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Insights from Prof Alan Gardiner Giving Public Lecture on Mopane Worm Use Across South-Central Africa

Prof Alan Gardiner giving a Public Lecture on Mopane Worm Use Across South-Central Africa

The Faculty of Science, Engineering and Agriculture on 12 September 2025 at UNIVEN recently arranged a public lecture by Prof Alan Gardiner, Head of the Applied Learning Unit at the Southern African Wildlife College. Prof Gardiner lecture, titled "Mopane Worm Use Across South-Central Africa," offered an in-depth exploration of the ecological, cultural, and economic significance of mopane worms (Gonimbrasia belina) and other edible caterpillars such as Serinaphora (Cirina forda) across the region. The lecture took place in Lab FF017 of the Life Science Building.

Prof Gardiner began by drawing attention to the relative importance of Serinaphora, noting that it is often overlooked in academic literature despite being more widely distributed and available in greater quantities than the mopane worm.

"It should be the other way around," he remarked, stressing the need for more research into this species.

He then outlined the distribution of mopane worms, explaining their polyphagous nature and adaptability to multiple host plants, even noting that they can be fed apples. Mopane worms are particularly concentrated in northern South Africa but play an essential role across the region as a seasonal food source.

Prof Gardiner shared a vivid account of the communal aspect of mopane worm harvesting. Across Botswana, Zimbabwe, Zambia, and South Africa, women and children often set up temporary camps during the harvest season, working together to collect, squeeze, and prepare the caterpillars. These practices, he emphasised, are remarkably similar across borders, reflecting shared cultural traditions.
The lecture was richly illustrated with exampl

es of harvesting and processing, from hand-squeezing techniques to cooking and drying methods. Prof Gardiner also highlighted that quality is often compromised when caterpillars are roasted directly on coals, as this method prioritises speed over hygiene and results in lower nutritional value.

A major theme of the lecture was governance. Access to mopane worm harvesting areas varies widely, particularly in South Africa, much of the land is privately owned, and farmers often charge harvesters a fee to access their property. In Botswana, harvesting is largely regulated by the government, which issues licenses and enforces seasonal restrictions to prevent premature harvesting.

Prof Gardiner cautioned against the increasing problem of early harvesting, which results in lower protein yields and threatens population sustainability. He also addressed challenges such as contamination from livestock and poultry in harvesting areas, poor storage practices, and limited enforcement of existing bylaws.

He noted that the mopane worm trade is a significant economic activity, with tons of dried caterpillars transported to markets, particularly Johannesburg, generating millions of rands annually. However, producers often have little bargaining power, relying on traders who dictate prices.

In closing of the lecture, Prof Gardiner called for research and policy action, stronger governance systems, improved data collection, and investment in sustainable harvesting practices. He stressed that woodlands are declining rapidly, posing a risk to mopane worm populations and the communities that depend on them.

"This is not just about feeding people once a year during an outbreak," he said. "This is about ensuring that families continue to have access to a reliable, nutritious food source and that the trade remains viable for future generations."

Prof Gardiner's lecture left attendees with a deeper understanding of the ecological and socio-economic complexity surrounding mopane worm use and highlighted the urgent need for collaborative solutions that balance conservation with livelihoods.

Prof Lourens Swanepoel (Right) handing gift to Prof Alan Gardiner (Left)

Dr Rixongile Rhenny Rikhotso's Story of Resilience and Determination

As the University of Venda proudly conferred degrees on the 2025 Spring Graduation ceremony graduates, Dr Rikhotso Rixongile Rhenny was among these graduates and proudly graduated with a Doctor of Philosophy (PhD) in Microbiology which was a major achievement that crowns years of resilience, sacrifice, and passion for science.

Her PhD research, "Identification and molecular characterisation of human papillomavirus infection among women living with and without HIV in selected health facilities in Limpopo Province, South Africa," provided groundbreaking insights into the intersection of HPV and HIV in a region where the burden of both infections remains high, which was a major, astounding achievement. Working with 450 women across Limpopo Province, she successfully identified 41 HPV genotypes, including high-risk strains that are directly linked to cervical cancer. Through advanced sequencing, Dr Rikhotso generated and made publicly available six full-length HPV genomes, creating a global scientific resource that will support future virological research and vaccine development.

Dr Rikhotso's study produced two significant contributions with public health and policy implications. Firstly, it highlighted the urgent need to integrate HPV screening into the management of HIV-positive women, given their vulnerability to persistent infection and progression to cervical cancer. Secondly, the identification of several high-risk HPV genotypes underscored the importance of tailoring next-generation vaccines to ensure regional relevance and effectiveness. These findings not only advance scientific understanding but also position Limpopo and South Africa as key contributors in the fight against HPV-related diseases.

Beyond the laboratory, her academic journey afforded her the opportunity to serve as a pre-doctoral fellow at the University of Virginia in the United States. This international exposure not only sharpened her research skills but also enriched her ability to mentor and collaborate. During her PhD, Dr Rikhotso guided honours students in her laboratory at UNIVEN and worked closely with exchange students from Virginia, broadening both scientific knowledge and cultural exchange while strengthening her mentorship capabilities.

Yet, behind these academic milestones lies a story of determination and faith. After matric, she initially only qualified for diploma-level admission but refusing to settle for that, she repeated matric and earned a bachelor-level pass. Though she had been awarded a bursary for Social Work, she turned it down because her heart was set on Biology and Life Sciences. Dr Rikhotso later enrolled for BSc in Biochemistry and Microbiology at UNIVEN, beginning at the foundation level. Through perseverance, she excelled and never looked back.

A rejection after applying for a job post-graduation became a major source of inspiration and a turning point in her journey. "Instead of discouraging me, it inspired me to make a vow: I would not seek employment until I held a PhD. That closed door became a blessing in disguise, fuelling my relentless pursuit of academic excellence and shaping the scientist I am today." she said.

Along the way, Dr Rikhotso was guided by the steady mentorship of Prof Pascal Bessong and Prof EM McKim, who played a pivotal role in shaping her growth.

"I am deeply grateful to my brother, Rodney Rikhotso, who stood as my pillar of strength in the absence of both our parents. Above all, I owe my triumphs to God, whose grace carried me through trials, tears, and triumphs." Stressed as she acknowledged.

Dr Rikhotso highlighted that growing up without her parents was not easy, but her story is proof that no challenge is greater than your dreams when fuelled by humility, focus, and an insatiable hunger for knowledge. This PhD is not the end for her, but it is a launchpad which built resilience, skills, and lessons that she has gained as a stepping stone to the future she eagerly awaits.

"To every student and aspiring scholar: your dreams are valid. Dare to dream, keep learning, and never give up. The future is waiting for you, and it is brighter than you can imagine," she said.

UNIVEN Alumna's Passion for Chemistry Yields PhD Success

On September 5, 2025, the University of Venda proudly conferred a Doctor of Philosophy in Chemistry to Dr Fulufhelo Tshikhudo during the 2025 Spring Graduation Ceremony. Dr Tshikhudo (30) hails from Maniini, Block L, Zone 1, near Thohoyandou. Her academic journey began at Tshiluvhi Primary School and Mphaphuli High School, where she completed her Grade 12 in 2013. Initially, she dreamed of becoming a nurse, but her interests shifted to Chemistry during her undergraduate studies at the University of Venda.

Dr Tshikhudo's research focused on designing organic compounds to protect metals from corrosion, demonstrating the potential of substituted triazine compounds in forming protective films on metal surfaces.

With enhanced performance achieved through graphene oxide incorporation, her

breakthrough provides valuable insights for developing sustainable corrosion inhibitors. Her PhD research demonstrated the potential of these compounds in protecting aluminium and mild steel, contributing to the development of safer and more sustainable corrosion protection solutions.

Throughout her academic journey, Dr Tshikhudo faced challenges, including struggling with English writing and presenting her work. However, with the guidance of her supervisor, Prof Lutendo Murulana, and co-supervisors, she was able overcame these challenges and grew as an independent researcher. Dr Tshikhudo's experiences taught her the value of patience, meticulous problem-solving, and leveraging expert guidance and persistence.

Dr Tshikhudo's achievement serves as an inspiration to students, particularly young women interested in STEM fields. She advises others to believe in their abilities, even when the path feels intimidating. "STEM fields can be challenging, but they are also full of opportunities to solve real-world problems and make meaningful contributions.

Trust yourself, and don't be afraid to make mistakes, because every mistake is part of the learning process."

With funding support from the NRF Thuthuka, Sasol Foundation, and NRF SASAC, Dr Tshikhudo was able to focus on her research without financial constraints. She presented her work at conferences, including SACI Inorganic and Carman Chemistry Conference, and travelled to Robert Gordon University in the United Kingdom for networking and advanced techniques.

Reflecting on her academic path, Dr Tshikhudo shared that "This journey was filled with growth, resilience, independence, self-trust, and valuable collaborations." Her achievement marks a significant milestone in her academic journey, and her advice to students is, "Don't give up, and trust the process. Challenges are part of learning and research, and setbacks do not define your potential. Believe in yourself, and your hard work and perseverance will pay off in ways you may not yet see."