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DSTI-NRF Centre of Excellence for Integrated Mineral and Energy Resource Analysis

science, technology & innovation
Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA

National Research Foundation

NEWSLETTER

NOVEMBER 2026

WELCOME

WELCOME TO THE "WE CAN'T BELIEVE IT'S ALREADY THE LAST NEWSLETTER OF 2026" EDITION!

As we prepared this final newsletter of the year, we thought we'd do something a little different.

Instead of a traditional welcome message, we asked ourselves: *What have we been talking about most at CIMERA lately?* The answers came easily.

"Have you listened to the latest episode of the CIMERA Corner podcast yet?"

"Wait... our students were presenting in Germany, Australia and all around the world?"

"Which partner university are we visiting next?"

"Another graduation announcement? We love to see it."

How is the DSTI-NRF CIMERA Annual Research Colloquium already underway?

"2027 is already shaping up to be an exciting year!"

And that's probably the best way to describe 2026.

It has been a year filled with student achievements, research breakthroughs, new partnerships, inspiring conversations, international opportunities, university visits, podcasts, outreach initiatives, workshops, competitions, and a growing community connected by a shared passion for the geosciences value chain. From the first episode of CIMERA Corner to the Earth Observation Masterclass, Science Communication workshops and everything in between, there has always been something exciting happening across the CIMERA network.

As you explore this final edition, you'll meet some of the people behind these stories. The students asking important questions. The researchers advancing knowledge. The alumni making their mark. The partners creating opportunities. And the community that continues to make CIMERA what it is.

Thank you for being part of the journey this year. We hope this edition reminds you how much we've achieved together and leaves you feeling inspired by what's still to come.

After all, if 2026 is anything to go by, the conversation is only just getting started.

Happy reading, and here's to an even bigger 2027.

The CIMERA Team



Hyperspectual Image of the DSTI-NRF CIMERA x HIF Earth Observation Masterclass attendees.

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CIMERA Corner

DSTI-NRF CIMERA Earth Observation Masterclass 2026

One of the highlights of the past few months was the Earth Observation (EO) Masterclass, held at the University of Johannesburg from 5 - 9 October 2026.

Presented in collaboration with the **Helmholtz Institute Freiberg for Resource Technology (HIF)**, this year's programme marked the **4th EO Masterclass** delivered through the partnership, continuing a successful collaboration focused on building Earth Observation capacity and connecting South African researchers with international expertise.

Over the course of the week, participants explored topics ranging from remote sensing applications in mining and exploration to hyperspectral imaging, photogrammetry, machine learning tools and practical Earth Observation workflows. Researchers and students also had the opportunity to engage directly with experts from South Africa and Germany, creating valuable opportunities for learning, discussion and collaboration.

The Masterclass concluded with a **Hyperspectral Imaging Demonstration and Networking Lunch**, proudly sponsored by **Exosens**. The event gave attendees a closer look at advanced hyperspectral imaging technologies and provided a platform for researchers, students, technology specialists and industry representatives to connect, exchange ideas and explore future opportunities.

Now in its fourth year, the programme continues to demonstrate the value of sustained international collaboration in developing the next generation of Earth Observation researchers. By bringing together academia, research institutions and industry, the initiative not only strengthens technical expertise but also builds the networks and partnerships needed to drive innovation in Earth Observation across Africa.

If there's one thing the week reinforced, it's that great science happens when expertise, technology and people come together.












Collaborative Engagement with the Canadian High Commission

Often opportunities start with a conversation.

Following an introduction at one of Johannesburg's First Thursday networking events, CIMERA had the opportunity to host Avril Espinosa-Malpica (*First Secretary and Trade Commissioner*) and Drayton Brown (*Trade Commissioner*) at the Canadian High Commission, for a visit to the CIMERA offices and a networking lunch at the University of Johannesburg.

Discussions focused on the geoscience and mining sectors in South Africa and Canada, strengthening links with industry and international research partners, and exploring potential collaborations with Canadian institutions. The engagement also highlighted the relaunch of the **Mitacs programme**, which is expected to form part of the Presidential PhD Programme.

CIMERA looks forward to sharing further opportunities as both the Presidential PhD Programme and Mitacs initiatives continue to develop.



The ICDP Bushveld Drilling Project (BVDP) Sampling Party

August marked an important milestone for the **International Continental Scientific Drilling Program (ICDP) Bushveld Drilling Project (BVDP)**, with researchers and scientists gathering at the **Council for Geoscience's Donkerhoek Core Yard** in Pretoria to examine and begin sampling the newly recovered drill core.

Drilled to a depth of **1,877.2 metres**, the core provides rare access to the lower sections of the eastern limb of the Bushveld Complex and will support research into its formation, deep subsurface microbial life, and the deep-water influxes encountered during drilling.

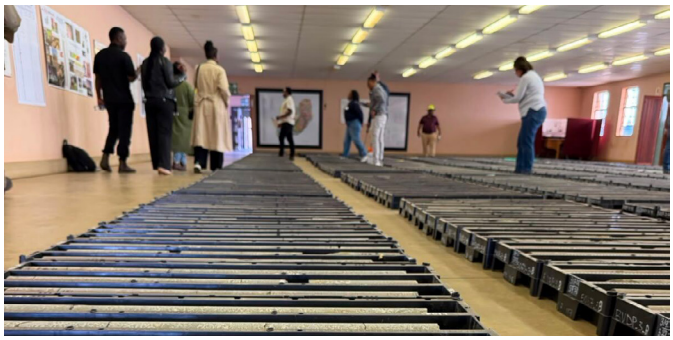
The South African component of the project was coordinated and managed by DSTI-NRF CIMERA, with Stuart Hill overseeing project management throughout the drilling campaign. Profs. Susan Webb and Frederick Roelofse have led the South African research team since 2012.

Following the sampling campaign, the core will remain at the Council for Geoscience's Donkerhoek Core Yard, where it will continue to support scientific research and international collaboration for years to come.

Further information can be found on the ICDP BVDP website













CIMERA University Tours | University of Pretoria

The third stop on the 2026 Annual University Visit Tour took the CIMERA team to the **University of Pretoria, Department of Geology.**

The visit began with a warm welcome from **James Roberts**, Head of Department, who shared insights into the department's growth and its role in developing the next generation of geoscientists. The spotlight then shifted to our CIMERA-funded students, who showcased the exciting research currently underway at the University of Pretoria.

The visit concluded with a tour of the geology facilities and an opportunity to engage with students, supervisors and staff. As with previous stops on the tour, the visit provided a valuable opportunity to see CIMERA-supported research in action and strengthen connections across our partner universities.

Thank you to the UP Geology team for hosting us and to our students for sharing their research and experiences.

















#CIMERAOnTheGround

Mintek SCi (Science Convention of Innovators)

CIMERA was proud to exhibit at the Mintek-SCi Symposium, a platform that brings together emerging researchers from academia, industry and research institutions to share knowledge, showcase research and build valuable professional networks.

The symposium provided an excellent opportunity to engage with students, researchers, innovators and industry professionals who are passionate about advancing science, technology and innovation. We were delighted to connect with so many attendees at our exhibition stand, exchange ideas and explore opportunities for future collaboration.

In addition to exhibiting at the symposium, CIMERA Director, Prof. Nikki Wagner, contributed to the **Mintek-SCi Disruptive Roundtable**, held under the theme ***"The Quadruple Helix in Science: Solving the Mineral Problems of the Future."*** The discussion brought together representatives from academia, industry, government and research institutions to explore the collaborations and innovations needed to address future mineral challenges.

We extend our sincere thanks to Mintek for hosting a successful event that continues to celebrate innovation, collaboration and the next generation of scientific talent.













Lichtenburg 100 Centenary Conference

CIMERA was proud to participate in the Lichtenburg 100 Centenary Conference, jointly hosted by the Council for Geoscience (CGS) and the Geological Society of South Africa (GSSA), commemorating 100 years since the discovery of alluvial diamonds north of Lichtenburg.

In addition to exhibiting at the conference, CIMERA was delighted to see three CIMERA-funded postgraduate students present their research to the broader geoscience community. **Puleng Nthebe (Wits)** shared research on the *spectroscopic characterisation of Palmietgat diamonds*, while **Jazmynn Eksteen** and **Ishta Maharaj** (UKZN) presented studies focused on *offshore mineral exploration and the geological controls influencing offshore diamond deposits*.

The conference provided an opportunity to celebrate a century of geological discovery while reflecting on the continued importance of research, collaboration and innovation within the geosciences. We are grateful to the Council for Geoscience and GSSA for bringing the community together for this landmark event and proud to have showcased CIMERA's contribution to the next generation of geoscientists.











A NEW WAY TO TALK GEOSCIENCE

Geoscience doesn't only happen in laboratories, lecture halls and conference venues. Increasingly, it happens wherever people are curious about the world around them. At CIMERA, we've embraced new ways of sharing geoscience through podcasts, radio conversations and creative storytelling that bring research closer to people and communities.

Over the past few months, we've continued to create platforms that make geoscience more accessible, helping researchers communicate their work beyond traditional academic audiences and demonstrating why their research matters in the real world.

CIMERA Corner | Where Geoscience Sounds Different

What started as a new platform for conversation has quickly become an important part of how CIMERA shares the stories behind the science.

Since launching in August 2026**, CIMERA Corner** has grown into a platform for conversations about research, collaboration, careers and the future of geoscience.

With **Four episodes now available on YouTube**, this series has welcomed a diverse range of guests from across the CIMERA network and beyond. Conversations have featured **Prof. Nikki Wagner and Mogaeleadi Seabela (President of WiMSA)** discussing leadership and the future of the sector; **Prof. Susan Webb and Kwane Fynn** sharing perspectives on research, international experiences and new opportunities in geoscience; **Prof. Jérémie Lehmann and Cicilia Motha** exploring research on the Kunene Complex and the stories hidden within the rocks.

Each episode is designed to make geoscience more accessible by moving beyond technical research outputs and creating conversations that inform, inspire and connect with a wider audience.

The momentum continues with Episode 5, which will feature **Prof. Richard Gloaguen** from the **Helmholtz Institute Freiberg for Resource Technology (HIF)** and **Jean-Philippe Gagnon** from **Exosens**, building on the international collaborations and industry partnerships that were recently highlighted during the Earth Observation Masterclass.

The podcast forms part of CIMERA's broader commitment to ensuring that science is not only conducted and published, but also shared, discussed and understood by a wider audience.

Watch all Five episodes on the UJ YouTube channel and join the conversation.









UJFM | From the Lab to the Airwaves

What happens when postgraduate students step out of the lab and into the radio studio?

CIMERA postgraduate students from the University of Johannesburg, **Ayakha Komzi (MSc)** and **Kwame Fynn (PhD Candidate)** joined **UJFM 95.4** to share their research journeys, what inspired them to pursue postgraduate studies in geoscience, and why science communication matters.

The conversation highlighted an important part of CIMERA's mission: *ensuring that research doesn't only live in laboratories, field notebooks and journal articles, but is shared in ways that spark curiosity, encourage conversation and inspire future scientists.*

The conversation also featured insights from CIMERA CoE Manager **Busisiwe Maphalala**, who spoke about CIMERA's commitment to developing the next generation of geoscientists and creating opportunities for students to engage beyond academia.

A special thank you to **UJFM 95.4** for providing a platform that helps amplify the voices of emerging researchers and bring geoscience conversations to a wider audience.

Postgraduates and academics are invited to get involved. Connect with us to explore opportunities to communicate geoscience in new, creative, and impactful ways.





From Core to Community: Writing Beyond the Academic Journal Workshop

As part of CIMERA's commitment to making geoscience more accessible, students and researchers participated in **From Core to Community | Writing Beyond the Journal**, a *creative science writing workshop* designed to help researchers communicate their work beyond academic audiences.

During the first session, participants explored what it means to translate complex geoscience research into stories that resonate with a general audience. Discussions focused on identifying who you're writing for, using analogies and sensory detail to explain scientific concepts, and applying storytelling techniques to make research more engaging and accessible.

The workshop provided practical tools to help researchers think differently about how they communicate their science, while encouraging them to consider the broader impact and relevance of their work beyond academia.

The workshop also serves as a valuable stepping stone towards the **2026 DSTI-NRF CIMERA Science Writing Competition: *My Science in Your World,*** helping participants develop the skills needed to share the stories behind their research with wider audiences.

Freewriting: A technique for beating the blank page

Freewriting is writing fast, without stopping, and without judging what comes out. Its only job is to get words onto the page so you have something to work with. You are not writing your piece yet - you are just getting unstuck.

1. **Write the six question words**
   Who, what, when, where, why, how.
2. **Roll a dice twice and pick one**
   Let the dice decide. It takes the pressure off choosing.
3. **One minute to write a question**
   Using your chosen word. Any question at all.
4. **Five minutes to answer it, without stopping**
   Don't lift the pen. Don't delete. Don't edit.

There are no wrong answers. Only 'write' ones.

And Now for the Best Part...

At the heart of every CIMERA success story are the students, researchers and emerging scientists driving discovery, asking new questions and pushing the boundaries of geoscience. Here are some of the people and achievements we've been celebrating over the past few months.

An Alumni Success Story | Dr Itumeleng Matlala

Few stories capture the impact of long-term support quite like that of Dr Itumeleng Matlala, whose academic journey with CIMERA began at MSc level and culminated in the completion of her PhD in Geology at the University of Johannesburg earlier this year. Throughout her MSc and PhD studies, CIMERA supported her development as a researcher, helping to nurture a career that continues to make an impact in the geosciences.

Today, Dr Itumeleng Matlala is a Geologist and Lecturer at Sol Plaatje University, where she contributes to the development of the university's undergraduate Geology programme. Her research focuses on coal geology and geochemistry, with interests spanning coal petrography, organic petrology, macromolecular characterisation and coal beneficiation.

Through CIMERA, she has presented her work internationally, including at conferences in Greece and Mongolia, earning a Best Presenter Award at the former. Her contributions to coal research have also resulted in publications in leading international journals.

Demonstrating the qualities of the holistic graduate that lie at the heart of CIMERA's mission, Dr Itumeleng Matlala has also taken on several leadership and service roles within the global scientific community. She served as Student Chairperson of The Society for Organic Petrology (TSOP), organised the first TSOP Student Virtual Conference to promote international student engagement and scientific exchange, earned accreditation as an organic petrologist through the International Committee for Coal and Organic Petrology (ICCP), and served as Marketing, Media and Public Engagement Lead on the Coaltech Youth Innovation Council.

Reflecting on her journey, Dr Matlala says she is passionate about ***"nurturing future geoscientists, strengthening industry-academic collaboration, and advancing geological education and research in the Northern Cape."***

Dr Itumeleng Matlala's story exemplifies CIMERA's vision of developing well-rounded graduates who are not only excellent researchers, but also leaders, communicators, mentors and active contributors to the broader scientific community.

Congratulations, Dr Matlala on this remarkable achievement and CIMERA hopes to continue to support your evolving career.





A PhD Success Story | Dr Daniel Ferreira



This year, CIMERA celebrated another significant achievement with the graduation of Dr Daniel Ferreira, who completed his PhD in Applied Earth Science at Stellenbosch University. His doctoral research focused on the Tantalite Valley Complex in southern Namibia, investigating the emplacement, internal architecture, differentiation and magmatic evolution of its nested layered intrusions. Through extensive fieldwork, geological mapping, geochemistry, mineral chemistry, geochronology and petrographic investigations, his work has contributed to a deeper understanding of the complex and its significance for magmatic Ni-Cu-PGE sulphide exploration.

Reflecting on the achievement, Dr Ferreira described graduating as the culmination of a long and, at times, challenging academic journey that offered opportunities to grow not only as a scientist and geologist, but also as a person.

"Graduating has been particularly meaningful. There was an enormous sense of gratitude and relief in finally reaching the end of a journey that has occupied such a significant part of my life. More importantly, I am proud of the work that went into getting there and excited to take the knowledge and experience gained into the next stage of my career."

Dr Ferreira also expressed his gratitude to CIMERA for its support throughout his doctoral studies, noting the important role that the funding, academic environment and broader CIMERA community played in his development as a researcher.

His achievement reflects the dedication, perseverance and scientific curiosity that continue to define the CIMERA student community.

Congratulations, Dr Ferreira, on this outstanding achievement!

A MSc Success Story | Yolanda Nocuze

For Yolanda Nocuze, completing her MSc in Geology at the University of Fort Hare marked the end of a challenging but deeply rewarding chapter.

Her research focused on an integrated mineralogical and geochemical study of a pyrophyllite deposit in the Ottosdal area of the North West Province. Through the project, she developed skills in mineralogy, petrography, geochemistry and geological interpretation, while gaining a deeper understanding of hydrothermal alteration and mineralisation processes.

Graduating **with distinction** is an achievement she looks back on with pride, reflecting the dedication and hard work invested throughout her postgraduate studies.

Beyond the research itself, Yolanda credits the support she received from CIMERA as an important part of her journey.

"The funding provided valuable financial support throughout my MSc and allowed me to focus more fully on my research and academic development. More importantly, being part of the CIMERA community gave me a sense of belonging within the broader geoscience research environment and encouraged me to continue growing as a young geoscientist."

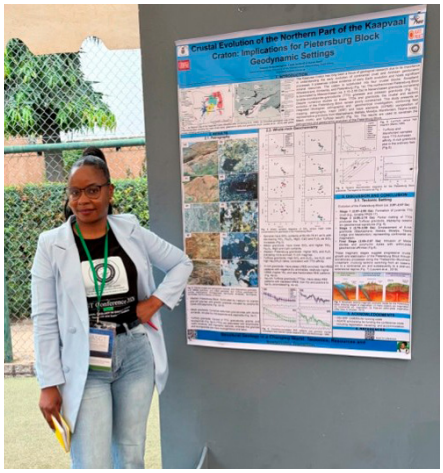
She adds that the experience strengthened her confidence and inspired her to pursue further opportunities in research and the geosciences.

Congratulations, Yolanda, on graduating with distinction and reaching this well-deserved milestone!





International Recognition for PhD Research | Patience Mudanalwo Ratshalingwa



For Patience Mudanalwo Ratshalingwa, a PhD candidate at the University of the Witwatersrand, July 2026 marked an important milestone in her doctoral journey. Her research focuses on the intracratonic architecture and metallogenic significance of the Kaapvaal Craton, contributing to a better understanding of its crustal evolution and geodynamic development.



In July, Patience presented part of her PhD research at the International Association of Structural Geology and Tectonics (IASGT) Conference in Accra, Ghana. Her poster, titled *"Crustal Evolution of the Northern Part of the Kaapvaal Craton: Implications for the Pietersburg Block Geodynamic Setting,"* showcased findings from her ongoing research into the geological evolution of the northern Kaapvaal Craton.

Her work was recognised with the **Best Poster Presentation Award**, an achievement that reflects both the quality of her research and the significance of the contribution she is making to the field.

Reflecting on the experience, Patience highlighted the value of presenting her work on an international platform and engaging with researchers from around the world.

"I am honoured that my research was recognised with the Best Poster Presentation Award at the conference. This achievement represents an important milestone in my PhD journey and provided a valuable opportunity to share my research with the international geoscience community, engage with fellow researchers, and receive constructive scientific feedback."

She also expressed her gratitude to CIMERA for its continued support throughout her studies.

Congratulations, Patience, on this well-deserved achievement and on representing South African geoscience research on the international stage! #CIMERAWorldwide

Digital Geology in Action | Dr Charl Cilliers

What if students could visit an outcrop before ever setting foot in the field?

Dr Charl Cilliers' ongoing research at the University of the Western Cape (UWC) is focused on driving innovation in digital scientific applications for geology, and on developing interactive Virtual Field Trips (VFTs) intended to prepare students for fieldwork and improve their understanding of target rock outcrops, geological concepts, and processes.

As part of developing these VFTs featuring 360° panoramas, 3D outcrop models, captioned videos, and relevant scientific articles, Cilliers (with the help of Honours student Ludfi van Vollenhoven) pre-programmed a "recreational" DJI Mavic 3 Pro Cine drone (UAV) during July 2026 using the online application WaypointMap to undertake terrain-aware, multi-directional, straightened flight missions, where 60% overlapping images (front and side) were captured at 5 m AGL. Using this methodology, 10,463 aligned images were combined within Agisoft Metashape Professional to create a 2.2 mm pixel^{-1} georeferenced orthomosaic (**Fig. 1**), which served as a baseline for Ludfi, as part of his Honours Project to map A- and I-type granites and quartz porphyries at Cape Columbine in unprecedented detail (**Fig. 2**).

Under Charl's guidance, Ludfi has also been mastering UWC's in-house GigaMacro camera, which uses image stacking to combine thousands of photographs to create super-high-resolution thin-section imagery of the contacts between the different granite types at Cape Columbine. Both of these outputs will soon be included within a VFT focused on the Cape Granites at Paternoster.

More recently (September–October 2026), Cilliers and UWC colleague Dr Juergen Reinhardt (**Fig. 3**) visited outcrops of the Natal Metamorphic Province, where the intention was to undertake similar pre-programmed flights for detailed mapping of outcrops with intricate geological features best exposed along the Tugela River. Unfortunately, the river level was too high, obscuring the target outcrops. Therefore, the drone was flown manually at two alternative onshore localities, 2–4 m AGL, with continuous image acquisition at 2 s intervals. Surprisingly (at least to Charl), the resultant orthomosaics (the featured example including 400 aligned photographs), depicted here in comparison with the original Google Earth imagery (**Figs. 4** and **5**), show the outcrop in detail and can certainly be used by Dr Reinhardt in a forthcoming scientific article.

Cilliers and his colleagues at UWC have also been quantifying the educational benefits of the VFTs produced thus far, the results of which have been nothing short of remarkable. To do this, student baseline knowledge was tested at first- and third-year levels before viewing the VFT, after being presented with the VFT in class, and after a week's independent VFT access.

In the 2025 Earth Science (ESC111) module, testing immediately before and after VFT exposure showed a mean increase of 14.90 percentage points, while evaluation in the 2025 Applied Geology (APG325) module revealed a gain of 16.51 percentage points after one week of continuous VFT access. For the 2026 ESC111 class, pre-VFT, post-demonstration, and post-one-week-access testing using similar multiple-choice questions yielded an immediate gain of 19.72 percentage points and a delayed mean gain of 47.85 percentage points. To address the effects of short-term memory, for the 2026 APG325 second-semester module we implemented more challenging test questions to help prepare the students for their upcoming field trip to the West Coast, with differently worded and sequenced questions before and after five days of VFT access resulting in a mean score increase of 29.40 percentage points. These results also allowed us to assess where learning gains were concentrated, and where misunderstandings of specific concepts persisted.

Looking ahead, our team aims to use both the orthomosaics and photogrammetric models for outcrop analysis and interpretation via the software program Lime by Fonix Geoscience, wherein extents and orientations of geological features can be traced and measured, and strike and dip can be calculated via three-point plane measurements. Furthermore, our existing VFTs will be customised to include built-in quizzes for self-learning (i.e. with questions that need to be answered correctly before being allowed to continue with the virtual tour). We also hope to produce a suite of new VFTs that focus specifically on mineral exploration, mining, extraction, and purification processes. In doing so, we aim to position UWC as a global leader in digital geoscience education and workplace preparation.



Fig. 1. Dr Cilliers, Ludfi van Vollenhoven and Prof Russell Bailie at Cape Columbine, Paternoster.

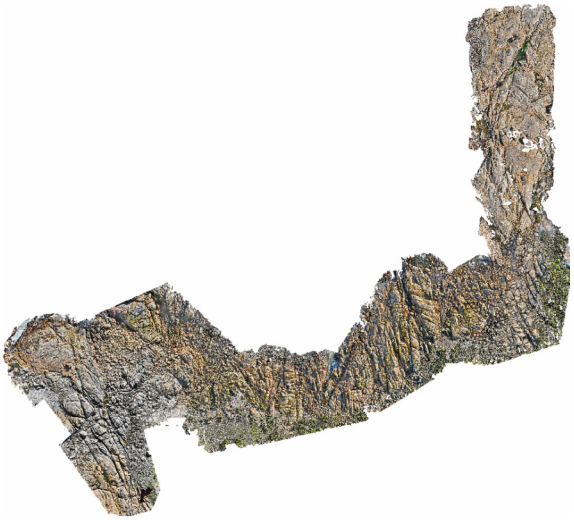


Fig. 2. Detailed drone-generated orthomosaic of alkali feldspar granites, quartz porphyries and I-type granites at Cape Columbine, Paternoster.



Fig. 3. Dr Cilliers and Dr Reinhardt at Kranskop, KwaZulu-Natal.



Fig. 4. Google Earth image of an outcrop of the Tugela Terrane of the Natal Metamorphic Province, KwaZulu-Natal.



Fig. 5. The same Google Earth image overlain by a detailed orthomosaic of an outcrop of the Natal Metamorphic Province cross-cut by a younger dyke (the age of which is yet to be determined).

Uncovering Ancient Crustal Processes | Pelele Lehloenya



For Pelele Lehloenya, a PhD candidate in the Department of Geology at Rhodes University, the focus is on answering some big questions about how continental crust forms, evolves and is reworked over geological time. Working under the supervision of **Prof. S.A. Prevec and Dr H. Minnaar**, Pelele's research investigates Paleoproterozoic crust formation processes recorded in migmatites of the Vioolsdrif Suite in the Northern Cape.

His project examines unusual migmatites found within the Richtersveld Subprovince, where rocks that typically form under very high temperatures occur alongside lower-grade rocks. By studying these contrasting rock units, Pelele hopes to better understand whether the migmatites formed in place through local heating or were created deeper within the crust and later transported by tectonic processes.

This year marked an important step forward in the project. **Pelele successfully submitted his PhD proposal for review and completed initial field sampling from key study areas in the Namaqua region**. Current work focuses on detailed petrographic analysis, which will lay the foundation for the next phase of the study, including mineral chemistry, geochemistry, isotopic investigations and geochronology.

Looking ahead, a follow-up field campaign is planned to gather additional samples, structural data and field observations that will help fill critical knowledge gaps and further advance the research.

Reflecting on his journey so far, Pelele acknowledges the role CIMERA has played in supporting his doctoral studies.

> ***"The funding allows me to commit fully to my doctoral research. Beyond the funding, being part of the CIMERA cohort has connected me with a wider community of researchers working on South Africa's geology and mineral resources, and I value the encouragement and opportunities that come with that."***

As his study progresses, we look forward to following the next chapter of this research and sharing future insights into the geological history of the Vioolsdrif Suite.

We wish Pelele every success as he continues his PhD journey!

Learning Across Borders | Wendy Hlungwane

For Wendy Hlungane, a PhD candidate at the University of Johannesburg, one of the highlights of 2026 was participating in the **Africa by Bus** programme, an educational journey that took students from South Africa to Eswatini and Mozambique.

The trip combined learning, cultural exchange and collaboration, offering participants the opportunity to engage with different institutions, industries and communities across the region. In Eswatini, the group visited the Engwenya Mine, a glass recycling factory, the International Trade Centre, and the University of Eswatini, where they participated in a Water Challenge competition alongside university students. In Mozambique, the programme included visits to key landmarks in Maputo before continuing the Water Challenge at the Eduardo Mondlane University.

Reflecting on the experience, Wendy described the journey as an opportunity to learn, connect and gain new perspectives while experiencing different parts of the continent.

> ***"This trip was filled with education, culture, teamwork, adventure, and unforgettable memories. I am truly grateful to the University of Johannesburg and the Faculty of Science for this amazing opportunity to travel, learn and experience different parts of Africa."***

The experience highlights the value of exposure beyond the classroom and laboratory, demonstrating how travel, collaboration and cultural exchange can contribute to the development of well-rounded researchers and future scientific leaders.







Taking Research to the Global Stage | Nthatisi Sandra Makhoba

For Nthatisi Sandra Makhoba, an MSc student at the University of the Witwatersrand, 2026 provided an exciting opportunity to share her research with the international geoscience community at the International Symposium on Mafic-Ultramafic Mineral Systems (ISMUMS) in Perth, Australia.

Supported through DSTI-NRF CIMERA ad hoc funding, Nthatisi presented a poster titled *"Paragenesis of Magmatic Sulphide Mineralisation in the Mafic-Ultramafic Phase of the Kunene Complex, Angola."* Her research explored the mineralogical characteristics of magmatic sulphide mineralisation within the Kunene Complex, providing evidence for the ore-forming processes that influenced its development, including fractional crystallisation, crustal contamination and magma mixing.

Beyond presenting her work, the conference offered valuable opportunities to engage with leading researchers, industry professionals, academics and fellow students working on mafic-ultramafic systems and associated ore deposits. The experience was further enriched through visits to Perth's Core Library and the Chalice-owned farmland, where participants examined drill core from the Gonneville Platinum Group Metal-Nickel-Copper (PGE-Ni-Cu) project and gained additional insight into magmatic ore systems.

Reflecting on the experience, Nthatisi highlighted the value of receiving feedback from an international audience and building professional connections that will contribute to both her MSc research and future career in geoscience.

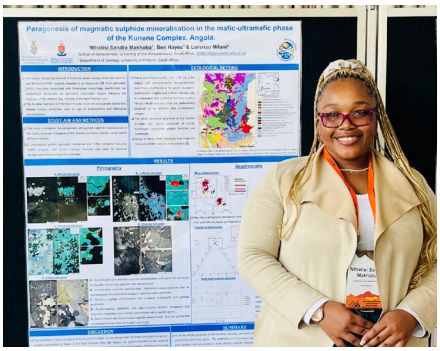
> ***"The ISMUMS conference provided an invaluable opportunity to receive constructive and insightful feedback on my research, which will play an important role in strengthening my MSc thesis."***

She also expressed her gratitude to CIMERA for making the opportunity possible and noted that the knowledge, experience and networks gained during the conference will continue to inform her research journey.

We are proud to see Nthatisi representing both CIMERA and South African geoscience research on an international platform. #CIMERAWorldwide











Exploring the Future of Critical Minerals | Ayakha Komzi and Pam Mabuza

The growing importance of critical minerals in the global energy transition took centre stage at the SAIMM Critical Minerals Conference 2026, where CIMERA-supported students Ayakha Komzi (UJ) and Pam Mabuza (UP) had the opportunity to engage with researchers, industry professionals and policymakers working across the critical minerals value chain.

For Ayakha, the conference provided valuable insights into the journey of critical minerals from exploration and mining through to processing and beneficiation. One of the highlights was the opportunity to connect with professionals from both academia and industry while gaining a better understanding of emerging trends shaping the sector.

Pam described the conference as both informative and inspiring. Held under the theme, *"From Potential to Prosperity - Building Africa's Critical Minerals Value Chains Through Collaboration, Innovation and Governance,"* the event explored topics including governance, ESG, mineral beneficiation, innovation, infrastructure, rare earth element processing and skills development.

Reflecting on her experience, Pam highlighted several key takeaways, including the importance of responsible governance, investment in research and innovation, and stronger collaboration across the minerals value chain. She also noted the need to move conversations beyond extraction towards skills development, technological advancement, community inclusion and sustainable mining practices that can strengthen Africa's position within the global critical minerals sector.

Beyond the technical knowledge gained, both students valued the opportunity to expand their professional networks and engage with experts working at the forefront of one of the fastest-growing areas in the geosciences.

Their participation in the conference reflects CIMERA's commitment to exposing students to emerging industry trends, fostering professional development and preparing the next generation of geoscientists to contribute to Africa's mineral future.

We are grateful to SAIMM for hosting an insightful event and look forward to seeing how these experiences shape the future careers of our students.

A Year of Research, Growth and New Experiences | Ishta Maharaj

For Ishta Maharaj, an MSc student at the University of Kwa-Zulu Natal, 2026 has been a year filled with memorable experiences as she works towards completing her master's research on the structural controls on diamond trap sites offshore Namibia. From presenting her work internationally to supporting initiatives that encourage greater participation in the geosciences, the year has provided opportunities for both scientific and personal growth.

One of the highlights was attending the International Conference for Seafloor Landforms, Processes and Evolution (ICSLPE), organised by Prof. Andrew Green and hosted at Pumula Beach Resort on the KwaZulu-Natal South Coast. The five-day conference brought together marine geologists from around the world, providing Ishta with the opportunity to present her master's research to an international audience and receive valuable feedback that will help strengthen her work.

Beyond research presentations, Ishta also helped facilitate the inaugural She Rocks the Field workshop, hosted by the UKZN Geology Department and spearheaded by Dr Lauren Hoyer. Designed to support female geology students preparing for fieldwork, the workshop tackled important topics including hygiene in remote environments, menstruation management, stress management and gender-based violence. Alongside fellow postgraduate students and staff members, Ishta helped create a supportive environment where students could openly discuss challenges and share practical solutions for navigating field-based research.

Later in the year, Ishta attended the Lichtenburg100 Centenary Conference, hosted by the Geological Society of South Africa (GSSA) and the Council for Geoscience. Sponsored by GSSA, she once again presented her master's research and engaged with researchers and industry professionals working within the diamond sector. The conference was followed by a field excursion to the historic Lichtenburg Diamond Fields, where participants visited former mining sites and gained firsthand insight into the geology and history of one of South Africa's most significant diamond-producing regions.

While these experiences have been highlights, Ishta notes that her biggest achievement this year has been moving closer to completing her master's degree. In addition to advancing her current research, she has also been working towards publishing research from both her Honours and MSc projects, an exciting next step in her academic journey.

Reflecting on the year, Ishta expressed her gratitude to her supervisors, Dr Lauren Hoyer and Prof. Andrew Green, for their constant encouragement and support, as well as to DSTI-NRF CIMERA for making these opportunities possible through its continued support of her studies.

With conference presentations, field experiences, publications and a master's degree on the horizon, 2026 has certainly been a year to remember for Ishta, and we look forward to seeing what comes next.









Alumni Spotlight | Dr Siyanda Brightboy Mngadi



From geophysics researcher to industry leader, Dr Siyanda Brightboy Mngadi's career reflects the diverse pathways available to geoscientists beyond academia.

A CIMERA-supported PhD graduate from the University of the Witwatersrand, Dr Mngadi currently serves as Managing Director of Ntuthuko Resources, a junior exploration company focused on mineral exploration, mining and energy. His research background spans geophysics, seismology, rock engineering and structural geology, with a particular focus on integrating underground mapping and high-resolution microseismicity to better understand weak geotechnical zones in deep South African gold mines. His work has been published in leading international journals, including the *International Journal of Rock Mechanics and Mining Sciences*.

Beyond his technical expertise, Dr Mngadi has built an impressive leadership career across the mining and resources sector, overseeing investment portfolios, corporate governance processes, and strategic mergers and acquisitions. He has also contributed extensively through board service and currently serves on the Boards of both the National Student Financial Aid Scheme (NSFAS) and the Council for Geoscience (CGS), where he plays a key role in guiding governance, technology and technical oversight.

Reflecting on his journey, Dr Mngadi credits CIMERA with providing more than just financial support during his doctoral studies.

> ***"CIMERA provided financial support during my PhD, which was pivotal in shaping my academic and professional journey. Beyond the funding, the platform also offered opportunities for conferences, networking, mentoring, and academic support that were instrumental in my development. This comprehensive backing allowed me to focus on my research and build the foundation for my transition from academia to industry."***

Today, Dr Mngadi's career stands as a testament to the impact of combining scientific excellence with leadership, governance and industry experience.

We are proud to celebrate Dr Mngadi's achievements and the impact he continues to make across the geoscience, mining and resource sectors.

LOOKING AHEAD

DSTI-NRF CIMERA Annual Research Colloquium

With only a few days to go until the 2026 DSTI-NRF CIMERA Annual Research Colloquium, preparations are well underway for two days of knowledge sharing, collaboration and professional development. Taking place on **16-17 November 2026 at the Wits Anglo American Digital Dome**, the Colloquium will bring together students, researchers, academics and industry professionals from across the CIMERA network and beyond.

This year's programme features research presentations from our CIMERA funded students representing institutions across South Africa, showcasing the breadth and impact of CIMERA-supported research. Delegates can also look forward to poster presentations, networking opportunities and discussions on emerging developments in the geosciences.

The programme will open with a keynote address by **Noleen Pauls, President of the Geological Society of South Africa (GSSA)**, titled *"Beyond the Rocks: A Career in Geoscience Without a Fixed Map."* Day two will feature a keynote presentation by **Dr Lauren Hoyer** *titled "She Rocks the Field: Building a More Inclusive Future for Geoscience."*

The Colloquium will also include a **Soft Skills Workshop** presented in collaboration with **Women in Mining South Africa (WiMSA)**, providing delegates with an opportunity to engage in discussions that extend beyond technical research and support their professional development.

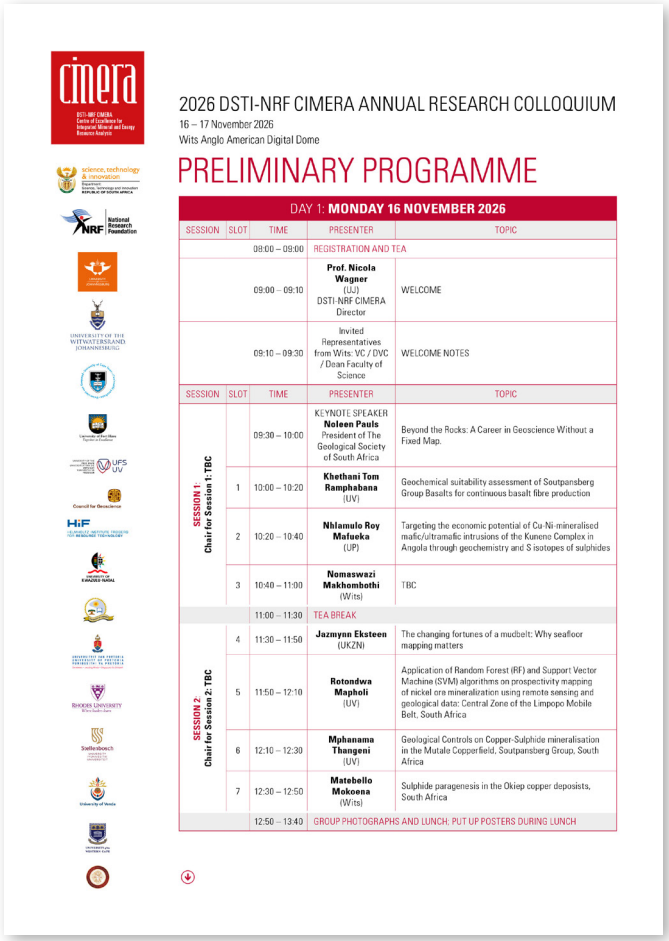
We are also grateful to the **University of Fort Hare Department of Chemical and Earth Sciences** for its sponsorship of the 2026 DSTI-NRF CIMERA Annual Research Colloquium. Their support contributes to creating a platform where students, researchers, academics and industry professionals can come together to share knowledge, build networks and engage with emerging developments in the geosciences. Thank you to the University of Fort Hare for investing in research collaboration, knowledge exchange and the next generation of scientific talent.

As anticipation builds, we look forward to welcoming delegates for what promises to be another memorable gathering of the CIMERA community, celebrating research excellence, collaboration and the next generation of geoscientists.

REGISTRATION IS STILL OPEN! If you have not registered click **HERE** to register.







2026 DSTI-NRF CIMERA ANNUAL RESEARCH COLLOQUIUM

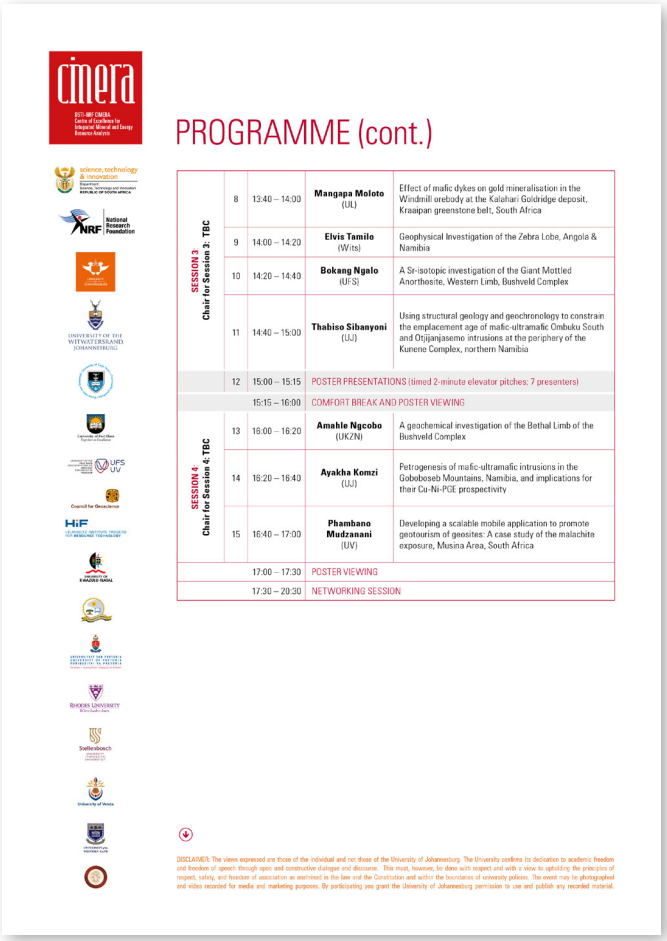
16 – 17 November 2026

Wits Anglo American Digital Dome

PRELIMINARY PROGRAMME

DAY 1: MONDAY 16 NOVEMBER 2026

SESSION	SLOT	TIME	PRESENTER	TOPIC
		08:00 – 09:00	REGISTRATION AND TEA	
		09:00 – 09:10	**Prof. Nicola Wagner** (UJ) DSTI-NRF CIMERA Director	WELCOME
		09:10 – 09:30	Invited Representatives from Wits: VC / DVC / Dean Faculty of Science	WELCOME NOTES
SESSION	**SLOT**	**TIME**	**PRESENTER**	**TOPIC**
SESSION 1: Chair for Session 1: TBC		09:30 – 10:00	KEYNOTE SPEAKER **Noleen Pauls** President of The Geological Society of South Africa	Beyond the Rocks: A Career in Geoscience Without a Fixed Map.
	1	10:00 – 10:20	**Khethani Tom Ramphabana** (UV)	Geochemical suitability assessment of Soutpansberg Group Basalts for continuous basalt fibre production
	2	10:20 – 10:40	**Nhlamulo Roy Mafueka** (UP)	Targeting the economic potential of Cu-Ni-mineralised mafic/ultramafic intrusions of the Kunene Complex in Angola through geochemistry and S isotopes of sulphides
	3	10:40 – 11:00	**Nomaswazi Makhombothi** (Wits)	TBC
		11:00 – 11:30	TEA BREAK	
SESSION 2: Chair for Session 2: TBC	4	11:30 – 11:50	**Jazmynn Eksteen** (UKZN)	The changing fortunes of a mudbelt: Why seafloor mapping matters
	5	11:50 – 12:10	**Rotondwa Mapholi** (UV)	Application of Random Forest (RF) and Support Vector Machine (SVM) algorithms on prospectivity mapping of nickel ore mineralization using remote sensing and geological data: Central Zone of the Limpopo Mobile Belt, South Africa
	6	12:10 – 12:30	**Mphanama Thangeni** (UV)	Geological Controls on Copper-Sulphide mineralisation in the Mutale Copperfield, Soutpansberg Group, South Africa
	7	12:30 – 12:50	**Matebello Mokoena** (Wits)	Sulphide paragenesis in the Okiep copper deposists, South Africa
		12:50 – 13:40	GROUP PHOTOGRAPHS AND LUNCH; PUT UP POSTERS DURING LUNCH	



PROGRAMME (cont.)

SESSION 3: Chair for Session 3: TBC	8	13:40 – 14:00	**Mangapa Moloto** (UL)	Effect of mafic dykes on gold mineralisation in the Windmill orebody at the Kalahari Goldridge deposit, Kraaipan greenstone belt, South Africa
	9	14:00 – 14:20	**Elvis Tamilo** (Wits)	Geophysical Investigation of the Zebra Lobe, Angola & Namibia
	10	14:20 – 14:40	**Bokang Ngalo** (UFS)	A Sr-isotopic investigation of the Giant Mottled Anorthosite, Western Limb, Bushveld Complex
	11	14:40 – 15:00	**Thabiso Sibanyoni** (UJ)	Using structural geology and geochronology to constrain the emplacement age of mafic-ultramafic Ombuku South and Otjijanjasemo intrusions at the periphery of the Kunene Complex, northern Namibia
	12	15:00 – 15:15	POSTER PRESENTATIONS (timed 2-minute elevator pitches; 7 presenters)	
		15:15 – 16:00	COMFORT BREAK AND POSTER VIEWING	
SESSION 4: Chair for Session 4: TBC	13	16:00 – 16:20	**Amahle Ngcobo** (UKZN)	A geochemical investigation of the Bethal Limb of the Bushveld Complex
	14	16:20 – 16:40	**Ayakha Komzi** (UJ)	Petrogenesis of mafic-ultramafic intrusions in the Goboboseb Mountains, Namibia, and implications for their Cu-Ni-PGE prospectivity
	15	16:40 – 17:00	**Phambano Mudzanani** (UV)	Developing a scalable mobile application to promote geotourism of geosites: A case study of the malachite exposure, Musina Area, South Africa
		17:00 – 17:30	POSTER VIEWING	
		17:30 – 20:30	NETWORKING SESSION	

DISCLAIMER: The views expressed are those of the individual and not those of the University of Johannesburg. The University confirms its dedication to academic freedom and freedom of speech through open and constructive dialogue and discourse. This must, however, be done with respect and with a view to upholding the principles of respect, safety, and freedom of association as enshrined in the law and the Constitution and within the boundaries of university policies. The event may be photographed and video recorded for media and marketing purposes. By participating you grant the University of Johannesburg permission to use and publish any recorded material.

DSTI-NRF CIMERA At Mining Indaba 2027

CIMERA is very excited to announce that we will be attending Mining Indaba 2027. We have engaged with MI27 organizers and the DSTI and will shortly be issuing a request for supervisors to nominate their high-flying postgraduate students to attend. The MI27 theme: **Stronger Together: Partnerships in Practice** continues the discussion from 2026 and the necessary inclusion of research and young voices in the MI program. The Young Professionals Program held on Day 4 of MI27 provides an excellent opportunity for young researchers to interact with peers and industry leaders. Mining Indaba Registration for 2027 | Mining Indaba

The Presidential PhD Programme Takes Shape

As we look ahead, one initiative that continues to gain momentum is the Presidential PhD Programme (PPhDP), a national effort aimed at developing high-level research capacity in areas that are critical to South Africa's future.

Through CIMERA's South African Just Energy Transition Battery and Critical Elements (SAJET-BaCE) Thematic Hub, the programme is supporting doctoral research focused on advancing South Africa's Just Energy Transition through the development of battery and critical element value chains. The initiative brings together researchers, universities, government, industry and international partners around key focus areas including geological exploration and resource mapping, mineralogy and ore-forming systems, sustainable mineral processing and beneficiation, and the socio-economic dimensions of critical minerals and energy transitions.

As highlighted throughout this newsletter, developing the next generation of researchers requires more than funding alone. It requires partnerships, mentorship, international collaboration and opportunities to tackle real-world challenges. The PPhDP represents an important step in building that future and creating pathways for research that can contribute meaningfully to South Africa's scientific, economic and energy priorities.

We look forward to sharing more milestones, collaborations and success stories as this exciting initiative continues to evolve.

IMPORTANT DATES

NOVEMBER 2026

- 16 -17 November: DSTI-NRF CIMERA Annual Research Colloquium
- 17 November: DSTI-NRF CIMERA Annual Soft Skills Workshop
- 17 November: Science Writing Competition Winners Announced
- 19 -18 November: GSSA African Exploration Showcase 2026
- 15 December: Holiday time, CIMERA offices will open 5 January 2027



ICCP 2026, Porto

Prof. Nikki Wagner participated in the **77th Annual Meeting of the International Committee for Coal and Organic Petrology (ICCP)**, hosted by the University of Porto, Portugal, from 12-18 September.

The annual meeting brings together organic petrologists from around the world to exchange knowledge, discuss advances in the field and engage through a range of commission, working group and microscope sessions. Discussions covered topics across General Coal and Organic Petrology, Geological Applications of Coal and Organic Petrology, and Industrial Applications of Coal and Organic Petrology. Key sessions focused on ISO standards related to organic petrology, as well as the ICCP's accreditation programmes.

A highlight of the week was the Symposium, **Organic Petrology for a Changing World**, held at the historic Academy of Sciences in Lisbon. During the symposium, **Miss Lydia Mpeoana (MSc, UJ)** and **Dr Sanki Biswas** presented research on discard coals and critical elements.

Looking ahead, the **ICCP Annual Meeting, in collaboration with The Society for Organic Petrology (TSOP), will be hosted in Johannesburg in September 2027**. The event will be organised by **Prof. Nikki Wagner, Dr Marvin Moroeng (UJ) and Dr Malumbazo (Wits)**, providing an exciting opportunity to welcome the international organic petrology community to South Africa.

WiMSA 3rd Annual Symposium

On 21–22 July, our CoE Manager Busisiwe Maphalala attended the Women in Mining South Africa (WiMSA) 3rd Annual Symposium, which provided a valuable platform for reflection and engagement on leadership, purpose and women's role in shaping the future of the mining industry.

CIMERA continues to engage with WiMSA to support their initiatives and to expose students to life lessons.

We are also delighted to welcome WiMSA back for the third consecutive year as facilitators of the Soft Skills Workshop at our Annual Research Colloquium. Thank you for this valued partnership. We look forward to many more collaborations in 2027 and beyond.







SAIMM Critical Minerals Conference

On 30–31 July, the DSTI-NRF (CIMERA sponsored the SAIMM Critical Minerals Conference 2026. Busisiwe Maphalala (CoE Manager) served on the sub-organising committee and moderated the breakaway session on *"ESG, Energy Transition and Inclusive Development: Ensuring Sustainability, Resilience and Equitable Growth."* The conference provided a valuable platform for engaging on critical minerals opportunities and challenges, highlighting the importance of responsible resource development, sustainable value chains and inclusive growth in advancing the energy transition. CIMERA's participation reinforces its commitment to contributing research-driven insights and fostering collaboration across the minerals sector.

AWIMSA 1st Annual Mining Symposium 2026

On 5 September, CoE Manager Busisiwe Maphalala moderated a panel discussion titled "Building the Capabilities for the Mine of the Future" at a symposium hosted by the Association of Women in Mining South Africa (AWIMSA). The discussion explored the importance of anticipating and defining the skills and capabilities required to navigate the future of mining, particularly in the context of emerging technologies, digitalisation and evolving industry demands. It highlighted the need for proactive skills development to ensure that women are not only equipped to participate in the transformation of the sector but are also positioned to shape, influence and lead it. Thank you to AWIMSA for creating a valuable platform for dialogue, knowledge-sharing and collaboration towards a more inclusive and future-ready mining industry.





Project Blue Critical Minerals Conference: Ferroalloys 2026

On 8-9 September, CoE Manager Busisiwe Maphalala attended the Project Blue Critical Materials Ferroalloys Conference, gaining valuable market intelligence on the evolving dynamics of the global ferroalloys sector. Day 1 focused on the macroeconomic trends and market fragmentation shaping the industry, with panel discussions examining investment prospects, regulatory frameworks, infrastructure constraints and supply chain resilience. Day 2 provided further insights into global market dynamics and the challenges and opportunities facing the sector. A sincere thank you to Menar for making it possible to attend this insightful conference and engage with key industry stakeholders.

For information visit the Project Blue website.

Policy dialogue on "Critical minerals beneficiation and upgrading pathways in South Africa"

On 25 September, the DSTI/NRF SARChI Chair in Transformative Innovation, 4IR and Sustainable Development, in collaboration with the Centre for African Minerals Value Chains (CAMVaC), hosted a policy dialogue on "Critical Minerals Beneficiation and Upgrading Pathways in South Africa." The discussion brought together stakeholders from industry, government, finance, research and labour to explore how South Africa can leverage its mineral resources to strengthen industrial development, technological capabilities and shared economic value. CIMERA continues to contribute to important policy and industry conversations that advance sustainable mineral value chains and South Africa's industrialisation objectives.



GET INVOLVED | CALL FOR CONTRIBUTIONS

We welcome:

- Student achievements
- Alumni updates
- Conference participation
- Publications
- Awards
- Fieldwork photographs
- Outreach activities

Contact:
Itumeleng Modisha
Marketing and Events Coordinator

Email:
imodisha@uj.ac.za

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CLOSING REMARKS

As we put together this final newsletter of 2026, one thing became clear: it's been an impactful year.

From international conferences and field trips to graduations, podcasts, workshops, research milestones and new partnerships, this edition is filled with stories of growth, discovery and achievement. More importantly, it's filled with the people who make CIMERA what it is.

If there's a common thread running through all of these stories, it's the people behind them. The students asking new questions. The supervisors providing guidance. The researchers pushing boundaries. The partners creating opportunities. And the broader CIMERA community cheering each other on every step of the way.

Thank you for being part of the journey, whether as a student, alumni member, supervisor, collaborator, industry partner or supporter.

As we look ahead to 2027, we're excited for the conversations yet to be had, the discoveries yet to be made, and the stories we'll be sharing in future editions.

Until then, keep asking questions, keep exploring, and keep sharing your science.

Thank you for reading. We'll see you in 2027.

The CIMERA Team

Our Impact Since 2015



