



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



NSTF e-Newsletter

S.E.T. for socio-economic growth

Scientists DO have voices

Message from the NSTF Executive Director, Ms Jansie Niehaus

The voices of scientists are important. In South Africa the rights to freedom of speech, association and protest are enshrined in the Constitution, meaning that scientists can and should exercise their rights by speaking out. Academic boycotts are contentious as they interrupt important scientific work, and are based on the assumption that Russian scientists agree with their government's invasion of the Ukraine. On the contrary, Russian scientists have spoken out. [Read](#) the ED's message.

NSTF News

2021/2022 NSTF-South32 Awards

Thank you to all nominators and nominees for submitting completed nomination forms for this year's [NSTF-South32 Awards](#). The final submission day was on 1 March 2022. The announcement of the [nominees](#) will take place in April. Watch your mailbox to see who is competing for these prestigious awards in [13 categories](#).

Special Annual Theme Award: The National Science and Technology Forum (NSTF) is making a special award this year for an outstanding contribution to science, engineering and technology (SET) and innovation arising from research and development in the [basic sciences for sustainable development](#). This is in support of sustainable socio-economic growth in South Africa. It is also the annual theme of the NSTF for 2022.

The United Nations General Assembly approved by consensus a resolution that promulgates 2022 as the [International Year of Basic Sciences for Sustainable Development](#). The opening ceremony and conference for IYBSSD 2022 will be held 8 July 2022 at UNESCO headquarters in Paris.

Today's research ... tomorrow's innovation



Presentations from the Creative Economy Discussion Forum now available

The NSTF hosted an online NSTF Discussion Forum on the [creative economy, science and the 4IR](#) from 2-3 March 2022. The creative economy is important in that it creates jobs and generates income, including through intellectual property rights. It can make important contributions to achieve the sustainable development goals (SDGs).

[Presentations](#) from the event on topics including innovative thinking in the 4IR by Prof Tshilidzi Marwala, Vice-Chancellor of the University of Johannesburg and many other fascinating topics are now available on the NSTF website. [Watch the videos](#) of each of the presenters on the [NSTF YouTube channel](#).

SET for socio-economic growth

Meet our Brilliants and BEST students

Learn more about the NSTF's [Brilliants](#) students. This programme is generously sponsored by South32 and the Department of Science and Innovation (DSI). The [South African Council for Natural Scientific Professions \(SACNASP\)](#) recently joined as a sponsor to further promote and support these [brilliant young minds](#) in STEM-related studies (STEM stands for science, technology, engineering and mathematics). In 2021, The [Lewis Foundation](#) partnered with the NSTF Brilliants Programme to include awards for nine 'BEST' students ('Biological and Environmental Sciences Top' students), thereby encouraging South Africa's future conservation champions. These students' choice of studies were related to biological and environmental sciences.

[Sabelo Langa](#) matriculated at Tholokuhle High School in KwaZulu-Natal and is currently studying medicine at the University of KwaZulu-Natal (UKZN).

"My biggest achievement will be to have my own surgery where I come from, since we have no hospital, only two clinics."

[Rirhandzu Precious Mkhari](#) matriculated at Ponego Secondary School in Gauteng. She is studying medicine at the University of Cape Town (UCT).

"I know that I won't change the world just by becoming a doctor, but I know I will be there in the hardest times, through pandemics and all. I will be there to help those in need."

The NSTF supports STEM education with the aim of creating the researchers, leaders and innovators for tomorrow's national system of innovation.

FameLab SA: Bookings still open

Institutions can build their brand and join the [FameLab SA](#) family by hosting a heat. Click [here](#) to learn more or sign up. The annual FameLab SA competition starts with a round of

Bursaries available

Find the latest news on bursaries in science, engineering and technology (SET) in the NSTF [Bursary Directory](#). Currently available bursaries are:

- [South African Nursery Association](#) (SANA) bursary programme (Deadline 31 March 2022)
- [Implats](#) Bursary Programme (Deadline 31 March 2022)
- [Ford Motor Company of SA](#) (Deadline: Open)

Visit the NSTF [bursary website](#) for more information on [SET-related careers](#) and articles on [inspiring people](#) who work in these areas.

SET for life!

New NSTF website

Look out for the new and updated NSTF website! It will be launched with a notice to all our subscribers.

heats held at leading research and training institutions in the hunt for the top 20 South African science communicators who will go on to talk about their work on a national platform in the FameLab SA semi-finals. Last season, more than 300 students from 15 institutions took part and benefited from embarking on a science communication journey of a lifetime. A journey that took one talented young researcher all the way to the world stage.

Meet our 2020/2021

NSTF-South32 Award Winners

[Innovation Award: Corporate Organisation](#)

The Biomimicry Diagnostic Verification Controls team from the University of the Witwatersrand (Wits), represented by Prof Bavesh Kana, won the 2020/2021 Innovation Award: Corporate Organisation for their use of biomimicry to verify the accuracy of diagnostic tests for COVID-19 and other infectious diseases.

The team's work significantly reduced the risk burden on testers and improved test verification procedures, enabling the verification of COVID-19 diagnostics in South Africa, and is now being deployed in 14 other countries. [Read more.](#)

TUT young journalists' video interviews with Award winners

The NSTF joined hands with the Journalism Department of the [Tshwane University of Technology](#) (TUT) to profile the outstanding contributions of the 2020/2021 NSTF-South32 Award [Winners](#). The aim is to engage the formal media in disseminating science, engineering, technology (SET) and innovation knowledge impacting society; newsworthy information; and profile the outstanding contributions of SET professionals and organisations, including new innovations. Simultaneously, the collaboration with TUT provided an opportunity for the journalism students to develop their science writing skills and to ultimately respond to and "translate" SET to their readers. The partnership involved video interviews with six of the 2020/2021 NSTF-South32 Award winners. To watch the videos of some of the 2020/2021 winners, click below:

- [Mr Segomotso Kelefetswe](#), Non-Governmental Organisation (NGO) Award
- [Prof Jannie P Maree](#), Innovation Award: Small, Medium and Micro Enterprise (SMME)

Meet our 2020/2021

NSTF-South32 Award Winners

[Innovation Award: Small, Medium and Micro Enterprise \(SMME\)](#)

(Sponsored by the [National Intellectual Property Management Office \(NIPMO\)](#) since 2019)

The winner of the 2020/2021 Innovation Award: SMME was ROC Water Technologies, funded by THRIP (Department of Trade, Industry and Competition), the Water Research Commission and the Innovation Hub, with support from postgraduate students at the University of Limpopo, Tshwane University of Technology and the University of Pretoria.

The group developed a series of technologies that allow the processing of liquid and solid wastes from the mining, power station and fertiliser industries to recover water of drinking quality and saleable products.

It has also led to the development of saleable products such as pigment and aluminium sulphate, sodium carbonate, calcium carbonate and sulphur. [Read more.](#)

Symposium on interactions between COVID-19, HIV and TB

The HIV and Other Infectious Diseases Research Unit (HIDRU) in collaboration with scientists from CAPRISA, SAPRIN-SAMRC, and KRISP-UKZN, recently hosted a symposium on the interactions between COVID-19, HIV and TB, and its effects on viral evolution, disease progression and health service delivery. The three guest speakers shared the latest research regarding the burden of this tri-infection, its clinical manifestations, vaccine effectiveness, and long term strategies in managing the tri-infection. You can access the symposium recording and presentations [here](#). To view the PowerPoint presentations, click on the presenter's

- [Prof Raymond Durrheim](#), Lifetime Award, and Data for Research Award
- [Dr Boitumelo Ramatsetse](#), TW Kambule-NSTF Award: Emerging Researcher
- [Prof Bavesh Kana](#), Innovation Award: Corporate Organisation
- [Prof Paul Oberholster](#), NSTF-Water Research Commission (WRC) Award

Today's research ... tomorrow's innovation

name:

[Dr Richard Lessells](#) (KRISP, UKZN): The interactions between COVID-19 and its effect on viral evolution.

[Prof Kogie Naidoo](#) (CAPRISA): The interactions between COVID-19, HIV and TB and its effect on disease progression. (CAPRISA won the [2010/2011 NSTF Innovation Award](#).)

[Prof Kobus Herbst](#) (SAPRIN, SAMRC): The interactions between COVID-19, HIV and TB: effect on health service delivery. (Dr Herbst is the Director of SAPRIN, winner of the [2019/2020 NSTF-South32 Data for Research Award](#).)

Share 'n Dare outreach

Nzalo Career expos

During February to March 2022 the NSTF Share 'n Dare youth outreach programme promoted [career videos](#) of NSTF-South32 Award winners, the NSTF STEM [careers booklet](#), and the [STEMulator.org](#) web platform to thousands of Grade 12 learners in Mabopane, Soshanguve, Atteridgeville (Gauteng), Kimberley (Northern Cape), Thohoyandou, Malamulele, and Makhado (Limpopo) as part of the Nzalo Career expos. The NSTF outreach and communications team, Ms Kgaugelo Pule, Ms Itumeleng Ndlovu, Ms Kelebogile Galeboe and Mr Barnard Manne represented the NSTF and the STEMulator during the expos. The teachers and exhibitors received a bag with a copy of the STEM Careers booklet, and a USB stick containing the STEMulator for use off-line, videos of the winners and the digital version of the career booklet. The main aim was to raise awareness of the STEMulator among teachers and learners. Young people can now also message the NSTF via WhatsApp on +27 64 019 6446 for info about STEM-related bursaries, careers and to find inspiration.

Ga Rankuwa FM interviewed Ms Kgaugelo Pule, who informed the Tshwane community about the STEMulator, the expo and the role NSTF is playing in promoting the STEM sector.

New on STEMulator.org

A new, exciting landscape tile called the [Science Plaza](#), is available on the STEMulator platform, featuring the African Penguin and the Herbarium. STEMulator partnered with the [Natural Science Collections Facilities](#) that contributed the content for the new landscape. More content will be loaded in the coming weeks.

Exposure for the STEMulator was achieved in *Engineering News* with the publication of an interview with Richard Gundersen ([Free online tool encourages STEM exploration, discovery and learning](#)) on the role of the STEMulator as a tool for learners.

[STEMulator](#) is a proudly South African non-profit interactive learning platform initiated by the NSTF proSET sector to excite young South Africans about the STEM (Science, Technology, Engineering and Mathematics) world and associated studies and careers. STEMulator is a free-to-all, online and off-line, animated, educational application where the youth and those who are young at heart, can *Explore>Discover>Learn*.



proSET (Professionals in science, engineering and technology) is a sector of the NSTF representing more than 40 professional and learned societies. This section shares news about [members](#)* and introduces new members of the [proSET sector](#). *Note that this page will be updated on the new NSTF website to be launched soon. In the meantime visit the [current members](#)' page of the website for the full list of members, including proSET members.

- **Maths talent search for grades 7-12**

The [South African Mathematics Foundation](#) (SAMF) is hosting a Mathematics Talent Search for learners between Grades 7 and 12. The Talent Search is a project in partnership with [MyTutor.chat](#). SAMF also launched a book to help learners from Grades 7 to 12 improve their mathematics skills. The book, *1000 Mathematics Olympiad Problems* by Prof Poobhalan Pillay can be bought [here](#).

- **Entries invited for the CESA Aon Awards**

The CESA Aon Engineering Excellence Awards of the [Consulting Engineering South Africa](#) (CESA) celebrate and showcase the innovation, quality, outstanding workmanship and professionalism in the industry. This year the Awards are celebrating 50 years of showcasing excellence in engineering. The call for entries [form](#) must be submitted by 5 April 2022. The Awards will be presented in Johannesburg on 28 September 2022.

- **ECSA geared towards customer centric approach**

The [Engineering Council of South Africa](#) (ECSA) has developed an Information and Communications Technology (ICT) strategy geared to reorienting ECSA processes, people and systems towards a customer centric approach. [Read more](#).

- **ESSA produces fourth decadal review of biocontrol of weeds**

The [African Entomology Special Issue: Biological Control of Invasive Alien Plants in South Africa \(2011-2020\)](#) of the [Entomological Society of South Africa](#) (ESSA) is the fourth decadal review of biological control of invasive alien plants (biocontrol of weeds) in South Africa, following those published in 1991, 1999 and 2011. Included in this issue are 24 papers covering the weed biocontrol programmes, or important developments in the science and practice, from the period 2011 to 2020.

- **GSSA celebrates the variety of geosites in South Africa**

The Geoheritage Division of the [Geological Society of South Africa](#) (GSSA) will be hosting a series of events on 3-7 April 2022 to celebrate the amazing variety of geological features (geosites) with scientific, educational, cultural, economic and/or aesthetic significance in South Africa. The event will comprise virtual and live field/museum visits, presentations, discussions, a strategy session, as well as the opening of the Morris Viljoen display at the Walter Sisulu National Botanical Garden - "The Origins of Life, Landscapes and Minerals as told by the Rocks of South Africa". [Read more](#).



SET-related policies currently open for public comment

Keep informed and have your say

- [Draft Electricity Pricing Policy \(EPP\)](#) (Comment by 25 March 2022)
- [Civil Aviation Act: Regulations: Technical standards: Amendment](#) (Comment by 26 March 2022)
- [Plant Breeders' Rights Act: Receipts of applications for plant breeders' rights](#) (Comment by 8 April 2022)
- [Mineral and Petroleum Resources Development Act: Regulations: Amendments](#) (Comment by 12 April 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.

Energy

- [Renewable energy to lift energy availability](#) (energize.co.za)
- [South Africa's efforts to tackle its energy crisis lack urgency and coherence](#) (theconversation.com)

Environment

- [Ban on single-use plastic is not yet on the table in SA, says Creecy](#) (dailymaverick.co.za)
- [State of the South African waste industry](#) (infrqstructurenews.co.za)
- [Funding flows for climate change research on Africa](#) (reliefweb.int)
- [Africa's adaptation to climate change hampered by skewed funding and lack of data](#) (sun.ac.za)
- [South Africa's carbon tax rate goes up but emitters get more time to clean up](#) (theconversation.com)
- [Increase in natural disasters set to overwhelm national emergency telecommunications plans](#) (engineerit.co.za)

Agriculture

- [Portfolio committee on agriculture discuss proposed amendments to Agricultural Produce Agents Act](#) (agbiz.co.za)
- [The Climate Change Bill and why it's important for agribusiness](#) (agbiz.co.za)

Education

- [Gauteng sets aside funds for coding, robotics pilot](#) (itweb.co.za)
- [Free online tool encourages STEM exploration, discovery and learning](#) (engineeringnews.co.za)

Infrastructure

- [Key infrastructure projects for development of water resources](#) (infrastructurenews.co.za)

Medicine and Health

- [Unveiling of World-Class Laboratory to Boost South Africa's Pharmaceutical Manufacturing Capability](#) (dst.gov.za)
- [DSI Hosts Consultative Workshop On Rites Of Passage For Males In South Africa](#) (dst.gov.za)

The 4th Industrial Revolution and Information Technologies

- [R2.65bn raised in first round of SA's radio frequency spectrum auction](#) (msn.com)
- [New Tech Challenge Fund to drive South African-Irish innovation partnerships](#) (dst.gov.za)
- [How drug companies are sidestepping the WHO's technology transfer hub in Africa](#) (theconversation.com)



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.

- [EuroScience Open Forum \(ESOF2022\)](#): Crossing Borders, Engaged Science, Resilient Societies, 365-day programme, [Leiden European City of Science](#), Netherlands
- [Africa Automation Technology Fair 2023](#): Johannesburg, 9-11 May 2023
- The 7th [World Conference of Research Integrity](#) Cape Town, 29 May – 1 June 2022
- [Food Safety Summit SA](#): 7-8 June 2022
- [Agbiz Congress 2022](#): Sun City, 22-24 June 2022
- [XX International Triple Helix Conference 2022](#): Italy, 27-29 June 2022 on the theme "Governing new and traditional partnerships for innovation and development in the post-pandemic world".
- [International Congress of Entomology](#): Helsinki, Finland, 17-22 July 2022
- [57th Annual Conference of the Grassland Society of Southern Africa \(GSSA\)](#): Aldam Resort, Free State, 25-29 July 2022
- [Infrastructure Africa Virtual Conference and exhibition](#): 17-18 August 2022

- [Africa Agri Tech Conference and Exhibition](#): Pretoria, 29 August - 2 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, 27-29th September 2022
- [WasteCon 2022](#): Johannesburg, 18-22 October 2022
- [85th IMESA conference](#): Adapting to our changing world: Gauteng, 2-4 November 2022
- [World Science Forum](#): Cape Town, 5-9 December 2022



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Science Councils and Statutory Bodies

- **SAMRC**: [SAMRC Bioinformatics Unit rolls out data analytics training for genomic surveillance to support the SADC region](#) (SAMRC.AC.ZA)
- [SAMRC rolls out the red carpet for leading medical scientists and researchers](#)
- **CSIR**: [Support programme for the marine manufacturing and repairs industry gains traction](#) (csir.co.za)
- **ASSAf**: [ASSAf appoints Dr Melusi Thwala](#) as Manager: Science Advisory Programme and Strategic Partnerships (assaf.org.za)
- **SANSA**: [SANSA welcomes interim CEO, Ms Andiswa Mlisa to the helm of the Agency](#) (sansa.org.za)
- **NRF**: [NRF-SASTA's New Managing Director is Working Towards a Science-Literate South Africa](#) (nrf.ac.za)

Higher Education institutions

- [Historically disadvantaged universities still lag in R&D](#) (hsrc.ac.za)
- [MIT honour for SU's Centre for Epidemic Response and Innovation](#) (sun.ac.za)
- [University of Pretoria to launch research centre for mechanised mining systems](#) (up.ac.za)
- [University of Pretoria launches Pan African Cancer Research Institute](#) (up.ac.za)
- [UWC Develops Unique DNA Profiling Kit that Fights Crime And Reveals SA's Genetic Diversity](#) (uwc.ac.za)
- [Black women in South African academia struggle to get ahead: what needs to change](#) (theconversation.com)
- [Combatting Predatory Academic Journals and Conferences](#) (interacademies.org)

Space Science and Astronomy

- [Radio Frequency Interference Testing of HIRAX Correlator Completed](#) (ukza.ac.za)

- [Astronomers think they've just spotted an 'invisible' black hole for the first time](http://dailymaverick.co.za) (dailymaverick.co.za)
- [SANSA Space Operations Supports NASA GOES-T Launch](http://sansa.org.za) (sansa.org.za)
- [Fast and furious: A shock wave that extends for 6.5 million light years](#)

Archaeology and Palaeontology

- [Expedition team aboard SA Agulhas II discovers wreck of Endurance – last seen in 1915](http://businessinsider.co.za) (businessinsider.co.za)
- [Ancient DNA helps reveal social changes in Africa 50,000 years ago that shaped the human story](http://theconversation.com) (theconversation.com)

Natural sciences

- [Elephants: ambassadors in the quest to save Africa's ancient wildlife corridors](http://sun.ac.za) (sun.ac.za)
- [WWF and UP team up to keep watch on southern right whales](http://up.ac.za) (up.ac.za)

Science Communication

- [Father and son team produce 'Explore the shore' free educational video series](http://uct.ac.za) (uct.ac.za)
- The February 2022 issue of *Hola MaHigh-School* is now available. The science articles this month are about super immunity and natural selection vs gene editing. There is also a mini-series about writing instruments and much more in this magazine for young readers. Read it [here](#).

Medicine and health

- [Novel digital medicines information platform – a 'game-changer' for sector](http://uct.ac.za) (uct.ac.za)
- [New promising interventions to protect term and premature babies from deadly respiratory virus](http://wits.ac.za) (wits.ac.za)

Epidemics – human and animal

- [New COVID data: South Africa has arrived at the recovery stage of the pandemic](http://samrc.ac.za) (samrc.ac.za)
- [Wait, donate, demolish: Why millions of SA's vaccines will never be used](http://bhekisisa.org) (bhekisisa.org)
- [Tons of COVID Medical Garbage Threaten Health](http://scientificamerican.com) (scientificamerican.com)
- [It's your last shot at getting a Pfizer vaccine. Here's how South Africa's roll-out is changing come July](http://bhekisisa.org) (bhekisisa.org)

Climate change and Environment

- [How recycled waste can be used to make roads to create a circular economy](http://infrastructurenews.co.za) (infrastructurenews.co.za)

Infrastructure

- [Xhora Dam showcases design innovation](http://infrastructurenews.co.za) (infrastructurenews.co.za)
- [Making infrastructure more accessible](http://infrastructurenews.co.za) (infrastructurenews.co.za)

The 4th Industrial Revolution and digital technology

- [If AI models are trained on poor data, they will inevitably make poor decisions](http://engineerit.co.za) (engineerit.co.za)
- [The challenges of building AI in Africa](http://itweb.co.za) (itweb.co.za)

- [15 Start-ups chosen for Google for Start-ups Accelerator Africa](http://engineerit.co.za) (engineerit.co.za)

Opportunities

- The [Department of Agriculture, Land Reform and Rural Development](#) (DALRRD) received an invitation from the Ministry of Commerce of the People's Republic of China (MOFCOM) to participate in the Chinese Scholarship Council (CSC) Programme. This programme is targeting high-level managers and professional personnel to apply for academic education programmes under the MOFCOM Scholarship-CSC Programme. MOFCOM offers one-year and two-year master's programmes as well as three-year doctoral programmes for the purpose of educating high-end and inter-disciplinary talent working in the applied fields of government, trade, foreign affairs, agriculture, technology, education, culture and health, building intellectual capacity and facilitating the economic and social development of the recipient countries. Deadline for submission of application forms to DALRRD: 5 May 2022. Contact [Jacky Smit](#) for more information



- [Dr Mthunzi-Kufa appointed as the Deputy Chairperson of the Advisory Council on National Orders](#) (csir.co.za)
- [Awards given for post-COVID-19 recovery, renewal and resilience research](#) (uct.ac.za)
- [Dr Jack V Fletcher: Inventor shortlisted for prestigious award, secures more UCT funding](#) (uct.ac.za)
- [Wits physicist awarded 2022 Sang Soo Lee Award](#) (wits.ac.za)
- [French National Order of Merit awarded to Professor Helen Rees](#) (wits.ac.za)
- [Wolfgang Preiser—co-discoverer of SARS-CoV-2 variants](#) (sun.ac.za)
- [NRF-SARAO MD Dr Rob Adam awarded Honorary Doctorate by UCT](#) (nrf.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.

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For more information

www.nstf.org.za

E-mail: enquiries@nstf.org.za

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

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