



Email: [enquiries@nstf.org.za](mailto:enquiries@nstf.org.za) | Tel: +27 12 841 3987 |  
<https://www.nstf.org.za/>



# NSTF e-Newsletter

## NSTF News

### Upcoming NSTF Discussion Forum

A hybrid NSTF Discussion Forum on [Science and Disaster Management for Social Justice](#) will be held as a side event at the [World Science Forum](#) (WSF) from 5-6 December, from 9:00-12:00. The NSTF will also participate as an exhibitor at the WSF. The WSF is proudly hosted by the [South African Department of Science and Innovation](#) (DSI). The main topic, subtopics and speakers were planned by the NSTF representatives of the [Science Councils and Statutory Bodies sector](#).

Recent disasters caused by the SARS-CoV-2 pandemic, and severe flooding across the world due to climate change make this an important topic to discuss. The recent disaster when a mine tailings dam broke in Jagersfontein demonstrating the importance of infrastructure maintenance also makes this a currently relevant topic. Evidence based decision making is key to saving lives and limiting damage to livelihoods. Do join the NSTF and share your knowledge and insights on the connections between disaster management, science and related issues of social justice.

The NSTF discussion forums (See [Previous Discussion Forums – NSTF](#)) provide constructive interaction and discussion among stakeholders from a variety of perspectives, including those of government, on key areas of concern to the public and the science, engineering and technology (SET) community.

**Erratum:** Our apologies for the mistake we made on the Day 1 Survey of the [Basic sciences for sustainable development Discussion Forum](#). Dr Farai Dziike is at the Durban University of Technology (DUT) – not SANEDI. Our apologies to Prof Dziike.

### Call for nominations: the ‘Science Oscars’ of South Africa

The NSTF calls for nominations for the 2022/2023 [NSTF-South32 Awards](#). [Nominations](#) must be registered electronically by **15 December 2022**.

The NSTF’s theme for 2023 is *Ocean science for sustainable development*. The [Special Annual Theme Award for 2023](#) will be made for an outstanding contribution to science, engineering and technology (SET) and innovation from research and development in the ocean sciences for sustainable development. For more information on [how to register](#) and what is new this year, visit the [NSTF Awards](#) page on the website.

### New category partner, new prize sponsors

**NSTF-SAMRC Clinician-Scientist Award:** The [South African Medical Research Council](#) (SAMRC) is sponsoring a [new award](#) for an outstanding contribution by a clinician-scientist, with a focus on work to enhance life and to improve the health of the community. This new category is modelled on the Emerging Researcher category.

**SAYAS as a new prize sponsor:** The [South African Young Academy of Science](#) (SAYAS)

is the new prize sponsor for the TW Kambule-NSTF Emerging Researcher category. Prizes of R20 000 each will be awarded to the two winners to supplement their research funding.

**A prize for an established category:** The TW Kambule-NSTF Researcher category now has a prize sponsor for the first time, which is [proSET](#) (the Professional Bodies and Learned Societies sector of the NSTF). proSET previously sponsored the prizes for the Emerging Researchers. The prize money is R20 000 to supplement the winner's research funding.

*Help the NSTF to fulfil its role as Non-profit Company representing South Africa's science, engineering, technology (SET) and innovation stakeholders. NSTF provides platforms to promote SET and innovation, consult stakeholders with government, have vibrant discussions about currently relevant issues, celebrate the very top scientists and related professionals in South Africa, and do meaningful STEM outreach to the youth. **Your tax-exempted contribution plays a crucial role in sustaining these efforts. See the [donation form](#) on our website for more information.***



## NSTF welcomes new Chairperson

Prof Jeffrey Mphahlele has been appointed as the new NSTF Chairperson after recommendation by the NSTF Executive Committee at the 2022 Annual General Meeting. Prof Mphahlele will serve in this capacity for a term of three years. We look forward to his leadership in the times ahead. The NSTF is grateful to Prof Dhansay for serving the community over the past nine years with wisdom and commitment.

Prof Mphahlele is Deputy Vice Chancellor for Research and Innovation at the North-West University (NWU). He holds a doctoral degree in medical virology. He currently serves on a number of governance and advisory structures, including the Ministerial Advisory Committee on COVID-19 vaccines in the Ministry of Health since 2020 and as the Vice President for Research at the South African Medical Research Council (SAMRC) since October 2014. He is a member of the Academy of Science of

## STEMulator.org is growing in leaps and bounds

**STEMulator in NSTF Discussion Forum and in *Mail and Guardian* newspaper**  
STEMulator formed part of the NSTF [Discussion Forum: STEM Education Disruptions and the future](#) webinar in August. Kgaugelo Pule shared the NSTF/proSET's digital learning tool, [STEMulator.org](#) and demonstrated how it provides science, technology, engineering, mathematics (STEM) career information in context. [Watch](#) the talk on the NSTF's YouTube channel.

The NSTF discussion forum and the STEMulator featured in the [Mail and Guardian supplement](#) on Friday, 4 November 2022. An advert in the supplement called for education partners for the next major milestone, the STEMulator 'school' which will contain curriculum materials from grade 4-12 in maths, natural/physical science and life science.

Anyone who can contribute to the school, be it information, pictures and videos or gifs of practical experiments, will assist in investing in South Africa's youth. Feel free to email [Ms](#)

South Africa (ASSAf).

## Welcome to a new member

The NSTF welcomes a new member:

- [Operations Research Society of Southern Africa](#) (ORSSA) under the proSET sector for professional societies.

Join the 120 [member organisations](#) of the NSTF non-profit company in promoting science, engineering, technology (SET) and innovation in South Africa. Visit the [membership section](#) on the website for more information about the NSTF. [Apply](#) for membership online.

### SET for socio-economic growth

## Bursaries available

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

- [Northern Cape Provincial Government Bursary](#) (Deadline: 18 November 2022)
- [Department of Mineral Resources and Energy Bursary](#) (Deadline: 30 November 2022)
- [Magalies Water Bursary](#) (Deadline: 30 November 2022)
- [Sibanye-Still Water](#) (Deadline: 30 November 2022)
- [Clicks Foundation Bursary](#) (Deadline: 30 November 2022)

### SET for life

## New developments – NSTF Discussion Forums

- A newspaper [supplement](#) on ‘[STEM education – disruptions and the future](#)’ featured in the Mail & Guardian (media sponsor of the NSTF) newspaper on 4 November 2022.
- The [videos of the presentations](#) delivered at the ‘[Basic sciences for sustainable development](#)’ discussion forum are now available for further sharing

## Meet our winners of the 2022 NSTF-South32 Awards

### Green Economy Award

**Prof Guy Midgley**, Head of the Global Change Biology Group at Stellenbosch University

[Kgaugelo Pule](#) or [info@stemulator.org](mailto:info@stemulator.org) to be part of this amazing journey. [Read more](#).



*SET to Explore>Discover>Learn*

## Obituary: Carolina Ödman-Govender

It is with great sadness that we learnt that Carolina Ödman-Govender passed away on 15 November 2022. She was Associate Professor of Astrophysics at the [University of the Western Cape](#) (UWC) and Associate Director: Development and Outreach, Inter-University Institute of Data Intensive Astronomy, UWC. She was awarded the 2018 [International Astronomical Union](#) Special Executive Committee Award for Astronomy Outreach, Development and Education. In 2021 she was awarded the 2020/2021 [NSTF-South32 Communication Award](#), "for reshaping how science is communicated to the general public and in particular research into building a scientific vocabulary in African languages" ([read more](#)).

Carolina continued to work and travel and inspire people throughout her illness and treatment cycles. She was passionate about motivating and inspiring the youth, and addressed the [NSTF Brilliants students](#) in February this year when she spoke about "Scientists are needed everywhere!". Our heartfelt condolences go to her husband, Kevin Govender, their two sons, other family members and her global circle of friends.

received this Award for his contribution over two decades to the understanding of the risks of climate change to endemic biodiversity and ecosystems, both nationally and globally. He developed response options through modelling as well as critical field and controlled environment trials; and is committed to communicate these issues to the public. [Read more](#).

#### **NSTF-Water Research Commission Award**

Sponsored by the Water Research Commission (WRC) since 2017.

**Prof Evans Chirwa**, Professor and Rand Water Research Chair: Water Utilisation at the Department of Chemical Engineering, University of Pretoria, received the Award for introducing the use of biological analogues in advanced water treatment and water recovery with applications in metal-halide heterogeneous photocatalysis in South Africa. His latest contribution was in the treatment of organic pollutants using synthesised photocatalytic nanomaterials. [Read more](#).

#### ***Today's research, tomorrow's innovation***

#### **Did you know that NSTF shares career talks on TikTok?**

The NSTF now has a [profile](#) on TikTok, the popular social media app that allows users to create, watch, and share short videos. The app is especially popular among young people, therefore we are posting material suitable to their tastes, such as two-minute videos of Award winners speaking on careers in science, engineering and technology (SET). Please distribute this news widely to spread the word of the wonderful career opportunities available in SET. One more way to reach the youth!

There are also longer versions of these videos, sharing the complete background information of the career path that role models follow. These are available on the [NSTF YouTube channel](#). It is prepared for the NSTF's Share 'n Dare programme for public outreach. This programme provides a platform for [NSTF-South32 Award winners](#) to act as role models and ambassadors for SET and innovation.

#### ***SET for life!***



proSET (Professionals in science, engineering and technology) is a sector of the NSTF representing about 40 professional and learned societies. This section shares news about [current members](#) and introduces new members of the [proSET sector](#).

- **NEW MEMBER: Operations Research Society of South Africa – ORSSA**

The [Operations Research Society of South Africa](#) (ORSSA) is the national professional body tasked with furthering the interests of those engaged in, or interested in, Operations Research (OR) and decision science activities. ORSSA is continually involved in matters which concern operations researchers. Membership includes a wide range of students, academics and practitioners across South Africa as well as corporate members. *ORiON* is the official journal of ORSSA and is published biannually. The Society awards a number of prizes and awards annually to recognise outstanding achievements in the field of

Operations Research. A national conference is organised by the Society at different venues annually, usually during September, to serve as a forum for communication about OR.

- **SAICE questions the awarding of SANRAL tenders to foreign companies**

The [South African Institution of Civil Engineering](#) (SAICE) is deeply concerned by the recent awarding of tenders by the South African National Roads Agency (SANRAL) to joint ventures led by foreign companies. Four of the five tenders that were cancelled in June 2022, were awarded following an evaluation process conducted by the Development Bank of Southern Africa (DBSA). President of SAICE, Professor Marianne Vanderschuren, is concerned by the potential impact and cost to the economy and all South Africans. SAICE sent an open letter to President Cyril Ramaphosa about the matter. [Read more.](#)

- **Top future programmers shine at 2022 Programming Olympiad awards**

The South African Computer Olympiad (SACO) and the [Institute of Information Technology Professionals](#) (IITPSA) have announced the winners for the 2022 national Programming Olympiad, a challenge for high school learners who can use a computer programming language. [Read more.](#)

- **Proceedings and best papers of SAIE 2022 Conference available**

The *South African Journal of Industrial Engineering* has just published its latest issue at <http://sajie.journals.ac.za/pub>. Visit the website to read the best papers presented at the 33rd [Southern African Institute for Industrial Engineering](#) (SAIIE) annual conference held from 3 to 5 October 2022, as well as the 23rd annual Rapid Product Development Association of South Africa (RAPDASA) conference, joined by the 15th Robotics and Mechatronics (RobMech), the 33rd Pattern Recognition Association of South Africa (PRASA), and the 3rd South African Advanced Materials Initiative (CoSAAMI) conferences. This joint conference was held from 9 to 11 November 2022 in Somerset West. Proceedings of the SAIIE Conference are available [here](#).

- **SANBI convenes Catchment Indaba 2022**

The [South African National Biodiversity Institute](#) (SANBI) is convening the country's catchment community to have its third Catchment-based Indaba on Ecological Infrastructure from 1 to 3 November 2022 at the Olifants River Catchment. This catchment, known for the richness in diversity in plant species and ecosystems as it collects significant rainfall, is currently facing threats to its biodiversity.



## SET-related policies currently open for public comment

*Keep informed and have your say*

- [Draft Non-Profit Organisation Amendment Bill](#) (Comment by 18 November 2022)
- [Project and Construction Professions Act: Continuing Professional Development Policy](#) (Comment by 30 November 2022)
- [Council for Medical Schemes Levies Act: Proposed levies on medical schemes](#) (Comment by 2 December 2022)

- [National Environmental Management Act: Intention to amend the procedures for the Assessment and Minimum Criteria for reporting on Identified Environmental Themes when applying for Environmental Authorisation](#) (Comment by 4 December 2022)
- [Infrastructure Development Act: National Infrastructure Plan 2050 Phase 2](#) (Comment by 9 December 2022)
- [South African National Water Resources Infrastructure Agency SOC Limited Bill – Draft](#) (Comment by 16 December 2022)
- [Health Professions Act: Regulations relating to registration by environmental health practitioners of additional qualifications](#) (Comment by 23 December 2022)
- [Health Professions Act: Regulations: Defining the scope of the profession of dental therapy](#) (Comment by 29 December 2022)
- [National Environmental Management Act: Establishment of a panel of experts to advise on proposed fishing-area closures adjacent to South Africa's African penguin breeding colonies and decline in penguin population](#) (Nominations invited)
- [White Paper on Conservation and Sustainable Use of South Africa's Biodiversity 2022: Revised](#) (Comments invited)

## 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

- [Major partnership to drive digital transformation in Africa](#) (wits.ac.za)

### Agriculture

- [Important changes made to the Land Court Bill](#) (agbiz.co.za)
- [South Africa's food security conditions](#) (agbiz.co.za)
- [Rooibos industry pays R12.2m to indigenous councils](#) (businesslive.co.za)

### Climate change and environment

- [NEMLA Act to introduce major shift in SA's environmental legislative landscape](#) (ReSource, August 2022)
- [Africa bears least responsibility for climate change but is most affected – Ramaphosa](#) (polity.org.za)
- [South Africa's water crisis likely to be worse than its energy crisis](#) (bizcommunity.com)

### Department of Science and Innovation

- [Sod-turning ceremony for Africa's first deep-space ground station and signing of joint statement by DSI and NASA](#) (dst.gov.za)
- [Minister Nzimande launches state-of-the-art space weather centre in Hermanus](#) (dst.gov.za)

### Energy

- [Eskom loan "significant step" for Just Energy Transition](#) (sanews.gov.za)

### Health and medicine

- [3 ways COVID sped up SA's medicine approvals process — and how it can help the NHI](#) (bhekisisa.org)

## Infrastructure

- [Civil engineering industry calls for collaboration to tackle 'construction mafia'](#) (infrastructurenews.co.za)
- [Ailing construction sector holds out hope for infrastructure developments to be fast-tracked](#) (infrastructurenews.co.za)



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

- [SA Academy of Engineering lecture: Smart technologies for a safer rail network](#): University of Pretoria, 21 November, 17:30. Register [here](#) to attend.
- [In-person lectures at the Iziko South African Museum](#): Professor Mike Bruton on *Harambee: The Spirit of Innovation in Africa*, Cape Town, 23 November 2022, 11:00
- 9th ASSAf Presidential Roundtable Discussion: The Threat of Academic Xenophobia to the Future of South African Universities: Webinar, 24 November 2022, 10:00. [Register here](#)
- [South African Geophysical Association's 17th Biennial Conference & Exhibition](#): Sun City, North-West Province, 28 November – 1 December 2022
- [World Science Forum](#): Cape Town, 5-9 December 2022
- [Promoting social justice through accessibility of language in science](#): World Science Forum side event hosted by the South African Journal of Science, 5 December 2022. Register [here](#).
- [GeoCongress 2023](#): Stellenbosch, 11-13 January 2023
- [31st Conference of the Southern African Association for Research in Mathematics, Science and Technology Education](#): Bloemfontein, 17-19 January 2023
- [5th National Conference on Global Change](#): Bloemfontein, 30 January – 2 February 2023
- [Third International Summit on Human Genome Editing](#): Francis Crick Institute, London, UK, 6-8 March 2023
- [Africa Agri Tech Conference and Exhibition](#): Pretoria, 14-16 March 2023
- [Africa Automation Technology Fair](#): Johannesburg, 9-11 May 2023
- [International Grassland Congress](#): Soil, Animal and Human Health: Kentucky, USA, 14-20 May 2023
- [2023 SAAFoST Biennial Congress and Exhibition](#): Future Foods: Smarter and More Sustainable Solutions, Cape Town, 28-30 August 2023



## SET Community 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.

### Science Councils and Statutory Bodies

- **CSIR:** [SA's first Industrial Biocatalysis Hub drives uptake of green production methods in chemical industry manufacturing processes](#) (csir.co.za)
- **ASSAf:** "This is the time for Radical Reason" is the theme of a special issue of the *South African Journal of Science*, produced by the Academy of Science of South Africa (ASSAf). [Read more](#).
- **ASSAf awards Science-for-Society Gold Medals for outstanding achievement** (assaf.org.za)
- **SABS:** [Tips from the South African Bureau of Standards to keep cool in buildings during summer](#) (sabs.co.za)
- **NRF:** [The NRF and HSRC sign historic Memorandum of Agreement](#) (nrf.ac.za)
- **SAMRC:** [SAMRC's Youth Health Economics Focal team awarded Wellcome Data Prize for Mental Health Research in Young People](#) (samrc.ac.za)
- **SAMRC notes, with concern, a sharp rise in concentrations of SARS-COV-2 RNA in wastewater in Cape Town and parts of the Western Cape** (samrc.ac.za)

### Higher Education Institutions

- [UCT team part of €40m 'CARE-O-SENE' SA-Germany project to decarbonise aviation](#) (uct.ac.za)
- [UP scientist joins call to protect Southern Ocean](#) (up.ac.za)
- [UWC's Institute for Water Studies shares its research with communities in the Nuwejaars Catchment](#) (uwc.ac.za)
- [UWC Augments Green Hydrogen Production Development and Training](#) (uwc.ac.za)

### 4IR and information technologies

- [Closing the cybersecurity gender gap to improve cyber resilience](#) (it-online.co.za)
- [Africa's first endovascular robotic unit will advance research and enable 'outreach intelligence'](#) (wits.ac.za)
- [Artificial intelligence is used for predictive policing in the US and UK – South Africa should embrace it, too](#) (theconversation.com)

### Agriculture

- [The challenges facing Eastern Cape agribusinesses](#) (agbiz.co.za)
- [Climate change is already hitting Africa's livestock - here's how to address the risks](#) (theconversation.com)
- [South Africa's small-scale farmers still can't find a place in the food value chain](#) (up.ac.za)

## Climate change and environment

- [Groundbreaking research on the impact of microplastic pollution in oceans](https://www.infrastructurenews.co.za) (infrastructurenews.co.za)
- [Transforming the waste sector by investing in the next generation](https://www.dst.gov.za) (dst.gov.za)
- [Termites' sensitivity to temperature affects global wood decay rate](https://www.up.ac.za) (up.ac.za)
- [Climate change to impact mountains on a global scale](https://www.wits.ac.za) (wits.ac.za)
- [Climate change: the effects of extreme heat on health in Africa](https://www.wits.ac.za) (wits.ac.za)
- [Climate change is causing endangered African wild dogs to give birth later – threatening the survival of the pack](https://www.theconversation.com) (theconversation.com)

## Energy

- [Energy efficiency in SA homes - new survey reveals compelling results](https://www.energize.co.za) (energize.co.za)
- [Invitation to submit comments: Repurposing Komati power station](https://www.energize.co.za) (Deadline: 18 November 2022) (energize.co.za)
- [Flexible gas: an enabler of South Africa's energy transition](https://www.energize.co.za) (energize.co.za)

## Medicine and health

- [Covid-19 comes in spikes now, and vaccines are still vital, SA expert says](https://www.businesslive.co.za) (businesslive.co.za)
- [South African study reveals a dangerous lack of dietary knowledge](https://www.nature.com) (nature.com)
- [UCT part of groundbreaking research with potential to impact the prevention, cure and transmission of malaria](https://www.uct.ac.za) (uct.ac.za)
- [Wolfson Memorial Lecture explores dementia prevention](https://www.uct.ac.za) (uct.ac.za)
- [CEBHC research informs WHO salt-intake guidelines](https://www.sun.ac.za) (sun.ac.za)

## Palaeontology and archaeology

- [Huge Karoo fossil find rocks scientists' world](https://www.vryeweekblad.com) (vryeweekblad.com)
- [Large tortoises lived in South Africa long ago: how we recorded their fast-disappearing traces](https://www.theconversation.com) (theconversation.com)

## Science communication

- [Science Communication comes under the spotlight](https://www.nrf.ac.za) (nrf.ac.za)
- [FameLab winner 2022: Diabetes is the second leading cause of death due to disease in SA, after tuberculosis. Finding ways to treat diabetes using indigenous knowledge about natural remedies has won Dr Nehemiah Latolla of the Nelson Mandela University a place on the world stage of science communicators. He was chosen as FameLab SA 2022 winner during the national leg of the International FameLab science communication competition held on 17 October 2022. As the national winner, he will represent South Africa in the International FameLab 2022 competition this month.](https://www.nrf.ac.za)

## Space science and astronomy

- [SAAO telescopes observe the first successful redirection of an asteroid](https://www.nrf.ac.za) (nrf.ac.za)
- [With Starlink, the SKA is not the limit](https://www.businesslive.co.za) (businesslive.co.za)

## Zoology and Entomology

- [One in seven rhinos infected with bovine TB pathogen](https://www.nature.com) (nature.com)
- [A new way to name bacteria: 300-year-old system revised thanks to scientific](https://www.nature.com)

- [advances](#) (up.ac.za)
- [Fish species in Nuwejaars River extremely vulnerable](#) (uwc.ac.za)

## Opportunities

The [South African Medical Research Council](#) (SAMRC), through its Grand Challenges South Africa programme, has partnered with Grand Challenges Canada to launch a new Grand Challenge: Health Impacts of Climate Change. They seek bold ideas that address the human health impacts of climate change in low- and middle-income countries. All proposals must be submitted through the Grand Challenges Canada Fluxx [portal](#). Register for an account on the portal by 2:00pm EST (8:00pm SAST) on 15 December 2022. Follow [this link](#) for more information on the RFP and to download the relevant documents.



- [Farrant's life's work recognised with coveted German award](#) (uct.ac.za)
- [Honours Student Scoops Prestigious Women in Tech Award](#) (ukzn.ac.za)
- [UWC Professor elected to the Royal Society of South Africa](#) (uwc.ac.za)

## 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, which seeks to influence policy formulation and delivery.

The NSTF Awards are unique in SA, recognising the outstanding contributions of individuals and groups to SET and innovation.

The science bursaries page provides information on bursaries and bursary providers for science, engineering and related studies.

STEMulator.org attracts learners and students to the exciting world of science, technology, engineering and mathematics (STEM). It provides a virtual world full of stimulating content to excite and inform the youth, including STEM career guidance. Established under the auspices of the NSTF proSET membership sector (Professionals *in science, engineering and technology*).

### Disclaimer

The NSTF has taken all practical measures to ensure that the material contained in this newsletter is correct. The NSTF reserves the right to make changes as it deems necessary.

### Privacy

Registration details submitted to the NSTF will be treated confidentially and will only be used by NSTF to communicate with its members and subscribers.

### For more information

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

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

Tel: [+27 12 841 3987](tel:+27128413987) (Currently not in use due to NSTF staff working from home)

Non Profit Company Registration Number: 2007/029165/08

NPO Registration Number: 92042