



## Project A @ Osizweni

Osizweni is elated to announce the rollout of yet another educational initiative dubbed *Project A*. This is a three-year program that enrolls top Mathematics and Science learners at Grade 10-12 from Embalenhle secondary schools. A total of 90 students, with 30 in each grade, from *Thomas Nhlabathi, Kusasaletu, KiriyaSwane, Sizwakele* and *Osizweni Secondary* are currently enrolled for the 2011 academic year. Learners are selected for enrollment in the program on the basis of their performance by participating schools.

Learners in the program receive intensive and continuous academic support from grade 10 in the first year through to Grade 12 through a range of activities and programs including workshops, hands-on science experiments, computer-based tutorials, industry visits, science camps, educational tours, computer literacy, life skills and career guidance.

Activities usually take place outside of school hours and during school holidays. Classes are conducted and coordinated by highly qualified and competent Osizweni staff members.

Learners in the program will also have opportunities to interact with engineers at Sasol and professionals from other industries and institutions of higher learning.

As the name aptly refers, the program will ensure that a cohort of 30 learners will exit the school system at Grade 12 with A-symbols in Mathematics and Science annually.

Grade 12 learners in the program will also be assisted with applications for bursaries and admission to universities, thus ensuring that each of them will be able to realize their dreams.

*Angela Ford*

# The Big Bang at ArcelorMittal Science Centre.



From l to r: Nchabu Mokoloane, Kwekwe Lisene, Bongane Bolebo, Mr Assistance Mushudulu (Executive Mayor, Sedibeng Municipality, Sedibeng West), Ms Maggie Mopedi (ArcelorMittal Gauteng Corporate Responsibility Manager), Mannini Mohlamme, Mrs Alinah Masobela (Project Co-ordinator, ArcelorMittal Science Centre), Mr. Jerry Bhagaloo (District director, Department of Education), Sibongile Radebe, Keitumetse Motloung and Mr Peters (Procurement officer, ArcelorMittal South Africa)

The year 2011 started on a high note for ArcelorMittal Science Centre staff and learners. Management was there to help the learners celebrate the fruits of their hard work. About nine of the centres 2010 matriculants obtained distinctions in mathematics, physical science and life science and many others were able to obtain above average results in the same category of subjects.

The physical science educators at the centre said they were not surprised about these results, because from day one they recognized the eagerness in these learners to excel in their work, despite daily challenges most face from their homes and communities.

AcelorMittal South Africa was able to provide the bursaries for those young intellects who had their minds set on engineering-related studies at reputable higher institutions. This prestigious award ceremony took place at the Department of Education (d8), where six students were awarded bursaries worth R500 000 each, in different fields of engineering, to study for four years at universities of their choice. Another fifteen learners were given full course bursaries worth R47 000, per year, for all engineering fields, at universities of technology. An additional eight were funded for BSc Information Technology at Belgium College. Many others who were not admitted to any higher institutions and/or had average performance were encouraged to apply for diverse learnership programmes at ArcelorMittal South Africa - some of them are already undergoing fitness and medical tests.

## Article published in Cape Argus on Wednesday 23 February 2011 Written by Neo Maditla Picture by Matthew Jordaan

THE CAPE Town Science Centre's staff are carrying on with science workshops across the province even though the centre's future remains uncertain.

The centre, formerly known as the MTN Sciencentre, faces closure after its 10-year sponsorship agreement with the cellphone service provider came to an end late last year. Keen to see the centre's doors remain open, the LeadSA initiative, driven by Independent Newspapers and Primedia Broadcasting, this month launched a campaign to raise public awareness of the importance of having a science centre in the city. A decision about its future will be made at the end of next month.

In the meantime, the centre's facilitators visited Thandokulu High School in Mowbray on Tuesday 22 February as part of their Public Understanding of Biotechnology (PUB) programme. They presented a workshop on genetically modified organisms (GMOs), a subject in the biotechnological field that they had not previously explored.

Amy Louw, one of the facilitators, said that they were targeting Grade 9 pupils. "At the end of the year they will be asked to choose subjects that they will study until matric. We hope to encourage them to choose science, as the number of pupils opting to study science has been dropping."

At Thandokulu, the pupils did hands-on DNA extraction, had a GMO discussion and participated in a card game and quiz.

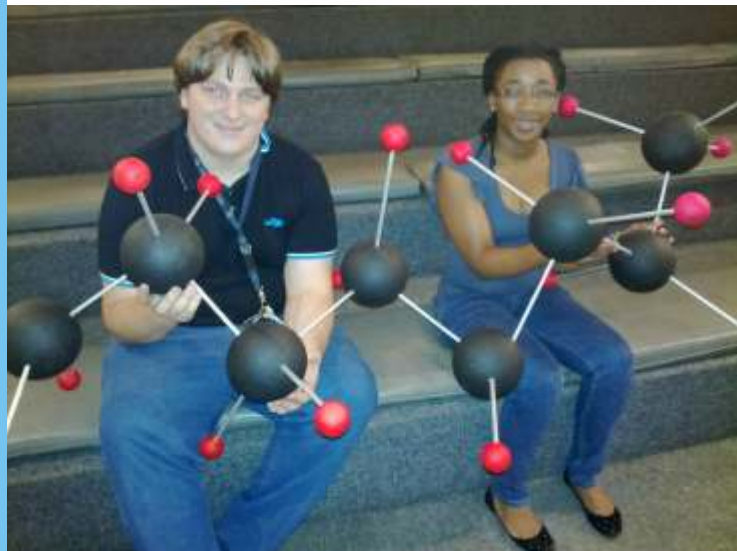


Kevin Cloete, who is at the University of the Western Cape and works in the field of biotechnology, also spoke to the pupils.

Another facilitator, Fikiswa Majola, said they wanted the pupils to understand that "a scientist is not some old man with glasses and bubbling test tubes". "There is more to science than chemistry. We are trying to show that science is really cool." Majola encouraged teachers to invite the science centre staff to their schools. "Our services are free of charge for public schools, while there is a fee for private schools. Teachers can book us and tell us what they would like us to teach and we will come," Majola said.

Lelethu Norushu, 14, and Siphosethu Raka, 16, were among the pupils who took part in yesterday's workshop. They said they most enjoyed extracting DNA and learning about how genetically modifying crops could help them grow in areas which were previously unsuitable. "I am glad to know that I can apply the science I learnt in school for other stuff, like food and growing crops," Lelethu said.

# Chemically Curie-ous!



**Above: Marty Schwartz and Bongive Nzama holding the Octane (petrol) molecule.**

**Below: The urea molecule! According to Derek Fish - they shall be hanging it on the toilet wall at the Science Centre!**



For the majority of the public the image of chemistry is one of a lab filled with colourful and toxic chemicals, placed in a maze of strange looking glass apparatus. Seldom is this vital and vibrant branch of science given more recognition. Truth be told, when one plans to truly find out what in the world is chemistry you will most certainly come to conclusion of what in the world is NOT chemistry!

The United Nations has commemorated 2011 to be the International Year of Chemistry (IYC) in recognition of the "achievements of chemistry and its contributions to the well-being of humankind." It would be hard to think of a better example of this than Marie Curie who no less than 100 years ago was awarded with a Nobel Prize in Chemistry in 1911, being the first person ever to be awarded a second Nobel Prize, the first being for physics in 1903 which she shared with her husband and Henri Becquerel, being also the first woman to ever receive a Nobel Prize in Physics. She, together with her husband Pierre Curie, also discovered the elements radium and polonium. After her death in 1934 the element curium was named in her and her husbands honor.

In light of this momentous year, the UNIZUL Science Centre will be joining the rest of the world in spreading the gospel of chemistry and honouring the memory of Marie Curie. An explosive chemistry science show will be presented for schools to come and watch from July August 2011. The UNIZUL Science Centre will also be taking part once again in the National Science Week this year which plans to highlight the role of chemistry in the economy of Richards Bay as well as hosting a Marie Curie Day which serves to empower young woman into the fields of science. We invite all schools both local and abroad to come and visit us and join in the chemical celebrations.

*Marty Schwartz*  
Chemistry Team Leader: UNIZUL Science Centre



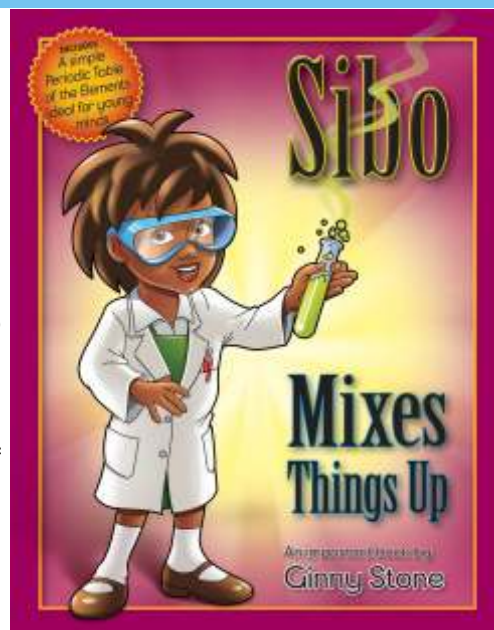
*Students Mxolisi Mthembu, Sandile Mhlongo, and Ayanda Nxumalo were sent to the UK by Unizul in 2009 - seen here with the Headmaster Mr VJ Hlatshwayo of Tholokuhke High School (right) and teacher, Xolani Manqe (left).*



*Mxolisi and Ayanda - full of smiles as they have just received substantial bursaries for tertiary study from BHP Billiton!*



For those at the SAASTEC conference who might have listened to Ginny Stone's talk - here it is! In celebration of International Year of Chemistry... "Sibo Mixes Things Up".



[Http://www.sibo.co.za](http://www.sibo.co.za) for more info

# HELP!

Needed by our  
newest  
SAASTEC  
Member

## VOORTREKKER / MSUNDUZI MUSEUM

Dear Colleagues

Warm greetings to you all! I met some of you at last year's SAASTEC Conference, and was impressed and heartened by the offers of advice and help with our new 'Discovery Centre' from a lot of people.

We are making good progress with our plans, and have decided to focus on 'Sound' and 'Movement' (ie 'Music and Dance') in line with the Museum's core functions. This is a cultural history museum, and most of us are either Anthropologists or historians, so you can imagine - this is quite a daunting task- we are soon 'scientifically' challenged!

However, I would like to ask anyone who has advice / old equipment / ideas - whatever - please let me know, because we will be finalising our plans soon, and will start calling for quotes etc within the next month.

Thank you, and I look forward to hearing from some of you!

Kind regards

Riana Mulder

HOD: Education, Liaison and Outreach Projects

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6th SCIENCE CENTRE  
WORLD CONGRESS  
CAPE TOWN, SOUTH AFRICA 2011

*Science Across Cultures*

## 6SCWC REGISTRATION – NOW OPEN

6SCWC registration is open, with discounts for early registrations and delegates from countries with a low gross national income (GNI) - this includes SA.

### **EARLY / STANDARD / LATE / DISCOUNTED REGISTRATION FEES INCLUDE:**

- All sessions and congress materials
- 2 tea breaks and lunch on congress days
- Congress Opening Session (5 Sept)
- Welcome Reception (4 Sept) & Gala Dinner (7 Sept)
- Evening excursions to Cape Town museums or science centres (5 and 6 Sept)

### **ACCOMPANYING PERSON PACKAGE INCLUDES:**

- Congress Opening Session (5 Sept)
- Welcome Reception (4 Sept) & Gala Dinner (7 Sept)
- Evening excursions to Cape Town museums or science centres (5 and 6 Sept)
- 2 City Sightseeing Day Tours

Accommodation at the designated congress hotels can also be booked through the registration process.

For more info: <http://www.6scwc.org>

## Mangaung Youth Empowerment Day & Career Expo for Grade 10,11 & 12

Don't miss the biggest opportunity to interact and empower young entrepreneurs from Bloemfontein, Botshabelo and Thabamochu during the 2011 Mangaung Youth Empowerment Day scheduled on the 15<sup>th</sup> of April 2011.

There are about 200 local based SMMES expected to attend the events and National ministers from different portfolios will also be interacting with businesses.

The Minister of Mineral Resources, Ms Susan Shabangu, MP will empower young people with new opportunities in mining while other invited Ministers will interact with all exhibitors and young entrepreneurs in various sessions scheduled on the day. Young women in business will also interact in a session with stakeholders from the National government to the local Municipality.

Please remember the career expos on the 13 and 14 of April 2011 where learners from the Mangaung and Xhariep areas will be looking for information on various fields of study, bursary, internship and knowing more about your institution and industry.

You can also reach many learners and educators through the Careers and Bursaries handbook for Free State learners. (Closing date for Advert : 20-03-2011)

We therefore look forward to your participation. Do not hesitate to contact us for further information 074 123 3647 / 071 406 6412

**BOORCHAT**

offers warm congratulations to  
*Mike Bruton*

Author of *Great South African Inventions*  
published by *Sanjiva, Durban, KwaZulu*

on being selected as one of

*"Bookchat's Books of the Year"*

2010

Jay Heale - founder - editor

Bookchat magazine 1976-1997

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Congratulations to Mike Bruton (and publishers) who received a certificate from Jay Heale's Bookchat for his book "**Great South African Inventions**" which was selected as one of Bookchat's Books of the Year for 2010.

**Way to go Mike!**



*DIFS students orientated in the JLB Smith Collection Management Centre*

## Stargazing with the Old Mutual-MTN ScienCentre: "Awesome Astronomy"

By Kershnee Naidoo

Admit it, at some stage, we have all gazed up at the sky wondering, "What is out there?" followed by our wild imaginations taking us on trips to the moon or other planets. Thanks to astronomers and astronauts alike, we now have an overwhelming amount of knowledge of what lies beyond our 'third rock from the sun.' During February's "Awesome Astronomy" month, at the Old Mutual-MTN ScienCentre, over 6000 sponsored learners from previously disadvantaged schools around Kwazulu Natal were able to learn more about our solar system and planet after realizing, they too can become star observers when they look up at the sky.

To begin their astronomical adventure, learners ventured into our 50 seater domed planetarium to find out what it would be like to live on a lunar space colony in 2081 and only be able to admire the marble-blue Earth but never been able to go there. "Earth's Wild Ride" explores our planet, from the moon, highlighting unique natural phenomena like volcanoes and when dinosaurs once roamed freely. Learners thoroughly enjoyed the amazing "ride" as they learnt more about our planet from a different perspective that was quite literally, out of this world!

Gravity sucks and in the case of Earth, it also contributed to the formation of our planet's layers. Learners utilized their molding skills as they created and labeled models of Earth's four layers and then learnt what makes up each layer. Expanding from our planet, the next workshop activity used different sized balls to represent the planets in our solar system. First arranging the planets in decreasing size and then, using a scale, in the correct order and distance from the sun, learners were enlightened on the gas giants and satellites. Who said maths can't be fun? In the last activity, planetary orbits and distances from the sun explained why learners would have a different age on other planets. Using this knowledge and some formulas, they eagerly calculated their "New Age" on these distant planets.

Our "Lost in Space" and "Space Quest" astronomy-based word search and crossword puzzles, were a fitting end to this outer-world journey. The young astronomers put on a stellar performance as the planetary teams competed to answer general astronomy questions, based on the "Awesome Astronomy" programme, in the "Buzz Lightyear Oral Quiz." The winners, with the highest number of star-points, earned their team some radical prizes!

This programme was aided by the sponsorship of Department of Science and Technology, making it possible to take the minds of learners from 126 primary schools, (in the words of Buzz Lightyear) "to infinity and beyond!"

## SAIAB welcomes Rhodes DIFS students.

On the 7<sup>th</sup> of February 2010, the South African Institute for Aquatic Biodiversity (SAIAB) welcomed six honours students from the Rhodes University Department of Ichthyology and Fishery Science (DIFS). DIFS students regularly utilize the library and laboratory facilities available at SAIAB.

As an introduction, a short video was played in an effort to help them understand the institution and get a 'feel' for SAIAB's aim, mission and vision. Professor Paul Skelton welcomed the students on behalf of the institution and wished them good luck for the upcoming year.

They were further orientated around the Margaret Smith Library and JLB Smith Collection Management Centre as these are the areas within the institution which they will use regularly.

SAIAB is an Associated Institute of Rhodes University and works closely with the DIFS. This relationship has been maintained since 1981 when DIFS used the facilities of the JLB Smith Institute of Ichthyology, now known as SAIAB, for lectures. "SAIAB and DIFS maintain strong ties with researchers supervising students from DIFS and sharing the library facilities," said SAIAB's Science Advancement Coordinator, Vanessa Rouhani.

DIFS honours student, Kerthu Shipoke, who comes from Namibia, is hoping to learn a lot from SAIAB and is very impressed with the amount of research the institute has undertaken. Another student, Roy Bealey, shares Shipoke's sentiments and plans to advance his studies through to Masters level.

## "This is for you; all science learners in Embalenhle."

This year, *Osizweni Education & Development Centre* will bring the much needed 'After-Care Assistance' to the doorsteps of Mathematics and Science learners in Embalenhle. Implemented in partnership with the *Embalenhle Library*, this program, dubbed **MST After-Care**, will cater for the needs of Grade 8-12 learners, assisting them with challenges related to homework, assignments, projects and related academic challenges in Mathematics and Science.

Learners will be able to interact and consult with Osizweni staff members, science graduates and student fellows from Monday - Thursday at the library auditorium; who will attend to their individual learning problems and assist with homework and assignments. The program has been introduced in response to the enormity of support that learners must get in order for them to succeed in these critical subjects. Whilst it is not meant to replace the support and assistance that parents must provide towards their kids' studies, the program was initiated in acknowledgement of the fact that not all parents are able to provide this crucial support to their children. It is therefore envisaged that the program will go a long way in improving learner performance in local schools, especially in science, which is a National priority.

This service will be provided at no cost to learners. All what learners need to do is to make their way to the Embalenhle Library from 14:00 - 17:00, Monday - Thursday, where a competent and dedicated *MST After-Care* team will be waiting to assist them. This new addition to Osizweni's platter of MST (Math, Science & Technology) education programmes will undoubtedly see the organization live up to its motto: "*Inspiring tomorrow's scientists*".

Established in 1991, Osizweni is a Sasol supported initiative whose mandate is to support learning and teaching in Mathematics, Science & Technology.

For more information about the project please contact *Dr. Rufus Wesiat* 017 689 1292 or *Rose Thugwana* at the Embalenhle library.

# Spotlight on Women in Physics

The worldwide shortage of women in physics will come under the spotlight at the 4th International Conference on Women in Physics (ICWIP) to be held from 5-8 April 2011 in Stellenbosch. The conference will also celebrate the diverse contribution of women around the globe to this field. More than 200 physicists from about 50 countries will attend this event. South Africa's Minister for Science and Technology, Ms Naledi Pandor, will open the conference on 5 April 2011.

"Physics is a wonderfully stimulating profession it needs women and women need physics," says Professor Diane Grayson of the University of Pretoria, programme chair for the conference. "We must use this conference to highlight the exciting career paths that physics offers to women and remind people of the key role that physics play in our everyday lives and in many other professions including engineering, medicine, telecommunications, environmental sciences and more!"



Professor Grayson points out that there is still a huge gender gap in physics in South Africa. "Far fewer women than men qualify as physicists and even fewer fill top academic positions in the field." In 2010, all heads of university physics departments in South Africa were men, and only 24% of all the physics graduates were women. "This conference is an opportunity to explore why South Africa has so few women physicists and to look for solutions, drawing on the perspectives of participants from dozens of countries," she adds.

Women from around the globe, including many from African countries, will debate the impact and success rate of different educational models, role model initiatives and out-of-school activities in attracting girls to physics. Another key topic on the agenda will be how to recruit and retain female physicists via a supportive culture which often turns out to be more acceptable to all staff, regardless of gender. Delegates will share best practice examples of the kind of professional development that will significantly help female physicists to overcome obstacles in their careers.



"We believe in starting young by making physics appealing to girls at school," says Mmantsae Diale, a physics lecturer at the University of Pretoria and chair of Women in Physics in South Africa (WiPiSA) an organisation that works to attract girls to physics by providing role models and mentors for girls and female students.

"It is also vitally important that teachers must give a clear message to girls that physics is relevant and accessible to them, and that it is not only for boys," Diale adds.

## There are several renowned female physicists on the ICWIP 2011 programme, including:

- Dame Jocelyn Bell-Burnell, the British astrophysicist who first discovered pulsars (rapidly rotating stars) in 1967. Her talk at the conference will focus on pulsars and extreme physics.
- Professor Cecilia Jarlskog, a Swedish scientist who found a relationship between the mass of an electron and the mass of a quark (the most fundamental particles of matter). She chaired the Nobel Committee for Physics from 1989 to 2000. At the conference in April, she will talk about the universe and its smallest constituents mysteries in particle physics.
- Professor YanLai Yan, a physicist from the People's Republic of China, and winner of the prestigious Xie Xi-De Prize for physics. Her talk will be about how physics is involved in ancient Chinese chime-bells.

Another highlight of the conference will be a fun presentation by UK physicist Ann Marks, MBE, who is recognised for her contribution to physics education and outreach. In 2007, she was awarded Membership of the Order of the British Empire for her services to physics. She will demonstrate singing rods, straw oboes and other physics activities using items commonly found around the home from coat hangers to musical boxes.

## ABOUT THE CONFERENCE

The conference is hosted by Women in Physics in South Africa, in partnership with the South African Institute of Physics. It takes place under the auspices of the international Working Group on Women in Physics, which falls under the International Union of Pure and Applied Physics. South Africa's Department of Science and Technology is the main funder of the event.

*Issued by Marina Joubert, Southern Science, on behalf of the organisers of the 4th International Conference on Women in Physics.*



# Vive la France!

By Anja  
Fourie



Scifest Africa, in collaboration with representatives of Planète Sciences in France and teachers at the Français Lycée Jules Verne in Johannesburg, have been challenging educators and science centre facilitators with their hands-on Robotics and Micro-Rocket Educator Workshops sponsored by the Embassy of France.

The workshops, developed by Christophe Scicluna of Planète Sciences, and perfected by Scicluna and teachers at the Français Lycée Jules Verne during Scifest Africa and the school's science club activities, teach educators and facilitators how to present the workshops in their own school or science centre.

The Robotics workshops were presented by Scicluna at Sci-Bono Discovery Centre in Johannesburg, the Cape Academy of Mathematics, Science and Technology in Cape Town, and Rhodes University in Grahamstown, and had participants building robots using simple objects like cardboard, wires, a lunchbox and switches, in preparation for the national Afrobot Competition to be hosted at Scifest Africa 2011.

Piet Boshoff, an educator from Oude Molen Technical High School in Pinelands, said he found the workshop inspiring. "I like that I can now teach my learners how to use little things around them to make something new."

The Micro-Rocket Educator Workshops had teachers and familiar faces in the science centre community playing like children, as micro-rockets were built, tested and launched at the Français Lycée Jules Verne in Johannesburg.

Scicluna, an engineer who facilitated the workshops on behalf of Planète Sciences and the Embassy of France, said the workshops aimed to inspire educators and learners. "We want to show learners that science is not complicated, but fun, and can be practiced using everyday materials."

Science centres, educators or parents who would like more information about the workshops, or would like to participate in the Afrobot Competition, are welcome to contact Scifest Africa on 046 603 1106.

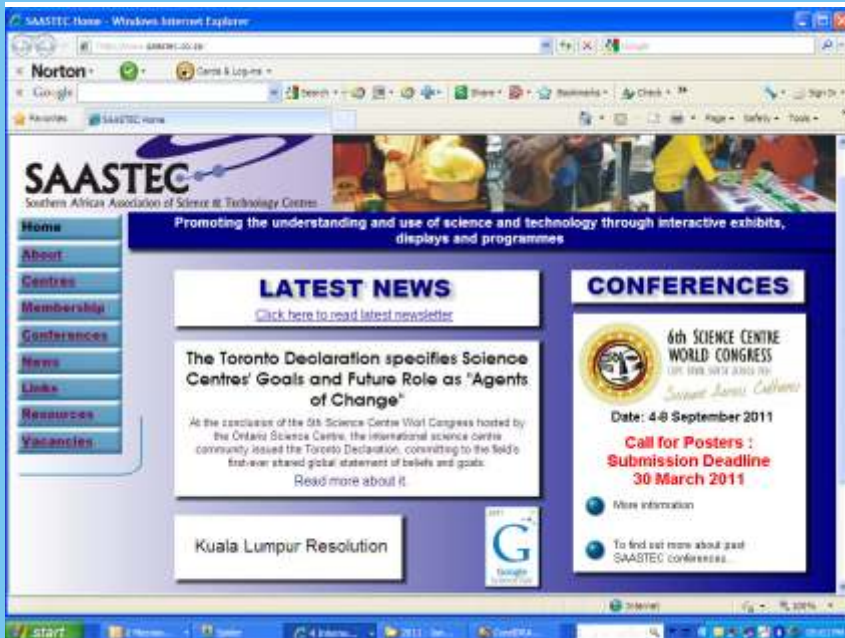
**Top:**

***"This is how it's done." Bafedile Kgwadi of SAASTA shows the boys how to build a robot.***

**Left:**

***Rufus Wesi of the Osizweni Education and Development Centre (centre) adds the nose cone to his team's micro-rocket, while Sharon Mashau of SAASTA (left) and Bafana Mavuso of ArcelorMittal Science Centre offer advice.***





The SAASSTEC Website has been totally revamped - have a look at: <http://www.saastec.co.za>

If you have vacancies at your centres - send them in - you'll note there is now a page for vacancies. Free advertising that directly hits the target market! If you have any resources - or interesting links to resources that you do not mind sharing with other science centres, please do send them in. We also now offer a HELP desk!

If you don't have a web presence - SAASSTEC can host one for you.

Check that your link works and if you have any changes or updates - contact Ginny: [squigglez@telkomsa.net](mailto:squigglez@telkomsa.net)

[Http://www.saastec.co.za](http://www.saastec.co.za)

**South West Indian Ocean Fisheries Project (SWIOFP)** cruise and workshop. SWIOFP is implemented by the World Bank and is one of a trio of projects linked to [Global Environment Facility \(GEF\)](#) supported projects. The other two projects are the West Indian Ocean Land Based Sources of Pollution (WIOLaB) Project implemented by the [United Nations Environment Programme \(UNEP\)](#) and the [Agulhas & Somali Current Large Marine Ecosystem Project \(ASCLME\)](#) implemented by the [United Nations Development Programme \(UNDP\)](#). SAIAB plays an important role in all three projects.



From left are: Julian Badcock from the Natural History Museum in London, England and Vladimir Laptikhovskiy from Falkland Islands Government Fisheries Department identifying fish



DST/NRF intern based at SAIAB, Khanyisile Ngomane measuring and labelling specimens.

## Conference Reminders



6th SCIENCE CENTRE  
WORLD CONGRESS  
CAPE TOWN, SOUTH AFRICA 2011  
*Science Across Cultures*

**4-8 September 2011**

**Call for Posters : Submission Deadline**  
30 March 2011

For more info: <http://www.6scwc.org>

**SAASSTEC Newsletter**  
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