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NSTF e-Newsletter

S.E.T. for socio-economic growth

What should be shed at Eskom?

Message from the NSTF Executive Director, Ms Jansie Niehaus

The public is fed-up with the national power utility for loadshedding in ever increasing 'stages'. What should be 'shed' besides the unmanageable 'load'? [Read](#) the ED's message.

NSTF News

NSTF Discussion Forums

One of the key strategic objectives of the [National Science and Technology Forum \(NSTF\)](#) is to raise awareness of, and engage with science, engineering, technology (SET) and innovation policies and burning issues. The topics are of cross-cutting relevance and provide constructive interaction and discussion with government and stakeholders of the SET and innovation community.

STEM education Discussion Forum

The NSTF's online Discussion Forum on [STEM education – disruptions and the future](#) took place on 29 and 30 August 2022. Videos of the presentations at the event are now available. Click here to watch the [videos](#). This event was held under the auspices of [proSET](#), the [Professional Bodies Sector](#) of the NSTF.

Upcoming Discussion Forums

- [Basic sciences for sustainable development Discussion Forum](#): Look out for the invitation to participate in the upcoming Discussion Forum on *Basic Sciences for Sustainable Development* that will be held from 26-27 October 2022. Watch your mailbox for the invitation.
- A Discussion Forum on **Science and Disaster Management for Social Justice** will be held as part of the [World Science Forum](#) in Cape Town in December. Keep an eye on the next edition of the [NSTF eNews](#) for more information.

Make your voice heard and contribute to the ongoing conversations around socio-economic issues and change.



Presidential Climate Commission welcomes adoption of the Just Transition Framework

The Presidential Climate Commission (PCC) welcomed the acceptance of the [Just Transition Framework](#) by President Cyril Ramaphosa on behalf of government. This is a major step in the country's climate response and in achieving a just transition in South Africa.

The PCC convened its third quarterly meeting on 2 September 2022, chaired by The Deputy Chair of the PCC, Valli Moosa. The meeting discussed various issues including Just Urban Transition; the acceleration of the transition to electric motor vehicles; Just Energy Transition Partnership, and preparations for South Africa's participation to the UNFCCC 27th Conference of Parties (COP27). [Read more.](#)

The PCC unanimously adopted the Just Transition Framework at its Sixth Meeting held on 27 May 2022, following months of research and intense consultations with various social partners and communities across the country.

The NSTF's part in the process was [hosting a consultative session](#) with the PCC where its members and stakeholders commented and submitted feedback on the draft Just Transition Framework for South Africa. This took place on 8 April 2022 and brought together a broad range of stakeholders across public and private sectors to exchange knowledge and ideas. Read the [media release](#).

Introducing our Brilliant students

The two students introduced below are part of the [NSTF Brilliant programme](#). The programme recognises the top young man and woman from each of the nine provinces, based on their marks in physical science and mathematics in the 2021 National Senior Certificate Examinations (Grade 12), and their choice of studies in STEM-related courses.

[Anele Mnguni](#) matriculated at Sibusisiwe Comprehensive Technical High School in KwaZulu-Natal. She is studying medicine at the University of KwaZulu-Natal.

"I see myself improving lives of South

proSET and STEMulator.org

Dawie Botha, the current co-chair of [proSET](#), a membership sector of the NSTF, is currently doing radio interviews on civil engineering on the Afrikaans radio station Radio Sonder Grense (RSG). The first interviews were broadcast on 22 August and 6 September 2022, and the series will continue every month for nine months.

While talking about civil engineering, Dawie encourages the listeners to visit [STEMulator.org](#) which is the flagship project of proSET. It is a virtual world of science, engineering and technology (SET) that shows how things work and satisfies the curiosity of young (and older) minds. STEMulator helps people to 'explore>discover>learn' more about science, technology, engineering and mathematics (STEM) subjects, but also raises

Africa by working with orphans, the elderly and people suffering from addiction.”

[Emilia Janse van Rensburg](#)

matriculated at the Afrikaanse Hoër Meisieskool in Pretoria. She is studying medicine at the University of the Witwatersrand

“I hope to have touched the lives of many in ten years’ time.”

[Meet](#) the other exceptional young people of the Brilliants Programme on the NSTF website.

SET for our future innovators!

awareness of the many fulfilling careers available in STEM.

STEMulator also featured at the NSTF and proSET virtual [Discussion Forum on STEM Education – disruptions and the future](#) that took place on 29 and 30 August. Mr Richard Gundersen and Ms Kgaugelo Pule explained and demonstrated the concept and talked on the career guidance features of STEMulator. Watch the videos of Kgaugelo’s presentation [here](#) and Richard’s [here](#).

We welcome new ideas, feedback, suggestions and content contributions to STEMulator. Fly the flag of your organisation on STEMulator.org. Contact [Ms Kgaugelo Pule](#) to find out more.



SET to Explore>Discover>Learn

Meet our Award winners

TW Kambule-NSTF Award: Researcher

Prof Tamiru Abiye, Professor of Hydrogeology at the University of the Witwatersrand (Wits), received this Award for his dedication to water science and his focus on building research capacity and solving community problems to attain sustainable development in South Africa. Abiye’s background as a person from a rural water-stressed area, gives him a unique perspective on humanity’s most pressing problem – securing water in the face of population, industrial, climate change and pandemic pressures. [Read more](#).

TW Kambule-NSTF Award: Emerging Researcher

Prize sponsor: [proSET \(Professionals in science, engineering and technology\)](#), a sector of the NSTF representing professional bodies and learned societies. This Award is made to two researchers:

- **Dr Wynand Goosen**, Wellcome Trust Lecturer in the Animal Tuberculosis Research Group at Stellenbosch University (SU), who won the Award for his leadership role in South African research on the surveillance of zoonotic tuberculosis in domestic cattle and wild animals. Zoonotic pathogens (that can be transmitted from animals to humans) are potential sources of infections in susceptible people in rural areas. [Read more](#).
- **Dr Banothile Makhubela** – Senior Lecturer and Director: Research Centre for Synthesis and Catalysis, at the University of Johannesburg won for research into nano- and organometallic-catalysis directed towards green and sustainable chemical processes. Dr Makhubela’s research applies such catalysts to converting waste materials like lignocellulose and a greenhouse gas, carbon

dioxide (CO₂), into sustainable chemicals and fuels. [Read more.](#)

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:

- [Rio Tinto/ Richards Bay Minerals \(RBM\) Bursary Programme](#) (Deadline: 23 September 2022)
- [Sasol Foundation Bursary](#) (Deadline: 23 September 2022)
- [Industrial Development Corporation Bursary Programme](#) (Deadline: 29 September 2022)
- [Western Cape Department of Health Bursary](#) (Deadline: 30 September 2022)
- [WSP Global Inc. Bursary Programme](#) (Deadline: 30 September 2022)
- [Amazon Web Services \(AWS\) Skills Development Bursary](#) (Deadline: 30 September 2022)
- [ASLA](#) (infrastructure design and construction) Bursary Programme (Deadline: 30 September 2022)
- [SAPPI Bursary Programme](#) (Deadline: 30 September 2022)
- [SANTAM Bursary Programme](#) (Deadline: 30 September 2022)

Radio talk: Artificial intelligence and crop health monitoring

Following on the NSTF discussion forum on [Plant health in South Africa – threats to biosecurity, biodiversity and food security](#), in June last year, the NSTF has partnered with [Plaas/Farm TV](#) (YouTube channel) to broadcast a series of monthly talks during 2022 on the topic.

Sixth in the series is Prof Willem Boshoff talking to Plaas/Farm TV and RSG Landbou (Agriculture) about disease resistance in small grain cereals - the South African approach. He is the Associate Professor: Department of Plant Sciences, University of the Free State. Prof Boshoff also presented at the above-mentioned NSTF Discussion Forum in June 2021. His [presentation](#) is available on video on the NSTF YouTube channel.

SET for socio-economic growth!



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

- **SAICE President advocates for a sustainable approach to driving infrastructure development**
President of the [South African Institution of Civil Engineering](#) (SAICE), Professor Marianne Vanderschuren (also a winner of the 2022 NSTF-South32 Awards), has embarked on her presidential visits of various SAICE branches and universities across South Africa. She reinforced her message of rebuilding, maintaining and enabling a sustainable and holistic appraisal approach to unlocking South Africa's infrastructure development. [Read more.](#)

- IITPSA webinar reveals the costs of not being ethical**
Ethical behaviour may not deliver easily measurable profits, but the costs of not being ethical can be devastating. This emerged during a webinar hosted by the [Institute of Information Technology Professionals South Africa](#) (IITPSA) Social and Ethics Committee. [Read more.](#)
- Engineers invited by Minister to assist re-engineer the country**
In his keynote address at the [Consulting Engineers South Africa](#) (CESA) annual Infrastructure Indaba on 18 August 2022, Minister of Finance, Mr Enoch Godongwana, stated, “My invitation to you is to help re-engineer the country, you have the skills, we need your help!” As far as the skills needed for the infrastructure build programme, he challenged the audience to help train as many graduates as possible to transition them into productive citizens – he asked what the industry can do to help train people on a massive scale. [Read more.](#)
- Municipal infrastructure cannot exist or operate without engineering practitioners**
The [Engineering Council of South Africa](#)’s (ECSA) President Refilwe Buthelezi Pr Eng, delivered a presentation on municipal infrastructure at the South African Human Rights Commission’s (SAHRC) National Conference on 1 September 2022. Emphasising the importance and the role of competent and qualified engineering practitioners in ensuring the creation and maintenance of infrastructure and ultimately the provision of basic services to communities, she said, “Municipal infrastructure cannot exist or operate without engineering practitioners in all its forms”. [Read more.](#)
- Participate in IEEE’s response to climate change**
Join the [South African Institute of Electrical Engineers](#) (SAIEE) in collaboration with [IEEE](#) Ad Hoc Committee to coordinate IEEE's response to Climate Change on 26 September at 15:00. Click [here](#) to register, it's open to all.
- SAIAE celebrates a woman agricultural engineer in Women’s Month**
The [South African Institute of Agricultural Engineers](#) (SAIAE) celebrated Women’s Month with a special website feature on a member, Samantha Moodley. She is the current SAIAE Western Cape Branch Chairperson. Samantha holds a BSc Eng (Agricultural Engineering) and MSc Eng (Agricultural Engineering) from the University of KwaZulu-Natal and is a registered Professional Engineer with the Engineering Council of South Africa (ECSA). [Read more.](#)
- Inspirational stories to share**
The [South African Institution of Civil Engineering](#) (SAICE) has posted six Inspirational Stories videos on their [website](#). Do have a look and share, especially with young people who have not decided on a career yet.
- The “boring” grassland biome?**
When you look at a map of the vegetation of South Africa, the right half of the map is nearly dominated by one particular biome – [grasslands](#). [Read more](#) on this biome that covers nearly a third of South Africa’s land area. The Foundational Biodiversity Information Programme (FBIP) is funded by the [Department of Science and Innovation \(DSI\)](#) and jointly managed by the [South African National Biodiversity Institute](#) (SANBI) and the [National Research Foundation \(NRF\)](#).



SET-related policies currently open for public comment

Keep informed and have your say

- [Regulations - Licensing Community Mental Health Day Care and Residential Care Facilities](#) (Comment by 23 September 2022)
- [Agricultural Product Standards Amendment Bill](#) (Comment by 30 September 2022)
- [Electricity Generation: Licensing Exemption and Regulation](#) (Comment by 01 October 2022)
- [Revision of the National Pricing Strategy for Water Use Charges](#) (Comment by 03 November 2022)

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

- [South Africa setting up Artificial Intelligence Institute](#) (itweb.co.za)

Energy

- [South Africa drafting green hydrogen position statement for COP27 – IDC](#) (polity.org.za)
- [To develop renewable energy artisan skills in South Africa](#) (energize.co.za)

Infrastructure

- [Human Rights Commission conference focused on water and sanitation issues](#) (infrastructurenews.co.za)
- [Survey shows confidence still high in construction sector's future](#) (infrastructurenews.co.za)

STI Policy

- [Inaugural Science, Technology And Innovation \(STI\) Policy Colloquium](#) (dst.gov.za)

Sustainable development

- [UNDP supports special economic zones to drive sustainable development](#) (mg.co.za)



Upcoming SET Events

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.

- [SAIAE Symposium and Biennial CPD Event](#): “The rise of engineering in agriculture”, Tzaneen, 21–23 September 2022
- [IAIA Climate Change Symposium](#): Celsius 1.5 : Impact Assessment & Climate Change: Cape Town, 26-28 September 2022
- [SA Innovation Summit 2022](#): Theme: Innovation goes viral. Cape Town, 27-29 September 2022. Side events will be taking place throughout that week.
- [5th edition of AI Expo Africa 2022](#): Johannesburg, 27-29 September 2022
- [Water Institute of South Africa \(WISA\) Biennial Conference and Exhibition](#): Sandton, 28-30 September 2022
- [Investing in disaster management for sustainable development](#): Zimbabwe, hybrid event, 1-4 October 2022
- [33rd SAIEE Conference](#): Zimbali, KwaZulu-Natal, 3-5 October 2022
- [The inaugural Township Economies Conference and Expo](#): Ekurhuleni, 4-5 October 2022
- [North-West University International Water-Climate Summer School](#): Mahikeng, 4-18 October 2022
- National Eco-Industrial Park Day: CSIR ICC Pretoria, 10 October 2022. Attendance is free but registration is essential, space is limited. Click [here](#) to register.
- [WasteCon 2022](#): Johannesburg, 18-22 October 2022
- [23rd WaterNet/WARFSA/GWP-SA Symposium](#) on Integrated Water Resources Management for Sustainable Development in Eastern and Southern Africa: Sun City, 19-21 October 2022
- [85th IMESA conference](#): Adapting to our changing world: Gauteng, 2-4 November 2022
- [4th International South African Cultural Observatory Conference 2022](#): Theme: Creative economy reset: Structuring the creative and cultural industries for a sustainable and inclusive future. Pretoria, 9-10 November 2022
- [Africa Wind Energy 2022 Conference & Exhibition](#): Online virtual conference, 16-17 November 2022
- [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
- [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
- [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



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Science Councils and Statutory Bodies

- **CSIR:** [CSIR and SIU join forces in deployment of advanced technologies to curb corruption](#) (csir.co.za)
- **ASSAf:** The Academy of Science of South Africa (ASSAf) has produced a special issue of the *SA Journal of Science* with the theme 'Waste as a resource: South African perspectives on circularity'. Read the full issue [here](#).
- **SABS:** [The South African Bureau of Standards \(SABS\) warns that some Information Technology \(IT\) standards are at risk because of inadequate industry participation in the SABS Technical Committees](#) (sabs.co.za)
- **NRF:** [2022 National Research Foundation \(NRF\) Awards Honour and Celebrate South Africa's Top Researchers and Scientists](#) (nrf.ac.za)
- **NRFISAASTA:** [Call for papers 2023 STEMI Community of Practice \(CoP\) Conference](#), July 2023. Hosted by the Department of Science and Innovation in collaboration with the South African Agency for Science and Technology Advancement (SAASTA)
- **SAMRC:** Nominations are now open for the 2022 South African Medical Research Council (SAMRC) Scientific Merit Awards. The Awards are in recognition of the best scientific minds and contributions within health research – whose work reflect innovative methods and novel approaches to public health concerns, to potentially impact on policy and subsequently to the betterment of the lives of South Africans. Deadline: 30 September 2022. [Read more](#).
- [SAMRC launches four new extramural units to strengthen the country's health systems in tackling current disease burden as well as pandemics such as COVID-19](#) (samrc.ac.za)
- [International Partnership for Building a Vaccine R&D and Manufacturing Workforce for Africa: the CSSFF-SAMRC Capacity Development Programme](#) (samrc.ac.za)

Higher Education institutions

- [UCT vice-chancellor Professor Phakeng wins inaugural Africa Education Medal](#) (iol.co.za)

4IR and Information Technologies

- [Sasol, CSIR partner to host solar challenge](#) (itweb.co.za)
- [Meet smWoef, the University of Pretoria's new robotic dog](#) (up.ac.za)
- [We need a 4IR shift in our approach to SA's multiple water-related crises](#) (uj.ac.za)

Agriculture

- [Cotton Balers Usher In A New Technological Era For Small-Scale Cotton Farmers](#) (dst.gov.za)

Biological sciences

- [Study finds freshwater species at risk from threats linked to human activities](#) (nwu.ac.za)

Climate change and Environment

- [What happens to used car oil in South Africa?](#) (infrastructurenews.co.za)
- [CSIR Biodegradability Testing Laboratory To Tackle Leakage Of Plastic Waste Into Environment](#) (dst.gov.za)
- [Earth Is Teetering on The Edge of Five Disastrous Climate Tipping Points, Study Finds](#) (sciencealert.com)
- [Mine closure: it's all about the water](#) (Water & Sanitation Africa)

Energy

- [Managing consumption key to solving SA's energy crunch](#) (energize.co.za)
- [Electricity – NERSA](#) (agbiz.co.za)

Infrastructure

- [Women winning in construction – ERWIC awards winners announced](#) (infrastructurenews.co.za)
- [Cleaning up the construction industry with renewable energy](#) (engineerit.co.za)

Innovation

- [A new way to save rhinos](#) (wits.ac.za)

Medicine and health

- [Zebrafish study shows adverse effects of ivermectin use](#) (sun.ac.za)
- [High trauma caseload impedes delivery of healthcare services](#) (sun.ac.za)
- [Study reveals aggressive prostate cancer linked to ancestral heritage](#) (up.ac.za)
- [The key to treating TB may be in a common carbohydrate. What we know so far](#) (uwc.ac.za)
- [Scientists advise government to vaccinate high risk 5-11-year-olds against Covid-19](#) (business;ive.co.za)

Palaeontology

- [All in the footprints: a dinosaur mystery solved](#) (uct.ac.za)
- [Africa's dinosaur discoveries: five essential reads](#) (theconversation.com)
- [Professor Lee Berger, a 'messenger from the past', unearths major discovery in Rising Star cave system](#) (dailymaverick.co.za)

Science Communication

- **Postgraduate study in Science Communication at Stellenbosch University:** The MPhil (STS) programme at Stellenbosch University offers students the opportunity to focus on science communication and public engagement, with a course offering a blend of theory and practice. [Find out more](#) about the course structure, as well as how to apply. Closing date for South African applicants: 30 September 2022.

Space Science and Astronomy

- [MeerKAT measures the “fuel reserves” of galaxies in the past](https://sarao.ac.za) (sarao.ac.za)
- [We don't know if dark matter exists. So why do astronomers keep looking?](https://theconversation.com) (theconversation.com)

Opportunities

- **Groen Sibenza Phase II call for internships:** The Groen Sebenza Phase II Programme is a bridging into work programme funded to the total value of R300m for the next three years. GS Phase II aims to recruit 1050 unemployed graduates (diploma - PHD) and place them nationally in different organisations (government and non-governmental) where they will be incubated (trained and mentored) to further develop their competence and confidence in the management of environment/biodiversity.
- The [GreenMatter](#) (an NSTF member) partnership with the [South African National Biodiversity Institute](#) (SANBI, another NSTF member), is calling for applications for incubation in environmental management and environmental education. Deadline for applications: 21 October 2022. For more information, click [here](#). For information on all the Groen Sibenza Phase II programme and nationwide internship opportunities, click [here](#).
- [Call for SA tech talent to join BRICS skills challenge](#) The challenge, which is in the form of a multi-day online hackathon from 1 to 6 November, will see the BRICS countries' top candidates compete against each other.



- [UCT researcher selected for African fellowship](https://news.uct.ac.za) (news.uct.ac.za)
- [Ms Pontsho Maruping is the new Managing Director of the South African Radio Astronomy Observatory \(SARAO\), with effect from 1 October 2022](https://sarao.ac.za) (sarao.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

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