

# Stellenbosch region 2012



*Our diligent regional judges*



*SU Faculty of Education's new Dean, Dr Maureen Robinson, addresses participants*



*Inspirational words from Anré Swart, an engineer at Eskom*



*Stellenbosch region's national finalists*

## **Introduction**

It is with gratitude that I can reflect on a successful expo year in the Stellenbosch region. It was once again a privilege to offer a platform where learners could showcase their creativity and research, and as committee we were once again pleasantly surprised to see the high level of research which some learners manage to achieve. It goes without saying that a successful Expo event is never possible without dedicated educators, judges that willingly give up their time, parents that support their children, and sponsors who share our desire to promote science. I want to specially thank each member of the Stellenbosch organising committee for being invaluable and reliable pillars of strength.

### **1. Sponsorship**

Without sponsors and donors it is impossible to run an exposition of good standard. For 2012 our sincere thanks go to the Het Jan Marais National Fund, Stellenbosch University, Tronox-Namakwa Sands, Eskom nationally, as well as Eskom in the Western Cape. A big thank to all who contributed towards this worthy cause!

### **2. Workshops**

Three workshops for teachers and learners were conducted – one in Lochnerhof Primary School in Strand, one in Stellenbosch at Ithemba labs, and one in Vredenburg at the Arcelor Mittal science centre. About 40 educators and 400 learners attended these sessions. Unfortunately these efforts did not really pay-off well as few of these new schools came on board.

One workshop was held for new and inexperienced judges. This was a fruitful endeavour as an unanticipated group of 21 people attended!

To give participants and teachers tips for upgrading and polishing, all projects chosen for the national competition were visited by one or another committee member. This refining process as we know is of crucial importance in the growth and development of learners' scientific thinking.

### **3. Regional Expo**

The regional competition was held on 23 and 24 August 2012 in Paul Roos Gymnasium's activity hall.

34 schools selected and entered their best projects, resulting in 229 projects (105 individual and 124 group projects) being exhibited by 351 participants. From these exhibitors 155 were in Gr 10 -12, 127 in Gr 8 – 9 and 69 in Gr 7. Learners younger than Gr 7 were allowed to enter the regional competition.

Three private schools, 7 urban schools, 15 peri-urban schools and 12 rural schools and were represented. Four schools took part for the very first time.

Only 35% of participants were male, the other 65% (naturally!) was female. Twenty one learners won gold medals, 43 silver and 54 bronze medals. Twenty four participants received special awards.

Eileen Theron won the Eskom prize for the best project by a girl participant, with her project on gastroenteritis as the main reason for children dying on farms in the Western Cape. Aletia Basson's project on sand mining in the Troe-Troe river near Vanrhynsdorp was Eskom's best development project. The project from Kaila Fourie where equal masses of white coal (compressed wood) and hard coal (anthracite) were burned and the heat energy released compared, won Eskom's best alternative energy prize. Eskom's award for energy efficiency went to An-Louise Engelbrecht and Chrisri Dyason. They concluded that a bottle full of water in the roof of an informal settlement home can save electricity and money.

There were 94 judges that sacrificed their time and energy to act as adjudicators. Every project was judged at least three times to come up with a well thought through, discussed final mark. This is of course always of paramount importance as judging is at the heart of every expo competition.



#### 4. South African International Science Fair

Twenty seven research projects by 37 participants out of 15 schools were selected as regional representatives for the national competition held from 4 to 6 October 2012 at the Birchwood centre in Boksburg. Like in the past it is regarded as important to select projects from as many schools and districts as possible.

Due to financial constraints it was decided to make use of a bus to get to Boksburg. At the same time an educational tour was planned to make the long, tedious trip worthwhile.

We started at ARC Infruitec-Nietvoorbij in Stellenbosch with interesting talks, demonstrations and hands-on sessions on soil science, micro-biology, the making of wine and tissue cultures. The Eskom Palmiet hydroelectric pump storage scheme near Grabouw was visited next. This power station is 2 km from the Kogelberg dam wall in the Palmiet River, and is regarded as a forerunner in environmental engineering.

Disappointment was inevitable when serious mechanical problems were experienced with the bus, as this prevented us from honouring an appointment in Kimberley where the Big hole, an underground mine tour and the historic mine town were waiting on us! A trip on the Gautrain and visit to Nelson Mandela square in Sandton compensated to an extent for the discomfort and frustration experienced during the bus trip. The educational tour was concluded with a visit to the Boyden observatory in Bloemfontein on our way back.



***A visit to ARC Infruitec-Nietvoorbij for a look at research in practice***



***The functioning of the Eskom Palmiet pump storage scheme in Grabouw was explained.***



***A trip on the Gautrain!***



***In awe of what technology makes possible - at the Boyden observatory in Bloemfontein***

| NATIONAL EXPO RESULTS 2012                   |  |    |   |  |
|--|--|----|---|--|
| Category                                     | Names  | Gr | Project title   | Award/s  |
| Agricultural Sciences                        | Marista Smith<br>Neline Burger               | 11 | Klim opi byeboerwa  | Silver medal   |
|  | Klara van der Walt                           | 12 | Erdwormreste: Tee of kompos?  | Silver medal   |
|  | Willem Walters                               | 10 | Lamhokstelsel bied vele voordele  |  |
| Chemistry                                    | Nerita Kluyts                                | 9  | Vlekvrye staal is nie vlekvy nie.   | Silver medal<br>Category prize - best Gr 8, 9<br>project in Chemistry      |
| Energy efficiency and<br>energy conservation | An-Louise<br>Engelbrecht                     | 10 | 'n Bottel vol lig.  | Bronze medal   |
| Energy: Alternative<br>and renewable         | Kaila Fourie                                 | 9  | Replacing coal with 'White coal' in<br>the Western Cape                                   | Gold medal<br>Special prize – “Exhibitors award”                           |
|  | Johan van der Merwe<br>Ernst Niewoudt        | 10 | Die gebruik van biogas in die huis  |  |
|  | Franco Esterhuizen                           | 9  | Maak lemme 'n verskil?  | Bronze medal   |
| Engineering -<br>Mechanical,                 | Werner Theron<br>Santoné Benn                | 11 | From peels to meals   | Silver medal   |
| Environmental<br>Management:                 | Aletia Basson                                | 8  | Die invloed van onwettige<br>sandmyne in die Troe-troe rivier.                            | Gold medal<br>Special prize: Junior<br>environmental prize from SAEON      |
|  | Cosima Babl                                  | 9  | Weeds be Gone   |  |
|  | Ashley Simpson<br>Nancy Cloete               | 9  | Ballast here, ballast there, ballast<br>almost everywhere                                 | Silver medal   |
|  | Genevia Ackers                               | 10 | Rook jy sal ons nie vernietig nie!!   |  |
| Environmental<br>Science                     | Lee-Ann Cloete<br>Mischa Carsten             | 11 | Miere ons bure!   | Bronze medal<br>Special prize: Senior<br>environment prize van SAEON       |
| Food Sciences, Food<br>Technology            | Yolandi Philander<br>Gerisca Smith           | 7  | Die uitwerking van ensieme in<br>vrugte.  | Silver medal   |
| Innovation and<br>Technology,                | Kiara De Jager<br>Alene Holder               | 9  | Vervang sand en klip in<br>sementstene met gemaalde glas                                  | Gold medal   |
|  | Elmarie Viljoen                              | 11 | Olie van plastiek   | Silver medal<br>Chosen to be considered for<br>international participation |
|  | Chané van der<br>Westhuizen<br>Robyn Collins | 10 | Tumble dryer saves oceans   | Gold medal   |
|  | Nasca Kriel<br>Willmaree Scheepers           | 9  | Koel, koeler klaskamers   | Silver medal   |
|  | Kalnisha Govender                            | 10 | Water storing crystals  | Bronze medal   |
| Mathematics and<br>Statistics                | Duan van Schalkwyk                           | 9  | Verbuikers val ver (of nie?): Huidige<br>ekonomiese krisis affekteer<br>bestedingspatrone | Bronze medal   |
| Medical Sciences -<br>Human Biology          | Maxine Smit<br>Loré Botha                    | 12 | Korttermyn geheue word verbeter<br>deur matige fisiese oefening voor<br>memoriserings     | Silver medal<br>Category prize : Best senior<br>Medical Sciences project   |
| Medical Sciences -<br>diseases               | Marian Liebenberg                            | 7  | For your eyes only  |  |
| Physics, Astronomy<br>and Space Science      | Megan de Vos                                 | 9  | How temperature affects the<br>elasticity of polybutadiene in<br>bouncy balls             | Gold medal<br>Chosen to be considered for<br>international participation   |
|  | Petria Butler                                | 9  | Laai of laat waai?  | Silver medal   |
|  | Sean Manas                                   | 10 | Kleur vs energie  |  |
|  | Anthea Boks                                  | 11 | Sorg “sneeuwit”vir ‘n koeler rit  |  |

## 5. Marketing

CD's with all the necessary info as well as info packs were sent out to invite schools in the wider Stellenbosch region to participate at regional level. The project guide books were put into the info packs and were distributed during training at workshops.

Three big banners with details were put up in Stellenbosch to invite visitors to attend the regional competition.

Local newspapers in the various districts of the Stellenbosch region published dates of the regional expo and prompted learners and teachers to become involved. After the regional and national competitions pictures of achievers were placed in the same newspapers again.

Blue Eskom Expo banners were also put up at Paul Roos Gymnasium where the regional competition was held.

## 6. International participation

Khumbulani Ntshidi and Abongile Hlaleleni were chosen to represent South Africa at the China Science Fair in Beijing, 21-27 March 2012. In their project they compared different batteries to determine whether more expensive batteries really lasted longer than less expensive ones. When asked what the trip meant to them, they answered that "an experience like that cannot be put in words"! During the regional competition they did however share their China experience with the 2012 expo participants.

## 7. General

I want to thank Priscilla, Rancia and the Eskom Expo board of directors for their strategic and supportive roles. Your guidance and care meant a lot to us at regional level; we cannot do it without you!



7 December 2012

Regional science fair director, Stellenbosch