



Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

forward together
sonke siya phambili
saam vorentoe

MOVING FORWARD WITH RESEARCH FOR IMPACT

Pushing the boundaries of
knowledge and possibility through
impactful research and innovation

Impactful research is one of the main drivers that measures the value-add of Stellenbosch University (SU) to knowledge generation and high-end skills training. This ensures that our research agenda optimises the scientific, economic, social, scholarly and cultural impact of the research outcomes. Our focus is on inter- and trans-disciplinary research that benefits society on a local, regional, national, continental and global (LRNCG) scale. We also acknowledge the important role that fundamental and disciplinary research plays, as this forms the basis for applied and translational research. We will continue to invest in research excellence to help us achieve our vision of being Africa's leading research-intensive university, recognised as **excellent, inclusive and innovative, where we advance knowledge in service of society.**

SU has five strategic research areas (SRAs) that drive its institutional research agenda: **the natural environment; health and human security; social justice and development; human creativity and social innovation; and systems and technologies for the future.**


Under each of these broad “umbrella” areas we focus on the establishment of relevant and focused inter- and trans-disciplinary research entities, for which a specific strategic niche exists at SU related to human capacity, strategic focus, geographical location, as well as local, national and global research needs. The SRAs were developed against the background of the United Nation’s Global Sustainable Development Goals (SDGs), the African Union’s Agenda 2063 goals, the national goals and new growth strategy of government and the National Development plan (NDP).

Our focused research entities under the SRAs are developed in line with the South African White Paper on Science, Technology and Innovation (STI) and the new **Decadal Plan 2021-2031. The plan emphasises Science, Technology and Innovation (STI) priorities aligned with key sectors of the economy (agriculture, manufacturing, mining, health, energy, and the digital and circular economies), as well as three Societal Grand Challenges (SGCs), namely, climate change and environmental sustainability, the future of education, skills and work; and the future of society.** In this regard, interconnectedness and an inter- and trans-disciplinary approach to research projects are important. At the same time, we are committed to basic and fundamental research excellence as it forms the basis for applied and translational research.

At SU we will therefore continuously focus on the unique areas in which we have developed expertise over time and built collaborative networks with knowledge partners in South Africa, the rest of the continent and the rest of the world. Part of this strive is to be locally relevant, with regional impact, but also globally competitive.

We value the diversity of our research expertise and unique strengths. Research is a transformative activity with the power to change the world. SU’s academics, postdoctoral research fellows and postgraduate students, through their future-oriented and innovative ideas and work, are breaking ground to build healthy, strong and sustainable communities. This is achieved by, amongst others, our theme-based research chairs, centres of excellence and other high-level research entities. These entities have strong academic leadership surrounded by a team

of researchers, postdoctoral fellows and postgraduate students and contribute greatly to our research mission to stay future-focused with real impact and benefit to society. They uncover imagination and creativity, prioritise future possibilities above what we have at hand and push the boundaries of knowledge and possibility. Research for Impact at SU are indeed characterised by diverse ideas, excellent research and relevant outcomes.



“We know that people, our people, play a significant role in setting the research agenda, providing training, and framing research to help transform and improve livelihoods. So, research for impact also means that we continuously strive to create an enabling environment for our people to thrive and continue to push the boundaries of knowledge and possibility - which is of importance for the benefit of society, for the benefit of our country, and the globe in which we live and for which we should be responsible. Only then can we help to transform our society and make it sustainable for everyone to live in.”

Prof Sibusiso Moyo

(DVC: Research, Innovation and Postgraduate Studies)



The Natural Environment

SA Research Chair in Social-Ecological Systems and Resilience

The Chair aims to contribute to addressing theoretical, methodological, and empirical gaps in our understanding of social-ecological systems and resilience. The research employs transdisciplinary approaches that integrate methods from the social and natural sciences, while engaging with stakeholders outside academia to generate globally relevant insights in this emerging field, grounded in the southern African context.

Prof Reinette (Oonsie) Biggs (oonsie@sun.ac.za)

<https://www0.sun.ac.za/cst/research/social-ecological-resilience/>

SA Research Chair in Integrated Wine Sciences

The research programme of the Chair represents an integrated approach to wine sciences, and combines molecular, cellular and multi-omics biology with traditional wine sciences (oenology). The collaboration network of the Chair also covers and integrates core support disciplines such as bioinformatics, data science, analytical chemistry, sensory science and multi-variate data analytics.

Prof Florian Bauer (fb2@sun.ac.za)

<https://sagwri.sun.ac.za/sarchi-chair/>

SA Research Chair in Mathematical and Theoretical Physical Biosciences

The Chair aims to establish the multi-disciplinary field of mathematical and theoretical physical biosciences as a distinct research strength in SA. The research focus areas are: biodiversity informatics; spatial dynamics; evolutionary game theory; and ecological networks.

Prof Cang Hui (chui@sun.ac.za)

<https://www0.sun.ac.za/biomath/research/>

SA Research Chair in Green Hydrogen Integration and Transition

The Chair will create opportunities to train the next generation of researchers and graduates and create awareness for young learners on technology solutions and new possibilities of energy sources and their implementations. With the dramatic increase in electrification and renewables, a critical aim of this Chair is to investigate a diversified energy mix.

Prof Paramespri Naidoo (prathiekan@sun.ac.za)

<https://bit.ly/483njQD>

Chair in Invasive Species Management in Protected Areas

The Chair aims to safeguard biodiversity and the ecosystem services that protected areas provide to people by undertaking excellent research that facilitates evidence-based management of invasions in conservation areas; develop tools that support the cost-efficient yet effective management of alien species in protected areas; and build capacity within conservation agencies to strengthen their ability to meet their legal mandate of managing invasions.

Prof Tammy Robinson-Smythe (trobins@sun.ac.za)

<https://blogs.sun.ac.za/cib/managing-invasions-in-protected-areas/>

Research Chair in Plant Health

The Chair focuses on research that strengthens and supports the crop protection and plant health spheres. Applied research is done across a range of crops, such as table grapes, potatoes and grains, with, among others, input from the data science and agri-informatics sectors.

Prof Nick Kotze (nkotze@sun.ac.za)

<https://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9580>

Post-Harvest Physiology Research Chair in Deciduous Postharvest Research

The Chair not only provides an opportunity to do important research, but also a chance to train future industry leaders and to ensure greater interaction with the fruit industry and other researchers. Research includes ways to eliminate various physiological disorders which occur when apples and pears are stored or ripened after picking.

Dr Elke Crouch (elke@sun.ac.za)

<https://bit.ly/45Qm4SU>

Hans Merensky Chair in Advanced Modelling of Wood Formation in Eucalypts

The Chair explores in detail all aspects of growth, but particularly the dynamics of wood formation (xylogenesis) in the ecologically and commercially important group of genera known as the eucalypts (particularly *Eucalyptus*, *Corymbia* and *Angophora*). This is done through cutting edge, detailed experimental and observational science, looking at plant growth, wood formation processes, anatomy and ecophysiology; and the development of mathematical, computational models of tree growth and xylem productions.

Prof David Drew (drew@sun.ac.za)

<https://blogs.sun.ac.za/eucxylo/>

AIMS-Canada Junior Research Chair in Data Science for Climate Resilience

The purpose of the Chair is to contribute to novel research within the field

of machine learning to address ecological problems. Furthermore, the Chair should increase public awareness, facilitate student projects, and contribute to the human capacity development within Africa for machine learning and conservation ecology - as a combined area of research, which is currently lacking in Africa.

Dr Emmanuel Dufourq (edufourq@sun.ac.za)

<https://bit.ly/45yyTlp>

SASOL Chair in Analytical Polymer Science

The focus of the Chair is on the development of novel multi-dimensional and multi-detector approaches for the analysis of complex macromolecular architectures. Their analytical focus is on 2D coupling of various liquid chromatography and fractionation techniques and coupling with information-rich detectors such as light scattering, viscosity, fluorescence, FTIR and mass spectrometry.

Prof Alben Lederer (alederer@sun.ac.za)

<https://www0.sun.ac.za/chemistry/>

African Rainbow Minerals (ARM) geomaterials research chair

The Chair aims to develop knowledge, workflows and models which focus on value generation through understanding the 3D ore body characteristics (e.g. mineralogy, grade, distribution of deleterious elements, envisioned processing behaviour) in a context of the full mine value chain (i.e. geology, mining, comminution, and beneficiation).

Dr Bjorn von der Heyden & Dr Margreth Tadie

(bvon@sun.ac.za; mtadie@sun.ac.za)

<https://bit.ly/3Pm1k>

Africa-Europe CoRE Nature-based Solutions for Climate Change Adaptation and Mitigation

The Cluster will address both global and inter-continental challenges within the Green Transition category and advance coordinated trans-disciplinary approaches to addressing climate change and biodiversity challenges that are inextricably intertwined, and therefore best addressed simultaneously, as guided by the UNs SDGs.

Prof Guy Midgley (gfmidgley@sun.ac.za)

<https://bit.ly/3R0n1Eg>

Africa-Europe CoRE Renewable Energy

The Cluster focuses on renewable energy technology development, equitable societal transition, and sustainable education and training. This CoRE hopes to contribute significantly to tackling one of society's biggest and most pressing needs – the current energy challenges faced within Africa and Europe. It will focus on renewable energy technology development, equitable societal transition, and sustainable education and training.

Prof Neill Goosen (njgoosen@sun.ac.za)

<https://bit.ly/3R0n1Eg>

Stellenbosch University Water Institute (SUWI)

The SUWI is a multi-disciplinary research collective that recognises the complex nature of water management and supply in a water-scarce country such as SA.

Prof Gideon Wolfaardt (gmw@sun.ac.za)

<https://www.sun.ac.za/afrikaans/entities/SUWI/about>

Centre of Renewable and Sustainable Energy (CRSES)

The objective of CRSES is to develop and enhance national capacity in renewable and sustainable energy in support of accelerated and shared economic growth within the area of sustainable energy.

Prof Wikus van Niekerk (wikus@sun.ac.za)

<https://www.crses.sun.ac.za/>

Centre of Excellence for Invasion Biology (C-I-B)

The C I B undertakes research on the biodiversity consequences of biological invasions, largely through postgraduate student training, research projects and long-term biodiversity monitoring. The Centre aims to reduce the rates and impacts of biological invasions by furthering scientific understanding and predictive capability, and by developing research capacity.

Prof Guy Midgley (gfmidgley@sun.ac.za)

<https://blogs.sun.ac.za/cib/>

School for Climate Studies

The School is the first of its kind in South Africa that has the status of a Faculty. The aim is to create transdisciplinary capacity that will combine the climate-related knowledge systems of SU faculties, public sector climate policies and initiatives, private sector climate redress and innovation capacities, and SU's social impact mission in both academic and applied ways – all in support of the transition to a climate-resilient society and a low-carbon economy.

Prof Guy Midgley (gfmidgley@sun.ac.za)

<https://climate.sun.ac.za/>

SA Research Chair in Innovative Rehabilitation

The Chair focuses on the development of novel approaches to strengthen rehabilitation in the health system. The Chair's research will position SA as a world leader in enhancing access to rehabilitation and delivering effective, cost-efficient rehabilitation services to address the unmet needs of people disadvantaged by chronic disease and disability in the low- and middle-income settings. In low resource settings, additional costs for chronic disease and disability management simply cannot be absorbed without innovations.

Prof Quinette Louw (qalouw@sun.ac.za)

<https://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=5743>

SA Research Chair in Mycobacteriomics

The research aim of the Chair is to perform in-depth characterisation of clinical strains of *M.tuberculosis* and other mycobacterial species isolated from humans and animals on the African continent. Knowledge gained will support the goal of an improved understanding of mycobacterial biology aiding the design of effective tuberculosis vaccines, diagnostics and therapeutics.

Prof Samantha Sampson (ssampson@sun.ac.za)

<https://bit.ly/3YZEOxf>

SA Research Chair in Food, Environments, Nutrition and Health

The research focus of the Chair is food environments, nutrition and health, in the context of their influence and impact on the triple burden of malnutrition. In this context, it relates to undernutrition (stunting, wasting and micronutrient deficiencies), over nutrition (overweight and obesity), and consequent non-communicable diseases (diabetes, hypertension, cardiovascular diseases and cancer). It includes a focus on food systems, food industry, and household status.

Prof Xikombiso Mbhenyane (xgm@sun.ac.za)

<https://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=7420>

SA Research Chair in Paediatric Tuberculosis (TB)

The Chair focuses on novel and transformative strategies to improve tuberculosis prevention, diagnosis and treatment in children, using family-centered approaches in the context of broader lung and child and maternal health. Evaluation of novel drug regimens across the age, disease and drug resistance spectrum is a key priority. Diagnostics and biomarkers is another strong focus, given the challenges of robust tuberculosis in children. The clinical research is underpinned by robust surveillance, epidemiological research, health systems, mathematical modelling and socio-behavioural research.

Prof Anneke Hesseling (annekeh@sun.ac.za)

<https://blogs.sun.ac.za/dttc/paediatric-tuberculosis-research/>

SA Research Chair in TB Biomarkers

The main focus of the research is to identify immune biomarkers that can be taken into future trials for novel diagnosis, vaccines, and treatment response evaluation. The research group is part of several international consortia that identify - together with US, European and African partners - large cohorts of participants with well-characterised MTB infection and disease phenotypes to search for biomarkers of TB. The group's work spans the divide between clinical and basic sciences in a high TB prevalence area, and is also working on modern clinical approaches, like research bronchoscopies for site-of-disease investigations and advanced imaging through PET/CT scanning.

Prof Gerhard Walzl (gwalzl@sun.ac.za)

<https://bit.ly/3Z6wTOD>

SA Research Chair in Mechanistic Modelling of Health and Epidemiology

The focus of the Chair is to provide a mechanistic modelling approach to analyse pharmaceutical drug effects and identify intervention steps to improve individual and public health. The goal is therefore to construct and validate mathematical models of metabolism in cells and try to simulate the effects of the biochemical mechanisms underlying a disease for disease states at cellular, tissue and whole body levels. The focus is on a number of important diseases in the SA context, i.e. malaria, type II diabetes, TB and cancer.

Prof Jacob (Jacky) Snoep (jls@sun.ac.za)

<https://bit.ly/3PqpHv>

SA Research Chair in Integrative Skeletal Muscle Physiology, Biology and Biotechnology

The Chair aims to close the gap between an in-depth understanding of the biological effects of trauma and disease on skeletal muscle cells and the well-known ability of muscle to gain strength and regenerate

from injury. Postgraduate students and postdoctoral fellows study these aspects of skeletal muscle at three complementary levels: whole body physiology (real humans); cellular and molecular biology (tissue and cells in culture dishes); and biotechnology (manipulation of regeneration).

Prof Kathy Myburgh (khm@sun.ac.za)

<https://bit.ly/3Z2jBTf>

Sarah Turoff Endowed Chair in Schizophrenia Research

Brain diseases are major contributors to the disease burden globally and nationally and schizophrenia makes up a substantial component. It is a puzzling and complex disorder, impacting negatively upon individuals, families and society. The Chair aims to increase the visibility of schizophrenia research and enhance research opportunities for staff and students.

Prof Robin Emsley (rae@sun.ac.za)

<https://bit.ly/3qXomku>

Rand Water Chair in Public Health

The principle of this Chair is to implement diverse research projects in the field of drinking water related to human health risk assessment and epidemiology. Multiple environmental factors in water supply and distribution need to be monitored in order to minimise the chance of water becoming a threat to public health. In line with Rand Water's stated vision to stay at the forefront of water supply and further its international reputation, the aim is to go beyond standard monitoring to develop new strategies with Rand Water for the advancement of water research in service of society.

Prof Gideon Wolfaardt (gwm@sun.ac.za)

<https://bit.ly/3Emyh6e>

Africa-Europe CoRE Genomics for Health in Africa

The Cluster's priority area is public health and will specifically focus on rare diseases and rare cancers, in addition to pandemic preparedness and infectious diseases.

Prof Tulio De Oliveira (tulio@sun.ac.za)

<https://bit.ly/3PjDp1t>

Centre of Excellence for Biomedical TB Research (CBTBR)

The CBTBR combines clinical grassroots investigations into TB with sophisticated laboratory research that involves various departments and disciplines within and beyond the University. Whereas much of the work entails the development of accurate diagnostics and appropriate therapy for MDR and XDR-TB, the Centre has also played an ongoing role in community outreach and awareness to prevent and treat TB.

Prof Gerhard Walzl (gwalzl@sun.ac.za)

<https://tuberculosis.mrc.ac.za/>

Centre for Epidemic Response and Innovation (CERI)

CERI's vision is to effectively respond to epidemics through pathogen genomics surveillance to enhance biomedical discovery, improving the treatment, diagnosis and prevention of human disease and generating economic opportunities for Africa. They apply expertise in genomics to identify new variants of pathogens and advance basic and translational science to improve prevention, treatment and vaccines to human disease in Africa.

Prof Tulio De Oliveira (tulio@sun.ac.za)

<https://ceri.org.za/>

South African Centre for Epidemiological Modelling and Analysis (SACEMA)

SACEMA specialises in the mathematical modelling of diseases prevalent in SA. The work is multi-disciplinary, combining biological, medical, statistical, mathematical and computing skills to study patterns of disease progression, in space and time, at population and within host levels. The aim of this modelling is to identify the principle causes of diseases and their transmission, and the likely outcomes of various interventions, and so to provide a sound scientific basis for health policy.

Prof Juliet Pulliam (pulliam@sun.ac.za)

<https://www.sacema.org/>

Also visit:

Centre for Food Safety: <https://bit.ly/3Ek0vOW>

Desmond Tutu TB Centre: <https://blogs.sun.ac.za/dttc/>

Africa Cancer Institute: <https://bit.ly/47VFfMW>

Institute of Sport and Exercise Medicine (ISEM):

<https://www.isemsun.com/>

Social Justice & Development

SA Research Chair in the Sociology of Land, Environment and Sustainable Development

The central concern of this Chair is to deepen our understanding of the complex web of social and environmental dynamics in which commitments to sustainable development must be grounded, through an investigation of these issues in and through the Karoo region of SA. The focus of the Chair is on local understandings of development priorities and needs in a region that has long been marginalised politically and economically.

Prof Steven Robins (slr@sun.ac.za)
www.cosmopolitankaroo.co.za

SA Research Chair in Gender Politics

This Chair aims to fill the gap that exist in gender-related research and will broaden research access for gender scholars. Most serious societal problems in SA are deeply gendered problems (such as gender-based violence, poverty, land and health issues). In order to deliver a better understanding of women's citizenship, the research focuses on experiences of women in the political system through representations, the accommodation of their needs and demands in governmental policies, and women's activism that mobilise demands so that these demands can be included on the political/policy agenda.

Prof Amanda Gouws (ag1@sun.ac.za)
<https://polsci.sun.ac.za/sarchi/>

SA Research Chair in Violent Histories and Transgenerational Trauma

The Chair is a multidisciplinary research initiative that aims to bring conceptual clarity to the genealogies of violence and to illuminate the enduring legacies of violent histories and their transgenerational repercussions. At the heart of this work is the "afterlife" of historical trauma - the continuing transgenerational impact of violent pasts shaped by colonialisation, oppression, discrimination, and destruction of communities. The Chair also seeks to have impact on public debate and influencing audiences at a broader level of society.

Prof Pumla Gobodo-Madikizela (pumlam@sun.ac.za)
<https://bit.ly/45y6l5S>

SA-Africa-UK Trilateral SARCHI in Mainstreaming Gender for Energy Security and Urban Poor Environments

The overall objective of the GENS Trilateral Chair is to build research capacity and produce knowledge across Africa concerning gender-informed innovation and commercialisation opportunities in alternative energy technology and services.

Prof Mark Swilling (interim) (swilling@sun.ac.za)
<https://gens.sun.ac.za/>

The Law Trust Chair in Social Justice

The working definition underpinning the research of the Chair is that Social justice is about the equal enjoyment of all rights and freedoms regardless of human diversity reflected in the fair and just and distribution of all opportunities, benefits, privileges and burdens in a society or group. The Social Justice M-Plan is the flagship programme of the Law Trust Chair in Social Justice. It is also an avenue for giving effect to the University's social impact objective, particularly with regard to the grand constitutional objective of healing the divisions of the past and transforming structural social relations in society to give effect to the constitutional promise of freeing the potential and improving the quality of life of every citizen. Influenced by 2 years of intensive research and modelled on the US sponsored post-World War 2 Europe Recovery Marshal Plan, the Social Justice M-Plan is an integrated ground up civil society plan that seeks to coordinate systematic and integrated academic, business and broader civil society input to support government efforts towards breaking the back of poverty and inequality. Worth noting, is that the research includes auditing and integrating existing social justice research and data while generating new knowledge and information where necessary.

Prof Thuli Madonsela (tmadonsela@sun.ac.za)
<https://blogs.sun.ac.za/law/faculty-trust-chair-of-social-justice/>

HF Oppenheimer Chair in Human Rights Law

The Chair's aim is to contribute to deepening a human rights culture in SA through high quality research and contributing to public debate and advocacy on human rights. The Chair is endowed by the Oppenheimer Foundation with the purpose of promoting the development of human rights law in SA through the three main pillars of academic endeavour - research, teaching and community interaction.

Prof Sandra Liebenberg (sliebenb@sun.ac.za)
<https://blogs.sun.ac.za/law/hf-oppenheimer-chair-in-human-rights/>

Gys Steyn Chair in Financial Regulation Law

The Chair will focus on the theory, purpose and principles of regulation in general, and specifically financial regulation law. This will incorporate aspects such as the economics of the financial sector, models of regulation, regulation of different risks in the financial sector, and regional and international financial regulation law. The vision is for the Chair to create a hub around which more focused expertise (both academic and professional) may be co-opted in the various areas of financial regulation. The Chair will also investigate the nature and regulation of technology used in financial markets (so-called "fintech") to promote the efficient and effective use of these technologies, and how these technologies disrupt traditional financial services and their regulation.

<https://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=10008>

Also visit:

Centre for the Study of the Afterlife of Violence and the Reparative Quest (AVReQ): <https://avreq.sun.ac.za/>

Centre for Research on Democracy (CREDO):
<https://polsci.sun.ac.za/centre-for-research-on-democracy/>

Bureau for Economic Research: <https://www.ber.ac.za/Home/>

Centre on Conflict and Collaboration: www.stellenboschbusiness.ac.za/research/centre-conflict-and-collaboration

Unit for Religion and Development Research:
<https://blogs.sun.ac.za/urdr/who-we-are/>

Centre for Applied Ethics: <https://bit.ly/3R1APym>

Centre for International and Comparative Politics: <https://bit.ly/44ruE9D>

Africa Centre for HIV/Aids Management:
<https://www.aidscentre.sun.ac.za/>

Anti-corruption Centre for Education and Research of SU (ACCERUS):
<https://bit.ly/3YXws9p>

Centre for Social Justice (CSJ): <https://bit.ly/3PjAwxF>

Security Institute for Governance and Leadership in Africa (SIGLA):
<http://www.sun.ac.za/english/faculty/milscience/sigla>

Centre for Military Studies (CEMIS): <https://bit.ly/44wHcNb>



Human Creativity & Social Innovation

SA Research Chair in Science Communication

The Chair serves as a hub of research and postgraduate training in the field. Through an interdisciplinary lens, the Chair focuses on issue-driven and action research to explore the agenda of science communication for social justice. This enables theoretical and empirical insights into the complex ways in which communication research and practice can positively connect science and society.

Prof Mehita Iqani (mehita@sun.ac.za)

<https://www.imidibaniso.co.za/>

Anton Mostert Chair of Intellectual Property

The Chair was established with the express purpose of fostering a greater development drive for intellectual property in SA. This is done through high-level academic tuition, expert analysis, private-public coordination, rigorous protective action of established legal principles and pioneering sound adjustments to IP law to increase the production and export of intellectual property and provide adequate protection of contemporary expressions of human intellectual endeavour.

Prof Sadulla Karjiker (skarjiker@sun.ac.za)

<https://blogs.sun.ac.za/iplaw/>

Ton and Anet Vosloo Research Chair in Afrikaans Language Practice

The Chair hosts a centre of knowledge on the scientific study of translation, interpreting and revision/editing. Afrikaans language practice is being researched here and in this way Afrikaans is enhanced as a language of science. This does not happen in isolation within an Afrikaans enclave, but rather within a multilingual and multicultural environment.

Prof Ilse Feinauer (aef@sun.ac.za)

<https://bit.ly/45CutKf>

UNESCO Chair in Complex Systems and Transformative African Futures

The Chair will draw on the expertise of the two co-chairholders to integrate in-depth knowledge of complex systems, combined with the conceptual and practical applications of futures studies. This includes specialisation in theories of complex systems and in the practice of futures studies and foresight. The Chair will develop capacities for studying and exploring the nature of complex interdependent social-ecological systems, how change comes about in such systems, and how to create the conditions for ecologically sustainable and socially just futures.

Prof Rika Preiser and Tanja Hichert (rika@sun.ac.za)

<https://bit.ly/45Xw6Se>

UNESCO Chair in Intercultural Competences

The Chair will provide expertise on intercultural competence and integrating in-depth knowledge of intercultural competencies, educational research and capacity development in Africa. It aims to promote an integrated system of research, teaching and training, as well as community engagement and communication. It will facilitate collaboration between high-level, internationally recognised researchers and teaching staff of SU and other institutions in the region and in other regions of the world. The intention of the Chair is therefore to re-think the lens of intercultural competence.

Dr Darla Deardorff and Prof Sarah Howie

<https://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9960>

DSI-NRF Centre of Excellence in Scientometrics and Science, Technology and Innovation Policy (SCISTIP)

SCISTIP has five research focus areas: science in (South) Africa (history, governance, state and trends); human resources for science and technology (the next generation of scientists, scholars and knowledge professionals); research evaluation (assessing the uptake, utilisation and impact of research); science and technology and innovation studies; and communication in and of science.

Prof Johann Mouton (ijm6@sun.ac.za)

<https://www0.sun.ac.za/scistip/>

Also visit:

Africa Open Institute for Music, Research and Innovation:

<https://aoinstitute.ac.za/>

Centre for Science and Technology Mass Communication (CENSCOM):

<https://bit.ly/47NIh6d>

Centre for Regional and Urban Innovation and Statistical Exploration

(CRUISE): <https://www0.sun.ac.za/cruise/>

Standard Bank Centre for Agribusiness Development and Leadership:

<https://bit.ly/3Z05ZrF>

Stellenbosch Institute for Advanced Study (STIAS):

<https://stias.ac.za/about/>

African Wildlife Economy Institute: <https://www0.sun.ac.za/awei/>

Stellenbosch University Centre for Pedagogy (SUNCEP):

<https://bit.ly/3OZbZwc>

Confucius Institute at SU (CISU):

<http://www.sun.ac.za/english/confucius-institute>

Stellenbosch University (SU) is firmly committed to the pursuit of knowledge, research and innovation, in service of society. We provide a world-class centre for learning and development, which is globally relevant, yet rooted in the upliftment and transformation of our local communities. Our actions are guided by key values and attributes, and enabled by outstanding staff and students, sound operating systems and a deep sense of purpose.



Systems and Technologies for the Future

SA Research Chair in Sugarcane Biorefining

The Chair aims to broaden the range of products manufactured from available sugarcane, so as to maximise the economic value extracted beyond conventional products like sugar, electricity, and ethanol. It involves both technology development and assessment, aiming to identify new investment opportunities for diversification of the local and international sugarcane industries.

Prof Johann Görgens (jgorgens@sun.ac.za)

<http://process.sun.ac.za/research-chair-in-sugarcane-biorefining/>

SA Research Chair in Antenna Systems for SKA

The Chair focuses on research and development of various antenna sub-systems for radio astronomy applications. Projects include work on reflector antenna optics, feed antennas, analogue front ends and digital back ends of a variety of radio telescopes - from interferometric dish arrays to large aperture arrays, to specialised single antenna instruments.

Prof Dirk de Villiers (ddv@sun.ac.za)

<http://blogs.sun.ac.za/su-ska/about/>

SA Research Chair in Power Systems Simulation

The Chair aims to characterise variability in the power system and understand its impacts in support of power system planning and operations. The Chair's vision is to optimally leverage SU's existing ecosystem of renewable energy and power system simulation expertise and industry and academic relationships towards developing and strengthening a national competency in power system simulation within South Africa.

Prof Bernard Bekker (bbekker@sun.ac.za)

<https://www.ee.sun.ac.za/professor-bekker-appointed-as-sarchi-research-chair/>

SA Research Chair in Postharvest Technology

The main research aim of the Chair is to address the postharvest loss and waste problem, which adds to food insecurity in SA. The research areas include development of cold-chain technologies, non-destructive quality measurement and control, as well as mapping and reducing postharvest losses along the food chain.

Prof Linus Opara (opara@sun.ac.za)

<https://www.sun.ac.za/english/faculty/agri/postharvest-technology>

South African National Roads Agency Limited (SANRAL) Chair in Pavement Engineering

The Chair endeavours to develop students, researchers and members of industry with appropriate knowledge and skills in pavement engineering; to develop students and technologies, through research, that will preserve and maintain our environment through developing new materials, processes, and technologies to provide the necessary performance and durability; and to use the circular economy to optimise the benefits of the 4IR and digitisation.

Prof Kim Jenkins (kjenkins@sun.ac.za)

<https://bit.ly/3EmFXW8>

Chair of Computational Thinking for AI (CT4AI)

The research focuses on problem-solving in AI, grounded in computational thinking skills and techniques. This includes problem abstraction and decomposition, symbolic modelling, computational logic, and algorithmic problem solving. It is therefore foundational to both symbolic AI with its advanced reasoning capabilities, and non-symbolic (connectionist) AI with its advanced learning capabilities.

Prof Bruce Watson (bbwatson@sun.ac.za)

<https://www.cair.org.za/group/3>

Capitec Chair of Applied Artificial Intelligence

The Chair does fundamental and applied AI research, with a specific focus on the design of correct, fast and elegant algorithms for solving important problems, particularly relevant to emerging economies of the Global South, such as securing the cyber vulnerable, SA critical infrastructure, and decision-making processes (also known as knowledge security).

Prof Bruce Watson (bbwatson@sun.ac.za)

<https://www.threatcon.co.za/bw.html>

MacroComm Smart Utility Solutions Chair

The Chair focuses on research in the fields of smart metering, big-data analytics, internet-of-things technologies, low-power wide-area networks, smart capacity building, hosted software solutions and utility performance forecasting. The Chair will also form partnerships with the other research and funding institutions in the general field of utility solutions, engage in specialised consulting activities for industry and pursue other funding streams.

Christo Nicholls (cnicholls@sun.ac.za)

<https://bit.ly/3P6aDQv>

Research Chair in the Internet of Things (IoT)

The Internet of Things encompasses how digital technology and connectivity observe, link, and affect the world around us. It is about connecting many things that previously operated individually. These connections, which include monitoring and control, open opportunities for a plethora of improvements in the way we use and manage the many things around us.

Prof Thinus Booysen (mjbooyesen@sun.ac.za)

<https://bit.ly/3P5UKt8>

National Institute for Theoretical and Computational Sciences (NITHeCS)

The NITHeCS leads and coordinates research programmes and fosters education in theoretical physics. Research is conducted mainly in statistical and condensed matter physics; quantum information and computation; high energy physics, namely string theory and matrix models as well as phenomenology.

Prof Francesco Petruccione (petruccione@sun.ac.za)

<https://nithecs.ac.za/>

AUDA-NEPAD Centre of Excellence in Science, Technology and Innovation (AUDA-NEPAD CoE-STI)

A key element in the purpose and value-proposition of the AUDA-NEPAD CoE-STI is to foster "real and active" two-way flow connection between science, policy, and practice. Strategic priority areas were identified within the Science, Technology, and Innovation domain between SU and CSIR researchers. These areas include: aquaculture; genome editing; telehealth; and cybersecurity.

Dr Nico Elema (ne@sun.ac.za)

<https://www.nepad.org/centres-of-excellence>

Gibela Engineering Research Chair

The Chair provides research capability to support the Gibela Transport Consortium in maintaining X'Trapolis Mega trainsets which will be built at the Consortium's Dunottar factory. It will create a niche in monitoring applications and asset management technologies for operational Gibela passenger trains.

Prof Annie Bekker (annieb@sun.ac.za)

<https://ie.sun.ac.za/staff/gibela-engineering-research/>

Africa-Europe CoRE Addressing Global and African Challenges through Methods from Artificial Intelligence, Data Science and Theoretical and Computational Thinking

The cluster's priority area is innovation and technology and aims to address the effective application of AI, data science and theoretical and computational thinking to tackle pressing global and African healthcare, education, agriculture, energy and infrastructure challenges. It will bring together experts from diverse fields, such as computer science, engineering, mathematics, physics and social sciences to work on complex problems and develop innovative solutions.

Prof Francesco Petruccione (petruccione@sun.ac.za)

<https://bit.ly/3PjDp1t>

School for Data Science and Computational Thinking

Aiming to be a world-class institution for data science and computational thinking in and for Africa, the School works across SU's ten faculties, generating multi-, inter- and trans-disciplinary collaboration. It also spans the entire academic project, from under- and postgraduate training to research and specialist consultation. Through our new School for Data Science and Computational Thinking, SU is ready to enhance South Africa's competitiveness in the Fourth Industrial Revolution.

Prof Kanshu Rajarathnam (kanshu@sun.ac.za)

<https://www.sun.ac.za/english/data-science-and-computational-thinking/>

Also visit:

Centre for Geographical Analysis (CGA): <https://www0.sun.ac.za/cga/>

Institute for Futures Research: <https://www.ifr.sun.ac.za/>

Centre for Complex Systems in Transition: <https://www0.sun.ac.za/cst/>

Institute for Wine Biotechnology: <https://bit.ly/45RjwnC>

Institute for Biomedical Engineering: <https://www.ibe.sun.ac.za/>

Research Alliance for Disaster and Risk Reduction (RADAR):

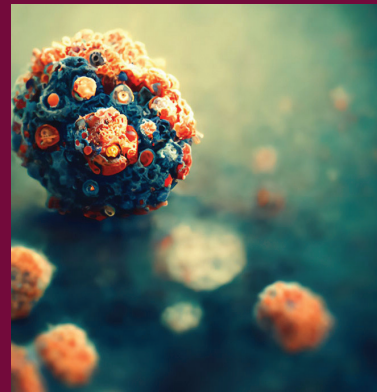
<https://bit.ly/44xgyna>

Centre for Bioinformatics and Computational Biology (CBCB):

<http://www.sun.ac.za/english/faculty/science/sci-bioinformatics>

Stellenbosch Phototonics Institute (SPI):

<http://www.sun.ac.za/english/faculty/science/physics/lri>



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<https://www0.sun.ac.za/researchforimpact/researchfor-impact/>

For more information, contact the Division for Research Development (DRD):

mh3@sun.ac.za

Visit the Stellenbosch University website:

www.sun.ac.za