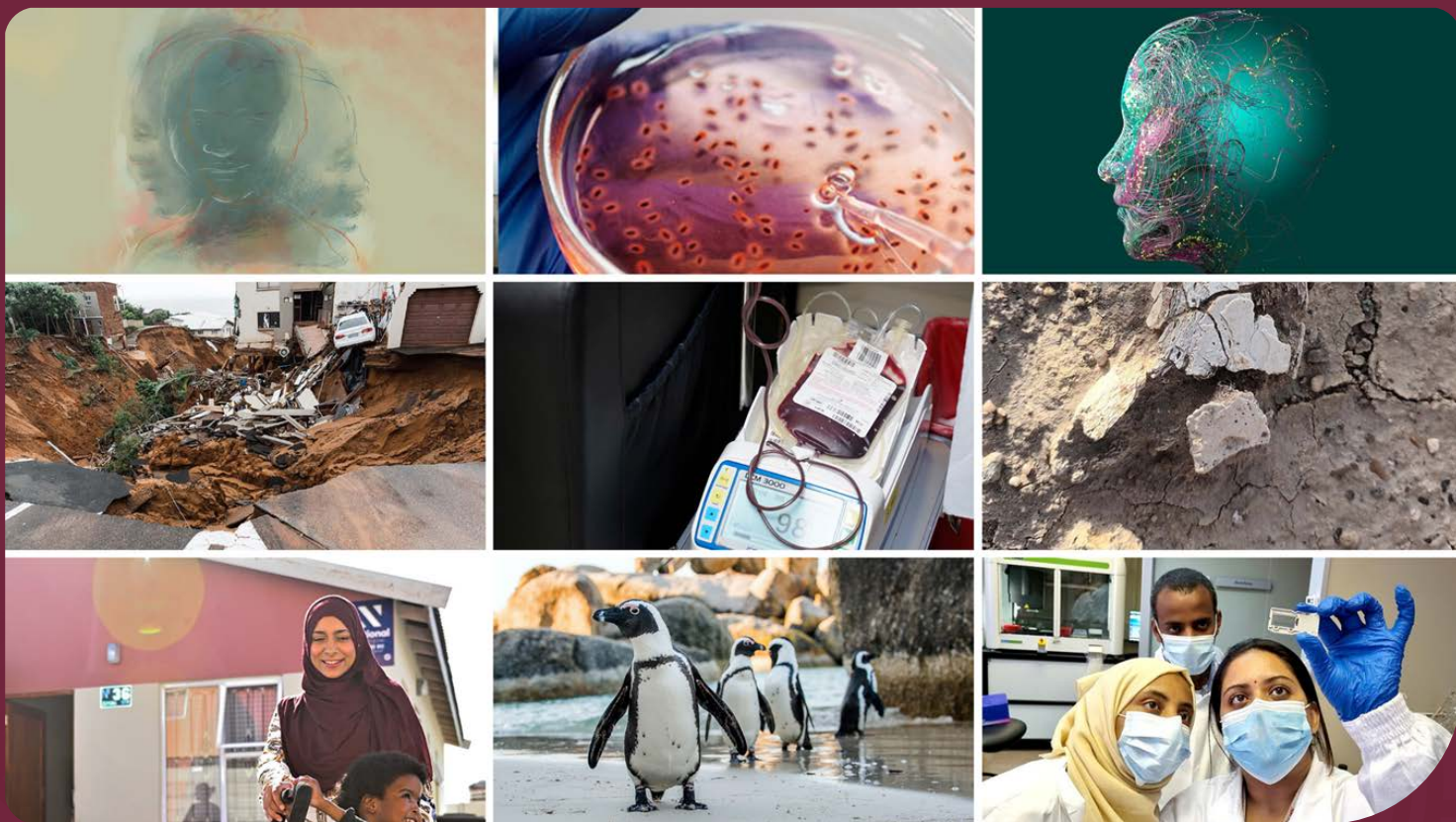


REPORT TO COUNCIL

of the Deputy Vice-Chancellor:
Research, Innovation and Postgraduate Studies

Professor Sibusiso Moyo
March 2023





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Introduction



Stellenbosch University's (SU's) Research, Innovation and Postgraduate Studies Responsibility Centre (RC) relies heavily on the research and innovation expertise of its people/human capital, excellent infrastructure and impeccable reputation to deliver high quality training, produce new knowledge and conduct the research needed to solve problems in our environment and society. **The RC contributes to all six strategic themes/objectives with the main focus on Research for Impact.**

Impactful research is one of the main drivers that measures the value add of 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) 2019 and the new Decadal Plan 2021-2031, which is an implementation tool of the

White Paper to which we will align our response in terms of the establishment of focused research entities under the SRA's over time.

The challenge for us is to be locally relevant, with regional impact, but also globally competitive. To achieve this goal, we need to 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.

In this regard, interconnectedness and an inter- and trans-disciplinary approach to research projects are important.

The repositioning of the SU research agenda through the establishment of the **two new Schools for Climate Studies and Data Science and Computational Thinking**, respectively, gives us a great opportunity to change the playing field, break disciplinary silos and bring together high impact, diverse teams to deal with LRNCG challenges. A typical example is how responsive the Centres of Excellence (CoEs) and the two new Schools have been in dealing with current issues on epidemics, pandemics and climate change challenges. There are many other highlights which have been showcased in our various media platforms, as well as in this report.

The Research, Innovation and Postgraduate Studies (RI&PGS) landscape at SU in 2022 was characterised by the vast array of research-related activities and initiatives that our researchers have been busy with despite some continuing disruptive effects of the post-COVID-19 era on teaching, learning and research environments. These effects translate into reduced investment into R&D by industry, funding councils and Government.

On 1 September 2022, I took over the RI&PGS portfolio from my predecessor, Prof Eugene Cloete, who did a sterling job at building the research and innovation enterprise at SU over the last decade. I would also like to acknowledge the Division for Research Development (DRD), the Library and Information Service (LIS) and all other support services at the University for their continued dedication and commitment, as well as give thanks and **credit to the Deans and Vice Deans for Research, the Directors of the two Schools, Central Analytical Facilities (CAF), the Research Chairs and CoE's as well as SU researchers at large for their initiatives and dedication.** The support of the Rectorate and Council remains invaluable to ensure that our research, innovation and postgraduate studies environment and infrastructure remain enabling and up to date to ensure we are at the cutting edge of knowledge production.

The RI&PG Studies portfolio has gone from strength to strength in the past ten years, positioning SU as one of the leading research-intensive universities in South Africa. I attribute this to an incredible team effort and strategic leadership. The matrix reporting and relations with other Responsibility Centres cannot be underestimated and I extend my acknowledgements to our very supportive colleagues in the Rectorate, the Stellenbosch Institute for Advanced Studies (STIAS), Faculties and SU Business School, our national and international partners, our funders and Science Councils and the CoEs we host and co-host at SU, namely, the South African Centre for Epidemiological Modelling and Analysis (SACEMA), the Centre of Excellence

in Scientometrics and Science, Technology and Innovation Policy (SciSTIP), the National Institute for Theoretical and Computational Science (NITheCS) (former NITheP), the Centre for Invasion Biology (CIB), the African Research Universities Alliance Centre of Excellence (ARUA CoE) in Energy, the AUDA-NEPAD/CSIR Centre of Excellence in Science, Technology and Innovation (AUDA-NEPAD CoE STI), the Centre of Excellence for Biomedical Tuberculosis Research (CBTBR), the Centre for Renewable and Sustainable Energy Studies (CRSES) and the Stellenbosch University Water Institute (SUWI), for the support and strategic initiatives that are helping us fulfil our Research for Impact in service of society and government at large.

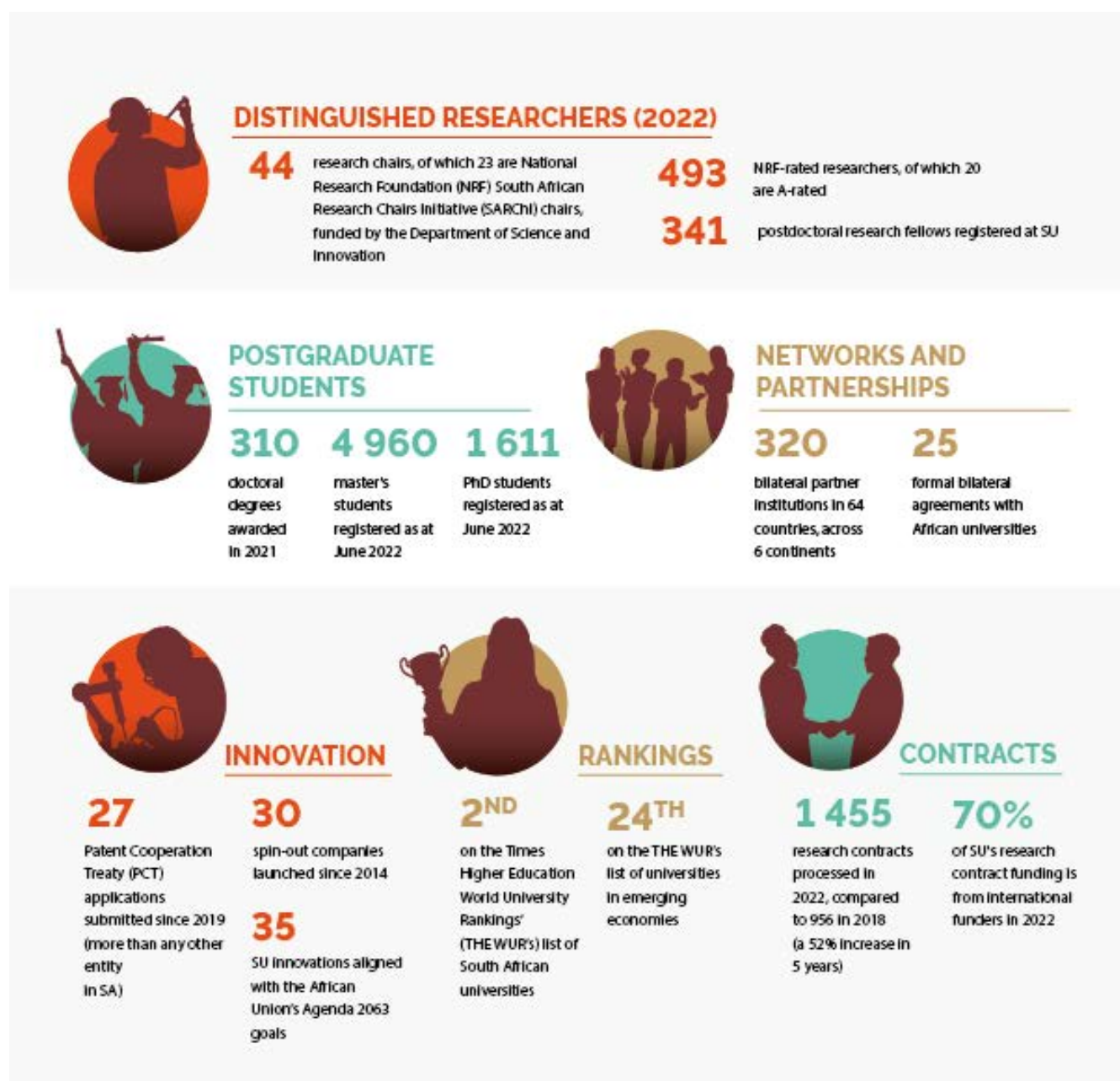
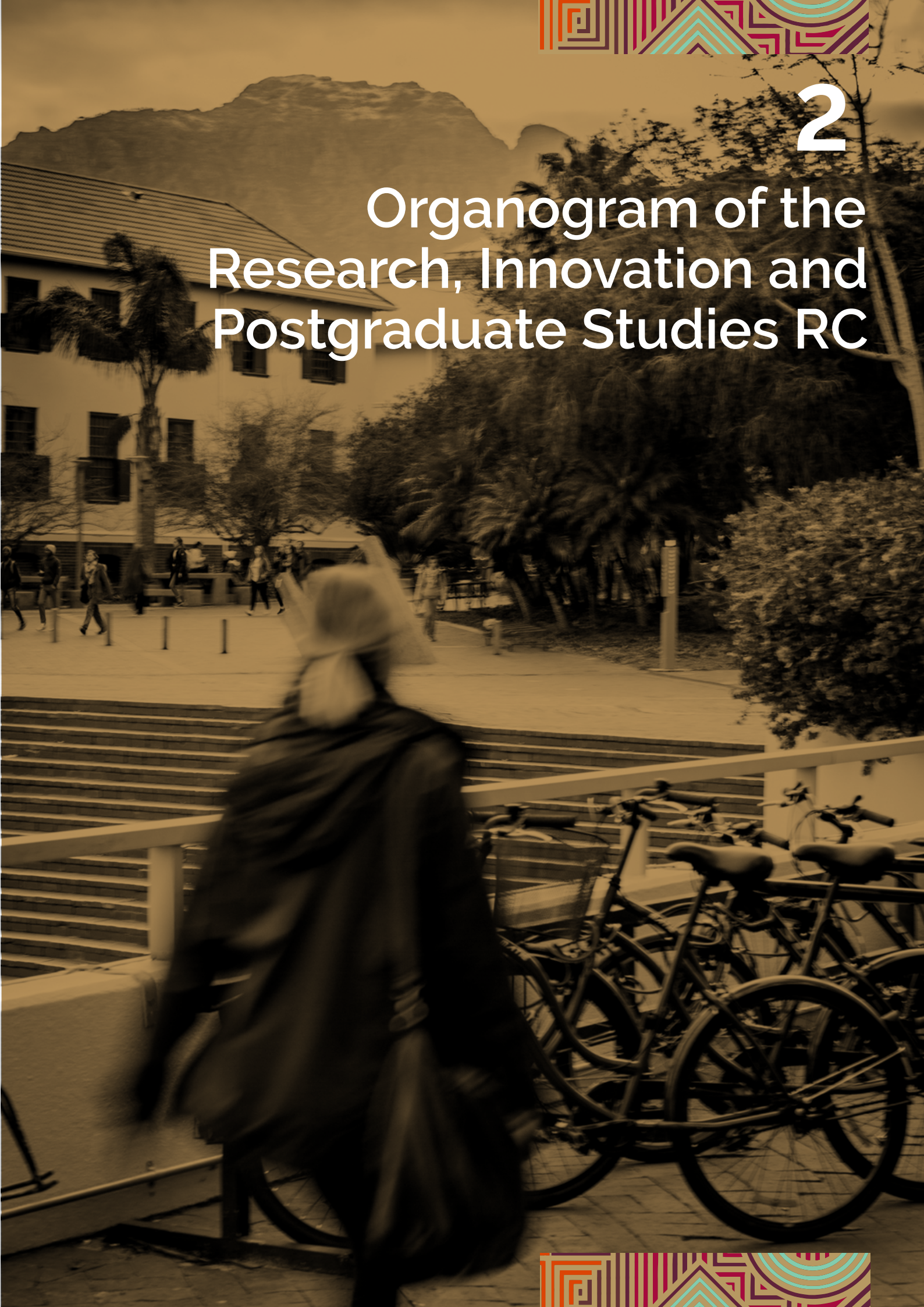


Figure 1: A selection of high-level research-related stats and facts as at February 2023



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Organogram of the Research, Innovation and Postgraduate Studies RC



The current organogram for the RC is shown in Figure 2. The RC consists of two professional administrative support service (PASS) divisions, namely the Division for Research Development (DRD) and Library and Information Services (LIS), which are headed up by Senior Directors Dr Therina Theron and Ms Ellen Tise, respectively. The newly established School for Climate Studies, led by Prof Guy Midgley and the School for Data Science and Computational Thinking, led by Prof Kanshu Rajaratnam also resides under the RC. The RC also includes the Central Analytical Facilities (CAF), under the directorship of Prof Gary Stevens. The Deans of the 10 faculties have a reporting line to the RC, as do the SARCHI Chairs and the CoEs.



Figure 2: Organogram of the DVC: Research, Innovation and Postgraduate Studies RC



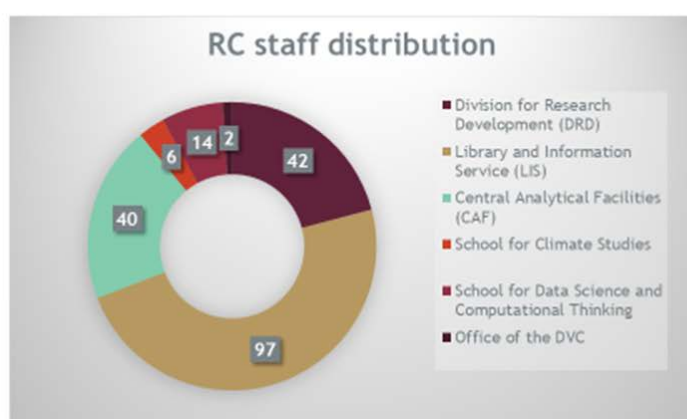
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Demographics and Employment Equity within the RC



The current demographics of staff members that directly reside within the RC (DRD, LIS, CAF and the two Schools) are presented in the form of distributions according to age, grade/job level, gender and race. The RC is committed to transformation, one component of which is related to demographics and employment equity. We will furthermore launch initiatives within the broader University context to support and accelerate human capital development, especially around the SU Future Professors Programme, Postdoctoral Research Fellows and initiatives to increase our postgraduate enrolments over time.

RC staff statistics for primary positions



Total number of staff members: N=201

Academic staff members: 6

PASS staff members: 195

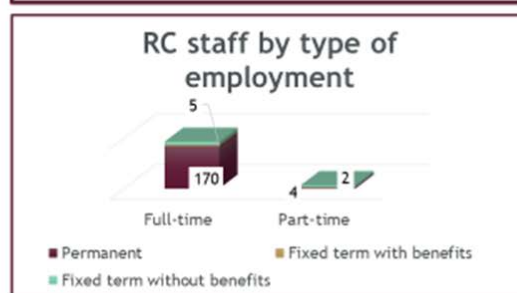
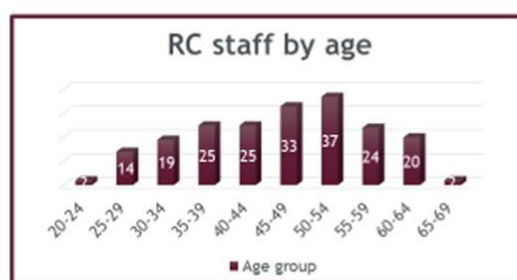


Figure 3: RC staff statistics for primary positions

RC staff statistics by race

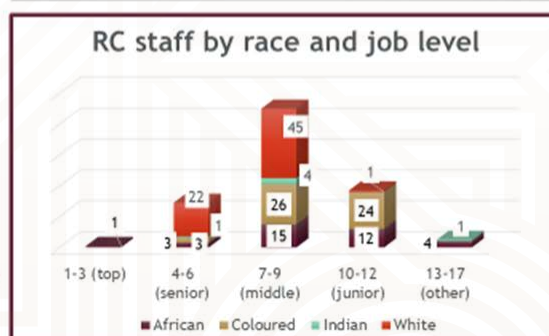
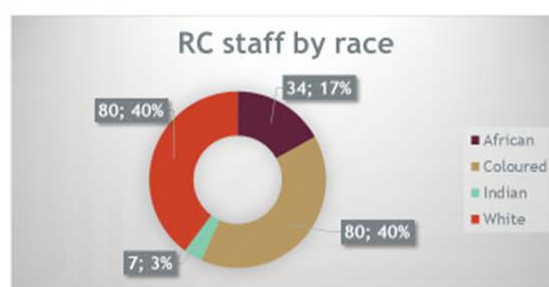
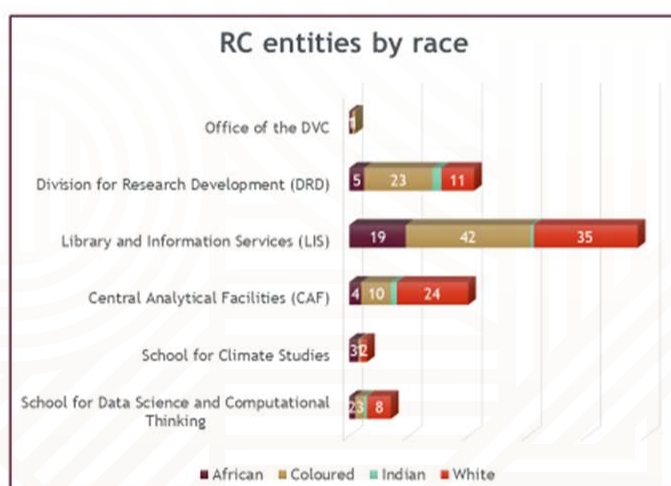


Figure 4: RC staff statistics by race



RC staff statistics by gender

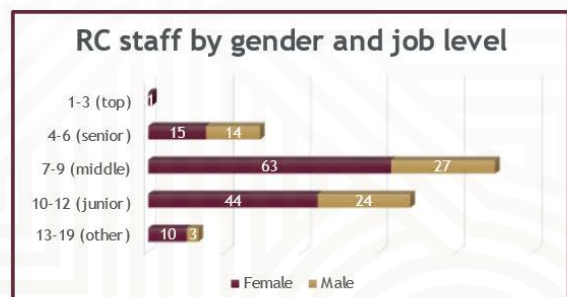
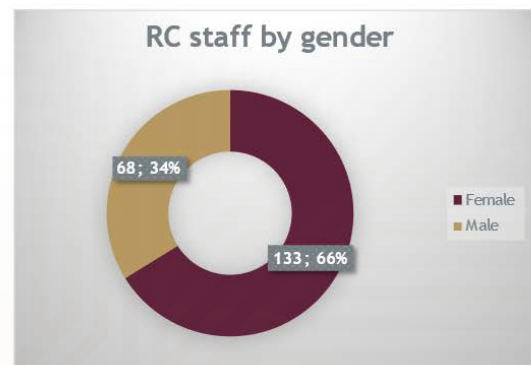
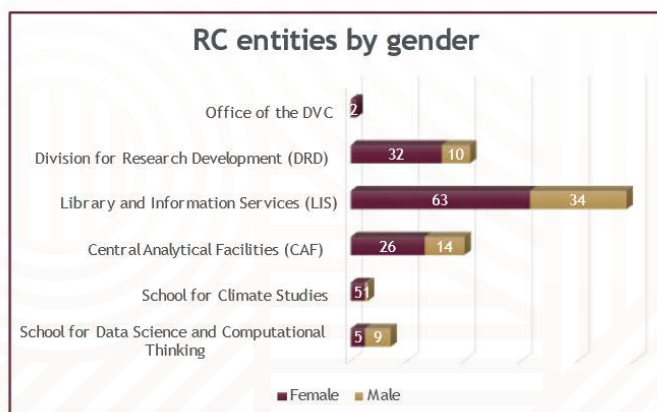


Figure 5: RC staff statistics by gender



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Strategic Priorities within the RC



Research for Impact as an institutional strategic theme

It is Stellenbosch University (SU)'s vision to be a leading research-intensive university on the African continent. The institution wishes to achieve this by pursuing excellence, remaining at the forefront of its chosen focus areas, gaining standing based on its research outputs, and being enterprising, innovative and self-renewing. This requires a careful balance between, on the one hand, continuity and consistency and on the other, transformation and rejuvenation of SU's academic researcher cohort. At the same time, SU research strives to be socially relevant. Ultimately, our research efforts are not only aimed at academic success, but also at making a significant impact in the world.

Institutional goals for research for impact (*as set out in the Consolidated Responsibility Centres Strategy Implementation plan and further unpacked in the internal RC research strategy/environmental plan: 2019 - 2024*) are to:

1. Develop a research agenda derived from SU's values, societal needs and the sustainability imperative.
2. Conduct research of significance based on selected, focused strategic research areas.
3. Inform the future research agenda and strategically involve our stakeholders.
4. Conduct collaborative and interdisciplinary research that addresses the grand challenges of society.
5. Create an embedded culture of innovation and entrepreneurship in our research.

For the period 2019 – 2024 the overall aims of the environmental plan for research, innovation and postgraduate studies focuses on:

Strengthening the knowledge base

The excellence of any organisation is rooted in the quality of the people appointed. That is why quality staff with the right skills is the greatest asset an organisation can possess. Universities specifically rely on personnel who excel in their field.

Areas for intervention:

- PhD as a minimum requirement for any full-time academic appointment at SU – increasing the number of personnel with a doctorate degree.
- Expanding the postdoctoral research fellows programme.
- Transformation through the renewal of the staff complement at SU to become more diverse.

Research, Innovation and Social Impact

SU is currently a leader in research in SA and Africa. It is a place of discovery and invention, and the research we do must have a social impact on society. Therefore, it is also important that our research effort is aligned with the National Development Plan of government (NDP) 2030 and the White Paper on Science, Technology and Innovation 2019. After 20 years of democracy, the three biggest challenges facing SA are poverty, unemployment and disparity. This is where SU can make an impact built on academic excellence. This can be done by expanding the knowledge base and innovation locked up within the institution.

Areas for intervention:

- Applying SU expertise in areas aligned to the NDP, through our strategic research areas, such as water, clean energy, food security, education and training, land ownership and use, transformation, technology, health and housing.
- Promoting the establishment of new trans-disciplinary research focus areas that address societal needs.
- Focus on partnerships with universities in Africa as part of the internationalisation strategy of SU.

Research Outputs

SU has already maintained an exceptional research effort over the last few years. The research achievements show that SU is one of the most research productive academic institutions on a national level. We are amongst the top 3 Higher Education Institutions (HEI's) in South Africa with regards to weighted research output per full-time staff member (publications and postgraduate students). The aim is to continue to build on these achievements.

Areas for intervention:

- Increasing the quantity and quality of research outputs, with the aim to publish more than 80% of our publications in journals listed on international databases known for high quality listings.
- Increase our visibility in the international rankings.

Innovation

The South African 2019 White Paper on Science, Technology and Innovation¹, defines Innovation as the “implementation of a new or significantly improved product (good or service) or process, or a new marketing method, or a new organisational model in business practice, workplace organisation or external relations”. Innovation is not only commercially focused but also include broader knowledge exchange activities.

Innovation forms part of SU’s research success. It positions SU as a place of discovery and renewal, which attracts the best researchers and students from all over the continent and the world. Engaging in knowledge exchange activities enhance and accelerate the impact of our research.

Areas for intervention:

- Encourage creativity and entrepreneurial behaviour in our staff and students.
- Promote interaction with industry.
- Research, consultation and the establishment of new businesses.
- Expand our initiatives which focus on knowledge exchange, through the establishment and support of trans-disciplinary research entities.
- Encourage research translation as part of research planning to ensure the research and innovation enterprise remains sustainable.

Postgraduate students

Postgraduate student success is of cardinal importance to SU. Maintaining the student pipeline is essential to ensure sustainable postgraduate output.

Areas for intervention:

- Reduce the average time to completion of a doctoral degree to 4 years.
- Revisit the Master’s degree programme in order to determine the optimal ratio between coursework and research Master’s degrees.

- Reduce the average time for the completion of research Master’s degrees to 2 years.
- Ensuring the postgraduate student component makes up an optimal percentage of the student body.
- Optimise postgraduate administrative admission and tracking systems to increase enrolments and completion rates at post-graduate level.

In order to achieve these aims, a strategic framework forms the basis in the office of the Deputy Vice-Chancellor: Research, Innovation and Postgraduate Studies. It places an emphasis on creating an enabling environment that is important to research success. Such research enablers include human resources and critical mass in terms of expertise in particular strategic focus areas, as found in our Research Chairs, CoEs and other SU research entities. Moreover, universities and research institutions rely on funding from grant and contract research to enable research. In most cases, infrastructure is required, including research laboratories, which often contain high-end and expensive research equipment.

Finally, collaboration with other institutions enable training opportunities for postgraduate student support, joint degree opportunities, and the sharing of high-end infrastructure. The primary research outputs from the research include postgraduate qualifications, research publications, patents, licencing and commercialisation at large. The challenge is to relate these primary research outputs to research impact in order to benefit future research, policy development and social, environmental and economic benefits.

Our five strategic research areas

Stellenbosch University has five strategic research areas 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.**

Our strategic research areas represent inclusive, broadscale areas of research expertise for the strengthening and development of specific inter- and transdisciplinary research focus areas. At the same time, we remain committed to strengthening basic and disciplinary research excellence, seeing as it forms the basis for applied and translational research. There will also be forward looking efforts to reprioritise research focus areas based on institutional strengths and CoEs to concentrate resources and benefit from high impact outcomes.

Recent investments in inter- and trans-disciplinary research outputs at the University include the

¹ https://www.dst.gov.za/images/2019/White_paper_web_copyv1.pdf (Accessed 30th January 2023)

establishment of the School for Data Science and Computational Thinking and the School for Climate Studies. Institutionally these structures stand alongside the ten faculties and the Centres of Excellence. The Schools as game-changers have contributed significantly in increasing our research impact and visibility as a university.

Knowledge exchange through activities that engage different audiences in the research done at SU can help us make a real difference to the ways in which questions, events and problems are understood and addressed. Over the next few years, we will prioritise building on existing efforts to create an enabling environment that will strengthen our research and innovation portfolio

even further. We can do this by promoting inter- and trans-disciplinary research and collaborations; supporting the innovation and entrepreneurship of our researchers in order to translate their research into relevant projects, services and products; and creating opportunities for emerging researchers to excel, even at undergraduate level.

As part of the drive to further institutionalise the five strategic research areas and provide support for more inter- and trans-disciplinary research initiatives, the Division for Research Development (DRD) will host a series of networking sessions under the five SRAs in 2023. A Knowledge Exchange forum is also planned by the DRD, and the Division for Social Impact.



Figure 6: Stellenbosch University has five strategic research areas 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. These areas 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. The infographic is a mapping of our 5 strategic research areas to the SDGs and the Africa Agenda 2063.



Figure 7: Mapping of our 5 strategic research areas to SU Research Chairs, Centres of Excellence and a high-level selection of SU research entities (as at December 2022)

Other unique research areas



Figure 8: Other unique research areas where SU researchers are producing ground-breaking research & outputs.

Current Strategic Management Indicators for Research for Impact

CORE STRATEGIC THEME	Institutional Objectives	Indicators and Measures	Definition
5. RESEARCH FOR IMPACT	Support research staff and invest in capacity development	% of academic staff members with a doctorate to all academic staff members	% of academic staff members with the highest qualification equal to doctorate as a percentage of academic permanently employed incl. fixed term contracts staff members (only primary appointments) on the official census date in the Salaries HR group.
		% of Postdoctoral Research Fellows to all academic staff members	% of Postdoctoral research fellows registered in a particular year as a percentage of academic permanently employed incl. fixed term contracts staff members (only primary appointments) on the official census date in the Salaries HR group.
	Increase research impact	Average number of SU DHET accredited publication units per FTE-SLE-C1 staff members per year	For a given year, determine the number of SU DHET accredited publication units (A). Determine the total number of full-time equivalent (FTE) academic (C1) staff scaled to senior lecturer equivalents (SLE) staff members for a given year. Calculate the SMI as (A) divided by (B).
		Average number of master's graduates per FTE-SLE-C1 staff members per year	For a given year, determine the number of master's graduates (A). Determine the total number of full-time equivalent (FTE) academic (C1) staff scaled to senior lecturer equivalents (SLE) staff members for a given year. Calculate the SMI as (A) divided by (B).
		Average number of doctoral graduates per FTE-SLE-C1 staff members per year	For a given year, determine the number of doctoral graduates (A). Determine the total number of full-time equivalent (FTE) academic (C1) staff scaled to senior lecturer equivalents (SLE) staff members for a given year. Calculate the SMI as (A) divided by (B).

Extract 1: The current Strategic Management Indicators for Research for Impact (Source: SU Annual Report 2021)

MONITORING OUR PERFORMANCE WITH OUR STRATEGIC MANAGEMENT INDICATORS

Our *Institutional Plan 2021-2026* contains key overarching SMIs, which we use to measure ourselves against our institutional goals. For each of our Strategic Framework 2019-2024 themes, we aim to describe specific strategic actions that are stipulated by each faculty and professional administrative support service (PASS) environment individually. The full details are contained in the action plans of our respective responsibility centres, in which the faculties and PASS divisions indicate how they will achieve our institution's goals. All faculties and PASS environments are jointly responsible for achieving the targets in the *Institutional Plan 2021-2026* and, therefore, work in an integrated manner according to our business model.

We have developed a performance measurement framework to measure our effectiveness under the Strategic Framework 2019-2024. Our effectiveness score card models and tracks the SMIs against 2024 targets. The scorecard measures progress on each SMI, objective and theme, as well as for the Strategic Framework 2019-2024 as a whole. Different weights are allocated to core strategic themes, institutional objectives, indicators and measures, all of which influence our overall effectiveness. As the methodology for measuring the core strategic theme "Networked and collaborative teaching and learning" is still being developed, no data is currently available for this theme.

STELLENBOSCH UNIVERSITY STRATEGIC MANAGEMENT INDICATORS								
Strategy	Indicator	2017	2018	2019	2020	2021	2024 target %	% realisation
Research for impact	Objective: Support research staff and invest in capacity development							
	Share of academic staff members with a doctorate (%)	60,2	61,8	61,1	60,3	71,0	75,0	94,7
	Postdoctoral research fellows as a share of academic staff members (%)	29,0	26,9	25,9	27,2	30,3	40,0	75,8
	Objective: Increase research impact.							
	Average number of DHET-accredited publication units per full-time-equivalent teaching and research staff member	1,52	1,51	1,61	1,71	1,68	1,75	79,7
	Average number of master's graduates per full-time-equivalent teaching and research staff member	1,29	1,20	1,15	1,75	1,18	1,15	100,0
	Average number of doctoral graduates per full-time-equivalent teaching and research staff member	0,24	0,24	0,28	1,15	0,24	0,25	95,1

Extract 2: SU Strategic Management Indicators for Research for Impact (Source: SU Annual Report 2021)

The way forward

The RC started to work on a **project charter/blueprint (5-year plan)** for the environment in September 2022. The activities in the charter will focus on strengthening the basic foundations needed to sustain the SU research and innovation enterprise using the four elements of the research framework:

People: our researchers, postgraduate students, postdoctoral research fellows, professional support staff, and our community are all important contributors to knowledge production and should be nurtured and supported to enable them to do their work.

Strategy: the development of a research and innovation strategy that enables SU to reach its targets in terms of research is important.

Resources and infrastructure: includes funding for research as an important enabler.

Measuring outcomes and impact: we need to develop suitable and reliable metrics and indicators to measure our success.

Adopting the concept of knowledge exchange at SU

The RC will actively pursue knowledge exchange as an area for further exploration within the context of research and innovation at SU.

Knowledge exchange (KE) is a process of exchange between researchers and knowledge users designed to make relevant research information available and accessible to stakeholders for use in decision-making about practices, programs and policies. The concept of KE expands the definition of innovation generated through research beyond the quantifiable and commercial outputs and makes innovation an activity that is possible within every research field.

Knowledge exchange (KE) can be seen as an umbrella concept covering a lot of what is already being done in the Faculties and supported through the Divisions for Research Development, Social Impact and Innovus. By making visible our current and promoting future KE activities SU will be able to illustrate its research impact to external stakeholders beyond just reporting on hard outputs/outcomes.

We have certain challenges that we must address as part of our institutional transformation journey. We must optimise our postgraduate student experience and throughput rates, expand our postdoctoral fellowship programme, and engage in initiatives that ensure broadened access, diversity and transformation.

On the research and innovation front, 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.

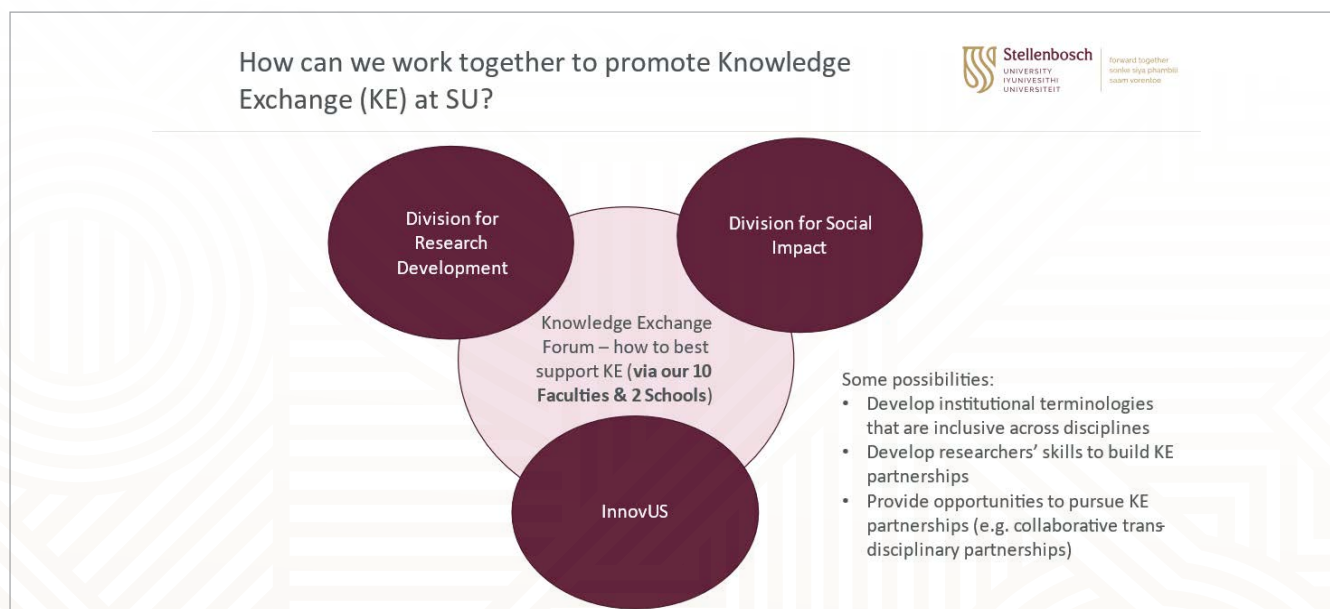


Figure 9: How can we work together to promote KE at SU (Source: Dr Therina Theron)

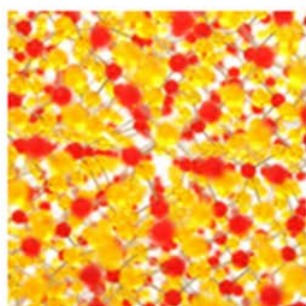
So, research for impact also means that we have to create an enabling environment for our people to thrive and continue to push the boundaries of knowledge and possibility - which is of importance for the benefit of society, for the benefit of our country, and the globe in which we live and for which we should be responsible. Only then can we help to transform our society and make it sustainable for everyone to live in.

Looking forward to 2023 and beyond, and as part of evidence-based research to inform decision-making through the SU hosted SciSTIP and CREST, the DVC: Research, Innovation and Postgraduate Studies, together with the faculties, will continue to develop strategies through the envisaged **Research and Innovation Blueprint** and the **RC Environmental Plan** to ensure that SU continues to build its capacity as a research intensive university through a framework that focuses on supporting the researchers (both staff and students); state of the art infrastructure and facilities; resources and funding support; ensuring we increase our grant writing capacity; support for strategic grants; research contracts support and efficiency in this area; and monitoring and evaluation of research impact and performance. The Blueprint is expected to take into account building capacities for both the basic and applied sciences in order to increase our capabilities to access multi-national grants and contribute to national, regional and local priorities.

The process of designing the Research and Innovation Blueprint already kicked off via the 2022 Research Indaba and an initial list of areas of focus that need intervention were identified through the input of delegates who attended the event.

Planned focus areas/initiatives include:

- Further development of interdisciplinary research through the two Schools.
- Taking stock of initiatives and interventions within Faculties and opportunities therein.
- Broadening international/national networks, including inter-institutional collaboration.
- Innovation and Entrepreneurship – supporting researchers to translate their research to commercial projects, services or products. Working in collaboration with Innovus and the Launchlab to identify and strengthen postgraduate student entrepreneurship.
- Digital transformation – managing data, providing easy access to it.
- Working on the business models for the two new Schools.
- The need to strengthen management processes and collaboration within the Responsibility Centre, which includes the 10 faculties, the 2 Schools, the Chairs, CoEs, the DRD and LIS.
- Sustainability of the postdoctoral research fellowship programme and doubling the numbers to at least 600 (over the next 5 years). Postdocs are important for research productivity but also contribute to the pool of people who are the next generation of scholars and pipeline for the academy.
- Sustainability of our Research Chairs and CoEs.
- The development of a focused SU Future Professors Programme equivalent.
- Developing and supporting the career trajectories of SU women in research.
- Continued support for and capacity building of our early career researchers through the Early Career Academic Development programme and other initiatives.
- Supporting Undergraduate Research Excellence.
- Broadening access, diversity, transformation (linked to enrolment plans).
- Providing support for Faculties and researchers to increase research productivity.
- Optimising postgraduate student experiences – including postgraduate funding.
- Optimising postgraduate supervision and supervisor training.
- Measuring research and innovation impact – pursue documenting indicators for success and tracking performance.
- Resources for funding – the current funding model for research needs to be revisited.
- Creating more opportunities for networking of researchers working within the 5 strategic research areas to increase interdisciplinary and trans-disciplinary collaboration.





5

Strategic Themes

ing • Onderwysgebou • Sakhi
wysgebou • Sakhiwo seMfundo
khiwo seMfundo • Education B
ation Building • Onderwysgebou
eMfundo • **Education Building**



5.1 A thriving Stellenbosch University

5.1.1 Rankings

Whilst many arguments may be made for and against university rankings, these still play a significant role in how universities are perceived, measured and viewed by potential students, funders, alumni, governments and countries. The only ranking tables where SU submits its data for rankings are the Times Higher Education World University Rankings (THE WUR). According to the THE WUR 2022, SU was ranked 2nd amongst South African Universities in the 251-300 category. In comparison to 2021, it had moved up one position out of 1600 universities from 93 countries.

SU's performance improved in terms of Industry Income, Teaching, Research and Citations. The RC, through the researchers, faculties, Schools, CoEs, its partners and funders, contributes to the increase in industry income through research contracts. In 2022, the industry income score increased by 8.8% (79.5) in comparison to 2021 (73.1). Similarly, there was a 5.6% growth in the teaching score to 30.3 in 2022 compared to 28.7 in 2021.

Furthermore, SU maintains its standing as one of Africa's leading universities, according to the QS World University Rankings <https://www.top-universities.com/subject-rankings/2022> by Subject for 2022, which ranks the world's top universities in individual subject areas, covering 51 subjects.

Within the broad subject area category, SU improved its global standing in life sciences and medicine from position 269 in 2021 to position 265 in 2022. In addition, it was ranked higher than any other South African university in the subjects agriculture and forestry (attaining the 76th position globally), as well as in theology, and divinity and religious studies (rating within the world's top 100).

In April 2022, SU was also ranked among the top 2 000 higher education institutions in the world by the Centre for World University Rankings.

5.1.2 New research-related policies and regulations approved

SU Policy for Responsible Research Conduct

The SU Policy for Responsible Research Conduct was last revised and updated in 2013. At their meeting of 30 August 2021, the Senate Research Ethics Committee (SREC) invited the involvement of SREC members in a task team for the revision of the Policy for Responsible Research Conduct at SU. The policy underwent revision over a period of 7 months and served at the Rectorate, Social and Business Ethics Committee (SBEC), the various Faculty Boards, the Institutional Forum, the Research Committee and Senate before being approved by Council on 28 November 2022.

Revision of the REC: ACU SOP

The Research Ethics Committee: Animal Care and Use (REC: ACU) was audited by the National Health Research Ethics Council in June of 2021. One major finding of the audit was that the REC: ACU's Standard Operating Procedures (SOP) need to be updated. A subcommittee of the REC: ACU was established to review and update the SOP in line with the South African National Standard: The Care and Use of Animals for Scientific Purposes (SANS 10386:2021) and the Department of Health 2015 Ethics in Health Research Guidelines. Once finalised, the SOP will serve at the SREC for final approval, by June 2023.

Consultation Work Policy

In 2022 a new policy came to light, namely the "University Consultation Work Policy", approved by Council after a broad consultation process. The DRD serves as the custodian for the policy.

Implementation of the SU Research Data Management Regulations

A workgroup consisting of several academics and professional support staff was formed in 2022 to review the SU Research Data Management Regulations, which will be finalised early in 2023. These regulations will then be widely consulted on and serve at Senate for final endorsement.

Financial policies related to research-related grants and contracts

Two policies related to third and fifth stream income were revised in 2022 and after wide consultation, approved by Council in 2022. The mentioned policies are the "Policy on Costing and Pricing of Research and Research Related Grants & Contracts" and the "Policy in respect of the Indirect Cost Recovery Rate (ICRR) with regard to Third and Fifth stream income at Stellenbosch



Photo 1: Members of the REC: ACU and REC: BES (ltr: Mrs Liezel Muller (REC: BES), Dr Victor Rambau and Dr Margaret Nolan (REC: ACU), Dr Hennie Groenewald (Biosafety South Africa), Dr Sarita Groenewald (REC: BES) and Prof Dirk U Bellstedt (Chair - REC: ACU)

University (SU)". Both these policies are under shared custodianship of the DRD and the Division of Finance.

5.1.3 Research Ethics and Integrity matters

Research Ethics Committee: Social, Behavioural and Education Research (REC: SBE) hosted the 6th Annual Western Cape Regional Human Research Ethics Workshop on 11 November 2022

The workshop was held online via MS Teams and attracted 80 participants from SU, University of Cape Town (UCT), University of the Western Cape (UWC), Cape Peninsula University of Technology (CPUT) and the South African Medical Research Council's (SAMRC's) ethics committees. Sessions included: 1) Ethics and use of race and other social constructs in Health and Social Science; 2) The relationship between health and social science research and how to bridge the gap; and 3) The health and wellbeing of REC members in challenging times. Our REC: SBE Chairperson,

Office for Research Integrity and Ethics hosted its first Research Ethics Committees (RECs) Symposium on 8 December 2022

The Office for Research Integrity and Ethics hosted the Research Ethics Committee Symposium on 8 December 2022. The symposium is the first of its kind, bringing together the institutions' research ethics committees for Health Research (HREC); Social, Behavioural and Education Research (SBE); Animal Care and Use (ACU); and Biological and Environmental Safety (BES), to take stock of and discuss integrity and ethics issues that affect

responsible research conduct at SU. For 2022, the RECs for Human Research focused on discussing the development of an institutional guideline for the ethical use of social constructs (e.g., race, gender and disability) in research.

The RECs for Animal Care and Use and Biological and Environmental Safety had a discussion on genetically modified organisms (GMO) in Animal Research and Biosafety Applications, facilitated by Dr Hennie Groenewald. A GMO permit is required if one wants to participate in activities relating to GMOs, such as those activities which entail contained use, confined use, and/or commercial release of said organisms. A careful evaluation of the risks of accidental release is considered. The activities requiring permits include the registration of facilities, importation and exportation of GMOs, field trials, import for release into the environment, general use and commodity clearance. To apply for the GMO permit, an application needs to be submitted to the Registrar Office. Dr Groenewald discussed the novel risks introduced by new GMOs. This was done by illuminating the interconnectivity between hazards, exposure, and harm.

Both Health Research Ethics Committees were audited by the National Health Research Ethics Council; HREC1 on 8 September 2022, and HREC2 on 19 July 2022. The HREC's both received favourable audit reports and consequently registration has been extended to November 2027. This is a notable achievement for our SU RECs which must be commended for the voluntary work they do to ensure we remain compliant in our research endeavours and promote good ethical standards.

REC submissions and other statistics

REC: ACU – Submissions 2022

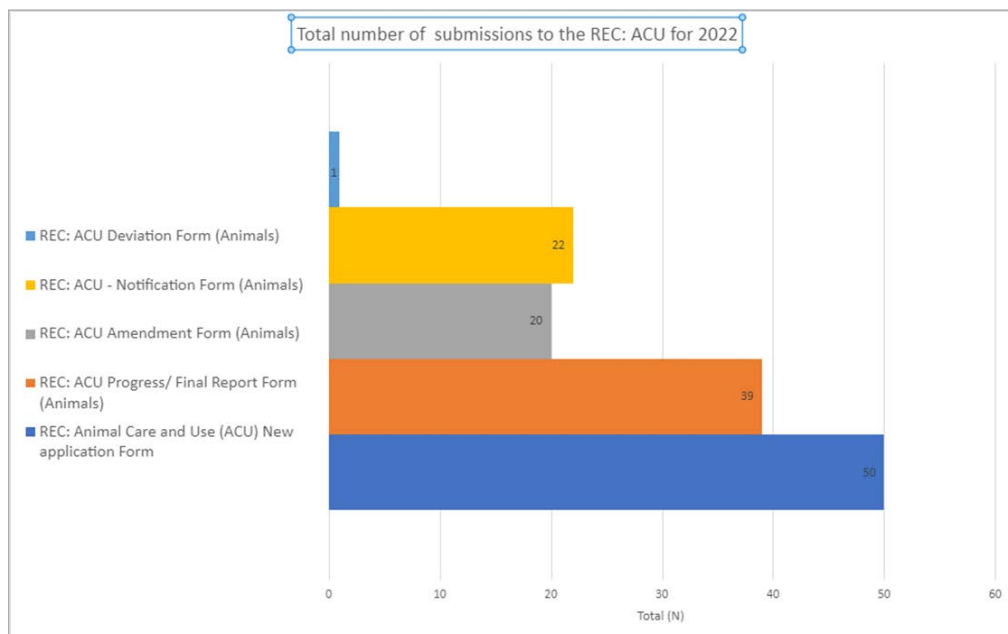


Figure 10: REC: ACU – Submissions 2022

REC: BES – Submissions 2022

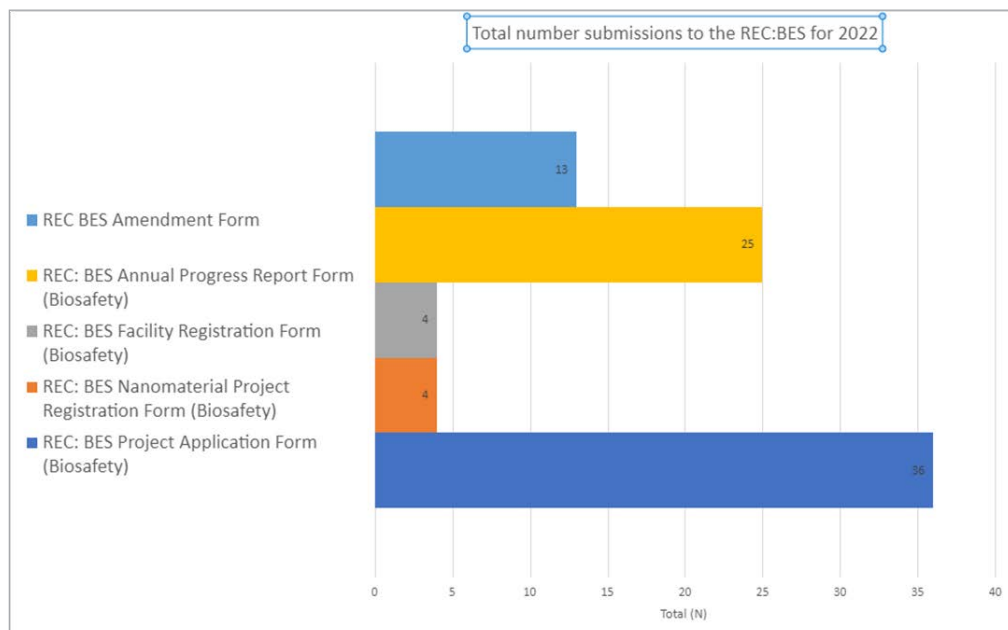


Figure 11: REC: BES Submissions 2022

Table 1: REC: SBE statistics: 2022

REC: SBE submissions for 2022	
New applications	1216
Amendments	123
Progress reports	119
Final reports	74
Serious adverse events	1
Protocol deviations	8
Total applications reviewed	1541
REC: SBE consults, training and investigations for 2022	
One-on-one consultations	68
Training events	25
Non-compliance investigations	7

Table 2: HREC statistics 2022

HREC NEW APPLICATIONS	
Application Type	Total Projects as at 31 Dec 2022
Case Studies	39
Biobank/Database Registry	7
Exemptions	30
Health Projects	153
Student Projects	271
Clinical Trials	18
Total new applications: 2022	518
COVID-19-related Projects	
Application Type	
COVID-19 Case Studies	4
COVID-19 Biobank	0
COVID-19 Exemptions	3
COVID-19 Health	8
COVID-19 Student Projects	17
COVID-19 Clinical Trials	3
Total new COVID-19 applications: 2022	35
TOTAL NEW SUBMISSIONS REVIEWED: 2022	533
HREC ONGOING SUBMISSIONS	
Submission Type	As at 31 Dec 2022
Final Reports	149
Progress Reports	659
Amendments	433
Serious Adverse Events (SAEs)	331
Protocol Deviations	62
Documentation	690
Total ongoing submissions to HREC	2324

The total number of reviews undertaken by HREC members for the 2022 academic year was **2 857**.

Increase in non-compliance cases

In line with international research integrity and ethics legislation and requirements, the university has the obligation and is committed to investigate allegations and reports of breaches in research norms and standards.

The Social, Behavioural and Education Research Ethics Committee (REC: SBE) is concerned with the increase of reports of non-compliance among postgraduate students. In 2022, the REC: SBE dealt with seven cases of non-compliance, where researchers had either proceeded with recruitment and data collection activities without confirmation of ethics approval, or where specific conditions/regulatory requirements were deviated from or ignored, without notifying the REC of such deviation. Two of these cases led to a decision to place the thesis under embargo. The REC: SBE will bring this concern to the Senate REC's attention and would like to urge Faculty Deans to encourage their students to speak to their supervisors and their Faculty or Department Ethics coordinators about ethics approval. The REC: SBE cannot yet explain the sudden increase in cases of non-compliance but suspects it might be attributed to better and more frequent passive monitoring and follow-ups from the REC office and awareness among research participants to report complaints to the REC coordinator, Ms Clarissa Robertson (cgraham@sun.ac.za).

From an HREC perspective, there were fewer non-compliance cases escalated to the Research Integrity Office (RIO) during the period under review. In collaboration with the RIO, most matters related to ethics compliance were managed by the relevant HREC. Of the matters escalated to the RIO, one pertained to data being reused by a student at a collaborating European university without the necessary Data Transfer Agreement (DTA) permissions being in place. This matter was escalated to the SU Legal Services and is being pursued with the SU academic environment and the university concerned.

The HREC dealt with a complaint received from an external party regarding the inclusion of children in a COVID-19 study and associated publication. The complaint was investigated by the HREC with guidance/input from the RIO and the researcher addressed the ethical and scientific concerns raised by the complaint.

Testing of accessibility features on the research ethics application portal: EthicsRM

The REC: SBE office in consultation with the Research Information and Strategic Initiatives cluster of the DRD contracted Mr Gerhard Erasmus, the Blindness & Low Vision Project Manager of

EditMicro to test the online application form and process for accessibility to blind and low vision users. Mr Erasmus confirmed that the EthicsRM portal conforms to the standard accessibility requirements and accommodations and should be readable using the most updated screen readers. He expressed that our users might need advanced training to use their screen readers and how to navigate online portals such as ours to make the process less tedious. He also advised that the REC consider shortening the REC form and to make use of more in-test guidance.

Department of Health (DoH) permit requirements

Some research activities (within the Faculty of Medicine and Health Sciences (FMHS), the Faculty of AgriSciences (FoAS), the Faculty of Education (FoE) and the Faculty of Science (FoS)) are affected by national and provincial legislation related to permit requirements. The regulators (National Department of Health, South African Health Products Regulatory Association, Department of Agriculture, Land Reform and Rural Development and the National Department of Environment, Forestry and Fisheries) each have its own permit application processes that varies greatly in efficacy and turnaround time. The average turnaround time for research permits within the DoH is 1 year and six months, which is detrimental to any research project, especially if your project involves the use of restricted substances or requires an export or import permit. This situation is unfortunately a national one affecting all universities and private companies alike.

As functional compliance officer within the Office for Research Integrity and Ethics, Mr Winston Beukes met with senior officials within the National Department of Health (Compliance Directorate) to discuss the effect the delays have on SU research projects. After several such consults we are pleased to announce that permit applications from SU now have a turnaround time of 2 weeks. SU now has a dedicated person within the Compliance Directorate that we can contact to follow-up on submitted applications. Mr Beukes is still facilitating further discussions with the DoH and other universities in the hope of finding a sustainable solution that not only benefits SU but the rest of the Higher Education Institutions in South Africa.

Post Approval Monitoring of Approved Ethics Applications (ACU and BES)

The RECs for Animal Care and Use (ACU) and Biological and Environmental Safety (BES) have a mandate to conduct Post Approval Monitoring on all approved ethics projects, especially higher risk studies. These two committees have been conducting these site visits effectively and will

continue to do so to ensure that animals used in research, teaching or testing are treated humanely according to the REC: ACU approval and that laboratory biosafety is compliant to according to the REC: BES approval.

5.1.4 National Research Foundation (NRF)

The National Research Foundation (NRF) implemented a new online application platform in March 2022. This led to a delay of one month in the opening of calls for research funding.

The new platform was plagued with several design flaws, which had to be fixed by the NRF after the calls had already opened. One of the flaws made it impossible for some users to register on the new system, thus preventing them from even creating an application. After a combined request from several universities, led by SU, the NRF agreed to delay the closing date of several calls. We believe that these NRF system issues, together with the challenges of emergency remote teaching during the lockdown period of the past two years, led to a decline in the number of applications submitted to the NRF by SU researchers. This decline is illustrated in Figures 12 and 13.

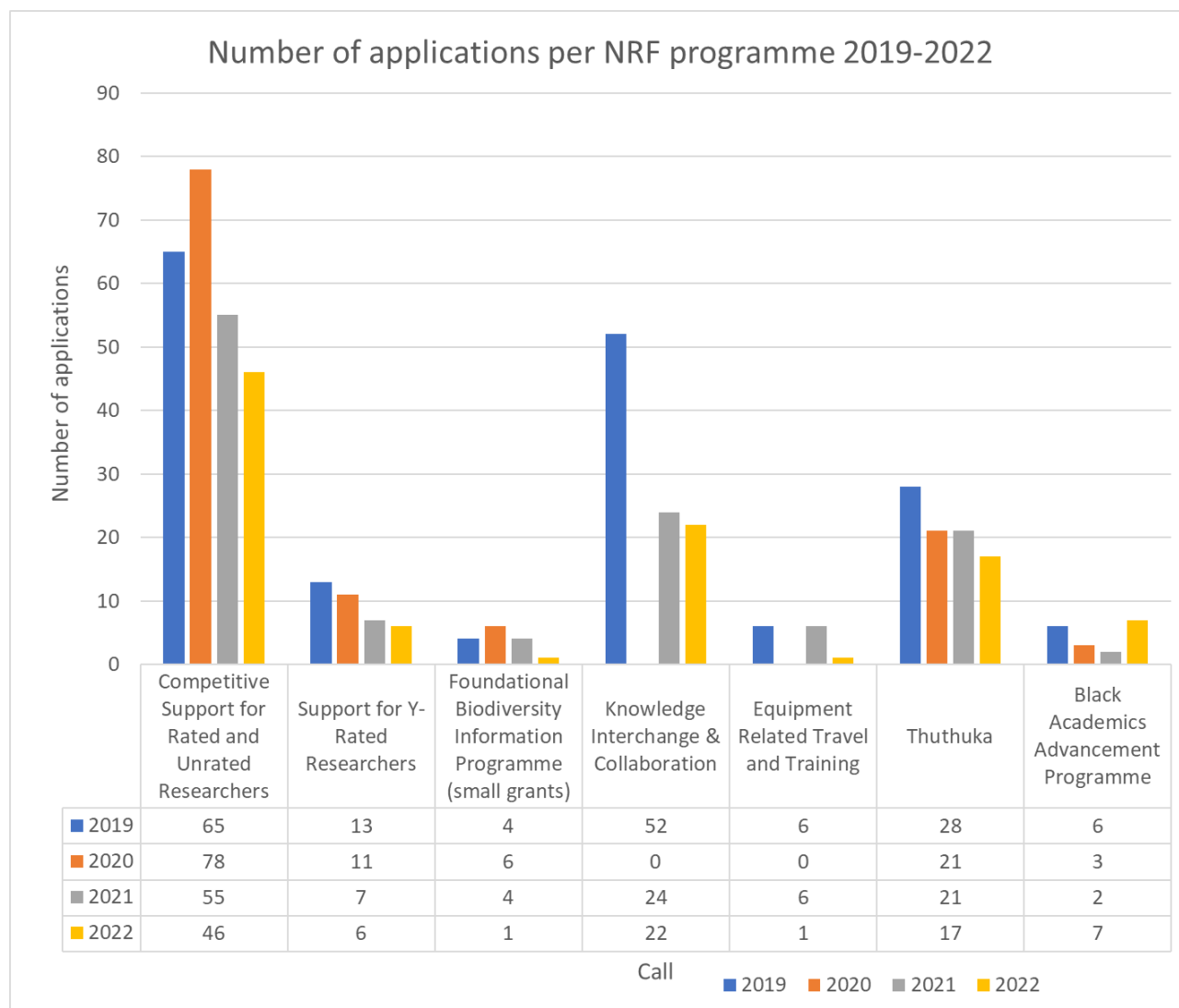


Figure 12: Number of applications per NRF programme

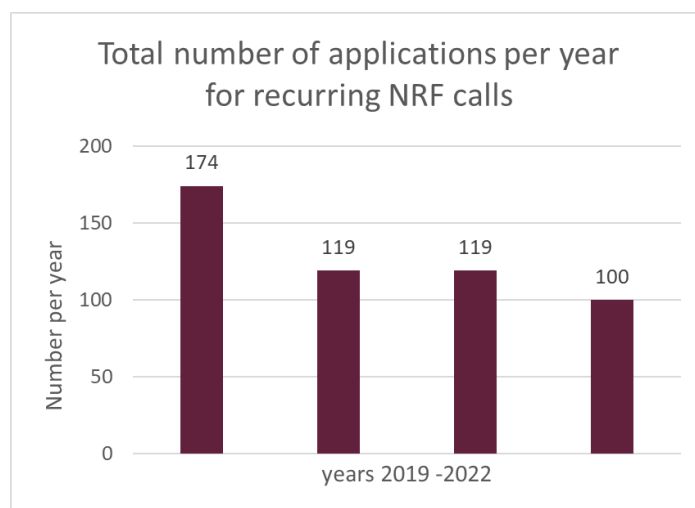


Figure 13: Total number of applications per year for recurring NRF calls

Table 3 shows the success rate of NRF applications between 2019 and 2022. NRF budget cuts in response to COVID-19 influenced the number of grants awarded and they also did not award new travel grants in 2021. The overall rise in our success

rate must be judged in context of the decline in our number of applications submitted. We suspect the decline in application numbers was a trend across institutions which meant fewer competing applications, which then benefitted SU.

Table 3: Success rate of NRF applications between 2019 and 2022

Call	2019	Funded	%	2020	Funded	%	2021	Funded	%	2022
Competitive Support for Rated and Unrated Researchers	65	7	10.8%	78	25	32.1%	55	29	52.7%	46
Support for Y-Rated Researchers	13	9	69.2%	11	8	72.7%	7	5	71.4%	6
Foundational Biodiversity Information Programme (small grants)	4	2	50.0%	6	3	50.0%	4	3	75.0%	1
Knowledge Interchange & Collaboration	52	21	40.4%	0	0	-	24	17	70.8%	22
Equipment Related Travel and Training	6	5	83.3%	0	0	-	6	5	83.3%	1
Thuthuka	28	18	64.3%	21	17	81.0%	21	11	52.4%	17
Black Academics Advancement Programme	6	3	50.0%	3	2	66.7%	2	2	100.0%	7
Total	174	65	37.4%	119	55	46.2%	119	72	60.5%	100

Table 4: DSI-NRF Conference Fund awards

Surname, Initial, Title	Department	Funding Programme	Start Date	End Date	Research Title	Amount awarded
Bosch, A, Prof	Women at Work Research Chair: Business School	DSI-NRF Conference Fund	1 Jan 2023	31 Dec 2023	Marginalised Gender Identities	R950 000.00
Theron, T, Dr	Division for Research Development	DSI-NRF Conference Fund	1 Jan 2023	31 Dec 2023	International Network of Research Management Societies (INORMS)	R850 000.00

Department of Science and Innovation-National Research Foundation (DSI-NRF) Conference fund

The DSI-NRF Conference Fund is a competitive funding opportunity to host large scientific events such as conferences, seminars, etc. of an international nature. The scientific event should host a minimum of 500 participants, which include international and African keynote speakers as well as participation by postgraduate students.

5.1.5 Third-stream income

Report on Research Contracts for SU for the 2022 year, with reflection on previous years

Context:

After initiation of the *Integrated Reporting on Research Contracts* project in 2017, funded through SU Strategic Funds, the Division for Research Development (DRD) through its Research Contracts Office, hereby report on the progress of this project, as well as on the research contracts for the 2022 year, whilst reflecting on previous years to create more context.

The Integrated Reporting on Research Contracts project:

Phase I focused on improvement of research contract information based on the portfolio of contracts signed in a specific year (this included the development and implementation of a new research contract management solution which was SU's first cloud-based solution) and improved "real-time" visualisation of strategic information from this research contract management solution (using Power BI and presented on several platforms, including MS Teams). The visualisations presented in this report, are therefore a snapshot of the "real-time" visualisation as on 19 February 2023.

Phase II saw the commencement of the development effort, and we are currently iterating through cycles that will result in an accurate, robust analytical model. Development efforts extend to

the ingestion and transformation of several data sources (financial system, budgeting system and contracts system), landing the transformed data in a data warehouse, and finally, building a multi-dimensional cube where information from these various data sources can be interacted with by way of measures and dimensions. We have onboarded the help of early adopters (Faculty Managers, Deans, and accountants) to test and validate the analytical model. We also intend leveraging the use of Artificial Intelligence (AI) to allow users to interact research contract data using natural language queries.

One of the benefits of this initiative is offering the capability to perform accurate forecasting on research contract income, comparing the full cost budget (break-even) of a research contract to the contract price, and report on deviations per line item (such as under/over-recovery of indirect cost, salaries etc). This information is of strategic importance for forecasting purposes of SU's valuable research income source. Other compliance aspects were also addressed to assist Finance with reporting to the Minister of Higher Education and Training, heightening the strategic importance of this initiative. Aspects related to this initiative, such as review and implementation of the Full Cost Policy for sustainability and not only Intellectual Property Rights (IPR) compliance (and approved by Council at the end of 2022), are subsequently also addressed to improve management information for strategic decision-making.

As the project is currently in its Phase II (Development Model phase), and with SunFin being implemented mid-end 2023 in a staggered approach, reporting is still limited to information captured in the Research Contract Management Solution. However as soon as Phase II is completed, the output will be an integrated approach on contract- and financial information contained in several solutions.

Phase II are planned to run until end of 2023, or at such time that IDU programme software is replaced by another solution.

The challenge, however, is to keep the data updated in the contracts management solutions, due to some capacity constraints and a backlog in administrative processes caused by the pandemic, as we were not able to immediately move to another platform for our contract administration in 2020. We are pleased to report that for 2022, we are now up to date.

Explanatory notes on interpretation of the data presented:

The information presented in this report is limited to the data in the Research Contract Management Solution. As we are in process with Phase II, we are not yet able to create an integrated report by using data from the Finance solution, or IDU programme software. We are however in a much better position in terms of reporting as we were in 2018, whilst still working on the legacy solution. We have also improved on our reporting capabilities annually, and therefore the report as it stands, is already a huge improvement on the first reports of this nature in 2019. Therefore, no financial information from the financial system is included in the first part of the report.

However, for the sake of a complete overview, information regarding the actual income for the period 2013-2022 for the National Research Foundation (NRF) and Research Contract Income is presented in the last section. Please note there are cases where the National Research Foundation issues specific contracts, which are not governed under the standard funding programmes. Those are recorded on the research contracts solution and included in this report.

It is important to understand the difference between the reporting on the value for signed contracts for 2022, vs the actual income for 2022. The signed contracts are contracts received, registered, processed, negotiated, and signed for the 2022 year. These contracts can run over multi-years, and for the sake of reporting the full contract **value is reported for contracts registered and signed** in 2022. Some of these 2022 registered contracts will be signed in 2023 as negotiations are concluded and will reflect against the 2022 year. Hence, it is important to understand that what is presented in this report is a snapshot from the status of the research contracts as on 19 February 2023, and it will change over time as more research contracts from 2022 are finalised.

The **actual income for 2022** will include contracts signed in 2022 or previous years but receiving certain payments in 2022. For example, contracts signed in 2022's year 1, contracts signed 2021's year 2, contracts signed in 2020's year 3, etc. This information is derived from the financial solution.

As explained in the previous annual reports, the principles for reporting are confirmed as follows:

- We report only on contract amounts already committed through signed contracts (and not include contracts still pending or in process).
- We use the average annual applicable exchange rates for historic years, and not work on the exchange rate as on the date of reporting.
- For future forecasting (part of Phase II and not yet implemented), we will work on the forecasted exchange rates as set out in the Bureau for Economic Research's (BER's) Report to their Macro Clients (which includes government and banks in SA). This will give us a more standardised way to report.
- Important to note that this report therefore does not reflect actual income (apart from the last section), but only report on contracts in the Research Contract Management solution's contract amount running over a number of years.

With the exception of Figure 14 and 15, **data presented in the visualizations** contained within this document have been filtered to only show where the **contract status** is:

- Approved (No Signing) – Cost Centre Required
- Approved (No Signing) – No Cost Centre Required
- Signed - Cost Centre Not Required
- Signed - Cost Centre Required
- To Institution for Signing
- To SU Delegate for Signing
- Successful (in the case of tenders)

(Therefore, not considering contracts still in negotiations or pending, or where we were unsuccessful in the bid).

To ensure that **contract values** reflect correctly in Rands (ZAR), the following exchange rates have been applied:

Currency	2018	2019	2020	2021	2022
Euro	15.61	16.48	18.00	17.96	17.63
GBP	17.64	18.66	19.95	21.12	20.60
USD	13.24	14.22	14.71	15.89	15.54

Results on 2022 contracts:

In **2022**, we processed **1455** research contracts vs 2018's 956 contracts. Of these 1455 contracts, **1081 are signed** (as on 19 February 2023). Figure 14 shows the increase of number of contracts from 2018 to 2022 (52% increase), as well as

distinguishes between the signed (grey) and unsigned (maroon) contracts for a specific year. Please note that the unsigned contracts include the following contract statuses: pending, in process, deleted and unsuccessful. Figure 15 illustrates the number of contracts by status for 2022, as on 19 February 2023.

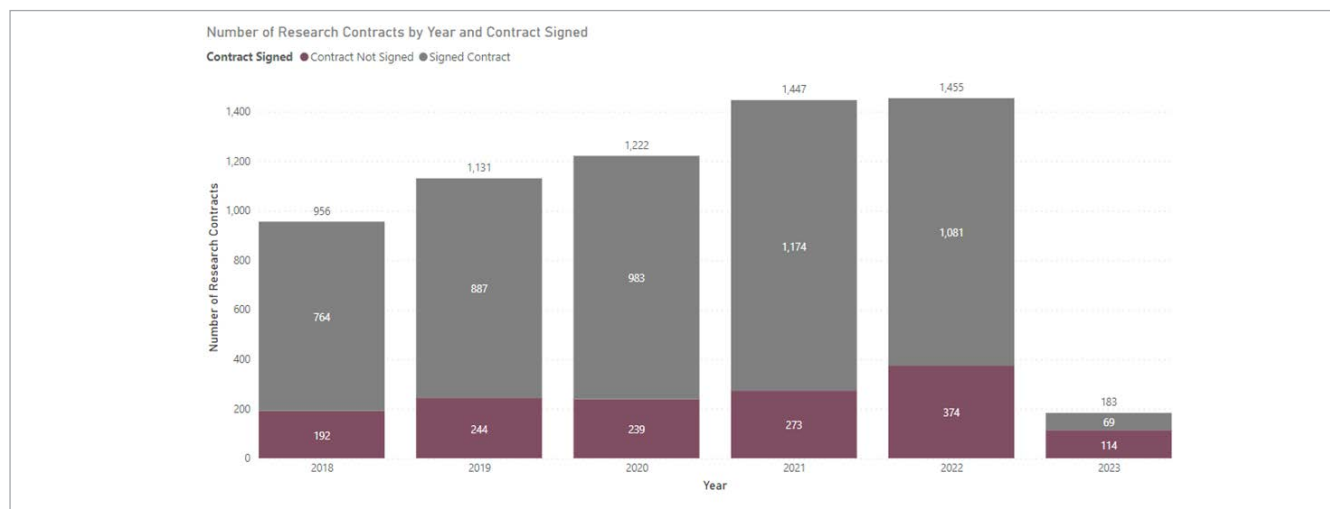


Figure 14: Increase of number of contracts between 2018 and 2022

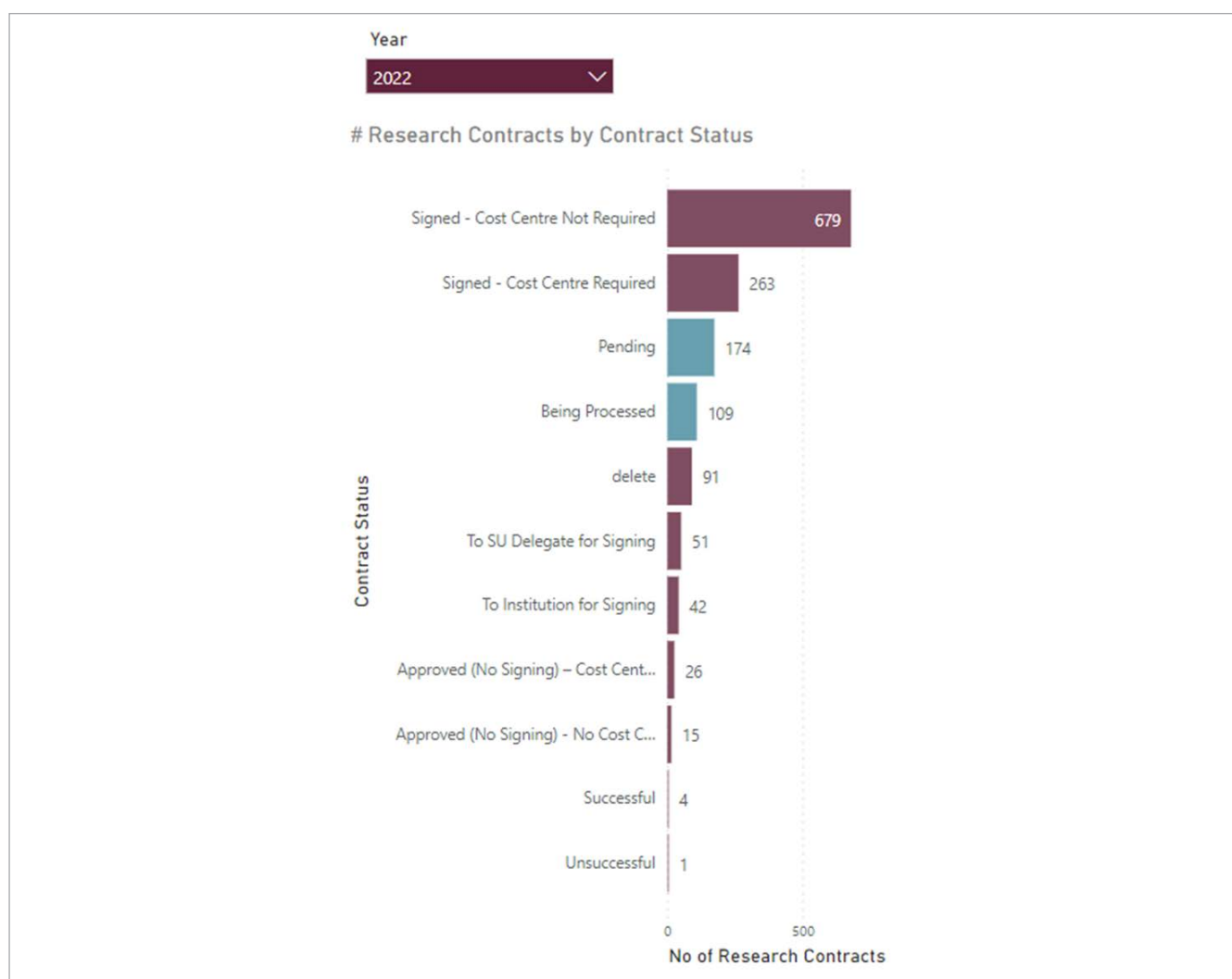


Figure 15: Number of 2022 contracts by status

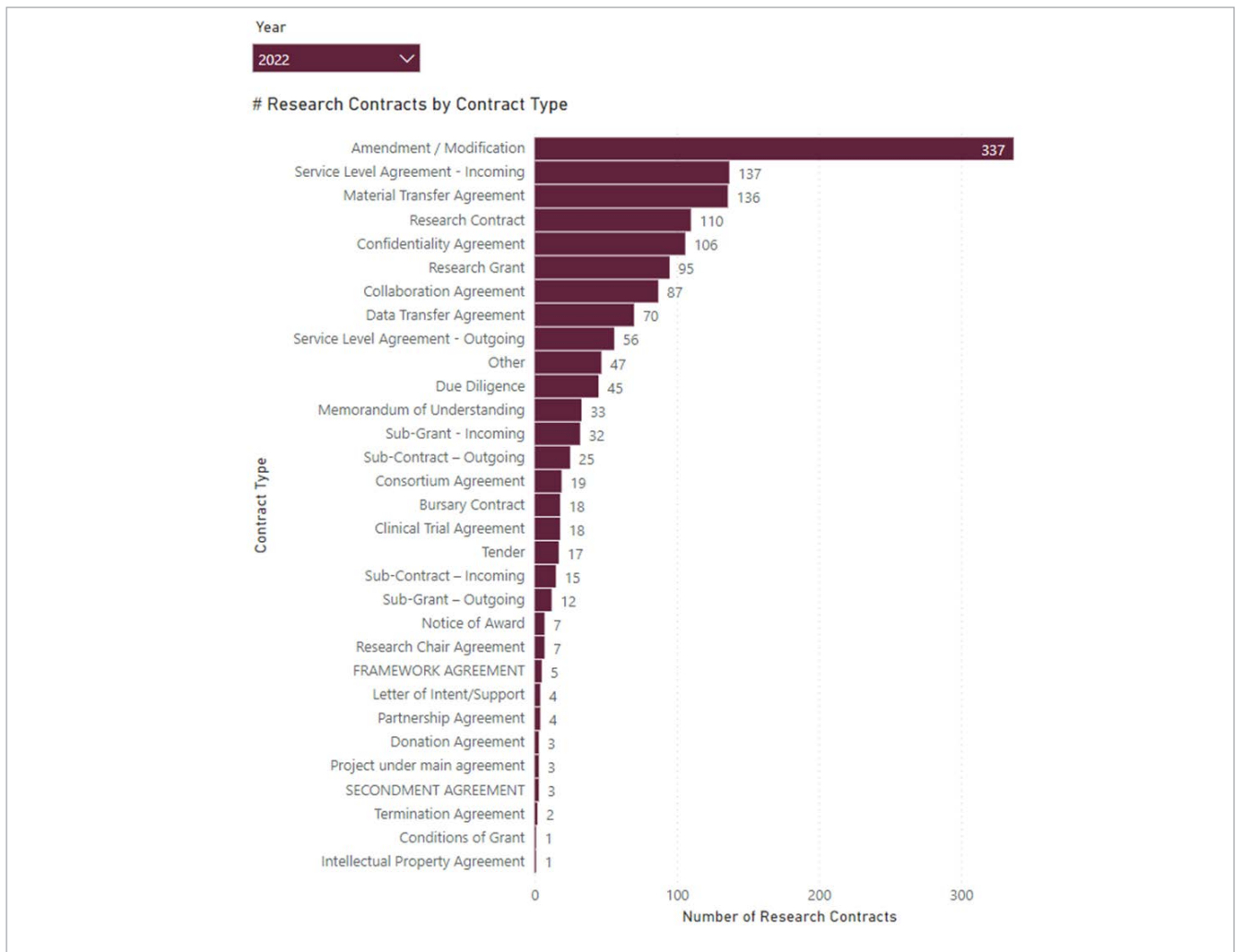


Figure 16: Contracts according to contract type

It is interesting to note from Figure 17.1 that nearly 50% of contracts processed and signed in the 2022 year (as on 19 February 2023), does not have a financial implication (meaning, it is contracts with a null value, such as Collaboration Agreements, Non-Disclosure Agreements, Material- or Data Transfer Agreements, No Cost Extensions etc). However, contracts with a null value does not mean that it has no financial risk, as there are severe liability risks linked to contracts such as Data – and Material Transfer Agreements and

Confidentially Agreements. It is also an indication of our collaborative efforts with other research partners.

Figure 17.2 gives an overview of the financial- vs non-financial implications for the contract portfolio between 2018 and 2022. It is clear that on average 50% or more of research contracts processed, have no financial value linked to it, however, it is indicative that the collaborative research efforts with other research partners are flourishing, despite financial pressures.

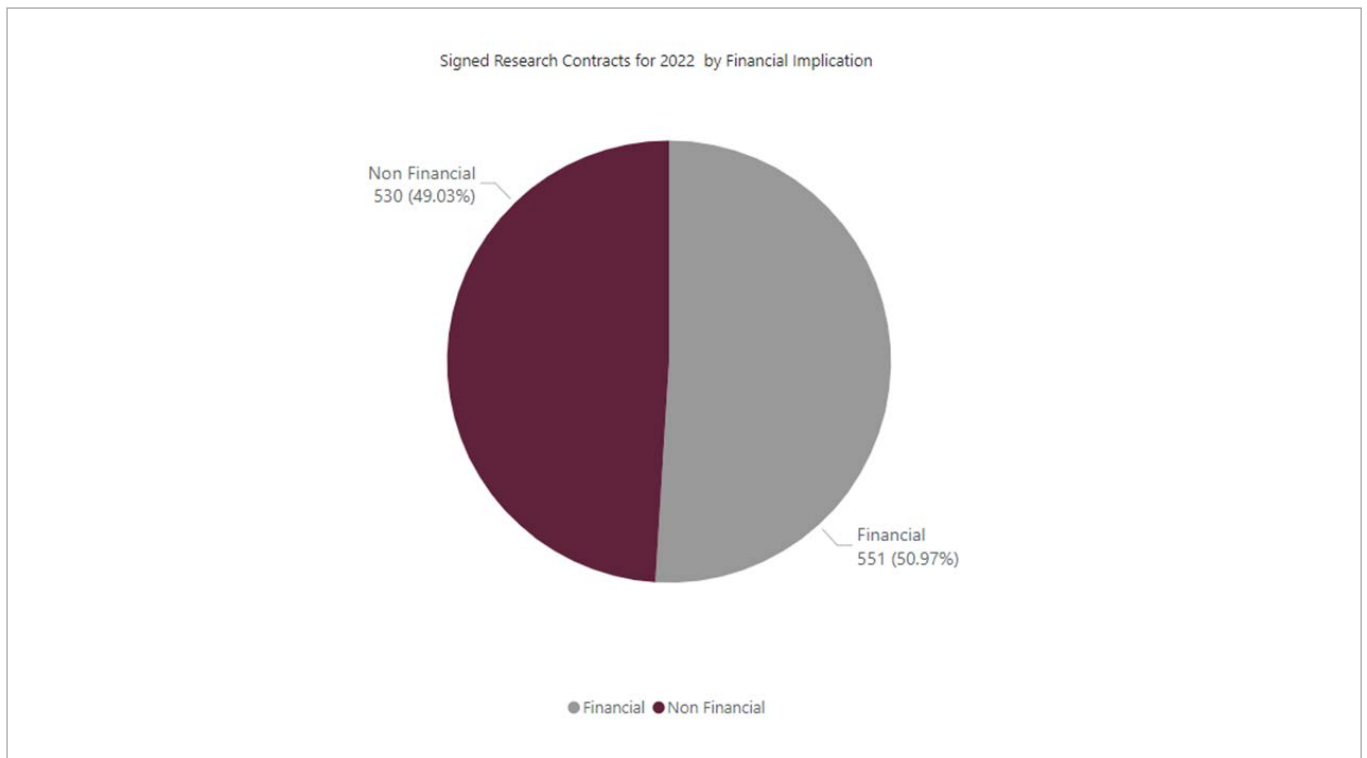


Figure 17.1: Signed contracts for 2022 by financial implication

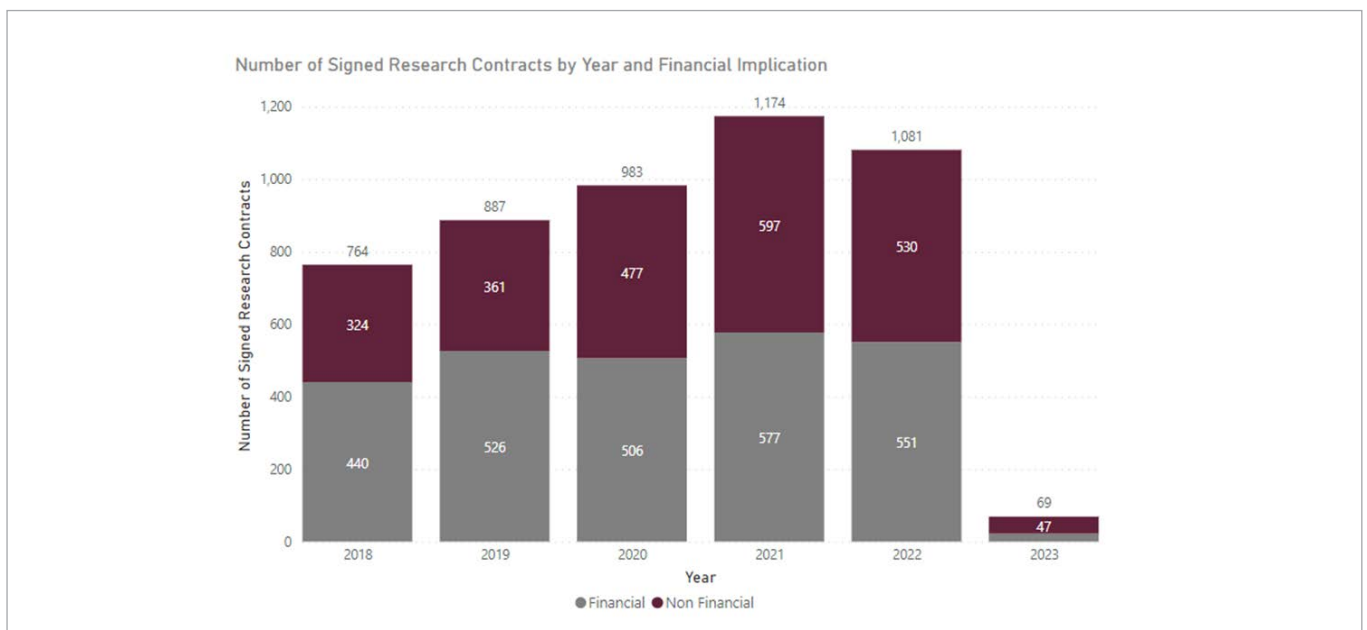


Figure 17.2: Comparison of signed contracts for the period 2018-2022 by financial implication

Figure 18.1 indicates the Signed Contract Values for 2022 by Debit and Credit Value. As we are at times a consortium leader, we must pay out funds to other collaborators, and at times we must subcontract portions of research or analytical work to other institutions. Funds being paid out (Debit), are less than 11% (like 2021).

From Figure 18.1 we can also see that the value of **2022 INCOMING (Credit) contracts** already signed is **calculated at R806m**, as on 19 February 2023 (in comparison to R1,100m value of 2021 signed incoming (credit) contracts as on 4 February 2022). Again, please note that there are several 2022 contracts that are still in negotiations which will be signed in 2023. This amount will therefore increase.

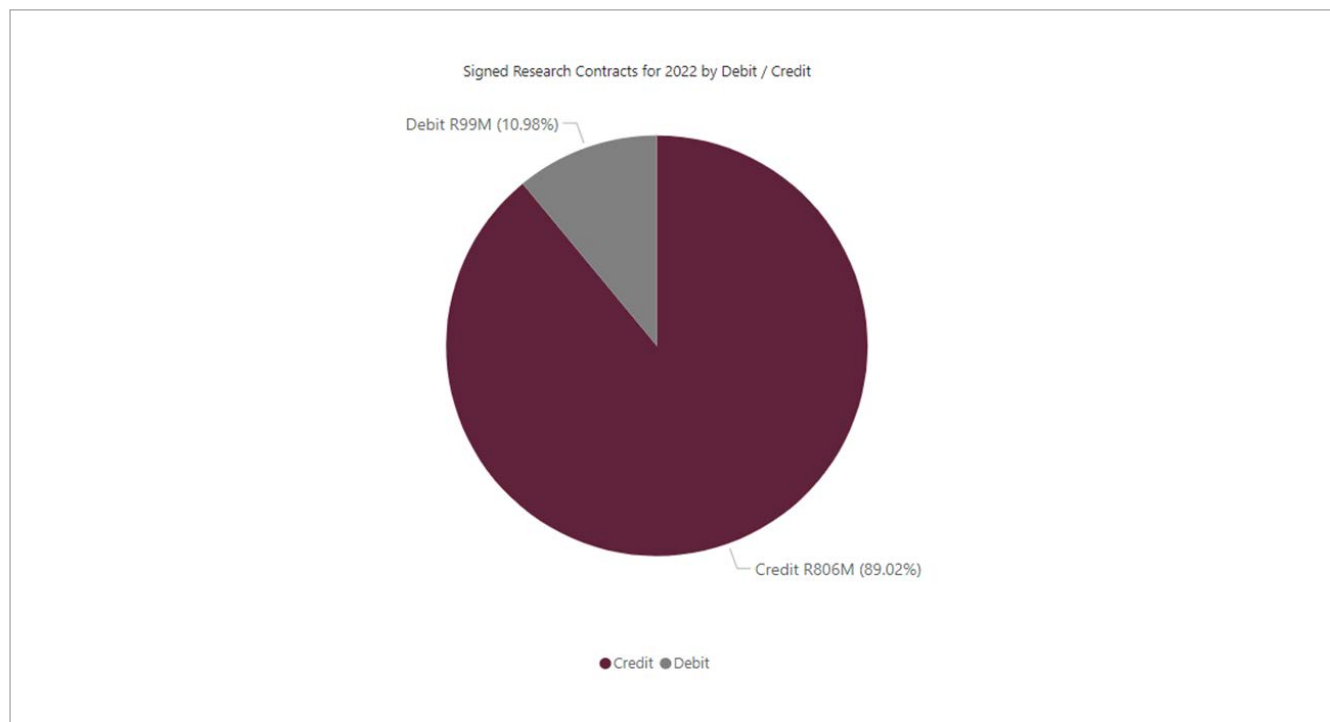


Figure 18.1: Contract amount for signed 2022 contracts in terms of debit vs credit

Figure 18.2 indicates the Signed Contract Values for 2022 by both Debit and Credit Value (this reflects the total value of the contracts that we signed, although some are incoming (credit) and some are outgoing (debit). As we are at times a

consortium leader, we must pay out funds to other collaborators, and at times we must subcontract portions of research or analytical work to other institutions. Figure 18.2 should not be confused with Figure 19, which only reports on the Incoming Contracts (credits).

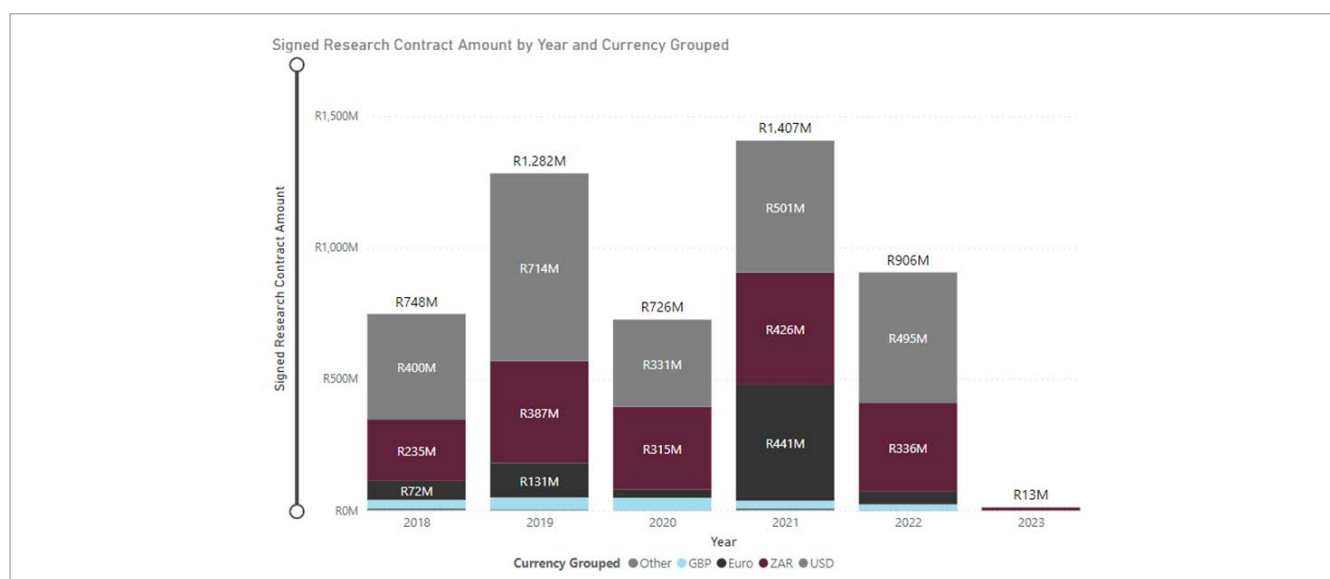


Figure 18.2: Contract amount (credit and debit) for signed 2018-2022 contracts

Figure 19 indicates the comparison of SIGNED INCOME (Credits) contract values for the period 2018-2022 research contracts (as on 19 February 2023). Please note that this should not be confused with Actual income from the Financial System. As explained, the contract amount reported for 2021 contracts as on 4 February 2022 was R1.100m, and with the remainder of 2021 research contracts being signed in 2022, that value has increased to R1.255m. The same could therefore be expected for the 2022 contract year. It should also be kept in mind that in 2019, the largest research contract in

SU's history was awarded (Unitaid), and it partially explains 2019 as an outlier year. In 2021, we have signed several large individual contracts, which also explains another outlier year. As we add more years in the future, we might be able to pick up more trends. Figure 19 also provides information on SU's risk profile in terms of exchange rate variances. From R806m income from 2022 signed contracts (credit), only R295m is in ZAR currency, making the research income of the largest portion very vulnerable to exchange rate variances.

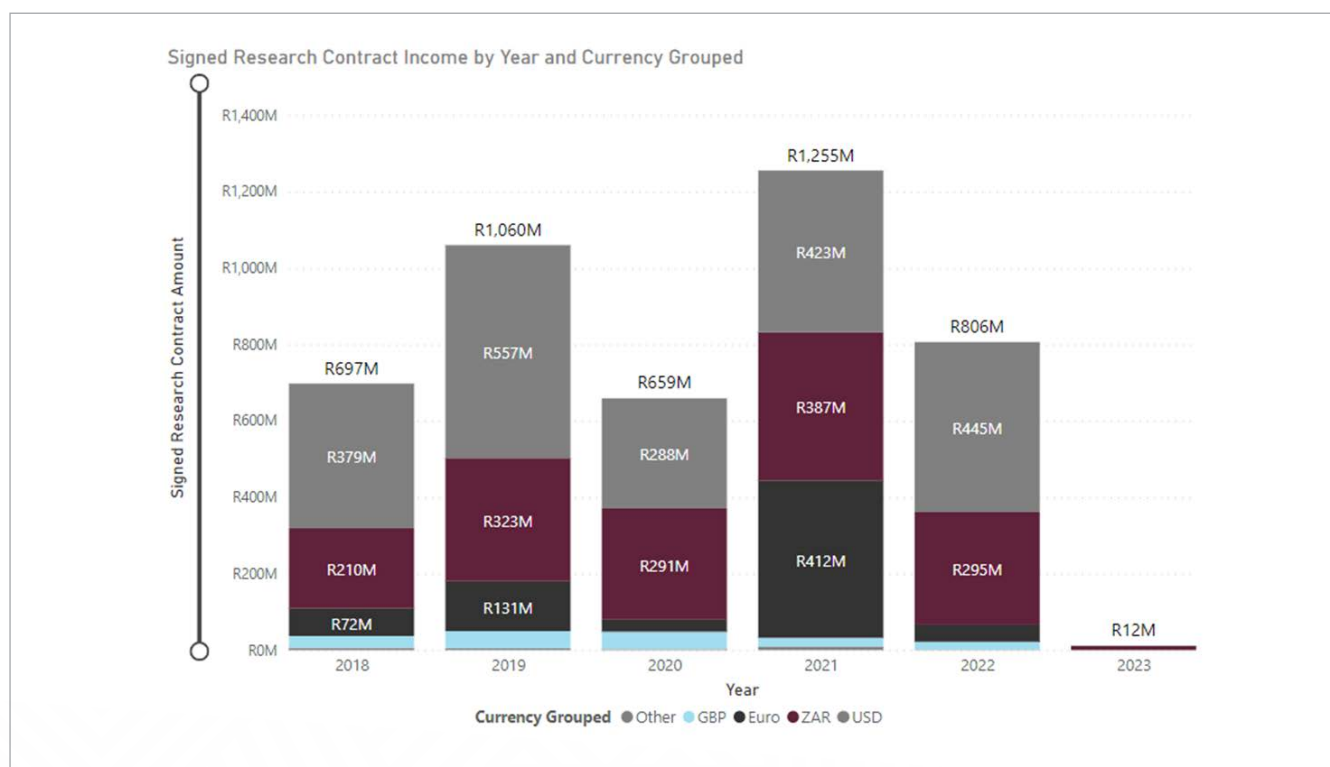


Figure 19: Comparison of signed contracts (income) for 2018-2022 with grouped currencies

Figure 20 indicates the contract **value** of 2022 signed contracts per faculty, **vs the number** of the signed contracts per faculty. Please note that this

only reflects faculties' research contracts. There are other environments at SU where there are research contracts not linked to a faculty and is excluded from this figure.

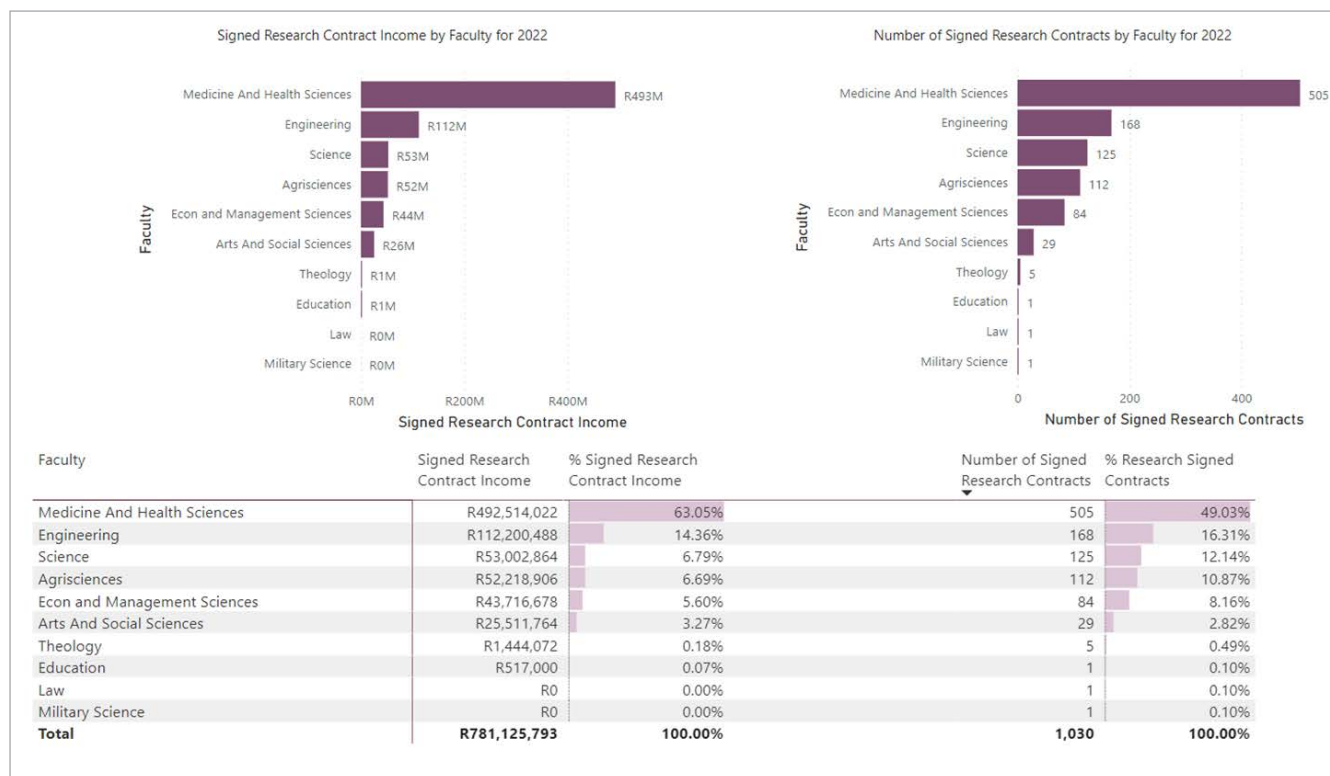


Figure 20: Number and value of signed contracts per faculty

Table 5 indicates the top five individual signed contracts of 2022.

Table 5: Top five individual signed contracts

Contract Number	Faculty	Main Funder	Contracting Institute	Principal Researcher	Research Contract Amount
S007945	Medicine And Health Sciences	Health Emergency Preparedness and Response Multi-Donor Trust Fund	WORLD BANK	Tulio De Paiva Nazareth Andrade De O	R77,700,000
S007805	Medicine And Health Sciences	BILL AND MELINDA GATES FOUNDATION	BILL AND MELINDA GATES FOUNDATION	Gerhard Walzl	R31,309,852
S008310	Engineering	Department of Science and Innovation (DSI)	South African National Energy Development Institute (SANEDI)	Richmore Kaseke	R25,551,997
S005878-A-03	Medicine And Health Sciences	Unitaid	Unitaid	Anthony Joseph Garcia-Prats	R25,461,295
S008017	Medicine And Health Sciences	South African Medical Research Council (SAMRC)	South African Medical Research Council (SAMRC)	Tulio De Paiva Nazareth Andrade De O	R25,403,901
Total					R185,427,046

Classification of contracts in accordance with the Department of Science and Innovation's (DSI) Experimental Research and Development (R&D) Survey for 2021 and 2022

A new feature implemented in the Research Contracts solution during Phase 1, was the ability to classify all incoming contracts in the funding categories as prescribed by the DSI R&D survey. It is important to distinguish between the terminologies used in this report.

Main Funder has the meaning of the entity sponsoring the research project, whilst the **Contracting Party** is the entity with which we are entering into contractually. As an example: The National Institutes of Health (NIH) is classified as a Funding Agency – International, as per the DSI R&D survey definitions. However, funding from the NIH can reach Stellenbosch University (SU) directly through a direct research grant, or via another university (then classified as University national or international as the case may be). The Contracting Institution will then be the university that SU will sign the contract with, and the Contracting Institution classification will be according to the type of entity.

The terminology "not provided" on these figures, indicate that the funding is from individual persons and not classified as national or international.

The following figures will distinguish between the types of categories from a Main Funder and a Contracting Institution perspective. We also include the top 10 Main funders for the 2021 and 2022 years, as well as the top 10 Contracting Parties for 2021 and 2022 (as on 19 February 2023). Here we will note that our largest income by far is from International Funding Agencies.

For Main Funders:

Figure 21 indicates the contract amounts (credit and debit together) per **Main Funder Category** for **2022** and indicates that 69,4% (vs 77,1% in 2021) is from international sources.

For Contracting Parties:

Figure 22 indicates the contract amounts (credit and debit together) per **Contracting Institutions' Category** for **2022** and indicates that 67,0% (vs 71,2% in 2021) is from international institutions.

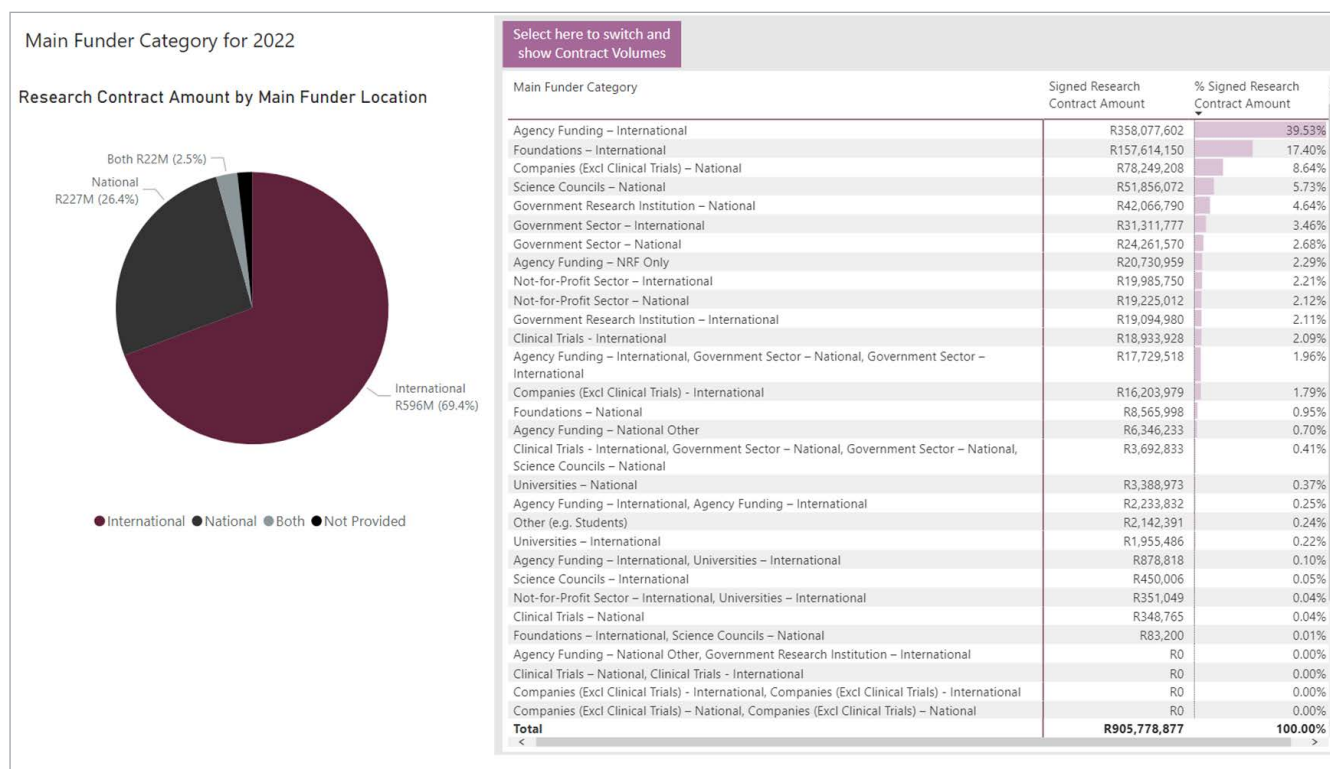


Figure 21: Main Funder Category for 2022

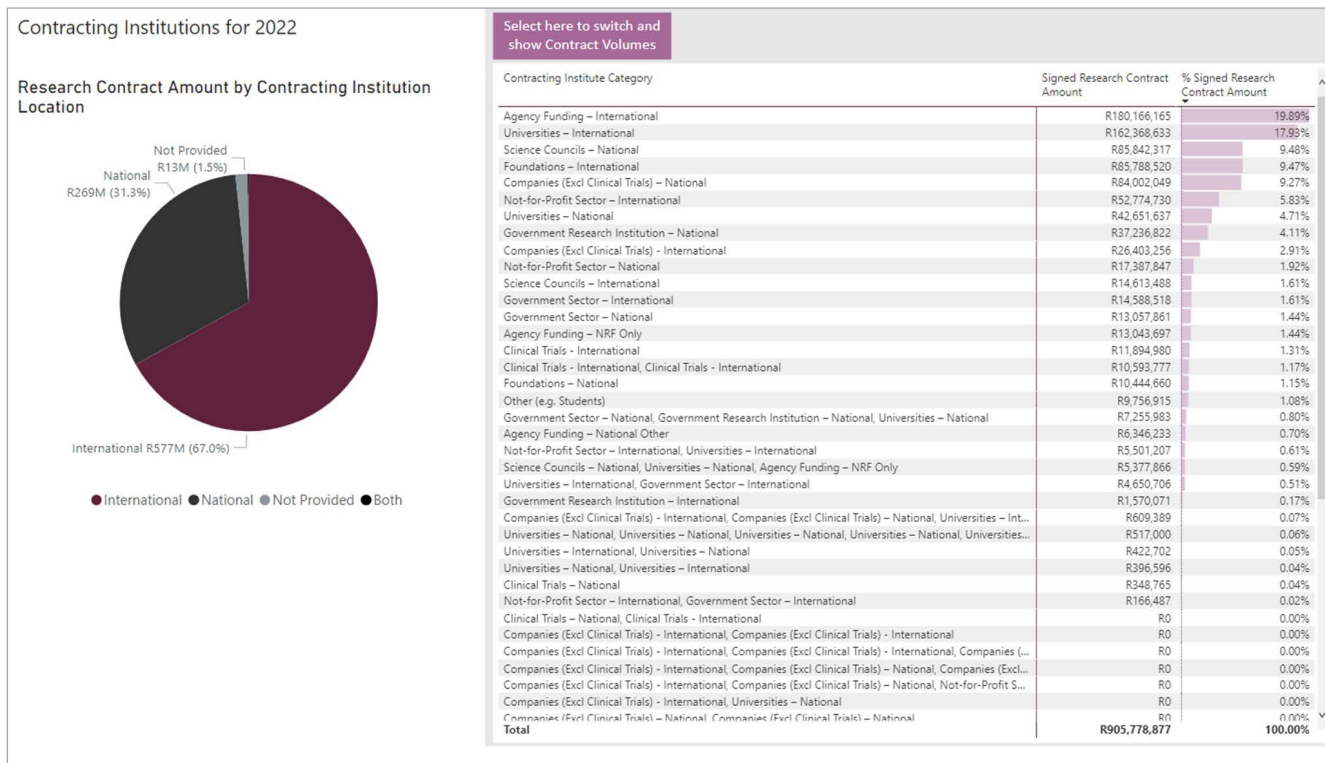


Figure 22: Contracting Institutions' Category for 2022

Actual Research Contract and National Research Foundation (NRF) Income for the period 2013 - 2022

For a complete overview with regards to research income (Research Contracts and the NRF), the **Actual Income** for 2013-2022 is presented in the Table 6 below.

Table 6: Actual Income (Research Contracts and the NRF) for 2013 - 2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Research contracts (excluding NRF)							R806,03m	R828,77m	R1,041bn	R1,076bn
							<i>Of which:</i>	<i>Of which:</i>	<i>Of which:</i>	<i>Of which:</i>
							<i>International:</i>	<i>International:</i>	<i>International:</i>	<i>International:</i>
							<i>R429,4m</i>	<i>R454,8m</i>	<i>R591,5m</i>	<i>R658,3m</i>
							<i>And</i>	<i>And</i>	<i>And</i>	<i>And</i>
							<i>National:</i>	<i>National:</i>	<i>National:</i>	<i>National:</i>
							<i>R376, 63m</i>	<i>R344,52m</i>	<i>R449,2m</i>	<i>R418,4m</i>
NRF	R160,3m	R198,3m	R224,1m	R367m	R364,2m	R235,2m	R209,92m	R164,324m	R183,2m	R213,6m
Total	R703,4m	R878,9m	R1,18bn	R2,158bn	R1,250bn	R1,018bn	R1,016bn	R963,62m	R1,224bn	R1,290bn

Figure 23 gives an indication of the source of funding based on Actual Income for 2022, which is a graphic representation of the last column in the Table above.

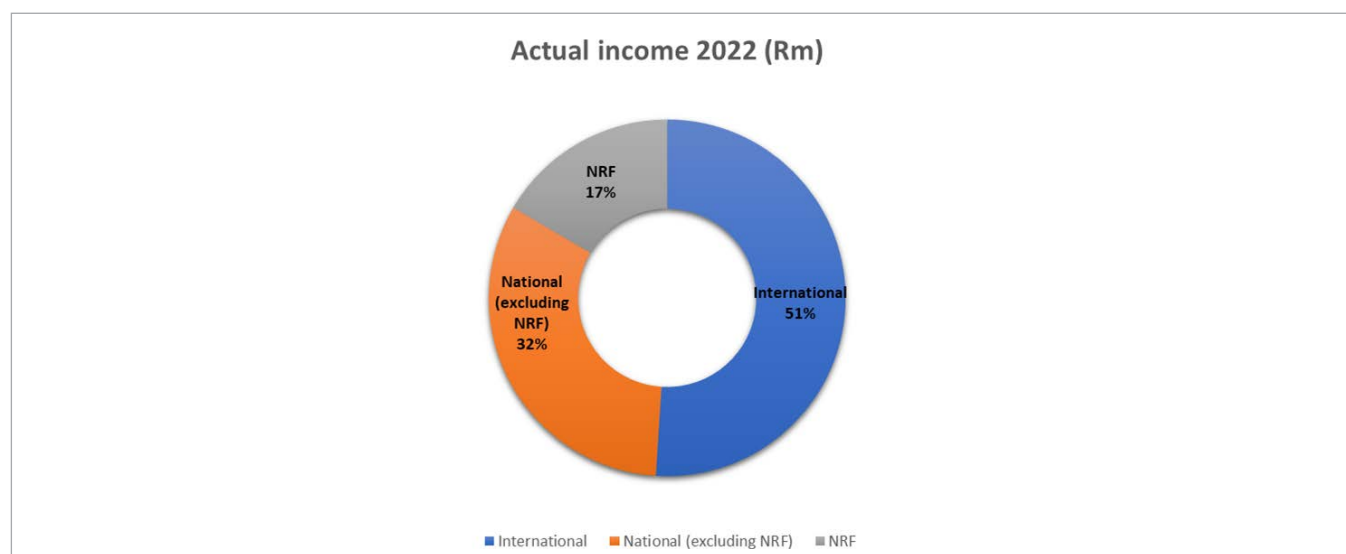


Figure 23: Funding sources based on Actual Income for 2022

The importance to understand the difference between the reporting on the value for signed contracts for 2022, vs the actual income for 2022 (the last section of this report) is again emphasized. **The signed contracts** are contracts received, registered, processed, negotiated, and signed for the 2022 year. These contracts can run over multi-years, and for the sake of reporting the full contract value are reported for contracts received in 2022. Also take note of the explanation regarding the "debits" and "credits".

The **actual income for 2022** will include contracts signed in 2022 or previous years but receiving certain payments in 2022. For example, contracts signed in 2022's year 1, contracts signed 2021's year 2, contracts signed in 2020's year 3, etc.

Additional research-related financial information for 2022

(Disclaimer: only a selection of financial information is provided here. A more comprehensive financial information set, based on specific pre-determined categories, will be provided in the 2023 report).

Subsidy block grant from DHET received:

It is important to mention that the subsidy block grant for 2022 is based on the various input units (e.g. teaching input units) and output units

(e.g. teaching output units and research output units) produced in 2020. There is a two-year lag between generating funded inputs/outputs and the eventual allocation of the subsidy by the Department of Higher Education and Training (DHET), based on the relevant inputs/outputs.

Block grant for Research Outputs received for 2022: R 492 006 727

(Source: SU Institutional Information)

The appropriation of SU Research Fund towards Subcommittees of the Research Committee

Research Fund distribution to subcommittees in 2022:

Total: R37 133 620

Subcommittee A – R14 756 611

(Faculties of Arts and Social Sciences, Education, Law, Theology, Economic and Management Sciences, PASS environments)

Subcommittee B – R15 951 305

(Faculties of Science, AgriSciences, Engineering)

Subcommittee C – R6 425 704

(Faculty of Medicine and Health Sciences)

Table 7: Subcommittee spending of budget allocation in 2022

	Subcommittee A	Subcommittee B	Subcommittee C
SOS funds	12 859 666	9 924 798	3 493 798
Full postdoc fellowships	920 000	1 620 000	200 000
Postdoc top-ups	80 000	620 000	
Consolidocs	0	210 000	
Project funding: new staff members	168 600	1 340 800	
Project funding: Thuthuka co-funding	350 000	1 320 000	776 743
Project funding: emerging researcher	50 000	Included in new staff member amount	
Book publication costs	167 555	n/a	
Refreshments	0	1 170	
Additional line items for Subcommittee C:			
Lecturer replacement funding			28 244
Temporary research assistance funding			624 227
Research assistance funding			400 000
Early-career research funding			870 227
Undergraduate research support			350 000

The current funding levels to subcommittees A, B and C is inadequate to expect them to drive the research strategy and it is one area that will need a focussed review so that there is more funding reallocated to support postdoctoral fellows, consolidocs, emerging researchers etc.

2022 Research Funding received for Capacity Building and Early Career Researcher Development:

SU Skills Levy: R150 000
 ECAD Programme (UCDG Funding): R4 200 300
 Postgraduate (PGP) project (UCDG Funding): R1 356 000

Overview of Postgraduate Funding Statistics

Table 8: Overview of PG Funding Sources between 2016 and 2022

Year	Mainstream Budget (institutional) (a)	Bequests & Donations (b)	External funds (c)	Total (d)
2016	R24,5m	R16,3m	R180,9m	R221,9m
	11%	7%	82%	100%
2017	R30,3m	R18,4m	R185,3m	R234m
	13%	8%	79%	100%
2018	R18,8m	R19m	R200,5m	R238m
	7.8%	8%	84.2%	100%
2019	R20,8m	R13,4m	R205,8m	R240m
	8,6%	5,6%	85,8%	100%
2020	R16,1m	14,5m	R206m	R237m
	7%	6%	87%	100%
2021	R42.8m	R15.4m	R193.4	R251.6m
	17%	6%	77%	100%
2022	R38.6m ²	R18.6m	R211m	R268m
	14%	7%	79%	100%

² Actual funding for the Postgraduate Funding Budget in 2022 was R43.5m. However, Master's and Doctoral student funding are committed for up to 2 and 3 years, respectively, ensuring sufficient support for these students up to graduation. Therefore, only actual expenditure is reported under this amount for 2022.

Table 9: Postgraduate Funding per category from 2019-2022

#	Category	2019	2020	2021	2022
1	Institutional funds	R 20 788 799,81	R16 116 575,56	R42 810 317,82	R38 554 812.00³
1.1	Merit	R1 595 000,00	R1 360 000,00	Phased out	Phased out
1.2	Support bursaries / PSP	R12 372 105,37	R8 469 519,45	R40 761 494,56	R37 554 812.00
1.3	Strategic	R6 821 694,44	R6 287 056,11	R2 048 823,26	R1 000 000.00
2	Internal	R13 416 384,76	R14 454 091,95	R15 429 611,38	R18 635 797.08
2.1	Bequests and donations	R13 416 384,76	R14 454 091,95	R15 429 611,38	R18 635 797.08
3	External funds	R206 057 261,50	R206 440 371,09	R193 397 153,57	R211 312 701.00
3.1	National Research Foundation	R59 277 518,37	R60 578 387,61	R55 199 137,36	R63 060 712.13
3.2	Statutory funds (i.e., CSIR)	R10 916 246,57	R9 515 637,95	R10 371 862,02	R5 597 246.10
3.3	Companies, donors, and trusts	R23 860 816,46	R21 435 443,01	R14 044 545,21	R18 808 845.79
3.4	Departmental funding	R112 002 680,10	R114 910 902,52	R113 781 608,98	R123 845 897.70
	Total	R240 262 446,10	R237 011 038.60	R251 637 082,80	R268 503 310.90
		3308 recipients	3865 recipients	3278 recipients	3063 recipients

3 Actual funding for the Postgraduate Funding Budget in 2022 was R43.5m. However, Master's and Doctoral student funding are committed for up to 2 and 3 years, respectively, ensuring sufficient support for these students up to graduation. Therefore, only actual expenditure is reported under this amount for 2022.

As mentioned elsewhere in this report, resources and infrastructure, including funding for research as an important enabler, forms a key part of the focus

areas and initiatives that have been identified under game changers in the Research and Innovation Blueprint and the RC Environmental Plan.

5.2 A transformative student experience

5.2.1 Master's and doctoral student enrolments and degrees awarded

A substantial and successful postgraduate student body is an important building block of any research-intensive university. According to the official June statistics, SU enrolled 4 960 Master's and 1 611 doctoral students in 2022. In 2022, the postgraduate student component made up more than 30% of the total student population.

SU is mindful of the need to strengthen student diversity at all levels. The number of South African generic black (BCIA - black, coloured, Indian and Asian) students enrolled at postgraduate level represents 47% of the postgraduate student body.

International students have remained a fairly stable proportion of the overall postgraduate student cohort despite restricted international mobility over the past two years.

Table 10: Master's and doctoral enrolments at SU

	2012 June	2017 June	2018 June	2019 June	2020 June	2021 June	2022 June*
Master's students	4 982	4 831	4 811	4 821	4 774	5 034	4 960
Doctoral students	1 236	1 614	1 645	1 637	1 607	1 649	1 611
Total	6 218	6 445	6 456	6 458	6 381	6 683	6 571

*This is annual registrations – June 2022 is the audited number for the year.

Table 11: Master's and doctoral degrees awarded by SU

	2012	2017	2018	2019	2020	2021	2022
Master's degrees	1 441	1 624	1 517	1 474	1 316	1 547	1 383
Doctoral degrees	240	305	308	362	302	310	261

Table 12: Postgraduate student diversity among SA citizens at SU

	2012	2017	2018	2019	2020	2021	2022
SA generic black students	40%	49%	50%	46%	47%	48%	47%

Table 13: International students as a percentage of total postgraduate enrolments

2016	2017	2018	2019	2020	2021	2022
19,3%	18,4%	18,3%	21,6%	16,6%	19,1%	15,8

5.2.2 Postgraduate Office

The Postgraduate Office (PGO) is a central support and liaison office for postgraduate students at SU. Located within the DRD, the PGO continuously works towards streamlining and enhancing the complete postgraduate experience for both supervisors and postgraduate students. Their aim is to create an enabling postgraduate environment in collaboration with the faculties and other SU support service divisions, to improve the overall quality of SU postgraduate students' academic experience. The PGO also functions as an institutional representative, promoting opportunities for and to SU postgraduates during their postgraduate life cycle (from application to graduation).

Council on Higher Education (CHE) national review of doctoral degrees

During 2022, the PGO continued with the implementation of the areas of improvement highlighted by the National Review of Doctoral Degree, including:

- the development of a science communication, public engagement resource on how to write a good lay summary/popular abstract that will be housed on SUNLearn under the PGO 'online training' module, was launched by the PGO during the first quarter of 2023.
- the refinement and consolidation of the new institutional Postgraduate Supervisor Training Course (STC) (see the next section of this report for detailed feedback of this course in 2022).

Institutional academic supervisor training courses in 2022

The PGO, in collaboration with the DRD staff capacity building workshop programme, facilitated two institutional supervisor training courses (STC) in support of SU academic staff during May/June 2022 and November 2022.

The course, which was piloted with a cohort of 30 SU mentees and mentors from the DRD's early-career academic development (ECAD) programme during November 2021, was refined and

re-presented by Prof Chrissie Boughey (a former Deputy Vice-Chancellor and current Emeritus Professor at the Centre for Postgraduate Studies at Rhodes University) during May/June 2022. Its format deviated slightly from the pilot course in the sense that it adopted a hybrid teaching and learning approach by adding two in-person sessions along with the bi-weekly MS Teams lunchtime discussion sessions and the asynchronous self-study material on SUNLearn.

Prof Boughey reported, *"I found the evidence of learning on the [June 2022] course quite extraordinary in comparison to other SPS [supervisor] courses I have run, and several participants indicated that they appreciated the hybrid mode of presentation."*

A second STC course took place during November 2022. This time, Prof Boughey co-presented with Dr Nompilo Tshuma, a lecturer specialising in supervision research (amongst other areas of interest) from SU's Education Faculty's Curriculum Studies Department, in their Centre for Higher and Adult Education (CHAE). This came about to accommodate more participants due to the demand for more SU staff and post-doctoral fellows to be trained in 2022.

A total of 80 SU supervisors received training (40 staff and 40 postdocs) during 2022, with 56% of the participants coming from the Faculty of Medicine and Health Sciences. Once again, the participants' feedback was very positive.

Postgraduate student support: Postgraduate Skills Development Programme

The PGO, via their Postgraduate Skills Development Programme, once again successfully delivered the University Capacity Development Programme (UCDP) Postgraduate Pipeline (PGP) project, which is funded by the University Capacity Development Grant (UCDG).

Overview of the impact accomplished in the UCDP funding cycle for 2022:

Project activity 1: Developed a comprehensive postgraduate e-resource on how to write a good lay summary/popular abstract.

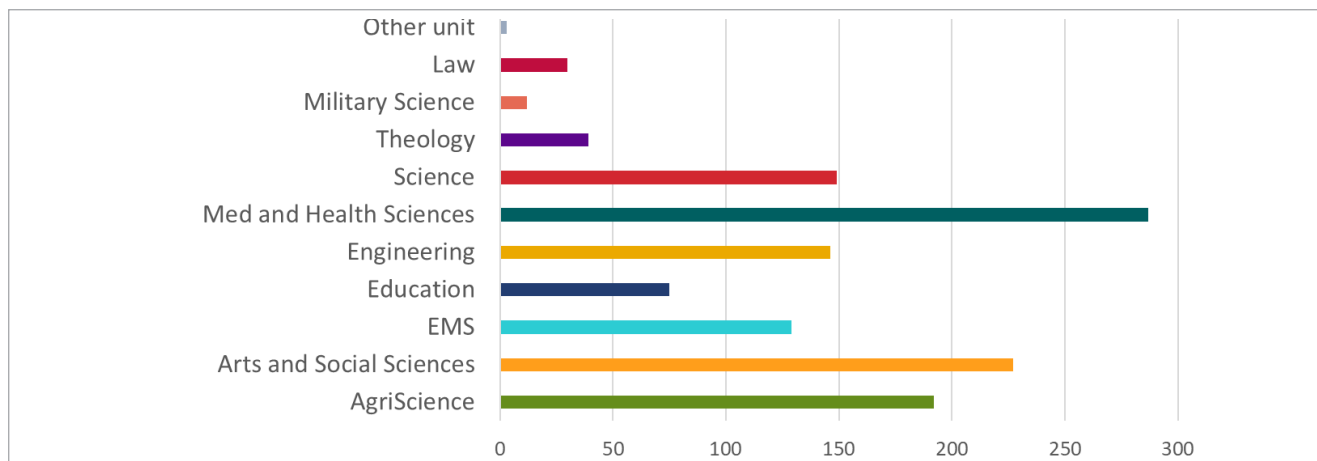


Figure 24: UCDP PGP workshop attendance in 2022 according to faculty

Project activity 2: Delivered 44 postgraduate workshops and webinars in the areas of writing, research, technical and professional skills (1292 seats).

Project activity 3: Awarded 38 postgraduate travel grants for research/study/networking purposes.

Once again, as was the case in 2021, running the bulk of the programme's workshops online since lockdown has made a big difference to the Faculty of Medicine and Health Sciences (FMHS) postgraduates' access to the PGO's workshops, as is reflected in Figure 24.

From a transformative perspective:

Figure 25: UCDP PGP workshop attendance in 2022 according to nationality

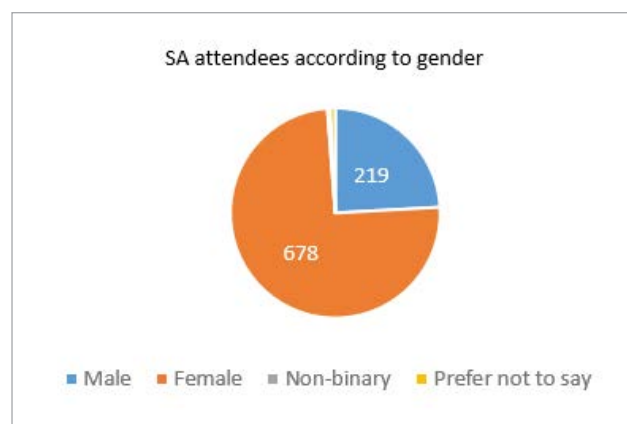
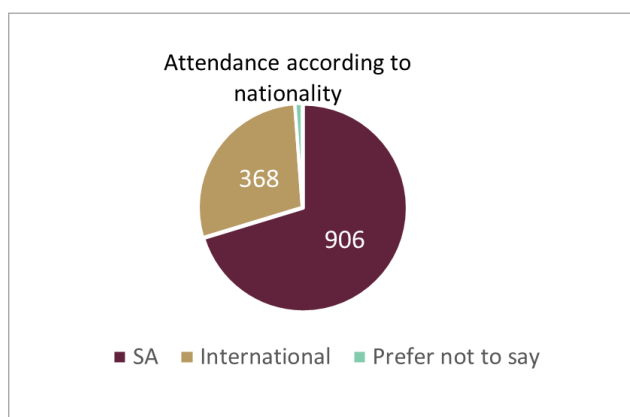


Figure 26: UCDP PGP workshop attendance in 2022 according to gender

- 70% of the workshop attendees were South African;
- of the South African attendees, a little over 51% were generically Black, and 75% were female;
- of the SA female attendees, 49% were generically Black, 40% were White, 11% preferred not to say

In addition to the Postgraduate Skills Development Programme's generic workshop offering in 2022, the Programme reached 528 Faculty of Engineering postgraduates via asynchronous online Professional Communication modules (59447-871 and 59447-771). The programme has been presenting this offering annually on behalf of the Faculty of Engineering since 2017. The modules cover academic writing integrity and how to avoid plagiarism.

FameLab – science communication public speaking development

The PGO has been running postgraduate training on presenting science to the public and working with the media through [Jive Media Africa](#) and [FameLab](#) every year since 2019.

In 2022, for the **FameLab 2022 national competition held 17 October 2022**, of the top ten national finalists, three were SU postgraduates: Tarryn Surajpal, a Faculty of Science Master's candidate (winner of the institutional heat for the 2022 FameLab cycle); Tanya van Aswegen, a Faculty of Medicine and Health Sciences PhD candidate (first runner-up of the institutional heat for the 2022 FameLab cycle); and Ewura-Esi Manful also a Faculty of Medicine and Health Sciences candidate (who entered the 2022 competition via a SAASTA sponsored FameLab regional open heat).

The PGO also hosted training for the **2023 round of FameLab institutional training and a heat** for the FameLab 2023 competition cycle in-person on 12 and 13 October 2022. Thirty SU postgraduates from the fields of science, technology, engineering, mathematics and innovation received specialist science communication training on the 12th and presented their research impactfully in only three minutes to a cross-disciplinary audience on the 13th. The winners of the heat were Taskeen Ebrahim from Engineering (winner of the institutional heat for the 2023 FameLab cycle), Kaylan Reddy from Science (first runner-up of the institutional heat for the 2023 FameLab cycle), Ayesha Shaikh from AgriSciences (second runner-up of the institutional heat for the 2023 FameLab cycle), and Siphosethu Zantsi from Medicine and Health Sciences (audience choice of the institutional heat for the 2023 FameLab cycle).



Photo 2: From left to right: Siphosethu Zantsi (audience choice), Kaylan Reddy (1st runner-up), Taskeen Ebrahim (winner), Ayesha Shaikh (2nd runner-up). (Source: DRD)

The Postgraduate Office's social media reach in 2022

The Postgraduate Office's social media accounts, managed by the Postgraduate Skills Development Programme's team, aims to inform postgraduates of the wide range of resources and support available to them at SU, such as funding opportunities, academic training, e-resources, important information on policies and deadlines, mental health and wellness, as well as professional development.

In 2022, the PGO's Facebook account reached 50,113 through posts, stories, and adverts. An increase of 200% from the previous year. In addition, the followers grew from 1772 followers in 2021 to 2200 followers in 2022.

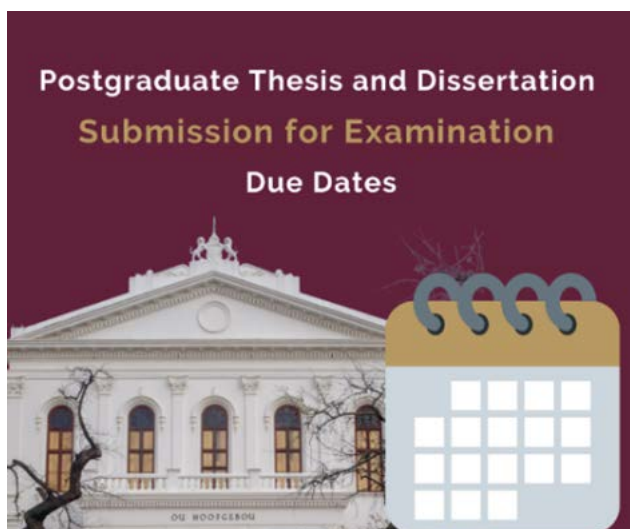
The *Stellenboschunipgo* Instagram account also grew in 2022 from 613 followers in 2021 to 833 followers in 2022.

Examples of posts that did particularly well in 2022:



Advertising the *National Research Foundation* Scholarship opportunity for Honours, Master's and doctoral students.

Post reached: **8 551 people**



Advertising SU's thesis and dissertation submission dates for examination in 2022.

Post reached: **1 487** people



Promoting SU's *Postgraduate Scholarship Programme* opportunity for Honours, Master's and doctoral students.

Post reached: **4 569** people

The SUNStudent system

It must be noted that the ongoing demands of the capability development and the refinement of aspects of the SUNStudent system, especially the Postgraduate Management Capability, have stretched capacity in the Postgraduate Office alongside business-as-usual activities during 2022. The go-live date for the SUNStudent Financial Aid capability has been pushed forward to January 2024. This system configuration is essential for the management of all bursaries and scholarship at the University.

5.2.3 Postgraduate funding and support

PG Funding Administered

The Postgraduate Funding Office administered more than R268 million in postgraduate scholarships during 2022, an increase of R17 million from the previous year.

The SA HEI funding landscape has become increasingly competitive over the last decade, particularly considering the diminishing pot of postgraduate scholarship funding. This trend poses a significant risk to improving

postgraduate access, in general, and to supporting students with financial need, which is further exacerbated by rising costs and high levels of student debt.

Echoed in numerous studies and reports, the resounding call to action is for increased levels of postgraduate funding support – especially in the context of declining funds in real-term emanating from the coffers of the National Research Foundation (NRF). In light of this, *Universities South Africa* (USAf) resolved in 2022 to establish a working group focussing on Postgraduate Funding as part of its Community of Practice on Postgraduate Education and Scholarship, led by Professor Stephanie Burton (UP). The focus of the Working Group will be to, *inter alia*, unpack funding issues, solutions, models and how best to leverage greater resources and support postgraduate students across the country.

Overview of postgraduate funding at SU

NRF Scholarships

SU received 84 new NRF Master's scholarships and 78 new doctoral scholarships, the highest number of awards in

The Postgraduate Office (PGO) administered approximately R268 million in postgraduate funding during the 2022 academic year, compared to R251 million in 2021. This

notable increase suggests that the investment made by the University to establish a flagship scholarship programme - the SU Postgraduate Scholarship Programme - has positively impacted the overall trajectory of our postgraduate funding portfolio and mitigated a potential drop in our overall funding support, as outlined by Figure 27.

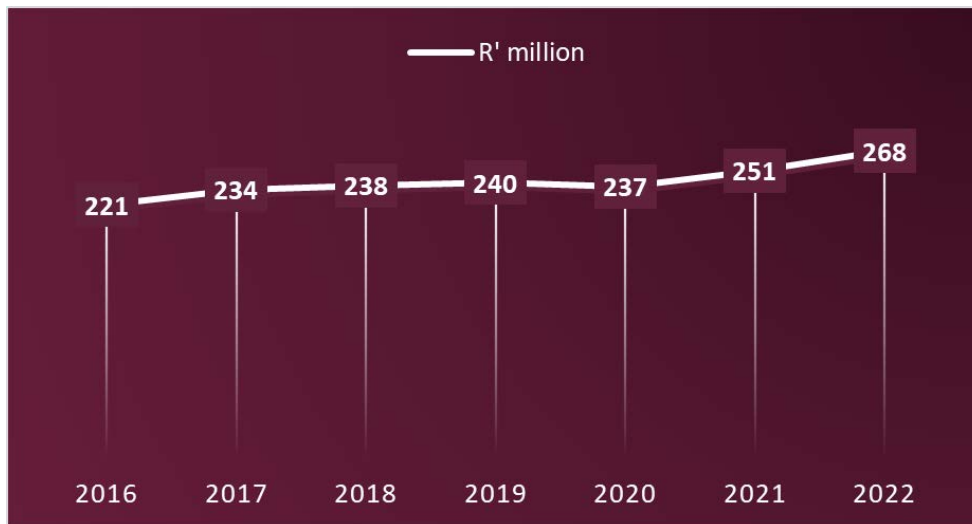


Figure 27: Total postgraduate funding administered (2016-2022)

During the 2022 academic year, 46% of all bursaries allocated to postgraduate students (approx. R123 m) were in the form of departmental bursaries, sourced mainly via research contracts and third-stream leveraged funding. This represents a slight increase of +1% from the previous academic year and a massive compliment to SU's research machinery in support of our postgraduate pipeline. The NRF contribution also improved over the last year, whereby scholarships for the 2022 academic year (R63m) increased beyond the contributions in 2021 (R55m) and 2020 (R60m). However, we should caution that the NRF's funding remains volatile and the current trend shows that fewer students are receiving support– an artefact of the broader higher education funding model.

Trends and Impact

Although funding levels are improving, the number of supported students remains on a downward trend. Above-average scholarship values may address the high cost of living and tuition faced by postgraduates across the country, on one hand. Still, decreasing the number of students being funded puts at risk our overall postgraduate pipeline and research output. The NRF's new policy on postgraduate funding underpins this trend, which will continue to pose a considerable challenge for institutions to raise more support to fund an increasing number of students (particularly, financially needy students) accessing or completing their postgraduate studies. The average scholarship awarded to SU postgraduates increased from R72 630 in 2019 to R88 439 in 2022.

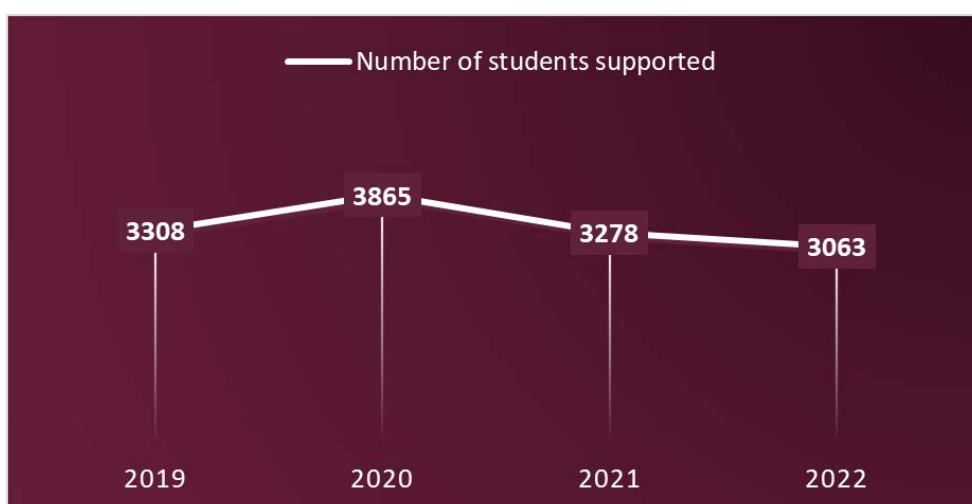


Figure 28: Supported students (2019-2022)

National Research Foundation Scholarships

Policy changes introduced by the NRF during 2020/2021 had a detrimental impact on the number of scholarships awarded to SU students due to the ultimate phasing-out of grant holder-linked bursaries, amongst others. The new scholarship policy by the NRF established a minimum academic requirement of 65%. At the same time, applicants for honours, master's and doctoral funding must be 28, 30 and 32 years of age or younger in the year of application. Successful applicants may be funded either at Full Cost Study (FCS) or Partial Cost of Study (PCS).

FCS funding is exclusively awarded to South African citizens and permanent residents, who are either financially needy (i.e., those whose combined household family income is less or equal to R350 000 per annum), exceptional academic achievers or living with a disability. Moreover, PCS funding may be awarded to 5% of international students including South African citizens and permanent

residents who could not be funded under FCS but meet other minimum requirements for the NRF scholarship funding criteria.

SU applicants performed better than in previous years compared to other research-intensive institutions. A positive outcome of the 2023 NRF application round was the 78 new doctoral scholarships awarded to SU students. Although the current award levels are still below those in 2015-2018, the trend suggests incremental increases in the number of awards – a strong indication of the competitiveness of SU applicants.

Although these award numbers are encouraging, they do not yet reflect the level of awards SU enjoyed pre-COVID. Figure 29 below illustrates a birds-eye view of new NRF scholarship awards over the last decade. In contrast, Table 14 provides a snapshot of the trend in NRF scholarships at SU – notably, the current decline of close to 50% in NRF scholarships compared to 2016/2017.

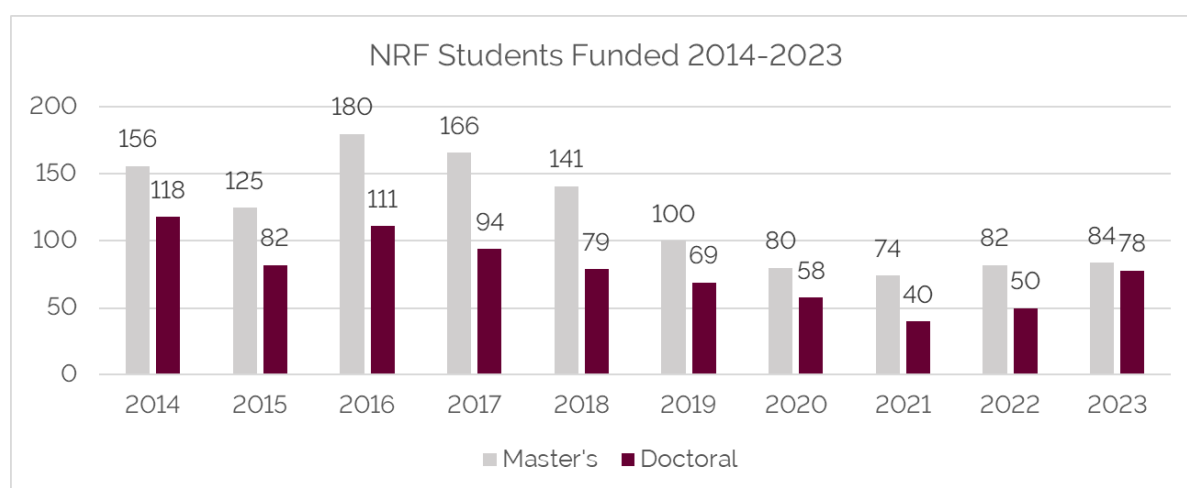


Figure 29: NRF scholarship awards (2014-2023)⁴

Table 14: NRF-funded students and income (2017-2022)

Year	Honours	Master's	Doctoral	Total	Total NRF	Average scholarship
2017	157	368	291	816	R60m	R74 314
2018	105	340	321	766	R57m	R75 701
2019	130	317	237	684	R55m	R80 506
2020	146	333	239	718	R60m	R84 092
2021	81	262	191	534	R54m	R102 543
2022	60	209	196	465	R63m	R135 484

⁴ Outcomes of the NRF SARChI Doctoral and Master's scholarships are still to be made. These numbers exclude awards for Extension Master's and Doctoral scholarship awards.

SU's Postgraduate Scholarship Programme

This flagship scholarship programme has become essential for SU to respond decisively to the volatile SA HEI funding situation. It has allowed the University to redirect the necessary funding support effectively and efficiently toward postgraduate research excellence, while addressing access to postgraduate studies for deserving and financially needy students. Thousands of current and prospective students annually apply to the PSP, and after a rigorous vetting and screening process, faculties provide funding recommendations.

Initially run as a pilot programme from 2021 to 2023, the Committee for Bursaries and Loans (CBL) approved the PGO's proposal for the PSP, as it is colloquially known, to be added as a standard item in the institutional bursaries budget from 2024 onwards. This monumental decision supports the SU's Vision 2030 of becoming Africa's leading research-intensive institution.

Prestigious local scholarships

- **The Harry Crossley Foundation (HCF)** will be supporting 38 postgraduate students during 2023 at a cost of R4.8m. The Foundation has also allocated R500 000 in support of deserving financially needy students, and R200 000 towards the roll-out of a pilot wrap-around support programme.

- **The Wilhelm Frank Trust** has awarded scholarships to top-performing students in Engineering and Science, with an emphasis on the infrastructural and technological advancement of South Africa. 14 students will be supported with scholarships ranging from R150 000 to R200 000 p.a.
- **The HB & MJ Thom Trust** will award 15 scholarships to exceptional student leaders in sports, community service, religion, and academia. This annual fund rewards leadership at the postgraduate level and is the only scholarship programme of its kind at SU.
- **The BEIT Trust (UK)** will again support up to 6 postgraduates from Malawi, Zambia, and/or Zimbabwe. The Trust has also allocated R400 000 in support of designated students facing financial hardship at SU.

Prestigious International scholarships

Sophia Rabie was awarded the prestigious [Rhodes Scholarship](#) to study at Oxford University in the UK in 2023. Sophia is currently completing an Honours in Social Anthropology (2022).

Dr Monde Maruza was awarded the prestigious [Margaret McNamara Education Grants](#) for women and will complete an MMED in Obstetrics and Gynaecology.

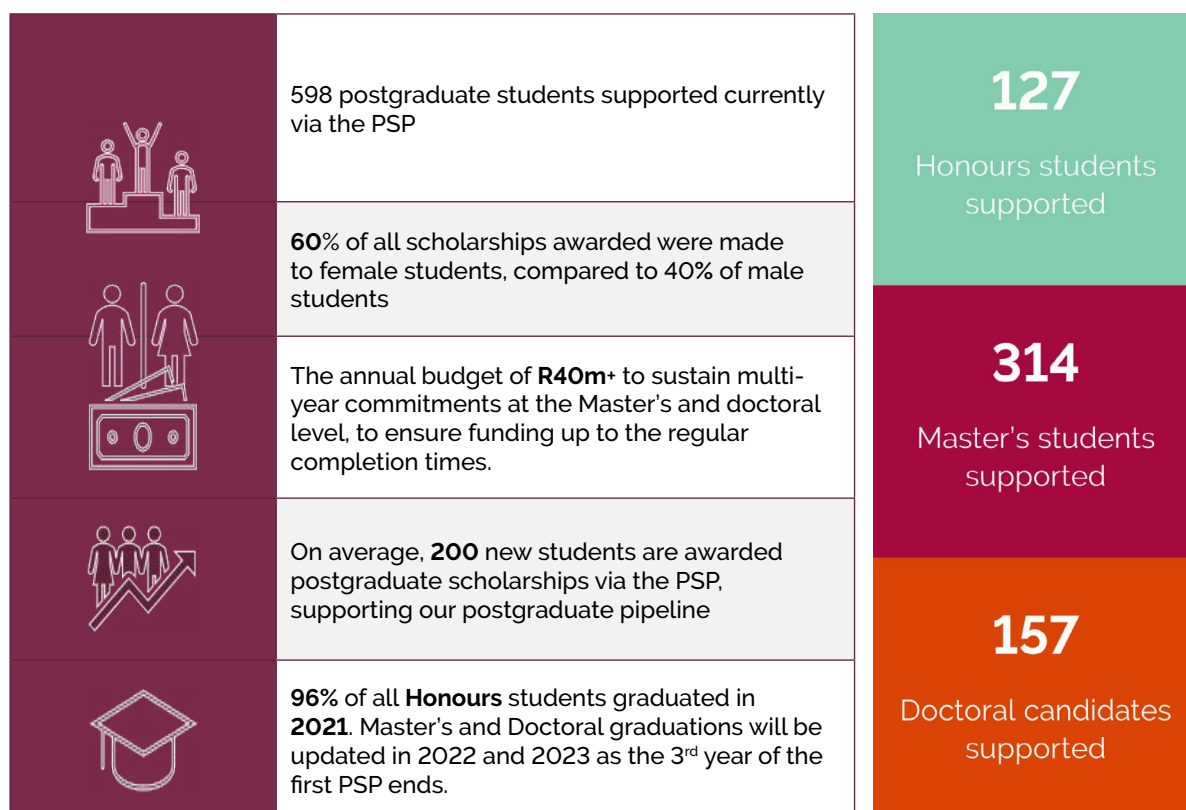


Figure 30: Summary of PSP awards up to 2022 (excluding 2023 awards)

Tadala Mtimuni received the prestigious [Queen Elizabeth Commonwealth Scholarship](#) towards her Master's in Chemical Engineering degree. This brings the total number of funded QECS students at SU to three (3).

Ntsiki Anderson-Mackay was awarded the [Wellcome Trust](#) doctoral scholarship for social sciences towards her doctoral degree in Social Anthropology.

5.2.4 Upgrading of SU library spaces and infrastructure

In May 2022, the renovations to the SU Library's main entrance, circulation area, reading area, ablution facilities, the Natural and Agricultural Sciences spaces, and the study areas on the upper level were completed. As part of the upgrade, additional workstations with computers and study seats have been provided. The new seats are spacious and equipped with electrical outlets. To reduce noise that can hamper clients' ability to study, read, write and research, acoustic panels have been installed in the renovated areas and on the ramp.



Photo 3: SU Library wheelchair-friendly ramp between the upper and lower levels (Photographer: SU Library)

Although no empirical evidence has been collected yet, at face value, the newly refurbished and created SU Library spaces appear to be well used. The occupancy levels of the newly refurbished spaces are often higher than the rest of the Library. Signage in English, isiXhosa and Afrikaans contributes to the welcoming environment.

During 2022 the SU Facilities Management division also completed the upgrade of the air conditioning system in the SU Library and installed a UPS system to provide a stable power supply to student workstations and the Wi-Fi network, ensuring minimal disruptions to data or network connectivity.

The Wi-Fi network itself was also upgraded to meet the demand for increased network connectivity in a digital-intensive learning environment, helping the Library achieve its strategic ambition of being a digital-first library service. The SU Library alone now has 45 Wi-Fi 6 hotspots installed across both floors of the building.

These renovations and upgrades contributed to a transformative student experience, raising the Library's virtual and physical infrastructure to that which is befitting a world-class research-intensive university, while embracing visual redress through our signage.



Photo 4: SU Library computer area (Photographer: Hennie Rudman, 2022)

5.2.5 The SUNLearn integrated course reading system (Leganto)

In 2022 the Library continued to engage with academic faculties and the Centre for Learning Technologies (CTL) to improve lecturer end-to-end workflows when administering course reading with the SUNLearn integrated course reading list system (Leganto).

Leganto aims to enhance lecturer instruction by using course reading lists directly integrated in the SUNLearn system and connected to the library's collection management and discovery system (Alma). This allows lecturers over the long-term to save time and the students benefit by having all their learning resources in one place, namely SUNLearn.

To guide the Library in meeting this objective, a set of adoption targets were decided on in 2021 and encapsulated into a Leganto Outreach Plan 2021 – 2023. Throughout 2022 the library continued to work to meet these adoption targets, now having implemented 111 reading lists across 32 of the 78 academic departments at SU.

Additionally, in 2022 the library continued to enhance the process for students and lecturers to gain access to academic resources made available through Leganto and Alma, by implementing the Resource Access in the 21st Century (RA21) standard. RA21 allows students and lecturers

to gain access to electronic databases without using the Library website's, with remote access integrated directly into SU's identity management system and the South African Identity Federation (SAFIRE). Based on SAFIRE's 2022 Trust and Identity Report, SU is currently the second highest adopter of the RA21 standard amongst South African Higher Education institutions and Science Councils. Collectively these initiatives contribute to enabling a digital-first library service and experience to all students and staff of SU.

5.2.6 Undergraduate student training

In 2022 the Library implemented a revised Digital and Information Skills Training Framework. Situated in the larger ecosystem of academic literacies and graduate attributes, this framework informs all the training activities the Library offers. These skills are critical for the development of students' general and subject-specific competency. South African students are digitally divided due to the country's uneven schooling system. By empowering students with digital and information skills, therefore, we help close the digital and information skills gap. Our training sessions teach students how to navigate and evaluate the various information resources at their disposal, to identify the information they need, and to present the information in an ethically sound manner. In this way, the Library contributes to the development of our students' graduate attributes. The Library's extensive digital and information skills training programme consists of one-on-one (individual) and group training sessions. The group sessions are presented face to face and/or online by using educational innovative tools such as MS Teams, Camtasia for videos and tutorials, LibGuides to create library guides, modules on SUNLearn and by making recordings of previous training sessions available. It consists of module-specific (assessed and non-assessed) training sessions and an extensive generic training programme.

The module-specific training sessions are the result of collaboration between faculty librarians and academic departments and are requested by lecturers to enhance curriculum content, support assessment, e.g. tests, assignments, theses or publication writing. Innovation regarding one-on-one (individual) consultations came through the LibCal Make an online appointment

feature and the implementation of LibChat. Using the green Chat with Us widget on the library homepage, students and staff can post their information queries online and receive a timely response from our librarians between 08:00 and 16:30. After hours this service is backed by the frequently answered questions on the Ask a Librarian homepage.

5.2.7 #SmartResearcher workshop series

#SmartResearcher

The Library's #SmartResearcher workshop series offers information skills training for researchers and also addresses the entire research process. Targeting emerging researchers and postgraduate students, these workshops are offered during each of the two semesters of the year. In 2022, the #SmartResearcher workshops were attended by 1 788 postgraduate students and researchers and the videos had been viewed more than 858 times.

5.2.8 Physical and virtual library spaces

Regarding spaces for students the Learning Commons in the SU Library and Digital Commons in the Medicine and Health Sciences Library, for example, provides innovative and stimulating learning environments that are vibrant extensions of the classroom while the SU Library Makerspace provides an innovative and stimulating environment for collaborative prototyping, inventing and learning.

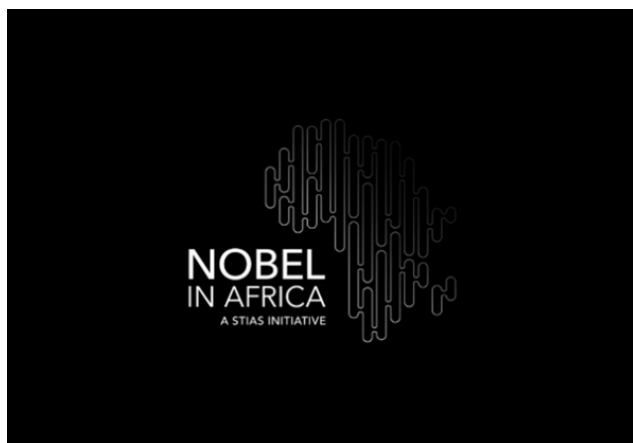
The Carnegie Research Commons provides a research environment for postgraduate students at master's and doctoral level, as well as SU academic staff and researchers. The state-of-the-art technology-enabled space is designed to support intensive study and research and satisfy higher-level client needs.

The Library launched its **Statistical Dashboard** in 2022. Power BI is used to compile and display the dashboard. This dashboard, amongst others, assist in demonstrating impact and value. Statistics on virtual services and digital and information skills training sessions mentioned above can be viewed on the dashboard.



Photo 5: Medicine and Health Sciences Library (Photographer: Hennie Rudman, 2022)

5.3 Purposeful partnerships and inclusive networks



5.3.1 Nobel in Africa: SU partnership with Stellenbosch Institute for Advanced Study (STIAS)

Nobel in Africa is a STIAS Initiative in partnership with SU, under the auspices of the Nobel Foundation and the Royal Swedish Academy of Sciences with funding from the Knut & Alice Wallenberg Foundation (KAW Foundation).

The Symposia provide a unique opportunity to support and showcase advanced research and scholarship on the African continent, and to promote research excellence and collaborative scholarship in Africa in conversation with the rest of the world. The aim is to provide an international forum to promote the sharing of innovative,

high-level scholarship and to demonstrate the importance of scientific research for the future of the continent and the world. The first Symposia Series focused on Physics: Predictability in Science in the Age of AI and took place between 24 – 28 October 2022 and the launch was a huge success. The KAW-Foundation subsequently approved to extend the series to 2028 as well as funding activities related to Wallenberg Academy Fellows through a new funding grant.

5.3.2 EU framework programme Horizon Europe

SU's participation in the consortium driven EU Framework Programmes has exponentially grown from a single project in *FP5 (1998-2002)* to 56 projects in *Horizon 2020 (2014-2020)*. In addition to the *Horizon 2020* Framework projects, SU has also secured 32 EU-SA joint programmes, supported by the Department of Science and Innovation (DSI). These include COST Actions. COST Actions provide valuable networking opportunities for international collaboration over several years. SU is currently the top COST university in SA.

In the current *Horizon Europe (2021-date)*, SU has already secured 17 Framework projects and 14 EU-SA projects, totalling more than R133 million to date. After 18 months, SU has already exceeded the total amount of funding secured for the full period in *FP7 (2013-2020)*. With the recent focus on the AU-EU Innovation Agenda opportunities, future projections seem to be favourable in that SU researchers are currently actively participating in these consortia driven applications.

EU Framework Programme collaboration at SU

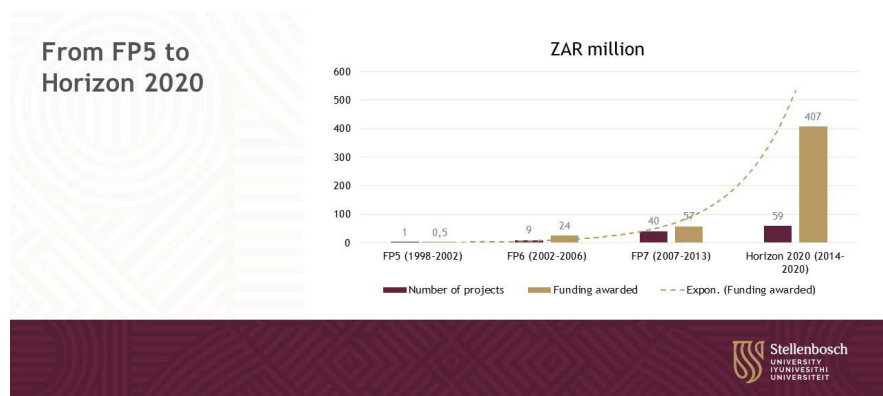


Figure 31: EU Framework Programme collaboration at SU: From FP5 to Horizon 2020

EU Framework Programme collaboration at SU

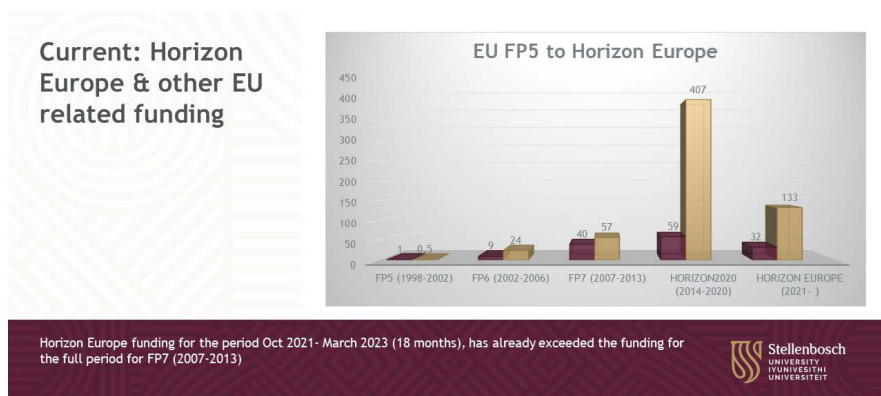


Figure 32: Current Horizon Europe and other EU related funding

In order to position the University in participating in Horizon Europe 2023, the DVC Research, Innovation and Postgraduate Studies together with some members of SU International and the Senior Director: Research and Innovation participated in the AU-EU Innovation stakeholder engagement which took place from 23 to 24 November 2022 in Nairobi, Kenya and Online. *"The joint AU-EU Innovation Agenda is an unprecedented initiative aiming to accelerate the translation of Research and Innovation into tangible positive impact on the ground, so to generate products, services, businesses and jobs, in Africa and Europe. It proposes four objectives, articulated into short-term, medium-term and long-term actions, for each of the four priority areas of the AU-EU cooperation in Science, Technology and Innovation [namely (i) Public Health, (ii) Green Transition, (iii) Capacities for Science and (iv) Innovation and Technology], as well as for (v) Cross-cutting issues"* (see <https://aeu-innovationagenda-stakeholderevent.com/> for more).

5.3.3 International Centre for Genetic Engineering and Biotechnology (ICGEB) signs MoU with SU



Photo 6: Dr Lawrence Banks and Prof Eugene Cloete (Source: Corporate Communications)

On March 28th, 2022 – ICGEB Director-General, Dr Lawrence Banks signed a Memorandum of Understanding with SU, strengthening partnerships,

collaborations and developing synergy in areas of mutual interest, for the benefit of South Africa and the Continent.

The signing of the MoU strengthens common actions in strategic areas including capacity building, cooperation in research areas of joint scientific interest and expertise including agricultural biotechnology and health sciences, training workshops and meetings, as well as community outreach and education in STEM.

5.3.4 SU signs agreement with WinField United

SU signed an agreement with WinField United, South Africa, to extend its continued support of the sterling work by the Chair in Plant Health at SU Department of Agronomy. The extension of the Chair is for another 3 years.



Photo 7: Dean of AgriSciences, Prof D Brink, Mr M Boshoff, Chief Strategy Officer, WinField United South Africa, Prof S Moyo, DVC Research, Innovation and Postgraduate Studies (SU), Prof N Kotze, (Chair in Plant Health (SU) (Source: Corporate Communications)

The Chair supports the training of a new generation of agricultural scientists, upskills practitioners in the agri-sector through relevant and accredited short courses and provides leadership development

opportunities. Under the leadership of Prof Nick Kotze of the SU Department of Agronomy, it increasingly focuses on research that strengthens and supports the crop protection and plant health spheres.

Over the next three years, the Chair will broaden our research portfolio and the projects pursued by our experts and postgraduate students. It will also help industry find more efficient and environmentally friendly options to turn to when matters related to crop health and crop protection come into play, which ultimately influence profitable farming and food security.

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. The Chair also enjoys links with the University of Minnesota in the United States of America (USA).

5.3.5 Research Ethics Committees host Ministry of Health, Ivory Coast

On 11 May 2022, the Research Ethics Committees (RECs) Animal Care and Use, Biological and Environmental Safety & Health Research Ethics 1&2 jointly hosted Dr Jean-Richard N'Goran and Mr Felix Tobin, representatives of the Ministry of Health, Ivory Coast. The purpose of their visit was to learn more about RECs in South Africa, the challenges they are exposed to, their assets in terms of human resourcing, logistics and resources, and their relationship to the National Department of Health. The Ivory Coast is currently in discussions regarding an optimal structure for RECs in the country.



Photo 8: Mr Winston Beukes (SU) with Dr Jean-Richard N'Goran and Mr Felix Tobin (Source: DRD)



Photo 9: As part of SUs collaboration with external organisations Mr Winston A Beukes is a member of the Western Cape Department of Agriculture Animal Ethics Committee. Here he is part of a team selected to do an inspection of the Outeniqua Research Farm in George Western Cape, where a number of SU students in collaboration with the Agriculture Department have joint projects. (Source: DRD)

5.3.6 African Research Universities Alliance (ARUA) DVC meeting

SU participated in the ARUA DVCs meeting which took place between 20-21 September 2022 in Accra, Ghana. SU was represented by Dr Nico Elema (Centre for Collaboration in Africa) on behalf of Prof Sibusiso Moyo (DVC Research, Innovation and Postgraduate Studies). The agenda covered various topics with updates and feedback related to the data management benchmarking visits by individual universities, the visit of the Secretary-General (Prof Ernest Aryeetey) to the various ARUA partner institutions, feedback on subscription payments of the various ARUA partner institutions and other related matters.

During the meeting, Prof Aryeetey highlighted the upcoming meeting of the various VCs from The Guild Universities in Europe and ARUA VCs in Cape Town between 2-3 November 2022 and encouraged ARUA member institutions to prepare proposals focussed on thematic clusters which comprise institutions from both networks. In addition, ARUA would embark on the development of a PhD programme following the recently concluding review of selected PhD programmes at ARUA member institutions by the HSRC of South Africa.

To further operationalise ARUA at member institutions, a decentralisation strategy is being followed, which will now include workgroups comprising of Deans and Registrars from the various ARUA member institutions. In addition, the ARUA secretariat is looking at expanding its Centres of Excellence by an additional seven centres. Thematic areas will be decided upon during the next Board meeting of VCs.

5.3.7 LIS strategic partnerships

Guided by the University's core strategic theme of "Purposeful partnerships and inclusive networks", the LIS continued in 2022 to pursue strategic partnerships both within the University and externally. Significant regional partnerships we have engaged in include the Cape Higher Education Library Network (CHELiN) and the ilifu research data management project.

Nationally the LIS is a member of the South African National Library and Information Consortium (SANLIC), CHELSA and the Library and Information Association of South Africa (LIASA). At the University itself, the Library is pursuing collaboration with the School for Data Science and Computational Thinking. We regularly collaborate with SU divisions such as Information Technology, Teaching and Learning and Research development.

5.4 Networked and collaborative teaching and learning

5.4.1 Joint postgraduate degrees at SU

By December 2022, SU had awarded 52 joint PhDs and 81 collaborative Master's degrees. 67 students are currently enrolled for joint PhDs; 7 students are pending. 29 students are currently enrolled for collaborative Master's degrees; 4 students are pending.

The top two institutions with whom SU has current enrolled joint PhD students are Vrije Universiteit

Amsterdam in the Netherlands (18 students) and Coventry University in the United Kingdom (16 students).

The biggest growth in joint PhDs in 2022 has been with the University of Groningen (1 student in 2020; 1 more in 2021; 4 more in 2022 with 6 pending). This is a consequence of a deliberate effort by the partners to invest resources and seek synergies and opportunities for collaboration.

SU renewed 3 existing joint PhD agreements in 2022 (Vrije Universiteit Amsterdam; Erasmus University Rotterdam; University of Groningen) and is negotiating 2 new Joint PhD agreements (Université Clermont Auvergne and Université Toulouse III - Paul Sabatier). 1 New Joint Masters agreement was concluded in 2022 with the African School of Economics, Benin.



5.5 Research for Impact

5.5.1 Research Outputs

As a public university, SU adheres to the Department of Higher Education and Training (DHET)'s [*Research Outputs Policy*](#) (2015) and our comparative performance can be benchmarked according to the publication output units, as published in the DHET's annual reports, the most recent being the [*Report on the Evaluation of the 2020 Universities Research output*](#) (March, 2022).

For the 2020-publication year outputs SU received the highest number of book publications (445 subsidy units), the second highest number of conference proceedings (74, 6 subsidy units) and the third highest per-capita research output (1,82). SU was placed third in terms of overall institutional units received for this output year. This includes journal articles, books, chapters in books and conference proceedings.

The graphs below depict the growth at SU in terms of both number of journal articles in accredited journals as well as the subsequent growth in number of units in this category for the past decade.

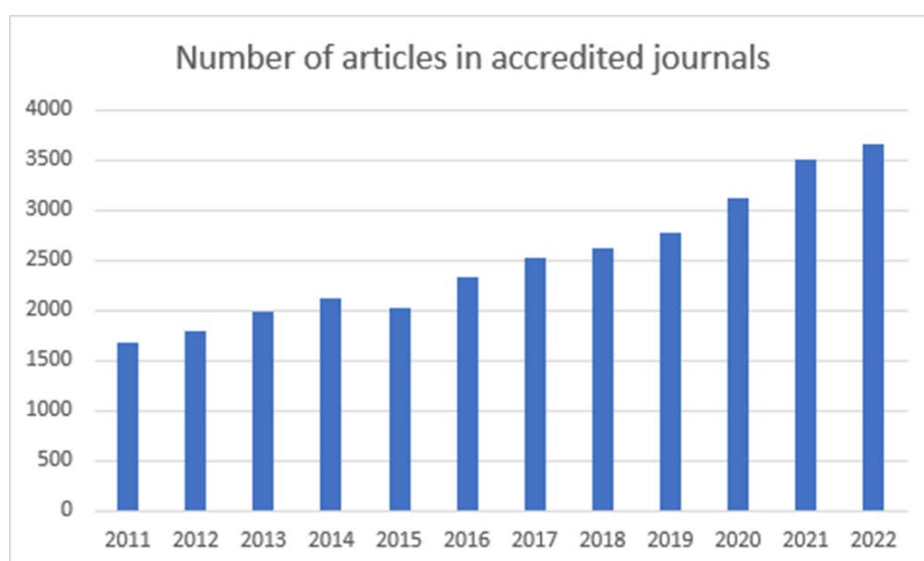


Figure 33: Number of articles in accredited journals

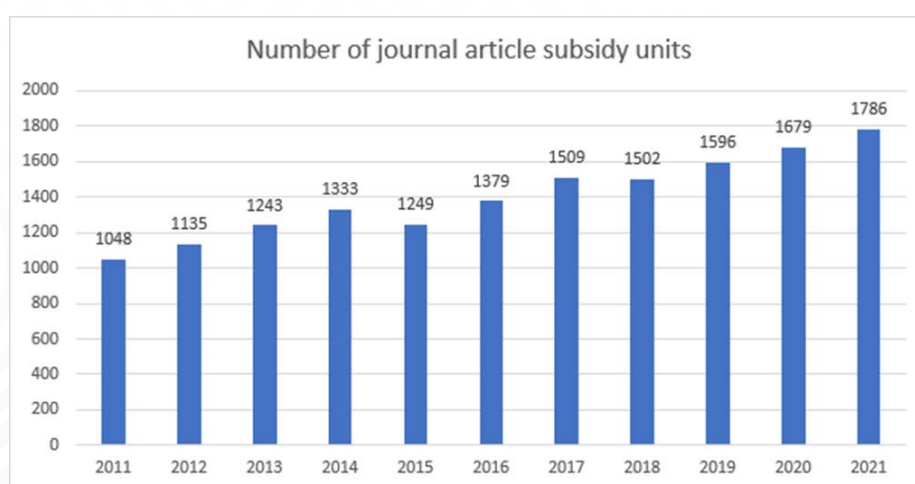


Figure 34: Number of journal article subsidy units

The number of DHET approved units for the 2021-publication year has not been released yet at time of reporting, therefore the latest figures only depict information pertaining to the 2020-publication year. From Figure 33, it is clear that a record number of journal articles had once been submitted for the 2022-publication year. (This growth can in part be attributed to a change in DHET policy in 2015 whereby more journal indexes were regarded as accredited, but moreover to SU researchers' commitment to contribute to knowledge production in their respective areas of research. Institutionally, SU is also committed to continuously support and incentivise research outputs through various initiatives, such as the SOS funding scheme.

SU is also one of the most successful institutions nationally in terms of number of creative outputs submitted and subsidy awarded. According to the outcome of the 2019 submission to the Department of Higher Education and Training (DHET), SU came first nationally with a total of 87 submissions and 53.6 units received, whilst for the 2020 submissions we again submitted the highest number of submissions (a total of 39), with 34.45 units awarded.

The process is guided by the DHET policy on the evaluation of recognition of creative outputs and innovations. The purpose of this policy, announced by the DHET in 2018, is to recognise and reward quality creative outputs and innovations produced by SA public higher education institutions.

SU's submissions has included a vast variety of outputs - from musical compositions to sculptures, jewellery design and award-winning collections of poetry.

Note: We are still awaiting the formal feedback from the DHET regarding submissions for the 2021-publication output year, both on an institutional as well as sector level.

The submission 2022-publications closed on 23 January 2023. Due to the increased number of publications submitted each year the DRD is under extreme pressure to submit publications on time to DHET and will in future only be able to follow up on outstanding information once. Any information that is still outstanding after this will unfortunately have to be forfeited since these DHET does not accept incomplete submissions. We can report that at the time of this report, 3622 articles in accredited journals were reported for submission to the DHET. These articles are still subject to a verification and audit process.

During 2022, members of the DRD and the IT Division set out on an RFP process to find a suitable service provider to replace the systems currently used for capturing research publications for submission for subsidy to the Department of Higher Education & Training (DHET) as well as the showcasing of SU's researchers' expertise. A suitable vendor, Digital Science, has been selected after thorough review and the services agreement was signed at the end of November 2022. The new solution will be rolled out in phases during 2023.

5.5.2 Innovation

AUDA-NEPAD/CSIR, SU Centre of Excellence in Science, Technology and Innovation



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. The AUDA NEPAD CoE-STI has specifically attempted to leverage the Agenda 2063 implementation processes through the required knowledge resources (i.e. Science- and evidence-backed innovations) as input in informing critical and strategic policy and investment choices underpinning effective and impact-oriented implementation of Agenda 2063 goals and targets domesticated in national development plans (NDPs) in the 55 African Union Member States.

Highlights of 2022 for the AUDA NEPAD CoE-STI: End-Year Results for Stellenbosch University:

- Operationalisation of the CoE with allocated resources (two permanent staff members, one dedicated to the CoE-STI on a full-time basis); AUDA NEPAD colleagues allocated and relocated, situated at the CSIR office in Stellenbosch
- Strategic priority areas identified within the Science, Technology, and Innovation domain between SU and CSIR researchers. These areas include:
 - o Aquaculture
 - o Genome Editing
 - o Telehealth
 - o Cybersecurity

- Strengthening of the bilateral relationship between the CSIR and SU through the following:
 - Workshop in March 2022 focusing on Aquaculture, Telehealth, Cybersecurity
 - Invitation to the [CSIR 8th Biennial Conference](#), 2-4 November 2022
 - [World Science Forum](#) on 6-9 December 2022 under the theme "Science for Social Justice".
 - Collectively attending and playing a key role in the [AU-EU Innovation Agenda Stakeholder](#) Meeting in Nairobi, Kenya

The thematic areas are guided by African Member State priorities in line with Agenda 2063 goals and targets.

AU-EU Innovation Agenda Stakeholder Meeting Nairobi, Kenya

The joint AU-EU Innovation Agenda is an unprecedented initiative aiming to accelerate the translation of Research and Innovation into tangible positive impact on the ground, so to generate products, services, businesses, and jobs in Africa and Europe. It proposes four objectives, articulated into short-term, medium-term, and long-term actions, for each of the four priority areas of the AU-EU cooperation in Science, Technology, and Innovation namely:

1. Public Health
2. Green Transition
3. Capacities for Science
4. Innovation and Technology
5. Cross-cutting issues

This Stakeholder Event provided a forum to:

- present and discuss on the findings of the online public consultation on the AU-EU Innovation Agenda (which took place between February and June 2022);
- discuss specific stakeholder demands and ideas, and possible implementation routes for the agenda, so to co-create its implementation plan;
- showcase the AU and EU vibrant innovation ecosystems, in the form of matchmaking sessions entitled "AU-EU Innovation Fair – meet the innovators", to catalyse partnerships and foster collaborations and entrepreneurship.
- provide strategic training and information sessions focused on topics of relevance to the implementation of the AU-EU Innovation Agenda.
- Feedback and input received during this Stakeholder Event were considered in the preparation of the final version of the AU-EU Innovation Agenda, expected to be ready for

the beginning of 2023, so to be presented for adoption during the AU-EU Ministerial Meeting on Science, Technology, and Innovation, to take place in 2023.

- Partnerships are essential to leveraging expertise and resources that complement the CoE-STI's mandate towards achieving a higher level of impact in Africa. The CoE-STI ecosystem is inclusive of development partners, African executives, senior officials, decision and policy makers, youth, researchers, and academia to effectively support – and collaborate on the AUDA NEPAD programme implementation by making it more innovative, facilitating increases in their growth and impact through the mentioned collaborations.

Aligned with Agenda 2063 impact areas, the following areas were identified for further action towards implementation:

1. **Industrialisation and wealth creation:** transformed economies and job creation, modern agriculture for increased production and productivity, blue/ocean economy for accelerated economic growth, industrialisation, job creation, world-class infrastructure; peace, security and stability; GDP; markets and trade, CFTA, etc.
2. **Shared prosperity and transformed livelihoods:** a high standard of living, quality of life and wellbeing for all citizens; healthy and well-nourished citizens, democratic values, practices, universal principles of human rights, justice and rule of law entrenched, African cultural renaissance is pre-eminent, engaged and empowered youth and children, access to energy, water, health care, employment, education, etc.
3. **Human capital development and transformed institutions:** well-educated citizens and skills revolution underpinned by science, technology and innovation, financial and monetary institutions on the continent established and functional, capable institutions and transformative leadership in place, a fully functional and operational African peace security architecture, governance, etc.
4. **Natural resources management and environmental resilience:** environmentally sustainable and climate-resilient economies and communities, environmental resilience, and climate change.



5.5.3 Our cross-cutting research entities

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.

2022 highlights:

- Prof Guy Midgley was appointed as Acting Director in February 2022.
- The School developed strong networks with the Global Alliance of Universities on Climate (GAUC) – SU is the only African university that belongs to GAUC – and worked with Science Po (Paris), to run a pilot training programme over eight weeks that developed 150 international students as Global Youth Ambassadors on climate change. SU had 15 students participate in the programme.
- Engagement with these GAUC youth ambassadors also developed into the youth-led Climate X week, in the lead up to COP27.
- The School was involved the COP27 in Egypt in November 2022 in various actions, in collaboration with the GAUC, engaging members of the Presidential Climate Commission and leading African researchers and policy makers in presenting and discussing African concerns relating to climate change negotiations.
- The School hosted the first African Regional Forum (ARF) on Climate Change, with 16 African nationalities represented in September 2022.
- The African Journal of Climate Studies (AJOCS, in collaboration with AOSIS) was launched

- during the ARF, and the process of recruiting subject and assistant editors are underway.
- External funding of roughly ZAR 2.5 million has been raised in programmes with UNESCO and the EU Horizon programme (together with SUWI) that is supporting a world-leading capacity in hydrological modelling for climate impact studies for the next three years.
- The School is also building its scientific intellectual capacity to allow it to lead in areas of Carbon Dioxide Removal and climate management, via funds raised through the SU Strategic Fund.
- The School also completed a contracted report for the World Bank on sustainable funding options for weather services provision in South Africa, as co-lead with the CSIR and sub-contracting several South African research and academic institutional partners to the value of over R 1.5 million.
- Funding of almost R 6 million was applied for and granted by the SA National Biodiversity Institute to permit the School to support SANBI policy development on invasive alien species, including risks relating to climate change.
- The School hosted an international synthesis meeting of the German BMBF-funded SPACES program in July 2022, with over two hundred virtual and in-person attendees, at Future Earth Campus, Pretoria. A 32-chapter book will shortly result as one of the major products of this program, co-edited by SCS affiliates and Acting Director.

Read more on the climate-related research done at SU in a special publication dedicated to this very important focus area at <https://bit.ly/SUclimatestudies>.

For more information on the School, visit <http://www.sun.ac.za/english/research-innovation/Climate-Studies>.

Watch an overview of the School's activities here: <https://www.youtube.com/watch?v=dYFVWN1TFf0>.

SCHOOL FOR DATA SCIENCE AND COMPUTATIONAL THINKING

#RESEARCHFORIMPACT



School for Data Science and Computational Thinking

The official opening of SU's School for Data Science and Computational Thinking on 29 July 2019 was celebrated at a function at the Stellenbosch Institute for Advanced Study (STIAS). 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, Stellenbosch University is ready to enhance South Africa's competitiveness in the Fourth Industrial Revolution. To read more on the School, visit <https://www.sun.ac.za/english/data-science-and-computational-thinking/>.
2022 highlights:

- During 2022, the School received visits by die SA President as well as the Director-General of the World Health Organisation.
- The Capitec Bank Chair and AIMS Chair in Climate Resilience was operationalised.
- The School hosted the Standard Bank Lab hackathon.
- The School presented a joint graduate seminar course with KU Leuven and Waseda University in Venice.
- The first module in data science and computational thinking for AgriScience students was launched.
- The number of rated researchers associated with the School increased to 4 – all B-rated or internationally acclaimed.
- Prof Francesco Petruccione and Prof Frank Tanser was appointed.
- Prof Tulio de Oliveira discovered a new sub-variant, received the German-Africa Prize, appeared in the Times Top 100 most influential people for 2022 and was showcased in MIT technological review as part of the top 10 breakthrough technologies for 2022.
- Numerous articles were published in Science, Nature and Lancet.
- CERi, a Type 2 centre, led by prof Tulio de Oliveira, was launched in 2022.

The School, in partnership with Praelexis, a consulting firm based in Technopark, held the Machine Learning Summer School in January 2023. Some examples of world leading speakers were John Shawe-Taylor from UCL and David Forsyth from the University of Illinois, Urbana-Campaign. They are the leading researchers in Support Vector Machine and Computer Vision respectively. Other speakers were from Caltech, Amazon Science, Meta (London), Swansea, etc.

Centre for Epidemic Response and Innovation (CERI)

Headed by world-renowned bioinformatician Professor Tulio de Oliveira, CERI has been at the forefront of pathogen genomics surveillance to enhance biomedical discovery and to respond effectively to epidemics. The type of surveillance being done at CERI helped South African scientists to quickly spot and warn the rest of world about the Beta and Omicron variants of COVID-19.

Envisioned to be the largest genomics facility in Africa, CERI also provides capacity building to other African countries as part of its support programme to the Africa Centres for Disease Control and Prevention (Africa CDC) and the World Health Organisation (WHO). CERI has already received fellows from 21 African countries to be trained in genomics, bioinformatics, big data and artificial intelligence analysis. CERI's last call for fellows received over 200 applicants.

Recently, a high-level international delegation, led by the WHO director-general visited SU's Tygerberg Campus, and specifically the BMRI and CERI. In addition to genomics surveillance, CERI is also a partner-member of the South African mRNA Vaccine Consortium (SAMVAC), selected by the WHO to become the first Covid mRNA Vaccine Technology Transfer Hub. This is just another example of SU's intention about providing multidisciplinary solutions to large problems.

One of the highlights of 2022 is that Prof de Oliveira and his consortium of African and European investigators has been awarded a major EU ECDTP grant called GenPath; The total project cost of GenPath is R90 mil, of which R37 mil is assigned to SU. The overall goal of GenPath Africa is to control pathogen infections in Africa. The consortium of African and European investigators proposes to build on our collective experience in responding to SARS-CoV-2 to better diagnose, monitor and clinically manage current and future epidemics in Africa. They propose to expand genomics capacity to combat drug resistant HIV-1 and TB through precision medicine and by using genomic epidemiology to guide the public health response.

GenPath Africa will also apply recent developments in wastewater and one health surveillance to detect emerging pathogens. Capacity development activities will include degree training in South Africa and the transfer of technology to the National Public Health Institute of Mozambique. The consortium's objectives will be achieved by connecting the specialized genomics facilities of the Africa CDC Pathogen Genomics Initiative (Africa PGI) in South Africa and Kenya with African national public health institutes to translate scientific advances into public health actions.

Long-term collaborations with Germany and Belgium will be leveraged to help achieve these objectives and make precision medicine and precision public health a reality in southern and East Africa. The consortium will also contribute to the long-term capacity building objectives of Africa PGI by contributing to harmonising training resources and collaboration with existing networks to ensure that all data are of high quality and available in public databases.

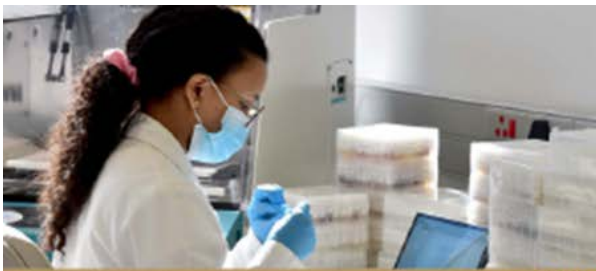
GenPath Africa will advance the EDTCP3 work program by: i) providing researchers and public health professionals with skills in genomic epidemiology to better understand infectious disease epidemiology and drug resistance, ii) strengthening capability in southern and East Africa to rapidly respond to current and emerging epidemics, and iii) providing researchers with training to advance their scientific careers in Africa and establish themselves as scientific and public health leaders.

Read more on CERI:

Tulio de Oliveira profiled in The Lancet: Collaborating to boost science in Africa. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(22\)01426-X/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(22)01426-X/fulltext)

CERI profiled in TIME: The Virus Hunters Trying to Prevent the Next Pandemic. <https://time.com/6202044/preparingfor-next-pandemic-virus-hunters/>

CERI profiled in New York Times: Why Experts Want to Rename Monkeypox. <https://ceri.org.za/news/?token=589>



Biomedical Research Institute (BMRI)



The BMRI's main aims are to investigate diseases that have the greatest impact on communities in South Africa and the rest of Africa, and to translate its discoveries into improving the diagnosis, prevention and treatment of illnesses such as TB, HIV, diabetes, heart disease and neurological disorders. The facility is on par with the most advanced and sophisticated biomedical research facilities in the world. It facilitates the immediate expansion of current research activities as well as strengthening of research and teaching capacity in fields such as bioinformatics, genomics, anatomy, neurobiology, advanced surgical sciences and biobanking.

For more on the Institute, visit:

<http://www.sun.ac.za/english/faculty/healthsciences/biomedical-research-institute>.

Central Analytical Facilities (CAF)

The main highlights for the Central Analytical Facility for 2022 are the following:

- During 2022 CAF income from analytical services rose to R32.6 million, the highest ever amount earned by CAF in a year, and

just slightly above the value of pre-pandemic sales in 2018. This confirms that recovery from the impact of the COVID-19 pandemic continues.

- The two Department of Science and Innovation supported Research Infrastructure Project Nodes housed within CAF, the NuMeRI Node for Infection Imaging and the BIOGRIP Node for Soil and Water analysis continued their strong development of analytical capacity and services. The NII will very likely attain cost-effective operation from 2023 while the BIOGRIP Node continues to expand its equipment base and range of services as set out in the original application to DSI.
- The commissioning of the new Neutron Magnetic Resonance Spectrometers the University purchased in 2021 took place during the first half of 2022. This includes new hardware and software for the analysis of wine and other beverages, which will be important in the unit developing new business so that it can be managed more cost-effectively.

SU did reasonably well with applications submitted to the National Research Foundation (NRF) National Equipment Programme (NEP), with two out of three applications being funded. Of these, the Cyclic IMS HDMS QT of mass spectrometer (total cost of R19 million, with NRF contributing R10 million). The impressive equipment base that makes CAF a comprehensive core facility was established with the assistance of a number of successful NEP applications. Some equipment, like the new Neutron Magnetic Resonance Spectrometers purchased in 2021, cannot be funded via NEP, and for those we must find alternative ways to fund the necessary renewal and expansion of CAF equipment to ensure optimal support of research at SU.



5.5.4 SU Knowledge Directory



The SU **Knowledge Directory** has the aim to increase the visibility of SU's research expertise by making information about SU researchers more accessible by means of a web console featured on the SU website. The value of the Directory lies in the following: prospective postgraduate students can identify potential supervisors; it will facilitate media liaison; potential national and international research collaborators and industry partners can search the Directory for SU experts; it may promote interdisciplinary networking among SU researchers; and it has the general potential to enhance the visibility of SU research strengths and individual research expertise.

Visit the SU Knowledge Directory at http://www0.sun.ac.za/knowledge_directory/.

5.5.5 Researcher Persona on My.SUN

The My.SUN tab on the SU home page hosts "personas" for staff, undergraduate and postgraduate students, and researchers. Researcher Persona is a one-stop platform for researchers to find links to research-related information.

The links found in this way cover important research-related information from different support services, including the DRD, the Postgraduate Office, Stellenbosch University International (SUI), the LIS and the Division for Information Technology (IT). The DRD coordinates the Researcher Persona. Information is divided into five main categories, namely: Skills Development, Research Information, Systems and Tools, Support Services and Support Divisions. The platform is dynamic – it is updated with links to relevant information as the need arises. Visit at <https://midtier.sun.ac.za/html-navbar/home.html>.

5.5.6 New take on the annual research publication



Welcome to 'Research for Impact', the digital research magazine of the Division for Research Development (DRD)!

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

This new publication offers via articles a view of some of the latest research being done at the University as well as through interviews that were conducted with a number of our leading scientists. Written in a clear, accessible style, the variety and relevance of contributions promises to pique the interest of scientists and other interested readers alike.

In Research for Impact, you will also read about the innovative work and directions that our scientists pursue, not only for the sake of knowledge production in their respective fields but also to make a real difference in society.

We have included stories that represent each of the University's [five strategic research areas](#) showcasing important initiatives and innovations on our campuses and in a variety of academic fields, and convey how this relates to national, regional and global goals to ensure sustainable development and improve prospects for people and the planet.

Maximising the visibility and reach of research is part of the global best practices in the field of research management. Over the past 12 years, the Division for Research Development (DRD) has produced an annual research publication called [Research at Stellenbosch University](#). It formed part of the Division's focus on making our institutional research portfolio more visible by sharing research-related information with a broader audience.

From the outset, the aim was to present our research in a hard-copy, magazine-style format that is accessible to research visitors and partners, future collaborators and funding agencies, as well as alumni, various media and the general public.

At the time, this approach was ground-breaking, moving away from traditional reporting about research outputs. Through means of storytelling, the magazine made our research outputs more accessible and tangible for government and funding agencies, as well as future students and other interested target audiences.

Today, science communication practices look very different. We live in a digital age in which online science communication has become the norm. Web publishing standards have improved dramatically, and in the field of higher education this is no exception. The best science journalism online shows the benefits of applying the craft of storytelling, innovative design and the smart use of multimedia.

We decided to employ this approach for our very first digital research magazine. We have also prioritised the readability of our unique, tailor-made content for reading on various devices. We have included striking photographs, editorial illustrations, infographics, video and sound bites that contribute to a rich reading experience. Regular additions to Research for Impact online ensure our content remains current as we showcase SU's new and evolving research.

Research for Impact contains food for thought and opportunities for collaboration. Please send us your feedback and suggestions. Enjoy the articles and bookmark our online platform for regular reading about the latest research and developments taking place at SU.

Download a selection of the magazine's content in 2022 at the link below.

[Research for Impact: 2022 selection](#)

5.5.7 Research Chairs and Centres of Excellence booklet

A booklet on our research chairs and CoEs was updated in 2022 and provides a snapshot of the key initiatives undertaken by them that enable us to pursue research excellence vigorously and contribute to the development of local and global capacity. We realise the benefits that these initiatives bring, not only in the form of increased visibility for the University, but also for researchers – enabling funding opportunities, research collaboration and networking. The booklet also showcases the relevance and applicability of our research in society, and our contribution to improving societal conditions.

Read it here: <https://tinyurl.com/chairs-coe>.





SU produced a record number of subsidy units for journal articles during the 2020 publication round namely

1669.5 units

In terms of research productivity SU had the **third highest** number of research outputs per capita after UKZN and UJ with **1.82**



SU has the **fourth highest** weighted research output per capita at **3.18**, with UKZN at 3.88, UP at 3.59 and Wits at 3.22.

SU also produced the **3rd highest number** of total publication outputs for the sector (after UKZN and UJ) as well as the highest number of units awarded for books for the sector. SU has the second highest number of units for conference proceedings after UJ.



In its annual research output report to the Department of Higher Education and Training (DHET), SU again submitted a record number of articles in accredited journals, in respect of the 2020 publication output year.



Stellenbosch University is positioning itself as the leading research-focused higher education institution on the African continent.



SU is ranked **=2nd** in South Africa on the Times Higher Education World University Rankings



SU ranked **251-300** on the Times Higher Education World University Rankings



Over the past decade, SU has produced more Patent Cooperation Treaty patent applications than any other public or private local entity.

5.5.8 Research Facts and Figures

The DRD brochure *Research Facts and Figures* provides an overview of research at SU, ranging from information about rankings to postdoctoral fellowships, international funding and research publication data.

Read the brochure here:

<https://online.fliphtml5.com/cvapr/ihia>.

5.5.9 Research-related information package

The DRD has developed a research-related information package that they send once a year to Deans, Vice-Deans: Research and Heads of Departments.

The package provides a snapshot of research activities within each faculty and department, including – to name but a few – statistics on research outputs, information on funding obtained, NRF ratings, ethics applications and general information on the DRD's functions and services.



RATING CATEGORIES

A
B
C
Y
P

- Leading international researcher
- Recognised as a leading international scholar in his/her field
- High quality and impact of recent research outputs
- Internationally acclaimed researcher
- Enjoys considerable international recognition
- High quality of recent research outputs
- Established researcher
- Sustained record of productivity
- Recognised as having produced a quality body of work
- Established researcher
- Sustained record of productivity
- Recognised as having produced a quality body of work
- Young researchers, younger than 35 years who holds a PhD or equivalent, for less than 5 years
- Considered likely to become an international leader based on exceptional potential demonstrated in published works

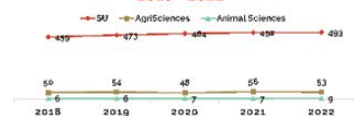
BENEFITS OF AN NRF RATING

The rating is one of a national indicator of excellence and is to the advantage of your faculty and the University at large. A successful rating allows you the option of applying for incentive funding from the NRF, the amount of which is directly proportional to the researcher's rating. Besides the access to NRF funds, the rating may assist in leveraging SU funds and other outside funding opportunities. In some faculties, a rating may impact on the performance appraisal of an individual.

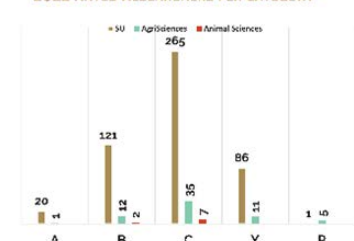
493

Rated researchers at SU in 2022

GROWTH OF NRF RATED RESEARCHERS: 2018 - 2022



2022 RATED RESEARCHERS PER CATEGORY





Stellenbosch University Research for Impact

7 likes • 8 followers

Create ads

Manage

Edit

5.5.10 SU Research Facebook and Twitter pages

The Facebook and Twitter pages for Research at Stellenbosch University serve as platforms to enhance and expand the reach of the research being done at the University, and to highlight the profile and achievements of our researchers.

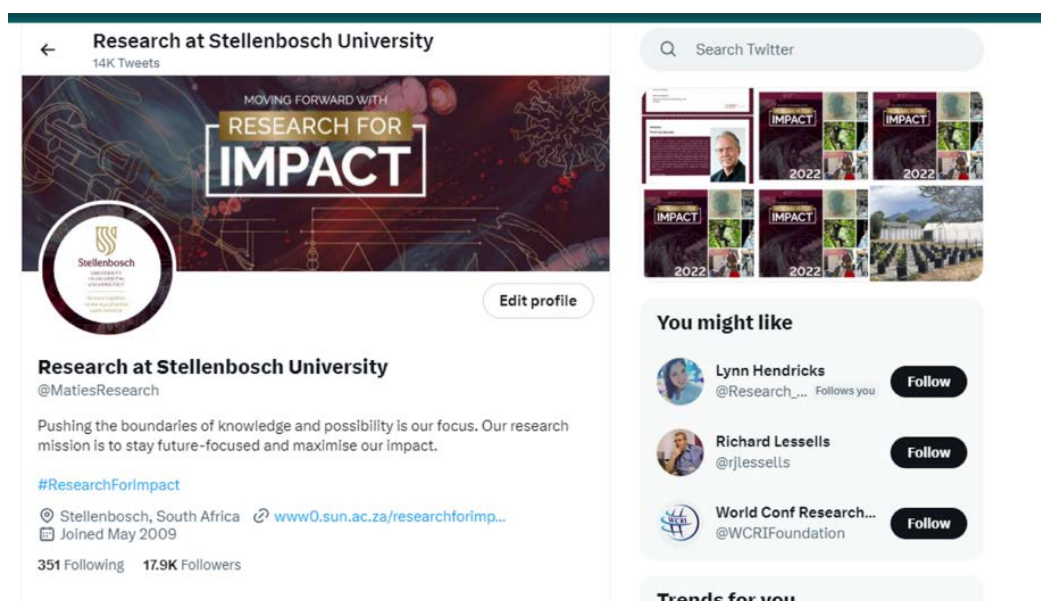
Facebook: <https://www.facebook.com/researchforimpactatsu/>

Twitter: <https://twitter.com/MatiesResearch>

LinkedIn: <https://www.linkedin.com/company/research-at-stellenbosch-university/>

The Facebook page *Stellenbosch University Research for Impact* was created towards the end of December 2022. This page was newly created to reflect the new direction the Research at Stellenbosch University publication was taking, which is to highlight the impactful research being done at SU in a more accessible manner for readers on an online platform. Our aim is to grow the page organically.

The Twitter Page "*Research at Stellenbosch University / @MatiesResearch*" was established in June 2021 through the former @MatiesStudent twitter page. To date, we have 17 877 people who follow the page.





5.5.11 SU Distinguished Professors social media campaign

The DRD launched an online campaign to highlight the profiles of some of our distinguished professors with reference to a series of questions. Interviews were conducted with them were published on a dedicated website for distinguished professors <https://sites.google.com/view/distinguished-professors/home> shared across several social media platforms.

5.5.12 SU women in research platform

Our research community includes woman researchers with exceptional talent and innovative ideas who deliver excellent research with relevant outcomes. Through their research and research-related activities they have been able to influence decision-making processes, contribute directly to improving people's lives, and present innovative ideas that lead to technological developments and

new concepts that give rise to more sustainable practices. The DRD created an online platform dedicated to these accomplishments of the past few years: <https://sites.google.com/view/suwomeninresearch/home>

5.5.13 Stellenbosch Forum lecture series

Our world is and continues to be in a state of flux. Changing climates affect all sectors of society already in the present. The pace of change will likely accelerate in the future influencing lives in manifold ways. Our response to these challenges requires cutting edge innovations and interventions from all sectors of society. As such, the DRD hosted a series of talks by leading researchers and experts at SU under the overarching theme 'Changing Climates'. The 2022 series showcased influences of changing environments associated with natural resources, health, education, history, and economies; and how research can be impactful in finding possible solutions in such rapidly changing settings.



Table 15: Stellenbosch Forum Lecture series 2022

Presenter	Date	Department	Topic	Recording
Prof Guy Midgley	21 April 2022	Department of Botany and Zoology	Solving the global climate crisis	Watch here
Prof Dion Forster	26 May 2022	Department of Systematic Theology and Ethics	A Critical Consideration of the Relationship Between African Christianities and American Evangelicalism: A Cautionary Tale of Theo-Political Exceptionalism?	Watch here Read here
Prof Michael le Cordeur	23 June 2022	Department of Curriculum Studies	Bridging the gap from an unequal past to a future of equal opportunities: in search of an effective curriculum for South Africa	Watch here Read here
Prof Keymanthri Moodley	18 August 2022	Department of Medicine	Digitization of Healthcare: Adapting to change.	Watch here Read article: http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9467
Prof Bob Mash	15 September 2022	Department of Family and Emergency Medicine	Climate change: the greatest global health threat of the 21st century.	Watch here Read Article
Prof Sandra Swart	29 September 2022	Department of History	Zombie Zoology: the end of extinction?	Watch here Read Article
Prof Mark Smith	7 October 2022	Stellenbosch Business School	A Four-Day week: time to work smarter?	https://youtu.be/x1GV543ovus Watch video Read Article

5.5.14 Promoting Digital Scholarship

In 2022, the Library participated in various activities that seek to enhance our role as an active participant and advocate for Open Access (OA) scholarship through various institutional repositories such as SUNScholar, SUNScholarData, SUNDigital Collections and SUNJournals.

To demonstrate the impact of the Library's repositories, documents in SUNScholar had been viewed and downloaded more than 390 901 and 157 622 times, respectively, by December 2022. Those from SUNDigital Collections were viewed and downloaded more than 29590 and 14559 times, respectively. The views were from all continents of the world, which increased the citability and international impact of the documents.

5.5.15 Open Access Week 2022

The Library's Open Access Week was held from 26-28 October 2022 with the theme **Open for Climate Justice**. Speakers included academics, students and library staff members and was well attended.

5.5.16 Research Data Services & SUNScholar Data

The Library is aware that data used to generate research is as important as the final output itself hence we host many datasets associated with SU research in our data repository called SUNScholarData. In 2022, 30 data sets were uploaded and viewed about 9982 times. Views were generated from all continents of the world which demonstrates the impact of the SU research data in the open access platform.



5.5.17 Library Research Week



The Library's Research Week was held from 16 to 20 May 2022. The launch on 16 May involved a panel discussion on research ethics. The presentations on the other days sought to cover aspects of the research lifecycle. These included literature and systematic reviews, writing of research proposals, research methods, Mendeley, Research Data Management, Copyright and Research Data Management. The sessions were attended by 752 researchers. Since all the sessions were uploaded on YouTube, they have been viewed for about 463 times.

5.5.18 Collections

Besides books and other physical resources for researchers, the Library kept its subscriptions to 112 databases and 364 subscriptions to individual electronic journals in 2022. Overall, it provided access to 342 040 electronic journals overall. This serves to ensure that SU researchers have access to some of the best resources. The aim is to ensure seamless access to information for SU researchers.

Justice Cameron Collection

The Library and Information Service received, sorted and indexed the Justice Edwin Cameron Collection that was formally launched on 6 December 2022. The collection is housed as part of the Special Collections of the Library and is now ready to be used by researchers. The Cameron collection takes pride of place next to other collections of SU Chancellors such as Frederik van Zyl Slabbert. The collection contains publications and lectures



Photo 10: Ms E Tise, Senior Director: Library and Information Service and Justice Edwin Cameron (Source: Corporate Communication and Marketing)

by Cameron as well as material on his voluntary community service. Importantly, it also contains material on his career and his years as Justice of the Constitutional Court of South Africa. We invite students, researchers and members of the public to peruse this unique collection.

5.5.19 2022 Research Indaba



Current standing of research at SU and future focus

The annual Research Indaba took place on 26 October 2022 from 08:00 to 16:00 at Lanzerac, Stellenbosch. The aim of the Indaba is to provide an opportunity where researchers from across the ten Faculties and research entities at SU can discuss and debate topics of common interest and how it affects them.

The focus in 2022 was on one of SU's core strategic themes: **Research for Impact**. The presentations and discussions focused on:

- What is meant by impact?
- What is the current state of research at SU?
- How do we measure success?
- What is required for the new strategic research areas (SRAs) to be successful?
- How can the SRAs contribute to strategic initiatives within environments?
- What is the focus for the next few years to further establish and develop the research portfolio at SU?

Presenters:

Link to the voice recordings of the presentations: <https://youtube.com/t?list=PLDZ9JxFUAWQTJ6AQNg24GnFbDO6oE11TM>

- **Prof Sibusiso Moyo** (DVC: Research, Innovation and Postgraduate Studies) (vision for research at SU and the way forward)
- **Prof Johann Mouton** (Director of the DSI-NRF Centre of Excellence for Scientometrics and Science, Technology and Innovation Policy (SciSTIP) and Professor in the Centre for Research on Evaluation, Science and Technology (CREST).
- **Prof Ian Cloete** (Senior Director: Information Governance) (current strategic management indicators for research at SU)
- **Dr Therina Theron** (Senior Director: Research and Innovation) facilitated an interactive brainstorm

For a full report of the 2022 Research Indaba, please visit: <https://bit.ly/researchindaba>

5.6 Employer of Choice

5.6.1 Highest qualification of academic staff

Table 16 shows the percentage of **academic staff** with the highest qualification a master's and/or doctoral degree.

Table 16: Highest qualification of academic staff

	Highest qualification Doctoral	Highest qualification Master's	Master's or higher
2021	65.8%	23.8%	89.6%
2022	66.4%	24.6%	91.0%

Table 17: Academic staff who received promotions during the course of 2022

Full_Name	Faculty	Organization_Name	Position Name
Roets, Prof Francois	AgriSciences	Conservation Ecology and Entomology	Professor
Divol, Prof Benoit Theophile	AgriSciences	Viticulture and Oenology	Professor
Elema, Dr. Nico Michiel	Deputy Vice-Chancellor (Strategy Global and Corporate Affairs)	Centre for Collaboration in Africa	Director: Centre for Collaboration in Africa
Von Fintel, Dr. Dieter Peter	Economic and Management Sciences	Economics	Professor
Jansen, Prof Ada Isobel	Economic and Management Sciences	Economics	Professor
Frick, Prof Beatrice Liezel Liezel	Education	Curriculum Studies	Professor
Engelbrecht, Prof Herman Arnold	Engineering	Electrical and Electronic Engineering	Professor
Streicher, Prof Elizabeth Maria	Medicine and Health Sciences	Molecular Biology and Human Genetics	Professor
Nyasulu, Prof Peter Rodwell Suwirakwenda	Medicine and Health Sciences	Epidemiology and Biostatistics	Professor
Loos, Prof Benjamin	Science	Physiological Sciences	Professor
Forster, Prof Dion Angus	Theology	Systematic Theology and Ecclesiology	Professor
Cloete, Prof Anita Louisa	Theology	Practical Theology and Missiology	Professor
Bowers-du Toit, Prof Nadine Francis	Theology	Practical Theology and Missiology	Professor

- The data is based on statistics at the end of June of 2021 and 2022 (month usually used in staff reports)
- Based on Academic (C1) staff on Salary Payroll

5.6.2 Promotions and new appointments

I would like to congratulate the following colleagues who received promotions during the course of 2022:

I would also like to congratulate Prof Francesco Petruccione and prof Frank Tanser with their academic appointments within my RC, in the School for Data Science and Computational Thinking.

5.6.3 Inaugural Lectures

I would like to congratulate the following colleagues who did their inaugural lectures in 2022:

Table 18: Academic staff who delivered inaugural lectures in 2022

PROFESSOR	TITLE	YouTube LECTURE LINK
Prof Bill Tucker (Science)	Forward together, saam vorentoe, sonke siya phambili,	https://youtu.be/LFyMCffiyX0
Prof MJ (Thinus) Booysen (E&E)	Engineering for Africa: Our Internet of Things.	https://youtu.be/Oe6xdfasNd0
Prof RS (Richard) Walls (Civil) Prof A (Annie) Bekker (M&M)	Fire safety engineering – where physics and disasters meet What we can learn from the way a ship shudders on an icy wreck hunt	https://youtu.be/ct6X3IGTSvQ
Prof Johan Fourie (EMS)	South Africa's Long Walk to Economic Freedom: A Personal Journey	https://youtu.be/pBE-SmTIVmw
Prof Anita Cloete (Theology)	Being human in a technology-driven world: Checkmate or opportunity for social responsibility?	https://youtu.be/-kCDRk5pKJU
Prof John Akudugu (FMHS - Radiobiology)	Radiobiology: Born with X-rays over a century ago, yet virtually unknown	https://youtu.be/-tWker76uWY
Prof CJ (Corné) Coetzee (M&M) Prof R (Roger) Wang (E&E)	Modelling of granular materials: Discrete and continuum approaches Electrical machine technology: Innovation and research	https://youtu.be/3TdDp6f4ssl
Prof Dion Forster (Theology)	Living more decently in an indecent world? The virtues and vices of a public theologian	https://youtu.be/R3aYxC7gYto
Prof Ben Loos (Fact of Science)	On the role of autophagy and cell death control in neurodegeneration and gliomas	https://youtu.be/kzDwU2IMh8I
Prof Alan Ellis (Fact of Science)	Dazzling daisies and forlorn flies: Namaqualand tales of unrequited love	https://youtu.be/R36aunvFeZY
Prof Lize van Robbroeck (Arts)	Art and the Legacies of Whiteness at Stellenbosch University's Visual Arts Department	https://youtu.be/xW/h9NMH4lo4
Prof Dana Niehaus (FMHS - Psychiatry)	Maternal mental health: 40 weeks and a thousand days	https://youtu.be/GfFUB9Ah-Yw
Prof Willem Boshoff (EMS)	Not at the races: Competition and competition policy in South Africa	https://youtu.be/vk9mkeSMMao
Prof Anita Bosch USB	Balancing just outcomes: Viewing work through the lens of women	https://youtu.be/jXUYC48KoeM
Prof Adriaan van Niekerk (Arts)	Data Science: Opportunity or threat?	https://youtu.be/smhUD1TjLhs?t=9
Prof Mark Smith (USB)	The Times They Are A-Changin'	https://youtu.be/HsySLxnHVI4
Prof Robert (Rob) Lamberts (FMHS - Biokinetics)	Finding the right balance in high-performance cycling	https://youtu.be/v_8ODPbmBzl

5.6.4 LIS staff training and capacity building opportunities

In 2022 the Library continued to develop and sustain competent, diverse and agile staff.

A comprehensive and customised staff training and development programme that includes all types of training available was presented to staff. The aim of these sessions was to address gaps and develop emerging skills. It included various sessions on staff training as part of the 2022 Development / Happy Hour Programme, such as:

- Virtual tools in practise: introducing LibChat & MS Teams: tips and tricks
- Makerspace training session for staff: 3D Printing: exploring the design and printing process
- Makerspace training session for staff: learning about electronics through an interactive project using Raspberry Pi
- Introduction to Digital Humanities
- Benchmarking Library services: new strategic choices in challenging times

Various staff members attended conferences and workshops during 2022 where they were informed and equipped with skills and knowledge about emerging trends and developments in the higher education and library landscape, for e.g:

- International Federation of Library Associations) IFLA Conference,
- 15th Southern African Online Information Meeting
- International Conference on Information Literacy - Africa
- LIS Bibliometrics Conference,
- Standing Conference of Eastern, Central and Southern African Library and Information Associations/ Library and Information Association of South Africa (LIASA) Conference
- SU's Centre for Teaching and Learning (SoTL) 2022 Conference.
- NACO Training for metadata librarians
- SU HR Performance Management Programme

Samuel Simango, Manager: Research Data Services participated in the Library's bi-annual Staff Enrichment (StEP) Programme in 2022, by attending The Mortenson Center for International Library Programs at the University of Illinois, Urbana-Champaign, USA.

5.6.5 DRD staff training and capacity building opportunities

The DRD regards the capacity development of its staff as a priority. In July 2022 the whole

Division participated in a strategic planning and team building session that included facilitated sessions on (i) transformation and diversity; (ii) the use of social constructs in research, and (iii) the management of research-related information. A Transformation Committee was established in the division, chaired by Winston Beukes.

Throughout the year, DRD staff participated in various training workshops, courses and conferences for the purpose of developing relevant skills and capacity, including:

- Senior Management leadership development
- 6th Annual Western Cape Health Research Ethics Committee (HREC) Workshop
- Navigating Legal considerations in Research
- SARIMA Ethics and Science workshop
- Navigating the hybrid landscape
- OHRP 5th Exploratory Workshop on Payment for Research Participation
- Boundaries Setting in the Workplace
- Academic editing short course
- Communication in the Digital World short course
- Transformation Training
- Reflecting on religion and cultural inclusion workshop
- Financial Literacy Training
- Supervisory Leadership Development
- Change Management course
- Animal Ethics Workshop
- SUPAN Annual Conference Day
- HERS-SA Academy
- Praxis Auril Research Contracts course
- EARMA Conference in Oslo
- INORMS Conference (online)
- 2022 Southern African Research and Innovation Management Association (SARIMA) annual conference (Johannesburg)
- 7th World Conference on Research Integrity (Cape Town)

A number of DRD staff members were enrolled for/ completed formal studies in 2022, including:

- Master's in Political Science (Cristan MacLeod)
- PhD in Industrial Engineering (Cornelia Malherbe)
- PhD in Higher Education studies (Clarissa Robertson)
- Masters in IP Law (Shehaam Abdurahman)
- MPhil in Science and Technology Studies (Palesa Mothapo; Dominique Meyer, Whitney Prins)
- PG Diploma in Research Management and Administration (Izel Rossouw)
- BA in Anthropology at UNISA (Jennifer de Beer – registered student)
- MPhil in Science and Technology Studies, CREST (Aasima Gaffoor graduated in 2022)
- Course in Advanced Bibliometrics, CREST

(Dalene Pieterse and Felicia McDonald completed)

- Diploma in Health Coaching (Fadwha Patel)
- Postgraduate Diploma in Tax Law (Chantal Hugo and Audrey Erasmus)

Members of the Division continue to play leadership roles in the field of research management at national and international level. Palesa Mothapo was competitively selected for the prestigious IREX University Administrator Support Programme (UASP) Fellowship in Research Management supported by the Carnegie Corporation in New York. Aasima Gaffoor is a member of the SARIMA Executive Committee and Therina Theron serves as past-President of the Southern African Research and Innovation Management Association (SARIMA). Maléne Fouché served on the local organising committee of the 7th World Conference on Research Integrity, held in Cape Town from 29 May to 1 June 2022. Maryke Hunter-Hüsselmann serves as Co-Chair of the Programme Committee and Dr Therina Theron as Chairperson of the International Network of Research Management Societies (INORMS) 2023 Congress. Dr Theron also serves as a member of the INORMS Council and as Co-Chair of the ACU 'Supporting Research' Steering Committee.

5.6.6 Research Chairs

Disclaimer: According to SU's policy: "A research chair is held by leading researchers and/or academics with a demonstrated international reputation in their respective research and/or teaching fields. A research chair is viewed as one of the highest levels of academic

accolades that a University can bestow upon an academic. In the case of a research chair, the purpose of the chair is to strengthen and improve the research and innovation capacity of the public university, through delivering high quality postgraduate students and research and innovation outputs. In the case of industry-funded research chairs, the dual purpose is of course also for such a chair to advance, through their research and postgraduate training, the competitiveness, and interests of the funding partner. A research chair in our context is normally defined as the establishment of an academic research position – the Chair (i.e. the person appointed to such an award) is often someone already at the level of a full professor, but not always (i.e. it sometimes involves individuals at associate professor level or senior lecturer's level). In our reporting, we include DSI-NRF SARCHI chairs and other formally endowed chairs.

Research Chairs make a very significant contribution to the research outputs, impact and income of SU as a thriving research-intensive institution. SU hosted 44 Chairs in 2022 – 23 on the DSI-NRF SARCHI programme, and 21 endowed or industry-funded Chairs. Due to the scheduled end of a number of SARCHI chair awards, SU has seen a reduced income (decreasing from R94m in 2020 to R71m in 2022) associated with the SARCHI programme, with more awards scheduled to end over the next few years. The environment of the DVC: RIPS received in principle support from the Rectorate on 4 October 2022 to embark on a strategic assessment and planning exercise, with the aim of assessing and proposing measures to counter any associated negative impact on SU's research success due to the reduced funding received via the SARCHI programme.

- The following chair started her new 5-year term in 2022:

Grant-holder	Department	Faculty	Chair name
Myburgh KH, Prof	Physiological Sciences	Science	Integrative Skeletal Muscle Biology, Physiology and Biotechnology

- We submitted 5-year reviews for the following chairs in February 2022:

Grant-holder	Department	Faculty	Chair name
Bauer FF, Prof	Viticulture and Oenology (IWBT)	AgriSciences	Integrated Wine Sciences
Snoep J, Prof	Biochemistry	Science	Mechanistic Modelling of Health and Epidemiology
Görgens JF, Prof	Process Engineering	Engineering	Sugarcane Bio-refining

- All three Chairs have been renewed for a third 5-year terms, starting on 1 January 2023.

5.6.7 Supporting SU's growing number of exemplary NRF-rated researchers

The NRF rating system is a benchmarking system whereby individuals who exemplify the highest standards of research, as well as those demonstrating strong potential as researchers, are identified by an extensive network of South African and international peer reviewers. Ratings are based on the quality and impact of recent research outputs (over an eight-year period).

SU supports the NRF rating system – not only as a qualitative, peer-reviewed measure of excellence, but also as a gateway to selected competitive NRF funding programmes. The NRF rating programme is managed by the DRD, that offers a thorough internal review process to support researchers in the preparation of their rating applications. This includes the assignment of a mentor to each applicant to assist with making applications submission ready.

For the round of submissions that closed in February 2022, 91 applications were submitted for review to the three research subcommittees. The subcommittees are tasked with providing the institutional recommendation required for the submission of the applications to the NRF. Of the 91 applications that were submitted, 51 were applications for a re-evaluation of a rating and 40 were new applications.

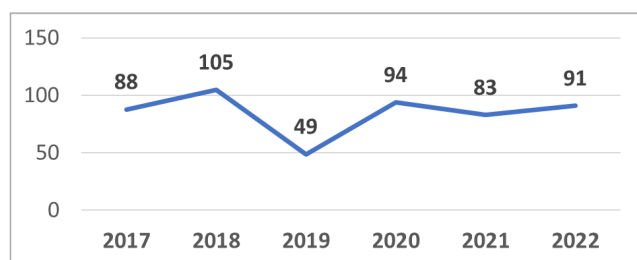


Figure 35: Number of NRF rating applications submitted for review 2017 – 2022

Over the past six years, the number of rating applications submitted to the NRF for review have remained relatively consistent. The decline in applications submitted in the 2019 round (closing date January 2019) was possibly due to the significant changes and uncertainty around the Incentive Funding scheme by the NRF. Judging by the applications submitted in 2020, 2021 and 2022, the trend seems to be consistent with that before 2019.

At the end of 2022, Stellenbosch University had **493** rated researchers. Nationally, SU has the third highest number of rated researchers, after the University of Pretoria and the University of Cape Town, respectively. Since 2017, there has been a

steadily increase the number of rated researchers at SU. There has been a 14% growth rate in rated researchers between 2017 and 2022.

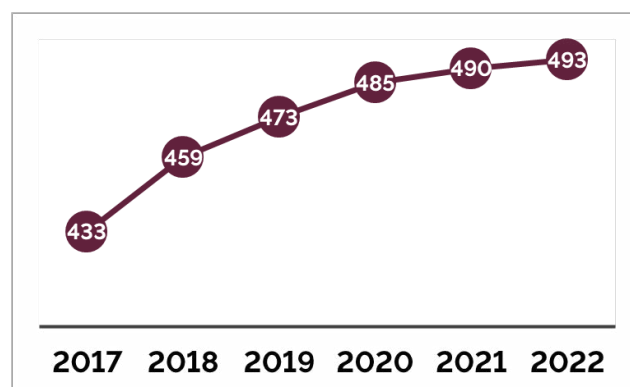


Figure 36: Growth in rated researchers at SU 2017 - 2022

SU received 9 new A-ratings in 2022. A-rated researchers are unequivocally recognised by their peers as leading international scholars in their respective fields for the high quality and impact of recent research outputs. Furthermore, we have recorded our highest number of A-rated researchers, a total of **20**. SU now has the third highest number of A-rated researchers in South Africa. The graph below depicts the number of rated researchers per rating category at SU.

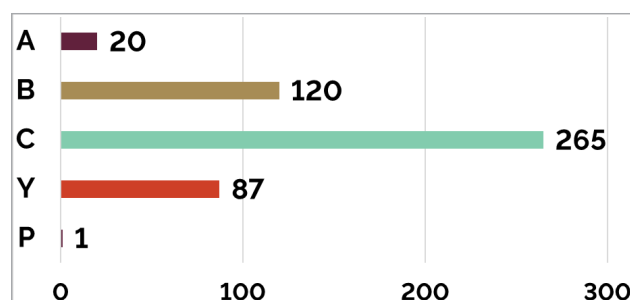
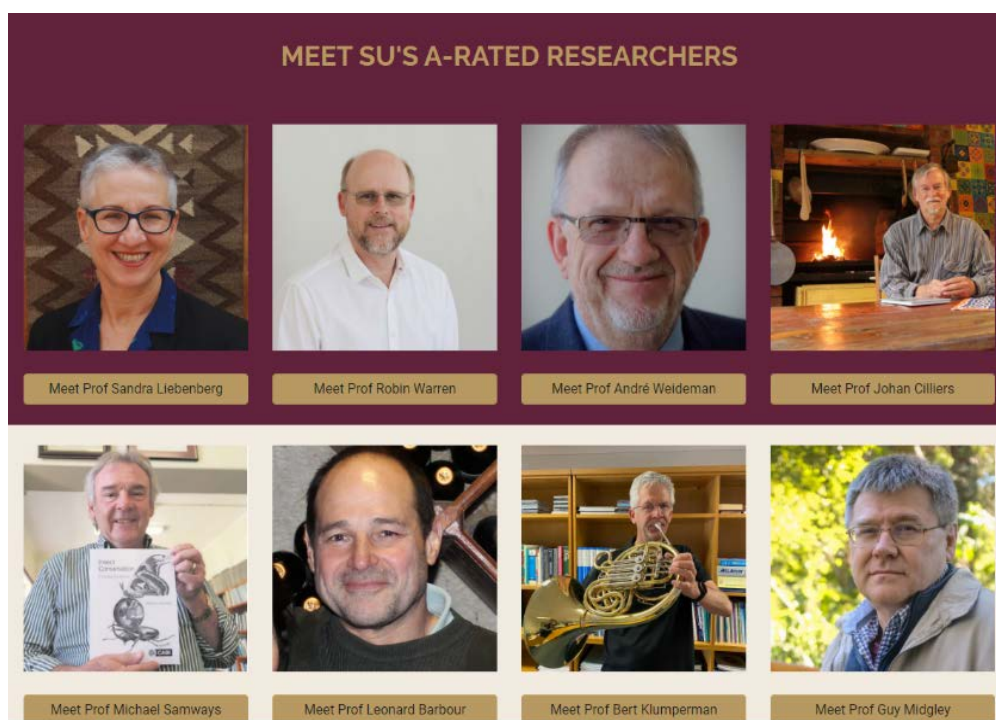


Figure 37: Total number of rated researchers per category - 2022

The following researchers received an A-rating: Profs Sandy Liebenberg (Department of Public Law & HF Oppenheimer Chair in Human Rights Law); Andre Weideman (Department of Applied Mathematics); Johan Cilliers (Department of Practical Theology and Missiology); Len Barbour (Department of Chemistry & Polymer Science); Willem Visser (Department of Computer Science), Mark Cotton (Department of Paediatrics & Child Health) and Rob Warren (Department of Molecular Biology and Human Genetics). Liebenberg, Weideman, Cilliers and Warren received their first A-rating, Visser and Cotton their second, and Barbour his fourth.

For a list of SU NRF rated researchers:
<https://bit.ly/3711FBM>



The Division for Research Development (DRD) undertook a campaign in 2022 to highlight our A-rated researchers, as part of its mandate to create visibility for our researchers and to showcase the innovative research conducted at SU.

<https://sites.google.com/view/sus-a-rated-researchers/home>

5.6.8 Postdoctoral Research Fellows

Postdoctoral Research Fellows are a key priority in the Strategic Vision of Stellenbosch University (SU). We pride ourselves in the development and research excellence of our Postdoctoral Research Fellows who contribute to our research productivity and impact in Africa and beyond.

SU is proud to have **341** Postdoctoral Research Fellows registered in 2022, an increase of **19** postdocs in comparison to the 2021 figures (**322**). We plan to double this intake in going forward. The fellows are distributed across all faculties, with the majority in Science, Health and Medical Sciences, Arts and Social Sciences, AgriSciences and Engineering. We have an almost equal distribution of national and international postdocs, and an equal distribution by gender.

In its strategic focus towards becoming a leading research university in Africa, SU is invested in developing young researchers such as these who drive impactful research in South Africa, the Continent and the rest of the world.



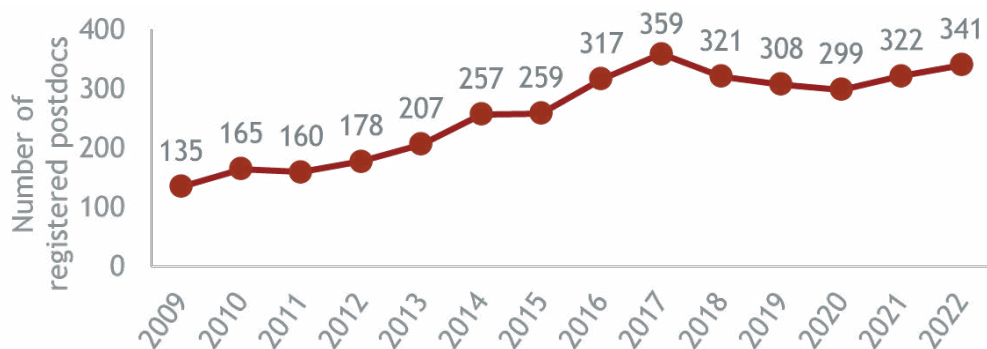


Figure 38: Number of postdocs registered at SU in 2022

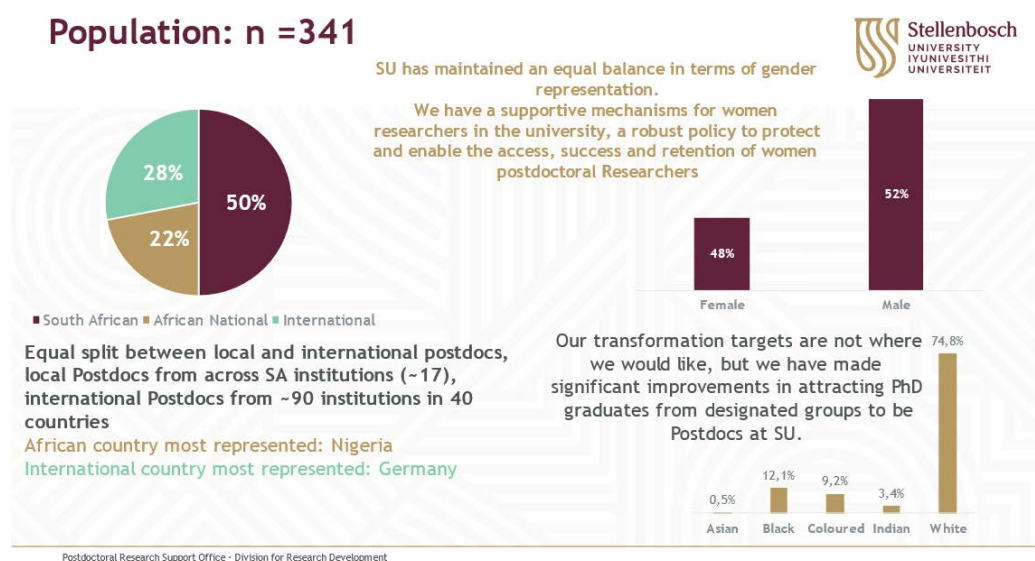


Figure 39: 2022 Postdocs by gender and nationality

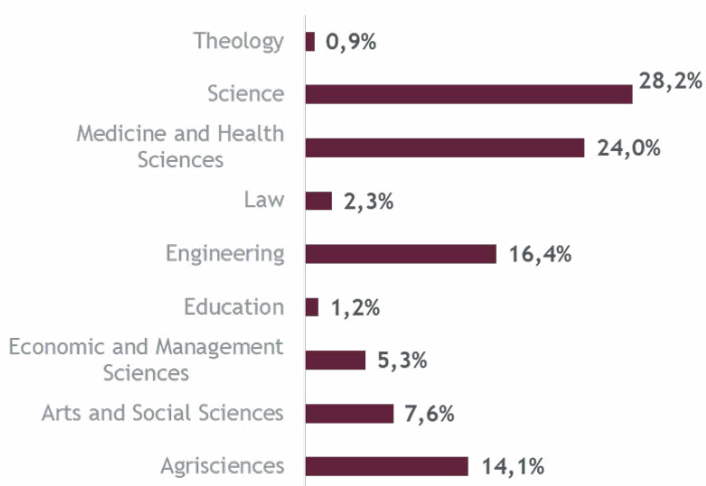


Figure 40: 2022 Postdoc distribution by faculty

DRD Postdoctoral Fellows Social Media Campaign



From September 2022 – October 2022, Interviews conducted with the postdoctoral fellows were published on a dedicated website for postdoctoral fellows and shared across several social media platforms namely the Stellenbosch University Facebook page and the Research at SU twitter page.

<https://sites.google.com/view/supostdocs/home>

Postdoctoral Research Fellows and mentors celebrated for their exceptional performance



<http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9447>

5.6.9 Early Career Academics

SU's Early Career Academic Development (ECAD) programme is a structured support programme for early-career academics, which is managed by the DRD with the support of funding from the DHET University Capacity Development Grant (UCDG). The programme includes a mentoring component, which has matched 105 early-career academic staff members with experienced mentors in 2022. The participants also benefited from career acceleration awards and access to several capacity and skills development opportunities offered by internal and external providers to the University. Two mentee- and mentor networking events were hosted by the DRD in 2022. The feedback received from participants in the programme is overwhelmingly positive.

The DRD launched a ECAD social media campaign in 2022 aimed at highlighting the work of our early career researchers who are part of the Early Career Academic Development (ECAD) programme. Through this campaign, we aimed to create visibility for our early career researchers and highlight innovative research done at SU.

<https://sites.google.com/view/ecads/home>



Early Career Academics



5.6.10 Future Professors Programme (FPP)

The FPP is a competitive and selective programme of the DHET with a view to preparing promising mid-career academics for becoming a new cohort of South African professors across disciplines.

Prof Nox Makunga (Department of Botany and Zoology) was selected to join the Programme in 2022, bringing the total number of SU participants to six. A further five nominees were submitted to the FPP call that opened in 2022 – the outcome of this round was announced early in 2023 and another two SU participants, Drs Gibson Ncube and Tawanda Zininga, were selected to join the national FPP group.

5.6.11 DRD information sessions and capacity building programme for 2022

The DRD annually presents various research capacity building workshops and information sessions. We did an opinion poll at the end of 2021 to get an indication of the specific needs of our research community and the 2022 programme therefore also included a few new sessions. The

research capacity building workshops focus on various aspects of the research cycle, whilst the information sessions focus on the services and support that DRD provides.

Please find the programmes for the capacity building workshops and information sessions that took place in 2022 here:

<http://www.sun.ac.za/english/research-innovation/Research-Development/research-calendar>

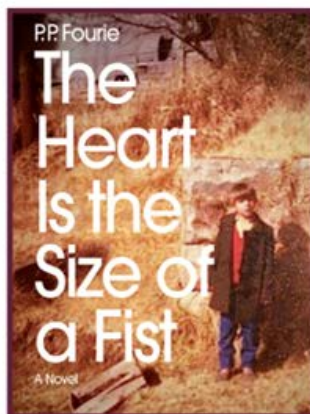
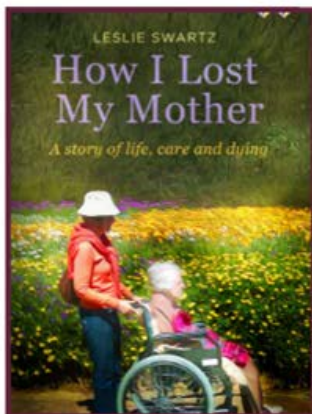
5.6.12 Awards and prizes

Sunday Times Literary Awards

Congratulations to Stellenbosch University's Profs Leslie Swartz from the Department of Psychology, and Pieter P. Fourie from the Department of Political Science, whose books were on the longlist for the prestigious Sunday Times Literary Awards in 2022. *How I Lost My Mother: A Story of Life, Care and Dying* by Prof Swartz is on the longlist for the Non-Fiction Prize, and *The Heart is the Size of a Fist* by Prof Fourie is on the longlist for the Fiction Prize.

See the full list here: <https://bit.ly/3OPQAnJ>
#SUCreativeOutputs

The 2022 Sunday Times Literary Awards longlist



Sunday Times
in partnership with



LITERARY
AWARDS

Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

forward together
sonke siya phambili
saam vorendoe

Contributions of SU researchers celebrated with Research Excellence Awards

The Research Excellence Award ceremony was held at the SU Museum on 29 August 2022. The awards were presented to SU researchers who made the biggest contribution to accredited publications (based on audited publication statistics of 2020 publications submitted to the Department

of Higher Education and Training – DHET – in the 2021-output submission year) and who delivered the most doctoral graduates (December 2021/ March/April 2022 graduations).

<http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9427>



Eminent SU researchers receive NRF awards



Ten prominent researchers from Stellenbosch University (SU) were honoured by the National Research Foundation (NRF) at the annual NRF Awards held on Thursday 1 September 2022. The awards recognise and celebrate South African research excellence that advances science for the benefit of society.

<http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9435>

NRF Achievements



The National Research Foundation (NRF) honoured Emeritus Professor Brian van Wilgen with the Lifetime Achievement Award in 2022, the highest

honour that is bestowed by the NRF for a deserving South African for their outstanding contribution to the development of science in and for South Africa, what they stand for as a South African, and for the extent to which their work has positively touched and shaped the lives of many South Africans.

Spanning a research career of more than four decades, Prof van Wilgen's work on alien plants and water resources has helped place South Africa at the forefront of managing biological invasions. He is mostly recognised for his work in 1995 on developing models of water use by alien trees, while working with a team at the CSIR. This work led to the establishment of the Working-for-Water programme – an innovative project to not only clear the country of invasive plants, but to simultaneously provide employment opportunities to thousands of South African, particularly women, the youth and the disabled.

<https://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9479>

FMHS' Prof Novel Chegou awarded prestigious Royal Society Africa Prize



Prof Novel Chegou of SU's Department of Biomedical Sciences is 2022's winner of the Royal Society Africa Prize, an annual award by the United Kingdom's national science academy which recognises the innovative contribution of an African research scientist

<http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9408>

Lexicographer receives prestigious award for research



Dr Lorna Hiles Morris was awarded the international A.S. Hornby Dictionary Award in 2022 – a £15 000 two-year research grant for her proposed research into electronic dictionary devices for South African primary school children.

<http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9379>

Three FMHS researcher-clinicians benefit from Discovery Awards



Three clinicians and researchers from the Faculty of Medicine and Health Sciences have received prestigious Discovery Foundation Awards for their work ranging from reproductive health to gynaecological oncology and rural mental health.

<http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9245>

LEGO grant helps research enrich parenting in the digital age



SU is to benefit from part of an £11 million (approximately R215 million) grant from the LEGO Foundation for international research aimed at developing free parenting support throughout the world which could be a game changer in parenting.

<http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9216>

Three SU staff members receive DHET University Staff Doctoral Programme grants



Three SU candidates, Malefu Moleleki, Megan Snow and Joani Groenewald were successful in the 5th phase of the Department of Higher Education and Training (DHET) University Staff Doctoral Programme selection process in 2022 and will each receive a grant to the value of R500 000. The duration of the grants is 3 years.

<http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9454>

FMHS' child psychiatry expert receives prestigious grants



Dr Anusha Lachman, Head of the Clinical Unit of Child Psychiatry at Tygerberg Hospital and senior lecturer in psychiatry at SU, recently received the King's College London Erasmus+ grant in 2022. In 2017, she was also the recipient of the Bongani Mayosi Scholarship for her Afrocentric research in infant mental health.

<http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9372>

SAMRC Early Investigators Award benefits patients and genomic research in Africa



Professor Shahida Moosa, a senior geneticist at SU's Faculty of Medicine and Health Sciences, is a recipient of the South African Medical Research Council's (SAMRC) Early Investigators Award.

<http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9348>

SU walks away with 3 awards at prestigious 'Science Oscars'

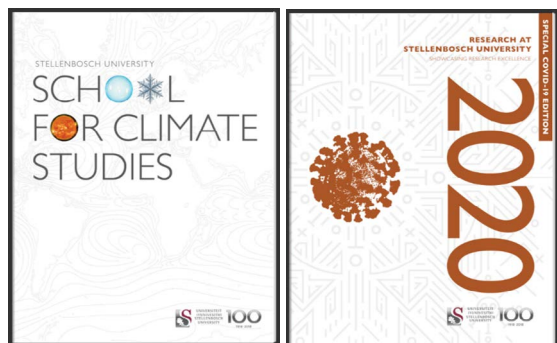


SU bagged three prizes at the 2022 National Science and Technology Forum (NSTF)/South32Awards. Two individual researchers, Prof Guy Midgley and Dr Wynand Goosen, were honoured with the Green Economy Award and the TW Kambule-NSTF Award for Emerging Researchers respectively, while SU was part of the Network for Genomic Surveillance in South Africa (NGS-SA) that won the Data for Research Award. The principal investigator and lead of the NGS-SA, Prof Tulio de Oliveira from the School for Data Science and Computational Thinking and the Centre for Epidemic Response and Innovation, represented SU at the event.

<http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=9325>

DRD wins two MACE Awards

The Division for Research Development (DRD) won two MACE Awards (Marketing, Advancement and Communication in Education) at the ceremony that took place in Pretoria on the 17th of November 2022. The School for Climate Studies booklet as well as the special COVID-19 edition of the *Research at Stellenbosch University* publication won excellence awards.



<https://online.fliphtml5.com/cvapr/mqnb/#p=1>

<https://online.fliphtml5.com/cvapr/gwnr/#p=1>

5.6.13 Highly Cited Researchers 2022

Prof Dave Richardson (Botany and Zoology) has again been included on the Highly Cited Researchers™ list for 2022 released by the Web of Science Group on 16 November 2022.

The highly anticipated list identifies scientists and social scientists who have produced multiple papers ranking in the top 1% by citations for their field and year of publication, demonstrating significant research influence among their peers. The 2022 list contains 6 602 highly cited researchers from more than 70 countries and regions in 21 fields categorised under sciences and social sciences.

5.6.14 DRD Transformation Committee

At the DRDs most recent Annual Strategic Session (21-22 July 2022) the conversation about the establishment of a Transformation committee specific to the DRD started. It is the strong belief within the DRD that transformation at SU is a matter that requires collective responsibility. For that reason, the DRD established its own Transformation Committee (DRD-TC), taking responsibility for its own environment. The committee operates within the current SU structures that include, but is not limited to, SUs Transformation Plan, draft Transformation Policy and the DRD context.

It is responsible for:

1. Creating an environment where matters of transformation can be discussed without fear or prejudice
2. Advise DRD Management Team on matters pertaining to transformation, equity, and equality
3. Report its activities to the Institutional Transformation Office.

The DRD-TC has members from each of the clusters that make up the DRD. The members on the committee represent the diversity of the DRD, gender, religion, personality, post level and race (a true inclusive and representative body). The DRD-TCs first task was to draft a Terms of Reference for the committee that is supported by the DRD Management Team and endorsed by the Transformation Office. The draft ToR were circulated to all DRD staff for their input and once it was finalised a copy was sent to the Institutional Transformation Office for their final approval (03 November 2022).

The Members of the DRD-TC:

1. Mr Winston A Beukes (Chairperson)
2. Ms Christan MacLeod (Secretariat)
3. Mrs Essie Thomas
4. Mr Aden Williams
5. Ms Naasema Sondag
6. Mr Jongi Ndlebe
7. Ms Aasima Gaffoor
8. Mrs Izel Gordon-Rossouw
9. Ms Dominique Meyer

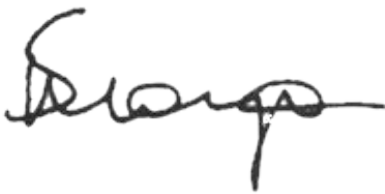


Photo 11: Members of the DRD transformation committee (Source: Division for Research Development)

Acknowledgements

- Division for Research Development (DRD): Dr Therina Theron and team
- Library and Information Service (LIS): Ms Ellen Tise and team
- Central Analytical Facilities (CAF): Prof Gary Stevens and team
- School for Climate Studies: Prof Guy Midgley and team
- School for Data Science and Computational Thinking: Prof Kanshu Rajaratham and team
- Ms Maryke Hunter-Hüsselmann for drafting the report and coordinating the input and contributions.
- SU Language Centre for the translation and language editing.
- Ms Elbie Els – for the design and lay-out of the report.
- All our researchers, postgraduate students, postdoctoral research fellows who are continuously pushing the research and innovation agenda to put SU on the national and global map.

We wish all our researchers a successful 2023!



Prof Sibusiso Moyo
Deputy Vice-Chancellor: Research, Innovation and Postgraduate Studies



