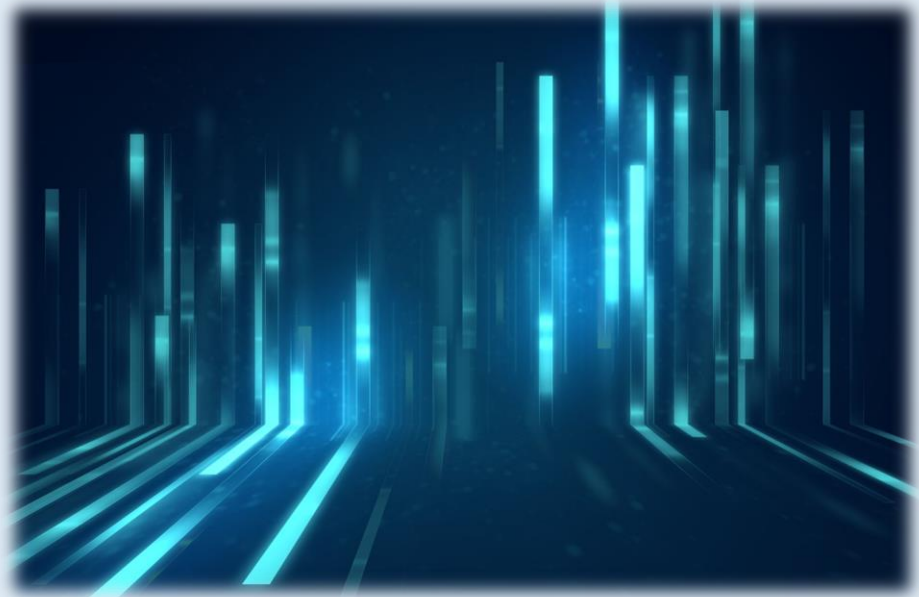




ZAMBIA ACADEMY OF SCIENCES



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ZaAS

INSIGHTS AND UPDATES

Esteemed Members,

In this October edition of the Zambia Academy of Sciences (ZaAS) Newsletter, members will find highlights on the successful Science Café held in collaboration with the Dziwa Science and Technology Trust (DSaT), where experts addressed the potential of solar energy in Zambia amidst current challenges in hydropower generation.

Additionally, the Child Development Podcast features a conversation on effective parenting strategies, differentiating discipline from punishment. The newsletter also includes articles addressing gender disparities in scientific leadership, the impact of HIV-1 on gastrointestinal immune cells, and global environmental concerns such as drought and tree species extinction.

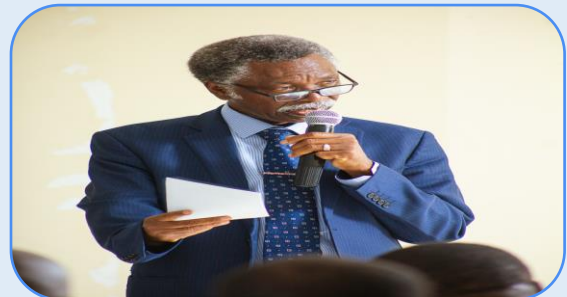
Furthermore, opportunities for professional development and workshops, including a fellowship program focused on nano-satellite technologies, along with valuable health and wellness tips centred on the MIND diet for cognitive health.

ZaAS NEWS

Zambia Academy of Sciences and DSaT Host Science Café on Solar Energy

Zambia Academy of Sciences (ZaAS) in partnership with the Dziwa Science and Technology Trust (DSaT), successfully hosted a Science Café on 16 October 2024, at the Grand Palace Hotel. The event which brought together key stakeholders in Zambia's energy sector, focused on discussing the feasibility of solar energy as a significant contributor to meeting the country's electricity demand, especially in light of recent hydropower challenges caused by drought. The Science Café was officially opened by

Professor Geoffrey Biemba, President of ZaAS, who highlighted the importance of harnessing solar energy as part of Zambia's broader strategy to meet its growing energy needs. The Science Café attracted a diverse group of experts including: from ZESCO, Engineer Thomas Miti who discussed Electricity Generation and the Impact of Drought on Zambia's Energy Sector, focusing on how the ongoing drought has affected hydroelectric power generation in Zambia; Engineer Geoffrey Chishimba Chiyumbe representing the Engineering Institution of Zambia highlighted the potential of solar energy in Zambia vis-à-vis the various energy consumers; Mr. Matanda Mwewa, President of the Solar Industry Association of Zambia touched on successful solar energy projects in Zambia, highlighting achievements, challenges faced and lessons learned; lastly, Professor Prem Jain, Fellow of the Zambia Academy of Sciences focused on challenges and opportunities in adopting Solar Energy.



The discussions were insightful with experts emphasising the need for collaboration between government, the private sector, and scientific institutions to drive forward solar energy adoption. It was learnt that, currently the country is generating approximately 30% of its required electricity and that at most solar can provide 800 MW of electricity.

Child Development Podcast: Setting Boundaries Discipline vs Punishment

In this episode, Professor Kavwanga E.S. Yambayamba (ZaAS Immediate Past President and Fellow) and Mr. Emmanuel Chisalu explore one of the most difficult facets of parenting and providing care, establishing limits and knowing the difference between punishment and discipline. The hosts explore how discipline can help kids learn self-control, respect, and accountability and dispel common myths about punishment and discipline, provide helpful pointers for setting firm limits, and guidance on developing a cordial, respectful relationship with kids. Whether a parent, educator, or other caregiver, this episode offers valuable perspectives in promoting a child's healthy emotional and behavioural growth. Click [here](#) to discover how to foster a culture of respect and promote positivity.





SCIENCE NEWS

Global Drought Crisis: Climate Change Triples Affected Areas Since 1980s, Report Warns

Nearly half of the Earth's land surface will experience at least one month of intense drought in 2023, according to a recent Lancet Countdown research, which shows that the number of regions afflicted by drought has tripled since the 1980s. Droughts are worsening due to climate change, which is changing rainfall patterns, particularly in South America, the Middle East, and the Horn of Africa. In addition to raising the risk of diseases like dengue fever and malaria, this also increases the risks to public health, food security, and water. [Read More](#)

Over a Third of the world's tree species facing extinction, scientists warn

More than a third of the world's tree species are currently in danger of going extinct, according to a recent study by more than 1,000 scientists. This hazard level is higher than that of all birds, mammals, reptiles, and amphibians combined. The research, which was released during the COP 16 UN biodiversity meeting in

Cali, Colombia, emphasizes that the main risks are logging, pest and disease spread, and deforestation for farming, with iconic species like oaks, magnolias, and the monkey puzzle tree being especially vulnerable. Additional ecological stress is caused by this biodiversity problem, which also impacts tree-dependent species including fungi, birds, and mammals. [Read More](#)

Funding, Foreign Influence Hinder African Science Progress

African scientists are calling for more cooperation, better funding, and less reliance on foreign funding to tackle regional scientific issues. Heavy reliance on external funding diminishes research's relevance to Africa's needs and leads to problems like resource duplication and fragmentation, according to a draft document from the Science Granting Councils Initiative (SGCI). An African Science, Technology, and Innovation Forum should be established, according to the study. [Read More](#)

PUBLICATIONS

Steering Science Forward: Addressing Gender Disparities in Leadership Roles

In this article series, "Women Scientists Around the World: Strategies for Gender Equality", the ISC examines the factors promoting or hindering gender representation within scientific organizations. It is based on a qualitative pilot study conducted in collaboration with the Standing Committee for Gender Equality in Science (SCGES) and includes insights from interviews with women scientists across diverse disciplines and regions. [Read More](#) For the findings of the Pilot Study, click [here](#).

Depletion of Germinal Center B Cells and IgA+ Plasma Cells in the GI Tract During HIV-1 Infection

This article explores how HIV-1 infection affects immune cells in the gastrointestinal (GI) tract, an important area for the body's defense system. The study focused on people living with HIV, comparing those with active virus to those receiving antiretroviral therapy (ART) to suppress it. Results show that when HIV is active, it reduces specific immune cells that are essential for fighting infections and maintaining balance in the gut, which also causes inflammation and changes in gut bacteria. This research sheds light on the lasting effects of HIV on gut health and immunity, helping us understand the ongoing challenges in managing HIV.

[Read More](#)

HEALTH AND WELLBEING

The MIND Diet: Tips for a Brain-Boosting Lifestyle

The MIND diet, short for "**Mediterranean-DASH Intervention for Neurodegenerative Delay**," promotes brain health and lower the risk of dementia. It is designed to be a long-term approach to eating, emphasizing specific foods known to benefit cognitive function and overall health.

- The MIND diet **encourages leafy greens**, berries, nuts, whole grains, fish, poultry, beans, and olive oil. These foods are rich in antioxidants, nutrients, and fats essential for brain health.
- **Aim for at least** one serving of leafy greens like spinach or kale each day. They are high in folate and vitamins linked to cognitive function.
- Eat berries, **particularly blueberries and strawberries**, twice a week. They are packed with antioxidants that support brain function.
- Use olive oil as your primary cooking fat. **Replace butter and margarine** to lower intake of saturated fats.
- **Limit red meat and processed foods** like bacon, to three times a week or less. These can increase oxidative stress, which affects brain health.
- Plan balanced meals by **incorporating a variety of brain-friendly** foods in each meal.
- Add a variety of **colorful vegetables** to your diet, like peppers and tomatoes, which are rich in antioxidants and help reduce inflammation.
- **Include nuts**, particularly walnuts and almonds, for a boost of healthy fats and brain-benefiting nutrients.

Source: [The Telegraph](#)

OPPORTUNITIES

United Nations/Japan Long-term Fellowship Programme

The United Nations Office for Outer Space Affairs and the Government of Japan in cooperation with the Kyushu Institute of Technology (Kyutech) have established a United Nations/Japan Long-term Fellowship Programme on Nano-Satellite Technologies for nationals of developing countries or non-space-faring nations. The Programme will provide extensive research opportunities in nano-satellite systems through the use of the nano-satellite development and testing facilities available at Kyutech. The purpose of this fellowship is to help non-space-faring nations join the community of space faring nations.

Deadline: 1 December 2024. [Read More](#)

Workshop: Opportunities and challenges of generative AI for managers and leaders

The International Science Council is hosting a workshop to explore the opportunities and challenges of using generative AI in science organizations. This 1.5-hour interactive session will address key management issues, such as ethical AI use, staff engagement, and developing guidelines, with limited registration available for two sessions on November 6 and 7, 2024. Due to its interactive nature, the workshop is limited to 25 participants at a time and is available on a first come, first served basis

[Read More](#)

OPPORTUNITIES: International Science Council

- [Call for researchers](#) to organize the eleventh annual CECAM-Lorentz workshop in computational simulation and modelling and its applications. **Deadline: 13 November 2024.**
- [Call for applications](#) for the Computation & Cognition Tübingen Summer Internship (CaCTüS) offered to 10 students by the Max Planck Institutes for Biological Cybernetics and Intelligent Systems and the Tübingen AI Center. **Deadline: 19 November 2024.**
- [Call for proposals](#) for young researchers for the FAPESP Program for the South Atlantic and Antarctica. **Deadline 25 November 2024.**
- [Call for inputs](#) to the UNESCO Draft Principles of Open Science Monitoring. **Deadline: 30 November 2024.**