



S.E.T. for socio-economic growth

## National Science and Technology Forum (NSTF)

# eNews

## There's a new 'god' in the ancient pantheon

*Message from the NSTF Executive Director, Ms Jansie Niehaus*

As artificial intelligence (AI) develops, it seems clear that it is created to mirror our minds and that it has human flaws too. Will AI be increasingly attuned to human vices, or will it help us find effective solutions to the major problems humanity faces? [Read](#) the ED's message.

## NSTF News

### NSTF Discussion Forum news

#### Transitions in South Africa's energy provision

The NSTF hosted an online discussion forum on [Transitions in South Africa's \(SA's\) energy provision](#) on 22-23 August 2023. The programme, presentations delivered, concept document and speakers' biographies are now available on this website. The video recordings of the proceedings and a media release summarising the salient points and outcomes will follow soon. Email any further queries or comments to [Ms Mankwe Mojapelo](#).

Ms Jansie Niehaus, NSTF Executive Director, was [interviewed on The Morning Show on eTV](#) on 22 August about the pressing issues covered by this discussion forum. The interview was broadcast live prior to the start of the discussion forum.

#### Pitfalls of AI

The NSTF unpacked the progression, potential and pitfalls of Artificial intelligence (AI) during its recent [Pitfalls of AI Discussion Forum](#), hosted in collaboration with [proSET](#) (a sector of the NSTF representing almost 50 professional and learned societies). Highlights of this popular event will come up again during the 9th edition of the [Science Summit at the 78th United Nations General Assembly \(UNGA78\)](#) in an online panel session, taking place on 15 September 2023 at 16:00-18:00 (CAT). Visit the website to read the media release captioned '[AI – to be feared or favoured?](#)', the YouTube [videos of the presentations](#), and watch your mailbox for the invitation to the panel session during the UNGA78. (Erratum: Our sincere apology for the incorrect spelling of the name of Dr Anwar Vahed of the CSIR in the media release on this discussion forum, where he was one of the speakers.)

#### Research and innovation towards sustainable economic growth

This hybrid discussion forum, in partnership with the [NSTF Science Councils and Statutory Bodies Sector](#) is coming up on 17-18 October 2023. Watch your mailbox for the invitation and spread the message!

#### Ocean science for sustainable development

An online discussion forum on Ocean Science for Sustainable Development will take place

towards the end of the year. Watch your mailbox for news.

***Make your voice heard and join in!***



## **Two Brilliant students embrace opportunity of a lifetime**

The NSTF's new partnership with the [London International Youth Science Forum \(LIYSF\)](#) and the [Department of Science and Innovation](#) as the sponsor, afforded two students from the [NSTF Brilliants Programme](#) the opportunity to participate in the 2023 LIYSF. The programme took place at Imperial College London from 26 July to 9 August 2023.

The two students, who were selected from recorded speeches about the reasons for the studies they are pursuing in engineering and medicine respectively, are Ms Lutendo Portia Rambevha from Limpopo and Mr Simphiwe Kubheka from Kwa-Zulu-Natal.

Meet [Lutendo Portia Rambevha](#) who is studying medicine at the University of Cape Town. She matriculated at Thengwe High School in Limpopo.

***"I chose to study medicine because I have this strong desire to learn more about the human body and how it works so that I can help people not only in my community, but also worldwide."***

[Read](#) about Lutendo's experiences on the trip to the LIYSF.

A report on Simphiwe's trip to the LIYSF will be published in the next issue of this newsletter.

***The NSTF supports STEM education with the aim of creating the researchers,***

## **Bursaries available**

Visit the NSTF [Bursary Directory](#) for the latest available bursaries in science, engineering and technology (SET):

- [City of Cape Town Bursary](#) (Deadline: 08 September 2023)
- [AgriSETA bursary programme](#) (Deadline: 15 September 2023)
- [South African Table Grape Industry Bursary Programme](#) (Deadline: 15 September 2023)
- [IMESA Bursaries](#) for full-time studies in civil engineering (Deadline: 15 September 2023)
- [Citrus Academy Bursary Programme](#) (Deadline: 18 September 2023)
- [The Western Cape Department of Health Bursary Programme](#) (Deadline: 29 September 2023)

The deadline for all the following bursary applications is 30 September 2023:

- [Upstream Training Trust \(UTT\) Bursary](#)
- [Toyota Bursary Programme](#)
- [Standard Bank Bursary Programme](#)
- [Shoprite Bursary Programme](#)
- [SAPPI Bursary Programme](#)
- [SANRAL Bursary Programme](#)
- [IDC Bursary Programme](#)
- [Firstrand Foundation Trust Bursary](#)
- [AWS Skills Development Bursary](#)
- [Investec Bursary Programme](#)

***SET for life!***

*leaders and innovators for tomorrow's national system of innovation.*

## Meet our Award winners

### Ukhozi Award – Silver Jubilee of the NSTF Awards

**Dr Philemon Mjwara**, Director-General: Department of Science and Innovation (DSI) was selected by the NSTF and presented with the Ukhozi Award for an essential contribution to science, technology and innovation in South Africa. He played a significant role in building strong relations between the DSI (as DST and later as DSI) and the NSTF over many years. The Award was made in celebration of the 25th anniversary of the NSTF Awards. 'Ukhozi' means 'eagle' in isiZulu, and here especially refers to the Black Eagle, or Verreaux's Eagle. This eagle is indigenous to South Africa and the continent and symbolises flying high and seeing the bigger picture. [Read more.](#)

### Lifetime Award

**Prof Jonathan Jansen**, Distinguished Professor: Education, Stellenbosch University (SU); and President: Academy of Science of South Africa was awarded the NSTF-South32 Lifetime Award for a distinguished contribution to the advancement of education scholarship through advanced research and publication, scholarly teaching, innovative university management especially in times of racial disharmony, science leadership, school improvement, educational innovation, capacity development, public engagement, and science advocacy. [Read more.](#)

## Highlights: Live broadcast of the 2022/2023 NSTF-South32 Awards Event

The NSTF continued with the hybrid format of the awards gala event this year, with two gala dinners taking place simultaneously in Cape Town and Johannesburg. If you missed the opportunity to attend the event at one of these venues on 13 July, you can catch up on the highlights in a [seven-minute video](#) on the NSTF YouTube channel. A broadcast of the [whole prestigious event](#), the Silver Jubilee of the Awards, is also available on this channel.

### Today's research ... tomorrow's innovation

#### STEMulator

[STEMulator](#) was invited to share a stall with the [SA Institution of Mechanical Engineering](#) (SAIMechE) at the [Sasol Techno X](#) expo in Sasolburg from 14-18 August. Over 3000 students watched the team demonstrate the STEMulator. USB flash drives with the STEMulator on them, as well as the NSTF career booklet, and career talks by the NSTF Award winners, were handed out to teachers to use in their classrooms. The expo provided invaluable insights into futuristic science, technology, engineering and mathematics (STEM) applications and their potential to transform lives. We were thrilled to be part of it.

The team appreciates SAIMechE facilitating our participation and allowing us to collaborate on promoting STEM education and careers. Working together we hope to inspire the next generation of innovators and

#### Welcome to a new member

The NSTF welcomes a new member:

- [Nelson Mandela University](#) (NMU) in the Eastern Cape under the Higher Education sector

Join the NSTF's existing cohort of over 130 member organisations involved in science, engineering, technology (SET) and innovation in South Africa.

Visit the [Membership section](#) on the website for more information.

#### proSET General Meeting

A general meeting is held once a year to update [proSET members](#) on the activities carried out by the [proSET Committee](#) on behalf of the membership, as well as other business as set out in the [agenda](#).

problem solvers.

If you'd like to get involved with the STEMulator email [info@stemulator.org](mailto:info@stemulator.org) or contact [Ms Kgaugelo Pule](#).

The meeting is coming up on 22 September 2023.

**SET for socio-economic growth**

**Explore>Discover>Learn – inspiring the next generation of STEM professionals**



## Understanding the International Day Against Nuclear Testing

The NSTF supports the International Day Against Nuclear Testing and the Treaty for the Non-Proliferation of Nuclear Weapons (NPT) of 1968, of which South Africa is a signatory.

Nuclear weapons are a global security threat, not only to humanity but also to the natural environment. The NPT came about due to both the need to promote global peace and security cooperation, and the gruesome impact that nuclear detonation has on the natural ecology. In a bid for peace, both nuclear and non-nuclear states ratified the NPT. Subsequently, on the 29<sup>th</sup> of August 2009 at the United Nations General Assembly (64<sup>th</sup> session), the International Day Against Nuclear Tests was established. The NSTF released a media statement on the organisation's stand against nuclear testing. [Read](#) the media release.



proSET (Professionals in science, engineering and technology) is a sector of the NSTF currently representing 47 professional and learned societies. This section shares news about [current members](#) and introduces new members of the [proSET sector](#).

- **Rising young computing stars named in IITPSA Computer Applications Olympiad**

Top performers in the 2023 Computer Applications Olympiad were announced recently. This Olympiad is part of the South African Computer Olympiads, a project of the [Institute of Information Technology Professionals South Africa](#) (IITPSA). IITPSA President Admire Gwanzura noted that ICT skills and aptitude were in growing demand in South Africa, and that young South Africans learning these skills could work towards rewarding careers in the ICT sector. [Read more](#).

- **Wits lecturer wins the Silver Jubilee Medal from the South African Institute of Physics**

University of the Witwatersrand (Wits) physics lecturer Dr Isaac Nape has won the Silver Jubilee Medal from the [South African Institute of Physics](#) for 2023. The award is made for outstanding achievements by a young physicist that contributes to the research, education or technology development in physics. [Read more](#).

- **July 2023 issue of Grassroots available**

The July issue of *Grassroots*, the magazine of the [Grassland Society of Southern Africa](#), is now available. Among the topics covered in this issue are the launch of SA's biodiversity banks, and how changing landscapes are affecting butterflies. Click [here](#) to read the magazine.

- **Industrial engineering, systems engineering and engineering management to be addressed at ISEM23 conference**

The [Southern African Institute for Industrial Engineering](#) (SAIIE), the [International Council on System Engineering](#) (INCOSE) and the [Graduate School of Technology Management](#) (GSTM) at the University of Pretoria invite you to attend the combined ISEM2023 conference. [Read more](#).

- **GSSA welcomes new President**

The [Geological Society of South Africa](#) (GSSA) welcomed Prof Steve McCourt as the incoming President of the Society for 2023/2024. Professor McCourt is an experienced and respected geological scientist and academic (now retired). [Read more](#).

- **National Zoological Garden receives conservation award**

Chadané Pretorius (conservation officer) and Kabelo Segodi (conservation worker) have been applauded by the [National Zoological Gardens](#) in Pretoria (which is part of the [South African National Biodiversity Institute](#) (SANBI)) for their dedication and efforts which have resulted in the garden winning the Pan-African Association of Zoos and Aquaria conservation award. The pair are responsible for breeding the critically endangered African pancake tortoises (*Malacochersus tornieri*) as part of the reptile park team. [Read more](#) (iol.co.za).



## SET-related policies currently open for public comment

*Keep informed and have your say*

- [Pharmacy Act: South African Pharmacy Council: Nominations invited](#) (Comment by 08 September 2023)
- [National Health Insurance \(NHI\) Bill](#) (Comment by 15 September 2023)

## SET-related policy news

*Some articles included in the section below are opinion pieces. The opinions expressed in these articles do not necessarily reflect the views of the NSTF Executive Committee, Directors, Secretariat or Members.*

### 4IR and information technologies

- [Top ICT tenders: SANParks seeks to update tech](#) (itweb.co.za)
- [Prepare for AI: As we navigate the era of artificial intelligence, South Africa must choose a regulatory path](#) (dailymaverick.co.za)
- [Data is the lifeblood of the global economy, but restrictions on cross-border data flows are a reality](#) (dailymaverick.co.za)

### Education

- [South Africa's first tracer study of doctoral graduates published](#) (dst.gov.za)

### Energy

- [Eskom given permission to sell its distribution assets](#) (energize.co.za)
- [Tax breaks make going green viable and attractive](#) (energize.co.za)

### Environment

- [Minister Barbara Creecy commends successful visit of UN Special Rapporteur on Toxins and Human Rights](#) (gov.za)

### STI Indicators Report 2023

- [South African Science, Technology and Innovation Indicators Report 2023](#) (naci.org.za)



*The events posted below are correct as far as we could establish at the time of preparing this newsletter. Please check the relevant websites for changes to dates and venues.*

- [Advanced Health Care Leadership](#): London - United Kingdom, 4-6 September 2023 (Face-to-Face and Online)
- [Agbiz Grain - Grain & Oilseed Value Chain Symposium](#): Virtual symposium, 5-8 September 2023
- [IAIAsa Gauteng Online Event: The Myths and Truths of Alternative Energy](#): 7 September 2023
- [PHASA 2023](#) (Public Health Association of SA Conference): 'Transforming research translation- reimagining public health evidence, policies, and practice', Gqeberha, 10-13 September 2023
- [9<sup>th</sup> Science Summit at UN General Assembly](#): 12-29 September 2023
- Space Renaissance International (SRI) and the National Space Society (NSS), on behalf of 47 space advocacy organisations will host a hybrid panel at the United Nations in New York, on 15 September 2023, officially present their proposal for an [18th Sustainable Development Goal \(SDG\), focused on Space Development](#), to be added to the U.N. 2030 Agenda for Sustainable Development.
- [50th IAH Worldwide Groundwater Congress](#) of the International Association of Hydrogeologists: Cape Town, 18-22 September 2023
- [9th African Engineering Week and 7th Africa Engineering Conference](#): Pretoria, 25-28 September 2023
- [8<sup>th</sup> All Africa Conference on Animal Agriculture](#): Botswana, 26-28 September 2023
- [Colloquium of African Geology](#) (CAG29): Namibia, 26-29 September 2023
- [SA Innovation Summit 2023](#): Cape Town, 27-28 September 2023. Theme: "Africa's Innovation Frontier". [Pre-registration](#) is now open.
- [69th Association of Municipal Electricity Utilities of Southern Africa \(AMEU\) Convention](#): Pretoria, 1-4 October 2023
- [International Conference on Industrial Engineering, Systems Engineering and Engineering Management \(ISEM2023\)](#): Western Cape, 2-4 October 2023
- [Windaba Conference and Exhibition](#): 2023: Cape Town, 3-5 October 2023
- [12th Oppenheimer Research Conference](#): Midrand, 4-6 October 2023
- [19<sup>th</sup> biennial International Conference on Accelerator and Large Experimental Physics Control Systems \(ICALEPCS\) 2023](#): Cape Town, 9-13 October 2023. Hosted by the South African Radio Astronomy Observatory (SARAO), the conference will be preceded by workshops on 7 and 8 October 2023.
- [CIGRE Southern Africa Regional Conference 2023](#): Pretoria, 24-27 October 2023
- [1st IWA Non-Sewered Sanitation Conference](#): Johannesburg, 15-18 October 2023
- [IMESA Conference 2023](#): Gqeberha, 25-27 October 2023

- [12<sup>th</sup> International Symposium on Pollination](#): Cape Town, 16-20 October 2023
- [Re-Connecting Human Capital with the Discourse of Digital Transformation to Achieve the United Nations Sustainable Development Goals](#): London - United Kingdom, 13-15 November 2023 (London - United Kingdom) (Face-to-Face and Online)
- [Southern African Sustainable Energy Conference \(SASEC23\)](#): Gqeberha, 15-17 November 2023
- [Hydrogen Safety and Hazardous Areas Conference](#): Sandton, 4 and 5 December 2023
- [53rd Congress of the Southern African Society of Plant Pathology](#): Golden Gate National Park, Free State, 21-25 January 2024
- [Africa Energy Indaba](#): Cape Town, 5–7 March 2024. It will feature a focused Hydrogen Forum.
- [The XX International Plant Protection Congress \(IPPCATHENS2024\)](#): Athens, Greece, 1-5 July 2024



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### Science Councils and Statutory Bodies

- **ASSAf**: The [July/August 2023 issue of the South African Journal of Science](#) is now available. Read more about the untapped therapeutic potential of marine sponges, future predictions in regional climate variability, and more.
- **NECSA**: [South Africa's desire to produce nuclear fuel](#) (energize.co.za)
- **NRF**: [Russia's Minister of Science and Education visits NRF-iThemba LABS](#) (nrf.ac.za)
- **SABS**: [SABS cautions suppliers and consumers to be wary of associations that appoint themselves as regulators, watchdogs or governing bodies](#) (sabs.co.za)
- **SAMRC**: [President and CEO of SAMRC, Prof Glenda Gray's second term comes to an end in 2024](#) (samrc.ac.za)

### Higher Education Institutions

- [Setting up an Africa–Europe cluster of research excellence](#) (uct.ac.za)
- [Blockchain solution to contested elections](#) (uct.ac.za)
- [Canon SA extends partnership with Wits rock art digitisation laboratory](#) (wits.ac.za)
- [Mandela University PhD students win French research prizes for their conservation projects](#) (mandela.ac.za)

### 4IR and information technologies

- [Don't worry, AI won't take your cybersecurity job](#) (engineerit.co.za)
- [South Africa risks missing the AI wave](#) (itweb.co.za)

### Agriculture

- [Case for a different approach to new plant breeding techniques](#) (agbiz.co.za)

- [Promoting indigenous foods could improve food security in Southern Africa](#) (sun.ac.za)

## Biology

- [How to grow rhinos in a lab: the science that could save an endangered species](#) (theconversation.com)

## Environment and Climate change

- [Largest survey on mosses highlights vital role in ecosystem](#) (nature.com)
- [Oil drilling threatens the Okavango River Basin, putting water in Namibia and Botswana at risk](#) (theconversation.com)

## Health and Medicine

- [Traditional healers in rural Mpumalanga help diagnose HIV](#) (wits.ac.za)
- [Confidence in vaccines falling rapidly](#) (nature.com)
- [Study Identifies Supplement to Reduce COVID-19 Symptoms](#) (ukzn.ac.za)
- [How genetically modifying mosquitoes could strengthen the world's war on malaria](#) (theconversation.com)

## Infrastructure

- [Cape Town hotel shatters records as world's tallest hemp building](#) (msn.com)

## Palaeontology and Anthropology

- [Gigantic extinct reptile weighed as much as a black rhino](#) (wits.ac.za)
- [Dinosaur tracksite in Lesotho: how a wrong turn led to an exciting find](#) (theconversation.com)

## Science engagement

- [How to get people to believe in science again](#): Podcast with Marcia McNutt, President of The National Academy Of Sciences and Vidar Helgesen, Executive Director of the Nobel Foundation (in-reality.fm)



- [UCT academic honoured with Royal Meteorological Society Award](#) (uct.ac.za)
- [Gina Ziervogel takes the helm at the African Climate Development Initiative](#) (uct.ac.za)
- [Concrete specialist wins prestigious award](#) (wits.ac.za)
- [Two UP researchers awarded places in prestigious Horizons Institute Crucible Programme](#) (up.ac.za)
- [UKZN Professor Recognised in MIPAD Global Top 100 Class of 2023](#) (ukzn.ac.za)

## Opportunities

- The **South African 2023 Science and Technology Research Partnership for Sustainable Development (SATREPS)** call for proposals closes on Friday 08 September 2023. For more information and if you need pairing with a Japanese institution, contact Sizo Zwane of the Department of Science and



Innovation as early as possible at tel : [+2712 843 6357](tel:+27128436357) or email : [Sizo.Zwane@dst.gov.za](mailto:Sizo.Zwane@dst.gov.za).

- **Start-Up Culture in partnership with 4IRI** are looking for looking to recruit their first cohort of 30 entrepreneurs for their 4-6 months Accelerator Programme aimed at building solar product installation businesses; digital energy management systems businesses; and smart meter installation businesses. Click [here](#) the link for more information. Closing date: 30 August 2023.
- [Call for applications: ICGEB-SA Women in Biotechnology PhD fellowships](#). Click [here](#) for more information. Closing date: 06 October 2023.
- **The Industrial Development Corporation of South Africa Limited (the IDC) Graduate Internship/Youth Opportunities Hub:** The IDC internship programme is a 24-month fixed-term contract that provides workplace experience underpinned by a carefully designed training program customised to allow one to gain valuable work experience, explore career paths, networking with professionals in the workplace while earning a stipend. [Read more](#).

## About the NSTF

The [National Science and Technology Forum](#) (NSTF), established in 1995:

- is a broadly-representative [stakeholder body](#) for all science, engineering and technology (SET) and innovation organisations in South Africa
- gathers stakeholders around [burning issues of national and global interest](#), across the public and private sectors, including matters of public policy
- includes a [network of professional societies in SET and STEM education](#) (STEM = science, technology, engineering and mathematics) - the [NSTF proSET membership sector](#).
- recognises, awards and profiles the outstanding contributions of individuals and groups to SET and innovation through the prestigious [NSTF Awards](#)
- runs and supports collaborative projects and [youth outreach](#), including recognition of top performance in mathematics and science, role modelling, bursary and STEM career information
- runs and supports the [STEMulator.org](#) which attracts youth and educators to Explore>Discover>Learn the world of STEM including careers. (Established by NSTF proSET)

### For more information

[www.nstf.org.za](http://www.nstf.org.za)

E-mail: [enquiries@nstf.org.za](mailto:enquiries@nstf.org.za)

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