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# NSTF e-Newsletter

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

## Outbreaks of plant, animal and human diseases; and what to do about the plastic plague?

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

The NSTF is anticipating a full and fascinating year ahead. We will initiate and participate in discussions around the solutions to crises such as outbreaks of human and animal communicable diseases. We are furthermore planning a discussion forum on plant health and will also delve more deeply into the problem of plastic waste. [Read the message.](#)



## NSTF News

### 25 years of serving the science, engineering, technology and innovation community in SA

The [National Science and Technology Forum \(NSTF\)](#) is celebrating 25 years of its existence this year. But what does this [stakeholder body](#), representing more than 120 organisations, councils and institutions actually do for its members and the broader community? We will be unpacking this question in this and following issues of the e-Newsletter.

**Did you know?** The NSTF is a consultative forum and watchdog for influencing the formulation and delivery of science, engineering, technology (SET) and innovation [public policy](#) in South Africa. The NSTF engages with government on SET-related policy and publishes the outcomes through media releases. This includes raising public awareness through ongoing engagement with the media. Four to six NSTF Discussion Forums are held every year and NSTF members participate free of charge – ‘SET for socio-economic change’ in action.

**Did you know?** As part of this mandate, the NSTF unpacked the National Development Plan (NDP) from a science and technology perspective? This was done as a service to its

stakeholders in a series of articles that were published in this e-Newsletter. [Read the summary of all 15 Chapters.](#)



### 2019/2020 NSTF-South32 Awards

The closing date for submitting nominations for the [2019/2020 NSTF-South32 Awards](#) was 2 March (#NSTFawards2020). The nominees for these prestigious awards will be announced in April and the Awards will be made at the [Awards gala dinner](#), scheduled for 25 June 2020.

The NSTF's theme for 2020 is Plant Health, aligned to the United Nations' [International Year of Plant Health](#) (IYPH2020). The 2020 NSTF-South32 Awards [special theme award](#) will be made for research and development (R&D) and innovation in Plant Health. [Click here](#) for more information on the 2019/2020 round of Awards.

### Bursaries available

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

- [FMCSA Ford bursary](#) (Open)
- [Power Group bursaries](#) (Open)
- [GAST Bursary Programme](#) (Open)

### Proceedings available

The proceedings of the NSTF Discussion Forum on [Career paths for researchers – where to in a changing world?](#) are now available on the NSTF website. Click [here](#) to read. The [media release](#), titled "Welcome the entrepreneur researchers" summarises the story.

The following are useful sources for this topic:

- [From postdoc to gig-economy scientists](#), article in *Nature*, by Amanda Niehaus
- [Stress of PhD](#) (nature.com)
- [Canada MPs survey](#) (evidencefordemocracy.ca)
- ["The state of the South African research enterprise"](#) by Johann Mouton with Basson, Blanckenberg, Boshoff, Prozesky, Redelinghuys, Treptow, Van Lill, Van Niekerk; DST-NRF Centre of Excellence in Scientometrics and Science, Technology and Innovation Policy, Stellenbosch University; 2019.
- [Scientific Correspondence, SAJS](#) "Educating scientists in South Africa in the 21st century" by Margaret A.L. Blackie, Department of Chemistry and

- [South African Society of Crop Production](#) bursary (Closing date 15 March)
- [Implats Bursaries](#) (Closing date 31 March)

Visit the directory for information on bursaries, SET [career](#) guidance and inspirational [role models](#). This service is sponsored by the [Fuchs Foundation](#).

### Discussion Forum on plant health coming up

The first NSTF Discussion Forum for 2020 is on Plant Health (aligned with [LYPH](#)). It will take place on 6-7 May 2020 in Pretoria. More information will follow in future issues of this eNewsletter. [Subscribe](#) to this newsletter to get the invitation firsthand.

### Share 'n Dare Activities

The NSTF's [Share 'n Dare programme](#) that promotes science, mathematics, engineering, technology and innovation among the youth, has the following activities planned for March:

- Lecture at iThemba Labs, Cape Town, by Dr Hlumani Ndlovu, 17 March
- Talk at the STEMI boys camp in Cullinan, by Ms Sanusha Govender, 23 March
- A talk at the Eskom Expo camp in partnership with JHB City Parks at Johannesburg Zoo, by Prof Elvis Fosso-Kankeu, 24 March
- A talk at the Eskom Expo camp in partnership with JHB City Parks at Johannesburg Zoo, by Ms Nicoleen Janse van Rensburg, 25 March

**Please note:** [Audio and video interviews](#) with participants in previous Share 'n Dare activities are available on the NSTF website. These can be used to great effect, especially in the classroom, to inspire learners to follow careers in science, engineering, technology and innovation. The Share 'n Dare programme is sponsored by the [Carl and Emily Fuchs Foundation](#).

### Getting to know the 2018/2019 NSTF-South32 Award winners

#### Data for research award

Professor Tandi Matsha, SARChi Chair in Cardiometabolic Health, received the 2018/2019 NSTF-South32 [Data for Research Award](#) for her work in the genomics of cardiometabolic diseases.

Matsha's research in the cardio-metabolic risk factors in subjects of mixed ancestry was the first such research in this population group since the 1990s, and revealed that international screening and assessment norms and standards were no longer accurate or adequate for this local population. [Read more.](#)

#### The Innovation Award: Corporate Organisation

The Centre for Rapid Prototyping and Manufacturing at the Central University for Technology achieved this award for using 3D printing to rebuild deformed faces of South Africans from poor backgrounds *pro bono*.

Polymer Science, Stellenbosch University; 2019.

### The media takes notice

A speaker at the NSTF Discussion Forum on [advanced manufacturing and automation: potential challenges](#) was interviewed by *Electricity + Control* magazine. Read the interview with Mr Yanesh Naidoo, Director: Digital Strategy at Jendemark Automation in the [February edition](#) of the e-magazine (pages 4-7).

The November 2019 issue of *Electricity + Control* carried an article on the Intsimbi Future Production Technologies as a result of participants in this Discussion Forum highlighting the initiative. [Read more.](#)

The centre uses the state-of-the-art technology of additive manufacturing (AM), or 3D printing, to repair the faces and lives of poor South Africans with facial deformities — people who have often become outcasts in their communities. [Read more.](#)

These articles are brought to you by the [Mail & Guardian](#), media partner of the [NSTF Awards](#).



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 of the proSET sector.

- **New proSET co-chair appointed**

Professor Kerstin Kruger, Associate Professor in the Department of Zoology and Entomology, Faculty of Natural and Agricultural Sciences of the University of Pretoria is the new co-chair of the proSET Committee. She is a member of the [Entomological Society of Southern Africa](#).

- **IEEE South Africa receives Outstanding Medium Section Award**

[IEEE South Africa](#) received the 2019 [MGA Outstanding Medium Section Award](#). IEEE has 339 Sections worldwide, with a Section typically associated with a country. IEEE Member and Geographic Activities (MGA) Awards are awarded to one large Section, one medium Section, and one small Section each year, for their successful efforts in fulfilling the educational and scientific goals of IEEE for the benefit of the public by maintaining, enhancing, and supporting the Student Branches, Technical Chapters, and Affinity Groups within their geographic boundaries.



## **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.

- [Petroleum Products Act: Guidelines to applicants for new to industry site and retail licences](#). Comment by 10 March 2020
- [Spatial Planning and Land Use Management Act: Draft national spatial development framework](#). Comment by 19 March 2020
- [National Environmental Management Act: Procedures to be followed for assessment and minimum criteria for reporting of identified environmental themes when applying](#)

[for Environmental Authorisation: Extension of deadline for comments](#) Comment by 24 March

- [Marketing of Agricultural Products Act: Request for continuation of SAGIS statutory measures](#) Comment by 30 April 2020

## 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.*

### Policy

- [SONA 2020 offers more science than usual](#) (researchprofessionalnews.com)
- [Natural Scientific Professions Act: Fee structure for 2020/2021](#) (gov.za)
- [National Research Foundation Amendment Act: Commencement](#) (gov.za)
- [Parliament approves the Science and Technology Laws Amendment Bill](#) (gov.za)
- [Budget Speech: Icasa To Be Capacitated To Deliver Spectrum](#) (engineerit.co.za)

### Agriculture

- [TLU SA objects to forced water meters for irrigation farmers](#) (infrastructurenews.co.za)
- [Genetically Modified Organisms Act: Regulations: Amendments](#) (gov.za)
- [Plant Breeders' Rights Act: Declaration notice](#) (gov.za)
- [Plant Improvement Act: Regulations relating to establishments, varieties, plants and propagating material: Amendment](#) (gov.za)
- [South African Biofuels Regulatory Framework and National Biofuels Feedstock Protocol](#) (gov.za)

### 4<sup>th</sup> Industrial Revolution and technology

- [By 2023 Artificial Intelligence will make up 40% of technology to manage privacy compliance](#) (engineerit.co.za)
- [Are we making technology too easy?](#) (itweb.co.za)
- [Huawei launches 5G Training at Walter Sisulu University](#) (engineerit.co.za)
- [New POPI Act regulations tough on disposing of old computer gear. Huge fines!](#) (engineerit.ac.za)

### Energy

- [#Sona20: Ramaphosa confirms own use generation plan](#) (bizcommunity.com)

### Education

- [Before embracing 4IR, our schools must get the basics right](#) (dailymaverick.co.za)
- [K-12 Teachers of Engineering in U.S. Lack Needed Preparation and Support from Education System](#) (nationalacademies.org)
- [Schools infrastructure in the spotlight](#) (infrastructurenews.co.za)
- [The urgency of rethinking education — for Africa and the world](#) (mg.co.za)
- [South Africa's education system is broken and unequal, and must be fixed without further delay](#) (mg.co.za)
- [How to fix the gap between school and work in South Africa](#) (theconversation.com)

### Infrastructure

- [Finding solutions for South Africa's water crisis](#) (infrastructurenews.co.za)
- [Sisulu says her department is on top of water crisis](#) (infrastructurenews.co.za)

### Medicine and Health

- [South Africa could face TB mask shortage because of coronavirus outbreak](#) (bhekisisa.org)

- [Health Professions Act: Regulations: Conduct of inquiries into alleged unprofessional conduct: Amendment](#) (gov.za)



- HSRC Seminar: [Cultural Rights in the World: Comparative Perspectives from Brazilian, French and South African Cities](#): Livestream via Vidyo to Pretoria, Durban and Cape Town, 11 March 2020 at 12:30
- HSRC Roundtable [Discussion with the UN Special Rapporteur on the Right to Privacy on the State of Privacy in South Africa](#): Livestream via Vidyo to Pretoria, Durban and Cape Town, 11 March 2020 at 14:00
- HSRC Seminar: [Are the Sustainable Development Goals \(SDGs\) Equitable?](#) Livestream via Vidyo to Pretoria, Durban and Cape Town, 17 March at 12:30
- [Women in Tech Africa Summit](#): Cape Town, 18-19 March 2020
- [Congress of the Mediterranean Phytopathological Union](#) entitled "Safeguarding Mediterranean Plant Health", Limassol, Cyprus, 23-27 March 2020
- HSRC Seminar: [Africa on the move: Migration, translocal livelihoods and development work](#), Livestream via Vidyo to Pretoria, Durban and Cape Town, 24 March 2020 at 12:30
- HSRC Seminar: [Measurement of Innovation in the South African Cultural & Creative Industries: A Methodological Challenge?](#) Livestream via Vidyo to Pretoria, Durban and Cape Town, 26 March 2020 at 12:30
- [Scifest Africa 2020](#): Makhanda (formerly Grahamstown), Eastern Cape, 15-21 April 2020
- [Working World Exhibition 2020](#): Port Elizabeth, 21-23 April 2020
- [16th International Conference on CFD In the Oil & Gas, Metallurgical and Process Industries International Conference on Space Operations](#): Cape Town 18-22 May 2020
- [Water Institute of South Africa 2020 Conference](#): Johannesburg, 31 May - 4 June 2020
- [Manufacturing Indaba](#): Johannesburg, 9-10 June 2020
- [14th International Conference on CFD In the Oil & Gas, Metallurgical and Process Industries](#): Trondheim, Norway 9-11 June 2020
- [XVIII Triple Helix Conference](#): Tampere, Finland, 15-17 June 2020.
- [International Agrifood Conference IFAMA 2020](#): Rotterdam, the Netherlands, 15-18 June 2020
- [2020 Africa Energy Forum](#): Barcelona, Spain, 30 June - 3 July 2020
- [Agbiz Congress 2020](#): Building resilient and sustainable agri-food ecosystems: Sun City, 15-17 July 2020. Registration now open.
- [23rd International Congress of Zoology](#): Cape Town, 19-24 July 2020
- [3rd African Symposium on Mycotoxicology](#): Stellenbosch, 6-9 September 2020
- [SA Innovation Summit](#): Cape Town, 30 September -2 October 2020
- [25th WasteCon 2020](#): Johannesburg, 6-8 October 2020
- [IMESA Conference](#): Cape Town, 28-30 October 2020
- The 7th [World Conference of Research Integrity](#) is to be hosted by UCT in 2021



## 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.

### Universities and higher education

- [SA-UK Collaboration to Strengthen Research Capacity in KwaZulu-Natal](http://ukzn.ac.za) (ukzn.ac.za)
- [UJ remembers NASA icon Katherine Johnson](http://uj.ac.za) (uj.ac.za)
- [How South African universities can tap into the continent's knowledge systems](http://theconversation.com) (theconversation.com)

### Science Councils and Statutory Organisations

- [Call for Nomination of New ASSAf Members 2020](http://assaf.org.za) (assaf.org.za)
- [CSIR partners with 3Sixty GSG and Tautomer to accelerate technology commercialisation](http://csir.co.za) (csir.co.za)

### Research ethics

- ['Avalanche' of spider-paper retractions shakes behavioural-ecology community](http://nature.com) (nature.com)

### Medicine and health

- [Coronavirus fears cancel world's biggest physics meeting](http://nature.com) (nature.com)
- [Determining Whether There Is a Link Between Antimalarial Drugs and Persistent Health Effects Requires More Rigorous Studies](http://nationalacademies.org) (nationalacademies.org)
- [A new kind of chemistry: Why science is rethinking the humble bed net](http://bhekisisa.org) (bhekisisa.org)
- [Antibiotic resistance: new discovery could change the future of treatment](http://bizcommunity.com) (bizcommunity.com)

### Mathematical modelling

- [Mathematical modelling: a language that explains the real world](http://theconversation.com) (theconversation)

### Entomology

- [Roadmap developed to conserve global insect populations](http://bizcommunity.com) (bizcommunity.com)

### Women in science

- [Why we need more women to work in water research](http://mg.co.za) (mg.co.za)

### Astronomy and space science

- [This powerful observatory studying the formation of galaxies is getting a massive, \\$54 million expansion](http://sciencemag.org) (sciencemag.org)
- [SANSa & NASA sign a Deep Space Communications study agreement](http://sansa.org.za) (sansa.org.za)

## Environment, climate change and energy

### Environment

- [Scientific breakthrough means plastic could be recycled 100 times](#) (infrastructurenew.co.za)
- [Local supermarkets sign pact to reduce plastic pollution](#) (infrastructurenew.co.za)
- [Dumping site turned into community food garden](#) (eNCA)
- [Humble sandprawn: a champion water filterer](#) (uct.ac.za)
- [Roadmap to a win-win against invasive weeds](#) (wits.ac.za)
- [Construction of first of nine waste disposal facilities in Cape starts](#) (infrastructurenews.co.za)
- [How South Africa's mangrove forests store carbon and why it matters](#) (theconversation.com)

### Energy

- [Load-shedding might take up to 5-years](#) (eNCA)
- [How heat can be used to store renewable energy](#) (bizcommunity.com)
- [Self-use generation projects already in the pipeline](#) (bizcommunity.com)

### Agriculture

- [Fundamental Pillars of Cannabis Market](#) (wandilesihlobo.com)
- [SMMES in agriculture sector share their experiences at the BIDC's accelerator event](#) (csir.co.za)
- [ARC launches new maize information guide for farmers](#) (bizcommunity.com)
- [Chair in Crop Health initiative to upskill students and qualified agriculturalists](#) (bizcommunity.com)

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

- [Is the Civil Society Sector Ready for 4IR?](#) (ngopulse.org)

### Infrastructure

- [Coronavirus causes delays for South African construction industry](#) (infrastructurenews.co.za)
- [Infrastructure to pave the way for Africa's development](#) (infrastructurenews.co.za)

### Science awareness

- [The Science of Science Communication](#) (pnas.org)
- [UWC Takes 4IR to the Community](#) (uwc.ac.za)

### Opportunities

- [Fulbright scholarship applications open](#). The United States Government has invited South Africans interested in pursuing a Master's or Doctoral degree to apply for a Fulbright scholarship to study at any accredited tertiary institution in the US. Applications and more information: [za.usembassy.gov/Fulbright](http://za.usembassy.gov/Fulbright). The closing date for submission of applications for scholarship is 31 March 2020 and applicants are encouraged to start the application process as soon as possible.
- South Africa/China Joint Research Programme: The 11th Call for 2020 Joint Research Project Proposals (JRP) and 3rd Call for 2020 Joint Flagship Projects (FP). The NRF Online Submission System will open the 1st week of February 2020 for submission of applications. Researchers must consult their institutions for internal closing dates. The projects will be supported for a period of two years (starting in early 2021) for both the JRP and FP. Closing date for applications at the NRF: 30 March 2020. For queries contact Ms Nombuso Madonda, tel: +27 (0) 12 481 4285; email: [Nombuso.madonda@nrf.ac.za](mailto:Nombuso.madonda@nrf.ac.za).



- The “[CYD Fellowships – A Talent Program for Cyber-Defence Research](#)” has been jointly launched by [EPFL](#), the Swiss Federal Institute of Technology in Lausanne, and the Swiss [Cyber-Defence \(CYD\) Campus](#). The first call for proposals deadline for applications: 30 March 2020. The program offers funding for 6-month Master theses, 4-year PhDs, and (up to) 3-year postdocs to talented researchers of all nationalities who are willing to engage with cross-cutting issues in cyber-defence under the supervision of a professor at a Swiss higher education institution and a CYD Campus researcher. Check the [website](#) for more information.



- [SU Food scientist recognised as a rising researcher](#) (sun.ac.za)
- [Tribute to the late Prof Klaus Koch](#) (sun.ac.za)
- [Obituary: Professor Lionel Opie](#) (nrf.ac.za)

### About the NSTF

The [National Science and Technology Forum](#) (NSTF), established in 1995, is a broadly-representative stakeholder body for all 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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