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# NSTF-South32 Awards

Today's research ... tomorrow's innovation

## Winners of the 2021/2022 NSTF-South32 Awards

The [Gala Event](#) of the prestigious [NSTF-South32 Awards](#) took place on Thursday, 21 July 2022. It is the 24th celebration of South African excellence through this flagship project of the [National Science and Technology Forum \(NSTF\)](#).

Outstanding contributions to science, engineering and technology (SET) and innovation were awarded and celebrated in the following broad areas under 13 [categories](#):

- Scientific research
- Innovation
- SET management and related activities
- Capacity development in engineering research
- Environmental sustainability and biodiversity conservation
- Water research and innovation
- Data for research
- Science communication

This year the [Special Annual Theme Award](#) was made for an outstanding contribution to SET and innovation towards the basic sciences for sustainable development. This is in recognition of the international theme for 2022 proclaimed by the United Nations: [International Year of Basic Sciences for Sustainable Development](#).

**About the NSTF and the awards:** The NSTF is the most representative multi-stakeholder non-profit forum in South Africa (SA) promoting SET and innovation. The [NSTF-South32 Awards](#) showcase the research and development capacity of our nation. The excellent output of the winners supports South Africa's advancement, economic growth and the social upliftment of our people.

**Why are these awards different?** The national NSTF-South32 Awards are the largest SET and innovation awards in SA since 1998. They are known as the 'Science Oscars' and were the first science awards in the country after the change of government in 1994. An important aspect of the Awards is the showcasing of South African SET and innovation

to the public, which includes the year-long engagement programme between NSTF-South32 Award Winners, and school learners, called the [NSTF Share 'n Dare Programme](#). These top scientists share their knowledge and experiences with young people, 'daring' them to follow in their footsteps.

The NSTF [Brilliants Programme](#) recognises at least two outstanding Grade 12 performers in physical science and mathematics from each province exposing them to the Award winning scientists and the world of professional SET work. They are also introduced to the public through the NSTF-South32 Awards [Gala Event](#).

## Award winners

The [finalists](#) and awardees were honoured, announced and celebrated at the Awards Gala Dinners in Johannesburg and Cape Town simultaneously, via live broadcast on the [NSTF YouTube channel](#). It is an honour to be [nominated](#), an achievement to reach the [finals](#) and an exceptional milestone of excellence to be a winner.

The NSTF and its [sponsors](#) congratulate the 2021/2022 NSTF-South32 Award [winners](#).

### [Lifetime Award](#)

- **Prof Shabir Madhi** – Dean: Faculty of Health Sciences; and Professor: Vaccinology, University of the Witwatersrand (Wits); and Director: South African Medical Research Council (SAMRC) Vaccine and Infectious Diseases Analytics Research Unit (Wits-VIDA); and Co-Director: African Leadership in Vaccinology Expertise, Wits  
For his leadership in research on vaccines against life-threatening diseases in Africa and globally, and he has been at the cutting edge of research in this area since 1997.

### [TW Kambule-NSTF Award: Researcher](#)

- **Prof Tamiru Abiye** – Professor: Hydrogeology Programme, School of GeoScience, Wits  
For his dedication to water science, where Prof Abiye has focused on building research capacity and solving community problems to promote sustainable development in SA. His rural water-stressed background gave him a unique perspective on humanity's most pressing problem – securing water in the face of population, industrial, climate change and pandemic pressures.

### [TW Kambule-NSTF Award: Emerging Researcher](#) (two winners)

Prize sponsor: proSET (Professionals in SET), a sector of the NSTF representing professional bodies and learned societies

- **Dr Wynand Goosen** – Lecturer (Wellcome Foundation): Animal Tuberculosis (TB) Research Group, Department of Science and Innovation (DSI) / National Research Foundation (NRF) Centre of Excellence for Biomedical TB Research, Division of Molecular Biology and Human Genetics, Department (Dept) of Biomedical Sciences, Faculty of Medicine and Health Sciences, Stellenbosch University (SU)  
For his leadership of research in SA on the surveillance of zoonotic TB in domestic cattle and wild animals as potential sources of infections in susceptible people in rural areas.  
AND
- **Dr Banothile Makhubela** – Senior Lecturer and Director: Research Centre for Synthesis and Catalysis, Dept of Chemical Sciences, Faculty of Science, University of Johannesburg  
For her contribution to 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 (CO<sub>2</sub>), into sustainable chemicals and fuels.

#### Management Award

- **Dr Boitumelo Semete-Makokotlela** – CEO: SA Health Products Regulatory Authority  
As the head of SAHPRA, Dr Semete-Makokotlela, successfully led the authorisation of a number of COVID-19 diagnostic tests, vaccines and therapies during the COVID-19 pandemic, in a sterling testament to her drive and passion to ensure that the regulator is an enabler.

#### Engineering Research Capacity Development Awards (two winners)

Sponsor: Eskom since 2003

- **Prof Sehliselo (Selo) Ndlovu** – Professor: Metallurgical and Materials Engineering; and Chair: DSI/NRF South African Research Chairs Initiative (SARChI), Hydrometallurgy Sustainable Development, Wits  
For her work as a hydrometallurgical engineer who is focussed on ensuring a sustainable future supply of metals by developing processes and building capacity and skills that can drive and contribute to the extractive metallurgical industry.  
AND
- **Prof Wellington Didibhuku Thwala** – Research Professor: Construction Project Management and Leadership, Dept of Civil Engineering, College of Science, Engineering and Technology (CSET), University of South Africa (UNISA); and *previously* Director and DSI/NRF SARChI Chair: Sustainable Construction Management and Leadership in the Built Environment, University of Johannesburg  
For his contribution to the research and development of sustainable construction methods and practices, Prof Thwala confronts and researches the problems of the containment and prevention of design errors and improving the performance in infrastructure projects in order to minimise project cost overruns.

#### Green Economy Award

- **Prof Guy F Midgley** – Distinguished Professor; and Head: Global Change Biology Group; and Interim Director: School for Climate Studies, SU  
For a contribution over two decades by Professor Midgley to the understanding of the risks of climate change to endemic biodiversity and ecosystems, both nationally and globally, to the development of response options through modelling as well as critical field and controlled environment trials; and the public communication of these issues.

#### NSTF-Water Research Commission (WRC) Award

Sponsor: WRC since 2017

- **Prof Evans M N Chirwa** – Professor; and Rand Water Research Chair: Water Utilisation, Dept of Chemical Engineering, University of Pretoria  
For the introduction into SA by Professor Chirwa of the use of biological analogues in advanced water treatment and water recovery with applications in metal-halide heterogeneous photocatalysis.

#### Data for Research Award

- **Network for Genomics Surveillance (NGS-SA) in SA** – Representing the Co-Founders: Dr Jinal Bhiman, Scientific Lead: Global Immunology and Immune Sequencing for Epidemic Response South Africa (GIISER-SA); and Prof Tulio de Oliveira, Professor: Bioinformatics, School for Data Science and Computational Thinking, SU

For the generation of genomic surveillance data of SARS-CoV-2, by the NGS-SA aimed at informing SA's public health response to this virus.

#### Innovation Award: Corporate Organisation

- **Mining Positron Emission Tomography Research Group (MinPET)** – Team Leader: Prof Simon Connell; and Dept of Mechanical Engineering Science, Faculty of Engineering and Built Environment, University of Johannesburg  
For the leadership Prof Connell took in the development of MinPET, a revolutionary Fourth Industrial Revolution (4IR) invention which is an online sensor-based detection process of diamonds within mined kimberlite rocks.

#### Innovation Award: Small, Medium and Micro Enterprise

Sponsor: National Intellectual Property Management Office (NIPMO) since 2019

- **Thermtron Scientific CC** – Sponsor and Manager: Dr Jacobus (Kokkie) Swanepoel  
For the establishment, over the course of the past decade, of Thermtron led by Dr Swanepoel as an important player and facilitator in the national system of innovation, generating revenue and opportunities in the process industry.

#### Communication Award

- **Vuwani Science Resource Centre** – Team Leader: Dr Nnditshedzeni Eric Maluta; and Coordinator: Vuwani Science Resource Centre; and Head: Dept of Physics, University of Venda; and Ordinary Member: International Union of Physics and Applied Physics (IUPAP) Commission-14 for Education Development  
For embarking on education outreach programmes to the previously disadvantaged learners in Venda and surrounds, in order to stimulate their learning and understanding of maths and science.

#### Non-Governmental Organisation (NGO) Award

- **CodeMakers** – Executive Director: Dr Justin Yarrow  
For his conception and implementation of SuperScientists, living scientists drawn as the superheroes who educate and inspire young people across SA.

#### Special Annual Theme Award: Basic Science for Sustainable Development

- **Prof Marianne Vanderschuren** – Professor: Transport Planning and Engineering; and Chair: DSI/NRF/Council for Scientific and Industrial Research (CSIR) Co-funded Smart Mobility Research; and Deputy Dean: Social Responsiveness and Transformation, Dept of Civil Engineering, Faculty of Engineering and the Built Environment, University of Cape Town  
For her role in improving the quality of life of vulnerable road users using Smart Mobility through research solutions based on the basic sciences.

**Read all about it:** The NSTF partners with [Mail & Guardian](#) and [Business Report](#) to publicise the winners and their work since 2009. Both newspapers are media sponsors of the NSTF-South32 Awards.

Buy your copy of the 22 July newspapers of Mail & Guardian and Business Report (the latter is an insert in The Star, Pretoria News, Cape Times and The Mercury). The Mail & Guardian supplement is also available online making the articles accessible throughout and to anyone interested.

These supplements are made possible by advertisements from [members of the NSTF](#) and the finalists organisations.

**Please note:** *The NSTF does not gain financially from this supplement. The intention is to*

*increase awareness among the public of the outstanding work being done in SA by top scientists and related professionals.*

**Awards partners and sponsors:**

- [South32](#) (co-branding sponsor)
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## 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*).

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### For more information

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