



science  
& technology  
Department:  
Science and Technology  
REPUBLIC OF SOUTH AFRICA

**SAASTEC**  
Southern African Association of Science & Technology Centres



University of Venda

# 20th SAASTEC Conference

Hosted by Vuwani Science Resource Centre, University of Venda

Conference Venue: Porche-Villa and Conference Centre ~ Thohoyandou, Block J (Muledane) On the main road to Tswinga

26 – 29 November 2018

# Programme

**Theme : Making Madiba Proud**

“And as we let our own light shine, we unconsciously give other people permission to do the same.”

~ Nelson Mandela

**Monday 26 November 2018**

12:00 - 20:00 Workshops and Icebreaker @ Vuwani Science Resource Centre

There are four different workshops to choose from ~ please note that they start at different times.

12:30 - 17:30

## Exhibit Building

By *Stuart Hopwood*  
& team @ *Sci-Bono Discovery Centre*  
Exhibit building workshop where each participant will leave with a function working exhibit (provided that it meets the minimum standard). Exhibit made will be the Chaotic Magnetic Pendulum.

**Only ONE person per SC**  
(Capacity 15)

12:30 - 17:30

## Career Development Services - the implementation of Career Kiosks in the science centres

By *Mr D Fothane and Mabasa Thembani*,  
*Department of Higher Education & Training Career Development Services*

(Capacity 30)

14:30 - 17:00

## Early Childhood Development (ECD)

By *Shemone Bokary*  
*ArcelorMittal Saldanha*  
Interactive workshop on the life cycle of the butterfly. Participants will learn how to introduce scientific concepts to ECD learners in a play based manner. The workshop will have a strong focus on skills development focusing on observation and investigation. Prioritizing visual perception development in young learners.

(Capacity 30)

14:30 - 17:00

## Easy Writing Workshop

By *Ginny Stone*  
*SAASTEC / Writer*  
Are you regularly contributing to the Khoroni or your local newspaper? If so, this workshop is not for you! If not, come and discover an easy way to elevate the profile of your science centre in your community and on a broader scale.

(Capacity unlimited)

"Do not look the other way;  
do not hesitate."

"Recognise that the world is hungry for action, not words."  
"Act with courage and vision."

# Tuesday 27 November 2018

08:00 - 09:00	Registration @ Porche-Villa Conference Centre	
09:00 - 10:00	Opening Session (Chair : Thami Mphokela)	
09:00 - 09:10	Welcome by SAASTEC	
09:10 - 09:20	Welcome by University of Venda	
09:20 - 09:25	Introduction to the DST	
09:25 - 09:45	Methodologies for determining participation in science centres. Livhuwani Masevhe, DST	
09:45 - 10:00	Questions from the audience	
10:00 - 10:30	Tea & Poster Session	
10:30 - 11:25	Session 1 (Chair : Disampras Mathebe)	
10:30 - 10:45	Science Centre Marketing - How do we communicate our value? Sandile Rikhotso, University of Limpopo Science Centre	
10:45 - 11:00	Establishing collaborations with society that would make Madiba proud. Tshepiso Maroga & Mathipa Sebetsiwa, Sci-Enza, UP	
11:00 - 11:15	Performativity in science engagement: papering over cracks. Tsepo Majake, Scholarly Publishing Unit, ASSAf	
11:15 - 11:25	Questions from the audience	
11:30 - 13:00	Session 2 (Chair : Nadine Nortier)	
11:30 - 11:45	Ten year review of Sci-Enza NYS volunteer programme. Puleng Tsie, Sci-Enza, UP	
11:45 - 12:00	National Science Week – Impact Studies. Bafedile Kgwadi, Gugulethu Mtsweni & Joyce Khunou, SAASTA	
12:00 - 12:15	Five Amazing ways we are making Madiba Proud. Thandamanzi Mtsweni, SAASTA	
12:15 - 12:30	Science engagement within Responsible Research an Innovation. Shadrack Mkansi, SAASTA	
12:30 - 12:45	The Tragedy of the Commons. Ulrich Oberprieler, National Zoological Gardens	
12:45 - 13:00	Questions from the audience	
13:00 - 14:00	Lunch & Poster Session	
	<b>PARALLEL SESSION A</b>	<b>PARALLEL SESSION B</b>
14:00 - 16:45	Session 3.1 (Chair : Thami Mphokela)	Session 3.2 (Chair : Shadrack Mahapa)
14:00 - 14:15	Science and Story Telling. Ginny Stone	14:00 - 14:15 The depiction of Vuwani Science Resource Centre learner's support program from the year 2000 until 2018. H Siaruli, SM Mathebe, Vuwani SRC, TS Mulaudzi & NE Maluta, Dept Physics, UniVen
14:15 - 14:30	Creating intergenerational Learning and Innovation spaces in selected communities: A collaborative between the elders, schools, Dzomo la Mupo (CBO) and a University in Venda. Mphatheleni Makaulule & Vhonani Netshandama, University of Venda	14:15 - 14:30 Understanding the use of pre- and post-tests in the grade 8 and 9 Natural Sciences teachers in Mpumalanga province. Maria Kekana, Sipho Nhlanhla Dlamini, MST Academy
14:30 - 14:45	What Christoph Meyer Maths & Science Centre has achieved that could have made Tata Madiba proud. Dorothy Mlambo, Christoph Meyer Maths & Science Centre	14:30 - 14:45 Impact of e-Learning on academic performance: A case study of Grade 12 Physical Sciences learners in secondary schools. Ngoako Norman Moshokoa, Palabora Foundation
14:45 - 14:55	Mandela day with the kids. SS Sibiya & S Bukhosini, Isibusiso Esihle Science Discovery Centre	14:45 - 14:55 What South Africa needs to do to improve mathematics and science? Xolani Cosmos Thikazi, Arcelor Mittal Science Centre Sebokeng
14:55 - 15:10	Stimulating Science through Fun films Diloshni Chetty, UNIZULU Science Centre	14:55 - 15:10 Be the change you want to see. Patrick Zondo, Siphesihle Bukhosini, Themba Ngubane, Isibusiso Esihle
15:10 - 15:15	<b>LEG STRETCH</b>	<b>LEG STRETCH</b>
15:15 - 15:30	The importance of using Science language in teaching Science subjects. Tracy Singo, MSc, Assessor, Facilitator	15:15 - 15:30 Teach me in my language and I will understand Silindile Mthembu, Unizulu SC
15:30 - 15:40	Curbing demotivation. Busisiwe Hadebe & Matsobane Mapheto, Sci-Enza	15:30 - 15:45 Hope for the future. Nonhle Magudulela, ArcelorMittal SC, Newcastle
15:40 - 15:55	Making everyday a Mandela Day. Phinah Manamela, ArcelorMittal SC Newcastle	15:45 - 16:00 Redefining Education. Zandile Nkopo, North West University Science Centre
15:55 - 16:10	Science shows: to theme or not to theme. Umr Chippendale, Cape Town Science Centre	16:00 - 16:15 The enhancement of mathematics and science education through innovative approaches – The case of the Univ. of Johannesburg Soweto SC. Patrick Monama, UJ, Soweto Science Centre
16:10 - 16:25	RHI—TRACKER. Gumede Thandoh BS, BSG Centre.	16:15 - 16:30 Science Centres and Youth Development. Alfred Hanyane, Sci-Bono Discovery Centre
16:30 - 16:45	Questions from the audience	
16:45 - 17:00	Tea & Poster Session	
17:00 - 18:00	POSTER SESSION (see back page for poster presentations)	
	<b>FREE EVENING</b>	

"There is no passion to be found playing small - in setting for a life that is less than the one you are capable of living."

# Wednesday 28 November 2018

08:00 - 08:40	Registration @ Porche-Villa Conference Centre	
08:40 - 10:00	Session 4 (Chair : Eric Maluta)	
08:40 - 08:55	Making Madiba proud through affording an informed decision making using career guidance. <b>Solly Simelane, Anglo-American Science Centre</b>	
08:55 - 09:10	The NSTF Share 'n Dare Programme. <b>Fulu Gelebe, National Science &amp; Technology Forum (NSTF)</b>	
09:10 - 09:25	DigiGirlz are everywhere. <b>Nomusa Keninda, Mpumalanga ICT Club</b>	
09:25 - 09:45	Career Development Services Training. <b>Thembanani Mabasa and Ditupa Fothane, Dept. of Higher Education &amp; Training Career Development Services</b>	
09:45 - 10:00	<b>Questions from the audience</b>	
10:00 - 10:30	<b>Tea &amp; Poster Session</b>	
10:30 - 11:00	Session 5 (Chair : Daniel Motsapi)	
10:30 - 10:45	Empowering our youth through Financial Education. <b>Old Mutual</b>	
10:45 - 11:00	SKA Science Centre in Carnarvon. <b>Takalani Nemaungani, Astronomy (SKA, AVN, SALT, HarTRAO etc)</b>	
11:00 - 11:10	<b>Questions from the audience</b>	
	<b>PARALLEL SESSION A</b>	<b>PARALLEL SESSION B</b>
11:15 - 13:00	Session 6.1 (Chair : Akash Dusrath)	11:15 - 13:00 Session 6.2 (Chair : Siphesihle Bukhosini)
11:15 - 11:30	Building Hope in Learners through collaborative Outreach. <b>Norman Pillay, Sci-Bono Discovery Centre</b>	11:15 - 11:30 Piloting the Process of Evaluating Interactive Exhibits within the Science Centre Environment. <b>Shadrack Mahapa and Silindokuhle Mbonane, Sci-Bono</b>
11:30 - 11:40	Science on the move with Joburg City Parks and Zoo. <b>Molie Moonyane, Johannesburg City Parks and Zoo</b>	11:30 - 11:45 How to monitor the learning progress of Science Centre visitors. <b>Michael Wolf, Formula D interactive</b>
11:40 - 12:50	Is my outreach really reaching out? <b>Daniel Motsapi, ArcelorMittal Science Centre</b>	11:45 - 12:00 Enhancing Critical thinking through Gardening for Wildlife. <b>Armstrong Mashakeni, National Zoological Gardens</b>
11:50 - 12:00	Public open spaces as interactive STEMI and Sustainability Learning Centres: The Case of Johannesburg City Parks and Zoo. <b>Sinah Magolo Johannesburg City Parks and Zoo</b>	12:00 - 12:15 How is Uranium Related to Energy. <b>Gilbert Lekwe, NeCSA</b>
12:00-12:15	When It's Time To Say Goodbye – Letting go of a project. <b>Meeloni Tanna, Sci-Enza, University of Pretoria</b>	12:15-12:30 Minerals for South Africa but its wealth for the other continents. <b>Joseph Sibiya, Mondi Science, Career Guidance Centre</b>
12:15 - 12:30	Inspiring Beacons of Hope for Our Future. <b>Nadine Nortier, Inkubeko Youth and Science Centre</b>	12:30 - 12:45 UK MSc and RSA UCT Graduated Scientists for German Branded EnerKey R&D PhD Thesis Collection of African Indigenous Knowledge Systems for Biodiversity Economy and Enterprises Development with Public Enterprises SOEs, DsT Agencies and SAASTECS Members. <b>Gcinimuzi Jeremia Mafereka AFRIKA, GWoT</b>
12:30 - 12:45	Oops they've done it again - Umjikelezo We-Science - The saga continues... <b>Stephen Ashworth, Henre Benson, Nokwanda Cele, Celiwe Chauca, Kesigan Govender, Busisiwe Gumede, Theshnie Naidoo, Tanja Reinhardt, Charles Thethwayo and the Umjikelezo We-Science team.</b>	
12:45 - 13:00	<b>Questions from the audience</b>	
13:00 - 14:00	<b>Lunch &amp; Poster Session</b>	
14:00 - 15:30	SAASTECS Annual General Meeting (Voting year)	
16:00 - 21:00	Afternoon / Evening Function @ Kalahari Waterfront (Bus provided - Nandoni Ha Budeli, Vhembe District)	

# Thursday 29 November 2018

08:00 - 08:30	Registration @ Porche-Villa Conference Centre	
	<b>PARALLEL SESSION A</b>	<b>PARALLEL SESSION B</b>
08:30 - 10:25	Session 7.1 (Chair : Puleng Tsie)	08:30 - 10:25 Session 7.2 (Chair : Ulrich Oberprieler)
08:30 - 08:45	Shaping the future for the disadvantaged through Mechatronics. <b>Phathutshedzo Malivha, Sci-Bono</b>	08:30 - 08:45 Learning without limits (Engaging rural primary schools in science and technology). <b>Brian Ndavha, Giyani Science Centre</b>
08:45 - 09:00	A taste of the future: 3D printing technology as innovation tool to supplement teaching and learning of STEM. <b>Mncedi Rani, FOSST</b>	08:45 - 09:00 A call to recognize the importance of play based-learning in our science centres. <b>Innocentia Mabuza, Sci-Bono Discovery Centre</b>
09:00 - 09:15	ICT infrastructures in the Vhembe District Secondary Schools. <b>Rodney Ramaru Rofhiwa, UniVen.</b>	09:00 - 09:15 The Future is here: Industry 4.0 <b>Akash Dusrath, Cape Town Science Centre</b>
09:15 - 09:30	Using Technology to Enhance Learning. <b>Themba Zwane, Mondi Science Centre</b>	09:15 - 09:30 An Ignited Curiosity in Science, Then What? Taking a Talent Tracking Approach. <b>Raven Motsewabangwe, Inkubeko Youth &amp; Science Centre</b>
09:30 - 09:40	Encouraging Diversity and Social Inclusion: Piloting the possibility of developing a Blueprint for science centres. <b>Mr. X Nameka, Sci-Bono</b>	09:30 - 09:45 Robotics in STEMI Education. <b>Mzwandile Maphanga, ArcelorMittal Science Centre</b>
09:40 - 09:55	Can we trust Science Centres with the Responsibility of Public Engagement in Astronomy. <b>Nsikelelo Malinga, UniZulu Science Centre</b>	09:45 - 10:00 YouTube, a tool science centres have been sleeping on?! <b>Bafo Yoti &amp; Jamey Bester, Cape Town SC</b>
09:55 - 10:10	The World and Beyond. <b>Sithembile Msweli, Siphesihle Bukhosini, Isibusiso Esihle Science Discovery Centre</b>	10:00 - 10:15 Simply BIG Science. <b>Thabang More &amp; Shoneez Parsons, Sci-Enza</b>
10:10 - 10:25	<b>Questions from the audience</b>	



# Thursday 29 November 2018 (continued)

10:30 - 11:00	Tea & Posters Down
11:00 - 12:30	Session 8 (Chair : Sandile Rikhotso)
11:00 - 11:15	Performativity in science engagement: papering over cracks. Tsepo Majake, Scholarly Publishing Unit, ASSAF
11:15 - 11:30	The Impact of Technology on Society. Bhekani Mathebula, ArcelorMittal Science Centre
11:30 - 11:45	Airbus Foundation Discovery Space. Didier Laval, Didier LAVAL - Culture Instable
11:45 - 12:00	Mouth, hands and feet that bring science to the community. Siphesihle Bukhosini, Isibusiso Esihle Science Discovery Centre
12:00 - 12:15	SAASTEC for YOU: a critical introspection. Puleng Tsie, Sci-Enza, University of Pretoria
12:15 - 12:30	Questions from the audience
12:30 - 13:00	Conference Wrap-up (Mondli Mnguni / Disampras Mathebe / SAASTEC Chair)
13:00 - 14:00	Lunch

## Poster Presentations

1. The Great South African Invention: Post democracy. Happy Vilakazi and Njabulo Duma, SAASTA
2. Adding value. Vuyolwethu Ngalo, Nelson Mandela Bay Science Centre
3. The Importance of being an Entrepreneur. Martins Mpotu, ArcelorMittal Science Centre (Sebokeng)
4. Applications of Telecommunications in the 21st Century Science Centres to enhance Public Communication and Bridge the Barriers in Learning. Zibusiso Nyoni, Sci-Bono Discovery Centre
5. Greatest Discoveries made from simple observations. Themba Ngubane, Siphesihle Bukhosini, Isibusiso Esihle Science Centre.
6. Mathematics is an art, let learners be creative. Daniel Motsapi, Khuliso Makungo, ArcelorMittal Science Centre.
7. Impacting communities through education. Sci-Bono Outreach Team.
8. Making science experiments exciting: science shows as a means to stimulate performance of STEM experiments. Sinovuyo Makinana, FOSST Discovery Centre.
9. Science centres as a web of STEM knowledge: informal education as a means to enhance formal education. Z Fudo, A Ziwele and P Kwinana, FOSST Discovery Centre.
10. Mobile science and technology labs as a means to revive STEM learning areas of rural-based schools in the Eastern Cape. Yolanda Jali and Xolisa Williams, FOSST Discovery Centre.
11. Placing learning beyond classroom in the spotlight: the role of science centres in sensitizing community about STEM benefits - experiences of mall excursions by FOSST-DC. Hlumelo Zondani, FOSST Discovery Centre.
12. Making Mandela Proud by providing an inclusive Science, Technology, Engineering and Mathematics (STEM) learning to all. Fulfufhelo Khomola & Mary-Ann Makama, Sci-Bono Discovery Centre.
13. Graphing calculator as an innovative hands-on gadget of teaching and for learning mathematics: a case study of Saturday STEM classes. Sinayo Booi, Xolani Gotyi, Fosst-Discovery Centre.
14. Knowledge sharing for capacity building. Sakhile Masango, ArcelorMittal Science Centre Newcastle.
15. Education is the only tool that we can use to transform the world. Mangaliso Mathebula, Mond Science Centre.
16. The use of absorption metals to enhance photo catalytic applications. Nqobile Sibeko, Mond Science Centre.
17. Science centres as learning centres: Lessons from the grassroots. Vhonani Netshandama, University of Venda.
18. The Fourth Industrial Revolution: issues and implications for career research and practice. Phe Sekele, Sci-Bono Discovery Centre.
19. Can Nano-materials be used to reduce CO<sub>2</sub> emissions? Sakhile Ntshangase, Mond Science, Career Guidance & FET Skills Centre.
20. Hydrogen Storage for Stationary and utility Vehicles. Suprice Mnisi, Mond Science, Career Guidance & FET Skills Centre.
21. The Influence of Learners' Perceptions on Mathematics Performance: A Case of the Soweto Science Centre Learner Intervention Program Hosted by the University of Johannesburg in Gauteng, South Africa. GKE Mosina, D Sipuka, N Macheke, M January, S Nhlapo, Faculty of Science, Soweto SC, University of Johannesburg.
22. Recycling of cell phones to save gorillas in the wild. Boitumelo Moeketsi, National Zoological Gardens.
23. RHI—TRACKER. Gumede Thandoh BS, BSG Centre.
24. Adverse environmental impacts from the establishment of hydro-electric power generation station in the semi-arid South Africa: Mbashe River. Mamagolokwe Malefane, National Zoological Gardens.
25. Genetic polymorphism of TNF alpha gene promoter region in a cohort of children in Northern South Africa: distribution and potential impact on diarrhoea and malnutrition. Caroline Davhana, Vuwani Science Resource Centre.
26. Meeting generation Z where they are at. Rokhuda Tshitimba & Londiwe Mkhabela, Sci-Enza.
27. Pathogenic Escherichia coli strains recovered from selected aquatic resources in the Eastern Cape, South Africa and its significance to public health. Kingsley Ehi Ebomah, Martins Ajibade Adefisoye and Anthony Ifeanyi Okoh <sup>1</sup> SAMRC Microbial Water Quality Monitoring Centre, Univ. of Fort Hare <sup>2</sup> (AEMREG), Dept of Biochem & Microbiology, Univ. of Fort Hare.
28. Making Science Fashionable. R.M. Ramohlale, N Mariba, K.E Mathebula, M.M. Modiba, K.A.Molekoa, M.D. Ncha, Univ. Limpopo Science Centre.

“The greatest glory in living lies not in never falling, but in rising every time we fall.”

~ Nelson Mandela

Please travel home safely.