale navorser (sy het haar voor- en nagraadse studie in Voedselwetenskap gedoen) en Prof Hoffman is 'n uitgelese professor in die Departement Veekundige wetenskappe, US. Hoffman beklee ook die SARChI-leerstool (Suid-Afrikaanse Navorsingleerstool-inisiatief) in Vleiskunde in vennootskap met prof Voster Muchenje van die Universiteit van Fort Hare.

Erasmus en Hoffman het navorsing gedoen oor die ontwikkeling van Suid-Afrikaanse vleisgeregte en maniere van vleis gaarmaak en die wortels daarvan tot by die Hollandse setlaars, Indo-Asiatiese slawe, inheemse Khoisan (die Khoikhoi/Hottentotte wat jagters en herders was en die San/Boesmans wat jagters was en kos versamel het) en swart Afrika-groepe teruggevoer.

Die resultate van hul studie is onlangs in die vaktydskrif Animal Frontiers gepubliseer.

"Veranderinge in eetgewoontes wys hoe Suid-Afrikaanse verbruikers oor tyd heen ontwikkel en getransformeer het. Hoewel vleis diep in die Suid-Afrikaanse erfenis gewortel is met verskillende bronne so wyd as die mense se etnisiteite, word die vraag steeds grotendeels deur beskikbaarheid, prys, tradisionele gebruike en verbruikers se assosiasies en persepsies beïnvloed."

Die res van die artikel volg hier in beide Engels en Afrikaans

<https://www.sun.ac.za/afrikaans/Lists/news/DispForm.aspx?ID=5175>

<https://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=5255>

## Paula Smit op pad Italië toe

Paula Smit sal op 6 Desember haar BSc Voedselwetenskap graad ontvang waarna sy 'n MSc onder leiding van Proff Louw Hoffman en Pieter Gouws beplan.

Haar projek gaan ondermeer kyk na die voorkoming van lipiedoksidase in verwerkte wildsvleisprodukte. Die vleisbedryf in SA is 'n groot rolspeler in die Suid-Afrikaanse ekonomie en daarom is 'n goeie reputasie en kwaliteit produksie van onskatbare waarde.

Haar projek gaan maak egter 'n oorsese draai wanneer dit in Januarie 2018 af-skop in Padova, Italië as deel van die Erasmus uitruilprogram. Hulle fokus is op gedroogde en geprosesseerde vleis soos salami wat tradisioneel Italiaans is. Paula gaan egter 'n Suid-Afrikaanse kinkel byvoeg deur met die toevoeging van Heuningbostee-ekstrak te eksperimenteer. Waar beter om iets te leer as aan die voete van die meesters op die gebied?

Paula ons glo dat jy 'n uitstekende ambassadeur gaan wees vir Stellenbosch. Geniet dit!

<http://www.unipd.it/en/erasmus-studies-semp#>





## Time for new beginnings

Between 2005 and 2007, with the closing of the former Consumer Science Department, Nina Muller & Daleen du Preez left the green Oak trees of Victoria Street behind, for the Food Science Department on the corner of Hammanshand and Helshoogte Roads, Stellenbosch.

At first, everything was weird—even the address. A new journey of adventure awaited...

They did not know what to expect at their new environment and the new environment was not sure, how to welcome them either...nonetheless they went in with FULL force!

Luckily, it was not long before these two ladies became very important role players within the Department of Food Science. Today, between 10-12 years later, one can hardly imagine Food Science without them.

Nina Muller established a Sensory Science facility of note. She is well respected and well connected on campus and within the Food Industry. She mimics a well-oiled machine producing scientific results for both the Food Industry and other Departments within the University. Her commitment to her students and work is truly admirable. Those who had the privilege to work with her or under her supervision will know that. Although Nina is an incredibly hard worker, she also enjoys a good party. She has a kind heart and really likes to spoil those around her with gifts. Flowers, all colours pink and animals are her true soft spots.

From 2018 onwards she will exchange her almost 30 year old teaching hat for another, but luckily she will not be entirely lost to the world of Sensory Science.

Nina will carry on working at the Sensory Unit she established, continuing to perform research and publish research articles in collaboration with the Agricultural Research Council. Projects she has recently initiated for the Food Industry will also carry on under her expert eye.

Daleen du Preez took over the role of Departmental Secretary 12 years ago. This position was also very new to her. Profs Trevor Britz, Corli Witthuhn and Gunnar Sigge all 'chaired' with Daleen. They are all such different characters, but Daleen managed to have a wonderful, unique working relationship with all three.

Daleen is a lady of note, thoughtful, polite, creative with a motherly care for the students of this Department. She has an eye for detail and when it comes to fundraising, I have never seen her equal. Perfectionist, style, care and creativeness are not always found in one person; with Daleen we had it all under one roof!

Unlike Nina, we will not be seeing Daleen around that often. Hopefully she will help her successor ease into her position. Teaching her all the special tricks to keep the Food Science boat sailing (seemingly) so effortlessly.

During the past 12 years Nina and Daleen have grown with this Department. A Department that has more than tripled in student numbers; underwent two major building projects and two external evaluations to name but a few.

We salute you both. Wishing you all the best for the future.

And YES, you will be missed!



Photo (left) Daleen du Preez, Nina Muller (right)

## Sensory Science @ Food Science since 2007

Food Science Graduates ready to solve the sensory science challenges of the SA food industry!

For the past ten years the Department of Food Science, SU has invested in Sensory Science but also Sensometrics research. The return on this investment was quite significant!

One of the *major research topics* was to use one of the standard sensory profiling methodologies, descriptive sensory analysis (DSA), and a number of sensometric methodologies such as principal component analysis (PCA) and partial least squared regression (PLS) to determine the chemical drivers of sensory quality or the sensory drivers of consumer liking. This research direction resulted in several MSc and PhD-studies that enabled a number of post-graduate students to move directly into the South African food industry, working either as sensory scientists, i.e. testing or revamping the sensory quality of food and beverage products, or working in Consumer Insights where the aim is to understand how the consumer relates to the sensory qualities of food and beverage products.

Three years ago, SU was invited to take part in an international research programme where the focus was on validating new sensory methodologies that could enable industry to *rapidly profile* the sensory quality of food products. Currently, the Department of Food Science has three PhD students validating rapid methodologies such as free sorting, projective mapping (PM), polarised sensory positioning (PSP) and check-all-that-apply (CATA). And to boost this research programme on rapid profiling methods, the Department of Food Science has just purchased a cutting-edge software programme, EyeQuestion®, a comprehensive web application for sensory and consumer research. From 2018 onwards, the results of these PhD studies will be available to the South African food industry to enhance their research and development programs!

**Contact: Nina Muller @ [mm7@sun.ac.za](mailto:mm7@sun.ac.za)**

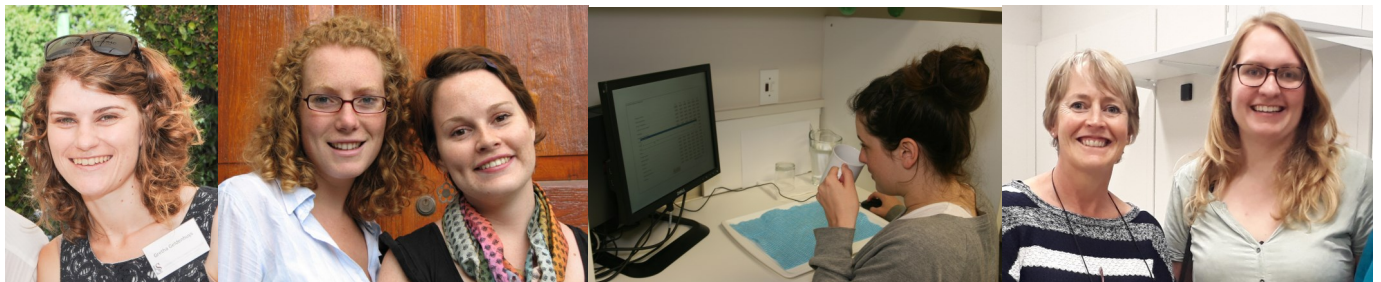


Photo left: Dr Greta Geldenhuys, Sensory Analyst, Liquid Innovation at Distell, Stellenbosch

Photo middle: Dr Anreza van der Merwe, Sensory Scientist in QC, Coca Cola, Johannesburg and Janita Botha, Sensory and Consumer Science specialist at Anheuser-Busch InBev, Johannesburg.

Photo right: Bianca Jolley, since completing her MSc research, Bianca has been appointed Consumer Scientist at Mondelēz, Johannesburg, where after Mondelēz transferred her to one of the UK offices.

Photo far right: Erika Moelich (left), a PhD student at SU, visited Sandra Beekhuizen, Logic8, the Netherlands, for training in EyeQuestion®.

‘The five senses are the ministers of the soul.’ Leonardo da Vinci



## Paul & Kiah in Europe for research

Kiah Payne

Dr Paul Williams and I had the privilege to travel to Leopold-Franzens University of Innsbruck, Austria between 26<sup>th</sup> November and 8<sup>th</sup> December 2017. The aim of the visit was to exchange scientific information for the development of rapid methods for food fraud, safety and security. This project also forms part of a South Africa/Austria joint scientific and technological cooperation.

During this visit work was done on a collaborative project with Prof Christian Huck and PhD student Anel Beganovic. Chemometrics was used to analyse near-infrared (NIR) spectroscopic data of game meat, obtained at Stellenbosch University earlier this year. It was extremely insightful and beneficial to work alongside experts in the field of chemometrics and spectral data analysis.

Even though this was a scientific research visit, we had time to explore the town of Innsbruck, experience Christmas markets in both Innsbruck, Austria and Munich, Germany, had traditional Austrian food, beer and gluhwein, walked in the snow and experienced temperatures of -10°C.

The trip was funded by the NRF and the funds are from a two-year bilateral agreement between Stellenbosch University and Leopold-Franzens University of Innsbruck.

I would like to express my sincere gratitude to both universities as well as Dr Williams and Prof Huck for their generosity and for making this trip a successful and unforgettable one.



## Ashleigh & Murray soon off to Italy

Ashleigh Forster and Murray Elphick graduated on 6 December, but this is not the end of their studies. These two Stellies are going to Europe to further their studies. With a FULL scholarship to do their Masters at the Food Innovation Program in Italy in 2018.

The Food Innovation Program is a 12-month full time Master's Program that offers aspiring food innovators and entrepreneurs an invaluable experience in enhancing their professional goals and personal growth. The Program is structured in three distinct phases with final thesis project. First phases is the INSPIRATION Track in Reggio Emilia, Italy that offers an intense and comprehensive academic experience combining classical and innovative educational methodologies, such as foresight training and design thinking. Once complete, students then go through the ASPIRATION Track to expand their entrepreneurial horizons and engage in the cross-pollination of ideas, cultures and culinary traditions through a global tour of Silicon Valley, California, Shanghai and other Asian cities. Finally, the PERSPIRATION track includes laboratory training and prototyping in the Officucina, the unique kitchen maker-space designed specifically for the Food Innovation Program.

We are really proud that our students are welcomed and even sponsored to further their studies abroad. We hope you have a wonderful enriching experience to also inspire others upon your return.

Ashleigh Forster was part of the Bread2BREW group who won the SAAFoST prize for best product and presentation at the 2017 NPD presentation which was held at Food Science on the 5th of October 2017, while Murray was in the Nudels group. Nudels won the InnovUS prize for most innovative product as well as the NSF prize for the group with the best HACCP plan.

For more information you can visit the institution's website at <http://foodinnovationprogram.org/about-fip/>



Ashleigh and Murray

## Listeria monocytogenes making news for all the wrong reasons.

Elisma Ackermann has just completed her MSc in Food Science on the survival and proliferation of *Listeria monocytogenes* in a South African food factory.

*Listeria monocytogenes* is a foodborne pathogen that has the ability to survive within a wide range of conditions found within food processing environments. It is the cause of a potentially life-threatening infection, listeriosis. Its presence is of major concern within ready-to-eat food processing environments and food products. Since no further processing or heat treatment is required by the consumer, post production cross contamination thereof should be minimised.

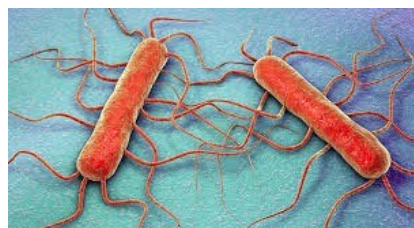
Considering the lack of information about *L. monocytogenes* in RTE foods in the South African context, the aim of this study was to study the survival and proliferation thereof within a food factory, situated in the Western Cape, South Africa. Isolates were subtyped through automated *EcoRI* ribotyping was conducted using DuPont RiboPrinter®. From the 29 ribotypes obtained, nine different DuPont ID's were assigned, which was indicative of the variety of contamination sources within the RTE factory. Lineage assignments of *Listeria monocytogenes* could be made using the DuPont ID's and the RTE factory studied was found to host both lineage I and II strains.

The response of *L. monocytogenes* biofilms, cultivated under flow conditions, to sanitisers used in the factory environment was evaluated. A protocol was developed using the CO<sub>2</sub> evolution measurement system (CEMS) to evaluate the effect four sanitisers used by the RTE food factory on *L. monocytogenes* biofilms. As first of its kind, it was found, that even though no bactericidal effect occurred by either sanitisers used, the QAC free chemical sanitiser resulted in the best eradication of the biofilm.

This study not only created more awareness regarding the complexities of *L. monocytogenes* in a food factory, but also laid the groundwork for further study into the survival and proliferation of *L. monocytogenes* in the RTE environment.

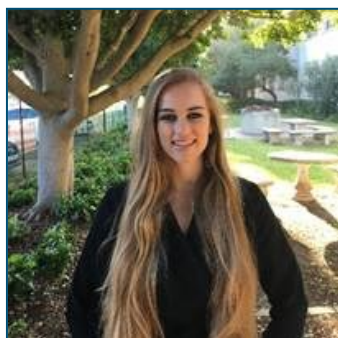
See this Facebook link for a few quick facts about *Listeria monocytogenes*.

<https://www.facebook.com/Department-of-Food-Science-Stellenbosch-University-176233605770289/>



Elisma Ackermann at the December 2017 graduation ceremony received her MSc Food Science degree *cum laude*.

## Jana span ook haar vlerke in 2018.



Jana van Schalkwyk het ook onlangs gehoor dat sy kwalifiseer om in 2018 'n een jaar kursus in Cirencester in Engeland by die Royal Agriculture University (RAU) te volg.

<https://www.rau.ac.uk/>

Die program is 'n MSc in Volhoubare Landbou en Voedselveiligheid (Sustainable Agriculture and Food Safety). Sy begin in Februarie aangesien dit 'n module georiënteerde MSc is. Dit is verdeel in 2 semesters en sluit modules in soos 'Poverty and Food Security', 'Sustainable management of soil and water' asook 'Agriculture and rural policy'.

Daar is ook ekstra modules waaruit kandidate drie kan kies en almal fokus op die verbetering van huidige praktyke wat ons sal help om 'n volhoubare toekoms in die landbousektor te verseker. Jana stel baie belang in die verbetering van voedselveiligheid in arm gemeenskappe. Daar is ook moontlikhede vir beurse wat deur die Universiteit befonds word. Daar is meer inligting in die verband op hul webblad beskikbaar.

Vereistes vir die program is ondermeer 'n 4 jaar kwalifikasie in enige relevante Agriwetenskaprigting. Die kandidaat moet 'n 70% gemiddeld behaal oor die vier studiejare. Daar word ook vereis van die kandidaat om IELTS (Engelse toetse) te skryf en 'n minimum punt van 5.5 te behaal in al die afdelings.

Baie geluk Jana. Ons hoop jy het 'n wonderlike ervaring!





## Graduation December 2017

We had a record breaking number of students who graduated on 6 December 2017. To be exact, 49 BSc Food Science degrees were rewarded of which 7 *cum laude*. The cum laude candidates were:

Ashleigh Forster, Rochelle Keet, Shannon Reeva, Alexandra Rust, Paula Smit, Cildie van der Walt and Daphine Wabule.

There were also 2 MSc students who graduated, namely Georgia Kutaa and Elisma Ackermann (*cum laude*).

Thank you for your hard work. We wish you well.