

Principal supporter:



Australian Government



Science Circus Africa 2015

Building African capacity to engage schools and communities with science

The mission - Astonishing science education in six countries over 10 weeks

Building on three decades of innovative science education in Australia and South Africa, and a successful pilot in 2014, the Science Circus is coming to southern Africa. The Australian National University (ANU), Questacon - The National Science and Technology Centre (Australia), the Dūcere Foundation and our partners in South Africa, Botswana, Zambia, Mauritius, Namibia and Malawi will deliver a travelling science program to students, teachers and communities over ten weeks during May to July 2015. The project is an initiative of the ANU's National Centre for the Public Awareness of Science and funded by Questacon and the Australian Government Department of Foreign Affairs and Trade (DFAT) Direct Aid Program through the Australian High Commission in Pretoria and Australian Embassy in Harare.

In schools and public venues, the Circus will bring science and technology to life using a hands-on exhibition, exciting science demonstrations and teacher workshops using everyday materials. After the tour, all equipment will be donated to our African partners for ongoing use – and ongoing impacts.

Our aim – Ongoing impacts for Africa

Science Circus Africa aims to make STEM – Science, Technology, Engineering and Maths – amazing for students, teachers and the community, inspire future careers and make learning fun. The project will develop African capacity to continue this work through training, building networks, and providing equipment and know-how.

This project is about Australia and Africa working together to create sustainable impacts – both for African youth, communities and science education, and for economic growth, industry and a country's capacity in STEM that drives this. Our African partners have been selected because they are all working towards big, long-term goals to deliver innovative science education for their countries; Science Circus Africa will be a step towards this.





Malawian trainees performing science shows during the pilot project

Alignment with African policy initiatives

The African Union's 2007 Addis Ababa Declaration on Science, Technology and Scientific Research for Development and the 2012 AU/UNESCO African Forum on Science, Technology and Innovation for Youth Employment, Human Capital Development and Inclusive Growth both advocated for improved education and greater promotion of study and careers in science, technology, engineering and math. These aims, shared by the AU and SCA, require ongoing efforts across the African continent.

Zambia

SCA is in line with the development agenda of Zambia as indicated in the Vision 2030 and the Sixth National Development Plan. Both policy documents emphasise human resource capacity building and the use of science, technology and innovation to address the development aspirations of the nation.

Malawi

Malawi's National Commission of Science and Technology's 2011-2015 strategic plan aims to promote 'science and technology awareness... and dissemination of relevant science and technology information' and 'development of science and technology human resources by building capacity in science and technology education' with a specific focus on women and youth. SCA will address these key strategic goals.

Botswana

Botswana's Revised National Policy on Education of 1994, the National Policy on Science, Technology and Innovation, and the National Human Resources Development Strategy 2009-2022, all highlight science and technology's critical importance. The Government founded the Botswana International University of Science and Technology, and its Pre University Academic Programmes - an SCA partner - to implement these policies.

Currently, these three countries have no science centres or ongoing informal science education programs.

*"A lack of publicized **science career opportunities** and recognized African **science role models** negatively impacts the ambitions of young Africans and has serious implications. By celebrating and demonstrating what can be achieved regardless of economic hardship, war, and gender, we can ensure a space that will nurture in young Africans ambitious aspirations in science."*

**Muza Gondwe,
Malawi Science
Centre Project**



Our African partners

Zambia

The Dūcere Foundation works with local governments and foundations to improve the quality of public education in Southern Africa. Innovative Dūcere initiatives move away from the global preoccupation with 'what' students learn to 'how' students learn. Dūcere Foundation focuses on the implementation of education by allocating our resources to our three programs: the School Improvement Program, the Dūcere Peace Centres and Dūcere Publishing.



Malawi

The Malawi Science Centre Project (MSCP) is aiming to establish the country's first science centre. Science Circus Africa will catalyse and lay groundwork to achieve this aim. In particular, the Circus and MSCP will support the overstretched Malawian education system and promote STEM careers and studies, addressing issues such as:

- Gender imbalance - Only 28% of tertiary students are female.
- Student performance - Less than 50% of students passed final exams in 2007.
- Tertiary education - Less than 1% of Malawians aged 18 to 23 are enrolled.

"The MSCP will enable visitors to engage with interactive science exhibits and experimentation where the hands-on experience of science and technology are coupled with fun and joy. Science Circus Africa will considerably assist us to achieve our aim of a permanent science centre."

- MSCP Steering Committee

Botswana

The Botswana International University of Science and Technology's (BIUST) Pre University Academic Programs aim to increase the numbers and skills of school students studying STEM at university. Currently STEM subjects are unpopular, with only 12% of students choosing them, of which about half lack the skills and knowledge to succeed at university. BIUST runs a range of projects for teachers and students to address this, however want to expand outreach and science centre based approaches - which is where the Circus will assist.

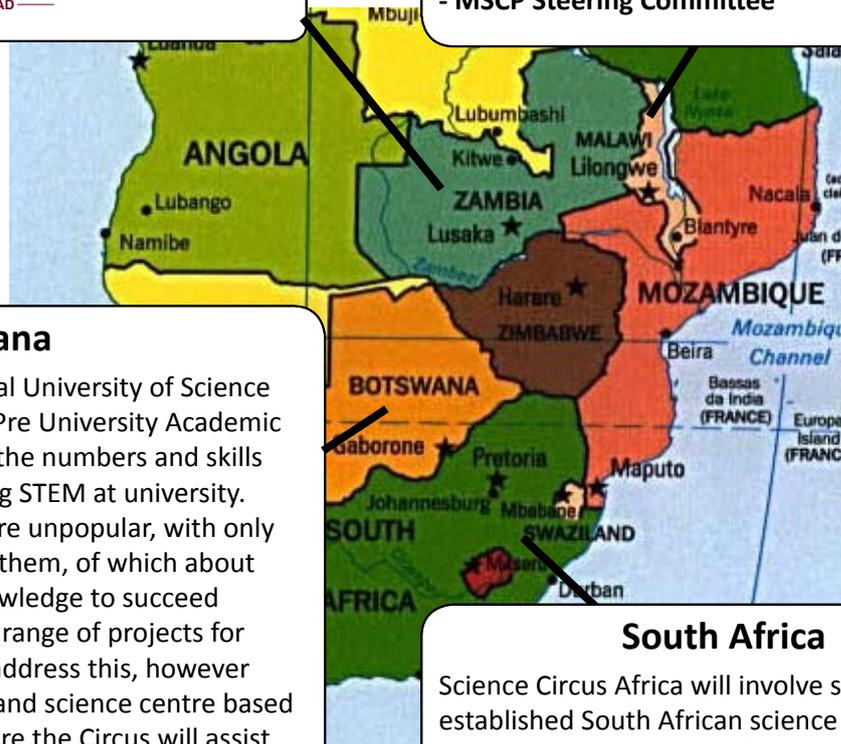


"Botswana is at infancy stage in the STEM arena. The unpopularity of mathematics and science in the general public and therefore in learners is an impediment that has to be conquered. Science Circus Africa is expected to bolster our efforts tremendously."

- Dr Haniso Motlhabane, Founding Director, Pre University Academic Programs (BIUST)

South Africa

Science Circus Africa will involve several established South African science centres, including the University of Zululand Science Centre, Scibono (Johannesburg) and the Cape Town Science Centre. These centres' involvement in previous science outreach and staff training projects and unique perspective on what works in the African context will provide crucial culturally-sensitive expertise to the project. The Circus will share successes and pitfalls from South Africa, which has established numerous science centres over the past two decades, to achieve the best results in our other Partner countries.



Program components

Science Circus Africa aims to show the fun in STEM, promote the careers and futures it can be part of, and – most critically – build capacity for STEM education and communication in countries where it is greatly needed. Major planned program components include:



Travelling exhibitions

Engaging, portable, interactive exhibits and training for local facilitators, including donation of sets of exhibits to our African partners to provide ongoing impact. DIY low-cost science exhibits will be made in Africa with local teams, allowing impacts to be sustained and spread.

Science shows

Exciting shows will bring the STEM curriculum to life with amazing demonstrations, audience participation and oodles of fun. Experienced international presenters will work closely with African colleagues, initially training and co-presenting shows before African presenters take centre stage. Sets of show equipment and scripts will be left in each country.



Teacher workshops

Inspiring workshops using everyday items to make science fascinating and hands-on for students, including donation of resource booklets to schools. Workshops have been piloted and will be further customised to address local needs and link to the country's school curriculum and teacher training colleges. International and African team members will work together, then as skills and confidence build local African staff will assume lead roles.

Building African capacity

We will create lasting, sustainable impacts through immersive training and mentoring for staff in each country, along with donation of resources and equipment. Our Partners will be 'twinned' with science centres around the world to provide ongoing support. This model is based on successful projects in South Africa over the past decade.



For Africa, with Africa

Working alongside our Partners and sponsors, the project will co-create content to address local needs, promote careers and study options relevant to each country, and closely involve our African partners in all aspects of the project - from planning, to delivery and into the future. It will build a network of informal STEM education across southern Africa and the globe.