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News snippets from around the CSIR

BOOK CORNER

WRC: 40 Years of Excellence

The Water Research Commission (WRC) recently celebrated 40 years of water research, reflecting on past achievements, but at the same time deliberating on future challenges. Since 1971, the WRC has played a significant role in providing South Africa with solutions and sufficient knowledge to address water challenges. The book, *WRC – 40 years of excellence,* reflects on the impact of its activities, which have covered capacity building in the water sector, broadening of South Africa's water-centred research and development base, and continued commitment to direct and funded research.
For a copy of the book, contact orders@wrc.org.za

Capturing glimpses of environmental change in South Africa

Observations on Environmental Change in South Africa was commissioned by the South African Environmental Observation Network (SAEON) with funding from the Department of Science and Technology (DST). A highly illustrative, glossy, hard-cover with striking photographs, satellite images and other graphics, the book gives a picture of environmental change and proposed responses on a range of themes and topics. It draws together work from as many scientific disciplines as possible, extracts pertinent information and presents it in a condensed format. Content is divided into four sections, *People and Environmental Change; Atmospheric System and Climatic Change; States and Trends in the Terrestrial Environment;* and *States and Trends in the Aquatic Environment.* It is a useful resource for the general public and government officials responsible for policy formulation and decision making on environmental issues. It will also be of value to lecturers and students at higher education institutions. Several CSIR staff members contributed to chapters in the book. Dr Konrad Wessels, an environmental remote sensing specialist at the CSIR, was a member of the editorial committee.

The book is available free for download as a pdf from **www.saeon.ac.za**, or contact SAEON at 012 349 7722 to order a hard copy.

Climate change handbook for southern Africa

The *Climate Risk and Vulnerability Handbook for Southern Africa* was designed to provide decision makers with up-to-date information on impact and risk of climate change and variability. It is structured according to four questions dealing with observations of past, current and future climate; the likely impacts of such climate changes in key sectors and how countries in the southern African development community should deal with these adverse impacts.

Launched at the Highway Africa Conference on African media and the global sustainability challenge in Cape Town recently, it will soon be available on Kalahari.com.

New instruments make regional estimation of carbon fluxes a near-reality

THE DEVELOPMENT of a reliable regional network of greenhouse gas monitoring stations will be further enhanced by the acquisition of three high-precision greenhouse gas monitoring instruments.

Funded by the National Research Foundation's Research Infrastructure Support Programme, the Picarro G2401 CRDS Analyser is recognised as a high precision instrument for measurement of the top three greenhouse gasses. It is capable of making measurements every five seconds, with a precision of better than 0.05 parts-per-million volume (ppmv) for CO_2, 0.07 parts-per-billion volume (ppbv) for CH_4, and 100 ppmv for H_2O. According to CSIR systems ecologist Dr Bob Scholes, an improved network of atmospheric monitoring stations over southern Africa will greatly enhance local estimates of carbon sources and sinks, as well as regional estimates elsewhere.

"High uncertainty in one region can lead to compensation in other regions to uphold the conservation of mass limitations imposed on these atmospheric inversions, thereby increasing the uncertainty of these regions as well," he explains.

– Wiida Basson

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News snippets from around the CSIR

mLab Southern Africa officially opens doors in Tshwane

A NEW REGIONAL LAB for mobile technology entrepreneurs, application developers, and innovators (mLab) was inaugurated on 15 September 2011. mLab Southern Africa's activities are aimed at making the region a global hub for mobile innovations to boost job-led growth and address economic and social needs. mLab Southern Africa will draw on South Africa's high bandwidth environment and pool of expertise with strong connections to the rest of Africa.

Situated at The Innovation Hub, mLab Southern Africa is co-hosted by the CSIR, The Innovation Hub, InnovationLab and Ungana-Afrika. Financial support is provided by the South African Department of Science and Technology and infoDev, a World Bank Group global programme focusing on supporting technology-driven small and medium-sized enterprises.

Energy efficiency improvement project promotes sustainable development

THE ENERGY CRISIS of 2007/08, the impending water challenge and the current climate change pressures highlight the growing need for sustainable development and to improve the capacity of SA industry to use available energy resources more efficiently and productively.

In response to this, the Industrial Energy Efficiency Improvement Project (IEEP) was established as a joint initiative between the dti, the DoE, UNIDO, the Swiss State Secretariat for Economic Affairs and the UK Association of International Donors. To contribute towards meeting the country's needs in terms of suitably skilled capacity, regular training workshops on energy management systems (EnMS) and energy systems optimisation (ESO) are presented by UNIDO-contracted international experts at a number of locations across the country.

Subsidised options are available for companies (including SMEs) to participate in the IEEP and demonstrate the impact of implementing an EnMS and/or ESO options in their plants.

The IEEP is hosted by the National Cleaner Production Centre of SA at the CSIR.

– Petro de Wet

Health infrastructure research expert wins 2011 JD Roberts Award

THE CONTRIBUTION by Geoff Abbott in the planning, design and management of health facilities in South Africa has won him the coveted 2011 JD Roberts Award. The annual JD Roberts Award is sponsored by Murray & Roberts and awarded in partnership with the CSIR in recognition of research excellence at the CSIR. It was instituted by Murray & Roberts more than three decades ago in honour of one of the group's founding fathers, Dr JD 'Douglas' Roberts.

Abbott, a research architect at the CSIR, plays a crucial role in a national project to provide new long-term accommodation for multi-drug-resistant tuberculosis patients at nine hospitals. One of the most significant strategic planning projects Abbott has been involved with was South Africa's first comprehensive survey and audit of public health care infrastructure in South Africa.

He has also provided valuable guidance in immovable asset management in the public sector over many years.

– Hilda van Rooyen

Africa's first sea gliders have arrived

THE FIRST two long-range autonomous iRobot Seagliders have arrived in South Africa and will soon be deployed into the heart of the world's largest ocean current – the Antarctic Circumpolar Current.

According to Dr Sebastiaan Swart, oceanographer with the CSIR in Cape Town, long-range gliders offer a unique platform for ocean-climate observations, and represent one of the most novel technologies available in oceanography.

Funded by the Department of Science and Technology, the newly-arrived gliders form part of a larger programme – the Southern Ocean Carbon and Climate Observatory (SOCCO) – to build South Africa's capacity in providing high-quality, precise data related to carbon-climate interactions in the Southern Ocean.

Over the next ten months the gliders will undergo sea trials in locations close to South Africa's coast, such as False Bay and off the West Coast.

A group of oceanographers and technicians from the CSIR, the University of Cape Town and the Institute of Maritime Technology are being trained by the manufacturer's engineers to manage the technical aspects of these three-metre-long instruments. They will then be deployed in practice-runs just off the coast, before going on board the SA Agulhas II, South Africa's brand new polar research vessel, for its first trip to Gough Island in September 2012.

These deployments will form a crucial part of SOCCO's Southern Ocean Seasonal Cycle Experiment (SOSCEx) from austral spring to autumn (2012 to 2013), which will combine measurements taken from ships, gliders and floats. The experiment will include the participation of international partners from the United States, Norway and France and will be in preparation for South Africa's participation in a planned multi-nation international experiment, beginning in 2014. This broader experiment aims to improve the global understanding of the link between the carbon cycle and climate in the Southern Ocean.

– Wiida Basson

Dr Sebastiaan Swart

An ICON for southern Africa

EARLIER THIS YEAR, a voluntary committee was established to integrate and synthesise carbon data from various institutions such as the CSIR's decade-old flux tower in Skukuza and the country's longest continuous atmospheric-measuring station at the Cape of Good Hope, administered by the South African Weather Services. Other members include the Department of Environmental Affairs, South African National Biodiversity Institute and the City of Cape Town.

The objective of the newly-established South African Integrated Carbon Observatory Network – SA-ICON for short – will be to foster collaboration among the different institutions involved in the field, and to lead to better application of data, skills and knowledge, explains the CSIR's Dr Pedro Monteiro.

"By working together we can coordinate the placement of instruments measuring carbon and other greenhouse gasses. Currently, South Africa does not have a dedicated carbon observation monitoring network," he explains.

– Wiida Basson