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# NSTF e-Newsletter

*S.E.T. for socio-economic growth*

## To 5G or not to 5G?

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

People have taken to social media to air their fears about the new and seemingly unknown thing called 5G. But can South Africa afford not to roll out 5G networks?

[Read the message.](#)



## NSTF News

### 2020/2021 NSTF-South32 Awards

#### Registration for nomination for the 2020/2021 NSTF-South32 Awards deadline extended

The NSTF has granted an extended deadline to identify worthy candidates to register as nominees for the 23rd NSTF-South32 Awards. Nominations must be registered by **8 February 2021**.

[Registration of the nominee](#) is the first step in a two-step nomination process. In the second step, completed nomination documents must be submitted to the NSTF by **1 March 2021**. [Read more](#) about the Awards process, categories and what is new this year.

#### Special Annual Theme Award

The NSTF's theme for 2021 is **Creative Economy for Sustainable Development**, aligned with the United Nations' [International Year of Creative Economy for Sustainable Development](#). The [Special Annual Theme Award for 2020/2021](#) will be made for an outstanding contribution to science, engineering, technology (SET) and innovation towards the creative economy for sustainable development in South Africa. [Read more](#) about this Award.

*Today's research, tomorrow's innovation*



Promote South Africa's excellent work in SET and innovation

Further the understanding of science

Highlight SET role models

Be part of the prestigious NSTF-South32 Awards

**National Science and Technology Forum**

### Discussion Forum on preparing for epidemics

An NSTF Discussion Forum titled “[Preparing for epidemics in South Africa – human and animal](#)” will take place from 25–26 February 2021. The event is hosted by the NSTF’s [Science Councils and Statutory Bodies](#) sector. It will be live streamed online and an interactive event will be presented at a venue in Gauteng. 50 delegates will be allowed to attend at the venue on a first come, first served basis – *Terms and conditions apply*. The online event allows up to 500 participants. Click [here](#) to register before 18 February 2021.

- Note that a [Discussion Forum](#) on the topic of Plant Health is in the pipeline for April 2021.

### Lessons on Innovation from South Africa

The NSTF represented South Africa at the virtual [ISPIM Connects Global 2020](#), an international conference that ran from 6-8 December 2020. NSTF hosted a discussion panel on ‘Lessons on Innovation from South Africa’ on 7 December 2020, moderated by Executive Director, Jansie Niehaus. [Read more.](#)

### Welcome to our new members

The NSTF is pleased to welcome three new members this month:

- [South African Association for Food Science and Technology](#) (SAAFoST) - proSET sector
- [Sefako Makgatho Health Sciences University](#) (SMU) - Higher Education sector
- [South African Radio Astronomy Observatory](#) (SARAO) – Science Councils and Statutory Bodies sector

These new members will add value to the science community’s interactions in the NSTF, and extend the reach of joint initiatives.

If you are interested in becoming a member, visit the [Membership](#) section on the website for more information about the NSTF and request the membership application form from Mr Matome Mphela at [enquiries@nstf.org.za](mailto:enquiries@nstf.org.za).

### *S.E.T. for socio-economic growth*

## Meet our 2020 NSTF-South32 Award winners

### Data for Research Award

The South African Population Research Infrastructure Network (SAPRIN) received this award for collectively conceiving, developing and implementing SAPRIN.

“[SAPRIN](#) produces up-to-date information on health and socioeconomic wellbeing, representative of South Africa’s population,” explains Professor Mark Collinson. He is co-director at SAPRIN and reader at the MRC-Wits Agincourt Unit, University of the Witwatersrand (Wits) School of Public Health. The information is used for scientific analysis, embedding research projects and policy evaluation.

Collinson and Dr Kobus Herbst comprise the team behind the SAPRIN concept. Herbst is the SAPRIN director and a faculty member at the African Health Research Institute (AHRI). Both have extensive experience in population research. SAPRIN itself is hosted by the South African Medical Research Council (MRC). [Read more](#).

### Innovation Award: Corporate Organisation

The Smart Spectrum Sharing Team, with team leader and Chief Research Scientist Dr Fisseha Mekuria, CSIR, received the award for developing the Smart Spectrum Sharing Technology (S3T) for a smarter ICT infrastructure and digital inclusion.

It was Nelson Mandela’s Nobel Prize acceptance speech that inspired Dr Fisseha Mekuria to come to South Africa and use his expertise within the wireless communications and research space to find solutions to the connectivity crisis. Today, he works with CSIR ‘Next generation enterprises and institutions’, developing an innovative spectrum sharing and management system.

The system uses data from the national regulator Icasa, radio propagation standards from ITU (the United Nations’ International Telecommunication Union), and computational modelling algorithms to identify available white space spectrum channels at any location in South Africa. Now network operators can access available spectrum, through their network devices, to provide broadband network services at any geolocation in South Africa. [Read more](#).

Read about all the winners in the *Mail & Guardian* [special report](#) on the 2020 NSTF-South32 Awards. Mail & Guardian is a media sponsor of the NSTF Awards.

### Brilliant students an inspiration

Nineteen first-year students were recognised in the 2019/2020 NSTF [Brilliant Programme](#) for top marks in mathematics and physical science in the National Senior Certificate Examinations.

**Malada Wamashudu** is one of these 19. He matriculated at Thengwe Secondary School in the Vhembe District of Limpopo. He is currently studying medicine at the Sefako Makgatho Health Sciences University. [Read more](#).

“Your future doesn’t start after high school, it starts exactly at your present grade, at your present age. That is when

### STEMulator.org

[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. The STEMulator is registered as a non-profit company, established under the auspices of the NSTF proSET committee (Professionals in science, engineering and technology).

Explore and send us your feedback on this proudly South African product to Ms Gabriella Mankune at [enquiries@nstf.org.za](mailto:enquiries@nstf.org.za) or to [richard@stemulator.org](mailto:richard@stemulator.org).

you should start crafting your future.” – Malada Wamashudu

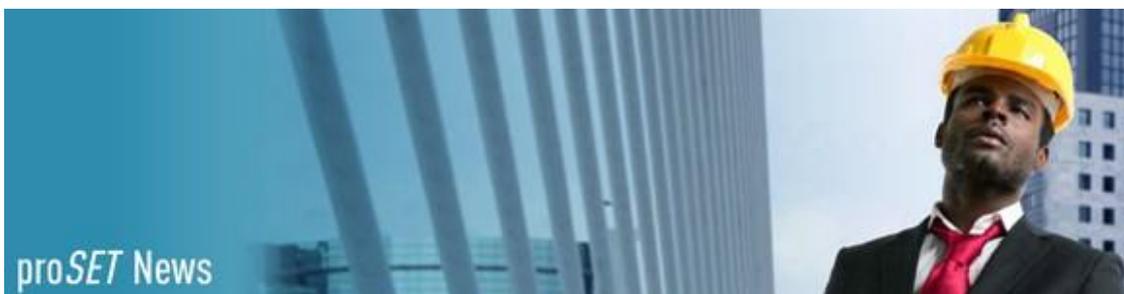
Another student in the Brilliants programme, **Nomasonto Masango**, is studying medicine at Stellenbosch University. She matriculated at Dlangezwa High School in KwaZulu-Natal. [Read more.](#)

“Do not go to university for the sake of being there. Seek proper career guidance, have enough information about your field of choice and know your strengths and weakness.” – Nomasonto Masango

**Alexandra van der Spuy**, also one of the 19 Brilliants students, is studying mathematical sciences at Stellenbosch University. She matriculated at Bloemhof Girls’ High in Stellenbosch. [Read more.](#)

“Education is so, so important. It is so easy to overlook your youth and wish for adulthood, but being young is really precious and the best investment is to educate yourself.” – Alexandra van der Spuy

### **S.E.T. 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 [members](#) and introduces new members of the [proSET sector](#).

- **New member: South African Association for Food Science and Technology (SAAFoST)**

The [South African Association for Food Science and Technology](#) (SAAFoST) is a non-profit, largely volunteer run, national association of food science and other technical professionals. It is concerned with advancing the knowledge of food science and technology. The Association publishes a membership magazine titled, Food Science and Technology, encouraging scientific research and the publication of papers and articles. Other activities include organising meetings, seminars, workshops, exhibitions, congresses and assisting in educational activities. Currently the Association has in the order of up to 2 000 members throughout Southern Africa. The Cape, KwaZulu-Natal and Northern



### **Bursaries available**

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

- [KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs Aeronautical Bursary programme: 2021](#) (Deadline: 28 February 2021)
- [Armcor Bursary Scheme](#) (Deadline: 28 February 2021)
- [FMCSA Ford Bursary](#) (Open)

Visit the [NSTF Bursary Directory](#) to find regularly updated information on [available bursaries](#), the [organisations](#) that usually provide bursaries, various [SET-related career paths](#), and inspiring stories of [people in SET](#).

The Bursary Directory is sponsored by the [Carl and Emily Fuchs Foundation](#).

branches attend to the regional affairs of the Association. The national secretariat is situated in Durban.

- **South African National Biodiversity Institute (SANBI)**

Karoo Desert National Botanical Garden celebrates 100 years: Throughout 2021 the Karoo Desert National Botanical Garden will celebrate their 100 years of existence. Various events are planned including wine pairing, show & shine event as well as art and landscaping competitions for kids. [Read more.](#)

- **South African Society of Plant Pathologists (SASPP)**

On 20 January 2021, [FABI](#) hosted a virtual congress of the [SASPP](#). The [52<sup>nd</sup> Congress](#) of the Society was scheduled to take place at the [University of Pretoria's Future Africa Institute](#), which was not possible due to COVID-19. The four-hour long virtual event marked the ending of the United Nations [International Year of Plant Health \(IYPH\)](#), an important global milestone focusing attention on the urgent need for greater global collaboration to protect plant health. The meeting was attended by 335 registered delegates from 27 countries. [Read more.](#)



## SET-related policies currently open for public comment

Policies open for comment allow the science, engineering and technology (SET) community to keep track of the changing regulation environment.

- [National Energy Regulator Act: Concurrence with ministerial determination on procurement of 2 500MW new generation capacity from nuclear](#) (Comment by 5 February 2021)
- [Expropriation Bill](#) (Comment by 10 February 2021)
- [National Small Enterprise Amendment Bill](#) (Comment by 11 February 2021)
- [Nuclear Energy Act: Regulations: Nuclear non-proliferation](#) (Comment by 11 February 2021)
- [National Youth Development Agency \(NYDA\) Amendment Bill](#) (Comment by 15 February 2021)
- [Companies and Intellectual Property Commission: Capacity Building Program for SSE of Patent Applications and provision of a search tool for patent searches](#) (Comment by 19 February 2021)
- [Standards Act: Standards matters: New standards, revision standards and cancelled standards](#) (Comment by 21 February 2021)
- [National Implementation Framework towards the Professionalisation of the Public Service](#) (Comment by 26 February 2021)
- [Tourism Act: National norms and standards for the safe operations of tourism sector in the context of COVID-19 and beyond: Draft](#) (Comment by 21 March 2021)
- [Plant Breeders' Rights Act: Receipt of applications for plant breeders' rights](#) (Comment by 23 April 2021)

## 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

- [Department of Energy Annual Report 2019/2020](#) (gov.za)
- [Hydrogen-linked Platinum Valley Corridor Project under way – Nzimande](#) (engineeringnews.co.za)

### Environment

- [Underestimating the Challenges of Avoiding a Ghastly Future](#) (frontiersin.org)
- [Department postpones implementation of EPR Regulations](#) (infrastructurenews.co.za)
- [Groundwater increasingly important, needs to be used wisely](#) (bizcommunity.com)

### Statistics

- [Africa's dearth of statistics a major impediment to policymaking](#) (msn.com)

### Agriculture

- [How sub-Saharan Africa can rethink its approach to agriculture](#) (theconversation.com)
- [Conservation of natural resources key, but take care not to bureaucratise farm management](#) (agbiz.co.za)
- [Agriculture has blossomed without much support from government](#) (businesslive.co.za)

### Technology and the 4<sup>th</sup> Industrial Revolution

- [It's time for a revolution: Government gazettes SA's 4IR blueprint](#) (itweb.co.za)

### Education

- [Light in the darkness: how South African schools should cut their electricity costs](#) (theconversation.com)
- [How South Africa can prepare for a data-driven education system](#) (theconversation.com)

### Infrastructure

- [Government's Infrastructure development and Investment projects: Dr. Kgositso Ramakgopa](#) (SABC News)
- [Department committed to improve water supply amid COVID-19](#) (infrastructurenews.co.za)
- [Challenges facing the construction industry in SA](#) (SABC News)
- [Infrastructure recovery hinges on urgent action, innovation](#) (infrastructurenews.co.za)
- [Government is not doing enough to fast track development, shows survey](#) (infrastructurenews.co.za)

### Medicine and Health

- [Vaccine production in South Africa: how an industry in its infancy can be developed](#) (theconversation.com)
- [The barcoding gap: Can South Africa protect its COVID jabs from crime?](#) (bhekisisa.org)



*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.*

- [Citation Programme in Applied Geostatistics](#): Live online lecturing, Johannesburg, 15-19 February, 15-19 March and 12-16 April 2021
- [WasteCon2020](#): Johannesburg, 9-11 February 2021
- [The Sixteenth Annual Public Health Conference](#) (PHASA2020): Tshwane, 15-17 February 2021
- [Inaugural South African Clinician Scientists Conference](#): Cape Town, 25-26 February 2021
- [Africa Energy Indaba](#): Virtual event, 1-5 March 2021
- [Second International Congress of Biological Control](#) (ICBC2): Davos, Switzerland, 26-30 April 2021
- [16th International Conference on Space Operations](#): Cape Town 3-7 May 2021
- [African Utility Week and POWERGEN Africa](#): live event in Cape Town, 11-13 May 2021
- [22nd Biennial ESSA Congress](#) of the Entomological Society of Southern Africa: Tshipise, Limpopo Province, 28 June - 1 July 2021
- [Grassland Society of Southern Africa Congress 56](#), Oudtshoorn 26-30 July 2021
- [AI Expo Africa 2021](#) will run as a 3-day online live event 7-9 September 2021, followed by 30-day on-demand show. Click [here](#) for a free ticket and to register.
- [SAAFoST 24th Biennial Virtual Congress](#): 20-22 September 2021. [Click here to register](#)
- The [Bio2021 Conference](#) at Spier Wine Estate has been postponed to 26-29 September 2021
- Institute of Waste Management of Southern Africa (IWMSA) [Biennial Seminar and Exhibition "Landfill and Waste Treatment 2021"](#), Durban, 3-5 November 2021
- [23rd International Congress of Zoology](#): Cape Town, 21-25 November 2021
- The 7th [World Conference of Research Integrity](#) Cape Town, has been postponed to 29 May – 1 June 2022

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.

### Universities and higher education

- [Zutari assists UCT to become a net zero water university by 2050](https://infrastructurenews.co.za) (infrastructurenews.co.za)
- [Wits joins York University in Africa-Canada Artificial Intelligence Data Modelling consortium](https://wits.ac.za) (wits.ac.za)
- [NWU's eye on the cosmos just became bigger](https://nwu.ac.za) (nwu.ac.za)

### Science Councils and Statutory Organisations

- [CSIR recognised as top employer in South Africa](https://csir.co.za) (csir.co.za)

### Science breakthroughs

- [The virus-free scientific breakthroughs of 2020, chosen by scientists](https://theguardian.com) (theguardian.com)

### Space Science and Astronomy

- [Gigantic galaxies discovered with the MeerKAT telescope](https://sarao.ac.za) (sarao.ac.za)
- [SARAO and the Max-Planck-Gesellschaft welcome the Italian Istituto Nazionale di Astrofisica as partner on the MeerKAT extension project](https://sarao.ac.za) (sarao.ac.za)
- [South African astronomy has a long, rich history of discovery – and a promising future](https://theconversation.com) (theconversation.com)
- [A star dying in the early universe can disrupt mobile phone reception today, NASA, MeerKAT](https://uj.ac.za) (uj.ac.za)
- [NWU researcher helps uncover new data about Earth and the Milky Way](https://nwu.ac.za) (nwu.ac.za)

### Palaeontology and Archaeology

- [Hominin lower limb bones from Sterkfontein](https://sajs.co.za) (sajs.co.za)

### Medicine and health

- Health Systems Trust [South African Health Review 2020](https://hst.org.za) now available. (hst.org.za)
- [Rogue antibodies could be driving severe COVID-19](https://nature.com) (nature.com)
- [Miracles and medicine: How COVID-19 has been changing the traditional remedies game](https://bhekisisa.org) (bhekisisa.org)
- [South Africa failed to get its act together on vaccines](https://wits.ac.za) (wits.ac.za)
- [South African scientists who discovered new COVID-19 variant share what they know](https://theconversation.com) (theconversation.com)

- [A pill, a ring or a jab: The future of HIV prevention is choice](#) (bhikisisa.org)
- [If we all don't get vaccinated, the alternative is years of Covid-induced death and suffering](#) (dailymaverick.co.za)
- [The blame game: Putting a pandemic on the pangolin](#) (wits.ac.za)
- [UP researcher's team discovers new compounds with the potential to eliminate malaria](#) (up.ac.za)
- [Fighting COVID-19: A veterinary perspective](#) (up.ac.za)
- During Science Forum South Africa 2020, [ASSAf](#) EO, Prof Himla Soodyall, hosted a panel discussion themed "The policy & practice of drug, alcohol & tobacco use during COVID-19". Watch the recording [here](#).
- [Conspiracy theories on Covid-19 vaccine can be as deadly as virus itself](#) (samrc.ac.za)

## Environment, climate change and energy

### Environment

- [Crucial Milestone for Ecosystems Research in South Africa](#) (nrf.ac.za)
- [Win-win for wind energy and eagles](#) (science.uct.ac.za)
- [Food and clean water start with soil biodiversity: learning more about it is urgent](#) (science.uct.ac.za)
- [We can't sacrifice Africa's Okavango Delta for oil](#) (thehill.com)
- [Clear waters: assessing regulation transparency of website advertising in South Africa's boat-based whale-watching industry](#) (tandfonline.com)
- [Changes in fire activity are threatening more than 4 400 species globally](#) (wits.ac.za)
- [Fencing-in of Botswana elephants could explain why 350 elephants died in one area, reveals UP-led study](#) (up.ac.za)

### Climate change

- [Top scientists warn of 'ghastly future of mass extinction' and climate disruption](#) (theguardian.com)
- ['Sacred Forests' store carbon, help combat climate change](#) (sun.ac.za)

## Mining and minerals

- [New mobile rescue winder tested for deep underground operations](#) (bizcommunity.com)

## Infrastructure

- [Construction industry banded together to survive COVID-19](#) (infrastrucrurenews.co.za)
- [Covid-19 could accelerate technology adoption in construction](#) (infrastrucrurenews.co.za)
- [Building better cities: A new approach to housing and urban development](#) (cde.org.za)

## Agriculture

- [France backs non-GMO regulation for crop gene-editing in EU](#) (sharenet.co.za)
- [Optimistic outlook for maize could be blown off course by Eloise](#) (businesslive.co.za)

## Science engagement

- [3 reasons to study science communication beyond the West](#) (theconversation.com)
- [Water conflicts, science and the media](#) (scidev.net)

## Technology and the 4<sup>th</sup> Industrial Revolution

- [Agritech start-up Aerobotics raises R250m in funding round led by Naspers](#) (msn.com)
- [AI helps to identify new Covid-19 hotspots in Gauteng](#) (wits.ac.za)
- [Gauteng Government, IBM Research and Wits University are fighting the pandemic with artificial intelligence](#) (nrf.ac.za)
- [SA made device set to ease provision of oxygen-therapy to COVID-19 patients](#) (ewn.co.za)
- [Human fallibility remains the weakest link in cybersecurity](#) (bizcommunity.com)
- [Built in Africa: Female Ivorian entrepreneur pioneers facial recognition tech](#) (msn.com)

## Opportunities

- **Accelerated Implementation of Biorefinery Technologies.** The Department of Science and Innovation (DSI), in collaboration with BIDS at the CSIR, invite interested South African SMEs, black industrialists, municipalities, Higher Education Institutions, and RTOs to submit Expressions of Interest (EOI) to the open call: Accelerated Implementation of Biorefinery Technologies. The objective is to demonstrate waste beneficiation biorefinery technologies to bridge the gap between pre-commercialisation instruments for technology development and full entry into commercial scale. Click [here](#) to download the call document. Click [here](#) to submit your proposal. Closing date: 5 February 2021.
- **Short Course: Fundamentals of Epidemiology:** The Division of Epidemiology and Biostatistics, Faculty of Medicine and Health Sciences, Stellenbosch University, will be offering a short course on Fundamentals of Epidemiology from February – June 2021. For more information and to secure your place, contact Anthea Henry [ahenry@sun.ac.za](mailto:ahenry@sun.ac.za).
- **Call for Research Proposals: Project Africa GRADIENT.** Call focus: Evaluate genetic diversity as the contributing factor to variability in exposure and/or safety and efficacy to drugs used to treat tuberculosis and malaria in Africa. Application for Intent to submit: 1 March 2021; letter of Intent deadline: 29 March 2021.
- **The Long-term Europe-Africa Partnership on Renewable Energy (LEAP-RE) programme** invites participants to submit collaborative research and innovation projects proposals on renewable energy. Closing date: 1 April 2021. [Read more.](#)
- **CODATA-RDA Research Data Summer School** provides early career African researchers (M-level to postdoc) and professionals with the foundational data science skills, to enable them to work with their data in an effective and efficient manner. Online & self-paced course: 03 May – 09 July 2021. [Read more.](#) Applications close 26 February 2021.
- **Nature Careers funding opportunities:** If you're looking for fellowships, research funding or scholarships, a new website from Nature Careers [offers thousands of funding opportunities](#). You can also find tips on how to write a winning grant application, find a funded internship in industry, bounce back from rejection, and lots more — [all for free](#).
- The Innovation Bridge Portal is embarking on a paid social media marketing campaign for 50 of the innovations on the Portal. This is part of their efforts to ensure that your innovation reaches a wider audience and, also in so doing increase the probability of commercialisation or investment. How do you get your innovation featured on the campaign? Simply login to your Innovation Bridge Portal account, update your innovation with the latest information or upload a new innovation. The deadline is **9 February 2021** to update or upload

a new innovation, for your innovation to be considered for the paid social media campaign. The paid social media campaigns will run across Facebook and Twitter for 7 days. Connect with us on our social media platform to see if your innovation is featured: Facebook: [www.facebook.com/InnovationBridge](http://www.facebook.com/InnovationBridge); Twitter: [www.twitter.com/portal\\_bridge](http://www.twitter.com/portal_bridge).

- The City of Johannesburg's Smart City Office invites you to submit proposals for smart city innovative solutions for challenges faced by the city. Application deadline: 02 March 2021; Briefing Session: 08 February 2021 @14h00 Click [here](#) for more information.



- [Anthony Fauci and Salim Abdool Karim awarded John Maddox Prize](#) (nrf.ac.za)
- [South African Professor Daniël Christiaan de Wet Swanepoel wins prestigious African Academy of Sciences science prize](#) (aasciences.africa)
- [TB researcher scoops coveted L'Oréal-UNESCO For Women in Science grant](#) (sun.ac.za)
- [Agricultural community mourns the death of Prof. Karaan](#) (foodformzansi.co.za)
- [Covid-19 claims life of top HIV scientist Dr Arthi Ramkissoon](#) (news24.com)
- [Rhodes University distinguished academic becomes an honorary fellow of the Royal Society of Chemistry](#) (ru.ac.za)
- Prof Shabir Madhi has been appointed the new Dean of the Faculty of Health Sciences at Wits University. [Read his letter.](#)

## 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.

### 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

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Non Profit Company Registration Number: 2007/029165/08

NPO Registration Number: 92042