

# Science Chat

with


 UNIVERSITEIT VAN PRETORIA  
 UNIVERSITY OF PRETORIA  
 YUNIBESITHI YA PRETORIA

## SCI-ENZA

HANDS-ON SCIENCE

### Sci-Enza and JuniorTukkie win at Scifest 2017



Scifest Africa is southern Africa's national science festival established in 1996 with the aim to promote public awareness, understanding and appreciation of science, technology, engineering, mathematics and innovation.

This year marked the 21st anniversary of Scifest Africa, which was hosted in Grahamstown from 8–14 March. The theme for this year was "Tour de science", which ties in with the International Year of Sustainable Tourism for Development.

Sci-Enza and JuniorTukkie, alongside other science organisations, participated in the festival through interactive exhibitions, science shows and workshops. Our exhibition was on the history of math, aimed at making math more appealing to the public through math puzzles, games and art.

To help future Tuks students, we informed learners in Grade 11 and Grade 12 about the admission requirements of the University of Pretoria and assisted Grade 9 learners with subject choices for Grade 10. We also actively worked towards recruiting JuniorTukkie members.

Scifest ended with an award ceremony to acknowledge the great work that was done by the exhibitors. For the Sci-Enza team, the highlight of the evening was when Sci-Enza was honoured with the award for Best Exhibition: Best Newcomer.

## Letter from the Sci-Enza team

### Dear Sci-Enza friend

Welcome to the first issue of *Science Chat with Sci-Enza*. We are very excited to share all the latest news from the Sci-Enza centre with you, our loyal supporters.

As you may know, Sci-Enza is the oldest interactive science centre in South Africa, and we are just as passionate about science today as we were in 1977 when we opened our doors.

It is our mission to make science accessible to learners of all ages in a fun and entertaining way, and to raise science awareness in the process.

In this issue, you will read about some of the exciting things that are happening at Sci-Enza at the moment, and hopefully be inspired to join in the fun.

Happy reading

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### Loved what you read?

Send your details to [sci-enza@up.ac.za](mailto:sci-enza@up.ac.za) to join our mailing list

### Upcoming events

- National Science Week: 5–12 August 2017
- Africa Code Week: 18–25 October 2017
- World Space Week: 4–10 October 2017

# Science is fun!

# HOLIDAY PROGRAMME

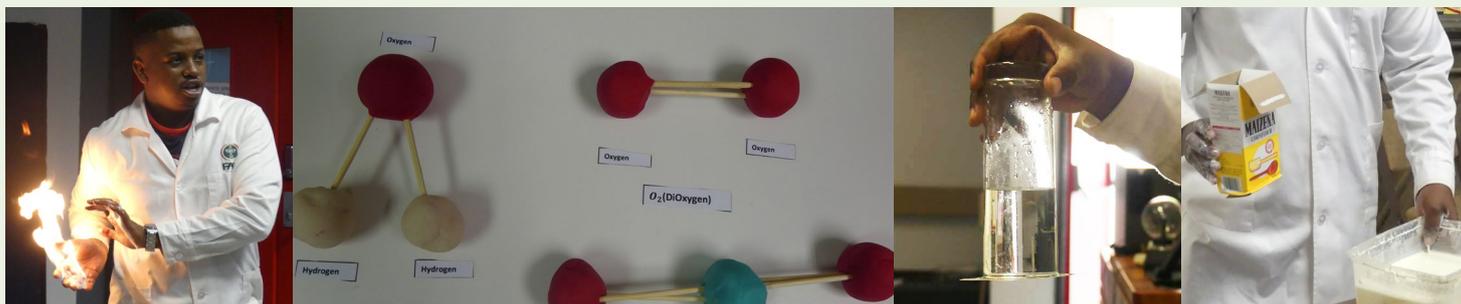
“Science is fun” is a school holiday programme, hosted by Sci-Enza, that caters to learners from Grade 1 to Grade 6. The programme has different themes for different days, during which learners get to experience science in a different light through fun activities.

This year, Sci-Enza hosted the “Science is fun” programme from 10–11 April with the themes chemistry and spiders respectively. The days start with a science show or a talk presented by an expert in their field, followed by a series of workshops to add to the learners’ understanding of what they learned. The learners are divided into two groups (seniors and juniors) so that the workshops can meet the level of understanding of every child.

This holiday programme hosted close to 80 learners, and many of them are looking forward to the next “Science is fun” that will take place during the June school holiday.

## Chemistry

For the chemistry session, the learners watched an amazing chemistry science show performed by Godfrey Kgatle. After the show, the seniors learned about the properties of water through experiments and discovered the periodic table through a chemistry card game. The juniors learned about acids and bases, where they measured the pH-level of common household items and conducted various experiments regarding the chemistry of candy. Both groups participated in slime-making workshop and built molecules with play dough.



Godfrey Kgatle brought his audience to the edge of their seats during his chemistry science show. Thereafter, the learners participated in a range of interactive experiments and activities.

## Spiders

For the spiders session, Astri Leroy gave a talk about South African spiders and other arachnids. At the end of the talk, the learners got to see the actual living spiders and the scorpions that glow in the dark under a black light. The talk was followed by a workshop about spider facts and myths. The seniors completed a workshop about the life-cycle of spiders and learned about spider prey and predators through a spider game. The juniors learned spider facts through a dominoes game and studied the anatomy of a spider by making their own crafty spiders.



Astri Leroy busted all the myths about spiders and arachnids for the learners during her presentation. Bringing out the real thing added a whole new dimension to the learners’ understanding of these creatures.



# Sci-Enza @ 40

Sci-Enza, the first interactive science centre in Africa, is celebrating its 40th birthday this year!

By Rudi Horak

## Humble beginnings

During 1977, the Department of Physics at the University of Pretoria opened an interactive science lab on the ground floor of the Physics Building (now the Department of Mineral Science). The founder of this initiative was Prof Lötz Strauss, a passionate physicist and lecturer who realised that students need to have more informal interaction with scientific equipment in a non-threatening space (compared to formal training laboratories) where they could explore and learn without supervision.

This Open Lab, as it was called in the early years, became very popular. There were more than thirty hands-on exhibits, a reading corner with scientific books and magazines, and duplicate setups of the first-year physics practicals so that the students could familiarise themselves with the apparatus and repeat the curriculum experiments. Technical assistants from the Department of Physics volunteered to assist in the Open Lab to supervise, explain and maintain exhibits, and to develop new ones.

During 1980, the informal name "Open Lab" was changed to Exploratorium, which officially opened on 29 April 1980. During this year, a full-time position for a science centre manager was also approved.

The centre became popular among all students on campus (not only the science and engineering students), as well as members of the public, teachers and learners; all wanting to visit the Exploratorium. Under the championship of Prof Strauss, the centre grew exponentially into an essential centre of learning and the promotion of primary exposure

to science and technology. This necessitated a bigger space for the popular centre, where after the Exploratorium was included in the design for the new Natural Science 1 Building. The Exploratorium moved to the ground floor of Natural Sciences 1 during 1987.

A Camera Obscura was built on the roof of the Natural Science 1 Building in 1990 as an extension of the science centre. This unique facility offers spectacular panoramic views of the Jacaranda City and the campus, and became a popular tourist attraction on the campus.

The San Francisco Exploratorium trademarked the name 'Exploratorium' in 1995, and the University of Pretoria had to rename the science centre. For the period between 1999 and 2004, the science centre was known as the Discovery Centre ("Ontdekkingsentrum" in Afrikaans). During 2001, the centre moved to a new, much larger premises in the Technical Services Building and became a truly integrated science, engineering and technology centre.

Since 2005 the centre has been known by the name Sci-Enza. This is a combination of the word science and the isiZulu word 'sebenza', meaning 'work' or 'to do'. This unique name fits all the activities of the centre and the diversity of its visitors.

## Proud legacy

Today, there are 35 science centres in South Africa. These are all members of the South African Association of Science and Technology Centres (SAASTEC), which represents South Africa within the International Network of Science Centres. Sci-Enza played



Wishing Sci-Enza a happy 40th birthday and many more prosperous years of cultivating a love for science

a major role to assist and mentor new and upcoming science centres in South Africa, as well as in Zimbabwe, Botswana, Namibia and Kenya.

Since its relocation to the current facility, an average of 17 000 school learners in some 280 school groups visit Sci-Enza each year. The programme for booked visits comprises a popular science show and demonstrations, hands-on experience in the centre and a visit to the Camera Obscura. Sci-Enza also receives about 20 000 casual visitors per year. This includes students, school learners, parents and grandparents accompanying children and other members of the public who attend public talks and workshops.

The centre has a well-equipped auditorium, three workshop venues, a reading corner, more than 200 interactive exhibits and models, and a puppet theatre. Sci-Enza is also actively involved in several outreach projects, programmes and exhibitions such as the Mae Jemison Reading Room in Mamelodi, National Science Week, Sasol TechnoX, Scifest, "Science is Fun" holiday programmes, teacher workshops and special events like the Bloodhound Super Sonic Car promotions.

Sci-Enza is now a locally and internationally recognised and respected science centre thanks to the hard work of its staff, and the support of the Management of the University of Pretoria, the deans of the Faculty of Natural and Agricultural Sciences and the Department of Physics since 1977.



# World Biotech Tour Festival

Biotechnology is a buzzword in the natural sciences arena. It has a broad spectrum of applications in our daily lives; combining biological processes and advanced technologies to create innovative ideas.

## @ Sci-Enza

It is for this very reason that this topic was used by the Association of Science and Technology Centres (ASTC), along with the Biogen Foundation, to run a programme known as the World Biotech Tour (WBT). The aim of this programme is to present to learners, educators and the general public the various applications of biotechnology in our daily lives through presentations, exhibits, experiments and other activities at science centres in a fun and exciting way.

Sci-Enza joined in on this multi-year tour that took place at other centres around the globe since 2015. In South Africa, a collaboration between Sci-Enza, Sci-Bono, Cape Town Science Centre and Unizulu Science Centre allowed for the tour to take place across the country.

Sci-Enza hosted a three-day festival from 8–10 June with fun activities focused on biotechnology for learners,

educators and the general public. The aim of the festival was to create awareness of biotechnology and stimulate interest in this fast-growing field of science, as well as to foster an interest in science, technology, engineering and math (STEM) careers.

As part of the activities, Sci-Enza hosted a forensic detectives scavenger hunt where learners worked through clues found at a crime scene in the centre to solve the crime. This gave learners and educators real-life experiences of the science behind forensics and an understanding of the applications of biotechnology in the field. These applications included fingerprinting and DNA sampling. In addition, workshops on DNA extraction were presented and learners experienced the exhibits in the centre. They also learned about gene selection and how our genes can affect our taste buds, and visited the Camera Obscura.

Apart from all the fun activities hosted at Sci-Enza, we went to the Mae Jemison Reading Room in Mamelodi where the student ambassadors for WBT presented projects they had been working on with the assistance from mentors at Sci-Enza. The ambassadors each had to decide on a biotechnology topic of interest to them that would engage their communities and create awareness.

They had to research the topic, do some fieldwork and put together a presentation. The winner of the presentations was Kgaugelo Kekana, a Grade 8 learner from Gatang Secondary School in Mamelodi, who presented on *'What future generations think about biotechnology'*. She will go to Sci-Bono in September to participate with other ambassadors from the other centres in a finale where one ambassador will be chosen to represent South Africa at the World Summit in Tokyo, Japan this November.