

MEDIA STATEMENT

Nine science boffins represent South Africa at the Intel ISEF in the USA

Thursday, 18 May 2017: Nine of South Africa's brightest young scientists are representing the country at the Intel International Science and Engineering Fair (ISEF) in Los Angeles, California, USA. It is the world's largest pre-college science fair competition and scientific research event that is taking place from 14 – 19 May 2017.

The nine learners are top achievers handpicked by some of the country's top industry judges and experts at the 36th annual Eskom Expo for Young Scientists International Science Fair (ISF) in October last year. They are competing alongside more than 1700 learners from over 70 countries and regions for over \$4 million in awards. These include scholarships, high-end laptops, 3 grand prizes of \$50 000 and the top award of \$75 000.

Time is set aside for the learners to experience the host city for various tours and activities. As with the Eskom Expo, a significant component of the programme at Intel ISEF is social, as learners interact with each other during mixers and ceremonies. Throughout much of the week, various seminars are also held for students, mentors and teachers.

Below are details of the learners and their projects:

Name/s	Province	Project
Zamazimba Madi (F) and Jacqueline Janse van Rensburg (F)	Gauteng	The project aimed to show the impact of high pollution levels on bacterial diversity using three dams in the Gauteng region as a testing ground. The results found that bacterial diversity in these is inversely proportional to pollution levels which may lead to potentially pathogenic bacteria outcompeting more benign phylotypes (an environmental DNA sequence or group of sequences).

Reinier Scherman (M) and Berno Myburg (M)	Gauteng	The project aimed to address forklift manoeuvrability (in storage warehouses) through a modified drive system to increase efficiency. A prototype drive system was developed that can not only turn on point (which is not possible with conventional forklift drive systems) and has the capability to change the vehicle's position while maintaining the same orientation.
Farah Shaik (F)	KwaZulu-Natal	The project aimed to show the decreasing efficacy of sunscreen and to develop a novel product that would indicate this using the principle of photochromism. The application of this formulation may protect individuals from the harmful consequences of excessive sun exposure by alerting them as the sunscreen wears off.
Katinka Wilkinson (F)	Western Cape	The project researched the different methods of energy storage that could be used to replace a battery. A flywheel energy storage system utilising rotational kinetic energy was identified as the most promising candidate. The prototype was found to have relatively high efficiency. Tests showed that the device could deliver more than 80% of the stored kinetic energy into the resistor load
Anika Meyer (F)	Gauteng	The project aimed to determine if the roots, seeds and pollen of cycads (commonly referred to as "living fossils" because they date back to the age of dinosaurs) contain the neurotoxin methyl-amino-L-alanine (BMAA). Through a series of tests and analyses, the investigation found the presence of this toxin in the coralloid roots, seeds and especially the pollen of cycads may be very hazardous to our health if these are airborne inhaled over many years.

Bianka Reyneke (F)	Free State	The project sought to determine whether there is a link between the visual motor abilities of learners in pre-school and school performance later at high school, specifically in subjects like mathematics and science. The results of the study showed that the higher the perceptual motor abilities in learners at an earlier age, the higher the chance that these learners would have less difficulty with maths and science later on in their school careers.
Lawrence John van Staden (M)	Kwa Zulu-Natal	The project aimed to determine if a viable home-made nano-based symmetric double layer supercapacitor (SDLS) can drive an inductive load (motor) after a quick charge at a low voltage for a number of charge-discharge cycles. According to the results, the tested SDLS could drive the motor longer than the charging time for several charge-discharge cycles, proving the hypothesis correct.

“To represent South Africa on the world stage is a tremendous honour and privilege and our nine young scientists are well-deserving of this honour because they were our exceptional achievers last year. Their projects were selected because of how internationally competitive they are, therefore there is no doubt in my mind that they will return home with top honours,” says Parthy Chetty, Executive Director of the Eskom Expo for Young Scientists.

“Eskom is a world class energy provider and is proud to be the driving force behind the Eskom Expo for young scientists, which provides this fantastic platform for budding young scientists to thrive. The international competitiveness of our country lies in the hands of young scientists and innovators like these delegates going to compete in Los Angeles, USA,” says Thava Govender, Eskom Group Executive: Transmission and Acting Group Executive Sustainability & Risk.

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About the Eskom Expo for Young Scientists NPO

The Eskom Expo provides a platform for the learners to increase their awareness and knowledge of the wonders of science and also hopes to broaden their scientific horizons



and encourage them to pursue careers in the sciences by igniting a passion for innovation in science, technology, engineering and mathematics.

By the very nature of its activities, it is making a contribution to improving the scientific, technical and research skills of young people, and providing an excellent opportunity for teachers to engage in the type of activity promoted within the education curriculum. The Expo provides an ideal opportunity for both teachers and learners to develop skills in scientific project work.

Now in its 37th year, the Expo is endorsed by the Department of Public Enterprises, Department of Science and Technology, the Department of Basic Education and has also received recognition from the Presidency. It sees learners presenting their scientific research work to judges, professionals from the private sector, academics, scientists, and educators, learners from other schools, parents as well as other interested members from the general community.