

# Geological Society of Africa

## Newsletter

Volume 12 – Issue 2  
June - August 2024

### Inside this Issue:

Senegal announced the first oil barrel production on June 10th on its Sangomar field

Article: "Ophiolites, obvious candidates for natural Hydrogen exploration".



Edited by:  
**Dr. Daniel Kwayisi**  
Editor of the GSAf Newsletter

<http://gsafr.org/newsletter/>

Editorial Team  
Mr. Eli Djomekou  
Mr. Nelson Senunyeme



Welcome to Kenya



**Colloquium of  
African Geology**  
**CAG30** Sept 23-27, 2025  
Nairobi, Kenya

## In this Issue

GSAf Matters	01
CAG30	02
News from GSAf partners	05
Opinion	10
Knowing Africa	18
Events	19
Geology Comic	24
Opportunities	25
Obituary	32
Contact the Council	34

Geological Society of Africa - Newsletter  
Volume 12 - Issue 2  
June - August 2024

© **Geological Society of Africa**  
<http://gsafr.org>

Temporary contact: [dkwayisi@gmail.com](mailto:dkwayisi@gmail.com)



# GSAf Matters

## GSAf at the 37<sup>th</sup> IGC

The recent 37th International Geological Congress (IGC) held in Busan, South Korea, from August 25 to 31, 2024, brought together geoscientists worldwide discuss pressing topics in Earth sciences under the theme, “The Great Travelers: Voyages to the Unifying Earth”. It was hosted by the International Union of Geological Sciences (IUGS) and organised by the Geological Society of Korea in collaboration with KIGAM and Busan is Good.

The Geological Society of Africa was actively involved in the congress, participating in discussions aimed at advancing geoscientific knowledge and fostering international collaboration. A full report, including photos of the President of the Geological Society of Africa’s engagements, will be shared later. However, find below a few pictures featuring the president, Gbenga Olugbenga Okunlola, during the just-ended 37th IGC.



The President of GSAf to the right, Mr. Arisekola senior advisor AMDC African Union to the left and early career geoscientists from Namibia



The President with young early career geoscientists from Ghana, Cote Dvoire, and Cameroon at the IGC



The President and the General Secretary of IUGS, Dr. Stan Finney



**Welcome to Kenya**



**Colloquium of  
African Geology**  
**CAG30** Sept 23-27, 2025  
Nairobi, Kenya

# Colloquium of African Geology CAG30

Sept 23-27, 2025  
Nairobi, Kenya



## Unveiling Africa's Geological Resources: "Paving the Way for Sustainable Development"

# CAG30

The 30th Colloquium  
of African Geology

## NAIROBI KENYA

23RD - 27TH SEPTEMBER 2025



The Colloquium of African Geology (CAG) is a major biennial meeting organized under the auspices of the Geological Society of Africa (GSAf), where earthscientists globally have the opportunities to present their research results on topics related to African geology and surrounding areas.

JOIN MORE THAN 1000 GEOSCIENTISTS  
FROM ALL OVER THE WORLD:

Sponsorship  
Presentations  
Exhibitions  
Field trips  
Workshops and Short Courses



WWW.CAG30NBI.ORG | CALL NOW: +254 791 308 357  
cag30info@cag30nbi.org | cag30.nbi@gmail.com



# SUB-THEMES CAG30

- ▶ Geopolitics trends on development of strategic minerals in Africa.
- ▶ Sustainable development of ground water resources in Africa, challenges and mitigation measures for a better tomorrow.
- ▶ Economic leveraging of geological trends, Geotourism and Geoheritage sites.
- ▶ Realization of Africa's potential in petroleum and energy resources in Climatic Changing times.
- ▶ Growing of Geophysics in exploration of mineral resources and development of geological resources.
- ▶ Maximising on geothermal resources as a key potential of green energy in Africa.
- ▶ Emphasis on geoscience education for development and sustainability.
- ▶ Innovative solutions to accommodate the influence of plate tectonics, sea floor spreading and other earth surface processes on Africa's landscape and resources.
- ▶ The fast growing technology in incorporating Artificial Intelligence (AI) on the development of Geosciences in Africa.

JOIN MORE THAN 1000 GEOSCIENTISTS  
FROM ALL OVER THE WORLD:

Sponsorship  
Presentations  
Exhibitions  
Field trips  
Workshops and Short Courses



WWW.CAG30NBI.ORG | CALL NOW: +254 791 308 357  
cag30info@cag30nbi.org | cag30.nbi@gmail.com



# News from GSAf partners

## Annual Conference of the Ghana Institute of Geoscientists (GHIGCON-2024)

Ghana Institute of Geoscientists (GhIG) is organising the 2024 Annual Conference (GHIGCON-2024) of the Institute under the theme *“Strategic Natural Resources Exploration & Exploitation: Guarantee for Sustainable Development”* at the University of Energy and Natural Resources - Sunyani, Ghana from 8th to 11th October 2024.

This National Conference, which will also be organized virtually, will include Plenary Lectures, Keynote Lectures and Panel Discussions by eminent personalities from Ghana and abroad, as well as oral and poster presentations from contributed papers. Workshops and lectures on specialised topics will also be organised for interested participants and students.

To register for the conference: <https://ghig.org/ghig-annual-conference-2024/>

Register now to secure your place at GHIGCON 2024. Limited slots available!"



The poster features a collage of images related to geoscience: a geologist in a field, an oil rig, a mining truck, and a person using a surveying instrument. The Ghana Institute of Geoscientists logo is in the top right, with the website www.ghig.org below it. The title 'National Geoscience Conference' is in large blue and black text. The theme, date, and venue are listed in a blue box. An 'Important information' table is at the bottom left, and social media links are at the bottom.

# National Geoscience Conference

Annual Conference of the Ghana Institute of Geoscientists

## GHIGCON-2024

THEME  
**Strategic Natural Resources Exploration & Exploitation: Guarantee for Sustainable Development**

DATE  
**08<sup>TH</sup> - 11<sup>TH</sup> OCTOBER**  
TWENTY TWENTY FOUR (2024)

VENUE  
**University of Energy and Natural Resources, Sunyani**

Important information	
Final Call for Abstracts/Contributions	15 July 2024
Abstract Submission Deadline	12 August 2024
Notification of Acceptance/Rejection of Abstract	26 August 2024
Conference Dates	8 - 11 October 2024
Submission of Abstracts should be done via	<a href="mailto:ghigcon24@ghig.org">ghigcon24@ghig.org</a> <a href="mailto:ghigcon.secretariat@ghig.org">ghigcon.secretariat@ghig.org</a>

 Field trip to understand and explore the Birimian mineralisation

[f](#) [in](#) Ghana Institute of Geoscientists [x](#) [v](#) @GhIG\_1

## GSA CONNECT

### The Geological Society of America: A Global Community for Geoscience

The Geological Society of America (GSA) is a professional scientific organization that unites geoscientists from around the world to promote the study and understanding of Earth sciences. Founded in 1888, GSA has a long history of supporting geoscientific research and education. The society serves over 18,000 members from academia, industry, and government sectors, providing a platform for networking, professional development, and scientific exchange.



THE  
GEOLOGICAL  
SOCIETY  
OF AMERICA®

### GSA International Programs

GSA's international initiatives are a critical component of its mission, fostering global collaboration and enhancing the exchange of knowledge across borders. The GSA International program focuses on creating opportunities for international cooperation, providing forums for discussions on science and policy, and building relationships with global geoscientific societies.

For GSA International Newsletter issues and descriptions of our programs, please visit: <https://www.geosociety.org/GSA/GSA/International/Home.aspx>.

GSA actively promotes international discussions through its Community platform, which facilitates conversations on global geoscience topics. The **James B. Thompson, Jr., Distinguished International Lectureship** allows U.S. distinguished geoscientists to share their expertise internationally, and international geoscientists to share their knowledge in the U.S., thus enhancing cross-cultural scientific communication. Please visit [https://www.geosociety.org/GSA/About/GSA\\_International/GSA/International/Lecture\\_Tour/Home.aspx](https://www.geosociety.org/GSA/About/GSA_International/GSA/International/Lecture_Tour/Home.aspx) to learn about Prof. Mary Hubbard's experience as the 2023-2024 James B. Thompson, Jr. Distinguished International Lecturer.

### Travel Grants and Awards

GSA supports international participation through various travel grants and awards. These grants are designed to help students and early-career scientists attend the GSA Connects meetings, such as the upcoming Connects 2024 meeting in Anaheim, California. The International Travel Grants are tailored to non-North American students and early career scientists, and the Christopher I. and Irene N. Chalokwu Travel Grant specifically supports students from Africa.

For more information, please see

[https://www.geosociety.org/GSA/About/GSA\\_International/GSA/International/Travel\\_Grants.aspx](https://www.geosociety.org/GSA/About/GSA_International/GSA/International/Travel_Grants.aspx)

### Collaborative Efforts

GSA's collaborative efforts extend to partnerships with other international geological societies. By working together, GSA and its partners aim to develop sustainable solutions, advance the understanding of Earth's complex systems, and support the next generations of geoscientists. For example, GSA collaborates with other organizations in various activities such as hosting webinars and workshops that provide valuable insights into career pathways and opportunities in geoscience.

In conclusion, GSA's international programs and initiatives play a vital role in uniting the

global geoscience community. Through these efforts, GSA not only promotes scientific excellence but also fosters a collaborative environment where geoscientists from diverse backgrounds can come together to share knowledge and tackle the world's most pressing geological issues. We look forward to collaborating with the Geological Society of Africa!

## Empowering Geoscientists



## Fostering Global Excellence

Subscribe to Newsletter



Join Now



## Sangomar delivers its first barrel



**PETROSEN** is pleased to announce the production of the first barrel of oil from the **Sangomar** field on Monday, **June 10, 2024**. With the achievement of this milestone, Senegal enters the restricted circle of oil-producing and exporting countries.

This nationwide development project has been successfully completed despite many challenges encountered since the Final Investment Decision (FID) signed in January 2020. Indeed, the RSSD Joint Venture, composed of **Woodside** and **PETROSEN**, has been able to face the various technical, financial and geopolitical challenges by having adopted effective and efficient strategies to respond to the global economic situation.

The production of the **Sangomar** field will be carried out by an FPSO (floating production, storage and offloading facility) vessel, named Léopold Sédar Senghor in tribute to the first president of Senegal, which is already anchored about a hundred kilometers from the Dakar coast and at a depth of 780 meters for the entire duration of the field's operation. This vessel, with a storage capacity of 1,300,000 barrels, has a daily production of up to 100,000 barrels of crude oil.

As a reminder, production will be ensured by a total of 23 development wells, which are divided into 11 oil production wells, 2 gas injection wells and 10 water injection wells. The subsea infrastructure is designed to enable the production of current wells and facilitate future phases of field development.

The cost estimate for Phase 1 of the Sangomar field development project remains between US\$4.9 billion and US\$5.2 billion.

PETROSEN would like to thank the Woodside Operator, the Government of Senegal, MODEC, SIA, as well as all international and local partners. Their collaboration and unwavering support have been essential to the success of this historic project which will generate significant revenues for Senegal and contribute to its economic development.

Translated by myself from official announcement.

Première Production de pétrole offshore au Sénégal (First-Oil) – Groupe Petrosen

## GSSA UPCOMING EVENTS

 <b>Geological Society Of South Africa 2024 Events</b>		
<b>DATE</b>	<b>EVENT</b>	<b>LOCATION</b>
6 AUGUST 2024	INTRODUCTION TO DRILLING	Online
15-23 AUGUST 2024	100 YEARS OF THE MERENSKY REEF MINERALS, METALS AND MINING MORE INFORMATION	
3 SEPTEMBER 2024	AND CODE OF ETHICS PROFESSIONALISM	
10 & 11 SEPTEMBER 2024	DATA ANALYTICS & MACHINE LEARNING	Online

## Opinion

# Leveraging Geoconservation Strategies for Geoscience Education in Africa

[Marian Selorm SAPAH\\*](#), [Daniel Kwadwo ASIEDU](#), [Yvonne Sena Akosua LOH](#), [Bruce K. BANOENG-YAKUBO](#)

Department of Earth Science, University of Ghana, P.O. Box LG 58, Legon-Accra, Ghana.  
[\\*msapah@ug.edu.gh](mailto:msapah@ug.edu.gh)

### 1. Abstract

To initiate a conversation leading to action on how Geoconservation strategies can be used as a means of advancing Geoscience education in Africa this article discusses and recommends Geoconservation strategies following established best practices including inventory, protection and preservation, management and public education, outreach and promotion.

### 2. Background

Geoconservation can be defined as the practice of identifying, preserving, and managing sites and landscapes which have value for their geology or geomorphology (e.g., Sharples, 2002; Brocx & Semeniuk, 2007; Burek & Prosser, 2008; Knight & Esterhuysen, 2015; Gordon, 2019; Crofts et al., 2020; Pescatore et al., 2023). Henriques et al., 2011 characterized geoconservation as an emergent geoscience within the earth and space sciences where its scope and methods, as well as production and validation of knowledge can be acknowledged such that, the definition of geoconservation interrelated with other earth sciences can be established to support applied geoconservation, and its technical applications can be identified through the production of materials, methods and or scientific services useful to society, namely geoeducation. This work further distinguished between basic geoconservation (the classification of Earth's geological heritage), applied geoconservation (the conservation of Earth's geological heritage), and technical applications of geoconservation (the valuation of Earth's geological heritage). In summary, geoconservation encompasses plans, policies, and actions towards conservation of geodiversity and geoheritage.

The Earth's natural diversity spans both biotic elements (biodiversity) and abiotic elements (geodiversity). Geodiversity describes the variety of geological materials i.e., rocks, minerals landscapes, fossils, soils etc. and the natural processes that form and or alter them (e.g., Gordon & Wignall, 2006; Gray, 2013; Brilha, 2016; Brilha et al., 2018; Gordon, 2019). Geodiversity may have scientific, educational, economic, cultural and touristic values. Geoheritage refers to elements of the Earth that have been identified for their geological value or significance with an interest of conservation (e.g., Reynard & Brilha, 2018; Santangelo & Valente, 2020; Pescatore et al., 2023). As such, geoheritage leads to geoconservation (e.g., Gray, 2018). Geoheritage and geoconservation are primarily concerned with the preservation of Earth, and are important endeavors globally as evident in various international and intra-national institutions (e.g., International Union for Conservation of Nature (IUCN), United Nations Educational, Scientific and Cultural Organization (UNESCO)'s Global Geoparks Network (GGN), International Geoscience and Geoparks Programme (IGGP), International Association for Geoethics (IAGETH), National Geological Surveys, National Parks Services and National Geoparks Committees) set up for this purpose with conventions, agreements and initiatives (Brocx & Semeniuk, 2007; Pescatore et al., 2023). There are two main ways in which the conservation of geoheritage

can be carried out i.e., *insitu and exsitu*, where *insitu* conservation refers to the protection of geological elements in their natural environment (e.g., geosites and geoparks) while *exsitu* conservation on the other hand is the relocation of geological elements from their natural environment to areas equipped for their protection and preservation (e.g., museums) (e.g., Van Geert, 2019; de Lima, et al., 2020). Areas of particular geological recognized for their scientific, educational, cultural, or aesthetic value and are often recognized as deserving to be preserved and protected, from either or both natural degradation or destructive human activities are termed geosites i.e. geological sites (e.g., ProGEO 2011; Gray, 2013; Reynard & Brilha, 2017).

Geoscience education refers to the field of education focused on teaching various aspects of the Earth sciences, including geology, meteorology, oceanography, and environmental science. It encompasses both the content knowledge of these disciplines and effective methods for teaching and learning about Earth processes, systems, and phenomena. It includes field-based learning experiences, such as field trips and field courses, which provide opportunities for students to engage directly with geological features and landscapes (e.g., Butler 2008; Mogk & Goodwin, 2012). Large or small, and regardless of ownership, many geological sites of scientific, educational, economic, cultural and touristic values are vulnerable to both natural processes and anthropogenic activities. As such, conservation strategies appropriate to the type of site and nature of ownership are important to protect and maintain geological sites for the long-term interests of both geologic and civic communities; in this case, for Geoscience education.

Intersections between Geoconservation and Geoscience education, can be seen in education, research, and professional expertise (e.g., Henriques et al., 2011; Arrad et al., 2020). Geoscience education plays a crucial role in providing the knowledge, skills, and expertise necessary for effective Geoconservation efforts. While the principles of Geoconservation which includes preservation, management, and interpretation of geological features, landscapes, and processes provides a discipline for geoscience education. For example, geoscientists are trained to identify and assess geological features and landscapes, which is essential for identifying sites of geological significance for conservation. Training in field geology, geological mapping, and site assessment techniques equips professionals with the skills needed to evaluate the scientific, educational, cultural and aesthetic value of geological sites (e.g., Brilha, 2016). On the other hand, some Geoscience education programs integrate conservation principles and practices into their curricula to prepare students for careers in Geoconservation (e.g., Manyuk, 2016; Reynard et al., 2018; Tormey et al., 2022). Geoscience research also contributes valuable knowledge and insights to the field of Geoconservation, informing conservation strategies, policies, and management practices. Geoconservation initiatives often involve educating the public about the importance of Earth's geological features, processes, and history. Geoscience education plays a crucial role in preparing professionals who can effectively communicate geological concepts and engage in outreach activities resulting in the effectiveness of Geoscience education programs in promoting geological awareness and understanding among students and the general public (e.g., Catana & Brilha, 2020; Somma, 2022; Rodrigues et al., 2023).

### 3. Importance of Geoscience education

Geoscience education holds significant importance for several reasons:

- **Understanding Earth Systems:** Geoscience education provides essential knowledge about Earth's processes, systems, and materials. This includes understanding geological formations, weather patterns, ocean currents, climate change, and

natural hazards like earthquakes and volcanic eruptions. Such understanding is crucial for making informed decisions about environmental management, resource use, and disaster preparedness.

- **Sustainability and Environmental Awareness:** It promotes awareness of environmental issues and sustainability challenges. Geoscience education equips individuals with the knowledge to understand the impacts of human activities on Earth's systems and to develop strategies for sustainable development.
- **Natural Hazard Mitigation:** Educating people about geohazards such as earthquakes, tsunamis, landslides, and hurricanes enables communities to prepare for and respond to these events effectively. This knowledge can save lives and reduce the economic impact of disasters.
- **Resource Management:** Geoscience education plays a crucial role in understanding Earth's natural resources, including minerals, water, and energy sources (e.g., fossil fuels, renewable energy). It helps in sustainable management and conservation of these resources for future generations.
- **Career Opportunities:** It prepares students for diverse career paths in industries such as energy, mining, environmental consulting, geotechnical engineering, and government agencies. Geoscientists contribute to exploration for resources, environmental protection, land use planning, and climate research.
- **Interdisciplinary Connections:** Geoscience intersects with other scientific disciplines (e.g., biology, chemistry, physics) and social sciences (e.g., economics, sociology). This interdisciplinary approach fosters a holistic understanding of Earth and its interconnected systems.
- **Scientific Literacy:** Geoscience education contributes to scientific literacy by teaching critical thinking, problem-solving, and analytical skills. It encourages inquiry-based learning and fosters curiosity about the natural world.
- **Policy and Decision Making:** Knowledge gained through geoscience education informs policy decisions related to land use planning, environmental regulations, climate policy, and disaster risk reduction. It empowers policymakers and stakeholders to make evidence-based decisions for sustainable development.

Overall, Geoscience education is essential for understanding our planet's past, present, and future. It enables individuals to become responsible stewards of Earth's resources and environment, addressing global challenges and contributing to a sustainable future.

#### **4. Geoconservation and Geoeeducation Initiatives in Africa**

Initiatives to conserve geological sites in Africa are crucial for preserving the continent's diverse geological heritage and promoting sustainable development. The history of geoconservation efforts in Africa dates to the recognition of the continent's rich geodiversity and the need to protect its unique geological features. Over the past five decades, there has been a significant global shift towards recognizing the importance of geoconservation, leading to its inclusion in international policies and strategies (Brilha, 2022; Neto & Henriques, 2022).

Some African countries like Morocco and South Africa have acknowledged the importance of geoconservation and have implemented various strategies to protect their geosites (e.g., Mhend et al., 2023; Matshusa et al, 2021). These efforts aim to conserve valuable geological features, promote scientific research, and raise public awareness about the significance of geodiversity. Efforts like those in Khnefiss National Park in Morocco highlight the importance of reconciling conservation imperatives with local demands and

tourism, emphasizing the need for geoconservation strategies based on international significance assessments (Abungu, 2022). One of the key milestones in geoconservation efforts in Africa was the establishment of the Earth Heritage Africa initiative in 1998. This initiative aimed to promote the conservation and management of Africa's geosites, as well as raise awareness about their scientific, educational, cultural, and economic value (Kisusi & Lwoga, 2023). Another milestone in African geoconservation was the creation of the African World Heritage Fund (AWHF) in 2006 (Dulias, 2022). The AWHF was established to provide finance and technical support for the effective conservation and protection of Africa's natural and cultural heritage, including those with significant geological value. The Global Geoparks Network has been instrumental in promoting geoconservation efforts globally, including in Africa. However, only two African countries have established geoparks. These geoparks play a key role in geoeducation, tourism, and community engagement in geoconservation.

The involvement of local communities in African geoconservation efforts is a significant development. Local communities have realized the importance of their geological heritage and have taken steps to protect and conserve it. According to Neto and Henriques (2022), involving the community in geoconservation through local-based initiatives can play a key role in co-management, sustainable development, and the long-term preservation of Africa's geodiversity. Developing inventory and evaluation procedures for African geoheritage has further supported these efforts. Various studies have emphasized the importance of assessing and documenting Africa's geoheritage. These studies have concentrated on identifying and evaluating geosites and their ecological, cultural, and economic significance (e.g., Mhend et al., 2023; Neto & Henriques, 2022).

Despite these efforts, Africa's geodiversity is not adequately represented on a global scale unlike in Europe and other continents. In Europe, geoconservation is actively pursued in most countries and two international symposia on this subject were staged in 1991 and 1996. Given the wealth of outstanding geological sites and the importance of African stratigraphy within the global geological record, there is an urgent need for a more comprehensive inventory, assessment, and legal protection of its geoheritage sites. Unique and typical geosites need to be identified, catalogued, and prioritised in the interest of science, education, and tourism, with the aim being their protection to ensure sustainable development through geoeducation and geotourism (Neto and Henriques, 2022). The gap between Africa and other continents regarding geoconservation is closely related to underdevelopment and the need for further efforts to raise awareness and implement protective policies.

## **5. Recommendations of Geoconservation strategies for Geoscience education in Africa**

As discussed above, Geoconservation is not a very well-established practice in Africa. As such, only few African countries have a few known geological sites that have been conserved or undergoing Geoconservation for Geoheritage, Geotourism or Geoeducation. There is therefore a need for stakeholders in the geoscience community such as academic institutions, Geological Surveys, Geoscience institutions, Environmental Protection Agencies, and other relevant government agencies as well as policy makers to collaborate on developing and promoting Geoconservation endeavors in Africa, particularly for geological sites that can be used for Geoscience education.

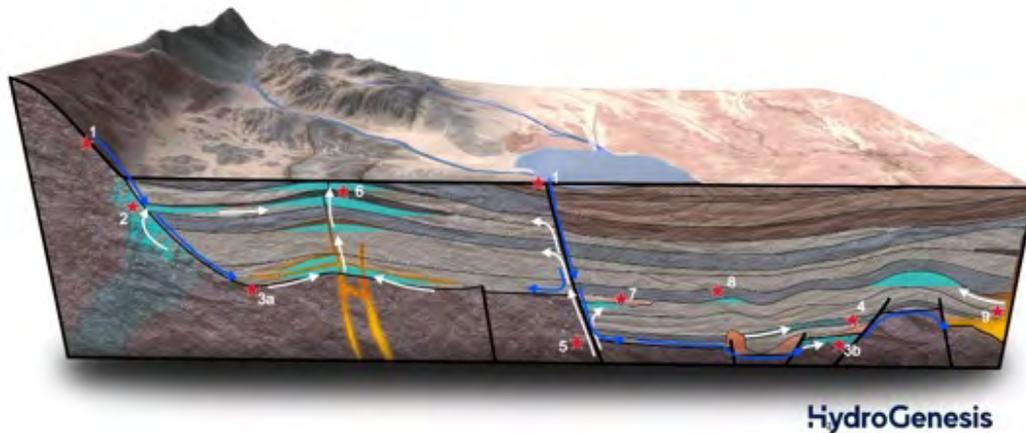
There are globally established methodologies and best practices in Geoconservation (e.g., Sharples, 1993, 2002; Brilha, 2016, 2018; Reynard & Brilha, 2017; García-Cortés, et al., 2019; Crofts, et al., 2020; IUGS-ICG, 2023) that can be used as a resource towards the development and promotion of Geoconservation in Africa. These methods and

established best practices mainly include:

- **Inventory and Documentation:** the systematic recording of geological sites, features, and landscapes and creating comprehensive databases and catalogs.
- **Assessment and Evaluation:** Assessing the scientific, educational, cultural, and aesthetic value of geological sites, using criteria such as geological significance, rarity, representativeness, integrity, and vulnerability.
- **Designation and Recognition:** Official designation of sites as protected areas (e.g., Geoparks, National Parks, World Heritage Sites).
- **Legal Protection:** Enacting laws and regulations to protect geological sites from damage or destruction as well as establishing protected areas and defining buffer zones.
- **Management:** Developing and implementing site-specific management plans, addressing issues such as visitor access, site maintenance, and risk management.
- **Active Conservation:** Physical conservation measures such as erosion control, vegetation management, and restoration of damaged sites, and also, monitoring and maintaining geological features to ensure long-term preservation.
- **Public Education, Outreach and Promotion:** Developing educational programs and materials for schools, universities, and the general public, organizing workshops, guided tours, and exhibitions, creating visitor centers, museums, and interpretative trails and using signage, brochures, and digital resources to explain geological features and their significance.

## Ophiolites, obvious candidates for natural Hydrogen exploration

Authored by [Eli Djomekou](#), with substantial input from [James Dodson](#) (HydroGenesis)



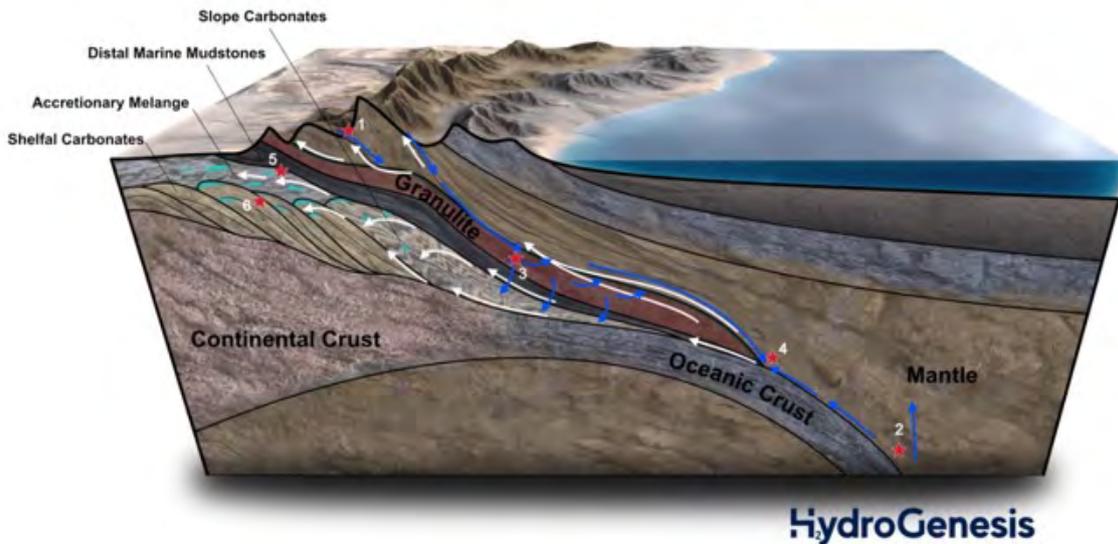
*Factors involving hydrogen generation in Intracratonic basins. 1. Meteoric water percolating into the subsurface. 2. Shallow hydrogen production from weather BIFs. 3. Serpentinization of greenstone basement and/or oxidation of iron silicates and/or radiolysis at high Uranium/Thorium basement lithologies. 4. Thermogenesis of organic matter. 5. Hydrogen emanation from deep, crustal faults. 6. Trapped by volcanic sills. 7. Salt trap. 8. Trapping by mudstones. 9. Hydrogen generated by magmatism/local thermogenesis. Image created by Lina Jakaite (Strike-Dip).*

A recent publication by GeoExPro identifies ophiolites as prime candidates for natural hydrogen exploration. Ophiolites are pieces of oceanic plates that have been thrust (obducted) onto the edges of continental plates. They consist of mafic and ultramafic lavas and hypabyssal rocks, often found alongside sedimentary rocks like greywackes and cherts.

The article argues that ophiolites worldwide are known to emit natural hydrogen, with serpentinization singled out as the dominant sourcing process. Serpentinization, a rapid process on a geological timescale, gives rise to two main play concepts: one involves historical trapping of hydrogen within the accretionary mélangé or forearc sediments, which are later covered by the ophiolite. The other concept involves present-day serpentinization at the base of the ophiolite, at depths where temperatures reach around 200–350°C, with the hydrogen migrating upward through faulting into traps.

The article explains that dewatering in ophiolites, due to metamorphic processes, generates water in areas where hydrogen is produced, alongside the dehydration of the subducting slab. Additionally, meteoric water can penetrate to depth through the many faults associated with tectonics.

In basic terms, serpentinization refers to a geological process occurring on the seafloor (~0°C to ~400°C), where ultramafic rocks react with water to produce hydrogen gas (H<sub>2</sub>), methane gas (CH<sub>4</sub>), and other organic compounds. This reaction is known as hydration, while oxidation and reduction are other possible reactions leading to serpentinization. On land, serpentinization occurs in ophiolite complexes at lower temperatures (generally <200°C) and in greenstone belts, which form significant portions of the Precambrian basement.



1. Meteoric water percolating into subsurface. 2. Water from metamorphic dewatering and/or dehydration of subducting slab. 3. Hydrogen flowing from area of serpentinization into foreland sediments. 4. Serpentinization at depth. 5. Hydrogen trapped in foreland sediments from historic serpentinization. Image created by Lina Jakaite (Strike-Dip).

Although ophiolites are listed among the promising candidates for natural hydrogen exploration, intracratonic basins, greenstone belts, and Banded Iron Formations (BIFs) are also potential sources. Intracratonic basins are likely to be the most accessible for natural hydrogen exploration due to their favourable, relatively simple geology, multiple hydrogen plays, and comparative ease of access. Notable natural hydrogen occurrences in intracratonic basins include Kansas, USA, and the Taoudeni Basin in Mali, with the Bourakebougou hydrogen field standing out as a key example.

The availability of technologies, methodologies, workforce, and skillsets from oil exploration presents a significant advantage for natural hydrogen exploration, despite the differences in their source rocks. Once the sources of natural hydrogen are identified, it is crucial to understand other parameters, including its migration, reservoirs, traps, and seals. The article suggests that exploration for natural hydrogen will progress through a funnel, starting with large-scale, low-cost studies, followed by increasingly expensive geophysical acquisition, including regional airborne projects, targeted seismic surveys, and eventually, wildcatting wells.

Despite concerns about long-term hydrogen storage and transportation, primarily due to its low energy density by volume, there are numerous applications for hydrogen, including fertilizer production, oil refining, and use in hard-to-abate industries like industrial heating, shipping, aviation, and even ground transportation. Beyond these uses, there are proposals to create hydrogen grids to replace natural gas grids for fuelling hydrogen boilers and hobs.

	Radiolysis	Serpentinisation	Fe-Silicate oxidation	Fe-oxide oxidation	Thermogenesis	Magmatic gasses
<b>Oceanic lithosphere</b>	Neg	High	High	Low	Neg	Med
<b>Ophiolites</b>	Neg	High	Low	Low	Neg	Med
<b>Cratonic basement</b>	High	High	Med	Med	Low	Neg
<b>Intracratonic basins</b>	Med	Low	Low	Low	Med	Neg
<b>Granite</b>	Med	Neg	High	Low	Neg	Med
<b>Layered basic intrusions</b>	Low	High	Med	Low	Neg	Med
<b>Metamorphic zones</b>	Var	Var	Var	Var	Med	Var
<b>Magmatism</b>	Neg	Neg	Neg	Neg	Neg	High
<b>Uranium ores</b>	High	Var	Var	Var	Var	Var
<b>Evaporite deposits</b>	Med	Neg	Neg	Neg	Neg	Neg
<b>The deep Earth</b>	?	?	?	?	?	?

Summary of the hydrogen generating processes (top row) related to different potential hydrogen source rocks (left column). Assessed based on whether there is a high, medium, low, negligible or variable potential for each particular process to occur in each rock type. Question mark denotes uncertainty of contribution.

In Africa, HydroGenesis advocates for focusing efforts on directly feeding grids for power generation or producing ammonia for fertilizer use, as both are critical needs on the continent.

# Knowing Africa

## Table Mountain: A Geological Marvel of Cape Town

The **cover image** of this issue features the iconic Table Mountain, a symbol of Cape Town's natural beauty and a geological wonder that has stood the test of time. This ancient mountain, part of the Table Mountain range, is more than just a scenic backdrop; it is a testament to millions of years of geological activity that has shaped not only the mountain itself but also the surrounding landscape.

Table Mountain is primarily composed of Table Mountain Sandstone (TMS), a durable rock that dates back approximately 450 to 500 million years. This sandstone was originally laid down as sediment in ancient rivers and shallow seas during the Ordovician period. Over time, the layers of sand were buried, compressed, and transformed into hard rock. This process created the steep cliffs and flat-topped summit that define the mountain today, making it one of the most recognizable features of Cape Town's skyline.

The mountain is part of the Cape Fold Belt, a range that was formed around 280 million years ago during the Permian period. Tectonic forces folded and uplifted the sedimentary rock layers, giving rise to the dramatic peaks and valleys that characterize the Cape Peninsula. These powerful geological processes are responsible for the striking features of Table Mountain, whose steep, rugged slopes are a reminder of the earth's dynamic history.

Over the millennia, erosion has played a significant role in shaping the mountain's current form. Wind and water slowly wore away the softer rock, leaving behind the harder sandstone that we see today. The mountain's flat top and towering cliffs are a direct result of these erosional forces, which continue to act on the landscape, reminding us that even the most solid structures are subject to change over time.

The reflection of Table Mountain in the calm coastal waters, as seen on the cover, highlights the mountain's proximity to the sea. Coastal erosion, driven by the rhythmic movement of the ocean, continues to shape the landscape, albeit at a much slower pace. The interplay between the land and the sea creates a dynamic environment where natural forces are constantly at work, sculpting the edges of this geological marvel.

Table Mountain stands as a silent witness to the ancient processes that have shaped southern Africa over hundreds of millions of years. Each layer of rock tells a story, from the days when the region was covered by rivers and shallow seas, to the tectonic collisions that uplifted the land. As you admire the cover image, you are looking at more than just a mountain—you are seeing a piece of Africa's deep geological history, preserved in stone and standing tall as a reminder of the earth's ever-changing nature.

# Events



## 9th SGA-IUGS-SEG-UNESCO SHORT COURSE ON AFRICAN METALLOGENY

### How can West Africa best use its mineral wealth for economic development?

The 9th Short course of African metallogeny will use titanium, zirconium, phosphate, and bauxite as examples, to explore challenges and opportunities to add value in-country to mined materials.

West Africa plays a key role as an important supplier of these materials. Can West Africa mine, concentrate, and produce intermediate metal compounds? This could enable the economic transition envisaged by the African Mining Vision 2050 and the Agenda 2063 of the African Union.

The target audiences are engineers and geologists in exploration and mining companies, but also those from the processing sector and geological surveys, PhD and Masters' students, researchers, and university lecturers."

The goal of these short courses is to develop personal skills and competencies in exploration and mining.

25<sup>th</sup> – 29<sup>th</sup> November 2024  
Dakar, Senegal

organized by  
**Society for Geology Applied to Mineral Deposits**  
**National Geological Survey of Senegal**  
**UNESCO, IUGS, RFG, SEG, AJGES**



The meeting will discuss the mineral wealth of West Africa and its optimal use for economic development, in the current context of the global energy transition and decarbonization of the mining and metallurgical industries.

#### TOPICS

- ❖ The role of technology metals in the energy transition in West Africa.
- ❖ Environmental impact, managing environmental degradation, sustainable mining.
- ❖ Titanium-zircon oxide deposits: opportunities and risks for West Africa
- ❖ Bauxite a critical raw material: opportunities and risks for West Africa
- ❖ Phosphate deposits: opportunities and risks for West Africa.



## 9<sup>ème</sup> SGA-SGNS-IUGS-SEG-UNESCO COURS DE COURTE DUREE SUR LA METALLOGENIE AFRICAINE

### Comment l'Afrique de l'Ouest peut-elle mieux utiliser ses richesses minérales pour le développement économique ?

Le 9<sup>ème</sup> cours de courte durée sur la métallogénie africaine sera axé sur le titane, le zirconium, le phosphate et la bauxite comme exemples de substances minérales, afin d'explorer les défis et les opportunités d'ajouter de la valeur aux matériaux extraits dans les pays.

L'Afrique de l'Ouest joue un rôle clé en tant que fournisseur important de ces matériaux. L'Afrique de l'Ouest peut-elle extraire, concentrer et produire des composés métalliques intermédiaires ? Cela pourrait permettre la transition économique envisagée par la Vision minière africaine 2050 et l'Agenda 2063 de l'Union africaine.

Les publics ciblés sont les ingénieurs et les géologues des sociétés d'exploration et d'exploitation minière, mais aussi ceux du secteur de la transformation et des services géologiques, les étudiants en doctorat et en master, les chercheurs et les professeurs d'université.

L'objectif de ces cours de courte durée est de développer les aptitudes et les compétences personnelles dans le domaine de l'exploration et de l'exploitation minière.

25 au 29 Novembre 2024  
Dakar, Sénégal

Organisé par  
**La Société spécialisée dans la géologie appliquée aux gisements de minéraux,**  
**Service Géologique National du Sénégal,**  
**UNESCO, IUGS, RFG, SEG, AJGES**



Le cours abordera la question de la richesse minérale de l'Afrique de l'Ouest et de son utilisation optimale pour le développement économique, dans le contexte actuel de la transition énergétique mondiale et de la décarbonisation des industries minières et métallurgiques.

#### THEMES

- ❖ Le rôle des métaux technologiques dans la transition énergétique en Afrique de l'Ouest.
- ❖ Impact environnemental, gestion de la dégradation de l'environnement et exploitation minière durable.
- ❖ Les gisements d'oxyde de titane et de zircon : opportunités et risques pour l'Afrique de l'Ouest.
- ❖ La bauxite, une matière première essentielle : opportunités et risques pour l'Afrique de l'Ouest.
- ❖ Gisements de phosphate : opportunités et risques pour l'Afrique de l'Ouest.



### Fieldtrips

– 2 days (Thursday 28th and Friday 29th November) Field excursion and mine visit at Eramet mine and to nearby mine sites.

### Organizing Committee

- **Rokhaya Samba** (Director of National Geological Survey of Senegal)
- **Mahamadane DIENE**, Director of ENSMG
- **Malick Faye** (SGA president Young Scientist network Senegal,)
- **Doro Niang** (President of AJGES, Vice President of SGA Senegal)
- **Raymond SAGNA** (Director of Exploration and Applied Geology, SGNS, Senegal)
- **Alla Diaw** (Director of Laboratories, SGNS Senegal)
- **Fatoumata Dramé** ( Director of Documentation and Information, SGNS, Senegal)
- **Ibrahima Maal**, (Chef de département Géosciences UAM)
- **Cheikh Ibrahima Youm** (Enseignant-Chercheur, UCAD)
- **Beate Orberger** (SGA resp. for African Metallogny Short Courses, Université Paris Saclay, Catura Geoprojects, France)
- **Ismahene Chaouche** (SGA, African Metallogeny short course co-coordinator, UTHB, Algeria)
- **Edmund Nickless** (IUGS chair Resourcing Future Generations Initiative, UK)
- **David Baratoux** (IRD Research Director, Geosciences Environnement Toulouse (GET))
- **Riad Ben El Khaznadji**((FSTGAT/USTHB), ALGERIA)
- **Mouloud Issaad**((FSTGAT/USTHB), ALGERIA)
- **Filadelphia Mbingeenko** (Vice President SGA Sub-Saharan Africa Windhoek, Namibia)
- **Mary Immaculate Neh Fru** (SGA, African Short Course workshop activity-coordinator, CRGM, Garoua Cameroon)

The short course will comprise 2,5 days of lectures, workshops (personal skill development) and evening events, as well as 2,5 days of practical training and excursion to the Titanium sand deposits mined by Eramet, and to nearby mine sites.

### Indicative FEES (€)

(exact fees will be depend on sponsorship)

Lectures:	
Students	250€
Academia / government / parastatal	500€
Industry	1000€
Online participation	100€
Field trips	
Students	200€
Academia / government / parastatal	400€
Industry	600€

### Course structure and social events

- Registration, icebreaker: Sunday 24<sup>th</sup> November at Cheikh Anta Diop University
- Lectures: Monday 25<sup>th</sup> – Tuesday 26<sup>th</sup> October (2,5 days)
- Course dinner: Monday 25<sup>th</sup> November in Gorée Island
- Workshop (personal skill development): Wednesday 27<sup>th</sup> November

### Preregistration link



[https://docs.google.com/forms/d/e/1FAIpQLSc-4ALF9Sk4e\\_tKYKg1avwSHJOg1uatCNRB3Rg3TDnFOXaOkQ/viewform?usp=pp\\_url](https://docs.google.com/forms/d/e/1FAIpQLSc-4ALF9Sk4e_tKYKg1avwSHJOg1uatCNRB3Rg3TDnFOXaOkQ/viewform?usp=pp_url)

General information :  
**Beate Orberger**  
[beate.orberger@catura.eu](mailto:beate.orberger@catura.eu)

Register for the UNESCO scholarship  
**Ishmahen Chaouche**  
[chasane@gmail.com](mailto:chasane@gmail.com)  
**Beate Orberger**  
[beate.orberger@catura.eu](mailto:beate.orberger@catura.eu)

Registration enquiries:  
**Rokhaya Samba DIENE**  
[rokhaya.samba@sgns.gouv.sn](mailto:rokhaya.samba@sgns.gouv.sn)



### Excursion

– 2 jours (jeudi 28 et vendredi 29 novembre) Excursion sur le terrain et visite de la mine Eramet et des sites miniers voisins.

### Comité d'organisation

- **Rokhaya Samba**, Directrice Générale du Service géologique national du Sénégal (SGNS)
- **Mahamadane DIENE**, Directeur de l'Ecole Nationale Supérieure des Mines et de la Géologie (ENSMG)
- **Malick Faye** (Président du Réseau des Jeunes Scientifiques SGA Sénégal,)
- **Doro Niang** (Président AJGES, Vice-Président de SGA Sénégal)
- **Raymond SAGNA**, Directeur de l'Exploration et de la Géologie appliquée, SGNS, Sénégal)
- **Alla Diaw** (Directeur des laboratoires, SGNS Sénégal)
- **Fatoumata Dramé** (Directrice de la Documentation et de l'Information, SGNS, Sénégal)
- **Ibrahima Maal**, (Chef de département Géosciences UAM)
- **Cheikh Ibrahima Youm** (Enseignant-Chercheur, UCAD)
- **Beate Orberger** (SGA Responsable des cours de courte durée en Métallogénie africaine, Université Paris Saclay, Catura Geoprojects, France)
- **Ismahene Chaouche** (SGA, Co-coordinatrice du cours de courte durée sur la Métallogénie africaine, UTHB, Algeria)
- **Edmund Nickless** (IUGS Chair Resourcing Future Generations Initiative, UK)
- **David Baratoux** (Directeur de Recherche IRD, Geosciences Environnement Toulouse (GET))
- **Riad Ben El Khaznadji**((FSTGAT/USTHB), ALGERIA)
- **Mouloud Issaad**((FSTGAT/USTHB), ALGERIA)
- **Filadelphia Mbingeenko** (Vice President SGA Sub-Saharan Africa Windhoek, Namibia)
- **Mary Immaculate Neh Fru** (SGA, African Short Course workshop activity-coordinator, CRGM, Garoua Cameroon)

La formation de courte durée comprendra 2 jours +1/2 jour de conférences, d'ateliers (développement des compétences personnelles) ainsi que 2 jours + 1/2 jours de formation pratique et d'excursion dans les gisements de sable titanifère exploités par ERAMET et sur les sites miniers voisins.

### Honoraires indicatifs (€)

(Les frais exacts dépendront du parrainage)

Cours :	
Etudiants	250€
Universités / gouvernements / organismes parapublics	500€
Sociétés	1000€
Participation en ligne	100€
Excursion	
Etudiants	200€
Universités / gouvernements / organismes parapublics	400€
Sociétés	600€

### Structure du cours et événements sociaux

- Inscription, brise-glace : Dimanche 24 novembre à l'Université Cheikh Anta Diop
- Conférences : Lundi 25 - mardi 26 mercredi 27 octobre en matinée (2+1/2 jours)
- Dîner du stage : Lundi 25 novembre à l'embarcadere de l'île de Gorée- Atelier (développement des compétences personnelles) : Mercredi 27 novembre

### Lien de préinscription



[https://docs.google.com/forms/d/e/1FAIpQLSc-4ALF9Sk4e\\_tKYKg1avwSHJOg1uatCNRB3Rg3TDnFOXaOkQ/viewform?usp=pp\\_url](https://docs.google.com/forms/d/e/1FAIpQLSc-4ALF9Sk4e_tKYKg1avwSHJOg1uatCNRB3Rg3TDnFOXaOkQ/viewform?usp=pp_url)

Informations générales :  
**Beate Orberger**  
[beate.orberger@catura.eu](mailto:beate.orberger@catura.eu)

Inscription pour une demande de bourse de l'UNESCO  
**Ishmahen Chaouche**  
[chasane@gmail.com](mailto:chasane@gmail.com)  
**Beate Orberger**  
[beate.orberger@catura.eu](mailto:beate.orberger@catura.eu)

Demandes d'inscription :  
**Rokhaya Samba DIENE**  
[rokhaya.samba@sgns.gouv.sn](mailto:rokhaya.samba@sgns.gouv.sn)

## PARTNERS / PARTENAIRES



**UAM**  
Plus qu'une formation,  
un avenir à construire





# SUSTAINABLE MINERAL EXPLORATION AND DEVELOPMENT

Windhoek, Namibia | September 27–30, 2024

## Session Themes

- The Energy Transition: Metals of the Future
- Specialty Metals and Materials
- Innovative Technology Developments in Mineral Deposit Science
- Africa’s Iconic Ore Deposits
- New Discoveries and Developments
- Resource Development: ESG from Exploration to Remediation
- Gold: Enhanced Discovery and Development
- Vital High-Volume Base Metals

PATRON SPONSOR



+CAP PATRON SPONSOR

RioTinto

## +CAP Program

SEG’s Conference Accessibility Program (CAP) is a new initiative designed to provide additional financial support for student travel, registration, and membership costs associated with attending conferences and other SEG activities. CAP funding is in addition to other student support already provided by the generous sponsors of the Student Presenter Funding program. CAP funds are designated for regional students, postdoctoral researchers, and new academics. With continued sponsorship support, it is SEG’s intention to make CAP an ongoing program, providing continuing funding for this cohort of students and early professionals at future conferences and SEG events.



[www.seg2024.org](http://www.seg2024.org)

Learn more about the  
+CAP Program



[www.seg2024.org/  
cap-sponsors](http://www.seg2024.org/cap-sponsors)



1–4  
OCT | 2024  
WINDHOEK

# Southern African Geophysical Association



**COLLABORATIVE GEOSCIENCE  
FOR CRITICAL SUPPLY**

# EVENT PROSPECTUS

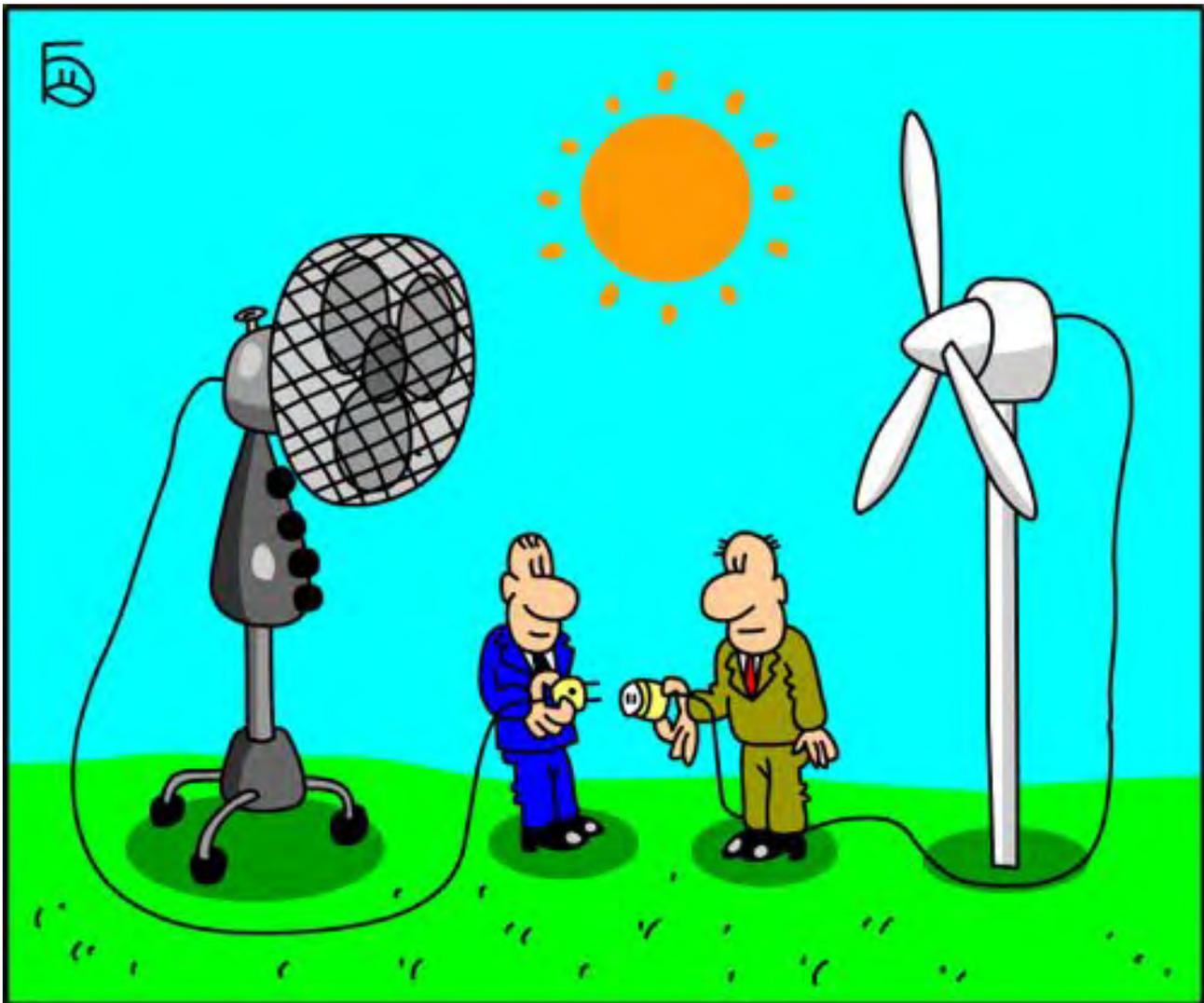
The countdown to the Southern African Geophysical Association's 18th Biennial Conference & Exhibition has begun! On the back of the expansion of SAGA's geographical reach in 2022, this year, Namibia hosts the prestigious event, materially enabling greater international collaboration and driving growth across the region.



#18SAGA2024

<https://sagaonline.co.za/>

# Geology Comic



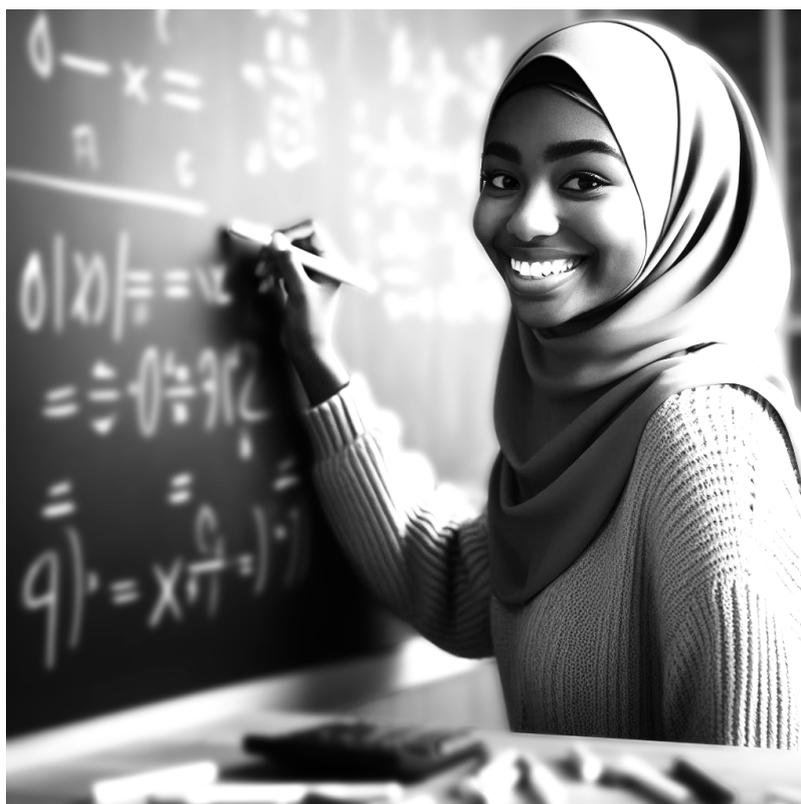
Source: <https://www.cartoonstock.com/>

# Opportunities

HUMBOLDT-UNIVERSITÄT ZU BERLIN



## Pan-African STM Cinema Competition



Are you good at explaining concepts in a clear way?

Would you like to make short explainer videos in science / tech / math?

We are accepting entries for the 2024 Pan-African STM Cinema Competition

Submission deadline: 30 October, 2024

**1000 euro prizes for the best explainer videos**

For details see <https://www.pastmcc.com>

With support of AIMS South Africa and AIMS Senegal



## 2024 Pan-African STM Cinema Competition

### Instructions for Film Creators

How do you submit an entry to the Pan-African STM Cinema Competition? It's easy!

#### In brief:

(1) Make new video(s) explaining some concept in science, tech, or math.

Humboldt-Universität zu Berlin  
10099 Berlin

(2) Get two experts in that area to sign the Referee Form.

(3) Create a Youtube channel, post your video, email us the link and signed referee forms.

The competition is open to anyone over 13 years of age who can show a valid passport, birth certificate, identification card for an African country. Multiple 1,000 euros prizes are available, depending on the number of high quality videos submitted. Up to 7,000 euro are available in total.

**Deadline: 30 October, 2024.**

#### **In detail:**

##### **(1) Create the film(s):**

Create a new video where you explain some established concept in math, science, or tech. By 'science', we mean physical sciences: biology, chemistry, physics, astronomy, earth science, environmental science, agricultural science, computer science, artificial intelligence, machine learning. Entries in math, statistics, and tech are also welcome.

The video should be 6 minutes long or less. It should be in very clear English. However, for bonus prize money, you can

submit separate replicas of the video in other languages. Native African languages are especially welcome.

There is no limit to the number of films you can submit. Submit as many as you wish, the more films submitted, the higher your chances of winning. It is possible to win more than one prize.

If you would like to explain a more elaborate concept, you can make a sequence of short videos, each 6 min long or less.

Films can be made on Zoom, Discord, Webex, ..., with your phone, or any other method.

##### **(2) Get two experts to approve your videos:**

Have a minimum of two experts watch your video(s) and have them check them for correctness and clarity. (Three experts is ideal, but not necessary.) The experts must (a) hold a PhD in the general topic area of your videos, or (b) they must have a degree in the topic of your videos, and be currently employed in that area.

Have the experts each sign a Referee Form.

##### **(3) Create your own Youtube channel, post your video, send us the link.**

Creating your own Youtube channel is easy! If you don't already have a Youtube channel, then here are the instructions:

<https://support.google.com/youtube/answer/1646861?hl=en>

( In case you don't already have a gmail account:

<https://support.google.com/mail/answer/56256?hl=en> )

Once you've created your own Youtube channel, upload your video(s).

In the description (or comments) of your video, please display the following sentence:

"This film has been submitted to the 2024 PanAfrican STM Cinema Competition. It has been refereed and approved by Dr ..... from ..... University, and by Dr ..... from ..... University."

Then email

- (+) your name and contact details
- (+) the links for your videos
- (+) the signed referee forms

to the email address:

[pastmcc2024@gmail.com](mailto:pastmcc2024@gmail.com)

**Note:** By submitting your entry to [pastmcc2024@gmail.com](mailto:pastmcc2024@gmail.com), You, the Contestant, have affirmatively reviewed, accepted, and agreed to the Terms and Conditions. See below.

### Tips and Hints

(+) Clarity. The best presenters tend to speak slowly and deliberately. Any writing needs to be very easy to read. Pretend that you are explaining a new concept to a friend. How can you communicate your message to them so that they understand?

(+) Be creative. How can you present your material so that it's fun and easy to understand for your audience? How can your videos make your stand out?

(+) Distribute your video links out to as many people as possible. At least one prize will go to the video with the most likes. For this reason, it is also a good idea to post your videos as early as possible before the deadline.

(+) Can you speak multiple languages?

Bonus prize money will be given to winners for every replica of their video they create in another language. Native African languages are especially welcome. Only the English versions will be refereed, so it is important that the extra language videos have the exact same scientific content as the English one.

(+) Clarity, correctness, and creativity are more important than having fancy graphics or effects.

Here are some examples of good explainer videos:

Photosynthesis

<https://youtu.be/bPQUFTQ0GF4>

Product rule

<https://youtu.be/GH0UzBQs1IY?t=4>

DNA

<https://youtu.be/JXGyXtNsu14?t=436>

Climate

Change

<https://youtu.be/VhZKYSq8HCc>

Topology

[www.youtube.com/watch?v=CN8hK3YFqhM](http://www.youtube.com/watch?v=CN8hK3YFqhM)

Circulating Oceans

<https://youtu.be/ZgNqZiPs-T8>

Geometry

(In

French)

<https://youtu.be/Wm0EaLD7iVY>

Water

<https://youtu.be/wjomxglXZtw>

Machine Learning

[www.youtube.com/watch?v=c2MzPGdkxsE](http://www.youtube.com/watch?v=c2MzPGdkxsE)

Good luck!

The 2024 PASTMCC competition is made possible by Humboldt-Universität zu Berlin. It is supported by the African Institute for Mathematical Sciences (AIMS)

South Africa and Senegal. We are furthermore grateful for support from Dr Mpfareleni Rejoyce Gavhi-Molefe, Dr Eliane Raissa Fankem, Prof Dr Christoph Schneider, Brittany Henderson, Jens Köplinger, Isa Heuer, and Adam Lewartowski.

PASTMCC

<https://www.pastmcc.com/>

Facebook

[pastmcc2024@gmail.com](mailto:pastmcc2024@gmail.com)

## Terms and Conditions

**1. No purchase is necessary in order to enter or win.**

**2. Eligibility:** This Competition is only open to those who are 13 or older.

Furthermore, this Competition is open to those who can show a valid passport, birth certificate, or national identification card for an African country, and is void where prohibited by law. Employees and associates

of PASTMCC/Humboldt-Universität zu Berlin, and immediate family members and/or those living in the same household of Employees are not eligible to participate in the Competition. The Competition is subject to all applicable national, state, and local laws and regulations. Void where prohibited.

**3. Agreement to Rules:** By participating in the Competition (“You”) agree to be fully unconditionally bound by these Rules, and You represent and warrant that You meet the eligibility requirements. In addition, You agree to accept the decisions of PASTMCC as final and binding as it relates to the content of this Competition.

**4. Contest Period:** Entries will be accepted online starting on 18 May, 2024 at 8:00 a.m. Berlin time and ending on 30 October, 2024 at 11:59 p.m. Berlin time. (If

the number of eligible entries is too few, it is possible that this deadline will be extended.)

**5. How to Enter:** The Competition must be entered by emailing your name, Youtube link(s), and signed referee forms to [pastmcc2024@gmail.com](mailto:pastmcc2024@gmail.com). The entry must fulfill all Competition requirements, as specified, to be eligible to win a prize. Entries that are incomplete or do not adhere to the rules or specifications may be disqualified at the sole discretion of PASTMCC. You may enter multiple times. You must provide all the information requested. If you use fraudulent methods or otherwise attempt to circumvent the rules, your submission may be removed from eligibility at the sole discretion of PASTMCC.

**6. Prizes:** There will be at least three 1000 euro prizes, with possible further prizes up to the discretion of PASTMCC. The specifics of the prizes shall be solely determined by PASTMCC. No other prize substitution shall be permitted except at PASTMCC discretion. The prize is nontransferable. Any and all prize-related expenses, including without limitation any and all national, state, and/or local taxes, shall be the sole responsibility of Winner. No substitution of prize or transfer/assignment of prize to others by Winner is permitted. Acceptance of prize constitutes permission for PASTMCC to use Winner’s name, likeness, and entry for purposes of educational promotion without further compensation.

**7. Odds:** The odds of winning depend on the number of eligible entries received.

**8. Winner Selection and Notification:** At least one new video with the most Youtube likes by the 30th October 2024 will receive a 500 euro prize. (This deadline might also be extended.) Other prizes will be allocated at the sole discretion of PASTMCC. Winners will be notified by

email within a week of selection of Winner. PASTMCC/Humboldt-Universität/AIMS shall have no liability for Winner's failure to receive notices due to spam, junk e-mail or other security settings or for Winner's provision of incorrect or otherwise non-functioning contact information. If Winner cannot be contacted, is ineligible, fails to claim the prize within one week from the time award notification was sent, or fails to timely return a completed and executed declaration and release as required, the prize may be forfeited and an alternate Winner selected. Receipt by Winner of the prize offered in this Competition is conditioned upon compliance with any and all national, state, and local laws and regulations. ANY VIOLATION OF THESE OFFICIAL RULES BY WINNER (AT PASTMCC'S SOLE DISCRETION) WILL RESULT IN WINNER'S DISQUALIFICATION AS WINNER OF THE CONTEST, AND ALL PRIVILEGES AS WINNER WILL BE IMMEDIATELY TERMINATED.

**9. Rights Granted by You:** By entering your video(s), You understand and agree that PASTMCC, anyone acting on behalf of PASTMCC, and PASTMCC's licensees, successors, and assigns, shall have the right, where permitted by law, to print, publish, broadcast, distribute, and use in any media now known or hereafter developed, in perpetuity and throughout the world, without limitation, your entry, name, portrait, picture, voice, likeness, image, statements about the Competition, and biographical information for news, publicity, information, education, public relations, and academic promotional purposes without any further compensation, notice, review, or consent. By entering your video, You represent and warrant that your entry is an original work of authorship, and does not violate any third party's proprietary or intellectual property rights. If your entry infringes upon the intellectual property rights of another, You will be disqualified

at the sole discretion of PASTMCC. If the content of your entry is claimed to constitute infringement of any proprietary or intellectual proprietary rights of any third party, You shall, at your sole expense, defend or settle against such claims. You shall indemnify, defend, and hold harmless PASTMCC/Humboldt-Universität/AIMS from and against any suit, proceeding, claims, liability, loss, damage, costs or expense, which PASTMCC/Humboldt-Universität/AIMS may incur, suffer, or be required to pay arising out of such infringement or suspected infringement of any third party's right.

**10. Terms & Conditions:** The Competition hosted by PASTMCC is in no way sponsored, endorsed, administered by, or associated with Youtube. PASTMCC reserves the right, in its sole discretion, to cancel, terminate, modify or suspend the Competition should virus, bug, non-authorized human intervention, fraud, or other cause beyond PASTMCC's control corrupt or affect the administration, security, fairness, or proper conduct of the Competition. In such case, PASTMCC may select the Winner from all eligible entries received prior to and/or after (if appropriate) the action taken by PASTMCC. Video entries must not constitute, facilitate, or promote illegal products, services or activities. Video entries must not discriminate or encourage discrimination against people based on personal attributes such as race, ethnicity, color, national origin, religion, age, sex, sexual orientation, gender identity, family status, disability, medical or genetic condition. Videos must not promote the sale or use of tobacco products, related paraphernalia, illegal, prescription or recreational drugs, unsafe supplements as determined by Youtube in its sole discretion, weapons, ammunition, or explosives. Video entries must not contain adult content, including nudity,

depictions of people in explicit or suggestive positions, or activities that are overly suggestive or sexually provocative. Videos must not contain shocking, sensational, disrespectful or excessively violent content. Video entries must not contain deceptive, false, or misleading content, including deceptive claims, offers, or business practices. PASTMCC reserves the right, in its sole discretion, to disqualify any individual who tampers or attempts to tamper with the entry process or the operation of the Competition or website or violates these Terms & Conditions. PASTMCC has the right, in its sole discretion, to maintain the integrity of the Competition, to void entries for any reason, including, but not limited to: the use of bots, macros, scripts, or other technical means for entering. Any attempt by an entrant to deliberately damage any website or undermine the legitimate operation of the Competition may be a violation of criminal and civil laws. Should such attempt be made, PASTMCC/Humboldt-Universität/AIMS reserves the right to seek damages to the fullest extent permitted by law.

**11. Limitation of Liability:** By entering, You agree to release and hold harmless PASTMCC/Humboldt-Universität/AIMS and its subsidiaries, affiliates, advertising and promotion agencies, partners, representatives, agents, successors, assigns, employees, officers, and directors from any liability, illness, injury, death, loss, litigation, claim, or damage that may occur, directly or indirectly, whether caused by negligence or not, from: (i) such entrant's participation in the Competition and/or his/her acceptance, possession, use, or misuse of any prize or any portion thereof; (ii) technical failures of any kind, including but not limited to the malfunction of any computer, cable, network, hardware, or software, or other mechanical equipment; (iii) the unavailability or inaccessibility of any transmissions, telephone, or Internet

service; (iv) unauthorized human intervention in any part of the entry process or the Promotion; (v) electronic or human error in the administration of the Promotion or the processing of entries.

**12. Disputes:** This Competition is governed by the laws of Germany, and Berlin, without respect to conflict of law doctrines. As a condition of participating in this Competition, participant agrees that any and all disputes that cannot be resolved between the parties, and causes of action arising out of or connected with this Competition, shall be resolved individually, without resort to any form of class action, exclusively before a court located in Berlin, Germany having jurisdiction. Further, in any such dispute, under no circumstances shall participant be permitted to obtain awards for, and hereby waives all rights to, punitive, incidental, or consequential damages, including reasonable attorney's fees, other than participant's actual out-of-pocket expenses (i.e. costs associated with entering this Competition). Participant further waives all rights to have damages multiplied or increased.

**13. Winners List:** A list of winners will be posted to the website <https://furey.space>, or an alternate affiliate website.

**14. Sponsor:** The Sponsor of the Contest is Humboldt-Universität zu Berlin.

15. By submitting your entry to [pastmcc2024@gmail.com](mailto:pastmcc2024@gmail.com), You, the Contestant, have affirmatively reviewed, accepted, and agreed to all the Official Rules.

## Referee Form

Dear Expert Referee,

Thank you for agreeing to referee this video for the Pan-African STM Cinema Competition! Your expert advice directly helps film creators produce high quality explainer videos in science, tech, and math. We, and the film creators, are deeply grateful to you for your candid feedback.

If you do indeed agree, could you please sign the following statement and return it to the video creator? (Electronic signatures will be accepted).

I, Dr \_\_\_\_\_ from the University of \_\_\_\_\_ am an expert in the general topic chosen by the video creator, whose name is \_\_\_\_\_.

The Youtube link for this video is: [https:// \\_\\_\\_\\_\\_](https://_____)

I have watched the video carefully, and certify that the material presented is correct to the best of my knowledge. Furthermore, I agree that the video creator may write that this video has been approved by me in the video's public description on Youtube.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_ Email: \_\_\_\_\_

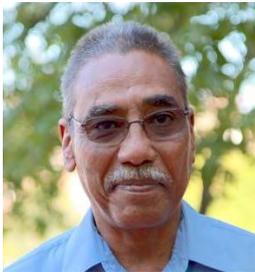
Thank you sincerely,  
2024 Pan-African STM Cinema Competition  
<https://www.pastmcc.com/>

With support from AIMS South Africa and Senegal



# Obituary

## Tribute to Prof. Mohamed Abdel Salam (President of GSAf: 2001-2004)



**Prof. Mohamed Abdel Salam**

President of GSAf, 2001 - 2004

Prof. Mohamed Abdel Salam was a distinguished geoscientist and a Regents Professor of Geology. Prof. Abdel Salam's academic journey began with an undergraduate degree and a master's degree in geology from the University of Khartoum. He then pursued his PhD at the University of Texas at Dallas.

Prof. Mohamed Abdel Salam authored and co-authored over 100 publications and several conference abstracts. Prof. Mohamed Abdel Salam also served in several leadership roles, including the Geosciences Graduate Advisor at UT Dallas (August 2005 - August 2006), the Geology and Geophysics Graduate Coordinator at Missouri S&T (September 2006 - May 2009), and the Geology Graduate Coordinator at Oklahoma State University (July 2013 - present). His commitment to his students and colleagues was recognised with numerous awards, including the Missouri S&T Faculty Excellence Award (December 2008) and the Oklahoma State University Outstanding Graduate Coordinator Award (April 2017).

Beyond his academic roles, Prof. Abdel Salam was an active member of the geoscientific community both in the US and Africa. He served as President of the Geological Society of Africa (2001-2004), co-editor-in-chief of the Journal of African Earth Sciences, and a member of the International Geology Review editorial board. He also served as a proposal's evaluator and manuscript reviewer for numerous national and international funding agencies and journals.

During his presidency at GSAf, he made significant contributions to society by providing much-needed leadership, clear intellectual direction, and creating partnership opportunities. He established a lasting relationship with Elsevier, which provided a platform for credible research publications through the Journal of African Sciences, the society's main journal. In his final year, he presented a well-researched paper as part of GSAf's webinar series. Even after stepping down as the society's president in 2006, he remained actively involved and interested in the society's activities.

Prof. Mohamed Abdel Salam's passing is a tremendous loss to the geoscientific community.

**MAY HIS SOUL REST IN PEACE.**

## Tribute to Prof. Martin LOMPO

(Full Professor in Structural Geology and Gîtology with CAMES)



**Prof. Martin LOMPO**  
Full Professor in Structural  
Geology and Gîtology with  
CAMES

Prof. Martin Lompo has had a distinguished academic and professional career, beginning in 1980 with his education in Ouagadougou and continuing with advanced studies in Senegal and France, where he completed his doctoral thesis in 1991. He began his teaching career in 1993 as an Assistant teacher-researcher at the University of Ouagadougou (now Joseph KI-ZERBO University) and progressed through academic ranks, being recognized as a suitable candidate for Assistant Professor in 1995 and Associate Professor in 2000 by CAMES. In 2010, he was registered as a Full Professor.

He held several leadership roles, including Head of the Department of Geology from 2001 to 2003, Director of the Training and Research Unit in Life and Earth Sciences from 2003 to 2006, and President of the University of Fada-N'Gourma (now Yembila Abdoulaye Toguyeni University) from 2017 to 2020. Between 2006 and 2020, he also established and directed the Geosciences and Mining Environment Laboratory (LGEM) and developed a doctoral training course in Geosciences. From 2004 to 2006, he served as Vice-President for West Africa in the Geological Society of Africa, where he played a crucial role in promoting geological research and collaboration within the region.

Prof. Lompo was deeply involved in research projects, including the "Geological cartography applied to mining research in Burkina Faso" program (1992-1994) and coordinating the "Gold concentration and crustal evolution in the Birimian of Burkina Faso" (1995-2001). He also contributed to the West Africa Exploration Initiative (WAXI) in 2006-2007. Throughout his career, he supervised over a hundred master's degrees and a dozen doctoral theses and authored or co-authored around thirty scientific articles, significantly impacting geological research and education in West Africa.

**MAY HIS SOUL REST IN PEACE.**



# Contact the Council

The Geological Society of Africa's council appreciates your opinion and input. All of your suggestions and comments will be taken into consideration. **Just drop us an email:**

**President:** Prof. Gbenga Okunlola (Nigeria); Department of Geology, University of Ibadan.  
([gbengaokunlola@yahoo.co.uk](mailto:gbengaokunlola@yahoo.co.uk))

**Secretary General:** Dr. Adama Sangare (Mali); IAMGOLD Exploration Mali S.A.R.L  
([Adama\\_Sangare@iamgold.com](mailto:Adama_Sangare@iamgold.com))

**Honorary Treasurer:** Prof. Asfawossen Asrat (Ethiopia); Department of Earth Sciences, Addis Ababa University. ([asrata@geol.aau.edu.et](mailto:asrata@geol.aau.edu.et))

**Assistant Secretary General/Membership Secretary:** Prof. Prosper M. Nude (Ghana); Department of Earth Science, University of Ghana. ([pmnude@ug.edu.gh](mailto:pmnude@ug.edu.gh))

**GSAf's Newsletter Editor/Information Officer:** Dr. Daniel Kwayisi (Ghana/South Africa); University of Ghana ([dkwayisi@ug.edu.gh](mailto:dkwayisi@ug.edu.gh))

**Vice President for Western Africa:** Dr. Yao Agbossoumonde (Togo); Department of Geology, University of Lome. ([yagboss12@gmail.com](mailto:yagboss12@gmail.com))

**Vice President for Eastern Africa:** Prof. Beneah Daniel Odhiambo (Kenya); Moi University. ([odhiambobdo@gmail.com](mailto:odhiambobdo@gmail.com))

**Vice President for Northern Africa:** Mr. Nasrddine Youbi (Morocco); Prince Moulay Abdellah Boulevard, P.O. Box 2390, Marrakech 40000, Morocco ([youbi@uca.ac.ma](mailto:youbi@uca.ac.ma) / [nasserito@yahoo.com](mailto:nasserito@yahoo.com))

**Vice President for Southern Africa:** Ms. Anna- Karren Nguno (Namibia); Geological Survey of Namibia. ([annatjieka@gmail.com](mailto:annatjieka@gmail.com))

**Vice President for Central Africa:** Dr. Bongwele Onanga Guyghens (Democratic Republic of the Congo); Faculty of Sciences and Technology, University of Kinshasa, ([bongweleguy@gmail.com](mailto:bongweleguy@gmail.com))

**Councillor for Eastern Africa:** Mr. Jean-Claude Ngaruye (Rwanda); Energy, Water and Sanitation Authority. ([jeanclaude.ngaruye@rmb.gov.rw](mailto:jeanclaude.ngaruye@rmb.gov.rw))

**Councillor for Northern Africa:** Dr. Kholoud M. AbdekMaksoud (Egypt); Institute of African Research and Studies, Cairo University. ([kholoud.mohamedali@gmail.com](mailto:kholoud.mohamedali@gmail.com))

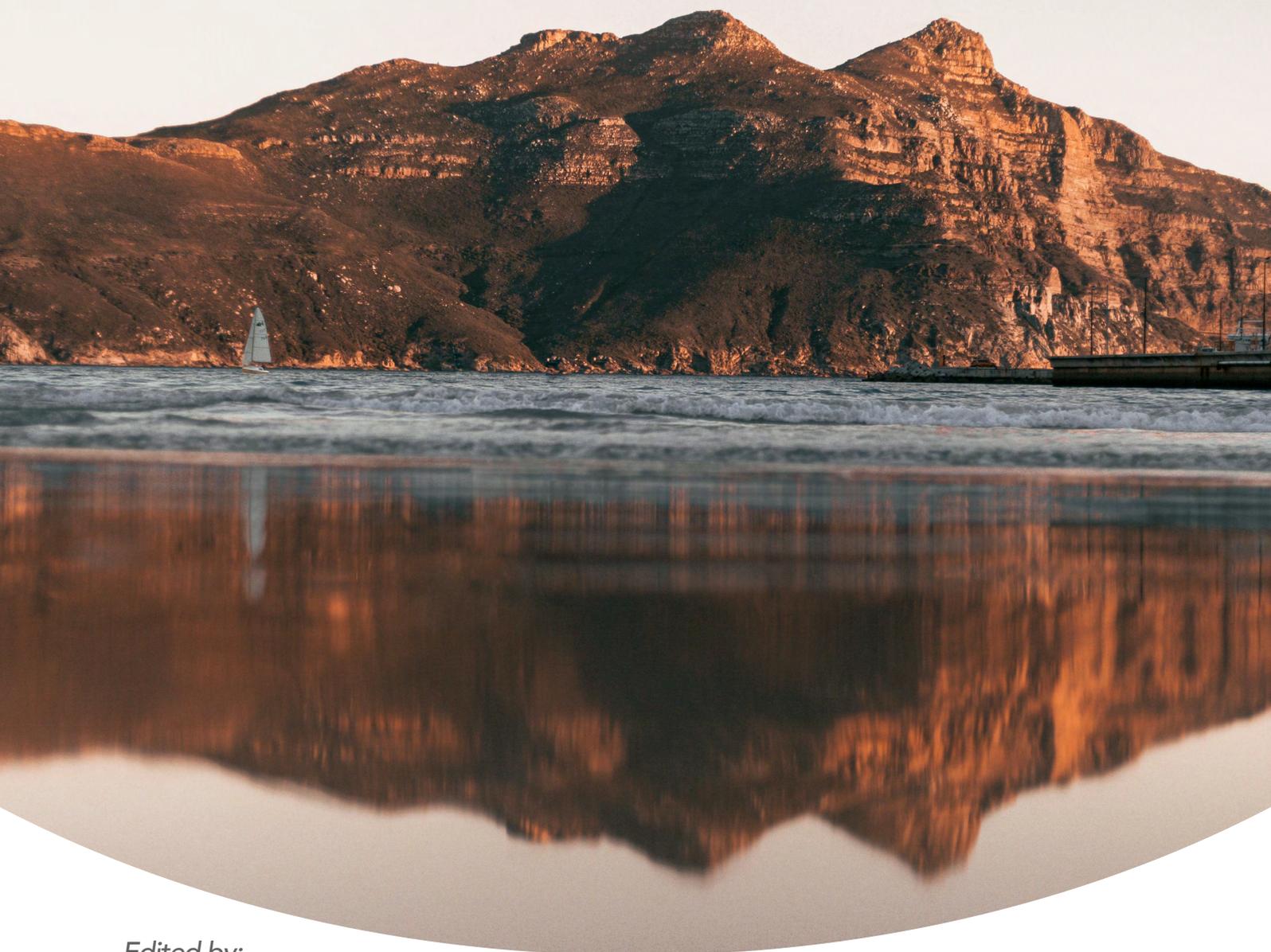
**Councillor for Southern Africa:** Ms. Paulo Tanganha (Angola); Kilamba Central, Kilamba Kixi District, Luanda, Angola, ([niva.tanganha@gmail.com](mailto:niva.tanganha@gmail.com))

**Councillor for Western Africa:** Pending

**Councillor for Central Africa:** Pending

# Geological Society of Africa Newsletter

**Volume 12 - Issue 2**  
June - August 2024



*Edited by:*  
**Dr. Daniel Kwayisi**  
Editor of the GSAf Newsletter

**Editorial Team**  
Mr. Eli Djomekou  
Mr. Nelson Senunyeme



© Geological Society of Africa