



ZAMBIA ACADEMY OF SCIENCES

NEWSLETTER



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ZaAS NEWS

Science Week- This year, the Zambia Academy of Sciences partnered with the National Science and Technology Council (NSTC) and the National STEM Foundation to host the 2023 Science Week and Zambia Science Conference. From November 6 to 10, the event unfolded under the captivating theme, "Breaking Barriers and Building Partnerships." The Science Week showcased a series of engaging events, including an Inauguration March led by the Minister of Technology and Science, a STEM Learners Bootcamp involving 60 girls and 40 boys from Lusaka's secondary schools, and a Women in STEM conference featuring expert speakers across various STEM fields. Topics ranged from Strategic Partnerships in STEM to Empowering the Next Generation through Growth Mindset, highlighting the importance of Inclusion and Diversity in STEM. The festivities culminated in a Gala Dinner, where outstanding contributions in STEM were honoured, including the prestigious 2023 Best Female and Best Male Young Scientist Awards (JETS), sponsored by the Zambia Academy of Sciences.

SCIENCE NEWS

Anthrax Outbreak in Zambia

Zambia has been battling an outbreak of Anthrax since September/early October 2023 in multiple provinces including Southern Province, Eastern Province, Western Province, Lusaka Province, Muchinga Province, and Northwestern Province. Anthrax, a severe infectious disease caused by a specific bacterium, poses a significant threat to public health in Zambia and the subregion. It is transmitted from animals to humans, commonly affecting domestic and wild animals worldwide. Anthrax spores, dormant in soil, can lead to illness in humans through contact with infected animals or contaminated animal products. There are four forms of anthrax, each presenting distinct symptoms and risks. Anthrax of the skin, the most common form, results from spores entering the skin, causing blisters and ulcers.



Without treatment, it can be fatal, but proper intervention leads to high survival rates. Anthrax of the lungs, considered the most deadly, occurs through spore inhalation, causing severe respiratory symptoms. Without aggressive treatment, this form is almost always fatal, but about 55% survive with intervention. Anthrax of the digestive system arises from consuming infected meat, causing a range of symptoms. Without treatment, more than half of patients die, but proper intervention yields a 60% survival rate. Injection anthrax, a rare type found in drug users, can spread rapidly throughout the body.

Treatment options include antibiotics and anti-toxins, with hospitalized patients often requiring aggressive measures such as ventilation. Although an anthrax vaccine exists, it is limited to specific at-risk populations. The Ministry of Health in Zambia employs a 'One Health Approach,' implementing measures such as staff reorientation, surveillance, adequate protective equipment, public awareness, and collaboration with livestock and fisheries authorities to curb anthrax spread among humans and animals.

Ministerial Statement on Anthrax Outbreak in Zambia. Press Statement by the Minister of Health. [Read More.](#)

Ministerial Statement on Anthrax Outbreaks in the Country by the Minister Of Livestock And Fisheries Presented at the National Assembly. [Read More.](#)

Quote

“Great minds discuss ideas; average minds discuss events;
small minds discuss people”

- Eleanor Roosevelt

MEMBER FOCUS

DR. ANGELA GONO-BWALYA - COMMITTEE MEMBER & CHAIRPERSON OF THE MEDICINE AND HEALTH SCIENCES COMMITTEE - ZAAS

Dr. Angela Gono-Bwalya is a Senior Lecturer and Researcher in the Department of Pharmacy, School of Health Sciences at the University of Zambia. She is a lecturer in Pharmacognosy and Pharmaceutical Chemistry. Her research interests are in Indigenous knowledge systems (IKS), Ethnobotany, Phytochemistry, and Drug discovery processes from medicinal plants. Dr Gono-Bwalya has worked at the University of Zambia since 2004, initially as a Lecturer and Researcher in the School of Medicine, Department of Pharmacy. During her professional journey at the University of Zambia, she has held different portfolios such as; Assistant Dean for Postgraduate studies in the School of Health Sciences, Vice-Chairperson and later chairperson of the University of Zambia Health Sciences Research Ethics Committee (UNZHSREC), and a member/reviewer of other committees namely; the University of Zambia Biomedical Research Ethics (UNZABREC) and Journal of Agriculture and Biomedical Sciences (JABS). She is also an expert reviewer of Pharmacy programs for the Higher Educational Authority (HEA), Zambia. Dr Gono-Bwalya is a Natural product Scientist and a Commonwealth Scholar.

PUBLICATIONS

Bioleaching of chalcopryrite using native *Acidithiobacillus ferrooxidans* isolated at Copper Nkana slag dump (Black Mountain) in Kitwe

This research aimed to evaluate the impact of various physical-chemical factors, including particle size, shake flask speed, starting pH, and pulp density, on the bioleaching of Zambian chalcopryrite. The study utilized a newly identified native *Acidithiobacillus ferrooxidans* strain DJN1 2021, isolated from samples collected at the Copper Nkana slag dump (Black Mountain) in Kitwe, Copperbelt Province, Zambia. Strain DJN1 2021 displayed promising characteristics for copper bioleaching under laboratory-optimized conditions. Scaling up this technology with the novel bacterium, particularly for large ore volumes, holds potential for its application in Zambia's copper mining sector and potentially in other regions of the African continent. [Read More](#)

The Contextualization Deficit: Reframing Trust in Science for Multilateral Policy

On this year's World Science Day for Peace and Development, centered around the theme "Building trust in science," the ISC presented a working paper titled "The Contextualization Deficit: Reframing Trust in Science for Multilateral Policy." This paper examines insights from various fields, including journalism and regulation, regarding trust in science in recent years. It discusses the implications of this collective knowledge for policymakers. [Read more](#)

Contextualizing entrepreneurship for Africa's post-Covid-19 recovery and growth

This study investigates how the African economy has faced and responded to the challenges posed by COVID-19, with a particular focus on the importance of a context-specific entrepreneurship approach in Africa's post-COVID recovery and growth. The paper emphasizes the need for a critical evaluation of the assumptions underlying entrepreneurship policies in Africa, a dimension often overlooked by international and national initiatives. Furthermore, it contributes novel insights to the discourse on entrepreneurship for Africa's post-COVID-19 recovery and growth, representing one of the initial discussions on the subject from an African perspective [Read More](#)

HEALTH AND WELLBEING

Tips for Managing Knee Pain in Cold Weather

Possible Causes:

1. **Barometric Pressure:** Cold fronts may lead to lower barometric pressure, causing swelling in tendons, muscles, joints, or scar tissue, resulting in pain.
2. **Synovial Fluid:** Cold temperatures may thicken synovial fluid in joints, making them stiffer and more painful.
3. **Blood Circulation:** In cold weather, blood is redirected from extremities to vital organs, reducing warmth in joints and potentially increasing aches.

Lifestyle Changes:

1. **Mood and Exercise:** Cold, dreary days can negatively impact mood, potentially worsening pain. Reduced outdoor activity may lead to less exercise and increased stiffness.
2. **Vitamin D:** Lack of sunlight in winter may result in vitamin D deficiency, linked to increased pain. Consider supplements after consulting with a doctor.

How to Feel Better:

1. **Dress Warmly:** Wear insulated clothing, including hats, scarves, and gloves, to keep joints warm.
2. **Moist Heat:** Use moist heat, such as warm baths, to enhance circulation and loosen muscles.
3. **Stay Active:** Engage in indoor exercises like yoga or heated pool swimming to strengthen bones and muscles around the knees.
4. **Avoid Overexertion:** Be mindful of daily tasks; don't push your body too hard, and seek help for heavy lifting.
5. **Maintain Healthy Lifestyle:** Eat nutritious food, maintain a healthy weight, and ensure adequate sleep to reduce pressure on joints.
6. **Stay Positive:** Engage in activities that bring happiness and shift attention away from pain.
7. **Medical Consultation:** If pain persists, consult with a doctor about medication or other treatment options

([Source](#))

OPPORTUNITIES

The Kinship Conservation Fellowship

The Fellowship supports conservation practitioners across the globe. The program is designed to advance your career and equip you with new skills, insights, and analytical tools to accelerate the projects you lead at home. The month-long, in-residence Fellowship focuses on market-based solutions in conservation and cultivates your leadership skills in the sector. Through interactive discussions, systems-thinking exercises, and peer-learning sessions, Fellows engage with stories and innovative solutions to overcome complex challenges that they can apply to their own work. The 2024 program runs June 30 – July 30 at Western Washington University in Bellingham, Washington, USA. [Read More](#).

HealthTech Hub Africa (HTHA) Accelerator Program 2024

HealthTech Hub Africa (HTHA) is a hybrid pan-African health tech accelerator with a physical co-working space in Kigali, Rwanda. Founded by the Novartis Foundation and supported by the Global Fund and the Patrick J. McGovern Foundation. Together with its managing partners, the accelerator aims to offer entrepreneurs a powerful platform to create sustainable businesses and meaningful health impact. For the 2024 Cohort, HTHA is looking for Growth Startups and Scale ups from the whole African continent with innovative business models allowing for collaboration with local and national governments, and aiming to support health systems in their digital transformation journeys. [Read More](#)

Global Sustainability Scholars (GSS) Fellows Program 2024

The GSS Fellows program offers a 10-week paid immersive training and mentoring with a global sustainability organization. Fellows will gain professional work experience, receive professional mentorship and professional development training, and build an international professional network in sustainability science. We will accept 5 -10 fellows per year to join the GSS community, provide advanced professional development training, and build professional connections that foster opportunities for employment and/or graduate school opportunities. Fellows will work with sustainability organizations such as Belmont Forum research projects or Earth Lab focused on a variety of sustainability challenges. [Read More](#)