



## UESM Newsletter

Summer Edition 2021





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## Editorial

### *What a year!*

For many of us 2021 has been loaded with challenges. This not only includes the familiar challenges we faced in our research and everyday activities, but also challenges on a personal level as well as global with Covid-19 still in our midst.

Despite all the lemons this year has given us, we were able to make a wonderfully sweet lemonade by concluding the year with an amazing awards ceremony. The ENVIRA-UESM Academic Recognition Function celebrated great achievements amid all the trials we faced. It is a clear testimony to hard work and perseverance during the past two years – a sure beacon of hope and expectation towards the new year.

In this edition of ENVIRA we reflect on the year 2021.

Join us as we look back on the year starting with a Letter from the UESM Director and a tribute to the late Prof Calie Schoeman. Our sincere condolences to his loved ones, our thoughts and prayers are with them, and our hope is that they'll be surrounded with love, peace, and many wonderful memories in this unfortunate time.

We further commemorate multiple events that took place despite uncertainties and cancellations of international travels. The reflection articles illustrate the value of much needed 'face-to-face' interactions with students and colleagues.

Finally - and for several readers, the highlight of the ENVIRA Summer editions - we announce the winners of the ENVIRA Photography Competition 2021.

We would like to thank everyone who have submitted their photographs and participated in the competition this year. Congratulations to the winners of each of the eight categories. We are extremely proud to showcase your marvellous pictures in this edition. It's certainly one of our favourite annual features.

With this final edition of 2021 we happily wish you a wonderful, well-deserved holiday and quality time with your loved ones.

### *See you in 2022!*

Clarissa Minnaar (Sub-editor)  
and Frances Siebert (Editor)





# Letter from the Research Director

Professor Carlos Bezuidenhout

The year 2021 started with a bang and now we have come to the end of it. The year had its challenges, specifically with regards to COVID-19 regulations and protocols. We were fortunate that the impact of positive cases was not severe. Some of our members tested positive and laboratories had to be closed and sanitized based on current protocols. We have however, seen the year through as important research sampling and field trips could continue as planned.

The staff were actively involved in postgraduate training many of our students completed their MSc and PhD studies. Once again, the research outputs in terms of peer reviewed articles, books and book chapters were remarkable in numbers and also in quality.

Incorporation of the ex-Centre of Environmental Management (CEM) staff will be completed. Prof Johan Nel, previous director of the CEM, retired in 2021. Prof Johan was also the risk champion of the faculty. He has however, groomed Jurie Moolman that will resume the role of risk champion for FNAS. Furthermore, Prof Luke Sandam will retire at the end of 2021. We wish both Professors Johan and Luke all the best with their retirement. Prof Luke will be taking on a role as extraordinary Professor in the UESM.

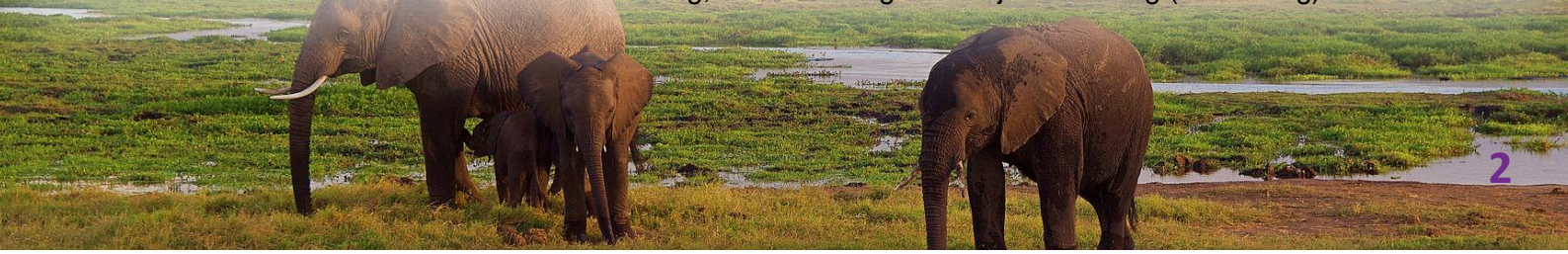
Sadly, Prof Callie Schoeman passed away in the cause of 2021. Prof Callie was an extraordinary Professor appointed in the UESM. He was still active in Urban and Regional Planning when he passed away. His passing left a real gap in this subject group and the sub-programme. He will be remembered fondly, as was emphasised by Prof Ernst Drewes in his [Tribute to Prof Calie Schoeman](#).

Two senior professors were appointed in the School of Geo and Spatial Sciences, one in Geology (Prof Frank Neumann) and one in Urban and regional planning (Prof James Chakwizira). We are looking forward to the contributions of these two staff members and the diversity that their research will bring to the UESM.

Many of our staff and students attended local conferences in person and international conferences in virtual/hybrid mode. These students presentations were excellent and they were awarded for these achievements. I am really hopeful that in 2022 we will be in a position to attend international conference in person. Travel bursaries will be made available to students for such events for those that have published.

Although the student administration is still a well-oiled machine, throughput rates are, in some cases, a concern. This was also reported in review processes that was conducted within the broader NWU. To ensure that we improve the throughput rate of all our students we will engage in 2022 to determine how we could further improve our processes.

The numbers of NRF rated scientists in the UESM are on the increase. Furthermore, there is also an increase in the numbers of NRF B -rated researchers. Although not all NRF evaluation panel outcomes have been finalised by the time of printing and therefore, some colleagues still awaiting their application outcomes, we have received the good news that Prof Louis du Preez obtained a B2 rating, and Dr George van Zijl a C2 rating (new rating).





## Letter from the Director



Several of members were also promoted during 2021. This process in a very transparent one and staff is encouraged to discuss options with the School or Research Director.

In 2021, the UESM members were once again excellent at community engagement and really go out of their way to participate in this at various levels. Ms Sascha Roopa and Dr Lesego Molale-Tom are the Community Engagement champions and keep records of activities. UESM Members contribute to [expert interviews](#) on various radio stations, TV stations and newspapers. They are also active in the broader local communities, interacting with community members, commercial and subsistence farmers, going to schools and even [nursery schools](#) to nurture the love for goggas and mielies, appreciate quality water and air etc. Colleagues, thank you for your contributions and please continue to keep Lesego and Sascha busy.

I would really like take this opportunity to thank you all for your participation in the strategic planning meetings that were held in November. I received the report from the facilitators and is currently working through it. In February the subprogramme managers will have a session to craft a New Business Model based on the Osterwalder format. This will inform the strategy that the UESM will follow.

When you drive past the M campus (i.e. previously known as 'EcoRehab') on Thabo Mbeki road you will see a lot of activity. There is new greenhouse for Agriculture undergraduate training, a garden is developing, a new fence is being erected, new microplots and breeding chambers were built, and installations have been completed. Further developments include moving of the open-tops to this facility and further upgrades. The planned move of Zoology and Microbiology laboratories and offices to G23 is on the cards. Discussions on the development of the research farm at Pienaarskamp is also underway.

Colleagues, at this time in our history, the medical world is grabbling with the COVID-19 pandemic, particularly the emergence of a new variant, OMICRON that was announced just a week ago. Lessons learnt over the past 2 or so years is what is currently guiding the approach that we have available to fight this disease and to prevent the spreading. Vaccination is a powerful tool to protect us against severe disease and hospitalisation. This is the message from medical and epidemiology experts. It is not yet mandatory in many spheres of the South African society. Some institutions of higher learning have already made vaccination mandatory for staff and students. I urge everyone of our members in the UESM to get vaccinated and to take boosters when available.

The NWU is developing a special SOP for line managers to manage the vaccination scenario, specifically how unvaccinated staff should be managed. It is anticipated that this will be finalized towards the middle of January. If we consider the recommendations, guidelines, SOPs, regulations, we can conclude that we have now really reached that NEW NORMAL.

This 2021 overview is demonstrating that the UESM is vibrant and as members we are doing the main things, Research, Teaching and Community engagement. This would not have been possible if we did not have a good foundation. I would thus like to acknowledge the contributions of Prof Nico Smit, previous UESM director and Victor Wepener, previous School of Biological Sciences (SBS) director for their contributions in the foundations that were laid. To Prof Sarina Claassens (SBS) and Prof Stuart Picketh (SGSS) thank you for the drive and the constant support that you are giving the UESM.

Colleagues you must enjoy a safe Christmas break with family and friends, rest well and return refreshed in 2022. Those of you that will be traveling, please travel safely.

All the best for 2022

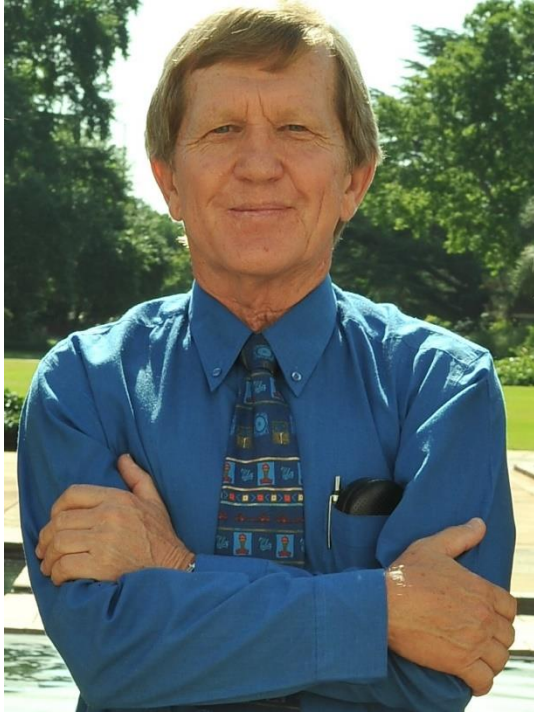
Carlos





# Tribute: Prof CB (Calie) Schoeman

Ernst Drewes



Prof Calie (as we knew him) served as Extraordinary Professor in the Research Unit for Environmental Sciences and Management until his untimely passing on 27 June 2021. Prof Schoeman joined the North-West University in 2002 and served as Subject Group Chairperson for Urban and Regional Planning numerous years. Since 2015, he was appointed as Research Professor in the Unit for Environmental Sciences and Management, due to his crucial and continuous involvement and contribution in the subject group Urban and Regional Planning.

Prof Calie was a registered Professional Town and Regional Planner as well as a Professional Construction Project Manager and a Member of the Municipal Engineering Institute of South Africa (IMESA). He published widely and delivered numerous Masters- and Doctoral-students throughout the years, and continued to do so until June this year. One of his main contributions and legacy will be as Project Team Leader for the Competencies and Standards Project of SACPLAN (Phase 1 and Phase 2, 2015-2016) and the Project Manager for the formulation of Capacity Building Guidelines in Urban and Regional Planning for IMESA (2014-2016). He continually advised for both these entities from his capacity as Professor at the North-West University.

We remember Prof Calie fondly for his burning passion for all forms and functions of spatial planning, and endless interesting discussions in the hallways about future trends and life in general. Prof Calie made an impact on so many students' lives during his time in Potchefstroom – and that is the one thing he will be most remembered for – we thank him for always being available and the invaluable advice offered to so many students.

**In the words of Prof Calie** (excerpt from the 50 year celebration publication of the NWU Urban and Regional Planning):

**“Die reis het pas weer begin. Nuwe bemanning sal weer aan boord kom. Tegnologie laat ’n spoor van vernuwing op opleiding, navorsing en ontwikkeling. Mag ons nooit die bestemming bereik nie, laat ons voortbou, altyd indiens staan van ons land, sy mense, gemeenskappe en in verantwoordelikheid van ons hulpbronne. Beplanning is werklik ’n wenprofessie. Die professie is in goeie hande, maar stap in diep voetspore.” C.B. Schoeman, 2015.**

**Translation:**

***“The journey has just started anew. New crew will come on board. Technology leaves a trace of innovation in training, research and development. May we never reach the final destination, let us continue to build, always in the service of our country, its people, communities and in responsibility of our resources. Planning is truly a winning profession. The profession is in good hands, but is following in deep footsteps” C.B. Schoeman, 2015.***



# ANNOUNCEMENTS

## UESM: eFUNDI FORMS

### Get all the Admin forms here – the UESM One Stop Source

Did you know that all the procedures and documents for UESM staff and students are uploaded onto a single eFundi page?

Click on this link to visit the UESM eFundi portal:

<https://efundi.nwu.ac.za/portal/site/f39464c0-cfe7-41c4-9ab1-5bbea6d0afbc>

This site contains the latest version of the most important forms used by the unit.

*"ETHICS IS KNOWING  
THE DIFFERENCE  
BETWEEN WHAT YOU  
HAVE A RIGHT TO  
DO AND WHAT IS  
RIGHT TO DO."*

*POTTER STEWART*

## ETHICS

Visit the [FNAS eFundi link](#) for a detailed summary of the ethics process.

For any queries or assistance, please contact:

Madelien Burgers:

[37630067@nwu.ac.za](mailto:37630067@nwu.ac.za)

Roelof Burger:

[Roelof.Burger@nwu.ac.za](mailto:Roelof.Burger@nwu.ac.za)

More information on Ethics [here](#).

## CHANGE YOUR AFFILIATION ON RESEARCH GATE

### Change your affiliation to the Unit of Environmental Sciences and Management on Research Gate

This is easy to do! You can complete it in less than a minute the next time you log on to your Research Gate **'profile'** page. This is the page with your name, photo and other info. On the right there is a box with the heading **'Current Affiliation'**. If under 'Department' it states **'Unit for Environmental Sciences and Management'** you have nothing further to do. If anything else, then click on 'edit' to the right of **'Current Affiliation'** and then **'edit current affiliation'**. Under 'Department' scroll and choose **'Unit for Environmental Sciences and Management'**. Do not copy and paste, just start typing and it will appear. And then right at the bottom click 'save'.

Welcome to one of the most active, dynamic and productive research communities of the NWU!



## Congratulations

The following awards and accolades demonstrate the high quality and significant impact of research and teaching within the UESM.

### Prof Nico Smit

The Research Entity Evaluation Committee (REEC) was established to provide expert advice to the Institutional Senate through the Institutional Committee for Research and Innovation on research programme quality within recognised research entities and -centres of the NWU. Furthermore, the REEC advises institutional- and campus management on research policies and procedures for the promotion of research.

**Prof Nico Smit** was appointed as the chairperson of the Research Entity Evaluation Committee (REEC) of the Senate Committee for Research and Innovation.

### Willie Landman

The Southern Africa Association for the Advancement of Science ( $S_2A_3$ ) presents several prestigious awards to promising postgraduate students and young as well as established scientists.

**Willie Landman** (Main supervisor: Prof Louis du Preez) was awarded the  $S_2A_3$  medal for his dissertation: **Madagascan polystome (Monogenea) diversity and taxonomy**.

The  $S_2A_3$  medal serves to commend and encourage local science students at Masters level. This award is made at the discretion of each university to the best Masters degree student in a scientific discipline.

### Anja Vermaak

The Southern African Society of Aquatic Scientists (SASAqS) is a learned society concerned with the research, management, and conservation of inland waters throughout southern Africa.

**Anja Vermaak** (Main supervisor: Prof Nico Smit) was awarded the Bronze medal by SASAqS for her dissertation: **Diversity of digenean trematodes of *Clinus superciliosus* (Linnaeus, 1758) from the coast of South Africa**.

A Bronze medal recognises the exceptionally high standard of a dissertation by a junior scientist or manager. This medal is awarded to the best student thesis in a year, motivated by the supervisor and judged by the medals committee.



RESEARCH AND INNOVATION



SOUTHERN  
AFRICAN  
SOCIETY OF  
AQUATIC  
SCIENTISTS





### **Prof Driekie Fourie and Mr Raymond Collett**

The Nematological Society of Southern Africa (NSSA) is committed to advance the science of Nematology in Southern Africa. The Society promotes the exchange of information by holding regular symposia and thereby expands knowledge in all phases of the subjects.

**Prof Driekie Fourie** and **Mr Raymond Collett** were elected as executive board members of the NSSA for the 2021-2023 term. Together Prof Driekie (serving as the next NSSA symposium chairperson) and Raymond will take on the arranging and hosting of the next NSSA symposium.

### **NWU students at the 23<sup>rd</sup> Symposium of the Nematological Society of Southern Africa**

The following students performed outstandingly at the Nematological Society of Southern Africa's 23rd symposium, which was held from 19-23 Sept 2021 outside Tulbagh, Western Cape province:

Student posters:

1st Prize - **Ilze Horak**

2nd Prize - **Izandie Wiese**

3rd Prize - **Marisa Meyer**

Student oral presentations:

1st Prize - **Ane Loggenberg**

3rd Prize - **Gerhard Engelbrecht**

George Martin Memorial Scholarship for 2021 - **Marne Pretorius**

These students made valuable contributions, in their achievements and by showcasing the NWU as a research and teaching institution together with the other institutions involved, namely the ARC, SASRI.

(View more on this symposium in the [Reflections](#) section)

### **Marlize Muller and Loewan Erasmus**

The Joint Student Symposium on Grassy Biome Ecology was initiated in 2021 to provide students, postdocs and researchers in grassy biome ecology with an opportunity to communicate their research to fellow ecologists from the NWU Forb...(FERG), the NWU GeoEco Lab and from prof Sally Archibald's team from the Animal, Plant and Environmental Sciences (APES), University of the Witwatersrand. The symposium event took place on 14 October 2021 at the Lekwena Wildlife Estate.

The following students from the FERG performed exceptionally well and received subsequent awards for their presentations:

**Marlize Muller** (PhD) - Student's Choice award

**Loewan Erasmus** (MSc) - Best Presentation

(View more on this symposium in the [Reflections](#) section)





SCIENTIFIC  
AMERICAN®



Beeld

Jou wêreld, Jou koerant



Accolades

# UESM Media Personality Summer 2021

Professor Henk Bouwman

Since the 1980's professor Bouwman has interacted with broadcast and print media. He has conducted many radio interviews (live and recorded) in South Africa and internationally, reaching millions of people. He has even been quoted on CNN's website. His research has covered front-page articles of several newspapers a couple of times. He participated in a number of TV shows such as 50/50 and Carte Blanche, two of which were award-winners. One appearance was on a live SABC TV news interview in studio.

Below are the links to some of the media highlights:

[Carte Blanche Twitter Feed](#)

[French Scientific American production](#)

[RSG \(2021\)](#)



Back to buttons



# Top 10 most cited and published post-doctoral fellows 2020-2021

	<u>Sub-programme</u>	<u>Number of Publications</u>	<u>Citations</u>
Edward Netherlands	BCE	12	117
Milad Rashidifard	IPM	12	35
Kazeem Alayande	EIER	11	54
Brigitte Language	CCAQI	11	37
Tomi Olatunji	EIER	7	57
Yaroslav Syrota	BCE	6	18
Bianca Greyvenstein	IPM	6	17
Abdullahi Jimoh	EIER	5*	114
Aline Acosta	AEH	5*	88
Oladayo Idris	EIER	5*	72

## Why 'The Calliper'?

A calliper is an instrument that measures the diameter of an object. In this

*Regulars* item, we measure and reflect on scientific outputs in the UESM.

## How the top 10 most cited and published post-doctoral fellows were determined:

This list is based on citations and publications of UESM-affiliated post-doctoral fellows as reflected by SCOPUS from 1 January 2020 to 3 December 2021.

*The number of post-doctoral fellows in the UESM: 26*

*\* Seven postdocs published 5 papers during 2020-2021. The three with the highest number of citations were included in the list.*





# Research Ethics in Environmental Sciences and Management

Ethics

Roelof Burger

The Senate has decreed that all research, including those by MSc and PhD students, should have an ethics number and all studies need an ethics review. Higher degree administration requires that all students have a unique ethics number before they are allowed to submit. Ethics approval is only given for one year. Renewal of the ethics certificate is done after an annual review. Researchers and supervisors should be cognisant that ethics approval should be obtained before research can start.

Click [here](#) for more on the dates, procedures, forms and information to obtain ethics approval described on the FNASREC page.

If you are interested to contribute towards ethics in FNAS, please contact:

Madelien Burgers: [37630067@nwu.ac.za](mailto:37630067@nwu.ac.za)

Roelof Burger: [Roelof.Burger@nwu.ac.za](mailto:Roelof.Burger@nwu.ac.za)

## What you need to know about ethics in the Unit for Environmental Science and Management

1. All research needs to be reviewed by one of the ethics committees at the NWU, including masters and doctoral students.
2. No research is allowed to start without an ethics number.
3. No student is allowed to submit his dissertation without an ethics number from one of the NWU ethics committees.
4. The ethical responsibility of student studies lies with the supervisor, not the student.
5. For low and no risk studies, the process is fairly quick and painless. Start by submitting an application to <https://tinyurl.com/fnasrec>







Webinar attendees



**Keynote Speaker Dr Jinal Bhiman**  
**Principle Medical Scientist from the**  
**National Institute for Communicable**  
**Diseases (NICD)**

## Community projects

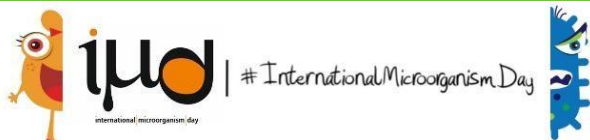
# Coronavirus and the perceptions of vaccines

**Tumelo Muteme, Lee Chenhaka  
 & Lesego Molale-Tom**

South Africa has recorded over 2.8 million Covid-19 infections and administered close to 31 million vaccine doses. The North-West University (NWU) proved that not only is it dedicated to teaching excellence, but also community engagement and an ethic of care by serving as a vaccination site where over 21 000 doses were successfully administered on the Mahikeng, Potchefstroom and Vanderbijlpark campuses. Apart from administering the vaccine to the public the NWU has also ensured that it educates the public about Covid-19, and the myths and facts surrounding the vaccine. On the 17<sup>th</sup> of September **Prof Rodney Medupe, deputy dean of community engagement within the Faculty of Natural and Agricultural Sciences** highlighted the need to commemorate International Microorganism Day (IMD) annually to educate the public. The Microbiology subject group in the School of Biological Sciences have commemorated IMD since its inception in 2018.

The webinar was hosted by the Microbiology subject group (Potchefstroom and Mahikeng) at NWU: **“Corona-virus and the perceptions of vaccines”**. **Dr Jinal Bhiman, principle medical scientist at the National Institute for Communicable Diseases (NICD)** was the keynote speaker at the event. She kicked off her talk by giving a brief description of what the SARS- CoV-2 virus looks like, what it is made of, and its background. **Dr Jinal** stated that, the main reason for the current global crisis can be attributed to asymptomatic infections and transmissions that occur before symptoms are developed. The rapid transmission rate of Covid-19 has led countries all over the world to focus on quickly building immunity by rapid deployment of vaccines. Although most of the vaccines were produced and approved within a year, Dr Jinal said a lot of the background work for these vaccines comes from years of research and studies for the MERS-Coronavirus and SARS-Coronavirus vaccines. She added that scientists all over the globe had been working on these vaccines after identifying the potential risks that these viruses pose. Vaccination protects oneself from severe infection and death. One has a higher chance of succumbing to the virus if they are not vaccinated. She also touched on the latest data that shows that vaccines have a minimum durability rate of approximately four months. It is likely that vaccinated individual will need to get booster shots at some point.





Webinar attendees

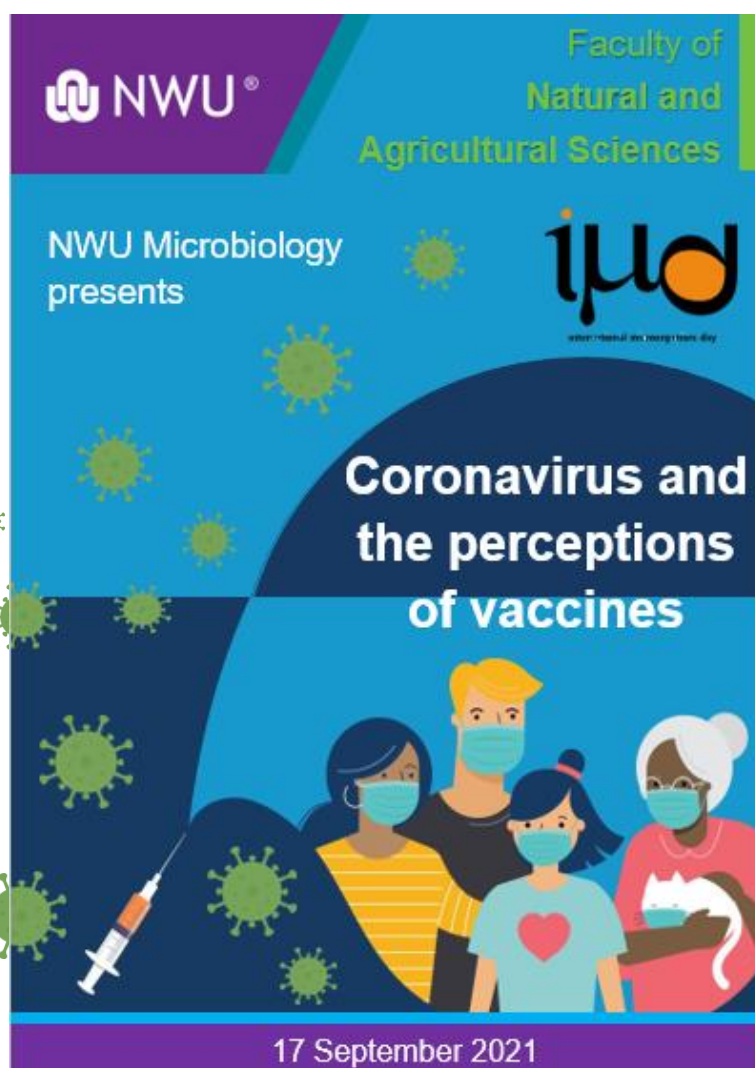
Prof Carlos Bezuidenhout, research director of the Unit for Environmental Sciences and Management, thanked the hundreds of staff, students and stakeholders that attended and participated in the webinar. He went on to thank Dr Jinal for her inspirational talk and her ability to simplify complex scientific information. The webinar reached an audience of 55 active participants on Zoom and 45 active views on YouTube. During the Q&A session, burning questions from the public was addressed. To date the webinar shows that 397 people have viewed this community outreach webinar. Look out for more educational community outreach webinars such as **World Antimicrobial Awareness Week 2021** on the 18<sup>th</sup> and the 22 – 23<sup>rd</sup> November 2021.

Click here to view the webinar:

<https://www.youtube.com/watch?v=imPSwK37lw0>

Click here to view the programme:

<http://natural-sciences.nwu.ac.za/sites/natural-sciences.nwu.ac.za/files/ENVIRA/IMDCommunityEngagementWebinarENVIRA.pdf>







River Red Gum in full flower with conspicuous white stamens.



Dark bark flaking to reveal smooth, white-grey bark beneath.

## The second largest tree on campus is a weed

Stefan Siebert

In the Spring 2021 edition of ENVIRA we introduced you to the [largest tree](#) on the Potchefstroom campus, namely *Platanus wrightii* (Arizona sycamore). In this edition we will feature the second largest tree on campus, [Eucalyptus camaldulensis](#) (River red gum), which is also an exotic species. It originates from Australia where it is endemic. It was introduced to South Africa in 1870 as a fast-growing, multipurpose tree, but became naturalised rapidly and is now considered to be an aggressive invader. It is classified as a Category 1b Invader in South Africa and requires compulsory control as per the Alien and Invasive Species Regulations of the National Environmental Management: Biodiversity Act, 2004 (Act No.10 of 2004). It is generally regarded as a poster-child example of a conflict-generating exotic species.

Notwithstanding its ignominious contribution towards the rapid depletion of water resources and transformation of riparian areas, majestic specimens of the River red gum remain scattered in urban areas across the Highveld of South Africa. One such a specimen is found at the Meyer Street entrance of the campus on [one of our tree routes](#). It is 25 m tall, has a mean crown width of 24 m, and a stem circumference of 542 cm. With a Size Index of 159, it is one of four trees on campus that have an index score over 150. However, our River red gum is regionally not considered to be a 'big' specimen, as the Wits Campus Tree in Johannesburg, that was planted 90 years ago, has a size index of 321, and the Waterkloof Giant in Pretoria boasts an index of 292. Albeit its lessor bulk, our tree is truly a champion on campus!

*Eucalyptus camaldulensis* belongs to the Myrtaceae (Guava family). The genus *Eucalyptus* is an exceptionally large genus with over 700 species, of which only a few occur naturally outside Australia. The name *Eucalyptus* has an interesting origin, with *eu* derived from Ancient Greek meaning 'good, well, true, beautiful' and *kalypto* meaning 'cover, conceal, hide' referring to the operculum covering the flower buds. The specific epithet *camaldulensis* refers to a private estate garden near the Camaldoli Monastery in Naples, Italy, where it was first cultivated in the early 1800s.

Similarly to the Arizona sycamore, the River red gum is a riparian species that rapidly colonises water courses and floodplains. It is therefore not rainfall dependent, but it is a thirsty tree that requires a constant supply of groundwater to thrive. It has a deep root system reaching depths of more than 15 m which allows it to withstand long periods of low rainfall, making it a very hardy species. It is also cold resistant and is commonly cultivated on the Highveld.

The River red gum is easily recognised by its smooth, peeling bark with white, grey and ochre patches. Blue-green, hairless leaves are





Curved, lance-shaped leaves.

alternate, lance-shaped and curved, with numerous secretory cavities. Leaves have high concentrations of cineole-based oil that produces the typical camphoraceous, woody-sweet scent when crushed. Inflorescences are 7-9 flowered and flowers are characterised by a beaked 'lid' (operculum) which protects the fertile parts of the flower. Fruit a dry capsule containing tiny yellow seed (1 mm long).

The Red river gum is a favourite timber tree with the wood having a fine polish and is used to make furniture. In the Potchefstroom region, with its icy winters, firewood of this tree is popular. Plantations of this species also provides much needed shelter for livestock during cold and wet weather on the Highveld. The nectareous flowers are pollinated by bees and makes this tree a favourite with beekeepers. Tall specimens provide roosting sites for *Falco naumannii* (Lesser Kestrel), as well as breeding sites for *Haliaeetus vocifer* (African Fish Eagle).

**The River Red Gum at the West Campus entrance is the second largest tree on campus.**



[View enlarged map](#)

A Champion Tree route has been developed for the campus. It takes you to the 10 largest trees on campus and is a nice 5 km walk. (Map created by Wynand Muller).



# Science Fact Box



**'Bad science': Missing grasslands**



**Your next cup of coffee grown in a lab**



**Albatrosses divorce in warmer water**



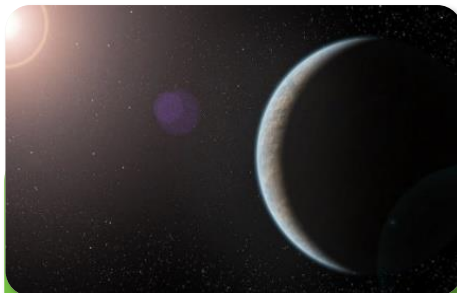
**'Wishcycling': Be good at recycling**



**Dragonflies migrating across Indian Ocean**



**How cities are going carbon neutral**



**Rocky exoplanets stranger than we thought**



**The earth's secret miracle worker**



**Baby seals can change their tone of voice**



**Whale conservation and CO<sub>2</sub>**



**Making aircraft fuel from sunlight and air**



**A planet outside of our galaxy**



# Reflecting on 2021

## The Tsitsikamma Living Laboratory

**Victor Wepener**

The Honours module on Estuarine and near-shore marine ecology is the only one of its kind at an inland university in South Africa. What makes the module truly unique is the Living Lab that forms the core of the course. The Tsitsikamma Living Lab is the opportunity where theory and the practice are brought together. During the week-long course the theoretical aspects that were dealt with in class are brought to life through focused daily programmes addressing aspects of intertidal and estuarine ecology. On the first day the biodiversity of the intertidal pools of the Tsitsikamma rocky shore is explored. The following day animal distribution patterns related to tidal activity are studied. On day three students test hypotheses related to predator-prey interactions and this is followed by a holistic assessment of different habitats and their relation to energy flow in the intertidal region. On the final day students study the changes in faunal diversity

along the changing physical and chemical habitat of the Groot River Estuary in Natures Valley. The course presents students with an international and cultural diversity experience through the participation of undergraduate students from The University of Hong Kong and Arkansas State University. Lectures were presented by marine ecology experts that included Prof Gray Williams (Hong Kong) and extra-ordinary Professors Paul Sikkell (University of Miami) and Neil Bruce (Australia). This unique “learning by doing” experience that NWU students are exposed to is aptly summarised by one of the international students: “by stepping out of the classroom in this beautiful natural laboratory, they get to feel and experience the enthusiasm and love for nature. They actually get to see what is in their textbooks, in real life”. Watch video [here](#).



Seine net sampling in the Groot River Estuary



Sampling the intertidal rocky shores of the Tsitsikamma



Camping experience during the Tsitsikamma Living Laboratory



Group photograph with students from NWU, University of Johannesburg, The University of Hong Kong and Arkansas State University



## Reflecting on 2021

### Research visit to United States

**Rasheed Adeleke**

Prof Rasheed Adeleke, the research group leader for Environmental Microbiology and Agricultural Microbiology research group, recently made a research collaboration visit to the United States. This is in relation to his Dimension of Biodiversity project, which is sponsored by National Research Foundation of South Africa and National Science Foundation of the United States. Prof Rasheed Adeleke is the PI from South Africa while Prof Teresa Pawlowska is the PI from the United States.

The research visit is part of the objectives of the research project and during the visit, Prof Adeleke was involved in the following activities:

- Sampling of plants at different sites
- Meetings with project team members
- Meeting with a new collaborator; Prof Nancy Moran of the University of Texas, Austin.



Prof Rasheed Adeleke(right) with Prof Nancy Moran of the University of Texas



From Right, Prof Teresa Pawlowska, Prof Rasheed Adeleke, Dr Kevin Amsees and Dr Nicole Reynolds during the visit for sample collection at Boyd Deep Canyon Desert Nature Reserve, California, USA



## Reflecting on 2021

### Joint Student Symposium on Grassy Biome Ecology

**Frances Siebert**

On 14 October 2021 the Forb Ecology Research Group (FERG) and GeoEco Lab from the UESM (NWU) hosted a Joint Student Symposium at Lekwena Wildlife Estate. Professor Sally Archibald, a leading international scientist on grassy biome ecology from the Animal, Plant and Environmental Sciences (APES) from Wits University and her students joined the event to enhance the research networking experience among students and colleagues.

During this special event, 16 students had the opportunity to communicate their research to fellow scientists that are equally passionate about the ecology of African grasslands and savannas. The scientific programme was packed with research questions related to an improved understanding of grassy biome ecology under complex environmental changes, such as drought, fire, grazing and land-use intensification.

For BSc Hons students, this was their very first exposure to a daunting face-to-face scientific audience.

They faired very well and used the opportunity to discover the value of a more personal scientific event, which proved to be much more satisfying than presenting research outcomes to a computer screen – something that has been the norm for the past 19 months.

After the floor presentations, participants had the opportunity to 'brainstorm' in groups, after which we came up with several state-of-the-art research questions to guide future collaborative research in grassy biome ecology between our universities. The event was closed by an award ceremony, where students were rewarded for their hard work.

Colleagues and students from FERG, GeoEco (NWU), and APES (Wits) are grateful towards the Director of the School of Biological Sciences for providing our students with this unforgettable scientific experience!



FERG, GeoEco & Wits group photo



We were surprised by a special guest during the proceedings, which was quite fitting considering the topic of the symposium



Prize winners (top to bottom: Londiwe Mokoena (Wits), Loewan Erasmus, (NWU) Marlize Muller (NWU)) with Prof Frances Siebert



## Reflecting on 2021

### NWU Parasite Workshop 2021

**Anneke Lincoln-Schoeman**

In a week filled with thought-provoking discussions, enlightening presentations and good coffee, staff and postgraduate students from the UESM's Water Research Group and African Amphibian Conservation Research Group participated in the NWU Parasites Workshop held from 21 to 25 June 2021 at Claassen & Company in Potchefstroom.

In part, this was a satellite meeting of the British Society for Parasitology's "Parasites Online 2021" Conference. Dr Lizaan de Necker presented a talk on the virtual conference platform about her research on schistosomiasis and climate change. Furthermore, 15 NWU parasitologists had the opportunity to participate in the conference via posters, which they also presented locally in the form of speed talks. For some of the postgraduate students, this was their first international conference experience.

The fruitful discussions that followed each of the local poster presentations was most of the participants' favourite part of the week. In the words of Ms Anja Erasmus: "I enjoyed seeing how another research group approached problems and the discussions on the results from everyone's research was refreshing during this time of science-in-isolation."

The programme further included workshops aimed at fostering collaboration and equipping the parasitologists of tomorrow. This included workshops on academic publishing (presented by Prof Nico Smit), data capture and management (Prof Louis du Preez and Dr Yaroslav Syrota), statistics (Prof Victor Wepener) and automated taxonomic descriptions (Dr Kerry Hadfield-Malherbe). True to the theme of "Parasites Online", the value of social media for scientists was also discussed, leading to fervent tweeting under the #FrogFish banner.



Participants (those who presented at the BSP conference indicated by an asterisk)

Absent from photo: Geraldine Oosthuizen\*, Lizaan de Necker\*

Front row from left to right:

Anja Erasmus\*, Marliese Truter\*, Coret Hoogendoorn\*, Kerry Hadfield-Malherbe, Linda van der Spuy\*, Precious Preye Ayawei, Teneal Nel\*, Ané Jacobs\*, Joretha du Buisson\*, Louis du Preez\*

Back row from left to right:

Edward Netherlands, Nico Smit\*, Willie Landman\*, Bernie Jordaan\*, Yaroslav Syrota\*, Mofokeng Lehlohonolo\*, Anneke Lincoln Schoeman\*, Victor Wepener



Workshop attendees and participants



# Reflecting on 2021

## Nematological Society of Southern Africa (NSSA) Symposium

**Gerhard Du Preez**

The 23rd Symposium of the Nematological Society of Southern Africa (NSSA) took place from 19-23 September 2021 in the beautiful Tulbagh valley (Western Cape). Seeing as this was the first face-to-face Nematology conference since the start of the pandemic, we made the most of it and represented the NWU by sending a large delegation consisting of three staff members and seven students. We enjoyed a full and top-quality scientific program with sessions on soil health, pest control, entomopathogenic nematodes, taxonomy, among others. Even so, there was enough time to meet with colleagues, build collaborations, and

make new friends. Our students did exceptionally well after winning the 1st (Ilze Horak), 2nd (Izandie Wiese), and 3rd (Marisa Meyer) prizes for best posters, as well as the 1<sup>st</sup> (Ane Loggenberg) and 3rd (Gerhard Engelbrecht) prizes for best oral presentations. Congratulations also to their supervisors! Furthermore, Marne Pretorius was awarded the George Martin Memorial Scholarship for 2021, while Prof Driekie Fourie and Raymond Collet were elected as executive board members of the NSSA. Together Prof Driekie and Raymond will take on arranging and hosting the next NSSA symposium.



Members and affiliates of the Nematology research group of the NWU attending the 23rd symposium of the Nematological Society of southern Africa



Attendees of the 23rd symposium of the Nematological Society of southern Africa in Tulbach, Western Cape



# Reflecting on 2021

## Workshop to work on collaborative Water Research Commission research project

**Rialet Pieters**

The Covid-19 pandemic caused the slowing down of many research projects. Apart from the fact that travel for sampling purposes was prohibited for a long time, meetings and around-the-table discussions were relegated to virtual meetings. For most of us, a virtual meeting is a very poor substitute, so you can imagine my excitedness when most of us involved in an extensive research project could get together—for the first time—since the inception of the project in 2020. The topic of the project is about the value and application of effect-based bioassays for water quality monitoring. The project is a collaboration between the universities of Stellenbosch, Pretoria, South Africa, and the NWU, as well as consultants working in the aquatic environment of South Africa. Of course, not everyone was able to attend the week-long break-away but the core of the team was able to meet face-to-face. We spent a week at a holiday resort equidistance from everyone.

We thrashed out the meaning of definitions and the format of fact sheets for various assays, after brainstorming about the validity of which bioassays to include in the project. We chatted about approaches in the current study and talked about future collaborations. The interesting thing is that although we did not return with completed tasks, we were able to understand each other's viewpoint and we did write, and interacted with literature, having the luxury of uninterrupted thought processes. We worked outside on a porch seated around a big table and enjoyed the birds and the squirrels in the trees.

I returned with renewed energy and passion for this particular research project and I am newly convinced that we are spending time and effort on a very worthy project.



*We had such a wonderful break-away at a holiday resort close to Rustenburg and came back refreshed and with a new comprehension for each other's research*



# Reflecting on 2021

## Exciting and Engaging return for third year Geography students on VC

**Adeline Ngie**

The practical component of GEOG311 had been suspended in 2020 due to lockdown challenges. One of these challenges included the lack of remotely accessible commercial software packages in GIS and remote sensing. In addition, student licences were not available, and even if they were, some students had connectivity issues or no access to computers, electricity, and so forth.

Thankfully, through the 2021 evaluations, face-to-face (F2F) sessions in Covid-19 compliant computer laboratories on the Vaal Campus were re-instated. This was done through block-weeks during which much engagement took place. Although breaks between sessions were limited, it was absolutely worth all the effort!

There were various stimulating and motivating tasks for students during the F2F sessions, after which they were rewarded with NASA gym bags. This incentive kept students engaged throughout the group activities and fast-tracked the learning process as only the first correct answers were rewarded. The atmosphere in the lab was

electric as students worked towards the incentive, while cheering each other on. Group projects foster interaction and collaborative learning in this module. We were so grateful to be able to perform effective group work in these F2F sessions. The 100% student attendance also kept us all motivated during these intense block-weeks.

In conclusion of the module, a poll was conducted to assess the sessions for future improvement. It was clear that students were struggling to meet the demand from other modules during the period. Hence, to avoid student fatigue, collective planning with other colleagues is essential for these block-week periods. Nevertheless, students reported a positive overall experience as it gave them an opportunity to practice learned concepts (80% strongly agreed and 20% agreed). Of course, student-lecturer and student-student engagement during the module also greatly improved (75% strongly agree and 25% agreed) during our F2F practical sessions. We are looking forward to seeing what 2022 holds for GEOG311.



*Dr Adeline Ngie with third year geography students on the VC performing GIS & Remote sensing practicals in the computer lab*





## Reflecting on 2021

### Resilience Thinking in Ecology Excursion to Phalaborwa

**Frances Siebert**

In April 2021, nine Honours students in the Resilience Thinking in Ecology (OMSE613) module joined an international field campaign as part of the practical component of this core module. Students were accompanied by a team of researchers, volunteers, and postgraduate students from various ecological research fields. The excursion was fully funded by the German Federal Ministry of Education and Research through the SALLNet (South African Limpopo Landscape Network) project, in which prof Frances Siebert (module coordinator) is a South African collaborator. The broader aim of the field campaign was to assess how ecosystem multi-functionality responds to global environmental change, though the application of an international Rapid Ecosystem Functioning Assessment (REFA) protocol. This protocol was introduced to South Africa through an online training workshop presented prior to the field campaign. Thereafter, the team left to apply REFA at Selwane, a multifunctional village close to Phalaborwa.

The group of ~20 participants were divided into groups to assess a wide array of ecosystem functions through surveys of invertebrates, natural plants, crops, soil fertility and microbial decomposition. The team gained hands-on experience with field surveys to assess ecosystem functioning and -resilience in practice. Furthermore, working very hard through hot days and late nights, adjusting tight schedules to comply with COVID-regulations, and even dodging local riots in Phalaborwa, also taught them the meaning of true resilience in practice (i.e. being able to absorb shocks/disturbances while maintaining your function). The team came back enriched with knowledge, new friendships, and many important life skills.



Brainstorming and locating the SC21 sampling point



Students taking a break for a photoshoot with an elephant skull in the Mthimkhulu Nature Reserve



Typical herbaceous vegetation sampling session



Identifying herbaceous vegetation in croplands



Lunch at the local 'meeting place' - under a Marula tree



South African participants of the REFA project



## Reflecting on 2021

### Geological mapping excursion in Vredefort Dome

**Jaco Koch**

Between the 2nd and the 5th of October, the third year Geology students were able to attend the geological mapping excursion, following a period where practical classes and field excursions were limited as a result of Covid-19 protocols. Forty-four students in one of our largest third-year groups to date, spent four days mapping the Quartzite and Hornfels hills at Donkerfriet in the Vredefort dome to learn the basic principles of geological mapping. The students were able to visualise how the meteorite shaped the landscape by delineating faults. They were also able to identify that the lithology was overturned, finding impact melt which cuts through rock layers (also known as pseudotachylite) and describe the outcrops, all whilst hiking across fairly challenging terrain. Having missed out on the practical

aspects of geology due to Covid-19 the students were finally able to place the theory into practice. This was visible in the excitement and enthusiasm in which the student scaled the mountain of work required to produce a geologic map. The map, which is marked as practical assignment for GLGN321 was also their ticket for the geology tour hosted by Ricart Boneschans and Jaco Koch on the final day of the excursion. For the geology tour, we were joined by Gustav Engelbrecht from the Department of Environmental Affairs, who outlined the value and legacy of the Vredefort Dome Heritage site and gave the students a perspective on the balance between protecting a South African heritage and making sure that communities can function whilst minimising environmental impacts.



*Geology students in their natural habitat*



*Teamwork is the key to get to the top*



*The third-year group at the Sacramento granite quarry in front (and on top) of an exposed pseudotachylite breccia*



*According to Newton's third law of motion a group of students that goes up must "eventually" come down (especially when the lunch was at the bottom)*



## Reflecting on 2021

### YWP-NW presents: Quiz Night

**Louwrens Laing**

The Young Water Professionals-North West (YWP-NW) chapter had their first official event for the year. This followed after Covid-19 regulations against social events and gatherings were finally lifted. The event was a Quiz night which was open to all UESM members, in order to earn bragging rights in UESM. This event served as a fundraiser for future events, as well as an introduction to welcome young researchers working in the water sector to become part of the YWP.

The evening began with a conference feeling, where all the banners of the different departments in the UESM were stalled outside B15 - serving as a photo booth. These photos are used to start an archive database for YWP and its events in the North West province. Scientists old and young, from different specialist fields came to enjoy the night.

Altogether, 9 teams entered the competition. With the welcoming, the vision and mission of the YWP was explained and the current team was introduced. After all the formalities, the quiz night kicked off with a bang. The competing teams were tested with different general knowledge categories such as: charades, song names portrayed by only using emojis and places of South Africa, just to mention a few. Four teams made it through to the finale, just to end up in a tie. The tie breaker was dealt with 15 questions about water. At the end of the night, it was the Water Research Group (WRG) who celebrated victory. We would like to thank everyone who competed and helped organize the event. We hope to see more young water professionals at our future events. We promise to make these events relevant and enjoyable for everyone.



YWP organizing team - From left to right: Louwrens Laing, Annika Kruger, Ilzé Horak, Rohan Fourie



Quiz night winners & bragging right holders - Water Research Group



Honours team



Photobooth in the foyer



Quiz night action photos



# Reflecting on 2021

## International workshop on Grassland functional ecology and vegetation modelling

Frances Siebert

African grasslands are under pressure from changing climatic conditions and land-use intensification. AGrEc (African Grassland Ecosystem resilience to climate change) aims to enhance the scientific understanding of sustainable grassland management through the combination of field observations and modelling. This international project is designed for knowledge transfer enabling (a) African female scientists to conduct research on grassland resilience to climate change and land-use intensification and (b) education of young scientists.

As part of the initial phase of this international collaboration between South Africa and Germany, Prof Frances Siebert from the Forb Ecology Research Group in the UESM, Dr Susanne Rolinski from the Potsdam Institute for Climate Impact Research, and Prof Anja Linstädter from the University of Potsdam in Germany hosted a workshop on functional ecology and vegetation modelling at Wits Rural Facility in September 2021.

Participants included young researchers from national research institutions, postgraduate students, and young lecturers - all from across South Africa.

Participants joined field trips to investigate how land-use type affects the functional ecology of plants. Thereafter, the German researchers, who joined the workshop remotely due to COVID travel restrictions, presented lectures and demonstrations on functional ecology data analyses. Thereafter, participants were trained in applying field ecological functional data in vegetation modelling. After days of intensive modelling, participants could illustrate how they've applied a vegetation model to an ecological research question, then presented and defended their results during a mini symposium. What better place to celebrate Heritage Day and the successful completion of their presentations, than an afternoon trip to the Kruger National Park!



Field training in functional plant ecology



AGrEc workshop training areas for sampling standards and techniques



Students performing a leaf economic spectrum exercise



The AGrEc workshop team. Prof Anja Linstädter and Dr Susanne Rolinski presented their lectures virtually from Germany due to COVID-related travel restrictions and could unfortunately not join the field excursion in South Africa



## Reflecting on 2021

### "Padda Pret" at Woel-en-Werkskaf pre-primary school

Ché Weldon

On 30 August the classrooms at Woel-en-Werkskaf pre-primary school were literally teeming with frogs. Upon closer inspection it became apparent that the moving green objects were in fact the children dressed up in all kinds of creative wear to resemble frogs! I had the privilege of spending the day with these enthusiastic scholars while introducing them to the weird and wonderful world of frogs. I soon realized that following a strict program with these kids was way above my pay-

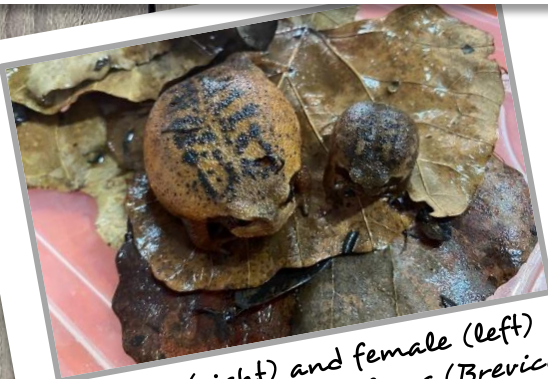
grade, so I settled for taking questions and addressing the issues that interested them, while negotiating the basic facts that I wanted them to take home. My day was rewarded when one of the classes sang me a frog song - boy do I wish I had a recording. This experience made me realize, once again, that a learning spirit is the door to success, and my hopes are that each one of these little tadpoles from W&W will grow up to be productive, young froglets in their respective societies.



Masked faces and green outfits display the children's playful enthusiasm for learning



Raucous toad (*Sclerophrys capensis*) displaying the characteristic parotid glands behind the eyes. Gloves protect the sensitive nature of frogs' skin



Male (right) and female (left) Northern forest rain frogs (*Breviceps sylvestris*). Sexual dimorphism displayed where the sexes differ greatly in size



Close-up encounter with live frogs. Seeing live frogs helps to enhance the children's experience and awareness



# Reflecting on 2021

## Plant Ecology Practical Excursion

**Frances Siebert**

Students registered in the Plant Ecology module (PLKS324) enthusiastically participated in practical field techniques training at Lekwena Wildlife Estate in October 2021. Although COVID-related restrictions have led to practical training outside of the optimal season for productivity and plant identifications, the need for face-to-face practical training in the field to students, who have missed out on several such opportunities the past two years, was addressed through this half-day excursion.

Students actively participated in discussions and were keen to learn more about practical applications of the

things that they have learned over a computer or cell phone screen during the past years. The overall realization of what we have missed out on was strongly evident, even for the postgraduate students who assisted with training in the smaller groups.

I am confident that students, lecturers, and postgraduate demonstrators are looking forward to more of such activities to realize in, hopefully, the nearby future.



Prof Jonathan Taylor illustrates water sampling for studying aquatic ecological processes



Terrestrial plant surveying techniques were introduced by prof Frances Siebert, after which students divided into smaller groups to conduct the surveys themselves



PhD student, Marlize Muller, illustrating plant surveying techniques in smaller student groups, during which field observations were enthusiastically discussed among participants



# Reflecting on 2021

## Successful practical's amidst an ongoing pandemic

**Lesego Molale-Tom**

Due to the COVID-19 pandemic, universities across the world have halted face to face teaching. The year 2020 was a year disrupted by the Corona virus, that changed the way in which we do things such as practicals. The University management was pro-active in their approach to make sure that essential practicals continue remotely. This necessitated the use of video material and eventually building a video library to teach the core skills of Microbiology. Lecturers quickly adapted to the new e-learning platforms and patiently helped the students familiarise themselves with the online platforms.

Fast forward to 2021, restrictions were eased and face to face practicals commenced. All the essential practicals were prioritised from first year to third year

modules. These practicals were successfully executed and students were happy to be back in the laboratory. A lot of changes had to be made on how and when practicals took place; such as full PPE, Social distancing, Capacity restrictions and frequent Sanitizing both your hands and working space. This would have never been a success story without the tremendous help of student demonstrators, who now had to work twice as hard.

We only recorded one COVID scare in the first semester third-year module, and the proper quarantine protocol was observed. By the second semester staff and students were now familiar with the new way of practicals during the ongoing pandemic.



Group members having fun during the antiseptics practical



Wearing the correct PPE attire & enjoying the practical session



Student sterilising her inoculation loop



Acid-fast staining



Endospore staining

Students performing staining protocols during their practical session



# Reflecting on 2021

## ENVIRA-UESM Academic Recognition Function

**Frances Siebert**

On the first day of the last month of 2021, colleagues and their partners joined in the festivities at The Feather Hill in celebration of academic achievements over the past year. For the first time in two years, event gatherings and functions were allowed, which prompted our UESM Director, Prof Carlos Bezuidenhout to gather a team of organizers to put together a memorable event. With Corene van der Merwe steering the event planning, one could certainly expect a classy venue, décor, and menu. Prof Carlos opened the evening with a [reflection speech](#), after which colleagues and students were acknowledged for their exceptional contributions to research in the UESM. To ensure transparent and fair distribution of prizes, the event team collated all

information from the Accolades section of the 2021 ENVIRA editions to acknowledge students, postdoctoral fellows, and staff members for their outstanding achievements over the past year.

The Master of all masters - GP van Rhee van Oudtshoorn, once again energized the audience with his sayings and songs, and together with his team of excellent musicians, triggered young and old to 'dance as if no one is watching'.

What a memorable evening filled with energy, synergy and gratitude for things that we have missed so dearly.



*Starry nights theme*



*Joyous moments with colleagues & friends*



*Professor Carlos Bezuidenhout making his introductory speech at the function*



## Photography Competition Need-to-Knows

A panel of judges were all invited to determine the winning image under the specified categories. Images were judged anonymously based on a pre-set list of criteria.

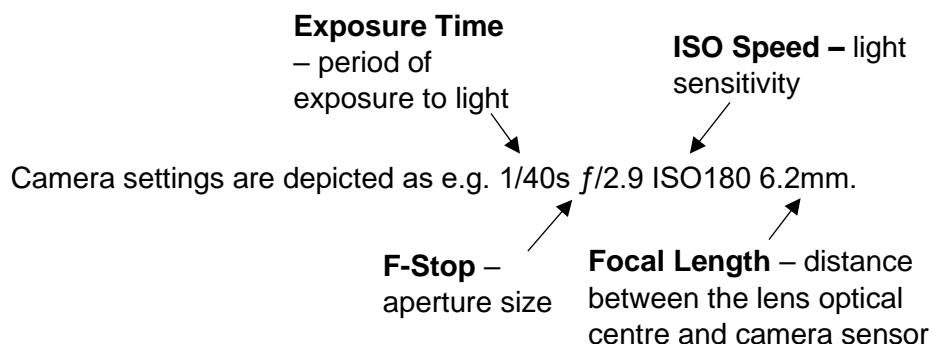
For comparability and fairness, microscopy images were grouped together under categories “SEM & TEM Microscopy” and “Light- & Stereo (Compound) Microscopy”

Creativity and originality of **image titles** contributed a fair amount to the overall point allocation.

In short, images were further judged based on:

- **Impact** – The sense or intense emotion one gets upon viewing an image for the first time.
- **Creativity** – The original, fresh, and external expression of the maker’s art or imagination by using the medium to convey an idea, message or thought.
- **Storytelling** – The image’s ability to deliver a message or evoke the imagination.
- **Technical Excellence** – The quality of the image e.g. sharpness, exposure, processing, and correct colour.
- **Focus** – The sharp and detailed portion of the main subject of the image.
- **Colour Balance** – An image in which the tones work together, effectively supporting the image, can enhance its emotional appeal.
- **Lighting** – Defines dimension and shape in an image. The lighting can be natural or artificial and should enhance the image.
- **Composition** – Bringing all visual elements together to express the purpose of the image. Proper composition holds the viewer in the image and prompts the viewer to look where the creator intends.
- **Centre(s) of Interest** – The point(s) on the image where the viewer should pause as they view the image.
- **Subject Matter** should always be appropriate to the topic or story being told in an image.

When viewing the winning images that follow:





*Prizewinner***Colours and motion** by Henk Bouwman

**Description:** Vibrant, yet soothing colours with the shadow of the gliding bird (Common Noddy).

**Locality:** St Brandon's, Indian Ocean

**Date:** October 2010

**Camera type:** Panasonic Lumix DMC-FZ18

**Settings:** 1/1300s f/5.6 ISO100 4.6mm



2<sup>nd</sup> Place

## Sunset in the land of the rising sun

by Fortunate Phaka

### Description:

A glorious sunset to end an uneventful day on safari.

### Locality:

Manyeleti Nature Reserve, Mpumalanga

### Date:

June 2014

### Camera type:

Canon EOS 650D

### Settings:

1/320s f/8 ISO400 123mm

## Suid-Wes Solitude

by Tean Joubert

### Description:

This beautiful lone tree (suspected to be a *Vachellia erioloba* - Camel Thorn tree) next to the Namibian roadside near Sossusvlei begged to be photographed in the afternoon light, which threw lovely shadows on the hills at its back.

### Locality:

Namibia

### Date:

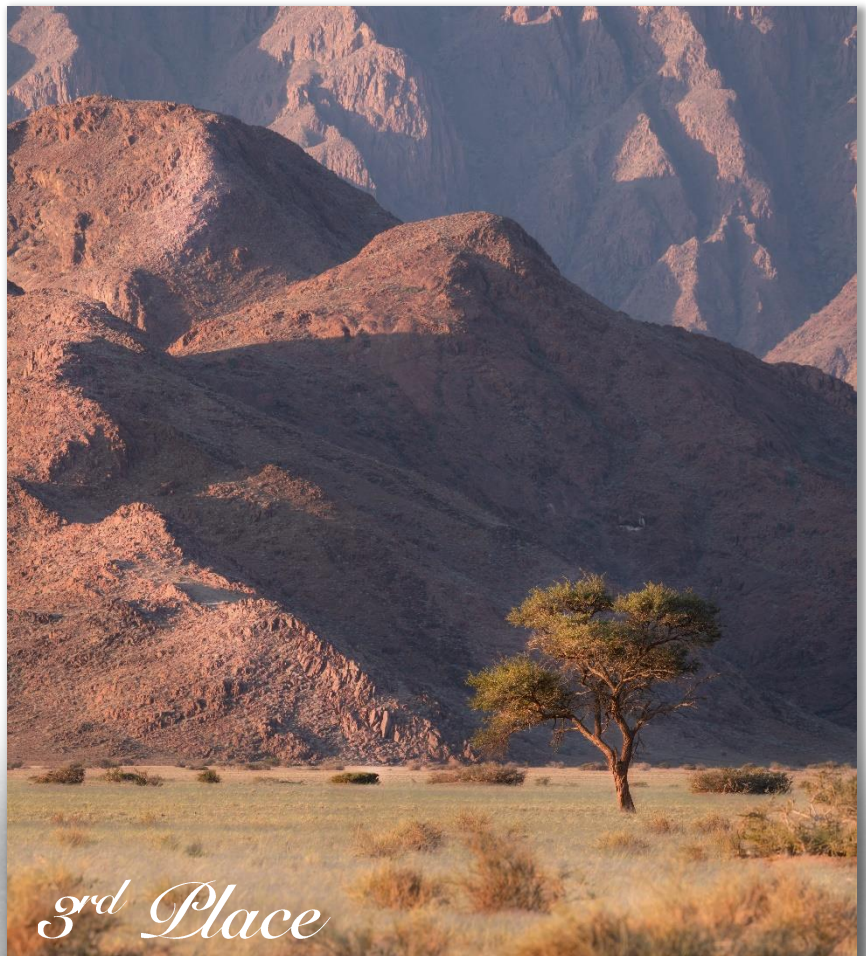
June 2018

### Camera type:

Nikon D750

### Settings:

1/30s f/11 ISO100 400mm

3<sup>rd</sup> Place



*Prizewinner***Opportunity Seized** by Kirsty Kyle

**Description:** This was a female snake who was laying eggs inside a dam wall, only her head was sticking out and the mosquitos were seizing the opportunity to feast.

**Locality:** Port Shepstone, KwaZulu-Natal

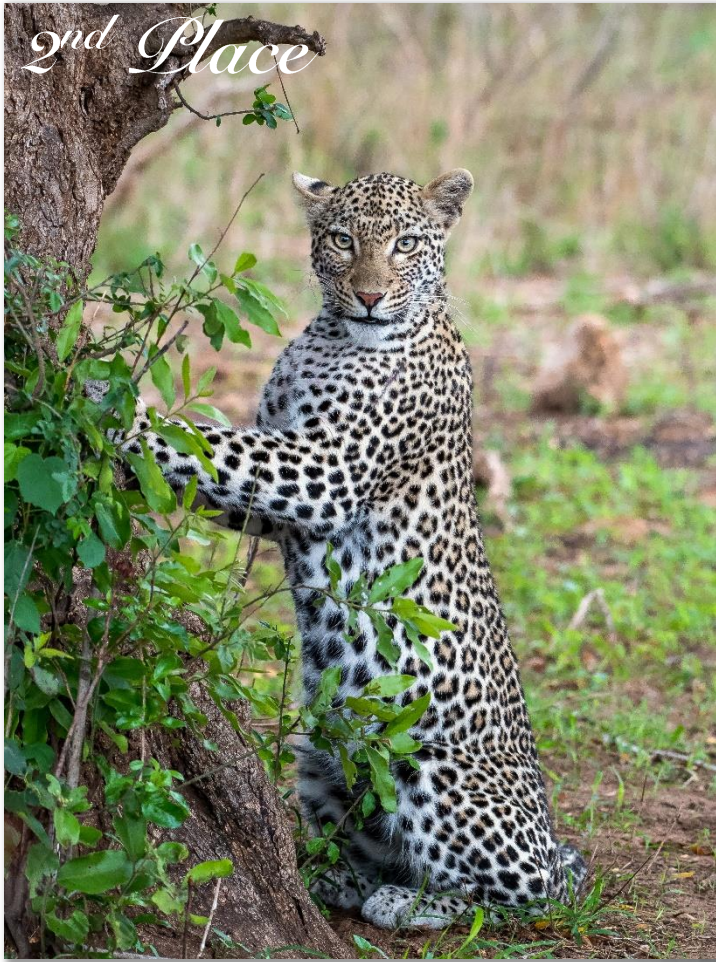
**Date:** November 2012

**Camera type:** Canon EOS 600D

**Settings:** 1/200s f/14 ISO100 100mm







*2nd Place*

### The meerkat leopard

by Dustin van Helsdingen

#### Description:

This female leopard was sitting in an upright position while sniffing the tree, before looking directly into my lens.

#### Locality:

H4-1, Kruger National Park

#### Date:

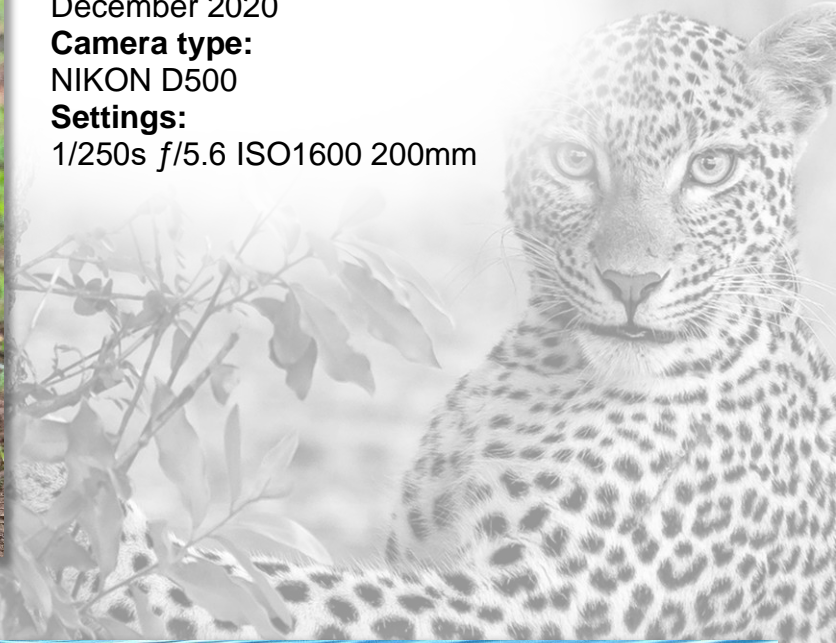
December 2020

#### Camera type:

NIKON D500

#### Settings:

1/250s f/5.6 ISO1600 200mm



### Reflections of speed and beauty

by Henrik Kylin

#### Description:

This photograph of a Dusky Dolphin was taken from the IB Oden, a Swedish icebreaker on an Antarctic expedition. It occurred in a group of about 400 during exceptionally calm seas. Notes were taken about the association between marine mammals and marine birds.

#### Locality:

La Plata, Argentina

#### Date:

November 2007

#### Camera type:

NIKON D70

#### Settings:

1/640s f/5.6 210mm



*3rd Place*



*Prizewinner*



**Fly in flight** by Willie Landman

**Description:** Horse flies (*Ancala africana*) feed on livestock blood and will also feed on human blood.

**Locality:** G29 Laboratory, Building E6, NWU, Potchefstroom

**Date:** October 2021

**Camera type:** Nikon AZ100M stereo microscope







### Micro malefic(s)c(i)ence

by Anja Erasmus

#### Description:

The photomicrograph was taken using the z-dimensional stacking function on the Nikon Eclipse microscope, with differential interference and phase contrast. This micrograph illustrates the anterior end of *Caligus* sp., the lunule, first antenna and second antenna are visible. This species of sea lice can be harmful (i.e., maleficent) to their fish host, especially in aquaculture facilities.

#### Locality:

Lab 110, Building E4, NWU

Date: April 2021

#### Camera type:

Nikon Eclipse Ni (Nikon Instruments, Tokyo, Japan)

#### Settings:

Camera name: Nikon DS-Fi3 Objective magnification: 20x Numerical aperture: 0.50 Red emission wavelength: 590 Green emission wavelength: 515 Blue emission wavelength: 420 Dimensions: Z Exposure: 30 ms Gain: 1.8x Sharpness: Medium FieldStop: 21.3 mm Z stack loop: 50 Step: 1.3 µm

### Holing up

by Roksana Majewska

#### Description:

Diatoms colonising a circular cavity on the smooth surface of giant kelp (False Bay, South Africa). Different diatom species are coloured with different false colours. The smooth surface of giant kelps and constant epidermal shedding prevent many diatoms from settling. Some diatom species, however, can use cavities made by grazers as attachment points.

#### Locality:

Laboratory of Electron Microscopy, NWU, Potchefstroom

Date: April 2018

#### Camera type:

Zeiss SUPRA 40 VP SEM (Carl Zeiss Microscopy)

#### Settings:

HV: 10kV, WD: 8.7





*Prizewinner***Whatcha doing?** by Anja Vermaak

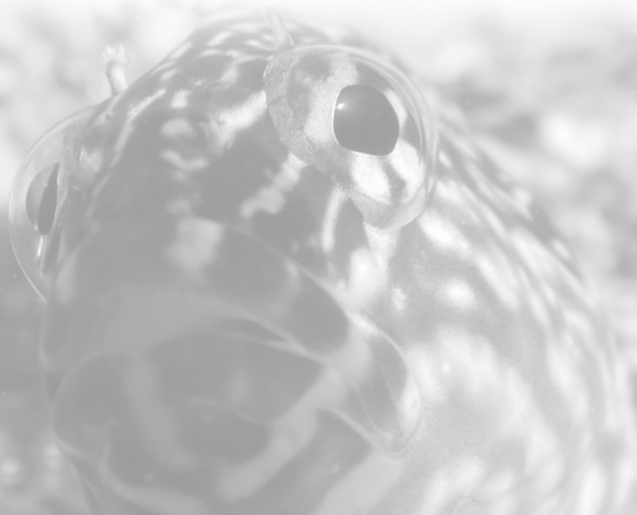
**Description:** *Clinus superciliosus* (the super klipfish) are the most curious fish that I have ever seen. They have so much personality and love "posing" for photographs. They often look so goofy (like the one pictured) and always make me smile with their quirkiness.

**Locality:** Langebaan

**Date:** August 2019

**Camera type:** NIKON Coolpix W300

**Settings:** 1/320s f/2.8 ISO125 4.3mm







### "One day"

by Tean Joubert

#### Description:

Coming back from a visit to a hide in Pilanesberg I found this vervet monkey admiring my *Landy* and thinking to itself "one day I want one of these".

#### Locality:

Pilanesberg

#### Date:

March 2020

#### Camera type:

NIKON D750

#### Settings:

1/320s f/6.3 ISO1000  
200mm



### This is a BIG frog!

by Henk Bouwman

#### Description:

Photo taken during crocodile surveys in the KNP, and Prof Louis got confused.

#### Locality:

Kruger National Park

#### Date:

August 2008

#### Camera type:

Panasonic Lumix DMC-FZ18

#### Settings:

1/8s f/3.2 ISO100 8.4mm



*Prizewinner***Into the blue** by Bernardine Altenroxel

**Description:** On a working trip to the Western Cape, there was a brief opportunity to visit L'Agulhas to get lunch. The crisp, blue water and sky provided a creative opportunity not to be missed.

**Locality:** L'Agulhas, Western Cape

**Date:** June 2019

**Camera type:** Samsung SM-A305F

**Settings:** 1/1414s f/1.7 ISO40 3.92mm



2<sup>nd</sup> Place



**The sunlight paints us gold**

by Marlize Muller

**Description:**

The *Allium* plants are always the first to start growing in our yard after winter, bringing the onset of Spring along with it!

**Locality:**

Nooitgedacht dam Nature Reserve, Mpumalanga, South Africa

**Date:**

September 2021

**Camera type:**

Samsung Galaxy A31

**Settings:**

1/100s f/2 ISO50 4.6mm

3<sup>rd</sup> Place



**Switzerland in South Africa** by Sanet Janse van Vuuren

**Locality:** Near Pella, Northern Cape

**Date:** November 2020

**Camera type:** Samsung Galaxy S10+

**Settings:** 1/844s f/2.4 ISO50 6mm



*Prizewinner***Bee happy** by Ané Loggenberg

**Description:** This scene was captured in a cover crop mix as part of trails on conservation and regenerative agriculture studied by NWU researchers and their collaborators.

**Locality:** Clocolan, Eastern Free State

**Date:** March 2021

**Camera type:** Apple iPhone 11

**Settings:** 1/128s f/1.8 ISO32 4.25mm





2<sup>nd</sup> Place**Nature's Helicopter**

by Hannes Erasmus

**Description:**

This is a male Lucia Widow dragonfly (*Palpopleura lucia*). They typically inhabit pools, marshes and sluggish reaches of streams in warm areas.

**Locality:**

Ndumo Nature Reserve

**Date:**

Feb 2017

**Camera type:**

Huawei P9

**Settings:**

1/50s f/2.2 ISO50 4.5mm

**Bo bink, onder stink**

by Ben Stoman

**Description:**

Members of the genus *Chlaenius* are known as Vivid Metallic Ground Beetles (Family: Carabidae). This specific species occurs across Southern Africa.

**Locality:**

Found between Magaliesburg and the Magaliesberg.

**Date:**

April 2021

**Camera type:**

Samsung Galaxy A21s (SM-A217F)

**Settings:**

48 MP F2.0 1/60 s ISO 160  
4.60 mm No flash

3<sup>rd</sup>  
Place



*Prizewinner***We've got babies** by Marelize Labuschagne

**Description:** After collecting gravid shrimp (*Caridina nilotica*) from the field we saw that one of them were starting to die so we wanted to see if we can perhaps save the eggs. The eggs need constant movement and oxygen so while the female is alive, she will turn the eggs and fan them with her pleopods where they will develop and finally hatch. While looking under the microscope I saw the heartbeat of some of the babies and wanted to show another student where she should look to see it and that is when I took this photo with my cellphone through the lens of a microscope.

**Locality:** NWU-NABF

**Date:** September 2021

**Camera type:** Samsung Galaxy A30s

**Settings:** 1/113s f/1.7 ISO40 3.93mm



2<sup>nd</sup> Place



### A nematode party for one

by Ané Loggenberg

#### Description:

This soil nematode (Family: Discolaimidae) is characterized by a very prominent disk/sucker shaped head. It can be spotted from miles away - given that it's placed under the microscope as seen here under x400 magnification.

#### Locality:

Eco Rehab

#### Date:

September 2019

#### Camera type:

iPhone 11

### *Rhipicephalus sanguineus* under light microscope

by Clara-lee van Wyk

#### Description:

Photo of *Rhipicephalus sanguineus* tick taken during microscopical identification based on tick morphological features.

#### Locality:

Lab 130 of Prof. Oriel Thekisoie at Building E6, School of Biological Sciences, North-West University (Potchefstroom campus)

#### Date:

May 2021

#### Camera type:

Samsung galaxy A31

3<sup>rd</sup> Place





*Prizewinner*

### Waiting for the green flash by Roksana Majewska

**Description:** Green Flash is a rare optical phenomenon that occurs shortly after sunset or before sunrise when a green ray shoots up from the sunset point. According to Pirate Lore, it was a flash that shoots up into the sky at the last glimpse of sunset, signaling the return of a soul from the world of the dead.

**Locality:** 17th-century graveyard near the ruins of the Dutch Reformed Church, St Eustatius, Dutch Caribbean

**Date:** October 2021

**Camera type:** Samsung Galaxy Note 10





### Tilted academics

by Rohan Fourie

**Description:**

Microbiology post-graduate "demmes" in their natural environment.

**Locality:**

G4

**Date:**

2014

**Camera type:**

iPhone 5



### Happiness in all the details

by Ané Loggenberg

**Description:**

This dog was bitten by a Puff Adder and almost lost his front leg and quite possibly, his life.

We helped heal his wounds with Silver water and honey.

He shows his love and appreciation in this way every day.

**Locality:**

Koppies, Free State

**Date:**

June 2020

**Camera type:**

iPhone 11





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- All judges of photo entries.

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We are excited to share more research articles in the upcoming *Autumn* edition, 2022.

May you have a fantastic and well-deserved holiday, wonderful Christmas, and a happy New Year.

Frances and Clarissa

## Photo credits:

**Professional Cameras - Landscape Category:** Henk Bouwman (1st place); Fortunate Phaka (2nd place); Tean Joubert (3rd place); Anja Vermaak; Henrik Kylin; Rozelna Janse van Rensburg; Kirsty Kyle; Milad Rashidifard; Wynand Muller; Theunis Meyer.

**Professional Cameras – Macro-organism / Wildlife Category:** Kirsty Kyle (1st place); Dustin Van Helsdingen (2nd place); Henrik Kylin (3rd place); Sanet Janse van Vuuren; Anja Vermaak; Hindrik Bouwman; Rozelna Janse van Rensburg; Marlice Muller; Tean Joubert; Paul Janse van Rensburg; Fortunate Phaka; Milad Rashidifard; Wynand Muller; Theunis Meyer.

**Professional Cameras – Microscopy Category:** Willie Landman (1st place); Anja Erasmus (2nd place); Roksana Majewska (3rd place); Anrich Kock; Henrik Kylin.

**Professional Cameras – Funny Features and Creatures Category:** Anja Vermaak (1st place); Tean Joubert (2nd place); Henk Bouwman (3rd place); Henrik Kylin; Kirsty Kyle; Milad Rashidifard.

**Lower Quality Cameras – Landscape Category:** Bernardine Altenroxel (1st place); Marlice Muller (2nd place); Sanet Janse van Vuuren (3rd place); Anrich Kock; Ben Stoman; Marliese Truter; Ané Loggenberg; Elaine Slooten; Marcell Slabbert; Hannes Erasmus; Ruhan Verster; Nolwandle Khumalo; Rohan Fourie; Paul Janse van Rensburg; Clara-lee van Wyk; Roksana Majewska; Willie Landman.

**Lower Quality Cameras – Macro-organism / Wildlife Category:** Ané Loggenberg (1st place); Hannes Erasmus (2nd place); Ben Stoman (3rd place); Anrich Kock; Marliese Truter; Elaine Slooten; Marcell Slabbert; Nolwandle Khumalo; Rohan Fourie; Clara-lee van Wyk; Willie Landman.

**Lower Quality Cameras – Microscopy Category:** Marelize Labuschagne (1st place); Ané Loggenberg (2nd place); Clara-lee van Wyk (3rd place); Rohan Fourie.

**Lower Quality Cameras – Funny Features and Creatures Category:** Roksana Majewska (1st place); Ané Loggenberg (2nd place); Rohan Fourie (3rd place); Sanet Janse van Vuuren; Marcell Slabbert; Marlice Muller; Wynand Muller; Clara-lee van Wyk; Willie Landman.

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