



Department of **Statistics and Actuarial Science**  
Departement **Statistiek en Aktuariële Wetenskap**



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## New energy as things return to normal

It was with great excitement that the University returned to full capacity at the beginning of the second semester. There was a new and fresh energy on campus which was evident in our students and lecturers alike.



*Ons staan aan die einde van nog 'n akademiese jaar waarin ons ten einde laaste kon terugkeer na die situasie soos voor die pandemie. Studente kon weer soos van ouds ons klasse volsit en deelneem aan al die aktiwiteite wat 'n universiteit bied.*

We are very excited to bring you another edition of our newsletter, full of news about student and staff achievements and some general newsworthy happenings in the Department. Over the past few years, the Department has experienced significant growth in student numbers in the modules we present. In 2023, we will introduce four new modules in Data Science that will be presented in all three academic years, namely Data Science 141, 241, 314 and 344. These will be presented alongside existing modules in Actuarial Science, Financial Risk Management, Mathematical Statistics and Statistics, together with several service courses to students in the Faculties of Economic and Management Sciences and Engineering.

We also welcome two new colleagues. Prof Daniel Polakow joined the Department on 1 November 2022 and will manage the Financial Risk Management division. Mr Stephan van der Westhuizen from the Department of Genetics will join us on 1 April 2023. We are very fortunate that we can appoint colleagues of their calibre in the Department.

I believe the Department's research profile is improving every year. We now have no fewer than six NRF-rated researchers in the Department. They are Profs Niël le Roux and Sugnet Lubbe (both B-rated), Profs Tertius de Wet and Justin Harvey (both C-rated) and Drs

David Hofmeyr and Mesias Alfeus (both Y-rated). Watch this space, as I believe more NRF-rated researchers from the Department will join them soon.

Our Department is very honoured and proud to announce that our industry partners will invest in our students again in 2023. No less than R1.5 million will be donated in the form of bursaries to our postgraduate students and we are so grateful to FirstRand, Correlation Risk Partners and the Faantjie and Lettie Pretorius Trust for their generous sponsorships.

*Ná 'n termyn van ses jaar is dit is dan ook die laaste keer wat ek as voorsitter van die Departement iets vir die nuusbrief skryf. Dit was 'n termyn vol hoogtepunte, en soms 'n paar laagtepunte, hoewel dit buite ons beheer was. Dit was bo alles 'n tydperk waarin ek kollegas se ongelooflike professionaliteit en onbaatsugtige lojaliteit aan die Departement, Fakulteit en Universiteit ervaar het, en waarin uitnemende onderrig aan al ons studente gelewer is.*

I would like to wish Justin Harvey well as the new chairperson of the Department and I am confident that he will steer the Department to new heights. I hope you enjoy the newsletter and happy reading.

**Prof Paul Mostert**

## Department welcomes two new colleagues

*The Department of Statistics and Actuarial Science recently appointed two new colleagues. Prof Daniel Polakow joined the Department on 1 November 2022 to manage the Financial Risk Management (FRM) division, whilst Mr Stephan van der Westhuizen from the Department of Genetics will join the Department on 1 April 2023. They shared a bit more about themselves with us.*



According to **Prof Polakow**, he began his career as a long-haired aspirant Greenpeace activist studying Natural Sciences at the University of the Witwatersrand in 1991 and completed his PhD in Biostatistics in 2000 under the late Prof Tim Dunne at the University of

Cape Town's Department of Statistical Sciences.

"My doctoral work progressed the field of applied survival analysis. The same models that disentangled the impact of censoring and highlighted the stochasticity behind fire-recurrence were also used by ASSA to calibrate our HIV/AIDS mortality curves. The SA government, at the time, neither supported HIV/AIDS nor advanced HIV/AIDS research. Hence, our data originated from a rural Ugandan population in which seroconversion and mortality data was being captured by the MRC in the UK.

"The work around fire-recurrence was obviously interesting to insurers, but more so to botanists (fire and fire volatility drives biodiversity in fynbos). Fynbos has parallel vegetation-types in areas of the world with winter rainfall – for example, chaparral in California and kwongan in

Australia. All such shrubland is prone to moribund accumulation and to burn, much like fynbos. The same survival-analytical models eventually made their way into predicting extreme events in the stock market. I enjoyed the multi-disciplinary work as well as the depth of expertise available to me as an academic.

"Mostly, I learned to listen to and appreciate the quiet curiosity and humility of the statistician."

He goes on to explain that he subsequently entered the world of financial services in South Africa "for all the wrong reasons" and spent more than two decades there; first, as an analyst servicing the asset-management and pension-fund industry with foci on investment strategy, quantitative analysis/risk and derivatives and then as a manager of assets (and liabilities) in some shape or form.

"I was acting as agent on a large institutional trading floor when the first aircraft hit the World Trade Centre in September 2001. I was acting as principal on a different trading floor when Lehman's filed for bankruptcy in September 2008. For the last six years I managed the assets of a global family office and ran several local companies (through a pandemic) in the tourism sector and in the conservation space."

Prof Polakow always kept one foot in academia with the view that ultimately, he "would be returning home". He approached Stellenbosch University (SU) several months ago and was delighted to find a position in FRM within the Department of Statistics and Actuarial Science.

"Members of the Department have been very gracious and helpful, and it is a genuine pleasure to be here. I enjoy engaging with both colleagues and students, particularly students at postgraduate level. I am known for my frankness and also my caffeine dependency. I value

getting the questions right before proceeding to answers. My research interests will continue along the lines of the quantification and refinement of active investment management and risk budgeting, the globalisation of risk-premia and the carry-trade. I remain involved in some national economic conservation projects.



### Mr Stephan van der Westhuizen

will join the Department next year as a lecturer in Statistics.

He graduated from SU in 2014 with a master's degree in Statistics and is about to enter the final year of his PhD degree

at Wageningen University & Research in the Netherlands. His PhD focuses on adapting machine-learning models to address certain key issues when modelling soil and building soil maps.

He describes his PhD journey as one of his career highlights.

"My professional growth since beginning my PhD has been astronomical," he says.

"I am also very privileged to be a recipient of the Thuthuka National Research Foundation (NRF) grant. Receiving this grant is a clear indicator that your research is competitive and that it has a meaningful impact on society. Another career highlight was when I was selected to form part of the Climate, Food and Farming, Global Research Alliance Development Scholarships Programme (CLIFF-GRADS). This scholarship allows a PhD candidate to spend six months abroad at a research institute. I used this scholarship to undertake an internship at the International Soil Reference and Information Centre (ISRIC) in the Netherlands in 2022. During this internship I was provided with the opportunity to work on my PhD full-time, and together with ISRIC staff, we explored strategies on how my PhD could contribute to global soil mapping projects hosted by ISRIC.

"Although I have been a co-author of a few journal publications, it is always a highlight

"The world is changing and continues to surprise us with its speed and direction of transformation – and finance, academia, and South Africa are not exempt from this change. It is an interesting time to return to university, and I look forward to the challenges ahead."

for any researcher to have your first, first-author publication. This highlight came when I published a paper in the international journal *Spatial Statistics* based on one of my PhD chapters."

It was during his time as a lecturer in Biometry at SU's Department of Genetics that he developed his passion for agricultural data applications.

"It is very rewarding to work on projects which have an impact on societal issues such as food scarcity and climate change."

According to Van der Westhuizen, Statistics opens up a world of opportunities for graduates.

"However, students often do not see the importance and the excitement of Statistics in the classroom. Having been a student myself not too long ago, I would like to present students with the opportunity to experience Statistics the way I experience it: as fun, interesting, and stimulating."

The world has become very data-driven, and nowadays, any individual can perform a data analysis on a user-friendly statistical package or run a machine-learning model on an online platform.

"However, what these individuals lack is not just the understanding of the statistical theory that underpins these methods, but also the ability to draw meaningful conclusions from the results, and how to formulate the questions that need to be answered by the data. Studying Statistics will help with all of this, and more," says Van der Westhuizen, adding that wherever there is data, there are opportunities for students majoring in Statistics.

Van der Westhuizen believes that collaboration with industry is key:

"It would be ideal if staff members have partnerships with industry to strengthen these bonds and allow students to be part of these partnerships."

## Prof Harvey appointed as new Departmental chair

The Department congratulates the following staff members on their promotions.

**Prof Justin Harvey** has been appointed as Departmental Chair for a term of three years from 1 January 2023 and the Department wishes him well with this very important and pivotal role. He is a lecturer in Mathematical Statistics and, prior to joining the Department of Statistics and Actuarial Science, he worked as a consultant at the Centre for Statistical Consultation.

He was promoted to Associate Professorship (AP) earlier this year.

**Dr Mesias Alfeus** was promoted to Senior Lecturer from 1 July 2022.

**Dr Chris Muller** has been promoted to Senior Lecturer from 1 January 2023.

We share their joy, thank them for their hard work and wish them well in their new positions.

## Visiting Professor – Prof Ludger Overbeck



**D**r Ludger Overbeck, professor of Applied Mathematics at the University of Giessen in Germany, was hosted by Dr Mesias Alfeus in the Department of Statistics and Actuarial Science from 22-31 August.

During his visit, he presented a guest lecture to postgraduate students in Financial Risk Management and worked on the draft research paper "Rough forward volatility model for Crude Oil market" with Dr Alfeus and Prof Christina Nikitopoulos, a lecturer at the University of Technology in Sydney.

Prof Overbeck's academic interests include stochastic analysis, mathematical finance and quantitative methods in risk management. He acts as consultant for several financial institutions in the fields of risk management (including the regulatory framework), portfolio management, financial engineering and pricing of structured products.

His clients include regulatory authorities, such as the Bank for International Settlements (Basel), World Bank (Washington), the central banks of Thailand, Columbia, Pakistan, Bahrain and Italy, KPEI Indonesia, the monetary authority of Singapore, as well as German and European authorities and commercial banks such as Commerzbank (Germany), DZ-Bank (Germany), Credit Suisse (Switzerland), OCBC (Singapore and Jakarta), Oinvest (Katar), Shinhan Financial Group (Korea), ICBC (China) and many others.

He tells us about his time at the Department:

"When I arrived in Stellenbosch, I was overwhelmed by the beautiful town of Stellenbosch and the warm welcome of the members of the Department of Statistics and Actuarial Science.

"I stayed in a guest house within walking distance of the Department, and on Monday morning I could stroll through the town to the campus to meet my long-time colleague and friend Mesias Alfeus. He showed me around the Department, and I was introduced to several of his colleagues.

"After lunch I gave my lecture on Credit Portfolio Management. The audience actively participated in the lecture by providing comments and questions which led to a lively learning and discussion experience. The second day we worked intensively on our current project and discussed further collaboration. I am sure that our joint projects will strengthen our successful cooperation, and I am looking forward to further visits to the Department."

## MuViSU hosts first guest professor

The Centre for Multi-dimensional Data Visualisation (MuViSU) in the Department of Statistics and Actuarial Science hosted Prof Dianne Cook in November 2022. She is the centre's first visitor since its establishment in July 2021.

Dianne Cook is a Professor of Business Analytics at Monash University in Melbourne, Australia. Her research focus is in the area of data visualisation, especially the visualisation of high-dimensional data using tours with low-dimensional projections, and projection pursuit.

She is part of the established Monash research group, the NUMBATs. This group aims to raise awareness of Australian fauna and flora, especially endangered species, through their research. The NUMBATs group is internationally known for its open source software development with over 2 million software package downloads in 2022.

During her visit she met with staff and postgraduate students of the Department and presented a special seminar on "Visually exploring local explanations to understand complex machine

learning models". She also presented a half-day pre-conference workshop for the Multivariate Data Analysis Group (MDAG), a special interest group of the South African Statistical Association (SASA) at SASA 2022 in George on "Visual methods for multivariate data – a journey beyond 3D".



## Department of Statistics and Actuarial Science: Staff



Foto: Anton Jord

**Front row:** Prof WJ Conradie, Ms S Loggenberg, Prof T de Wet, Ms L Rhode, Prof PG Slattery, Prof PJ Mostert, Prof S Lubbe and Mr R Clover. **Second row:** Mr SJ Burgess, Ms E Huysamen, Ms H Randall, Prof J Harvey, Dr CJB Muller, Dr T Sandrock, Dr H Viljoen and Dr M Alfeus.

**Back row:** Dr MMC Lamont, Mr L Steyn, Mr H Bakker, Mr DR Loggenberg, Mr H Sadiq, Dr S Bierman and Mr D Corubolo. **Absent:** Prof M Kidd, Prof DG Nel, Ms R Cilliers, Ms N van Zyl, Dr D Hofmeyr, Prof N le Roux, Mr S Louw, Ms M Matthews, Dr J Nienkemper-Swanepoel, Prof SJ Steel and Prof D Uys.

## Francois Botha: Combining knowledge, skills and passion for success

*When Francois Botha matriculated from Point High School in Mossel Bay in 2004, he only knew that he wanted to study at Stellenbosch University, and that he didn't want to become a CA. Ironically, he ended up marrying a CA in 2013 and realised that they are not so bad after all. He tells us about his journey:*



“I enrolled for the Financial Risk Management programme in 2005 and after receiving my degree in 2007, I also obtained honours and master’s degrees in Financial Risk Management. For my thesis I conducted research into innovative new methodologies for identifying and isolating manager skill and fund performance longevity. I continued studying whilst working and also obtained accreditation as a Chartered Alternative Investment Analyst (CAIA).

“I learned many important lessons from our lecturers. For Stats 186, our exam papers had to be collected in person from Prof De Wet. As he went through my answers, he repeatedly noted: “Francois, you can see that I can’t give you any marks since you didn’t write anything”. This taught me that you cannot succeed without trying something. I also remember how Prof Conradie phoned me to ask whether I would be attending class (since there were only four of us in our master’s degree class). My reply was that I was on hole number 16 and that I would go straight to his class as soon as I was done with my round of golf. Prof, I can honestly say that golf turned out to be a very useful skill!

“Whilst I was busy with my MCom, I began lecturing first-year students in Statistics and Theory of Interest. I’m still a part-time lecturer in Alternative Investments for the MCom students in the Department. My aim is to teach these students the CAIA theory, combined with a

practical perspective of problems they will face professionally. I am also a supervisor of a few honours projects.

“Armed with my MCom, I joined Novare Investments in 2010, where I advanced to Head of the Multi-Management division after a few years. Novare is a pension fund consulting business, and my role gave me the opportunity to meet and engage with all the South African fund managers, as well as gaining exposure to the rest of the world market. I quickly realised that I am not finished with learning; you can always learn from people with more or different experiences.

“In 2018 I was offered the opportunity to become the Chief Investment Officer of Optimum Investment Group, where I still am now. We look after more than R9 billion of clients’ assets and the portfolios for which I am responsible include different asset classes and risk profiles. It is also great working with several team members who also studied at SU’s Department of Statistics. The CIO is ultimately responsible for the performance of the portfolios, but I constantly remind the team that our work is about more than just performance: our clients are trusting us with their hard-earned wealth and taking care of their investments.

“There is such power in passions colliding. My studies are also helping me outside the investment world. During our family holidays to the bushveld, I fell in love with its wildlife.

In 2020, I became a director of Contemplate Wild, a non-profit organisation which assists with the implementation of conservation technology solutions. We are very privileged to collaborate closely with the Max Planck Institute of Animal Behaviour in Germany on the development of state-of-the-art, yet affordable, tracking technology. The tracking technology provides data which we analyse for animal behaviour patterns, including rhinos, wild dogs, vultures, and many more. There is a large overlap between the models used for financial risk and those applied to analysing animal behaviour. Our platform has already been invaluable in helping to save more than 30 wild dogs caught in snares – nearly 10% of the existing population. We also apply the same technology to obtain data on rhino behaviour and movements, which makes

the data analysis invaluable in anti-poaching operations. I am confident that our team's specialised knowledge and skills will provide an edge in the fight against poaching.

"Stellenbosch University and specifically the Department of Statistics and Actuarial Science had a major impact on my career. I cherish the relationships I've built with both peers and professors, and I am very thankful to still be involved with the Department and impact on students' lives in showing them how their knowledge and skills can help them in their careers, as well as following their passions."

Francois is married to Nannette and they have two beautiful princesses. He describes raising them as their ultimate adventure and accomplishment.

## ACADEMIC ARTICLE

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# Measurement error-filtered machine learning in digital soil mapping

*Newly appointed lecturer in the Department, Mr Stephan van der Westhuizen, and Dr David Hofmeyr, senior lecturer in Statistics, co-authored a paper titled "Measurement error-filtered machine learning in digital soil mapping", with Prof Gerard Heuvelink (Wageningen University) and Dr Laura Poggio (ISRIC).*

The paper was accepted for publication in December 2021 and is based on the first chapter of Stephan's PhD for which he is currently registered at Wageningen University.

Digital soil mapping, which involves a statistical model to quantify the relationship between soil measurements and environmental covariates in the form of satellite imagery, is a rapidly growing subdiscipline of pedometrics, the latter being the field of applying statistical theory in pedology or soil science. It is common that the soil data used in digital soil mapping is contaminated with measurement errors, especially when the data is obtained with low-cost techniques such as infrared spectroscopy, or with citizen science. Measurement errors, if ignored, propagate to the final maps, and therefore need to be accounted for. With geostatistical models the underlying theory concerning these errors is well developed, but not so for machine learning models.

In their paper, the authors propose a simple yet elegant framework to account for measurement error with a machine learning model. In addition, the paper also provides a comprehensive simulation study to investigate the performance of several models under various scenarios of measurement error, as well as a real-world case study wherein errors in clay data are accounted for to build clay maps for Namibia.

Their open access paper is available [HERE](#).



# Mathematical Statistics graduate honoured with coveted Chancellor's Medal

*Author: SU Corporate Communication*

*Jean Durand, a Mathematical Statistics graduate with focal area Data Science, is the recipient of Stellenbosch University's (SU) coveted Chancellor's Medal for 2022. The Department of Statistics and Actuarial Science also produced the 2021 recipient, Mr Bradley Moorcroft. This is a truly exceptional accolade for the Department and the Faculty of Economic and Management Sciences.*



The medal is awarded annually to a final-year or postgraduate student who has excelled academically, has contributed to campus life in various ways, and has worked hard at developing co-curricular attributes. Durand received the medal during the Faculty of Economic and Management Sciences graduation ceremony on Thursday 8 December 2022.

Durand's academic performance in his four years of study at Stellenbosch University has been truly exceptional. He passed every single module of his Bachelor programme with distinction, with no less than four of his undergraduate modules with a mark of 100%.

During his Honours BCom year in Mathematical Statistics, he obtained an average of 90% for his registered modules – a truly exceptional achievement.

In his first year at SU, he was the top student in Applied Mathematics, in his second year he obtained the award of the best Mathematics student, and in 2021 he clinched the award for the best Mathematical Statistics final-year student. In addition to these awards, he was also awarded the prestigious Michiel le Roux Merit Bursary in 2021, while in 2022 he received the Rector's Award for Excellent Academic Achievement.

"It really is unbelievable," says Durand. "I am very proud of myself and this is such a surreal ending to my time at Stellenbosch. I worked very hard for the last couple of years and it feels fantastic

to be rewarded in such a manner. I know none of this would have been possible without the support of my family and friends. I also just want to thank all the lecturers for making this possible. It was such a great experience this year. Coming back to campus and meeting new people really made for a great final year."

"Jean Durand's undergraduate and postgraduate academic performances were truly remarkable and exceptional, given the challenging modules in these programmes," said Prof Paul Mostert, Chair of the Department of Statistics and Actuarial Science, who also lectured various of the modules Durand completed.

"It was also evident during his studies that he earned the respect of fellow students and his lecturers," commented Mostert on behalf of the Department.

Durand has been shortlisted at three UK universities to register for a much sought-after master's programmes in Data Science and/or Artificial Intelligence, namely Edinburgh University, Cambridge University and Imperial College of London. He will first complete a 6-month internship at Discovery, after which he plans to continue his studies at Imperial College London or Cambridge where he wants to do a master's degree in machine learning.

# Glory bags Adrian Gore Fellowship Award

*Glory Ngwenya, an Actuarial Science student, is the recipient of the 2022 Adrian Gore Fellowship Award (AGFA) provided by Discovery. It is the very first time that a Matie has won this award.*

*Author: Daniel Bugan*

Ngwenya was chosen from the top Actuarial Science Honours students from the Universities of Stellenbosch, Cape Town, the Witwatersrand and Pretoria who were vying for the fellowship, named after Discovery's founder, CEO Adrian Gore. Six Stellenbosch University (SU) Actuarial Science honours students were selected to enter.

Now in its tenth year, the Adrian Gore Fellowship Programme is designed to offer rapid career growth for the recipient within the Actuarial Science field.

During her participation in the three-year fellowship programme, Ngwenya will receive mentorship from Gore, together with some of the finest actuaries in the field. Additional benefits include support towards her journey to qualify as an actuary and extra training opportunities. The fellowship will commence in 2023.

Ngwenya, who is currently completing her BComHons in Actuarial Science, said she is honoured to have been awarded the fellowship.

"It is a once-in-a-lifetime opportunity and one I never imagined possible. I hope that by being the first winner from SU, I am able to inspire future Maties to make the most of every opportunity presented and give their all, even when things may seem impossible."

The aspiring actuary stated that once she has qualified, she would like to enhance her skills as an actuary to positively contribute to the lives of those around her.

She added: "I am also extremely grateful for the support and guidance that I have received during the course of my studies at Stellenbosch. I have learnt many things, both inside and outside the classroom, that have helped shape who I am today."

Gore said of the winner: "Glory possesses remarkable intelligence combined with an agile mind, which gives her the ability to go straight

to the heart of the matter. She has a strong track record of leadership achievement, and a real ambition to make the world a better place. She impressed us with her ability to grasp the scope of complex problems, but also with her analytical and strategic approach to finding solutions, which she presented to her audience in an articulate and confident manner, yet with humility and poise."

Prof Ronel du Preez-Snyman, Vice-Dean (Learning and Teaching), said: "We are confident that Glory will be a worthy recipient of this award and that Discovery, and the industry at large, will continue to recognise the excellence of our graduates in this manner."

To enter the programme, candidates must be academically outstanding, show leadership potential, believe in Discovery's mission to make people healthier, and show evidence of living the company values. Candidates are also required to complete a set of challenging cognitive tests and to deliver presentations on difficult topics to senior executives with very little time to prepare.



*The SU team with Johannesburg's city lights in the background: They are Glory Ngwenya, Peng-chen Liang, Adrian Grové, Louie Gerber, Christa-Mari de Lange and Dané Odendaal.*

## Rector's Awards for Excellent Achievement

A group of 73 Stellenbosch University (SU) students were honoured with Rector's Awards for Excellent Achievement in recognition of their accomplishments in various spheres of student and campus life. These annual awards acknowledge student excellence in academics, leadership, culture, social impact, sport, and service provision.

Themed "Sustainable innovation; pursuing excellence together", the annual awards ceremony was held on Tuesday 18 October 2022. The Department of Statistics and Actuarial Science is delighted that four of its students received awards for academic excellence. They are: Christa-Mari de Lange, Jean Durand, Peng-Chen Liang and Dané Odendaal.

Congratulations to you!

## Honours presentations

From 10 to 12 October 2022, the Honours students in Statistics, Mathematical Statistics and Financial Risk Management presented their research topics to the Department. The students and their topics are listed below:

**Jean Durand and Hans Klusmann:** The use of non-parametric conditional moments in point estimation and quantile regression.

**Leon Halgryn and Moabi Mokhoru:** A comparison of Gaussian Process Regression to conventional ARIMA models for wind speed prediction.

**Bandon Lindsay and Jessie Leukes:** Evaluation of different clustering approaches to client segmentation.

**Luke Harding and Bea Scheepers:** Client selection for marketing.

**Darren Minnies and Christopher Bryant:** Client selection for marketing.

**Richard Shadwell:** Income estimation.

**Willem Cronjé and Langelihle Kamocho:** The effect of training load on performance.

**Jeanne Klopper and Jemma Daniel:** A comparison of statistical classification techniques for breast cancer.

**Fadeelah Abdullah and Tadiwa Mafuma:** The visualisation of multivariate time series through biplots.

**Jana Greeff and Frances Minnaar:** How many stocks make a diversified portfolio?

**Michael van der Westhuizen and Zac Fagan:** The evaluation of zero-cost collar based hedging strategies in a foreign equity market.

**Danyelle McGregor and Theresa Theron:** Optimal structure for an impact investment fund: focused on education in developing countries.

**Reid Peattie and Tjaart van der Walt:** Variance reduction in Monte Carlo option pricing.

**Roland Breedt and Janneman van der Merwe:** Optimal foreign asset allocation in light of the 2022 amended Regulation 28.



## Statistics Postgraduate Picnic at Zorgvliet



Our postgraduate students and their Statistics lecturers gathered on 17 November 2022 for a most enjoyable celebration of our students' successes. The function was held at Zorgvliet wine estate in the beautiful Banhoek valley. Picnic baskets and a social atmosphere under the trees allowed for a wonderful environment where stories were shared, memories of lecturers were recounted and, in some cases, goodbyes were said. The afternoon gave all those present the opportunity to remember the good times and laugh about some of the not-so-good times. As a Department, we would like to wish every postgraduate student who has come to the end of their academic journey a successful career. May they realise the potential their lecturers have seen in them all along.

## Final-year cocktail function

*The final-year cocktail function was hosted on 20 October in the foyer of the Van der Sterr building. It was attended by third-year students and staff.*



## SPORTING ACHIEVEMENTS

### Staff soccer team wins national tournament

Denver Loggenberg, an admin assistant in the Department of Statistics and Actuarial Science, has been passionate about soccer since he was a young boy. In 2018, he joined the Stellenbosch University (SU) staff soccer team and in 2022, the team won the University Sport South Africa (USSA) national staff tournament in Makhanda (Grahamstown).

"We never thought of ourselves as the best, but we had worked hard during the year, playing games in our hostel league and preparing to do better in all areas of the game. When the referee blew the final whistle and we won, the team members were over the moon. All the players were ecstatic with the win and, of course, we celebrated our victory. It was a great experience and we, as a team, will never forget the moment we brought the Cup home," says Denver.

Well done Denver and team!



### Faculty Fun Day Volleyball

The Department of Statistics and Actuarial Science's "Mean Machine" volleyball team participated in the Faculty fun day on 4 November 2022. The team included Brayden Pather, Denver Loggenberg, Elizna Huysamen, Guy Konan, Heleen Randall, Luca Steyn, Mesias Alfeus (team captain) and Monica Matthews. Sadly, the team did not manage to bring the trophy home.

They won two games in the group stage, notably destroying the Bureau for Economic Research (BER) 21-3, and in their last match they were able to defeat the ever-competitive School of Accounting's "Blue Team", which was a momentous achievement.



## No half measures for these lecturers



Monica runs the TOM



Simon finishes the Gun Run

Road running drew renewed attention during the COVID-19 lockdowns and this extended to the Department of Statistics and Actuarial Science. Two of our Actuarial Science lecturers, Simon Louw and Monica Matthews, completed their first half-marathons this year. Monica ran the Two Oceans half-marathon in April and Simon the Outsurance Gun Run half-marathon in September. Now that their knees have recovered, they both have an eye on new challenges for 2023.

## Garrett Slattery plays the IBGA Vision Cup in Florida

Prof Garrett Slattery, head of Actuarial Science, was selected to represent the Rest of the World team in the 5th edition of the IBGA Cup (the International Blind Golf Association's version of the Ryder Cup) in September this year.

Two teams competed for the trophy over three days at the iconic TPC Sawgrass course in Ponte Vedra Beach, Florida, USA. The North Americans were attempting to wrestle the trophy away from the Rest of the World who had won it on the previous four occasions the event had been staged, the last being in 2019 in Ireland. In addition to playing, Garrett was the vice-captain of the Rest of the World team.

Conditions were, unsurprisingly, challenging for all players on the tough Sawgrass layout. Water was in play on almost all holes (not to mention the threat of the odd alligator) and the weather was hot and humid. The North Americans, who were clearly more accustomed to the conditions, got off to a strong start on the first day, although matches won by the two South Africans in the team, Garrett (paired with Australian Glenn Niciejewski) and Charlene Pienaar (paired with captain, Englishman John Eakin) kept things interesting. The second day, another good day for

the North Americans, extended their lead. On the third – and final – day, the singles matches saw the North Americans making the most of home ground advantage to take the Vision Cup for the first time.

"The hospitality and facilities were incredible. Despite our first loss, the Rest of the World team is already considering how best to get the trophy back in the next event in two years' time," reports Garrett.



## Master's student represents MiViSU in Portugal

The following presentations were delivered by staff or postgraduate students at conferences in the past six months.

**Name of conference:** 24<sup>th</sup> International Conference on Computational Statistics (COMPSTAT2022)

**Date:** 23-26 August 2022

**Place:** Bologna, Italy

**Title:** Sensitivity analysis of the choice of multiple imputation approach on categorical GPABin biplots

**Authors:** Nienkemper-Swanepoel, J., le Roux, N.J. & Lubbe, S.

**Name of conference:** 217<sup>th</sup> Conference of the International Federation of Classification Societies (IFCS2022)

**Date:** 19-23 July 2022

**Place:** Porto, Portugal

**Title:** Embedded word MCA biplots for sentiment visualisation: application to COVID-19 related tweets

**Authors:** Adams, Z., Nienkemper-Swanepoel, J., le Roux, N., & Lubbe, S.

Zoë-Mae Adams, a master's student in the Department, had the opportunity to represent the Centre for Multi-Dimensional Data Visualisation (MuViSU) at the International Federation of Classification Societies (IFCS) conference in July 2022 at the University of Porto.

According to Zoë-Mae, the local organising committee did a brilliant job in accommodating the presentations of almost 280 submissions from 42 countries, as well as showing off the beauty of Porto during social events.

"I am grateful for the opportunity to present my MCom research at an international conference. It was both a reward for the hard work, and also a motivation to continue my research in the future," she says.

The presentation on "Embedded word MCA biplots for sentiment visualisation: Application to COVID-19 related tweets" showed how sentiment classification and multivariate visualisation can be combined to convey information on tweets obtained using the keyword "COVID".

The aim of the study was to gain insight from text through the quantification of the sentiment and underlying context from available text data. This was achieved by enhancing existing visualisation techniques to graphically display the sentiment within the text.

The methodology presented in this study adds to the developing field of sentiment visualisation. In particular, the multivariate exploratory analysis of tweets, including the enhancement of embedded information, enables the simultaneous interpretation of information related to procured tweets, together with their associated sentiment scores and additional available information. This study will serve as a primer for further research on sentiment classification and visualisation.



*Zoë-Mae presents her research*

## Seminar programme: **First semester 2023**

Stellenbosch University  
Department of Statistics and Actuarial Science

24 February	<b>Jan Beirlant</b> (Katholieke Universiteit Leuven, Belgium) Estimation of tail parameters with missing observations
10 March	<b>Elmarie Nel</b> (Research Analytics, City of Cape Town) Data-driven decision making
24 March	<b>Johan Fourie</b> (Department of Economics, SU) Big data in history: Challenges and opportunities
14 April	<b>Wesley Pretorius</b> (Alan Gray, Cape Town) Monte Carlo simulations to determine the rate of work completion in an agile IT team
5 May	<b>Michael Meyer</b> (Hudsonthames, Johannesburg) Meta Labelling Architecture
19 May	<b>Peter Ouwehand</b> (AIFMRM, UCT) Modelling inflation and real rates when nominal rates can reach the zero lower bound


All seminars start at 13:00 in room 2048 of the Van der Sterr Building, c/o Victoria and Bosman Streets, Stellenbosch, but can also be attended via Microsoft Teams by using the following link:

[CLICK HERE TO JOIN THE MEETING](#)

### Share with us

We hope that you enjoyed this edition of the Department's newsletter, and we would appreciate your feedback. If you have some news you would like to share, or have ideas for future editions, please let us know. We'd love to hear from you.

Please contact Elizna Huysamen (krugere@sun.ac.za) with enquiries, suggestions for the newsletter or to be added to the distribution list.



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Statistics and Actuarial  
Science wishes its  
alumni, industry  
partners, students and  
staff a blessed festive  
season.