

REPORT OF THE VICE-RECTOR (RESEARCH)

THE CORE PURSUIT OF STELLENBOSCH UNIVERSITY (SU) IS CENTRED ON THE DISCOVERY, TRANSFER AND APPLICATION OF KNOWLEDGE.

The University's research activities focus on the uncovering of new facts to enrich the body of knowledge, to renew the content of the curriculum and to provide the scientific basis for addressing the needs of the community. In doing so, research underpins and complements the other main functions of the University: teaching and learning, and community interaction.

It is envisaged that, by 2015, Stellenbosch University will position itself as the leading research-intensive higher education institution on the African continent. The research output will be characterised by excellence and relevance, and the University will be recognised as a knowledge pioneer underpinning the development agenda of the continent.

It is planned that over the next five years the growth rate of postgraduate students will be around 2,5% per year, and that the number of postgraduate students from previously disadvantaged communities will reach 50%.

During 2009 the research activities were aligned with the key development themes to which the University has committed itself. The necessary processes and structures were established to ensure that the goals of excellence, relevance and diversity set for 2015 will be reached. The realignment was guided by the University's Vision 2012 and beyond, as well as the Overarching Strategic Plan (OSP).

RESEARCH DEVELOPMENT EXTENDS CAPACITY AND RESOURCES STRATEGICALLY

The focus of the Division of Research Development (DRD) is to support and develop the research endeavour at SU. Its broad objectives include the proactive and strategic development of SU's research capacity and resources, an ongoing critical evaluation of the external and internal research landscapes, and the promotion of SU as a world-class, research-led university. The division is responsible for research funding applications and the management of research awards, including internal, national and international research funds. It is also responsible for the management of processes to obtain ethical approval, the promotion of research integrity, the development of research capacity, the facilitation of strategic research partnerships, the management of research contracts, as well as the provision of support for postdoctoral fellows.

The divisional structure was optimised in 2009, resulting in the establishment of four functional clusters, namely Research Support, Research Capacity Development and International Funding, Research Information and Strategy, and Research Contracts. Each of these clusters carries responsibility for a number of the above support areas.

Highlights in 2009 included a 10% growth in the number of NRF-rated researchers at SU to a total of 270, with three newly A-rated and one newly P-rated researcher. This represents a 93% success rate of rating applications submitted to the NRF.

The research community at the University comprised 9 233 postgraduate students (35,2% of the total student body), 130 postdoctoral fellows, and a body of 851 academics in 2009. The University hosts three (of seven) Department of Science and Technology (DST) and National Research Foundation (NRF) Centres of Excellence, eleven SARCHI Chairs (SA Research Chairs Initiative) and one SANERI (SA National Energy Research Institute) Research Chair. The University had 270 NRF-rated researchers in 2009, with 14 A-rated and three P-rated researchers. (A-rated researchers are regarded as world leaders by their peers and P-rated researchers are regarded as potential world leaders.) The formal weighted research output per staff member for the year 2008, according to the Department of Education, was 2,13 — the highest research output per capita of any university in the country.

Research output is responsible for a high proportion of the University's income. In 2009, 25,5% of the consolidated income of the University accrued from research-related subsidies (ca. R168 million) and research contract income (ca. R505 million).

The Division of Research Development, the Postgraduate and International Office, and the Library and Information Service provide the overarching institutional support service to the research community at the University.

SU was also awarded two new NRF/DST SARCHI Chairs in 2009, namely a SARCHI Chair in Electromagnetic Systems and EMI Mitigation for the SKA (Square Kilometre Array), and a SARCHI Chair in Epidemiological Modelling and Analysis (based at SACEMA). Both these Chairs will commence their tenure in 2010.

The success rate of SU's applications for funding under the various bilateral partnerships managed by the NRF was outstanding in 2009. SU retains the top position among universities in South Africa in terms of funding obtained through this programme, with a total income of approximately R10 million. Income received through the Knowledge Interchange and Collaboration Programme (KIC) — the NRF funding programme for overseas research visits and international conference attendance — showed a growth rate of nearly 100% compared to the previous year.

A total number of 463 new research contracts were signed in 2009, representing approximately R350 million in research income for the University. In the NRF's Technology and Human Resources for Industry Programme (THRIP), a 100% success rate was again achieved, with 40 successful applications, bearing testimony to SU's continued excellent track record of research collaboration with industry partners.

Sixteen new European Union (EU) grants were approved in 2009, while a further 21 new applications were submitted to the EU. The DRD is also a consortium partner in one of

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the successful EU grants participating in a project focusing on the development of research and innovation management capacity in Africa and the Caribbean region.

In 2009, Stellenbosch University hosted 130 postdoctoral fellows from more than 30 countries, 59% of whom were from the African continent (*including South Africa*). This represents an increase of almost 30% compared to the previous year.

POSTGRADUATE AND INTERNATIONAL OFFICE (PGIO)

During 2009, preparations were made to augment the functions of the International Office (IO) with the establishment of the Postgraduate and International Office. The PGIO, which will be launched formally in 2010, will offer a focused support platform for the promotion of postgraduate study and postgraduate student success, while maintaining support and promotion of outgoing and incoming international academic mobility of staff and students.

THE TRANSFORMATION AIMS OF THE OSP THAT ARE SUPPORTED BY THE PGIO INCLUDE:

- *Increasing the percentage of postgraduate students to around 40% by 2015.*
- *Halving the time the average postgraduate student takes to successfully complete a qualification.*
- *Diversifying and internationalising the University further.*

The International Office made various successful contributions to the University's mission during 2009. The IO facilitated the visits of around 70 international delegations to gain a general overview of the SU or to focus on specific areas of collaboration. In terms of academic excellence and knowledge partnership, the IO facilitated nine Erasmus Mundus proposals (*jointly funded master's programmes with EU universities*); sent 16 SU students to various international summer schools in Europe and Asia; signed new cooperation agreements with Rensselaer Polytechnic Institute (USA), Kwame Nkrumah University of Science and Technology (Kumasi, Ghana) and Pontificia Universidad Católica de Chile; and developed new short programmes for EPITA (*École pour l'Informatique et les Techniques Avancées*), Whittier College, the University of Arizona and Samford University.

In terms of encouraging a campus culture that welcomes a diversity of people and ideas, the IO hosted 2 769 international students of 100 different nationalities in 2009. With respect to building the scientific, technological and intellectual capacity of Africa, the IO registered 1 631 students from 39 other African countries (*including 606 master's students and 160 PhD students*), comprising 59% of the cohort of international students.

Two particularly successful ongoing African programmes are the AWARD and SCARDA projects. African Women in Agricultural Research and Development (AWARD) is part of the Gender and Diversity programme of the Consultative Group on International Agricultural Research (CGIAR). It aims

to help poor farmers in sub-Saharan Africa overcome food crises and improve their livelihoods by strengthening the voice of Africa's knowledgeable women, both on the farm and in the laboratory. AWARD offers two-year fellowships to fast-track the careers of African women involved in pro-poor research and development. Stellenbosch University was selected as an advanced research partner of the AWARD fellows and is currently hosting four fellows for research placements.

The Strengthening Capacity for Agricultural Research and Development in Africa (SCARDA) project is intended to strengthen the institutional and human capacity of African agricultural research and development systems. The aim is to identify, generate and deliver research outputs that meet the needs of people involved in agriculture. SU is one of the universities identified by the Southern African Development Community (SADC) to train master's students from focal institutions participating in the SCARDA project. An agreement between SU and the SADC Secretariat on the implementation of the SCARDA project was reached in 2009.

The IO's contribution to the development of the South African society includes weekly after-school programmes in Kayamandi, offered by international students. A formal programme in Service Learning and Community Development is offered to international students. Finally, an annual entrepreneurship development programme with Syracuse University sees 20 Syracuse and 20 Stellenbosch students join forces to support small businesses in townships with business plans and consultations.

The IO contribution to promoting Afrikaans as a language of teaching and science in a multilingual context includes offering Afrikaans language training to international students (*"Pretproe"* and *"Kaggeleklets"*); arranging semester courses in Afrikaans; and hosting courses in other local languages.

LIBRARY AND INFORMATION SERVICE KEY PARTNER IN RESEARCH PRODUCTION

Since the acceptance of the Strategy for Learning and Teaching 2002 – 2004 by Senate and Council in 2001, the Library and Information Service has achieved closer collaboration between the staff of the information services and the academic staff of the University so as to develop information literacy skills. Training in information literacy skills was again presented during 2009. The emphasis on developing credit-bearing, curriculum-integrated information literacy programmes will increase in 2010.

In 2009, progress was made with the OSP project of the Library and Information Service, namely Access to Electronic Resources: Student Success and Support for Research. This project aims to establish an electronic resources centre and training facility (*a Learning Commons*) in the JS Gericke Library, with interactive learning spaces, equipment and facilities to expedite literacy development amongst undergraduate students. The construction of the Learning Commons will commence early in 2010.

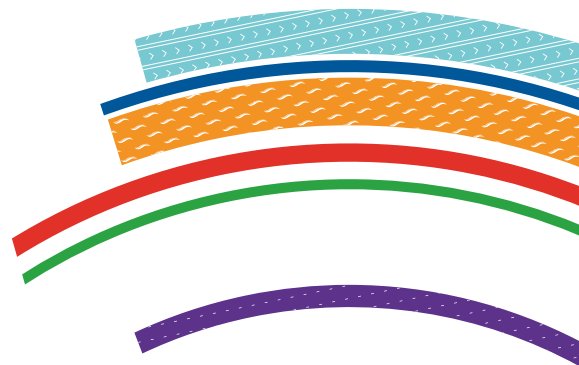
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Universities need to utilise their capacity and resources much more effectively in order to increase South Africa's output of first-rate doctoral graduates and the quality of research done in the country. A new South African Research Library Consortium (funded by the Carnegie Corporation of New York (CCNY)) was established with this aim in mind. The Library and Information Service was accepted into the Research Libraries Consortium in June 2009, along with five other academic library services in SA. The accompanying financial support from the CCNY will enable the Library and Information Service to establish a state-of-the-art Research Commons in the JS Gericke Library to provide specialised and focused support to postgraduates and researchers at the University. The establishment of this facility will significantly increase the contribution of the Library and Information Service towards the University's aim to be a world-class, research-intensive higher education institution.

During 2009 the Library acquired a number of high-quality online databases with subject specialisms that cater specifically for the newly-approved OSP priorities. The Library also took up institutional membership of Biomed Central (BMC), an online publisher that specialises in biological and medical research. Electronic books (ebooks) have been identified as a key learning and teaching resource. These are increasingly being used on all major campuses in South Africa and internationally. The library bought 585 ebooks in 2009.

One of the University's strategic priorities is to significantly increase postgraduate and research output by 2015. There is synergy between the increase in postgraduate output and research output. An increase in both of these outputs, through improved visibility and accessibility, impacts positively on the institution's capacity to attract high-profile collaboration, research funding and a high calibre of postgraduate students. An important development in the achievement of this goal was the establishment of an institutional e-research repository. In the past year the Library has streamlined the submission procedures for electronic theses and dissertations, and has extended its capacity to digitise the Library's unique collections and make these collections accessible to the international research audience. Currently, the Library's e-repository is one of three South African repositories that are listed in the top 300 repositories most frequently visited.

A significant highlight for the Library and Information Service during 2009 was when the Senior Director, Ms Ellen Tise, took office as the President of the International Federation of Library Associations and Institutions (IFLA), for the period 2009 – 2011. This office is regarded as the most influential honorary position in an association and will have a positive impact not only on the international profile of the Library and Information Service, but also that of Stellenbosch University, the South African library and information sector and the African continent.



SU SIGNS MOU WITH RENSSELAER

Stellenbosch University signed a memorandum of understanding with the Rensselaer Polytechnic Institute in the United States. The two universities will team up to expand their science and engineering capacity and generate new opportunities for students, teachers and researchers. Pictured are, from the left (sitting), Dr Shirley Ann Jackson, the President of Rensselaer, and the Rector of Stellenbosch University, Prof Russel Botman. Standing is Rensselaer's Chief of Staff, Mr Laban Coblentz (left), and Ms Samantha Walbrugh-Parsadh, the Rector's assistant.

