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National Research Foundation

Komodo Dragons

puffing away on African soil

The National Zoological Gardens of South Africa in Pretoria now also boasts a breeding pair of Komodo dragons from the Surabaya Zoo in Indonesia.

Executive Director, Willie Labuschagne says this is the culmination of many months of intricate planning and negotiations.

"The arrival of these Komodo dragons has been long in the making and included some high level negotiations. We are pleased that these animals have arrived safely."

Highlighting the importance of zoos in promoting worldwide biodiversity, Willie says zoos and aquaria are pre-eminently suited to emphasise the global aspects of conservation.

"Scientific knowledge of the interconnections of all life systems and habitats has greatly increased in the last few years. Conservation is not only a matter of saving species and habitats, but to be successful, cooperation and a global approach is essential. Zoos and aquaria, because they care for, and have the expertise in collections of living animals from around the world and because of their global network, can play a major role in promoting conservation on a global scale."

The Ambassador of the Republic of Indonesia to South Africa, His Excellency Mr Sugeng Rahardjo, says it is an honour for the Indonesian government to be involved in such an eventful occasion.

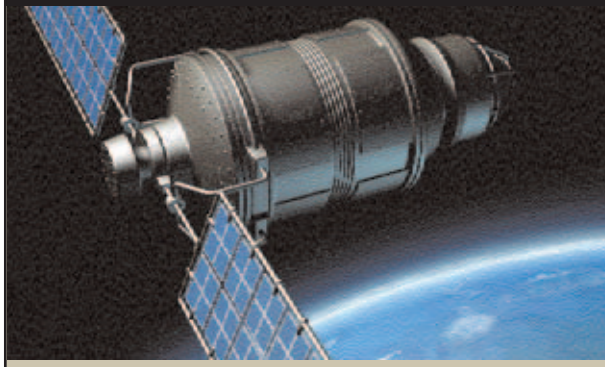
"We are proud to be associated with the National Zoological Gardens of South Africa in facilitating the arrival of these animals. Komodo dragons are protected under law by the President of Indonesia and we are honoured to have them housed in South Africa. Their presence will enable South Africans to acquire knowledge about these endangered species, and can build people-to-people contact between both nations."

In 2005 Willie visited Indonesia where he signed a cooperation agreement with his Surabaya Zoo colleague, sealing the deal on the exchange of animals. The National Zoo will make two cheetahs available to the Surabaya Zoo for their animal collection. South African President Thabo Mbeki and his Indonesian counterpart, President Susilo Bambang Yudhoyono, witnessed the signing of this memorandum of agreement.

This pair of Komodo dragons is the only one on the African continent. The giant reptiles will now be allowed to acclimatise to South African zoo conditions and will be on display to the general public from 20 March 2006.

The NZG's dragons and monsters display, where the Komodo dragons will be the focal point, also houses the Nile monitor, White-throated monitor, Malay water monitor, Bearded dragon, Beaded lizard, Green iguana, Rhinoceros iguana, Giant-plated lizard and some Snapping turtles.

Content



From page 1

Komodo facts

There are only an estimated 2 800 Komodo dragons left in the wilds of the Komodo and Rinca islands, off the coast of Indonesia. They have thus been declared a national treasure by the Indonesian government, protected by order of the President. The remaining wild dragons are kept safe from human destruction in patrolled reserves.

A Komodo dragon's mouth is filled with a poisonous bacteria caused by rotting food fragments lodged between its serrated teeth, making it extremely dangerous. Should prey escape its powerful grasp it will die within a few days from infection in the bite wound. Its saliva contains four deadly strains of bacteria that are capable of causing severe blood poisoning.

A Komodo dragon can eat as much as 80 per cent of its own body mass in one sitting – the equivalent of a 95 kg person eating 76 kg of food at one time!

Southern Africa unites to meet environmental needs

Delegates attending the 3rd ELTOSA meeting at Mangochi, Malawi, August 2005.

THE ENVIRONMENTAL Long-Term Observatories of Southern Africa (ELTOSA) recently met in Malawi to ensure environmental sustainability in the region.

ELTOSA is a network of southern African countries embarking on environmental research and monitoring programmes to deliver time-series datasets. A feather in South Africa's cap is that the South African Environmental Observation Network (SAEON) was elected chair of ELTOSA at the Malawi meeting, a two-year position that Johan Pauw will occupy in his capacity as the Head of SAEON.

Johan says ELTOSA's mission is to provide a facilitating regional forum for the national networks and to create synergy among them.

"It aims to overcome the inadequacies of short-term small-scale ecological research. Furthermore, it aims to create sufficient critical mass in terms of intellectual and infrastructural capacity that will support and inform environmental policy making on the sub-continent.

"The meeting was an appropriate forum to forge links with SAEON's southern African counterparts. It also gave us the opportunity to present our work and progress to other ELTOSA members."

In particular the participation of the Executive Coordinator of International Long-Term Environmental Research (ILTER), Holly Kaufman was beneficial as she is compiling a strategic plan that will be presented at the unit's meeting later this year. To reinforce her understanding of Africa's unique circumstances, she also visited the SAEON Ndlovu Node in the Lowveld and the Gobabeb Research and Training Institute in Namibia.

"As ILTER is currently considering making a special effort to support ELTOSA countries, the strategic value of her understanding of the African environment and socio-economic issues will do much to promote the ELTOSA cause," says Johan.

Presentations by young scientists from Malawi reflected an understanding of the need for long-term environmental research in the country and the fact that there are already a few related projects in place.

"Malawian scientists very seldom have the opportunity to attend and present at a conference, and the fact that this conference was held in their own country was a unique opportunity for them to participate."

Johan says site visits to Liwonde National Park and Lake Malawi highlighted the pressures put on the environment by the struggling people of Malawi.

SAEON's Johan Pauw, newly appointed ELTOSA Chairman.

"Liwonde stands in great contrast to its surrounding areas where people have to make do with minimal resources. Lake Malawi is severely affected by siltation caused by the rampant erosion in the catchments where cultivation has to be performed on steep slopes. Overfishing is clearly leading to a drop in the size of the catch and the specimens caught. A worrying side-effect is a related drop in tourism," he says.

Dr Dave Balfour, manager of the SAEON Ndlovu Node and Barney Kgope, environmental change researcher based at the South African National Biodiversity Institute, the designated host of the SAEON Fynbos Node, also attended the meeting.

Dave says the networking opportunities were great and was impressed by the levels of commitment and common sense of purpose.

"I hope to make Ndlovu Node an example for others to follow and learn from either by example or through reciprocal visits by staff and students," he says.

Johan says the conference definitely promoted professional relationships between representatives of member states, in particular enthusing the Malawian environmental science and governance community. The mix of young and old contributed to the overall success of the conference.

The draft strategy and constitution for ELTOSA co-authored by Johan were finalised and unanimously accepted by the ELTOSA Annual General Meeting.

The new educator at the **SAEON Ndlovu Node**

JOE SIBIYA is the new environmental science outreach officer at the South African Environmental Observation Network's (SAEON's) Ndlovu Node.

His responsibilities include the development and implementation of a plan of extracurricular environmental science for learners from grades 9 to 12, as well as a plan to develop science educators.

Joe has over ten years experience as a high school teacher in biology, over five years active involvement in the Programme for Technological Careers and has worked in the commercial sector. He is actively involved in community affairs in both Lulekani, his home in Ba-Phalaborwa, as well as more widely in the Lowveld extending as far as Bushbuck Ridge. He is also an honorary ranger of the Kruger National Park.

Elephants are one of the immediate and important drivers of environmental change in the park. As SAEON is involved in monitoring environmental change as well as promoting the drivers of this change, Node Manager Dr Dave Balfour has been involved in assisting scientific services staff in developing the monitoring and research programmes focused on the elephant population in the park. Joe's involvement in the park will thus also benefit SAEON's role in this regard.

Joe Sibiya of the SAEON Ndlovu Node.

First-ever summit for **SAEON**

THE SOUTH AFRICAN Environmental Observation Network (SAEON) will host its first-ever biennial summit in March.

Head of SAEON Johan Pauw says the objective of the summit is to provide a forum for stakeholders to contribute to a core earth observation science plan. Strategies and implementation plans to serve as a baseline for SAEON's core function of environmental observation will also be debated.

"Two major challenges – a comprehensive information management system and an education outreach programme – will also be addressed. This summit will differ from other scientific conferences in that it will be focused on observation science rather than research," he says.

The first day will focus on a range of topics aimed at reviewing the status of local earth observation and environmental monitoring systems, information management systems and environmental science education. On the next day parallel workshops will debate these topics, followed by a plenary report-back session.

▶ The full programme and more information on the summit to be held in Gauteng from 26-28 March is available on SAEON's summit web page on www.saeon.ac.za/summit/

What is **space physics?**

SPACE PHYSICS is the study of ionised gases of the solar-terrestrial environment and their interaction with the electric and magnetic fields of the earth and the sun, among others as it applies to improving our understanding and prediction of space weather.

Space weather is having an increasing impact on society. The main research questions concerns the relationships between geospace phenomena and their heliospheric drivers, like the understanding of how the near-earth space environment – atmosphere, ionosphere, magnetosphere – is controlled by influences emanating from the geomagnetic field and from the sun, how this environment changes with time, and how its effects on technological systems, including radio communications, near-earth space operations and power grids can be predicted and mitigated.

The Hermanus Magnetic Observatory forms part of the worldwide network of magnetic observatories which monitors and models variations of the earth's magnetic field and how it is affected by the near-earth space environment.

"Besides its observatory related functions of providing geomagnetic field data and information, the scope of the observatory's activities include fundamental and applied space physics research. This includes the training of students, science outreach, and the provision of geomagnetic field related services on a commercial basis," says the observatory's Pierre Cilliers.

"The Space Physics Group carries out research at the observatory to add to the present understanding of plasma behaviour in the earth's ionosphere and magnetosphere and its impact on earth. Ionospheric research in South Africa dates back to 1976. Since 2002, the group has been involved in ionospheric characterisation and research. This is done by developing techniques to determine the ionospheric total electron content and electron density profiles from dual frequency global positioning system data.

"In 2004 the observatory took over the management of the ionospheric research programme at the Department of Physics and Electronics at Rhodes University. It manages three ionosondes located at Grahamstown, Louisvale in the Northern Cape and Madimbo in Limpopo."

Pierre says research methods include theoretical, modelling and data analysis studies, the results of which are presented at conferences and published in indexed journals.

"Researchers in the group collaborate with researchers at universities and research institutes, both locally and internationally. The current research fields and collaborations include theoretical studies of waves in dusty plasmas and studies of ultra low frequency waves using ground-based and satellite data. It also includes field line resonant pulsation observations using the super dual auroral radar network high frequency radars, ionospheric characterisation using dual frequency global positioning system observations and modelling of the lower and bottomside ionospheres using the technique of neural networks.

"Observatory research staff annually present research results at several national and international conferences and regularly publish peer-reviewed papers. A key objective of the space physics group is to increase the number of postgraduate students and researchers, particularly from groups that were previously disadvantaged by either race or gender, trained in basic plasma physics, geomagnetism, magnetospheric physics, and ionospheric physics. Dr Lee-Anne McKinnell of the observatory serves on Commission G of the International Union of Radio Science."

Pierre says the observatory collaborates with South African institutions like the Department of Physics and Electronics at Rhodes University, the Schools of Physics at the Universities of KwaZulu-Natal and North West, the University of Cape Town, the Chief Directorate of Surveys and Mappings and the Hartebeesthoek Radio Astronomy Observatory.

"Several members of the space physics community in South Africa will be participating in the project Polar Space Weather Studies during International Polar Year. The project comprises participation in the ICESTAR project with 24 international consortia on space weather related measurements at SANAE IV in Antarctica of the earth's magnetic field, ionosphere and magnetosphere during the International Polar Year 2007-2008.

"Internationally we collaborate with the Department of Electronic and Electrical Engineering at the University of Bath in England, the Institute of Radio Engineering and Electronics at the Russian Academy of Sciences, the GeoForschungsZentrum in Potsdam, Germany and the Graz University of Technology in Austria. We also collaborate with the Indian Institute of Geomagnetism in Mumbai, the British Antarctic Survey in Cambridge in the UK, the Johns Hopkins University Applied Physics Laboratory in Baltimore in the USA, the Max-Planck Institute for Extraterrestrial Physics in Garching, Germany and the Lviv Centre of Institute of Space Physics in the Ukraine.

"The observatory is a member of the South African national Antarctic programme and manages the country's Antarctic-based Southern Hemisphere auroral radar experiment. This radar forms part of an international collaborative network of high frequency radars that monitors ionospheric plasma convection over the majority of the northern and southern polar regions. The observatory also trains radar engineers to maintain the radar.

"We have been mandated by the NRF to improve physics education and develop human capacity in science in South Africa. We provide postgraduate scholarships for studies in space physics and host honours, MSc, PhD and post-doctoral students conducting research in space physics. Annual summer and winter schools expose undergraduate students to space physics, signal processing, and scientific computing."

Pierre says the observatory is an active

A key objective of the space physics group is to increase the number of postgraduate students and researchers, particularly from groups that were previously disadvantaged by either race or gender.

member of the national astrophysics and space science programme hosted by the University of Cape Town.

"Honours and masters degree students do practical work related to their space physics coursework with us. We also host and accommodate engineering and science education student interns. Our science education outreach group interacts at educator and learner workshops in support of the national science curriculum.

"As part of the celebrations of ten years of democracy in South Africa in 2004 we opened an interactive science centre. Here we give learners from especially previously disadvantaged rural areas in the Breederiver/Overberg region the opportunity to participate in the programmes and interact with the exhibits on offer."

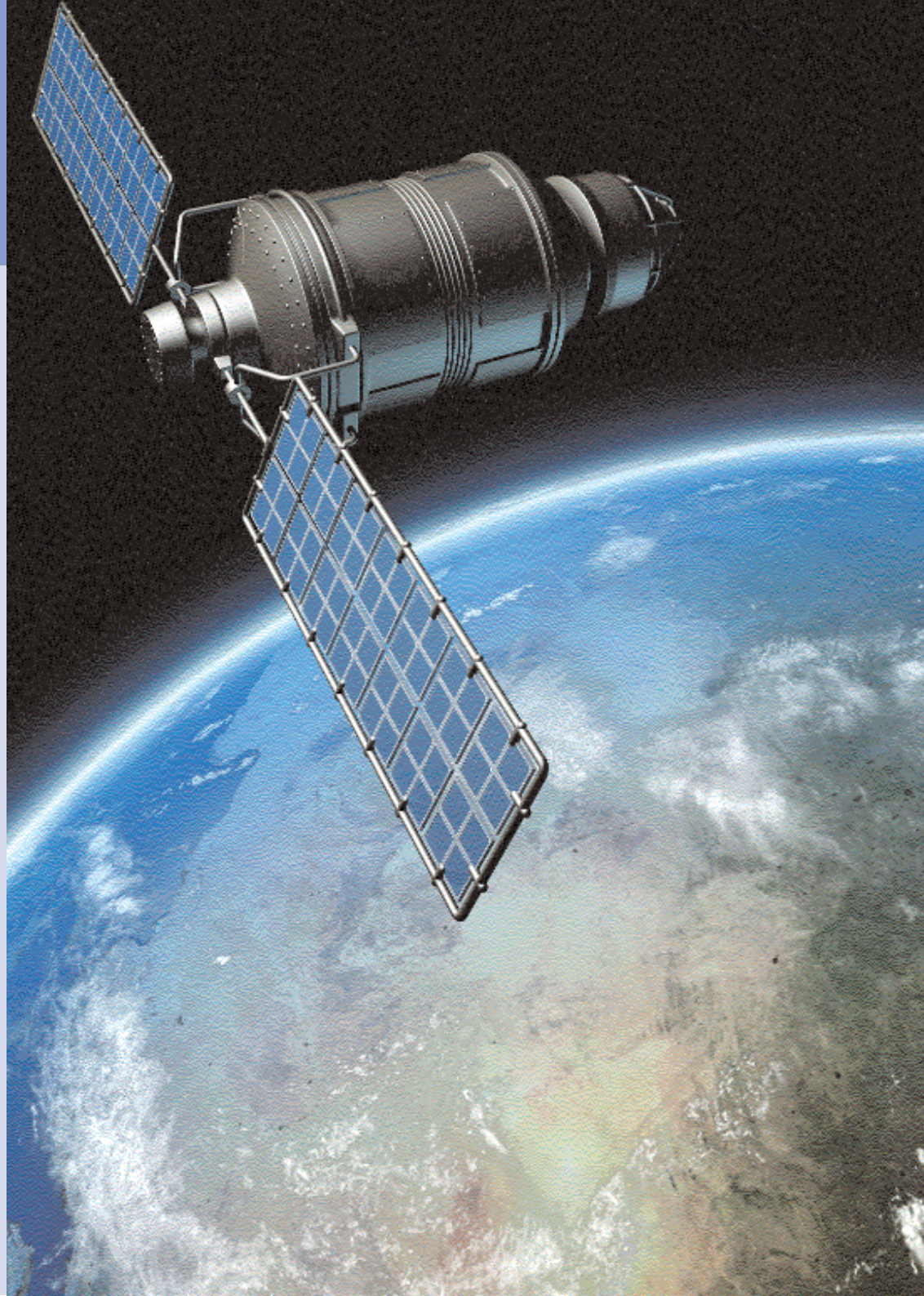
A key objective of the space physics group is to increase the number of postgraduate students and researchers, particularly from groups that were previously disadvantaged by either race or gender.

"We focus on students trained in basic plasma physics, geomagnetism, ionospheric and magnetospheric physics. The training programme for post-graduate students comprises various modules like a two-week practical for MSc students in the national astrophysics and space science programme and a winter school introducing space physics for final year BSc students majoring in physics. It also includes a summer school for final year BSc students planning to continue with post-graduate studies in space physics. Here they learn scientific computer programming and digital signal processing.

"Students taking a BSc Honours in plasma or space physics do their projects with us while university of technology students taking a diploma in electronic engineering do their experiential training with us. Students doing an MSc in space physics do part of their thesis work at the observatory and PhD students in plasma/space physics are appointed as research assistants for the duration of their PhD thesis research.

"Currently we have three PhD students in space physics, two of whom are staff members, one MSc student in Ionospheric Physics and one intern working on the effects of space weather on power lines and transformers. We also have one postdoctoral researcher working on using neural networks for the improvement of global ionospheric prediction maps.

"Space physics is very exiting and has always grabbed the attention of people of all walks of life – this despite the fact that it is perceived as a difficult subject and only for the very clever! Here at the observatory we are doing our utmost to popularise space physics so to speak, to ensure that we inspire young people to pursue a career in physics, particularly space physics. In this manner we will ensure that South Africa keeps abreast of a very fast developing international science environment," says Pierre.



The new face of communication **at the NRF**

> *… [he] believes in establishing effective and efficient avenues for channelling the news and stories generated across the NRF to its key stakeholders.*

HE IS young, he is able, he is rearing to go and he knows an awful lot about corporate communication.

He is Reidwaan Wookay and he is the new manager of group corporate communication and public relations at the NRF.

News@nrf asked Reidwaan about his plans for corporate communication at the NRF.

"Corporate communication is a core function of any organisation. If you do not proactively communicate to all your target markets – both internal and external – they will make their own assumptions on what they think are the facts. It takes much longer to change perceptions than to communicate the truth proactively.

"As an essential support service unit, corporate communication effectively promotes the organisation to reach its core mission and priorities – this is what we will do for the NRF and its facilities.

"As a business unit corporate communication will focus on issues like developing the corporate image of the organisation, protecting its corporate reputation and establishing effective and efficient channels for promoting and enhancing the flow of relevant information to and from the corporate office and the national facilities."

But what do you do with the information?

Reidwaan strongly believes in establishing effective and efficient avenues for channelling the news and stories generated across the NRF to its key stakeholders.

"I believe by creating 'One NRF' through effective change management processes, we can become the "Agency of Choice" and an employer of choice. We are excelling in the science and technology environment – the communications around the successes also needs to be from 'One mouth', so to speak.

"To achieve this we need to drive the corporatisation of the corporate communication function throughout the NRF and radically improve internal communication throughout the organisation.

"With my team – and the help of every NRF employee – I will support the organisation's initiatives by reflecting them in all corporate communication products. This will increase stakeholder awareness and knowledge of the organisation, its core mission and strategic priorities. Our products should, for example, highlight our focus on Africa, NEPAD and the achievements of women, previously disadvantaged people and young scientists.

"Collectively this will position the NRF to obtain top-of-mind awareness among our key stakeholders. The task is huge but extremely challenging – if I did not think so, I would not have been here," says Reidwaan.

Reidwaan has extensive corporate communications experience and has held senior positions in the corporate affairs environment.

He holds an MA degree from the University of Port Elizabeth, specialising in electronic communication and its effect on economic globalisation. Currently he is studying towards an MBA at the Wits Business School.

He spent three years in academics and government service before moving to the private sector where he went on to a eight year stint in banking and finances as well as consulting to the motor, retail and financial services.

SAIAB continues khomanani for **World Aids Day**

THE SOUTH AFRICAN Institute for Aquatic Biodiversity (SAIAB) again supported International Aids Day on 1 December last year.

Following the partnership with the Raphael Centre that started in 2004, this year the SAIAB donated R3 400 and boxes of non-perishable items such as canned food, clothes and toys collected from local businesses, churches and staff.

"This collection will go a long way in helping the centre provide care and support to an ever increasing number of AIDS orphans," said the centre's director Jabu van Niekerk.

Yolisa Ngele, a staff member of the Treatment Action Campaign, shared her triumphs in living positively with HIV. This included disclosing her status during her job interview, encouraging others who are infected and affected, maintaining a healthy lifestyle and continuing to take her anti-retroviral drug prescription. This was a very touching, as well as a learning, experience for the staff.

The Raphael Centre supports children who are in some way affected by HIV/Aids. Its services include voluntary counselling and testing, eight-week support programmes and a day nursery for support programme attendees.

SAIAB Managing Director, Prof Paul Skelton with the HIV/Aids Awareness Committee Gaji Magajana, Lukhanyiso Vumazonke, Linda Coetzee, Jabu van Niekerk Director of the Raphael Centre and Charles de Vos. Sitting: Naniswa Nyoka, Penny Haworth and Yolisa Ngele of the Treatment Action Campaign.

First commercial PET radiopharmaceutical for **iThemba Labs**

THE RADIONUCLIDE Production Group at iThemba Labs is commercially producing radiopharmaceuticals for the imaging of primary cancer tumours.

Head of the group, Dr Clive Naidoo says due to the demand by the South African Society of Nuclear Medicine to have Positron Emission Tomography (PET) available by 2005, iThemba Labs pulled out all stops to oblige.

PET is the most effective and sensitive method of imaging primary tumours and even very small metastases in cancer sufferers.

"The radiopharmaceutical, 18F-FDG or 18-fluorine fluoro-deoxy glucose, is the workhorse of PET with over a million scans being carried out worldwide every year. Experience worldwide has shown that the use of 18F-FDG imaging modifies the treatment recommended in 45 per cent of cases."

Clive says due to the rather urgent demand by the local market, off-the-shelf targetry, chemistry and dispensing modules were purchased, modified and commissioned on site.

"For example, a standalone water target supplied by Ion Beam Applications, was modified to our existing cyclotron proton beam. This modification involved the in-house manufacturing of new components to fit the beam line and the degrading of the proton beam with a water-cooled aluminium degrader. General Electric Medical Systems provided the automated radiolabelling module together with the Timotheo dispensing units and Comecer hot cells to produce the 18F-FDG. Quality control equipment was also installed and commissioned to ensure that the quality control of the final product was done in accordance to the specification requirements of the *European Pharmacopoeia*."

Clive says the group produced its first 18F-FDG from its own in-house neon gas target and radiolabelling facilities on an experimental basis for the local Tygerberg Academic Hospital in the late nineties.

"However, due to erratic radiolabelling efficiencies this was discontinued. Today, ten months after the inception date of the project, we are able to produce 18F-FDG under current good manufacturing practices for the commercial market on a routine scale.

"iThemba Labs has been producing accelerator radionuclides for the past 18 years and has been supplying these to over 60 nuclear medicine centres in South Africa. Some of these include Single Photon Emission Computed Tomography radiopharmaceuticals that are mainly used in nuclear medical applications for diagnostic and therapeutic studies. Others include non-medical radionuclides for the international market," says Clive.

Coastal systems data for eternity – **thanks to new SAEON node**

THE SOUTH African Institute for Aquatic Biodiversity (SAIAB) will host the South African Environmental Observation Network's (SAEON's) new node for the coastal-inshore zone.

SAEON was launched in 2004 to produce reliable and accessible environmental information by monitoring and studying long-term environmental change over large spatial scales. Head of SAEON Johan Pauw and SAIAB Managing Director Prof Paul Skelton recently signed a cooperation agreement.

"A considerable body of knowledge exists within South African marine science and much of this is reliant on historical and ongoing long-term observation programmes already stretching over many decades," says Paul.

"The initiative by SAEON to provide a home for all marine science data is widely hailed by the marine science community as important and timely. Much data is in danger of being lost due to individuals leaving the system, or not having been digitised or not being supported by adequate metadata."

But how are localities for new nodes determined?

SAEON steered the process through the South African Network for Coastal and Oceanic Research (SANCOR) which represents marine science in South Africa with some 1 000 associated individuals employed by government departments, municipalities, conservation agencies, higher education institutions, various industries, research organisations and consultancies. The organisation drives several initiatives to foster marine science.

"The consultative process included several briefings, four workshops and consultations with several key individuals regarding critical issues like the east-west divide in marine science," says Dr Kim Prochazka, the SANCOR chairperson.

A draft proposal for two nodes, one for the coastal-inshore zone and one for the marine-offshore ecosystems was submitted to SAEON with the final proposal also containing comment from the SANCOR community.

The potential host organisations were identified as the Oceanographic Research Institute (ORI), the SA Institute for Aquatic Biodiversity (SAIAB), Marine & Coastal Management (MCM), and the South African Data Centre for Oceanographic Research of the Council for Scientific and Industrial Research (CSIR).

The SAEON Technical Steering Committee visited the potential node host organisations to assess among others, physical and logistical facilities, organisational culture and the provision of services. SAIAB has a significant terrestrial arm that will be beneficial for creating links with SAEON's terrestrial nodes.

Young HIV/Aids victims leave their mark at SAASTA

Children from the Mohau Centre leave their hand prints in colourful ink for display at SAASTA as a reminder of people infected and affected by the Aids pandemic.

A GROUP of 25 children took over business at the South African Agency for Science and Technology Advancement (SAASTA) for part of the day on World Aids Day, 1 December last year. The little ones from the Mohau Centre for children infected and affected by HIV/Aids were invited to SAASTA as part of the organisation's World Aids Day commemoration.

The Mohau Centre at Kalafong Hospital in Atteridgeville cares for 45 children, of whom 33 are infected by HIV/Aids, at its main facility and at a satellite house in Pretoria.

At SAASTA, the children were taken on a tour of the Museum of Science and Technology, and were treated to a science show and other fun activities like making hand prints with colourful ink. SAASTA staff collected gifts for their little visitors as well as food for hampers for distribution by Mohau in the Atteridgeville community, where there are numerous child-headed households and Aids orphans cared for by unemployed grandparents.

Exploring the mysteries **of our deep oceans**

RECENTLY IT WAS talk-back time at the South African Institute for Aquatic Biodiversity (SAIAB) as a team of marine scientists from all over South Africa gathered to give insight into the fascinating work they have been doing over the past three years as part of the African coelacanth ecosystem programme.

The three-member review panel consisted of ichthyologist Dr John McCosker of the California Academy of Science in the United States, Prof John Field of the University of Cape Town's Zoology department and Dr Jim Taylor, Director of the Wildlife and Environment Society of Southern Africa's Environmental Education programme.

McCosker is world-renowned for his work on sharks, particularly the Great White, bioluminescent fish, eels and the deep-sea fishes of the Galapagos Islands. Field's interests include modelling marine ecosystems and developing important statistical tools for ecologists around the world. Taylor is an expert in the field of environmental education.

Kick-starting the process, the Director of the programme, Dr Tony Ribbink gave a background of the programme, explaining why the coelacanth, of all the fish in the sea, should be the focus of such a major research project. He praised both researchers and educators for their achievements since the launch of the programme in 2002.

A marine geoscientist from the University of KwaZulu-Natal, Dr Ron Uken showcased the data gathered on the geology of the submarine canyons of Sodwana Bay. He highlighted their potential to cause tsunamis in the region, an aspect that is worthy of further investigation.

Dr Kerry Sink Co-ordinator of the marine ecology programme presented a brief overview of her work on the incredible diversity of organisms hiding within the deep reefs and canyons of Sodwana Bay. She believes that whilst the coelacanth is worthy of study, many new distribution records of animals and plants not known from these waters or depths and even new species have been discovered hidden in the deeper waters of the Greater St Lucia Wetland Park.

Dr Sven Kaehler from Rhodes University introduced the use of stable isotope research in unravelling the tangled web of the marine food chain. This technique is used to determine the origin and importance of animal food sources. Surprisingly, over 60 per cent of the food upon which Sodwana's coelacanths depend ultimately comes from shallower, inshore reef communities.

Programme Information and Geographic Information System Co-ordinator, Lucy Scott and SAIAB Managing Director, Prof Paul Skelton certainly believe in what they are doing!

Also from Rhodes University, Prof Nigel Barker, showcased the potential power of genetic analysis in determining how animals along the coastline are related to each other. Such work often shows hidden biodiversity, where what was once considered to be one species turns out to be two or more separate species. Although they maintain separate gene pools, without genetic tools it is virtually impossible to tell them apart. Undetected biodiversity of this sort has major implications on the management and conservation of marine resources and biodiversity.

The programme's Environmental Education and Public Awareness Co-ordinator Berny Snow emphasised that to be truly successful and have a lasting impact, every major science programme must involve the public. Over the last three years the programme has reached over 300 000 learners and more than 7 000 educators.

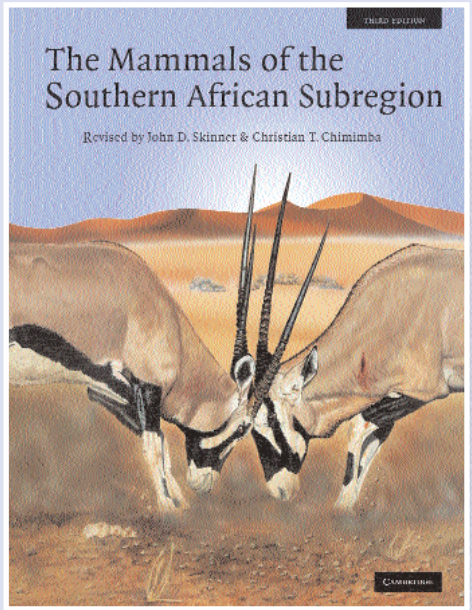
The programme's Information and Geographic Information System Co-ordinator Lucy Scott related the challenges and successes of archiving and analysing data collected throughout the western Indian Ocean. She emphasised that research programmes can only be successful if every discipline and stakeholder shares information.

Head of the Department of Biochemistry, Microbiology and Biotechnology at Rhodes University Prof Rosie Dorrington presented the opportunities offered by studying the coelacanth genome and how it could enhance understanding of the distant past.

Whilst a great deal had been discovered by the team of scientists of the different disciplines, it became clear that the sea has only started to give glimpses of its mysteries. ACEP should continue to seek new information to assist in predicting natural disasters, monitoring climate changes and its impact on the ecosystem. As important, it should continue to inspire the youth to take an interest in and perhaps pursue careers studying the sea.

book reviews

All the mammals of the Southern African subregion – in one book



The third, extensively revised edition of *The Mammals of the Southern African Subregion* covers all mammals that occur naturally on the African mainland south of the Cunene and Zambezi rivers, together with all mammals indigenous to the subregion's coastal waters.

Its publication by Cambridge University Press follows the response to the international recognition earned by the previous two editions, which were published by the University of Pretoria.

Necessitated by the rapid accumulation of new information resulting from mammal research in southern Africa and the radical taxonomic changes across all levels of mammalian classification, this new edition presents the best and latest data accurately in one comprehensive volume, for use by scientists and general readers alike.

JD Skinner and CT Chimimba have revised, expanded and updated the text in a major project overseen by an editorial committee constituted by the Mammal Research Institute at the University of Pretoria. Specialists on each mammalian order served as sub-editors and a range of independent and internationally recognised authorities reviewed every species' description.

This edition incorporates the new mammalian classification while all the distribution maps and many of the spoor illustrations have been updated and redrawn, several new colour plates have been added and the entire design has been enhanced to ensure easy access to information.

▶ Bibliographic Information
ISBN: 0521844185
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▶ For further information contact Cambridge University Press, tel 021 4127800, fax 021 4190594 or email awilliams@cup.co.za

New ventures @ **New Ventures**

NEW VENTURES is a new unit within the NRF's New Business Development Directorate. Its main role is to support fundraising efforts of the NRF and its facilities.

New projects at the NRF have grown significantly over the past three years with more than 20 new projects on the menu right now. This calls for high levels of financial resources to match the demands from various directorates and research facilities. To handle the increased fundraising demands and to centralise the diversification of resources and efforts, this new business unit was created.

Bheki Mfeka has been appointed to manage the New Ventures Unit. Bheki brings a rich background of more than ten years in business development from both private and public sector and wide experience with the donor community locally and abroad.

For projects-related information and referrals contact Pam du Toit on pam@nrf.ac.za, tel 012 481 4091, or Bheki Mfeka on bhekuyise@nrf.ac.za, tel 012 481 4201.

Our science authors **TOPS!**

THE SCIENCEDIRECT international barometer recently classified two South African science articles among the top 25 hottest publications worldwide.

The two South African scientific articles in the field of materials sciences and nanotechnology – Synthesis of lamp phosphors: facile combustion approach and Combustion synthesis and luminescent properties of Eu^3^+- activated cheap red phosphors – were rated 2nd and 13th respectively. Authored by Sanbandam Ekambaram, Kishore Chandra Patil and Malik Maaza, the articles were published in the *Journal of Alloys and Compounds*. Malik Maaza, a senior scientist in nanoscience and materials at iThemba Labs is the current chairman of the nanosciences African Network.

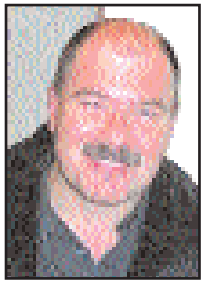
The articles were generated in South Africa through a double funding from the National Research Foundation and National Research Foundation-National Laser Centre of South Africa. This double recognition is due to their substantial high downloading by the international scientific community among 24 scientific subjects and more than 2 000 journal titles within the ISI *ScienceDirect* international barometer.

The ScienceDirect TOP25 Hottest Articles is a free quarterly service from ScienceDirect. Subscribers receive an email every three months listing the publication's users' 25 most frequently downloaded journal articles.

▶ More information on www.top25.sciencedirect.com

News@nrf congratulates the authors on this achievement and believes this will augur well to enhance excellence in science.

South African researcher **in winning team**



Prof Okkie de Jager of the North West University

A SOUTH AFRICAN researcher, Prof Okkie de Jager of the North West University – the only one from Africa – is a member of one of the five finalist teams in the prestigious EU Descartes Prize for outstanding European research teams in genetics, climate change, astronomy, social sciences and disease management.

The team – HESS – received this award for enhancing the understanding of the extreme universe.

The HESS collaboration was formed to produce an instrument that would be the world leader in the domain of high-energy gamma-ray astrophysics. The design was based on proven technology and technical and experimental approaches developed by the research teams. These were combined to provide an instrument to explore the most extreme objects in the universe. The results allowed the collaboration to revolutionise the understanding of the universe as viewed in gamma rays. It produced the first-ever gamma ray images of astronomical objects and the first scan of a large region around the centre of our galaxy.

The team consisted of members from various countries. The French members were Prof Stavros Katsanevas of the Centre National de la Recherche Scientifique, Dr Michael Punch of the Institut National de Physique Nucléaire et de Physique des Particules, Dr Philippe Goret of the Commissariat à l'Energie Atomique and Dr Hélène Sol of the Institut National des Sciences de l'Univers.

From Germany it was Prof Werner Hofmann of the Max-Planck-Institut für Kernphysik, Prof Thomas Lohse of the Humboldt-Universität zu Berlin, Prof Götz Heinzelmann of the Universität Hamburg, Prof Stefan Wagner of the Universität Heidelberg and Prof Reinhard Schlickeiser of the Ruhr-Universität Bochum.

Dr Paula Chadwick of the University of Durham in the UK, Prof Luke O'Connor Drury of the Dublin Institute for Advanced Studies in Ireland, Prof Ladislav Rob of the Charles University in the Czech Republic and our own Prof Ocker Comelis de Jager were the other members.

The other finalists were the PITCID project for new understanding of and development of new treatments for chronic inflammatory disease, the TANNIN team for development of natural tannin based, formaldehyde free adhesives for wood composite products, the HIDEMAR project for revolutionary new nanoparticles and nanopatterned arrays for high-density data storage and the PATHFINDER project for demonstrating the effects of nuclear receptors in health and disease. Each of these teams received 30 000 (about R225 000) in prize money.

The 1 000 000 (About R7 500 000) Descartes Research Prize was shared this year between five pan-European teams who achieved major scientific breakthroughs in key European research areas. The five teams were the EXEL DALHM team for developing a new class of artificial meta-materials, called left-handed materials or negative index materials which have the ability to overturn many familiar properties of light, the CECA team for breakthrough findings on climate and environmental change in the Arctic, the PULSE team for demonstrating the impact of European pulsar science on modern physics, the European social survey for radical innovations in cross-national surveys and the EURO-PID project for cutting-edge research on a group of over 130 rare genetically determined diseases known as primary immuno deficiencies.

The European Union Commissioner for Science and Research Janez Potocnik recently handed the winners their prizes at a function in London.

▶ For more information go to www.eubuero.de/arbeitsbereiche/wissenschaftundgesellschaft/descartes-2005#pitcid

"Goodbye" Tessa

COLLEAGUES REACTED with shock when they learnt that the Executive Director of Knowledge Fields Development at the NRF Dr Tessa Marcus had resigned.

From messages like "No you can't" to "Sad news for the NRF" to "Ah, do you have to leave?" are surely indicative of the impact that Tessa made during just over three years with the NRF.

A feather in her cap was NRF President and Chief Executive Officer Dr Khotso Mokhele's words that "in the short time she has been with the NRF, Dr Marcus has made valuable contributions and has earned the organisation much respect from its various stakeholders."

Knowledge Fields Development is responsible for promoting new knowledge and research capacity by stimulating and developing the spectrum of knowledge fields.

Tessa wishes to pursue her research interests and parted by saying that "My work here has never been dull thanks to the lively, varied and active engagement with ideas that is the lifeblood of healthy intellectual life in a democracy."

KHOTSO now also chairs the National Skills Authority

NRF PRESIDENT Dr Khotso Mokhele has been entrusted with yet another key responsibility – that of chairperson of the National Skills Authority (NSA).

In announcing the appointment, Labour Minister Membathisi Mdladlana said that given Khotso's strong background in research, linked with his extensive leadership experience, he is fully equipped to lead the authority in addressing its key priorities for the next three years.

"The NSA should focus particularly on the implementation of learnerships and the roles that Sector Education and Skills Authorities (SETAs) can play in developing guidelines on scarce and critical skills. The authority should also continue to advise me on the implementation of the revised national skills development strategy 2005-2010 – the review of the National Qualifications Framework (NQF). I also wish to be advised on the future of the South African Qualifications Authority (SAQA)," the Minister said.

In accepting the chairmanship Khotso pointed out the causal link between skills mismatch and job shedding and retrenchments.

"Unemployment and the high poverty index remain challenges for the authority as the custodian of skills development in the country," Khotso said. He called on his fellow NSA members to display the necessary commitment to ensure that the issue of skills development in the country is taken seriously.

The National Skills Authority was established in 1999 to provide an institutional framework for skills development through national, sector and workplace strategies to develop and improve the skills of the South African workforce. It also finances skills development through a levy-grant scheme and the National Skills Fund.

Its key functions are to advise the Minister of Labour on the national skills development strategy, to monitor implementation of the strategy and to advise the Minister on allocation of subsidies from the National Skills Fund through monitoring the performance of SETAs.

Currently in its third term of office, some of the NSA's key achievements include advising the Minister on a revised SETA landscape that saw the merger of some of the SETAs to ensure optimum delivery by these bodies. The authority also developed the revised national skills development strategy 2005-2010. This strategy spells out the national priority areas to which the projected R21,9 billion in the National Skills Fund will be allocated over the next five years.

National Research Foundation

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