



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY  
jou kennisvennoot • your knowledge partner

# RESEARCH

## A T S T E L L E N B O S C H U N I V E R S I T Y

In the light of the developmental needs of our region, Stellenbosch University has distilled five themes from various local and international agendas to guide our core activities ■ **The eradication of poverty and related conditions**

■ **The promotion of human dignity and health** ■ **The advancement of democracy and human rights**

■ **The maintenance of peace and security** ■ **The creation of a sustainable environment and a competitive industry**

In support of these themes our faculties have initiated a wide range of projects as well as a collaborative network with five other African universities called the Partnership for Africa's Next Generation of Academics. Collectively, the research, teaching and community interaction activities focused on the five development themes are known as Stellenbosch University's HOPE project. By using hope from and for Africa as its guiding concept, the University is putting its proven research and teaching strengths behind the needs of people and their environment. This requires academics to move beyond the narrow confines of their subject matter, in order to reassess how they engage with knowledge. Applying the principle of hope to our core activities uncovers imagination and creativity, and prioritises future possibilities above what we have on hand.



## Together we are doing more and better

In line with Government's post-1994 dictum of "improving the conditions of life of all South Africans and contributing to a better Africa and a better world", the MTSF also takes cognisance of the changing economic climate. Central to the strategy remains the stimulation of economic growth while reducing inequality, alleviating poverty and increasing social cohesion.

The research focus of Stellenbosch University recognises the need for **societal relevance in our research**, particularly in relation to the development agenda. Stellenbosch University has aligned itself with the strategic approach of the South African government. We are fully committed – as eloquently formulated in the MTSF – "to endeavour to transfer knowledge into practical applications; through contributing to international, national, regional and local policy formulation; and through social engagement in teaching and research agendas."





# Our research profile and strategy

The research community at Stellenbosch University comprises more than 9 000 postgraduate students, 140 postdoctoral fellows, and more than 800 academics.

Stellenbosch University actively positions itself as a leading higher education institution on the African continent with, amongst others:

- an exceptional research community of which many are national and international leaders in their respective research fields
- a dynamic postgraduate student body and postdoctoral fellows from all over the world
- a significant number of peer-rated researchers, research chairs and Centres of Excellence
- a top central analytical facility with clients from the academic world and industry
- the highest number of weighted research outputs per permanent academic staff member in South Africa
- the most technologically innovative campus in South Africa (as adjudicated by the DST)
- numerous strategic partnerships with, amongst others, science councils, industry and national and international research institutions
- a Postgraduate and International Office that provides a comprehensive one-stop service to postgraduate students and international visitors
- Library and Information Services with a newly established Learning and Research Commons area that provides specialised support to our students and staff

The research strategy of Stellenbosch University states that by 2015 our research output will be characterised by excellence and relevance generated by researchers representing the diversity of South Africa and the African continent. By 2015, postgraduate students will reach 40% of the total student body with more than half of these students coming from previously disadvantaged communities. Growing and diversifying the postgraduate student and academic body is of strategic importance to the University's contribution to science in South Africa as well as the rest of the continent.



## This is how research at Stellenbosch University supports the 10 MTSF priorities:

**Speeding up economic growth and transforming the economy to create jobs and sustainable livelihoods**

### **Agricultural transformation**

The Standard Bank Centre for Agribusiness Leadership and Mentorship Development is an initiative of the Faculty of AgriSciences to support agribusiness by providing assistance to emerging farmers and promoting land reform. By combining multidisciplinary postgraduate research with agricultural outreach, agribusiness advice and mentorship development in communities, the Centre creates a continental centre of expertise to help increase Africa's crop production and market delivery. Its success will generate livelihoods along the production chain and assist in poverty alleviation from within Africa.

[www.thehopeproject.co.za](http://www.thehopeproject.co.za)

### **Geographic Information Technology**

Stellenbosch University's Geographic Information Technology (GIT) facility is located across a range of disciplines and faculties. The facility contributes to sustainable biodiversity and the environment, the production and provision of food, the struggle against disease, and the promotion of health. GIT provides impetus to a range of strategic research goals, as well as to skills development through extending GIT training throughout Africa.

[www.sun.ac.za/geography](http://www.sun.ac.za/geography)

# Supporting national policy development with research

Numerous research programmes across all ten faculties of Stellenbosch University contribute to each of the ten Medium-term Strategic Framework (MTSF) priorities. Our social and health scientists are working towards improving social services such as education and public health, particularly to indigent urban and rural communities. Our engineers have long been involved in high-level research for technology applications and infrastructure, as the recent launch of SumbandilaSat proves. Our agricultural scientists have well-established links with South Africa's agricultural industry, and through a long-term, multi-faculty engagement called the Stellenbosch University Food Security Initiative, they are transferring their practical expertise to the benefit of small-scale farmers and communities in the

country and elsewhere in Africa. Our natural scientists and public management experts are world leaders in biodiversity and sustainable resource management. Our water scientists from five different faculties have brought their expertise together to form the leading centre for research on water sciences and technology in Africa. Finally, our industrial psychologists have developed highly sought-after postgraduate training programmes in managing HIV and Aids in the workplace.

But, more than merely increasing our understanding of the critical social and economic issues, a number of research programmes are playing a direct role in supporting fact-based policy formulation and action related to the MTSF.



## **Building economic and social infrastructure**

### **Energy and the environment**

The Centre for Renewable and Sustainable Energy – a national hub with several participants – is based in the Faculty of Engineering and focuses on energy generation and distribution with the aim of increasing energy supply to developing regions, providing renewable energy, limiting environmental impact and finding new techniques in energy usage management.

[www.crses.sun.ac.za](http://www.crses.sun.ac.za)

## **Rural development strategy linked to land and agrarian reform and food security**

### **Rural Clinical School**

The health challenges of African rural environments differ significantly from those in urban settings. The Ukwanda Centre for Rural Health is situated in the Overberg region of the Western Cape. The initial aim was to make health care accessible and affordable to the poor and to contribute to rural development. This led to the recent establishment of the Rural Clinical School that will enable the University to focus on rural areas by taking science to society.

[www.thehopeproject.co.za](http://www.thehopeproject.co.za)

## **Food security**

Stellenbosch University's Food Security Initiative works toward reducing the effects of malnutrition, poverty and hunger. Combining perspectives from AgriSciences, Social Anthropology, Engineering and Health Sciences, researchers are taking an interdisciplinary approach to investigating mechanisms for ensuring the availability of safe and adequate food sources, and to assure food affordability along with the effective utilisation of food.

[www.thehopeproject.co.za](http://www.thehopeproject.co.za)

## **Strengthening skills and human resources**

### **Virtual Postgraduate Learning Support Project**

The Virtual Postgraduate Learning Support Project is a cyber graduate school created in partnership with the faculties. The limitations of time, space and access to postgraduate study are eliminated or substantially reduced by online support in the form of accessible tutors, online research sources and discussion forums where fellow students can share experiences. This enables more students to register for postgraduate study, resulting in greater graduate research output, qualified experts and a better academic research profile in South Africa.

[www.thehopeproject.co.za](http://www.thehopeproject.co.za)

## **e-Learning library**

Stellenbosch University's e-Learning library combines digital services with the traditional approach. Complementing this broadened access to knowledge sources are contemporary learning spaces with electronic resources and skilled staff attuned to research information needs. This interactive learning environment equips knowledge consumers with information skills, workspaces with multi-platform access to scholarly articles, discussion rooms for team project work, and hubs for accessing multimedia equipment.

<http://library.sun.ac.za>

## **School for Graduate Research**

The School for Graduate Research in the Faculty of Arts and Social Sciences is an incubator of professional African expertise. A multi-interdisciplinary scholarly approach is being adopted to prepare a pioneering generation of African academics to tackle the critical challenges facing Africa and the world.

<http://sun025.sun.ac.za/portal/page/portal/Arts>

## **Pursuing regional development, African advancement and international cooperation**

### **Development and strengthening science in Africa**

Stellenbosch University plays a leading role in internationalisation in higher education. It actively pursues regional and African collaboration as well as the development and strengthening of science in Africa. To measure and better support our African initiatives a special indicator was created to record departments' partnerships in Africa. A database was developed together with the Division of Information Technology to record and systematise these projects. To date more than 200 entries of individual collaborative African projects and programmes have been recorded. This data informs policy aimed at supporting further initiatives and identifying potential partners for bilateral exchange agreements.

In addition, our Postgraduate and International Office has used its extensive experience in international relations to identify and partner with a select number of African universities.

[www.sun.ac.za/international](http://www.sun.ac.za/international)

### **Strengthening democracy through governance**

Stellenbosch University's Unit for Corporate Governance in Africa believes that governance is the key to building stable and healthy institutions and democracy on the continent. The Unit has introduced a range of research-based activities under the project banner of strengthening democracy through governance.

[www.thehopeproject.co.za](http://www.thehopeproject.co.za)

### **MEDIAAFRIKA**

Stellenbosch University's Department of Journalism believes that its multimedia training and research centre, MEDIAAFRIKA, will produce journalists who will serve as guardians of democracy through investigative reporting and across various media platforms. MEDIAAFRIKA holds a strategic benefit for Africa as the only specialised postgraduate journalism school in South Africa.

[www.thehopeproject.co.za](http://www.thehopeproject.co.za)

### **Sustainable resource management and use**

#### **Sustainability Institute**

Stellenbosch University and the Sustainability Institute has made an impact on sustainability policy measures through its close partnership with the City of Cape Town, the Stellenbosch Municipality and its work for various provincial and national departments.

A project on Cape Town's long-term sustainability options with respect to energy, waste, water and sanitation called Cape Town Futures, was recently completed and will be implemented in collaboration

with the City. An ongoing three-year partnership with the National Department of Human Settlements on Sustainable Neighbourhoods includes policy measures to incorporate sustainability into low-income housing projects in all nine provinces. The Sustainable Stellenbosch project uses Stellenbosch as a case study to implement policies for among others renewable energy, urban agriculture, food security, organic farming, water, and waste management. This included the co-authoring of the Stellenbosch Human Settlement Strategy. Similar research informed the Western Cape Human Settlement Strategy.

[www.sustainabilityinstitute.net](http://www.sustainabilityinstitute.net)

#### **Centre for Invasion Biology**

The Centre for Invasion Biology is a multi-institutional national Centre of Excellence based in the Faculty of Science. It functions at the forefront of research on invasive species, biodiversity and ecosystem functioning, and produces globally-relevant solutions. The Centre works towards reducing the rate and impact of biological invasions, both regionally and domestically.

[www.sun.ac.za/cib](http://www.sun.ac.za/cib)

#### **Stellenbosch University Water Institute**

The Stellenbosch University Water Institute was established to collaborate with government and industry. Through a focus on water, issues such as health, effluent treatment, agriculture, food, a sustainable environment, nanotechnology and filtration are addressed.

[www.sun.ac.za/water](http://www.sun.ac.za/water)

### **Building a developmental state – improving public services and strengthening democratic institutions**

#### **Poverty**

The Economics of Social Policy Team has produced substantial insight on poverty and inequality in South Africa. Their research has created a clear understanding that poverty has been declining since the turn of the century, and that social grants have played a central role in this regard.

[www.sun.ac.za/research](http://www.sun.ac.za/research)

#### **Socio-economic vulnerability and the legal system**

The Faculty of Law believes that significant progress in combating poverty, housing shortages and socio-economic vulnerability is hindered by the continued existence of traditional ways of thinking, insufficient theorisation regarding the role that the law should play in a transformation process, inadequate legal training and a shortage of highly-qualified jurists who have an awareness of transformation. The Faculty's initiative to combat socio-economic vulnerability through the South African Constitution seek solutions for social and economic problems that continue to exist and that are exacerbated by poverty, unemployment and housing shortages.

[www.sun.ac.za/law](http://www.sun.ac.za/law)

# **Conclusion**

Stellenbosch University's strategic position and the projects highlighted in this brochure demonstrate that we are aligned with the Presidency's Medium-term Strategic Framework (MTSF).

Our core functions – robust research (in support of evidence-based policy), quality teaching and learning, and community interaction – to ensure that the benefits of the academic enterprise reach the community – all converge to make the University an effective role player and participant in Government's strategic priorities of eradicating poverty, improving social services, building sustainable communities, improving South Africa's health profile, and growing an increasingly inclusive economy for the benefit of all South Africans as well as the citizens of Africa.

We are ready to engage with all stakeholders as a knowledge pioneer and a knowledge partner to achieve the goals set out in the MTSF.







### Centre for Studies in Complexity

The Centre for Studies in Complexity is the University's medium to rethink traditional approaches to addressing chronic societal problems. This Centre is the only such institution in South Africa. It provides a language which facilitates trans-disciplinary synthesis and growth, and creates new opportunities to find solutions for unsolved challenges through local and international collaboration.

[www.thehopeproject.co.za](http://www.thehopeproject.co.za)

### Improving the health profile of society

#### DST/NRF Centre of Excellence on Epidemiological Modelling and Analysis

The DST/NRF Centre of Excellence on Epidemiological Modelling and Analysis (SACEMA) is highly involved in promoting the possible use of antiretroviral therapy as a tool to reduce the incidence of HIV – with a view to eradicating the epidemic entirely. SACEMA has played a major part in the analysis of the public health consequences of establishing safe medical male circumcision as a public health measure.

[www.sun.ac.za/sacema](http://www.sun.ac.za/sacema)

#### HIV/Aids

The Africa Centre for HIV/Aids Management offers highly-regarded postgraduate training in HIV/Aids workplace management and has delivered over 2 400 graduates from 42 countries – including 82 with master's degrees. Its community mobilisation programme has reached more than 100 000 people through industrial theatre, focus groups and counselling.

[www.aidscentre.sun.ac.za](http://www.aidscentre.sun.ac.za)

#### DST/NRF Centre of Excellence for Biomedical TB Research

The Centre for Biomedical TB Research (CBTBR) focuses on South Africa's tuberculosis and HIV crisis. Whereas much of the work of the CBTBR entails the development of accurate diagnosis and appropriate therapy for MDR and XDR-TB, the centre plays an active role in community outreach and awareness to prevent and treat TB.

[www.tuberculosis.org.za](http://www.tuberculosis.org.za)

#### Communication and information systems

The Communication and Information Systems Initiative consists of three sub-projects: speech technology for indigenous African languages, computer access for physically disabled persons, and telemedicine workstation enhancement. Although these will contribute to a competitive industry, it will also have a major impact on the quality of life of people, their human dignity and their access to health care.

[www.thehopeproject.co.za](http://www.thehopeproject.co.za)

### Intensifying the fight against crime and corruption

#### Security Institute for Governance and Leadership in Africa

The Security Institute for Governance and Leadership in Africa (SIGLA) develops capability and generates knowledge in leadership, security, governance and democracy. Offering advanced postgraduate leadership studies and Africa-wide training, the latest leadership research, special commissions and policy advocacy, SIGLA strengthens the conceptual understanding of the relationship between leadership and governance.

[www.thehopeproject.co.za](http://www.thehopeproject.co.za)

#### Africa Centre for Dispute Settlement

The Africa Centre for Dispute Settlement at the University of Stellenbosch Business School under the patronage of Nobel Laureate Archbishop Emeritus Desmond Tutu, presents alternatives to traditional dispute settlement through advancing a culture of respect and civil courage.

[www.usb.ac.za](http://www.usb.ac.za)

### Building cohesive, caring and sustainable communities

#### TSAMA Hub

Complexity thinking applied to the dynamics of socio-ecological systems forms the epistemological focus of the Centre for Trans-disciplinarity, Sustainability, Assessment, Modelling and Analysis (TSAMA). The TSAMA Hub focuses on issues and challenges in sustainability, sustainable development and complexity.

[www.tsama.org.za](http://www.tsama.org.za)

#### Sport and physical activity for persons with disabilities

The Centre for Human Performance Sciences focuses on adapted physical activity through the development of a research and education network among participating African universities, and by creating research capacity to support research and publications on sport and physical activity for persons with disabilities, the youth and women.

[www.thehopeproject.co.za](http://www.thehopeproject.co.za)

#### Youth Soccer Centre

The Stellenbosch University Sport Performance Institute, the Centre for Human Performance Science and the Sport Bureau are working together to develop a Youth Sport Initiative. In addition to promoting soccer as a world-class sport through the Stellenbosch Soccer Academy, the Initiative focuses on strengthening the academic foundation of the youth soccer programme by helping youngsters to develop life skills, health intelligence and social values through sport.

[www.thehopeproject.co.za](http://www.thehopeproject.co.za)

#### Human dignity

Research initiatives at the Faculty of Theology revolve around poverty and human dignity. Initiatives include the Sustainable Livelihoods Project; research and exchange programmes with Sweden, the Netherlands and the United States; a network of theological training institutions in southern Africa (NetACT); and research on theology and social identity and differences, conflict and transformation.

<http://academic.sun.ac.za/tsv/netact.html>

*Continued on back cover ►*

diverse ideas  
excellent research  
relevant outcomes

Stellenbosch University makes a significant contribution towards a **skilled and capable workforce and continues to provide high-level occupation-directed programmes**. In 2010, for example, we produced 282 graduates in engineering and 304 graduates in the natural and physical sciences. Our research master's degrees have increased by 44% since 1999 with a total of 598 degrees awarded in 2010. Doctoral degrees awarded in 2010 show an increase of 66% since 1999 with a total of 139. We have one of the highest number of postdoctoral research fellow cohorts in South Africa, with a total of 150 postdocs in 2010.

We recognise the importance of **research, development and innovation in developing human capital for a growing knowledge economy**. Our commitment to research and development can be seen in the following:

### **Research focus**

- 14 Research Chairs and 3 Centres of Excellence
- 270 peer-rated researchers in 2010
- a Central Analytical Facility housing 9 units and servicing clients from academia and industry
- more than 40 NRF Thuthuka grants in 2010
- 9 NRF Blue Skies Awards in 2010

### **Academic output**

- 66% increase in the number of PhD graduates since 1999
- 12% of the total accredited research outputs in SA in 2009
- average annual growth of 6.2% in research outputs since 2006
- the highest weighted research output per permanent academic staff member in the country

### **Research collaboration**

- approximately 1 780 active research contracts, of which most are with industry partners
- approximately 20 active EU FP7 awards
- more than 70 joint projects with national science councils
- more than 120 active collaborative projects in 36 African countries involving 132 African institutions and 363 African collaborators
- more than 2 700 international students of 100 different nationalities
- a postgraduate student body that comprises 36% of the total student body of SU

# Contact us

## Division for Research Development

Research Information and Strategy

Stellenbosch University

Private Bag XI Matieland 7602

Tel: +27 (0) 21 808 4623

Fax: +27 (0) 21 808 4537

Email: [mh3@sun.ac.za](mailto:mh3@sun.ac.za)

Read more on the interesting research  
being done within the five themes at  
**[www.sun.ac.za/research](http://www.sun.ac.za/research)**



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY

# HOPE PROJECT

SU research outputs are stimulated, amongst others,  
by the themes within the HOPE project. Hereby  
our research activities contribute to the social and  
economic well-being of society and we position  
ourselves as a true knowledge partner  
and pioneer in support of the national  
and international development agenda.

**[www.thehopeproject.co.za](http://www.thehopeproject.co.za)**



A QR (Quick Response) code is a two-dimensional barcode (datamatrix) that can be read using a mobile phone with a built-in camera. The codes can be used to store all kinds of data, including URLs (web addresses). QR-Code readers are device-specific and can be downloaded from the internet.