



UNIVERSITEIT  
iYUNIVESITHI  
STELLENBOSCH  
UNIVERSITY

100  
1918 · 2018

*forward together · saam vorentoe · masiye phambili*

# COUNCIL REPORT

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

Prof TE Cloete  
March 2021



# Contents

Introduction .....	6
<b>1. A thriving Stellenbosch University .....</b>	<b>6</b>
1.1 National Research Foundation (NRF) grants.....	7
1.2 NRF Early Career Programme (Thuthuka).....	7
1.3 NRF-First Rand Bank Grant for Sabbatical Study for Black (African, Indian, Coloured) Academic Staff Members.....	7
1.4 Biomedical Research Institute (BMRI).....	7
1.5 Third stream income.....	10
<b>2. A transformative student experience.....</b>	<b>11</b>
2.1 Masters and doctoral student enrolments and degrees awarded.....	11
2.2 Library and Information Service.....	11
2.3 CHE National Review of Doctoral Degrees update.....	12
2.4 Postgraduate student support .....	12
2.5 Postgraduate funding .....	14
2.6 Postgraduate Scholarship Programme .....	14
<b>3. Purposeful partnerships and inclusive networks.....</b>	<b>15</b>
3.1 NRF Bi- and Multilateral Research Collaboration Programmes.....	16
3.2 FLAIR programme: African Academy of Sciences and the Royal Society Early Career Fellowship Programme .....	16
(managed by the DRD).....	16
3.3 UK Medical Research Council.....	16
3.4 HB & MJ Thom Awards for Study Leave by Academic Staff.....	16
3.5 EU-related research grants:.....	16
3.5.1 Horizon 2020 research grants .....	16
3.5.2 Other EU-related research grants.....	16
3.5.3 Summary of EU funding listed above.....	16
3.5.4 EU Erasmus + capacity development and mobility grants.....	16
3.5.5 Highlights .....	17
<b>4. Networked and collaborative teaching and learning.....</b>	<b>17</b>
4.1 Implementation of SUNLearn integrated course reading system.....	17
4.2 The importance of digital content in libraries cannot be over-emphasised.....	18
4.3 School for Data Science and Computational Thinking.....	19
<b>5. Research for impact.....</b>	<b>20</b>
5.1 Research outputs.....	20
5.2 Innovation.....	21
5.3 COVID-19 Contingency Funds for Research Contracts.....	23
5.4 COVID-19 related research.....	23
5.5 #ForwardwithSUResearchers Communication Campaign.....	24
5.6 SU Facebook page.....	25
5.7 Researcher Persona on MySUN.....	25
5.8 Research Information Package.....	25
5.9 DRD contributes to TReMOR in Research Management .....	26

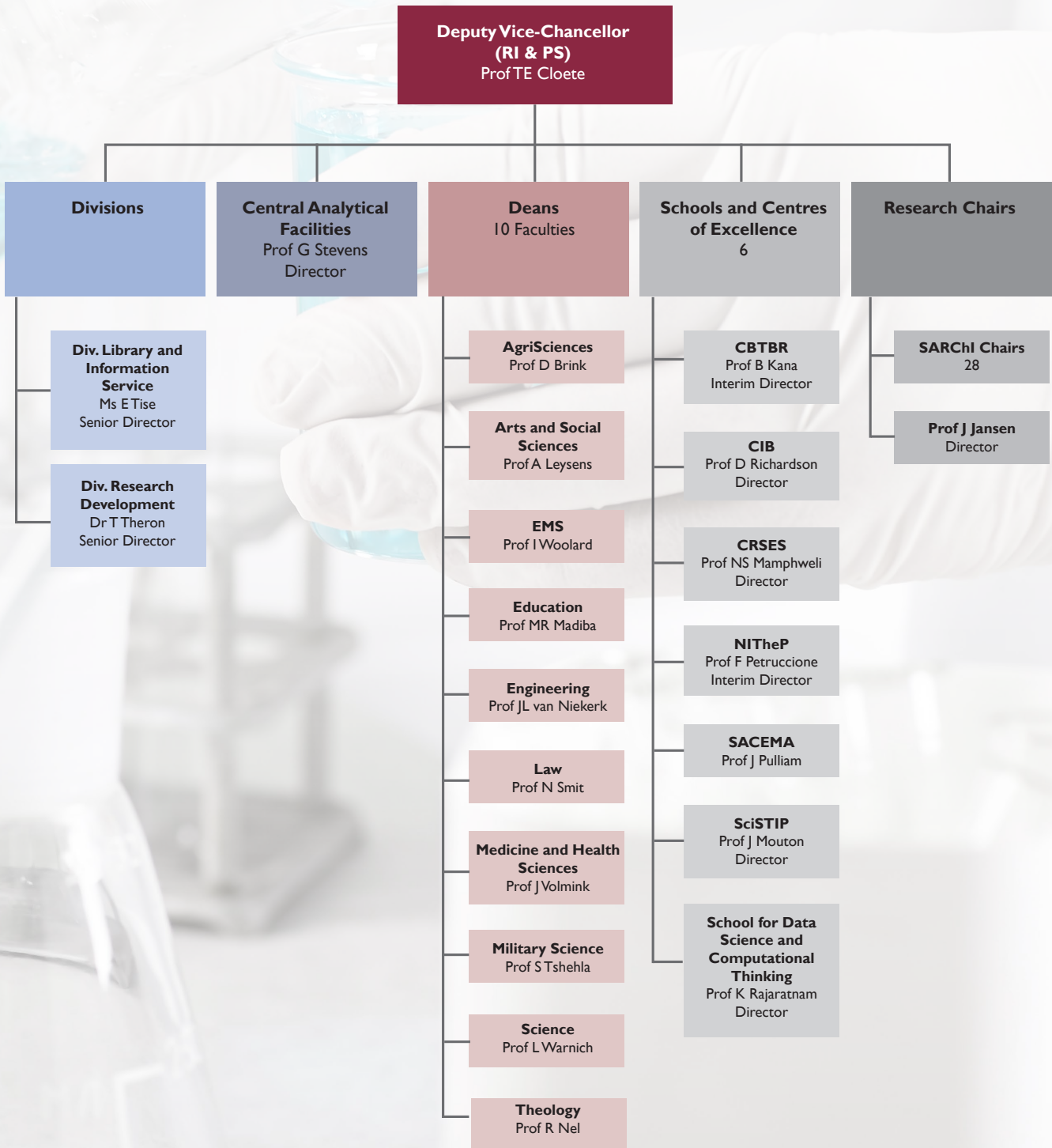
<b>6. Employer of choice .....</b>	<b>27</b>
6.1 Awards and Prizes .....	27
6.2 Fellowships / Grants .....	31
6.2.1 L'Oréal-UNESCO For Women in Science South African National Young Talents Programme .....	31
6.2.2 Early Career Academic Development (ECAD) programme .....	31
6.2.3 Postdoctoral Research Fellowship programme .....	31
6.3 Growth in numbers of Consolidocs .....	34
6.4 Notable awards, recognitions, and special achievements 2020 .....	34
6.4.1 Special achievements.....	34
6.4.2 Awards.....	34
6.5 Supporting SU's growing number of exemplary NRF-rated researchers .....	35
6.6 Number of NRF Rated researchers at SU 2016 – 2021 .....	35
6.7 Future professors programme.....	35
6.8 SARChI Chair renewals.....	35
6.9 Annual Research Output Awards honours SU academics .....	36
<b>7. Acknowledgements .....</b>	<b>38</b>





# Organogram

## Responsibility Centre: Deputy Vice-Chancellor: Research, Innovation and Postgraduate Studies



## Introduction

The Research, Innovation and Postgraduate Studies portfolio has gone from strength to strength in the past five years, positioning Stellenbosch University (SU) as the leading research-intensive university in South Africa. I attribute this to an incredible team effort. I therefore wish to acknowledge and credit the deans and vice-deans for research, the senior directors in my responsibility centre as well as SU researchers in general for their initiative and dedication. I also appreciate the support of the Rectorate and Council.

During 2018 Stellenbosch University adopted a new Strategic Framework including Vision 2040.

Vision 2040 states that, “Stellenbosch University will be Africa’s leading research intensive university, globally recognised as excellent, inclusive and innovative, where we advance knowledge in service of society”.

SU is a place of discovery and excellence, where staff and students are thought leaders in advancing knowledge in the service of all stakeholders. Its mission is to attract outstanding students, employ talented staff and provide a world-class environment: a place connected to the world, while enriching and transforming local, continental and global communities.

Research for Impact is therefore one of the six major institutional strategic themes as part of SU’s Strategic Framework 2019 – 2024. Research for Impact at SU implies optimising the scientific, economic, social, scholarly and cultural impact of our research. Our focus is on interdisciplinary research that benefits society on a national, continental and global scale. At the same time, we are committed to basic and disciplinary research excellence, as it forms the basis for applied and translational research.

Research at SU is driven by the notion of simultaneous excellence and relevance, informed by a diversity of people and ideas. 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. Ultimately, our research efforts are not only aimed at academic success, but also at making a significant impact in the world.

These objectives are actively pursued by the responsibility centre for Research, Innovation and Postgraduate Studies (RI&PS RC). Through the activities of its various divisions, the RI&PS RC in 2020 further strengthened the University’s status as a research leader and bolstered the institution’s intellectual capital, as the following sections will show. The report is organised along the six themes of the Strategic Framework and the respective institutional goals for each of these themes.

## I. A thriving Stellenbosch University

**The institutional goals for this theme are to:**

- Cultivate an SU characterised by inclusivity, deep and intentional transformation, and diversity.
- Create opportunities for the advancement of multilingualism in academic, administrative, professional and social contexts, whilst recognising the intellectual wealth inherent in linguistic diversity.
- Change the size, shape and mix of our student population and of our academic programmes to mirror the strategic direction of our vision.
- Create a financially sustainable organisation.
- Raise the standard of the University’s facilities and infrastructure to that of a world-class research-intensive university, while embracing visual redress.
- Bring about profound and sustainable change and regeneration in all facets and functions of SU to be agile, adaptive and responsive.
- Aspire to be a leading, research-intensive university ranked amongst the top world universities by 2024.

## **I.1 National Research Foundation (NRF) grants**

During 2020 SU received 15 new Rated Researcher and 6 Unrated Researcher Grants, 1 SANAP Development- and 2 SANAP Grants, and 7 Research Development Grants for Y-Rated Researchers. We also received a new award within the extremely competitive National Equipment Programme, as well a new award in the Global Change Social Sciences Research Programme. This represents a success rate of 30.5%, which demonstrates a 4.5% increase from 2019.

## **I.2 NRF Early Career Programme (Thuthuka)**

In 2020 the DRD processed 37 applications (22 new & 15 continuing). Of these, eleven new applications and all the continuing applications (15) were successful. The total of the funding received from the NRF for new awards in 2021 is R2 327 400. In 2021 there will be 44 Thuthuka grantholders in total, whether in their first, second or third year of funding.

## **I.3 NRF-First Rand Bank Grant for Sabbatical Study for Black (African, Indian, Coloured) Academic Staff Members**

**The following academic staff members received this award:**

### **2020:**

Dr Trudy Jansen from the Department of Microbiology received R475 872.00

Dr Lieketseng Ned from the Department of Global Health received R368 000.00

Dr Rizwana Roomaney from the Department of Psychology received R192 000

### **To be taken up in 2021:**

Dr Zelda Barends from the Department of Curriculum Studies received R354 700

Mr Phila Msimang from the Department of Philosophy received R250 000

## **I.4 Biomedical Research Institute (BMRI)**

The BMRI's main aims will be 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, among others. The new BMRI will be on par with the most advanced and sophisticated biomedical research facilities in the world. The new facility will allow for the immediate expansion of current research activities, as well as strengthen research and teaching capacity in fields such as bioinformatics, genomics, anatomy, neurobiology, advanced surgical sciences, biobanking, etc.

**The facility will host a range of biomedical research laboratories, including laboratories for:**

- Human Genetics
- Clinical Genetics
- Genomics
- Immunology
- Mycobacteriology
- Molecular Biology
- Medical Biochemistry
- Drug Metabolism and Resistance
- Stem Cell Biology
- Osteology
- Histology
- Clinical and Comparative Anatomy
- Surgical Sciences
- Basic Medicine
- Psychiatric Diseases
- Medical Physiology
- Reproductive Physiology
- Animal Diseases etc.

**The BMR will also provide for centralised facilities including:**

- Central Analytical Facilities including Electron Microscopy, Fluorescence Microscopy, Proteomics, Pharmaceutical Mass Spectrometry, and Flow Cytometry (FACS).
- Bronchoscopy Suite
- Bioinformatics Hub
- Medical Morphology Learning Centre
- Biorepository
- Sunskill Surgical Skill Training and Research Laboratory
- Biosafety Level 2 and Level 3 (BSL3) Facilities
- Clinical Research Unit and Sample Collection Facilities
- Conference Facilities
- Zebrafish Laboratory
- Ossuary

In addition, shared facilities will be available to all researchers including:

- Gas Facilities
- Break-out/kitchen spaces
- Cafeteria
- Seminar and Meeting Rooms
- Autoclave and washing facilities
- Chemical Stores
- Dissection Halls

A few of the interesting features:

### Medical Morphology Learning Centre

The Centre will be established from the previous Medical Morphology Museum, which was the first of its kind in Africa and contained exhibits relating to anatomy, anatomical and forensic pathology, physical anthropology, comparative vertebrate anatomy, medical history, orthopaedics, histology, forensic science, parasitology and paleontology. The new facility will have expanded and upgraded display areas and better access for public engagement with science through the use of new technology. The aim would be to use this facility for a vibrant public programme of events and exhibitions, where visitors can explore what goes on behind the scenes and gain fascinating insights into the BMRI research enterprise and biomedical research as a career.

### Biorepository

The fully automated state-of-the-art facility in the new BMRI will allow the biomedical science community of the FMHS to collect, use, and analyze biospecimens from our human populations. This fully automated Hamilton BIOS storage system has storage capacity of over 5 million samples at a constant temperature of  $-80^{\circ}\text{C}$ , with a full audit trail and temperature log for each stored sample.



Figure 1: Bios – biobanking facility

A dedicated laboratory infrastructure for sample delivery and preparation is included and the automation will allow samples to be picked without temperature fluctuations that could degrade precious specimens. The facility is able to read 1-D and 2-D barcodes, increasing sample tracking convenience, and will interface with IT infrastructure and laboratory information management systems (LIMS) for complete automation of sample management. The FMHS foresees that this biorepository would be able to become a regional resource and service the surrounding communities and higher education and research institutions. A linked ultra-low temperature storage facility for liquid nitrogen storage of sensitive samples, and an ambient temperature storage facility form part of the Biorepository.

Currently the divisions housed in the BMRI holds one of the largest M. tuberculosis culture banks representing a tuberculosis epidemic in the world. This culture bank of more than 20 000 isolates has associated molecular epidemiological and clinical data. Analysis of this data set has led to the publication of numerous high-level papers and provided new epidemiological understanding, which continues to challenge long standing dogmas. This has allowed our biomedical scientists to engage in a number of international collaborations. Apart from this, the Centre also houses other sample banks, including banks of human samples (DNA, RNA, serum, plasma, whole blood assay supernatants and peripheral blood mononuclear cells) from patients and controls.

### Sunskill Surgical Skill Training and Research Laboratory

The Sunskill Laboratory is an integrated clinical training and research laboratory that offers eight fully simulated theatre operating stations, a 'dry' laboratory, a 100-seat lecture theatre and a virtual intensive care unit – all complemented and connected by high-resolution audio-visual capabilities. The facility is uniquely positioned in Africa as postgraduate surgical students from countries such as Nigeria, Gabon and Namibia get funding to study here. In addition, several international surgical conferences are planned, ensuring that the Unit's functionality dovetails perfectly with the building's video and conferencing facilities. The revolutionary surgical skill training and research laboratory called the Sunskill Laboratory will ensure significantly enhanced training for postgraduate students and encourage surgical specialists from around the world and across all disciplines to collaborate on deepening and extending their skills on an ongoing basis. In addition, this laboratory will promote increasing cross-disciplinary work, thereby enabling many previously untapped areas of research. Research around models for postgraduate surgical training is already ongoing and this complements the internationally renowned work of the FMHS in health professions education.





Figure 2: BMRI Biomedical Research Institute

### Biosafety Level 3 (BSL-3) Facility

The BMRI also houses a large modern Biosafety Level 3 (BL3) bio-containment facility with laminar flow cabinets, BACTEC and MGIT instruments (with UPS back-up), CO2 incubators and a large BL3 walk-in incubator. The BL3 facility functions under negative pressure with Hepa filters and will be routinely used for large-scale solid and liquid culturing of mycobacteria, sputum smear microscopy, protein, DNA and RNA extraction, whole blood assays and tissue culture and infection, mycobacterial transformation, drug susceptibility testing and phase 2 trials of novel antimycobacterial compounds. The BL3 facility has a full complement of managing personnel and includes a laboratory manager, a safety officer, and training staff.

### Conference facilities

With plans to host international and regional conferences in the BMRI's new conference facilities, the FMHS plans to bring the world's top researchers to Africa and to invite them to share their skills and experience with local biomedical scientists and other health researchers. The conference facilities include access to a large auditorium, several smaller seminar rooms with the latest audio and video conferencing equipment. Catering facilities is also available.

The building will be managed from a Central Control and Monitoring Room with systems such as Critical alarms, HVAC, CCTV, and Fire Detection. All sub-systems communicating and interfaced to one central Building

Management System (BMS) allowing Security and Technical staff to monitor all systems and take appropriate action when required.

Once completed, the building will be rated by the South African branch of the World Green Building Council. The design team are aiming for a 4-star green rating. In addition, the Faculty has joined Health Care Without Harm, an international coalition of over 500 organisations working to enhance sustainability in the health sector worldwide. Similarly, the Faculty is affiliated to Global Green and Healthy Hospitals, a network of over 1000 organisations in 54 countries representing over 32 000 hospitals and health centres.

### Bronchoscopy Suite

Stellenbosch University's (SU) Faculty of Medicine and Health Sciences recently launched the Biomedical Research Institute (BMRI) Research Bronchoscopy Suite, housed within the Division of Molecular Biology and Human Genetics.

"The BMRI Research Bronchoscopy facility will pave the way for site-of-disease research for lung diseases, particularly tuberculosis," Prof Gerhard Walzl, head of the Division of Molecular Biology and Human Genetics said at the launch.

"The physical proximity of the facility to advanced microbacteriology, immunology and genomic research groups and laboratories of the new BMRI facility, and its proximity to established community-based research sites

with a high TB-disease prevalence, unlocks major research opportunities of international importance.’’

### 1.5 Third stream income

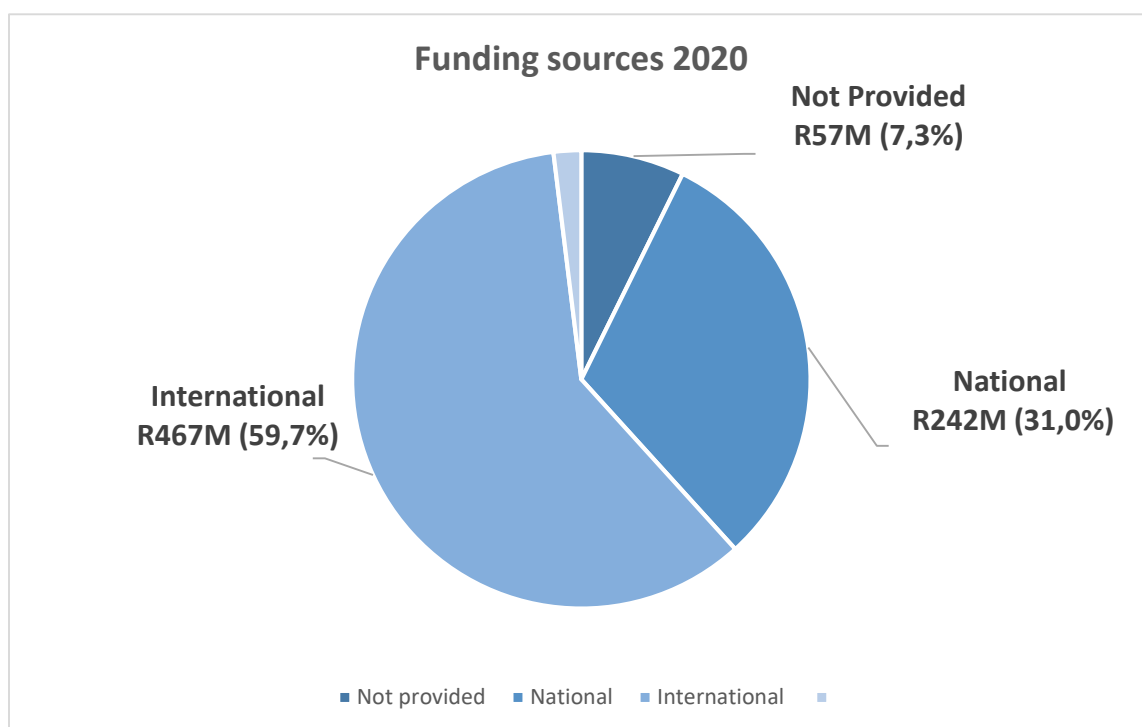
During 2020 we succeeded in signing a significant number of new research contracts, despite COVID-19. Again, a significant proportion of the funding (60%) was from international sources.

The realised third stream contract research income during 2020 was R963,62 million (Table 1). Noteworthy is the decline in NRF funding since 2017 due to financial constraints at the NRF mainly as a result of COVID-19

which forced the Department of Science and Innovation to cut budgets across the board by 20% and also as a result of the new postgraduate bursary policy.

**Table 1: Realised third stream income**

	2017	2018	2019	2020
Research contracts (excluding NRF)	R885,8m	R783,2m	R806,03m	R828,77m
NRF	R364,2m	R235,2m	R209,92m	R164,324m
Total	R1,250bn	R1,018bn	R1,016bn	R963,62m



**Figure 3: Funding sources 2020**

## 2. A transformative student experience

The institutional goals for this theme are to:

- Provide a unique, personalised student experience that serves as a catalyst for transformational change amidst opportunities for engagement and development through a first-class academic offering, which prepares graduates to lead and excel in a diverse world.
- Develop our students' graduate attributes so that they can be 21st-century citizens and achieve their full potential.
- Strengthen strategic enrolment management to enhance access and inclusivity.
- Enhance our student success rate through educational innovation.
- Deliver comprehensive, premium-quality support services to our student community.
- Enhance and expand engagement opportunities for our substantial alumni community.
- Create relevant opportunities for work-integrated learning towards a successful career and positive societal impact.

### 2.1 Masters 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 4774 master's and 1607 doctoral students in 2020.

**Table 2: The number of masters and doctoral enrolments at SU**

	2016 June	2017 June	2018 June	2019 June	2020 June
Master's students	4919	4831	4811	4821	4774
Doctoral students	1497	1614	1645	1637	1607
Total	6416	6445	6456	6458	6381

**Table 3: The number of masters and doctoral degrees awarded by SU**

	2016	2017	2018	2019	2020
Master's degrees	1 469	1 624	1517	1474	504
Doctoral degrees	278	305	310	362	137 * excl. March 2021

\*Not available at the time of this report

SU is mindful of the need to strengthen student diversity at all levels. 2020 saw a small increase in the number of South African generic black (BCIA - black, coloured, Indian and Asian) students enrolled at the postgraduate level, representing 47% of the postgraduate student body. The proportion of international students of the overall postgraduate student cohort in 2020 unfortunately saw a fairly sharp decline, from 21,6% in 2019 to 16,65% in 2020. We hope that this situation will improve as soon as the movement of international students stabilises.

**Table 4: Postgraduate student diversity amongst SA citizens**

	2016	2017	2018	2019	2020
Percentage SA generic black students	48%	49%	50%	46%	47%

**Table 5: International student as a percentage of overall postgraduate enrolments**

2016	2017	2018	2019	2020
19,3%	18,4%	18,3%	21,6%	16,6%

### 2.2 Library and Information Service

The momentum of renovating and repurposing existing library spaces, which started in 2010 with the opening of the Learning Commons, continued with the opening of the Carnegie Research Commons in the following year, and was followed by the refurbishment of the branch libraries at Engineering and Forestry, at Medicine and Health Sciences, and at the Bellville Park Campus, will continue at the SU Library 2021. The period mid-February to the end of September will see the installation of a new information desk, new student workspaces and leisure reading areas, and new ablution facilities. The primary focus of the project is to provide the students with comfortable and effective spaces to work while making it easier to use and navigate the library. Existing facilities and infrastructure will be upgraded to create a contemporary aesthetic for the Library while maintaining the integrity of the existing building. The renovations will be phased to maintain the functionality of the library throughout construction. The new spaces will contribute towards a transformative student experience and student success and the Library is excited to welcome their clients into the new space once the work is complete.

The Library is also pleased to announce that the Makerspace in the SU Library has been completed

in recent months. We are only the third library in the country, after the universities of Pretoria and the Free State, to offer a makerspace to our clients. The use of the space will commence once student activities return to normal. The Makerspace is a new service offering in support of research creativity and innovation and will be a creative laboratory that will bring together people with ideas and those with the technical ability to turn the ideas into reality. It will provide students access to some of the latest technology, including 3D printing, 3D scanning, electronics and 3D design software.



Figure 4: Makerspace in the SU Library

### 2.3 CHE National Review of Doctoral Degrees update

The Council on Higher Education (CHE) formally commenced a National Review of Doctoral degrees offered by higher education institutions in South Africa in July 2019. The Postgraduate Office in the DRD prepared SU's Institutional Self-Evaluation Report (SER) and submitted this to the CHE in March 2020. In October

2020, the CHE National Review Panel assigned to SU conducted a virtual site visit of the University and concluded online panel interviews with a broad range of stakeholders, including staff involved in doctoral education, current doctoral students and doctoral alumni. SU now awaits the CHE National Review Panel's draft report that will convey the panel's view of the extent to which SU's doctoral degrees meet the CHE's Qualification Standard for Doctoral Degrees, following their scrutiny of the SU SER and their conclusions after the virtual site visit. The report is due to be sent to SU by mid-February 2021.

### 2.4 Postgraduate student support

Through its Postgraduate Skills Development Programme, SU's Postgraduate Office (PGO) provides relevant research-related capacity-building workshops, webinars and other support annually to help SU postgraduate students complete their studies on time. In 2020, the Programme was sustained during COVID-19 lockdown restrictions by taking their full offering online:

- Their face-to-face scheduled [workshops](#) were adapted to online learning during March and April 2020 and taken online successfully via Microsoft Teams and SUNLearn towards the end of May 2020, recruiting participants via their [website](#), [Postgraduate Times](#) newsletter and on their [social media](#) platforms. Participants indicated they particularly appreciated the synchronous as well as asynchronous learning modes. In addition, the online mode allowed the Programme to reach a much broader audience. For example, there was a marked increase of Tygerberg campus, Faculty of Medical and Health Sciences participants, and other off-campus postgraduates who would ordinarily not have access to the on campus workshops.

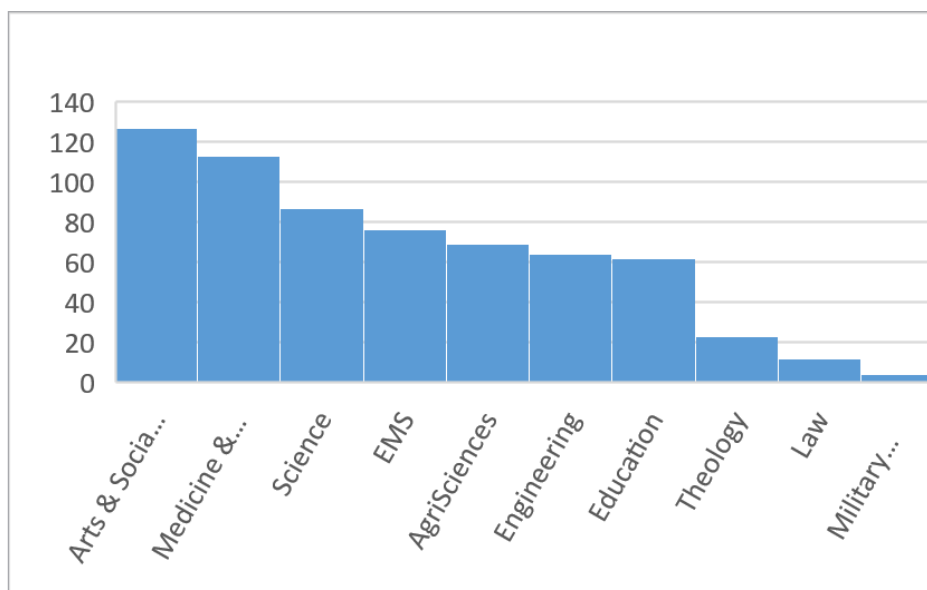


Figure 5: Faculty attendance

- Their virtual [Shut Up & Write writing sessions](#) were increased from one, 1 ½ hour weekly session to two, 1 ½ hour sessions per day (morning and evening every weekday).
- Postgraduates had access to additional online resources housed under the PGO's new bouquet of training modules on [SUNLearn](#).

Overall, during 2020, the Programme hosted 2 [Pop Up cafés](#) (one face-to-face and one virtual), 41 workshops/webinars, and a virtual science communication 2-day training opportunity combined with a virtual [FameLab](#) institutional heat. The Programme reached over 637 individual postgraduates in terms of workshop training (1310 places in workshops in total); 161 participants in terms of Pop Up café engagements; 23 participants in terms of science communication training (FameLab); 82 participants in terms of Shut Up & Write writing sessions; and approximately 720 participants in terms of Faculty postgraduate support orientation sessions.

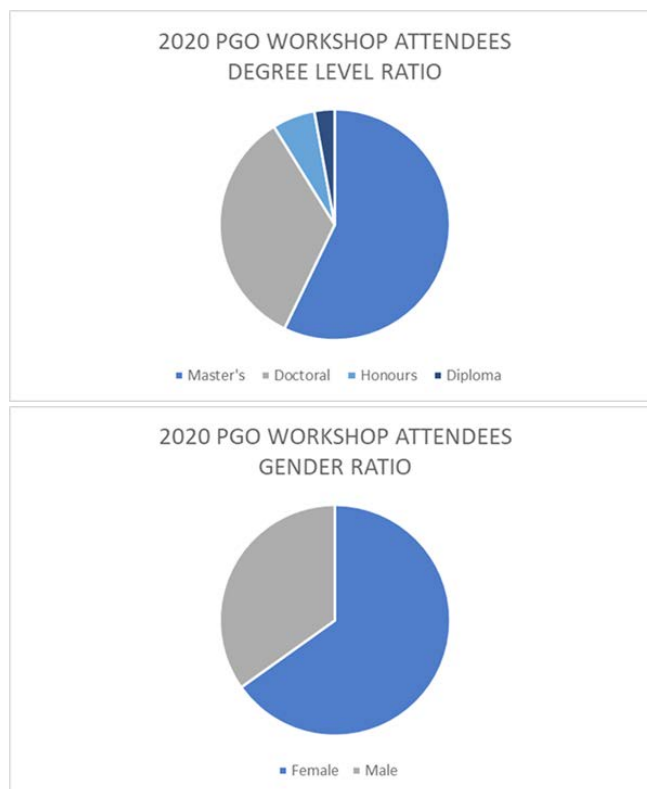


Figure 6: PGO Workshop attendance by Degree and Gender

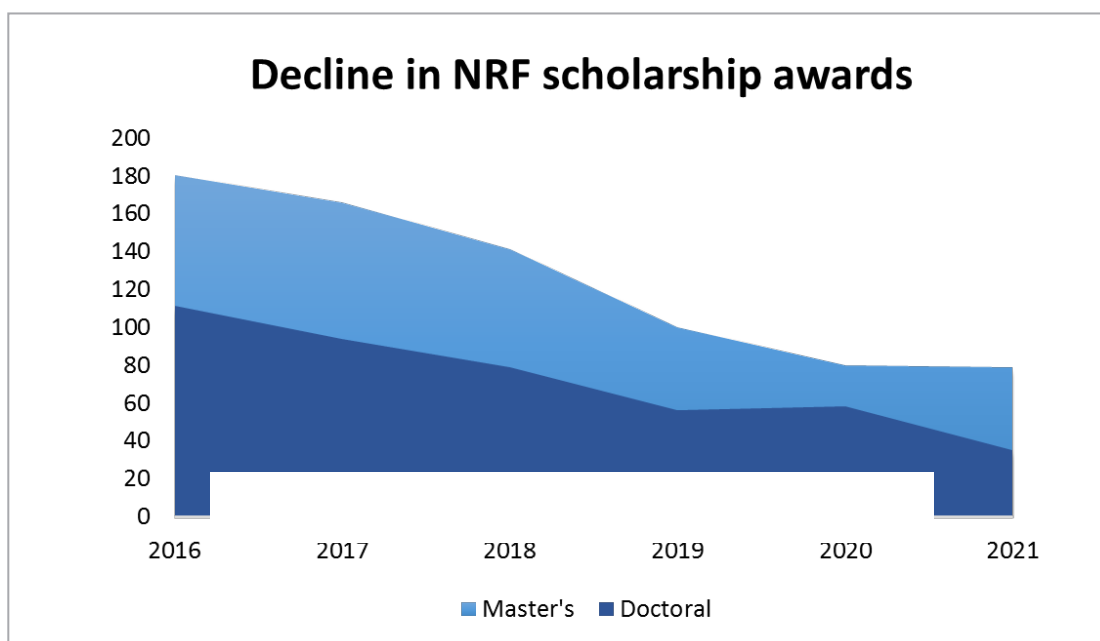


Figure 7: Decline in NRF scholarship awards

## 2.5 Postgraduate funding

The Postgraduate Office (PGO) through its Postgraduate Funding Unit, seeks to further support the SU postgraduate pipeline through financial aid and administration. In 2020, the PGO administered scholarships to the amount of approx. R237m (compared to R240m in 2019, and R238m in 2018). Funding from the National Research Foundation saw a slight increase, from approx. R59m in 2019 to R60,5m in 2020.

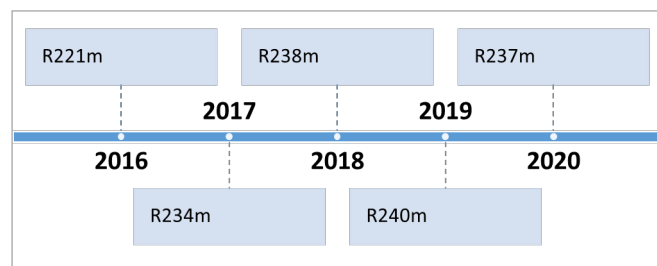


Figure 8: Overview of postgraduate funding (2016-2020)

Significant policy changes were implemented by the National Research Foundation – our main postgraduate funder. The NRF instituted a minimum academic requirement of 65% while applicants for honours, masters and doctoral funding must be 28, 30 and 32 years of age or younger respectively in the year of application. Furthermore, successful applicants may be funded either at Full Cost Study (FCS) or Partial Cost of Study (PCS).

The FCS funding may be awarded to South African citizens and permanent residents only, who are either financially needy (i.e., those whose combined household family income is less or equal to R350 000 per annum), living with a disability or exceptional academic achievers. However, the 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.

Echoed through discussions around the new scholarship policy, was the potential impact that this policy would have on the South African Research Chairs Initiative and the Centres of Excellence. Ultimately, and in light of further fiscal constraints related to COVID-19 austerity measures, the National Research Foundation announced critical budget cuts for all of its funding domains. Stellenbosch University was not immune to the impact of these cuts and this is reflected in our most recent performance in terms of scholarship applications versus awards. In summary, we have seen a decrease of more than 50% in our NRF scholarship awards since 2016, for Master's and Doctoral scholarships, respectively. The preliminary NRF scholarships outcomes for 2021 are currently under review and discussions are taking place with the NRF in this regard.

## 2.6 Postgraduate Scholarship Programme

In response to the decline in the number of NRF scholarship awards, the Committee for Bursaries and Loans (CBL) approved a motion tabled to re-allocate approx. R90m from undergraduate bursaries and loans' reserves to the postgraduate funding space. This laid the groundwork for the introduction of the Postgraduate Scholarship Programme (PSP) which will run from 2021 – 2023. A coordinated approach followed immediately, led by Professor Eugene Cloete (Deputy Vice-Chancellor: Research, Innovation and Postgraduate Studies), supported by a PG scholarship committee consisting of all faculty vice-deans for research, the Division for Research Development and its Postgraduate Office – based on a principle of collective responsibility.

The PSP follows a two-pronged approach, which allows for student applications as well as researcher-led applications, referred to as Category A and B, respectively. To date, 406 scholarship awards have been approved under Category A (with a total budget of R90m over the next three years) while Category B (R30m over the next three years) remains to be finalised before the end of March 2021. Below is a summary of the preliminary scholarship awards under Category A.

In addition to this institutional investment supporting our postgraduate pipeline, several partners have also announced their scholarship support for 2021, inter alia:

- The Harry Crossley Foundation continues to fund a cohort of academically deserving postgraduates. 39 Master's and/or doctoral students will share in R4.45m in funding for 2021. A new focus area will co-fund seven (7) Doris Crossley recipients to continue with their postgraduate studies.
- The Wilhelm Frank Trust committed R2.12 m to support 13 students in Science and Engineering.
- The HB & MJ Thom Trust committed R1.07m to support 18 postgraduate student leaders.
- The Fibre Processing and Manufacturing SETA has allocated R2.01m to assist 69 postgraduate students in forestry and wood science, journalism and media-related degree programmes. The Development and Alumni Relations Division secured this critical partnership by expanding the SETA funding portfolio for postgraduate students.
- The ETDP-SETA, through USAf, reserved R1.95m to fund approx. 47 postgraduate students, pending compliance with its criteria and regulations.
- PhD student Obaa Akua Konadu received the prestigious [Margaret McNamara Education grant](#) for 2021. Only 5 recipients were selected from South Africa.
- Edward Jacobs and Nuvika Pillay were announced as 2021 [Mandela Rhodes](#) Scholars.
- Bright Amanful from the Department: Processing

## STATISTICS PSP SCHOLARSHIPS (CATEGORY A)

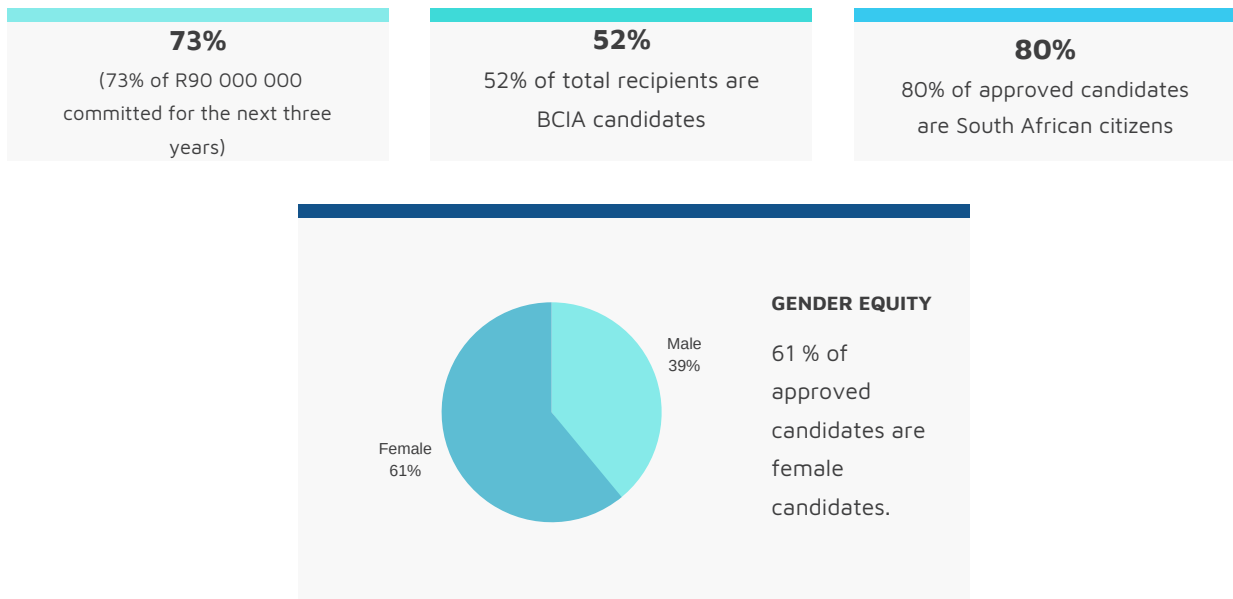


Figure 9: PG Scholarship Programme Statistics

Engineering was selected for the Queen Elizabeth Commonwealth Scholarship Programme.

- The BEIT Trust will continue with its co-funding scheme which currently supports 5 postgraduate students from Zimbabwe, Zambia and Malawi. The Trust also supports students from these countries with hardship funding support.

### 3. Purposeful partnerships and inclusive networks

The institutional goals for this theme are to:

- Develop a framework of principles to ensure local relevance, regional impact, and a global reach to enable transactional partnerships and promote transformative partnerships.
- Promote a deep connectedness and interaction with business, industry, and government to leverage our strengths, which will include work-integrated learning, continuing professional development,

collaborative research, consulting, licensing, spin-out companies, and commercial ventures.

- Embrace the communities we serve to bring about social, cultural, environmental, and economic development and change.
- Enhance and expand engagement opportunities for, and foster our relationship with, our substantial alumni community.
- Build effective collaborations through partnerships, alliances and networks with other universities, institutions, and organisations, where such collaboration contributes to excellence in teaching and learning, outstanding research and social engagement and impact.
- Foster distributed, networked and reciprocal partnerships that are nurtured by both institutional structuring and personal relations.
- Establish appropriate partnerships with institutions in all societal sectors, including the spheres of civil society, public discourse, public opinion-formation, and public policymaking.

### 3.1 NRF Bi- and Multilateral Research Collaboration Programmes

**Table 6: Stellenbosch University was awarded the following grants, amidst a drastic cut in budget (2020 data)**

Prof	Fourie	Coenrad	Electrical and Electronic Engineering	BRICS (Russia, China)	R 2 550 000
Prof	Lochner	Christine	Psychiatry	BRICS (India, Brazil)	R 1 437 000
Prof	Pasch	Harald	Chemistry and Polymer Science	China	R 400 000
Dr	Malaza	Vusi	Physics (Mil)	Russia	R 415 210
Prof	Wyngaardt	Shaun	Physics	Russia	R 811 609
Prof	Makunga	Nox	Botany and Zoology	Belgium	R 1 421 710

**Table 7: January – March 2021**

Prof	Swilling	Mark	School of Public Leadership	Netherlands	R 5 220 000
Prof	Stevens	Gary	Earth Sciences	France	R 2 900 000

Total: R15 155 529

### 3.2 FLAIR programme: African Academy of Sciences and the Royal Society Early Career Fellowship Programme (managed by the DRD)

The African Academy of Sciences and the Royal Society partnered in creating an early career fellowship programme supported by the Global Challenges Research Fund (GCRF): Future Leaders African Independent Research (FLAIR) Fellowships.

The FLAIR programme is highly competitive as close to 1 000 applications are annually received, from the whole of Africa. Out of these, about 60 applicants from all over Africa are selected for interviews after which 25 final awardees are selected. Dr Prinessa Chellan from Chemistry and Polymer Sciences was successful in being awarded the grant in 2020. The value of the grant is R6.5 million over two years, with the possibility of renewal of a further 3 years.

### 3.3 UK Medical Research Council

2020:

Prof Mark Tomlinson, Institute for Life Course Health Research, received an award of £548 000 (ca R11.5 million) for the project “Health Action in Schools for a Thriving Adolescent Generation (HASHTAG)”.

### 3.4 HB & MJ Thom Awards for Study Leave by Academic Staff

The HB & MJ Thom Trust awarded Stellenbosch University R1,206,883 for study leave grants to be taken up in 2021. Seventeen awards were made to researchers from across almost all faculties.

### 3.5 EU-related research grants:

#### 3.5.1 Horizon 2020 research grants

The European Union (EU) Horizon 2020 Research and Innovation Framework programme during for the period 2014-2020 came to an end last year. During 2020, successful funding for Horizon 2020 at SU increased to a new record high in terms of both the total number of successful projects and per implication, the total funding per year: 21 successful H2020 projects secured R221 407 569. For the full period of H2020 (2014-2020), a total of 56 H2020 projects secured a total of R407 075 069. (In comparison, 28 awards were successful in FP7 2007-2013). The Faculties of Medicine & Health Sciences, Engineering and AgriSciences fared best.

#### 3.5.2 Other EU-related research grants

In addition to H2020, other EU-related funding totalled R54 421 908 for the period 2014-2020. This includes amongst other funders, 25 projects funded by the DST/DSI to the total amount of R13 129 134 (of which R9 173 060 in 2020).

#### 3.5.3 Summary of EU funding listed above

Overall, for the period H2020 2014-2020, 91 grants to the amount of R461 496 977 were awarded to SU, of which R 221 407 569 in 2020 (21 grants).

#### 3.5.4 EU Erasmus + capacity development and mobility grants

For the period 2014-2020, 95 Erasmus + grants were awarded to SU, totalling the number of all EU grants at SU at 186.



### 3.5.5 Highlights

Exceptional performances by Professors Grant Theron and Gerhard Walzl from the Faculty of Medicine & Health Sciences resulted in a total of ten successful H2020 grants, in addition, six of their Postdocs received H2020 EDCTP Career Development Fellowships. Also, Alex Andrason from the Faculty of Arts and Social Sciences secured SU's first ever prestigious European Research Commission (ERC) award.

## 4. Networked and collaborative teaching and learning

The institutional goals for this theme are to:

- Focus on a learning-centred approach to teaching, whilst promoting a holistic understanding of teaching and learning.
- Foster interdisciplinary and interprofessional teaching and learning by empowering students to participate in a learning community where staff and students work together to learn, solve problems, research and innovate.
- Create an institution of continuous learning that is skilled at co-creating and sharing knowledge and insights.
- Promote the professionalisation of academics in their teaching role, and the scholarship of teaching and learning.
- Develop a digital strategy to provide the basis for digital fluency and the meaningful integration of learning technologies towards a networked University that engages and inspires students, staff and alumni.
- Expand on Stellenbosch University's knowledge offering to serve new student markets.
- Promote the continuous renewal of the University's academic programmes by means of a systemic process with clearly assigned roles and responsibilities for the various role-players.

## 4.1 Implementation of SUNLearn integrated course reading system

In December 2020 the Library and Information Service, in collaboration with the Centre for Learning Technologies and other learning and teaching support divisions, successfully completed the implementation of the SUNLearn integrated course reading system, Leganto. The purchase was made possible with support from the Strategic Fund. A total of six lecturers, from the departments of Educational Psychology, Music, Geography and Environmental Studies, the School of Accountancy, the Division of Molecular Biology and Human Genetics and the Faculty of Theology, participated in the implementation project.

A virtual event to launch Leganto, planned for Wednesday 17 February 2021, will include a live demonstration of the system in order to create awareness amongst lecturers on how Leganto can assist with building and managing their course reading lists directly from within SUNLearn. In doing so, lecturers will be able to include diverse content from the Library and elsewhere, such as books, articles, websites, streaming media, digitised content, and course notes, in a single list and add both print and electronic material to the same list while showing the real-time availability of both.

Course reading lists allow for hybrid learning and aim to improve the accessibility of up-to-date resources for ease of use in e-learning. Analytics and student usage reports will help lecturers determine how effective their reading lists are and what materials students engage with most through views, comments and "likes". This new integrated course reading system comes at a time when students need to engage more with their lecturers through the SUNLearn system and illustrates how the Library Service presents its services in ways that align with the core University activities of student success, research productivity and community outreach.

In 2020 the Library supported the University's commitment to ensure all students successfully complete the 2020 academic year by continuing to create or update various module-specific information literacy e-guides and providing extensive module-specific e-learning training opportunities. A total of 43 module-specific e-learning guides in partnership with faculties were offered to undergraduate students. Over 3000 undergraduates students completed assignments or were assessed on their knowledge gained via module-specific e-learning initiatives from the Library in 2020.

An extensive range of module-specific e-learning training events for postgraduates in partnership with faculties was also offered.

**Table 8: Module specific e-learning**

Completed assignments by undergraduate students	3 186
Views of module specific undergraduate e-guides	18 351
Attendance of online training sessions by undergraduate students	709
Views of module specific postgraduate e-guides	6 388

In response to the initial lockdown when all libraries closed, the Library had as its first priority to continue offering services to ensure a virtual thriving environment in which the academic year could be successfully completed. Faculty and branch librarians were able to transition smoothly to a complete virtual service, working from home and being available to clients by means of various channels.

As expected during lockdown, the use of our virtual information service, Ask a Librarian, grew substantially with the number of views of the FAQs increasing with 31.4% from 2019.

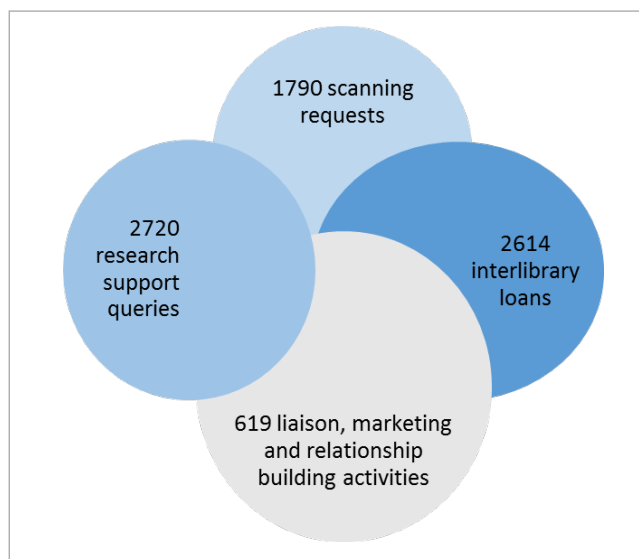
An unprecedented need for e-books, including e-textbooks, was voiced by students and academic staff during lockdown. In response, a Covid-19 library guide of e-resources that publishers were providing was compiled and marketed to find alternative texts during this time. In addition, several electronic books were added to the Library's collection which already had a well-established collection of e-journals, e-books, e-theses, e-reference works, e-newspapers and various digital collections available via the Library website.

In terms of training sessions, a new title for the Library's offering to postgraduate students and researchers, "#SmartResearcher workshops", was introduced in 2020. Immediately after lockdown, staff moved their workshops to the online environment and presented them as webinars by means of Microsoft Teams. Workshops on 28 different topics were presented.

## 4.2 The importance of digital content in libraries cannot be over-emphasised

The popularity of the webinars was almost overwhelming and showed an increase of approximately 54% in terms of students reached compared to 2019. Students and researchers were taking advantage of the fact that they could attend from anywhere and receive the recordings afterwards.

After the Library partially reopened on 6 July 2020, limited personal services were offered to clients, allowing them to visit the library by appointment, borrow and return books, interlibrary loans and requesting articles or chapters in books to be scanned free of charge.

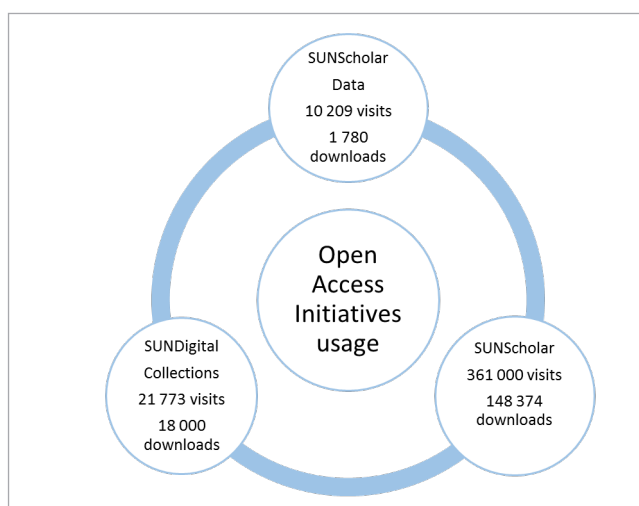


**Figure 10: Library support services**

Digital Scholarship activities and Open Access initiatives which play a crucial role in increasing the visibility and impact of Stellenbosch University research output was largely able to carry on without interruption during lockdown. The growth (2019-2020) and usage (2020) of our repositories and OA initiatives are presented in Table 9 and Figure 11 respectively.

**Table 9: Growth in Repositories**

Growth of Repositories	2019	2020
Full-text items in SUNScholar	23 974	26 961
Records in SUNDigital Collections	13 093	14 060
Datasets in SUNScholarData	90	3 598
Contributions by SU Researchers in SUNJournals	89	131



**Figure 11: Usage of repositories and OA initiatives (2020)**

During lockdown, the Library looked at COVID-related articles by SU researchers to try and get a sense of what research was being done and what impact it was having. From early April to October 2020, we picked up approximately 300 COVID-19-related articles by SU-associated authors on Google Scholar. They were viewed 19 716 times and downloaded 8 012 times in this

period. This led to an impressive 524 citations on Google Scholar. Forty-nine of these articles were uploaded to SUNScholar. One specific contribution stands out. The article “[Parenting in a time of COVID-19](#)” by Cluver et al, appeared in *The Lancet* (395:64). During the monitoring period (April 2020 to October 2020), the article has been cited 140 times, viewed 5 613 times, and downloaded 4 843 times – much higher than the average figures per article (11,9 citations, 386,5 views and 157 downloads).

In terms of making research data from SU available, SUNScholarData, the University’s institutional research data repository, grew significantly in 2020 largely due to the bulk-linkage to supplementary data, produced by SU researchers, associated with the Public Library of Science’s (PLOS) journals. On 16 September 2020, a total of 3 508 PLOS datasets were linked to SUNScholarData. The repository is well used and since inception in 2019, datasets in the repository has been viewed 10209 times and downloaded 1780 times.

The eighth annual Library Research Week took place from 24 to 28 August 2020 with the theme “Go for research gold with your library”. This event was presented online for the first time due to the COVID-19 pandemic and lockdown rules. Eleven workshops were presented and were attended virtually by 802 people in total, reaching a far wider audience than the traditional ‘face-to-face’ event.

### 4.3 School for Data Science and Computational Thinking

The School is a new entity at Stellenbosch University, established to facilitate trans-faculty approaches to teaching and research in data science and computational thinking. It is home to world-class academics as well as junior researchers, PhD students and postdoctoral fellows.

Thanks to its University-wide mandate and multi-disciplinary team of staff and students, the School can advance and connect a myriad of research agendas, ranging from the social impact of next-generation mobile internet connectivity to the development of new ontologies and algorithms in machine intelligence.

In close collaboration with partners in industry, the School will accelerate and expand the University’s societal footprint in data science and computational thinking.

The School develops and manages course content for summer and winter schools and other training initiatives outside of the regular undergraduate and postgraduate curricula.

#### Undergraduate degrees

- BDatSci (Bachelor of Data Science) – planned first intake 2021.  
For more information, contact Prof Paul Mostert: [pjmos@sun.ac.za](mailto:pjmos@sun.ac.za).
- BEng degree in Data Engineering – first intake 2020.  
For more information, contact Mr August Engelbrecht: [august@sun.ac.za](mailto:august@sun.ac.za).
- BCom Mathematical Sciences (focal area: Data Science) – first intake 2019.  
For more information, contact Prof Paul Mostert: [pjmos@sun.ac.za](mailto:pjmos@sun.ac.za).
- Interdisciplinary BSc (Stream: Bioinformatics and Computational Biology) – first intake 2020.  
For more information, contact Prof Hugh Patterton: [hpatterton@sun.ac.za](mailto:hpatterton@sun.ac.za).

#### Honours degrees

- BScHons in Computer Science (focal area: Data Science) – introduced in 2015.
- BComHons Mathematical Statistics (focal area: Data Science) – introduced in 2015.  
For more information, contact Prof Paul Mostert: [pjmos@sun.ac.za](mailto:pjmos@sun.ac.za).
- BScHons in Bioinformatics and Computational Biology (submitted for accreditation by SAQA).  
For more information, contact Prof Hugh Patterton: [hpatterton@sun.ac.za](mailto:hpatterton@sun.ac.za).

#### Postgraduate diploma and degrees

- Postgraduate Diploma in Industrial Engineering (focal area: Data Science) – first intake 2020.  
Contact Dr Christa de Kock: [christadk@sun.ac.za](mailto:christadk@sun.ac.za) for more information.  
Find a brochure [here](#).
- MEng degree in Industrial Engineering (focal area: Data Science) – first intake 2020.  
Contact Dr Christa de Kock: [christadk@sun.ac.za](mailto:christadk@sun.ac.za) for more information.  
Find a brochure [here](#).
- MSc in Bioinformatics and Computational Biology (submitted for accreditation by SAQA).  
For more information, contact Prof Hugh Patterton: [hpatterton@sun.ac.za](mailto:hpatterton@sun.ac.za).
- MSc in Machine Learning and AI (submitted for approval and accreditation by DHET, CHE and SAQA).  
For more information, contact Dr Willie Brink: [wbrink@sun.ac.za](mailto:wbrink@sun.ac.za).
- MSc in Biostatistics.  
For more information, contact Prof Taryn Young: [tyoung@sun.ac.za](mailto:tyoung@sun.ac.za).  
Click [here](#) for more information.
- MSc in Epidemiology.  
For more information, contact Prof Taryn Young: [tyoung@sun.ac.za](mailto:tyoung@sun.ac.za).  
Click [here](#) for more information.

- MSc in Clinical Epidemiology.  
For more information, contact Prof Taryn Young: [tyoung@sun.ac.za](mailto:tyoung@sun.ac.za).  
Click [here](#) for more information.
- PhD in Bioinformatics and Computational Biology (submitted for approval by Stellenbosch University Senate).  
For more information, contact Prof Hugh Patterton: [hpatterton@sun.ac.za](mailto:hpatterton@sun.ac.za).
- PhD in Epidemiology.  
For more information, contact Prof Taryn Young: [tyoung@sun.ac.za](mailto:tyoung@sun.ac.za).
- AUDA – Nepad Centre of Excellence in Science and Innovation

The aim of the collaboration between the African Union Development Agency-NEPAD, the Council for Scientific and Industrial Research (CSIR) in South Africa and Stellenbosch University (SU) is to be the founding organisations of the AUDA-NEPAD Centre of Excellence in Science, Technology and Innovation (AUDA-NEPAD CoE in STI). This initiative is structured to enable other institutions that align with the vision and mission of the AUDA-NEPAD CoE-STI to become associated partner organisations of the Centre and to participate and contribute to STI research, innovation, deployment and commercialisation on the African continent.

## 5. Research for impact

The institutional goals for this theme are to:

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

### 5.1 Research outputs

The official DHET report on 2019 publications indicates that SU produced 1,72 research publication outputs per capita following UKZN with 1,83 units (Table 10). The SU results for weighted research outputs (master; doctoral degrees and publications) was 3,36 (a new record for SU) putting SU in the third place following UKZN and UP (Table 11).

**Table 10: Per capita research publication output (normalized by head count of permanent academic staff) (2019)**

Institution	Headcount of permanently employed academics (a)	Research Publications in Units (1)	Per Capita Research Publications Units (1/a)
UKZN	1249	2286.0566	1.83
SUN	1181	2033.6761	1.72
UJ	1330	2276.3393	1.71
UP	1224	2060.6269	1.68
UCT	1184	1936.0157	1.64

**Table 11: Weighted per capita research output (2019)**

Institution	Headcount of permanently employed academics (a)	Research Publications in Units (1)	Research Masters Graduates in Units (2)	Doctorate Graduates in Units (3)	Total Weighted Research Output (1+2+3)	Weighted Output per capita (1+2+3)/a
UKZN	1249	2286.0566	880	1353	4519.0566	3.62
UP	1224	2060.6269	1167	1197	4424.6269	3.61
SUN	1181	2033.6761	889	1077	3999.6761	3.39
WITS	1204	1918.7522	868	873	3659.7522	3.04
UCT	1184	1936.0157	690	783	3409.0157	2.88

This makes SU one of the most research-productive institutions nationwide.

The 2019 submission round has been extremely challenging, mostly due to new challenges posed by COVID-19 lockdown regulations. DHET requested electronic submissions instead of hard copies a few months after the submission date as well as future submission in electronic copy mostly (the only exception is books where hard copies can still be submitted). They also requested a number of additional fields for all HEI's to report on in future. This required extensive enhancements to the current system that is used for capturing and submission of research publication outputs to DHET.

The Division for Research Development, who manages the annual submission of research output to the DHET for subsidy purposes, is currently in the process of developing a specifications document, together with IT, in order to prepare to go out on tender for a new product that will replace the current online system that has been used for more than 15 years for the capturing of research publications.

The DHET announced in 2018 the addition of creative outputs for subsidy purposes from the end of 2019. Members of the Division for Research Development (DRD) have been involved in institutional, as well as national discussions in this regard and provided extensive input in terms of the clarification of terminology and criteria used in the policy document.

Two rounds of submissions have now been made by the DRD to the DHET for subsidy purposes. This first submission round (2019) was applicable to outputs of the previous three years i.e. creative outputs for the period 2016-2018.

**Table 12: Creative outputs for subsidy purposes (2016 - 2018)**

Institution	Approved outputs
SU	46
UCT	16
UP	12
WITS	7
NMU	6

## 5.2 Innovation

- Dr Rose Cripwell, Microbiology, received an Award of Recognition from Innovus for a patent that was granted in 2020:  
Patent no: ZA2017/08218  
Title: Recombinant yeast and use thereof  
Inventors: Dr Rosemary Cripwell, Prof Emile van Zyl and Dr Shaunita Rose

- Dr Madhurananda Pahar, Engineering, and his team published unique work on Covid-19 cough classification. The work can be found here: Pahar, M., Klopfer, M., Warren, R. and Niesler, T., 2020. COVID-19 Cough Classification using Machine Learning and Global Smartphone Recordings. arXiv preprint arXiv:2012.01926.

- Dr Deon Neveling, Biochemistry, and team (Dr Liesel van Emmenes and Prof Erick Strauss) have started a spin-out company with Stellenbosch University. The company Biotikum (Pty) Ltd, focuses on developing microbial additives for the agricultural industry to promote sustainable farming practices. They have developed a chicken probiotic which we will be commercialised in South Africa soon, however, the aim is to make it available to the global farming community. The farming industry commonly uses antibiotics to prevent bacterial infections, however, such practices are unsustainable due to resistance development. The technology is environmentally friendly, consisting of a multi-strain probiotic to promote gut microbiome maturation, to prevent pathogen overgrowth.

- **Sharksafe barrier**

The ocean is our lifeline - its health is essential to our health. Securing the ocean's well-being will have positive impacts across many global challenges we face today such as poverty, hunger, human health, unemployment, inequality and more. Finding and elevating promising ocean innovations wherever they may be, connecting them and helping them scale is crucial to ensure we protect one of our planet's most valuable assets. In that vein, [UpLink](#) - a digital platform for scaling innovation and driving progress toward the Sustainable Development Goals - is proud to unveil its second cohort of ocean innovators. The [SharkSafe Barrier™](#) – shark deterrence technology that was developed by a SU team – forms part of this cohort. Over the next few months, we will work with the cohort to help them scale their impact through mentoring opportunities, capacity building workshops, exposure and visibility, as well as introductions to experts and potential investors where relevant. [SharkSafe Barriers](#) help promote a friendly coexistence between sharks and humans by installing vertical bio fences that mimic kelp forests and use magnetism to deter shark species.

This technology was listed recently by the World Economic Forum as one of 11 ocean innovations to restore the balance between ocean health and wealth.



**SharkSafe Barrier Installation in St Paul (Reunion)  
Photos taken on the 23 September 2020**

*Figure 12: SharkSafe Barrier Installation*

- **BioCODE**

BioCODE Technologies, was registered as a start-up company end of 2019. The company was the first recipient of UTF funding at Stellenbosch University. BioCODE develops biosignal and biomarker screening solutions for inflammatory disease risk identification. As part of their latest BioBOX project they are packaging their solution as an organizational and occupational wellness screening tool. This not only allows them to give thousands of people access to advanced wellness screening, but also enables them to inform systemic changes and preventive interventions within the environments in which people spend most of their time. For this latest endeavour, they partnered with Axiology Labs.

- **Phagoflux**

Phagoflux envisions to impact the health science, diagnostics and wellness sector by providing leading edge sensor technology for AUTOPHAGY ACTIVITY monitoring. Autophagy (literally 'self-eating'), is an intracellular bulk degradation pathway, indicative of the cell's self-cleaning activity. Similar to a car that requires regular servicing, or a household that requires cleaning, cells need to self-clean, otherwise, toxic material builds up. Importantly, this leads to disease onset such as Alzheimer's disease. Also, Diabetes and cancer are diseases that are characterized by autophagy dysfunction. Measuring autophagy activity is however very challenging. Phagoflux aims to provide solutions for the quantification and monitoring of autophagy to

be applied in the research & pharmaceutical/drug screening industry, the diagnostics (Alzheimer's Disease & Neurodegeneration) and wellness arena. Wellness, since high autophagy favours longevity and healthy cells, thereby counteracting the molecular processes that drive aging. The Phagoflux team, with its founding members Prof Ben Loos, Prof Jannie Hofmeyr, Dr Andre Du Toit, Prof Willie Perold and Prof Pieter Fourie, is an interdisciplinary line-up of experts with a wealth of experience, knowhow and passion in the fields of life science, engineering, computational modelling and the clinic.

- **Ideasmash competition**

The Stellenbosch University LaunchLab in partnership with the Office of the DVC: Research, Innovation and Postgraduate Studies, hosts Stellenbosch University's internal round of the annual intervarsity competition Entrepreneurship development in Higher Education (EDHE) under the name IdeaSmash. In July 2020, the Entrepreneurship Development in Higher Education (EDHE) held its first 2020 segment of the annual intervarsity competition. The competition is aimed at stirring and developing student entrepreneurship in South Africa's public universities. Each university holds an initial internal round from which representatives are chosen to compete in the regional/provincial rounds and finally in the national rounds. Although disrupted by COVID-19 earlier in the year, all the Universities displayed massive resilience and adaptability by pushing through with their respective internal rounds albeit modifications.

Keaton Harris, a Stellenbosch University medical student at the Tygerberg campus is the 2020 winner of SU LaunchLab IdeaSmash competition in the existing business: technology category. His business, [InforMed](#), is an offline mobile healthcare translation tool that focuses on breaking language barriers between healthcare professionals and patients. It uses an adaptive approach that is geared towards obtaining translations from healthcare professionals that not only have a medical degree but can also show fluency in both English and another language.

### 5.3 COVID-19 Contingency Funds for Research Contracts

The University acknowledged the difficulties that researchers are experiencing in terms of continuation of research contracts, due to the impact of the COVID-19 lockdown. In most cases, the funders are lenient and understanding and agree to extend the research contract periods, however no additional funds are made available for this extended period. A large number of our research contracts involve research contract appointments and these personnel's employment are directly dependent on the funding from research contracts.

In April 2020 the Division for Research Development conducted an impact study to determine the potential impact of a short-term lockdown (3-6 months) vs a longer-term lockdown (12 months) on the research portfolio of SU. More than 300 research projects were recorded and from this information SU's contingency fund prepared for assisting researchers, where in serious need for funds. A co-contribution from the direct environment (department and faculty) was required.

In 2020 COVID-19 contingency fund applications for 37 research contracts were submitted to the value of R 8 006 450.10, of which R 7 975 096.10 was awarded.

### 5.4 COVID-19 related research

Our researchers, both established and emerging, continue to make a valuable contribution in addressing the challenges that our country faces due to COVID-19. Link: [Corporate-Communication-03.pdf \(sun.ac.za\)](#) for a report on COVID-19-related research projects at SU and selected opinion pieces by our academics that was compiled April 2020. Our register of COVID-19 related research projects have since been updated to include more than 100 projects, which will be reported on in a special COVID-19 edition of the annual DRD publication Research at Stellenbosch University, to be released mid-2021.

The DVC: Research, Innovation and Postgraduate Studies, Prof Eugene Cloete, earmarked part of his 2020 discretionary funds to stimulate urgent research and innovation in this area. The intention was that this would also serve as seed funding or co-funding for larger research projects unfolding in the months ahead. A call for research proposals was issued to all faculties, and 15 projects were funded. TOTAL amount awarded: R1 252 066.

Table 13: List of the 15 COVID-19 related research projects

Title	Dept/Division	Project Title
Prof J Bantjes	Psychology	Mobile-help: e-interventions to provide psychological support to students during and after the COVID-19 crisis
Prof R English	Health Systems and Public Health, Global Health	Promoting adherence to non-pharmacological public health interventions in communities to combat COVID-19: rapidly co-creating for change
Prof J Fourie	Economics, History	A century later: lessons from the 1918 Spanish flu in South Africa
Dr MM Fourie	Historical Trauma and Transformation	COVID-19 as natural intervention? Perceptions of structural racism and historical responsibility under conditions of crisis
Prof SD Hanekom	Physiotherapy	Outcome of COVID-19 survivors
Prof J Jansen	Education Policy Studies	The impact of the pandemic lockdown on the academic work of women academics
Prof W Khan	Microbiology	Surveillance of SARS-CoV-2 in environmental samples and surface run-off in informal settlement communities
Prof T Madonsela	Law	Social Justice and Coronavirus COVID-19 Policy and Relief Monitoring Alliance (SCOPRA)
Dr LY Ned	Centre for Rehabilitation Studies, Global Health	COVID-19 pandemic and disability considerations: experiences of disabled people and disabled people's organizations
Prof PS Nyasulu	Global Health	The clinical evolution, management and outcomes of COVID-19 patients admitted at Tygerberg Hospital, Cape Town, South Africa
Prof M Rautenbach	Biochemistry	Peptide-derived antimicrobial/antiviral materials to curb pathogen transfer
Dr G Spies	Psychiatry	Collaborative Outcomes study on Health and Functioning during Infection Times (COH-FIT: COVID-19)
Prof G Theron	BioMedical Sciences	The frequency of COVID-19 and TB in newly diagnosed HIV patients initiating antiretroviral therapy
Prof SJ van der Spuy	Mechanical and Mechatronic Engineering	Development of a ventilator solution for support of COVID-19 patients
Dr MM van der Zalm	Paediatrics and child health	COVID-19: clinical presentation, immunology, respiratory morbidity and transmission dynamics in South African children-COVID-KIDS

## 5.5 #ForwardwithSUResearchers Communication Campaign

Due to the COVID-19 pandemic, the latest edition of Stellenbosch University (SU)'s multi-award winning publication Research at Stellenbosch University [https://](https://console.virtualpaper.com/stellenbosch-university/research19/)

[console.virtualpaper.com/stellenbosch-university/research19/](https://console.virtualpaper.com/stellenbosch-university/research19/) was only made available in electronic format. This annual publication by the Division for Research Development (DRD) at SU highlights some insightful research topics with a special focus on Research for Impact, one of SU's core strategic themes as part of its Vision 2040 and Strategic Framework 2019-2024.



Figure 13: #ForwardwithSUResearchers



As a result, the #ForwardwithSUResearchers communication campaign was launched from November to December. The objective of the campaign was to create continuous visibility for the publication through profiling some of the researchers whose work was featured in the latest edition of R@SU. The campaign allowed the public to get to know the person behind the research, which in turn makes the researcher's profile more visible and highlights their work.

The articles were published on the SU website and shared across several social media platforms namely the Research at Stellenbosch University Facebook page, SU Facebook page, SU twitter page and other electronic media platforms such as news@StellenboschUni. The Research at Stellenbosch University Facebook page is a useful platform for sustained visibility of SU's research activities.

## 5.6 SU Facebook page

The Facebook Page "Research at Stellenbosch University" was created in July 2019. To date, we have 1219 people who have liked our page.

- The highest number of people who engaged with our Page on any day, was 11 867 on the 12th of November 2020. Engagement includes any click or story created by unique users. On this day we posted Prof Jason Bantjes of the Institute for Life Course Health Research in the Department of Global Health at Stellenbosch University's profile as part of the #ForwardwithSUResearchers communication campaign.
- Our highest reach in 2020 is 6 217 (September 2020). This refers to the number of people who had any content from our Page or about our Page enter their screen. This includes posts, check-ins, ads, social information from people who interact with our Page and more. This is organic reach; we have not used paid boosting to reach more people.
- With regards to posts, the highest number of people who had our Page's post enter their screen was 6 195. Posts include statuses, photos, links, videos and more.
- When we have posted videos by researchers, the total number of times the videos were viewed for more than 3 seconds was 1219 times.

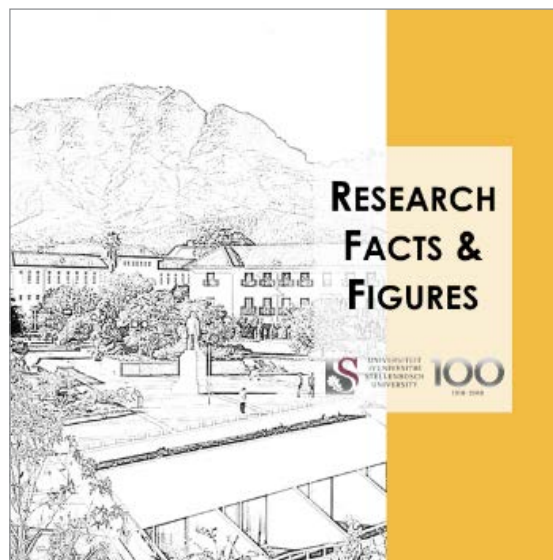


Figure 14: Research Facts and Figures

The Division for Research Development has redesigned its Research Facts and Figures brochure. The brochure provides an overview about the research effort at SU, ranging from information about rankings, postdoctoral fellowships, international funding and research publication data. Link: <https://online.fliphtml5.com/cvapr/ihia/>

## 5.7 Researcher Persona on My.SUN

The My.SUN on the SU homepage hosts "Persona's" for staff, undergraduate and postgraduate students, as well as researchers. The aim of the Researcher Persona is to provide a one-stop platform for researchers to find links to research-related information.

The links found on the persona cover important research-related information from different support divisions, including the Division for Research Development (DRD), the Postgraduate Office, Stellenbosch University International (SUI), Library and Information Services (LIS) and Information Technology (IT). The DRD coordinates this persona. The information has been divided into 5 main categories, namely: Skills Development, Research Information, Systems and Tools, Support Services and Support Divisions. The platform is dynamic and is updated with links to relevant information for researchers as the need arises, for example, there is now a COVID-19 category, which contains links to all the relevant information for researchers about the SU response to COVID-19. Link: <https://midtier.sun.ac.za/html-navbar/home.html>

## 5.8 Research Information Package

The DRD has developed a research-related information package, which is sent to Deans, Vice-deans, Research and heads of department on an annual basis.

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

The DRD is also working with the Division for Information Governance (IG) by providing the research-related data used to populate the PowerBI™ warehouse. In an effort to enhance the value of the information package and create synergy between the two offerings, the 2021 version of the information package will incorporate a selection of research-related graphs available on the PowerBI™ warehouse.

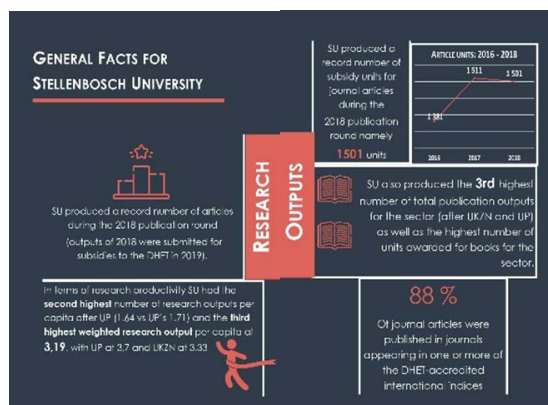


Figure 15: DRD Research-related Information Package

## 5.9 DRD contributes to TReMOR in Research Management

The Division for Research Development (DRD) continues to contribute to the professionalisation of Research Managers and Administrators in Southern Africa and beyond through a recently acquired project entitled: TReMOR (Toolkit for Early-career Research Managers Online Resources).

The project forms part of the International Research Management Staff Development Programme (IRMSDP), a collaboration between the African Academy of Sciences (AAS) and the Association of Research Managers and Administrators (ARMA) UK. The programme is focusing

on knowledge sharing and the development of tools and resources, created by teams consisting of research management professionals from across Africa and the UK.

The TREMOR project brings together a team from Namibia, South Africa, Botswana and the UK, with diverse experiences across a vast range of research management (RM) specialist areas.

The aim of the collaborative project is to develop practical tools and resources in RM for early-career Research Managers (ECRM) with a focus on Grant Management (GM), both pre-and post-award, as essential functions within a Research Office. This will increase knowledge and capacity in this function, with the aim of also strengthening the cultural understanding and collaborations between the UK and African Universities.

Maryke Hunter-Hüsselmann, Director: Research Information and Strategy at DRD, is one of 57 research managers, comprising six teams, who have been awarded this international grant through the IRMSDP. She is very excited about the opportunities it offers for staff development and international networking within the DRD, but also for the development of professional Research Managers across the Southern African Development Community (SADC).

## 6. Employer of choice

The institutional goals for this theme are to:

- Develop a comprehensive people strategy for SU that embraces diversity and equity, leverages unique talents and strengths, promotes life-long learning, and celebrates achievements.
- Enhance the well-being of our people by creating and promoting an enabling, inclusive, equitable, healthy, and safe working and learning environment that encourages our diverse staff to maximise their productivity, and where they feel valued and contribute to SU's excellence.
- Improve human resource processes through the application of technology and digitalisation.
- Develop and execute a game-changing talent acquisition and talent management plan, which includes equitable remuneration, the management and rewarding of performance, the identification of competencies and the development of talent and leadership throughout the career cycle of each SU employee.
- Support the development of SU as a learning organisation that is responsive to both individual and organisational needs.

### 6.1 Awards and Prizes

#### 6.1.1 FMHS lecturer chosen as vice-president of SAAHE



**Dr Elize Archer** (photo left) has been elected as the vice-president of the Council of the South African Association of Health Educationalists (SAAHE).

The SAAHE is the association of health sciences educators from Southern Africa and its members are from various universities, non-governmental organisations, government, and private sector higher education institutions, etc. The focus of SAAHE is to improve the quality of teaching and learning in health sciences education, and to enhance the delivery of high-quality, affordable, and sustainable healthcare education. SAAHE was established in 2004 and currently

has approximately 350 active members across all regions. There are five regional branches in South Africa, each with two representatives, who sit on the SAAHE Council, as well as a newly formed branch in Zimbabwe.

#### 6.1.2 Kruger Trust honours Dr Elbie Adendorff



**Dr Elbie Adendorff** (photo left), a senior lecturer in Language Acquisition in the Afrikaans and Dutch Department at Stellenbosch University (SU), is the recipient of the very first award from the Kruger Trust, specifically in the category Scientific

Practice in Afrikaans.

This honour is bestowed annually on a person or institution playing an essential role in attaining the goals of the Trust. Every year a different category is selected for possible funding. The Kruger Trust is a trust body which aims to protect and promote the Afrikaans language and Afrikaans culture without giving preference to any race, gender, or religion.

#### 6.1.3 PC Hooft prize



**Dr Alfred Schaffer** (photo left), a lecturer at Stellenbosch University (SU), recently became the youngest recipient of the PC Hooft prize, the most prestigious Dutch literary award, when he was announced the 2021 laureate.

Schaffer, who is known as one of the most talented Dutch poets of his generation, received the prize for his poetry oeuvre.

The prize, which is named after the 17th century Dutch poet Pieter Corneliszoon Hooft, is awarded alternately each year to a Dutch writer of narrative prose, contemplative prose and poetry. The PC Hooft Prize is worth 60,000 euros and will be awarded in May 2021.

Schaffer, who is known as one of the most talented Dutch poets of his generation, received the prize for his poetry oeuvre.

The prize, which is named after the 17th century Dutch poet Pieter Corneliszoon Hooft, is awarded alternately each year to a Dutch writer of narrative prose, contemplative prose and poetry. The PC Hooft Prize is worth 60,000 euros and will be awarded in May 2021.

“The advisory committee, consisting of academics of various South Africa universities, was unanimous in its recommendation that the award be made to Dr Adendorff,” explained Prof Rufus Gouws, convener of the advisory committee and a professor in Lexicography and Afrikaans Linguistics at SU.

#### 6.1.4 Highly cited researchers



Stellenbosch University (SU) once again boasts two eminent academics who have been named Highly Cited Researchers, according to the Highly Cited Researchers 2020 list from the Web of Science Group, released recently. **Professors Oonsie Biggs** (Cross-Field) (photo left) and **Dave Richardson** (Environment and Ecology) (photo left) are among the world's most-cited researchers. Both achieved the same feat in 2019.



The highly anticipated list identifies scientists and social scientists who produced multiple papers ranking in the top 1% by citations for their field and year of publication, demonstrating significant research influence among their peers. This year's list contains about 3 900 Highly Cited Researchers in 21 fields of the sciences and social sciences and about 2 500 Highly Cited Researchers identified as having exceptional performance across several fields.

#### 6.1.5 Neville Alexander Prestige Award



**Prof Michael le Cordeur** (photo left) from Stellenbosch University (SU) was recently honoured for his lifelong and outstanding service to the Afrikaans language community.

The Afrikaans Language Museum and Monument (ATM), in association with the Stigting vir Bemagtiging deur Afrikaans (Foundation for Empowerment through Afrikaans, SBA), awarded Le Cordeur with the 2020 Neville Alexander Prestige Award for the promotion of Afrikaans.

#### 6.1.6 South African Chemical Institute (SACI) Awards



Three chemists from Stellenbosch University have been recognised by the South African Chemical Institute (SACI) for their contribution to chemistry research, teaching and learning in South Africa.



Prof Selwyn Mapolie (photo top left) was selected as a SACI Fellow, the highest category of membership of the Institute, in recognition of his sustained contribution to the chemical community in South Africa. This honour is only bestowed on a select group of members that have demonstrated excellence and leadership in the areas of the profession, education and management of chemistry and volunteer service.



SACI also recognised Dr Margaret Blackie's (photo middle left) outstanding contribution to chemical education over the past five years. She is the recipient of the Institute's Chemical Education Medal, while PhD-student Jean Lombard (photo bottom left) received the SACI Postgraduate award.

Prof Peter Mallon, head of the Chemistry department, said the awards are well deserved national recognition for the researchers' contribution to research and education in chemistry in South Africa. Prof Mallon is also SACI president.

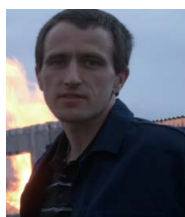
#### 6.1.7 British Ecological Society Marsh Award



The British Ecological Society's [Marsh award for climate change research](#) has been awarded to Professor Wendy Foden (photo left), a world-leading researcher in climate change and vulnerability assessments of threatened species.

According to a media release issued by the British Ecological Society (BES), Prof Foden is recognised for the global reach of her work with the International Union for the Conservation of Nature (IUCN) and the Red List of Threatened Species, as well as for her interest in translating science for practical conservation use, and in fostering conservation leadership. The award, provided by the Marsh Christian Trust and administered by the British Ecological Society, will be handed over in 2021.

## 6.1.8 National Science and Technology Forum (NSTF)/ South32Awards



Three researchers from Stellenbosch University (SU) walked away with top honours at the annual [National Science and Technology Forum \(NSTF\)/ South32Awards](#). Dr Richard Walls (photo top left) and Profs Christine Lochner (photo middle left) and Conrad Matthee (photo bottom left) were announced winners in their respective categories during a live-streamed gala event on Thursday, 30 July 2020.



The prestigious NSTF/South32 Awards recognise, celebrate and reward the outstanding contributions of individuals, teams and organisations to science, engineering and technology in South Africa.



Walls (Fire Engineering Research Unit at SU or FireSUN) received the TW Kambule-NSTF Award in the Emerging Researcher Category for establishing FireSUN, a dynamic research group pursuing methods to improve informal settlement fire safety as well as structural fire design – both crucial to ensuring safety in our communities.

Lochner (South African Medical Research Council Unit on Risk and Resilience in Mental Disorders and the Department of Psychiatry) was honoured with a TW Kambule-NSTF Award in the Researcher Category for raising awareness about obsessive-compulsive disorder, a common and debilitating condition that contributes to individual and societal suffering and massive economic costs.

The NSTF-Lewis Foundation Green Economy Award went to Matthee (Department of Botany and Zoology) and his team for inventing the first eco-friendly shark specific barrier [SharkSafe™](#), which can protect beachgoers without harming the marine life. This innovative novel technology solves international problems associated with shark attacks including loss of lives, loss of income for local businesses, loss of recreational opportunities and loss of biodiversity in marine ecosystems. SharkSafe™ contributes to the preservation of a healthy ocean ecosystem while it also promotes sustainable use of ocean resources for economic growth and in turn will improve livelihoods of local communities.

## 6.1.9 #InspiringFiftySA2020

Dr Palesa Natasha Mothapo, Head: Postdoctoral Research Support at SU's Division for Research Development and Ms Caroline Pule, PhD candidate at the Division of Molecular Biology and Human Genetics, were announced as winners at the third edition of Inspiring Fifty South Africa, a non-profit initiative that benchmarks and awards the 50 most inspiring women in STEM (science, technology, engineering and maths).



Figure 16: I am an Inspiring 50 winners

## 6.1.10 Top 20 Postdoctoral Fellows Awards for Exceptional Performance

The contribution of postdoctoral fellows to academic performance at the university is significant. Recognising this, the DVC: Research and Innovation, Prof Eugene Cloete launched the Postdoc Fellow Award in 2017 to honour the top performing postdoctoral fellows at the university. Every year it has become increasingly difficult to award these. Fellows are measured on the academic track record in terms of publication numbers, conference presentations and other outputs; their grants and funds raising; academic service with regard to teaching and student supervision; peer reviewing in the academic community; and community service.

The contribution of postdoctoral fellows to academic performance at the university is significant, and postdocs support students and are the muscle behind major research. The fellows honoured in 2020 had published upwards of 10 manuscripts, formed parts of collaborative research teams, and are active members in the university and other academic societies, raised over R15 million in research grants from funding agencies, government, industry, NGOs, and foundations; and received numerous prestigious awards in recognition of their research activities.

Each fellow received a certificate of recognition and a once off sum of R10 000 recognising their exceptional effort. The following fellows were honoured at the Virtual Postdoctoral Research Summit in October 2020.

**Table 14: List of Top 20 Postdoctoral Fellows Awardees**

Awardees	Host	Department
Dr Bertrand Ayuk	Prof XG Mbhenyane	Human Nutrition
Dr James Baxter-Gilbert	Prof John Measey	Botany and Zoology
Dr Rachelle Bester	Prof HJ Maree	Genetics
Dr Charl Deacon	Prof Mike Samways	Conservation Ecology and Entomology
Dr Maaïke Eken	Prof Wayne Derman	Institute of Sports and Exercise Medicine
Dr Wynand Goosen	Prof Michele Miller	Division of Molecular Biology and Human Genetics
Dr Tess Gridley	Prof Conrad Matthee	Botany and Zoology
Dr Dominique Leibbrandt	Prof Quinette Louw	Physiotherapy
Dr Tando Maduna	Prof Ben Loos	Physiological Sciences
Dr Marthie Momberg	Prof Dion Forster	Systematic Theology and Ecclesiology
Dr Anthony Ndiripo	Prof Harald Pasch	Chemistry and Polymer Science
Dr Henry Nkabyo	Prof Klaus Koch/Dr Robert Luckay	Chemistry
Dr Marietjie Pauw-Conradie	Prof Stephanus Muller	Africa Open Institute for Music, Research and Innovation
Dr Patricia Swart	Prof Sian Hemmings	Psychiatry
Dr Kim Trollope	Prof Johann Görgens	Process engineering
Dr Gustav van Niekerk	Prof Anna-Mart Engelbrecht	Physiological Sciences
Dr Julia van Schalkwyk	Prof Michael Samways	Conservation Ecology and Entomology
Dr Anton Du Preez van Staden	Prof Carine Smith	Physiological Sciences
Dr Rouxjeane Venter	Prof Grant Theron	Division of Molecular Biology and Human Genetics
Dr Andrew Watson	Prof J Miller	Earth Sciences



Prof Cloete hosted the awardees at a Luncheon held at the Lanzerac Hotel and Spa on 17 November 2020 to present them with their awards.

## 6.2 Fellowships / Grants

### 6.2.1 L'Oréal-UNESCO For Women in Science South African National Young Talents Programme



Dr Charissa Naidoo (photo left) is one of six South African researchers who were recently awarded a grant from the L'Oréal-UNESCO For Women in Science South African National Young Talents Programme.

Naidoo, a postdoctoral researcher in the Division of Molecular Biology and Human Genetics at Stellenbosch University's Faculty of Medicine and Health Sciences, is also part of the Clinical Mycobacteriology and Epidemiology (CLIME) Group where she is studying the gut microbiome of patients with tuberculosis (TB). She hopes the research will lead to innovative diagnosis tools and more accessible treatments.

### 6.2.2 Early Career Academic Development (ECAD) programme

The early career academic development (ECAD) programme is a structured support programme for early-career academics, which is managed by the Division for Research Development (DRD) with the support of funding from the Department of Higher Education and Training (DHET) University Capacity Development Grant (UCDG). The programme includes a mentoring component, which has matched 140 early career academic staff members with experienced mentors in 2020. This represents a significant growth in the numbers of early career academics supported since the start of the programme. The registered participants in the programme were further supported through career acceleration awards, and access to a significant number of capacity and skills development opportunities offered internally and externally to the University.

### 6.2.3 Postdoctoral Research Fellowship programme

Stellenbosch University was proud to host 297 postdoctoral research fellows and 53 Consolidocs in 2020. 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, Stellenbosch University is invested in

developing young researchers such as these who drive impactful research in South Africa, the continent, and the rest of the world. Prof Cloete values the postdocs and has ambitious plans to grow the postdoc cohort to 500 within the next two years, in line with the university strategy and vision to have global impact.

Postdoctoral research fellows are the research muscle of academia. In this career development phase of their academic lives, postdocs are engaging in independent research under the mentorship of a senior researcher here at Stellenbosch University. In addition, they support research activities by assisting with graduate student supervision, teaching, applying for research grants and most importantly, publications.

In 2020, we were challenged by the COVID-2019 pandemic, which affected research activities significantly and required the Postdoc Research Support Office to respond in a dynamic way to deal with the needs of postdocs at this time. With the support of the Senior Director: Research and Innovation, we were able to expand our support functions for postdocs. We assisted postdocs with reintegration to work after the first hard lockdown; we assisted postdocs in managing relationships with their funders and adapting some of their research plans to account for the disruption; we assisted postdocs with mental wellness support and help with access to medical care, visas and other administrative matters that arose as a result of the COVID-19 pandemic. Deans, HoDs and Hosts also assisted our office by cooperating with us and helping us to provide the needed support for postdocs. As lockdown and restrictions continue in 2021, we will adapt the support and respond to needs in a dynamic manner to ensure continuing research and postdoc success.

#### Postdocs in 2020

- Registered postdocs and Consolidocs  
In 2020 we registered a total of 350 postdocs and Consolidocs. The faculty of Engineering and AgriSciences funded 32 Consolidocs who did not receive awards in the first round, resulting in a total 53 Consolidocs.
- Demographics of postdocs**  
**Gender and nationality**  
SU currently has 350 postdocs (including 53 Consolidocs) currently registered:  
56.6% (198) South African, 23% (81) Other African countries, 20% (70) from international countries. SU have an equal distribution of male and females (0.3% (1) non-binary).

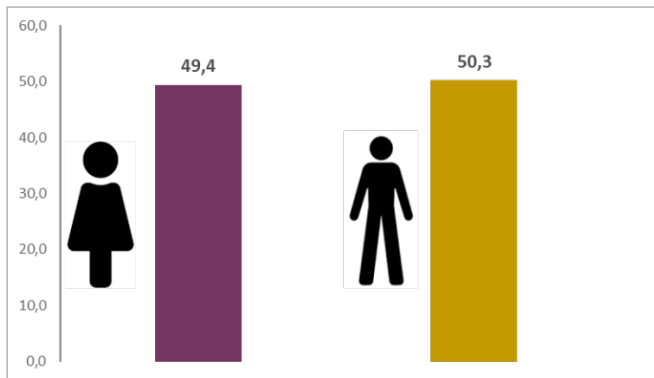


Figure 17: Gender distribution of postdocs at SU

- Gender and transformation, SA postdocs  
White South Africans predominate the postdoc body (193 out of 350), and white females make up a large part of the numbers. We have much work to do in order to reach some of the transformation targets.

Table 15: Distribution of South African postdocs by Gender and Race

Race group	Female	Male
Black	7.2%	5.9%
Coloured	4.5%	3.9%
White	45.8%	30.7%
Indian	1.9%	0

- Distribution by faculty  
The majority of postdocs in 2020 were in the faculty of Science (109, 31.1%), followed by Medicine and Health Science (65, 18.6%), Engineering (52, 14.9%), Arts and social sciences (50, 14.3%), and AgriSciences (44, 12.6%). We have to aim to increase the number of postdocs in the faculties of Law and Theology.

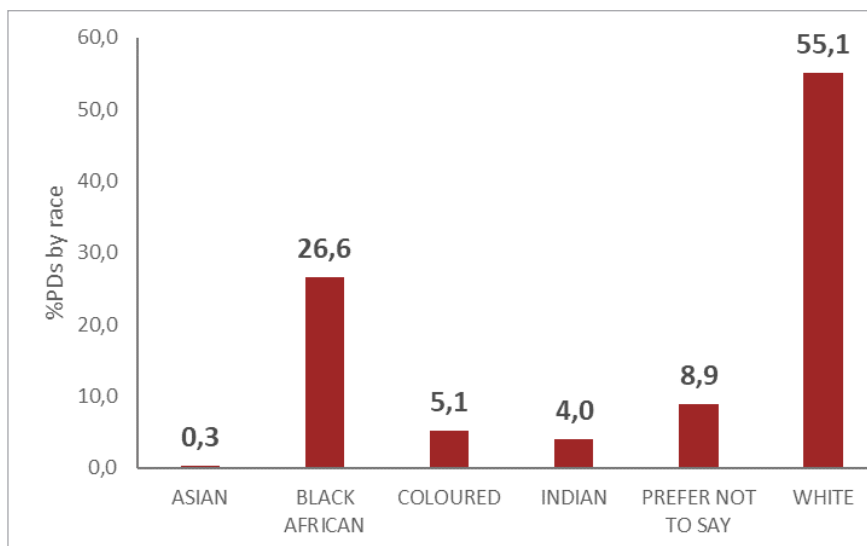


Figure 18: Race distribution of South African postdocs

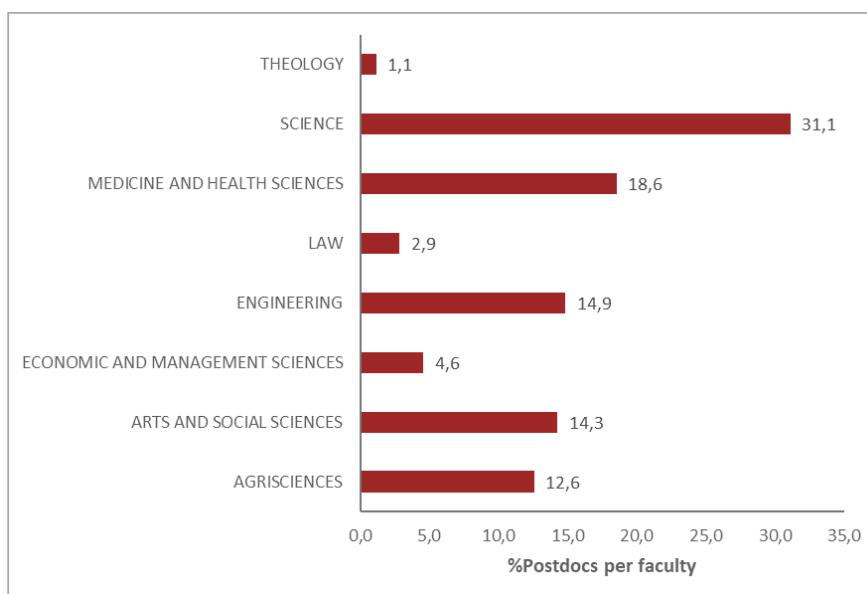


Figure 19: Distribution by faculty



- Financial Matters

Total funding for postdocs in 2020 amounted to R 74 513 306,9, with postdoc bursaries ranging from R200 000 to R890 000 per annum. Funders included the university through the subcommittees,

departments and DVC's strategic funds, the NRF (majority funder of postdocs), external foundation – Mellon foundation and Claude Leon foundation, and industry funders - HortGro, Sasol, SA Sugarcane Research Institute (SASRI), Volkswagen foundation.

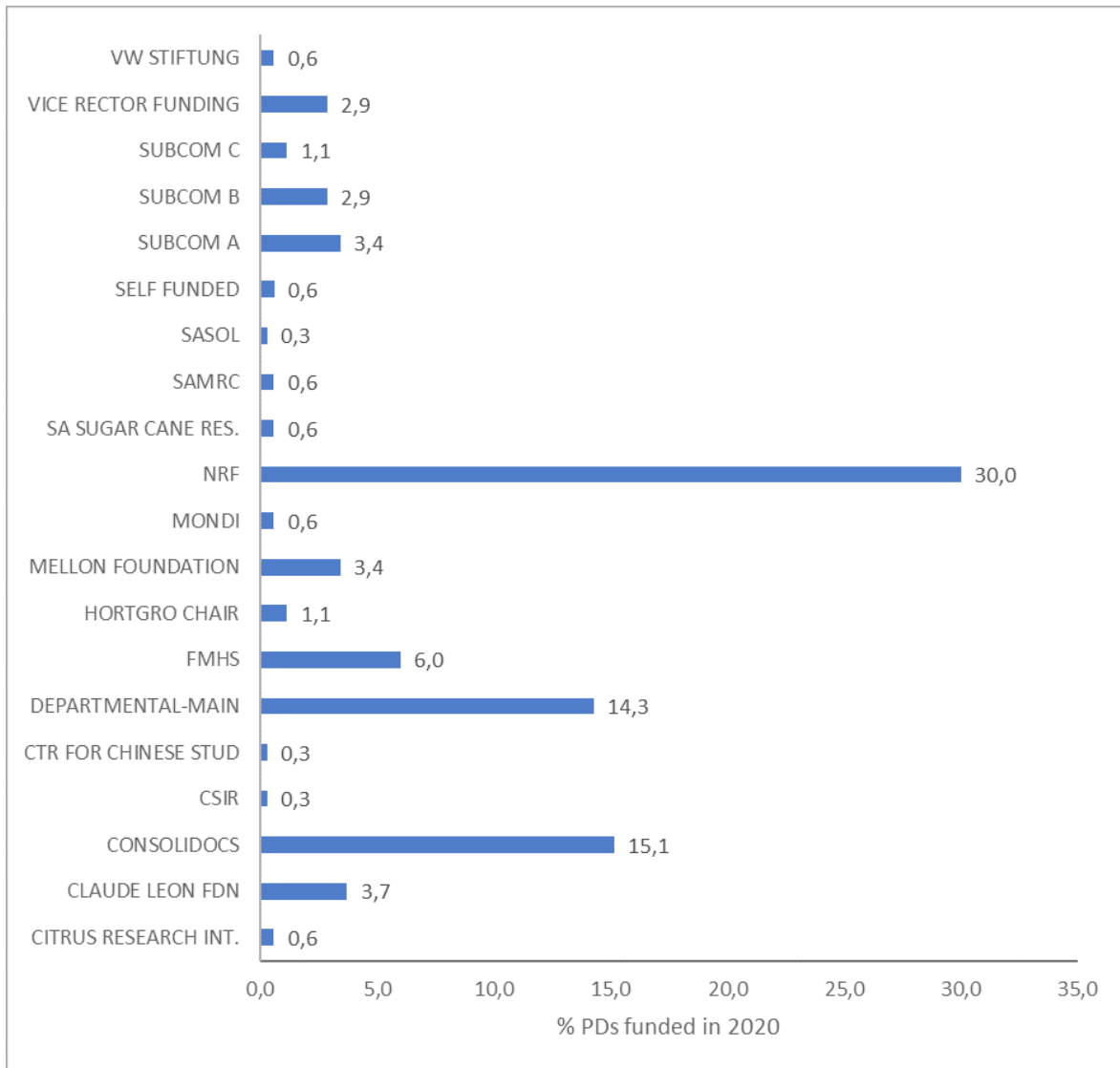


Figure 20: Funder profile for postdocs in 2020

### 6.3 Growth in numbers of Consolidocs

The Consolidoc programme is a special postdoctoral programme funded by the DVC: Research, Innovation and Postgraduate Studies, Prof Eugene Cloete. The first Consolidocs were funded in 2013 on an ad hoc basis. The programme was formally launched in 2014 and aims at giving new doctoral graduates across all fields of research a kick-start to their research publishing careers. These fellowships are intended for doctoral students as a bridge between graduating and obtaining a position either as a longer-term postdoctoral fellow or as a full-time employee.

The program has become highly popular and competitive. In 2020, we registered 53 Consolidocs, 21 which were funded by the DVC and Subcommittee funding and 32 who were funded by the faculties of Engineering and AgriSciences. On average, Consolidocs publish between 4-6 journal articles in 6 months.

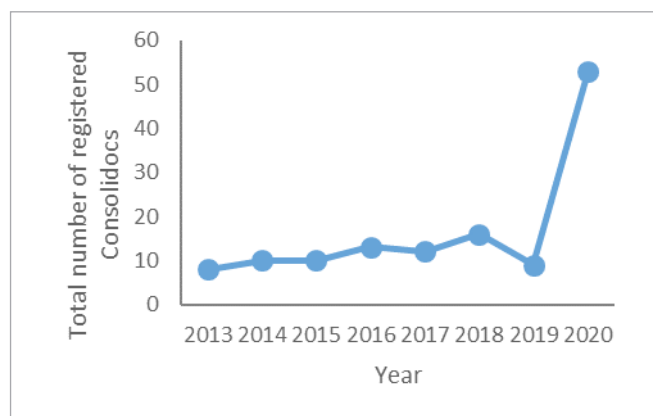


Figure 21: Growth in the number of Consolidocs

### 6.4 Notable awards, recognitions, and special achievements 2020

Despite the challenges of the COVID-19, postdoc showed strong resilience and determination. Many attended virtual courses, workshops and webinars; taught online and engaged with local and international stakeholders. Below we highlight a few of the notable achievements of our postdocs in 2020.

#### 6.4.1 Special achievements

- Dr Tando Maduna, Department of Physiology with host Prof. Ben Loos, was co-creator in the Rupert Museum's Science meets Art Exhibition which was launched on 31 October 2020. <https://rupertmuseum.org/exhibition/science-meets-art/>. The project exhibition focused on addressing stigma around mental illness. The team used science micrographs of damaged brain cells which were transformed into art pieces by various artists to showcase mental illness

in a powerful manner. Molecular imaging techniques are major tools in the biomedical research field, and are strongly utilised by the collaborator, providing colourful images of internal biological processes to make visible what cannot be seen. Dr Maduna further translated some of the descriptions and scientific terminology into isiXhosa. The images of cell structures, fluorescence images, artworks and crafts are on display until 21 February 2021.

- Dr Brigitte Glanzmann, Biomedical Sciences department, and her team performed the first whole genome sequence on African Soil. It is unique because this is the first time that samples were processed from start to finish. The work is published in Nature Scientific Reports (<https://doi.org/10.1038/s41598-020-79794-x>)
- Dr Sanita van Wyk, Faculty of Law (International Environmental Law), was competitively selected from a large group of international applicants to join the Women Leaders for Planetary Health (WLPH) initiative in the capacity of 'Mentee in the WLPH Programme' and 'Participant in the WLPH Digital Academy'. WLPH is housed at the Potsdam Institute for Advanced Sustainability Studies (IASS), which is situated in Potsdam, Germany.

WLPH has a mission "to bridge the inequality gap that still exists related to women leadership roles, while demonstrating the benefits of gender equality for sound environmental and public health solutions." More information on WLPH can be found here: <https://www.womenleadersforplanetaryhealth.org>.

#### 6.4.2 Awards

- Dr Somananda Sanyal, Faculty of Science, was awarded a CrystEngComm Poster Prize at ISXB4 - 4th International Symposium on Halogen Bonding Virtual Conference in November 2020.
- Dr Brigitte Rennie-Salonen, Africa Open Institute for Music, Research and Innovation, received a STIAS residential fellowship from 23 November 2020 to 4 Desember 2020 to study occupational health and well-being in the performing arts in South Africa.

This initiative aims to develop a national Performing Arts Health network led by Stellenbosch University and the University of Pretoria for interdisciplinary scholarly activity in the field of performing arts health in South Africa. The project will boost interdisciplinary research and interaction between professionals and researchers in the health sciences, sports sciences, and the performing arts (music, drama, and dance).

Dr Rennie-Salonen is also the co-author of an article that won the 2020 International Society of Bassists` Research Competition. Reference to the article: Levenderis, F. & Rennie-Salonen, B. 2021 (in press). Musculoskeletal symptoms of double bassists: a literature synthesis. Online Journal of Bass Research.

- Dr Ruth Kansky, received a senior fellowship for 3 years with the Volkswagen Foundation in Dec 2020, under the call Livelihoods and processes of structural change in sub-Saharan Africa. This will allow Dr Kansky to continue her research in Namibia strategies and processes to improve and innovate wildlife governance systems to promote human-wildlife coexistence in landscapes that are the home of both people and wildlife.

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

SU continues to support the NRF rating system in principle – not only as a qualitative, peer-reviewed measure of excellence, but also as a gateway to certain competitive NRF funding programmes. The NRF rating programme is managed by the DRD, who also follows a thorough internal review process to support researchers

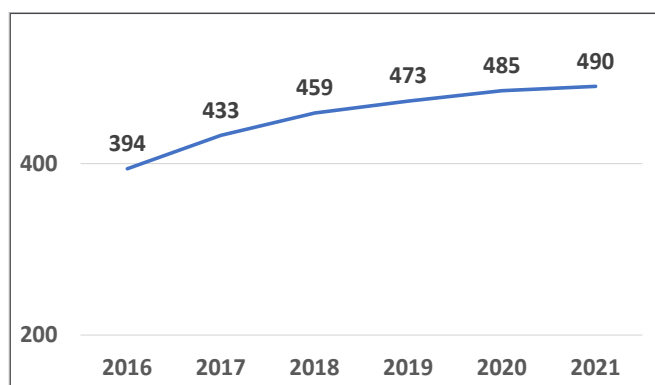


Figure 22: Growth in rated researchers at SU 2016 - 2021

in the preparation of their rating applications. This includes the assignment of a mentor to each applicant in order to assist with the completion of applications.

The total number of rated researchers at SU for 2021 is approximately 490 (as at 28 January 2021; there are outcomes that are still pending).

### 6.6 Number of NRF Rated researchers at SU 2016 – 2021

For the application closing date 01 March 2021, approximately 83 applications will be submitted to the NRF for review. Of the 83 applications that will be submitted, 50 are applications for a re-evaluation of a rating and 33 are new applications.

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) is possibly due to the significant changes and uncertainty around the Incentive Funding scheme by the NRF. Judging by the applications submitted in 2020 and those that will be submitted in 2021, the trend seems to be consistent with that before 2019.

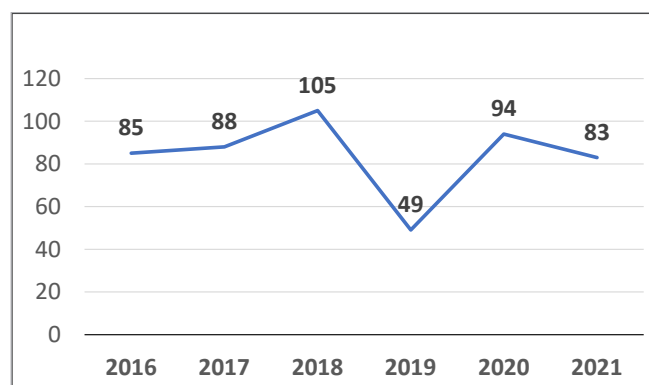


Figure 23: Number of NRF rating applications submitted for review 2016 – 2021

## 6.7 Future professors programme

SU gained another three entrants into the prestigious national Future Professors Programme (FPP) through its second call for applications issued in July 2020. The FPP is a competitive and selective programme of the Department of Higher Education and Training (DHET) to prepare promising mid-career academics to become a new cohort of South African professors across disciplines. Drs Rehana Malgas-Enus (Chemistry), Uhuru Phalafala (English) and Tongai Maponga (Medical Virology) were selected to join the programme in 2020, joining Drs Margaret Tadie (Process Engineering) and Lungi Nkonki (Health Systems & Public Health), who were selected in the first call, bringing the total number of SU participants to five.

## 6.8 SARChI Chair renewals

We are very happy to report that 5 SARChI Chairs that were up for renewal have been renewed and two of the Chairs (Prof O Biggs and A Hesselning) were upgraded to Tier I chairs.

## 6.9 Annual Research Output Awards honours SU academics

The 2020 Research Output Awards were made in January 2021 to SU researchers who made the biggest contribution to accredited publications (based on audited publication statistics of the 2018-output year) and doctoral graduates (December 2019/March 2020 graduations). For the purpose of the recognition with regards to accredited publications, two categories were taken into account, namely (i) SU researchers making the biggest contributions in terms of the publication subsidy units (PUs) of the Department of Higher Education and Training (DHET) (cut-off this round was 4.45) and (ii) SU researchers who produced the highest number of accredited research publications in collaboration with their national and international research partners and students (cut-off this round was 14). In this round, researchers who delivered 3 or more doctorates for the period mentioned were also acknowledged. A virtual award ceremony was hosted on 5th February 2021.

Table 16. List of renewed SARChI Chairs

Incumbent	Host Department	Host Faculty	Chair Title
Prof Oonsie Biggs	School for Public Leadership	Economic and Management Sciences	Social-Ecological Systems and Resilience
Prof Dirk deVilliers	Electrical and Electronic Engineering	Engineering	Electromagnetic Systems and EMI Mitigation for SKA
Prof Amanda Gouws	Political Science	Arts and Social Sciences	Gender Politics
Prof Anneke Hesselning	Paediatrics and Child Health	Medicine and Health Sciences	Paediatric Tuberculosis
Prof Cheryl Walker	Sociology and Social Anthropology	Arts and Social Sciences	The Sociology of Land, Environment and Sustainable Development



Collage of the 50 Research Output Awards

**Table 17: List of Awardees**

Awardee	Department	Research Outputs
Prof Linus Opara	Horticultural Sciences	Number pubs (48); pubs units (12.376)
Prof Soraya Seedat	Psychiatry	Number pubs (32); pubs units (5.944)
Prof Leslie Swartz	Psychology	Number pubs (30); pubs units (10.385)
Prof Robin Warren	Molecular Biology and Human Genetics	Number pubs (26)
Prof Anton du Plessis	Central Analytical Facility (CAF)	Number pubs (25); Pubs units (6.371)
Prof Anneke Hesseling	CBTBR	Number pubs (23)
Prof Cang Hui	Mathematics	Number pubs (22); pubs units (5.348)
Prof Mark Tomlinson	Institute for Health Course Life Research	Number pubs (21)
Prof Dave Richardson	Centre for Invasion Biology	Number pubs (21)
Prof Wayne Derman	Orthopaedic Surgery	Number pubs (19)
Prof Jason Bantjes	Psychology	Number pubs (19); pubs units (5.066)
Prof Karen Esler	Conservation Ecology and Entomology	Number pubs (18); pubs units (4.584)
Prof Mark Cotton	Paediatrics and Child Health	Number pubs (18); PhDs delivered (3)
Prof Simon Schaaf	Paediatrics and Child Health	Number pubs (16)
Prof Ashraf Kagee	Psychology	Number pubs (15); Pubs units (5.370)
Prof Len Barbour	Chemistry and Polymer Science	Number pubs (15); Pubs units (4.862)
Prof Resia Pretorius	Physiological Sciences	Number pubs (14); Pubs units (5.00)
Prof Gerhard Walzl	Molecular Biology	Number pubs (14)
Prof Nuraan Davids	Education Policy Studies	Number pubs (14); Pubs units (7.913)
Prof Robert Mash	Family Medicine and Primary Care	Number pubs (14); Pubs units (4.319)
Prof Johann Görgens	Process Engineering	Number pubs (14); PhDs delivered (3)
Dr Anton Ehlers	History	Pubs units (10.333)
Prof Henry Mbaya	Systematic Theology and Ecclesiology	Pubs units (8.0)
Prof Lesley le Grange	Curriculum Studies	Pubs units (7.483)
Prof Ronnie Donaldson	Geography and Environmental Studies	Pubs units (6.750)
Dr Alexander Andrason	Ancient Studies	Pubs units (6.50)
Dr Gabriël Botma	Journalism	Pubs units (6.322)
Prof Cara Schwarz	Process Engineering	Pubs units (6.083); PhDs delivered (3)
Dr Samantha van Schalkwyk	Psychology	Pubs units (6.00)
Dr Hilde Roos	Africa Open Institute	Pubs units (6.00)
Prof Yusef Waghid	Education Policy Studies	Pubs units (5.839); PhDs delivered (5)
Prof Carine Smith	Physiological Sciences	Pubs units (4.90); PhDs delivered (3)
Prof Aslam Fataar	Education Policy Studies	Pubs units (4.50)
Prof Johan Fourie	Economics	Pubs units (4.45)
Prof Bert Klumperman	Chemistry and Polymer Science	PhDs delivered (4)
Prof John Akudugu	Radiobiology	PhDs delivered (3)
Prof Ronel Burger	Economics	PhDs delivered (3)
Prof Stan du Plessis	Economics	PhDs delivered (3)
Prof Sara Grobbelaar	Industrial Engineering	PhDs delivered (3)
Prof Lindy Heinecken	Sociology and Social Anthropology	PhDs delivered (3)
Dr Nayankomo Marwa	USB	PhDs delivered (3)
Prof Johann Mouton	CREST	PhDs delivered (3)
Prof Tony Naidoo	Psychology	PhDs delivered (3)
Prof Corne Schutte	Industrial Engineering	PhDs delivered (3)
Prof Erick Strauss	Biochemistry	PhDs delivered (3)
Prof Willem van Otterlo	Chemistry and Polymer Sciences	PhDs delivered (3)
Prof Jan van Vuuren	Industrial Engineering	PhDs delivered (3)
Prof Gideon van Zijl	Civil Ingenieurswese	PhDs delivered (3)
Prof Ranel Venter	Sport Science	PhDs delivered (3)
Prof Cheryl Walker	Sociology and Social Anthropology	PhDs delivered (3)

## 7. Acknowledgements

- Dr Therina Theron and Team, Ms Ellen Tise and Team for their input and contribution to the report;
- Ms Elbie Els for the lay-out of the report; and
- Ms Maryke Hunter-Husselmann, Ms Ilse de Lange and Ms I Scholtz for co-ordinating the report.

Kind regards,



**Prof TE Cloete**

Deputy Vice-Chancellor:

Research, Innovation and Postgraduate Studies





The background of the cover is a deep red color. It features faint, light-colored line art illustrations. On the right side, there is a detailed drawing of a microscope, showing the eyepiece, objective lenses, and the base. On the left side, there are several molecular or cellular structures, including a large, complex network of interconnected circles and lines, and several smaller, spherical structures with protrusions, resembling viruses or cells. The overall aesthetic is scientific and academic.

# **COUNCIL REPORT**

of the Deputy Vice-Chancellor:  
Research, Innovation and Postgraduate Studies  
2021