

SUMMATIVE REPORT

ANNUAL REPORT 2022-2023



A NOTE FROM THE PRESIDENT AND CEO

South Africa has made significant strides in improving its health status over the past few decades. However, the country still faces numerous challenges, including high rates of HIV/AIDS, tuberculosis, and non-communicable diseases while still trying to recover from the Coronavirus pandemic. The South African Medical Research Council (SAMRC) plays a crucial role in addressing these challenges through its research and science advocacy. Efforts made to lead in such a pivotal time demand an interconnectedness in the 5th Industrial Revolution (5IR) health space, taking up a strategic adaption to new technologies that enable more innovation.

The SAMRC is a statutory body that conducts research on health and related social issues in South Africa. Our mission is to advance the nation's health and quality of life and address inequality by conducting and funding relevant and responsive health research, capacity development, innovation and research translation. The SAMRC's research focuses on a wide range of health issues, including infectious diseases, non-communicable diseases, mental health and environmental health.

Transformation in science remains an integral part of our strategy. More women and black South Africans and scholars and researchers from Historically Disadvantaged Institutions are the beneficiaries of our masters and doctoral and other capacity development programmes.

Reflecting on the 2022/23 financial year, a lot of good work was done and achieved. For instance, despite the tight fiscal environment, the SAMRC has delivered impactful scientific research and will continue to do so effectively and efficiently, as guided by the Public Finance and Management Act.

Our research during COVID-19 continued as we re-orientated our research funding to allocate resources to surveillance, the development of diagnostics, therapeutics, immunological research and vaccine development.

In a true spirit of partnership, Biovac, Afrigen and the SAMRC collaborated on the establishment of the mRNA hub in South Africa in an endeavour to support vaccine development on the continent. The SAMRC's role in the hub is to drive the R&D programme which is aimed at the research, development and testing of mRNA vaccine candidates for COVID-19 and other priority diseases to ensure a pipeline of products for manufacture by the spokes in South Africa and other low- and middle-income countries. The SAMRC is also the clinical trial partner for the mRNA Technology Transfer Hub.

The Chan Soon-Shiong Family Foundation (CSSFF) – SAMRC Biomanufacturing Capacity Development Programme commenced in the 2022/23 financial year with the first cohort of studentships. This is an ambitious programme to build a vaccine manufacturing workforce, with a commitment of R100 million over 5 years from the CSSFF and co-funding from the SAMRC.

South Africa's first COVID-19 Antigen Self-test was launched by Medical Diagnostech (Pty) Ltd. This project was funded by the SAMRC, and the self-test has a mobile phone application called HealthPulse TestNow, aiming to reduce reliance on international test kit supplies, whilst being robust enough to produce results before patients leave the testing site.

The SAMRC and National Research Foundation (NRF) were appointed to represent South Africa as institutional members of the International Human Frontier Science Programme. South Africa is the 16th country to be admitted, and the only country from Africa. This membership underscores the value that South Africa places on supporting fundamental research in the understanding of complex mechanisms in the life sciences to advance industry, health, and human well-being.

The Wastewater Surveillance and Research Project (WSARP) was formalised as an SAMRC Research Programme. The surveillance of wastewater is being conducted at a total of 77 wastewater treatment plants in four provinces and involves four historically disadvantaged university partners as part of skills transfer and capacity development.

An international study funded by the SAMRC and led by the University of KwaZulu-Natal's (UKZN's) Professor Dhayendre Moodley, confirmed the safe use of tenofovir disoproxil fumarate and emtricitabine as pre-exposure prophylaxis (PrEP) in pregnant women not living with HIV. Until December 2019, pregnant and lactating women were excluded from the PrEP roll-out in South Africa based on the absence of safety data for its use in pregnancy. The novel study, published in *The Lancet HIV*, is a pioneering approach providing much-needed safety data to allow for a more informed choice during pregnancy to protect mother and baby from the long-term effects of HIV.

Looking into the future, one of the key areas of focus for the SAMRC is the localisation of research and development (R&D) and the impact it has on scaling up innovation. We believe that localisation of R&D is critical to developing innovative solutions that are relevant and effective in addressing the health challenges faced by South Africans. This includes investing in local talent, building partnerships with local institutions, and conducting research that is relevant to the South African context. We also support the development of local capacity in research and innovation through training and mentorship programmes.

All these achievements could not become possible without the support of our National Department of Health under the leadership of Minister Dr Joe Phaahla, our SAMRC Board chaired by Professor Johnny Mahlangu, the Executive Committee Management, the leadership, researchers, staff, partners and service providers of the SAMRC. Thank you to all of you for making SAMRC a success.



Professor Glenda E. Gray
President and CEO: SAMRC



PROFESSOR GLENDA E. GRAY

ACHIEVEMENTS AND HIGHLIGHTS

Pandemic and Vaccine Preparedness

Since the start of the COVID-19 pandemic in South Africa in March 2020, the SAMRC has, together with key partners such as the National Department of Science and Innovation (DSI), driven the research and innovation response, with more than R500 million raised and/or reallocated to support more than 50 projects. While a portfolio of these projects is still being managed, in the 2022/23 financial year the SAMRC has focused its pandemic preparedness and response on surveillance and the vaccine response through continued support of the Network for Genomic Surveillance in South Africa (NGSSA) and the Wastewater Surveillance and Research Programme; the execution of various COVID-19 vaccine studies; participation in the mRNA Technology Transfer Hub; and initiation of the Chan Soon-Shiong Family Foundation-SAMRC Capacity Development Programme.

The **NGS-SA Genomics Surveillance Programme**, led by Prof Tulio de Oliveira from the Centre for Epidemic Response and Innovation (CERI), is a shining example of collaboration and harnessing the skills set within our borders to enable a rapid and coordinated response to the COVID-19 pandemic. The network, initiated with funds from the SAMRC and DSI at the Kwa-Zulu Natal Research Innovation and Sequencing Platform (KRISP), aimed to rapidly sequence as many outbreak samples as possible and to log the data on the global GISAID database, which is used to track the global COVID-19 pandemic. It took a major team effort using next generation sequencing technologies and a cutting-edge bioinformatics pipeline to enable real-time analysis and reporting of the data and contribution to the global database, enabling rapid release of information on the magnitude and characteristics of the South African pandemic.

The network was also enabled by the already robust workflow in place at the National Institute for Communicable Diseases (NICD), leveraging off the National Health Laboratory Services laboratory network for a streamlined workflow from access to samples to sequencing to data generation and

analysis. We saw technology suppliers also playing their role within the consortium with bulk reagent deals and this helped the network exceed their sequencing targets.

The network has been a pillar of the South African COVID-19 pandemic response, generating data to uncover new COVID-19 variants, informing pandemic control measures, and gaining international recognition for South Africa's role in the global pandemic response through a plethora of high impact publications in journals such as Nature and the Lancet. Furthermore, the success of the consortium was magnified by the pivotal role they played in capacity development and the roll out of pathogen genomic sequencing in other African countries to assist in their pandemic response.

The NGS-SA Programme model was leveraged to develop the Pathogen Genomics Initiative (PGI) for

Pandemic Preparedness through the Africa Centres for Disease Control. PGI has managed to enable capacity for pathogen genomics sequencing across the African continent, helping some countries localize omics technologies and data capacities.

The SAMRC has continued to drive several **COVID-19 vaccine studies** to ensure that globally developed vaccines are tested in our populations and to inform policy around vaccination and boosting. The Sisonke and Sisonke Homologous Boost studies delivered the Johnson and Johnson Ad26.COVS vaccine and boost to 496,424 and 230,488 participants, respectively, during 2021.

Follow up and data analysis on these studies have continued during 2022/23 with a total follow up time of 2 years included in the protocol. Results from the study will be published during 2023/24. The Sisonke studies were funded by an allocation from National Treasury through the National Department of Health and grant funding from the Michael and Susan Dell Foundation, the ELMA Vaccines and Immunisation Foundation, the Solidarity Fund, the Bill and Melinda Gates Foundation and Janssen Vaccines & Prevention B.V. The SAMRC initiated the Sisonke Heterologous mRNA-1273 boost after prime with Ad26.COVS (SHERPA) study in May 2022 to examine the real-

world effectiveness of a heterologous boost with the Moderna mRNA-1273 vaccine in those who received either a single or double dose of the Johnson and Johnson Ad26.COVS vaccine.

The study enrolled >12,000 participants between May and November 2022, with a further 200 enrolled in a more detailed immunogenicity sub-study. Results from this study are due in 2023/24. The SAMRC has also supported the BaSiS Study at Wits RHI Shandukani, which is a phase II randomized open label trial of full and half dose J&J Ad26.CoV2.S and Pfizer BNT162b2 booster vaccinations after receiving the J&J Ad26.CoV2.S prime vaccine through the SISONKE phase IIIB implementation study. The aim of this study is to evaluate immunogenicity (humoral and cellular) and safety of a 1:4 randomization of either homologous J&J Ad26.COVS or heterologous Pfizer BNT162b2, at full or half dose booster vaccinations, given at least 4 months after a single J&J Ad26.COVS prime at 4 clinical trial sites. The study enrolled 291 participants by 31 August 2022, which represents 97% of the enrolment target of 300 participants. A high number of the population enrolled (39.9%) are people living with HIV (PLHV). Data analysis for the study is ongoing. The BaSiS study was funded from a National Treasury allocation through the National Department of Health for a Vaccine Rollout Research Programme. The PI has raised additional funding from the Bill & Melinda Gates Foundation to extend the study follow-up time to 24 months post enrolment. This will enable the collection of data on longer term immunity to prime/boost vaccination, evaluation of the memory response in participants and tracking of long-term effects of comorbidities such as HIV, TB and diabetes.

The **mRNA Technology Transfer Hub** was established in 2021 with the objective of building capacity in low- and middle-income countries to produce mRNA vaccines through a centre of excellence and training. The hub is intended to drive greater and more diversified vaccines manufacturing capability, strengthen African regional health security and respond more equitably to the current COVID-19 pandemic and future pandemics. The consortium partners include the World Health

Organization (WHO), Medicines Patent Pool (MPP), Afrigen Biologics (Pty) Limited, the Biologicals and Vaccines Institute of Southern Africa (Biovac), the SAMRC, and the Africa Centres for Disease Control and Prevention (Africa CDC). The SAMRC's role in the hub is to drive the R&D programme which is aimed at the research, development and testing of mRNA vaccine candidates for COVID-19 and other priority diseases to ensure a pipeline of products for manufacture by the spokes in South Africa and other low- and middle-income countries.

The SAMRC is also the clinical trial partner for the mRNA Technology Transfer Hub. The SAMRC has convened a consortium of development partners known as the South African mRNA Vaccine Consortium (SAMVAC), comprising of the University of the Witwatersrand, the University of Cape Town, the African Health Research Institute, the University of Stellenbosch, North-West University, the National Institute for Communicable Diseases, the SAMRC and Afrigen Biologics. SAMVAC is leveraging off existing research expertise and prior SAMRC and DSI investments to develop a portfolio of mRNA vaccine candidates by Africa for Africa. It is also leveraging off the surveillance programme of the Africa CDC, of which the NGS-SA are leading partners, to ensure the most appropriate immunogens are identified for vaccine development.

The SAMVAC Programme commenced in January 2022, focusing initially on vaccine candidates for African COVID-19 variants and rapidly expanding to include research and development on TB and HIV vaccine candidates. The early development work is underway at the University of Witwatersrand (Prof Arbuthnot and Prof de Koning) with the development of ionisable lipids and mRNA-encoding plasmids that include the Omicron spike variant of concern. The immunogen components of the TB and HIV projects are led by Dr Musvosvi, Prof Scriba and Prof Chapman, respectively, from the University of Cape Town. The programme will also see the technology transfer of a hamster challenge model from the University of Marseille in France to UCT. SAMVAC is funded by the SAMRC, the DSI, ELMA Vaccines and Immunization Foundation and funds raised by MPP and the WHO.

The Chan Soon-Shiong Family Foundation (CSSFF) – SAMRC Biomanufacturing Capacity Development Programme

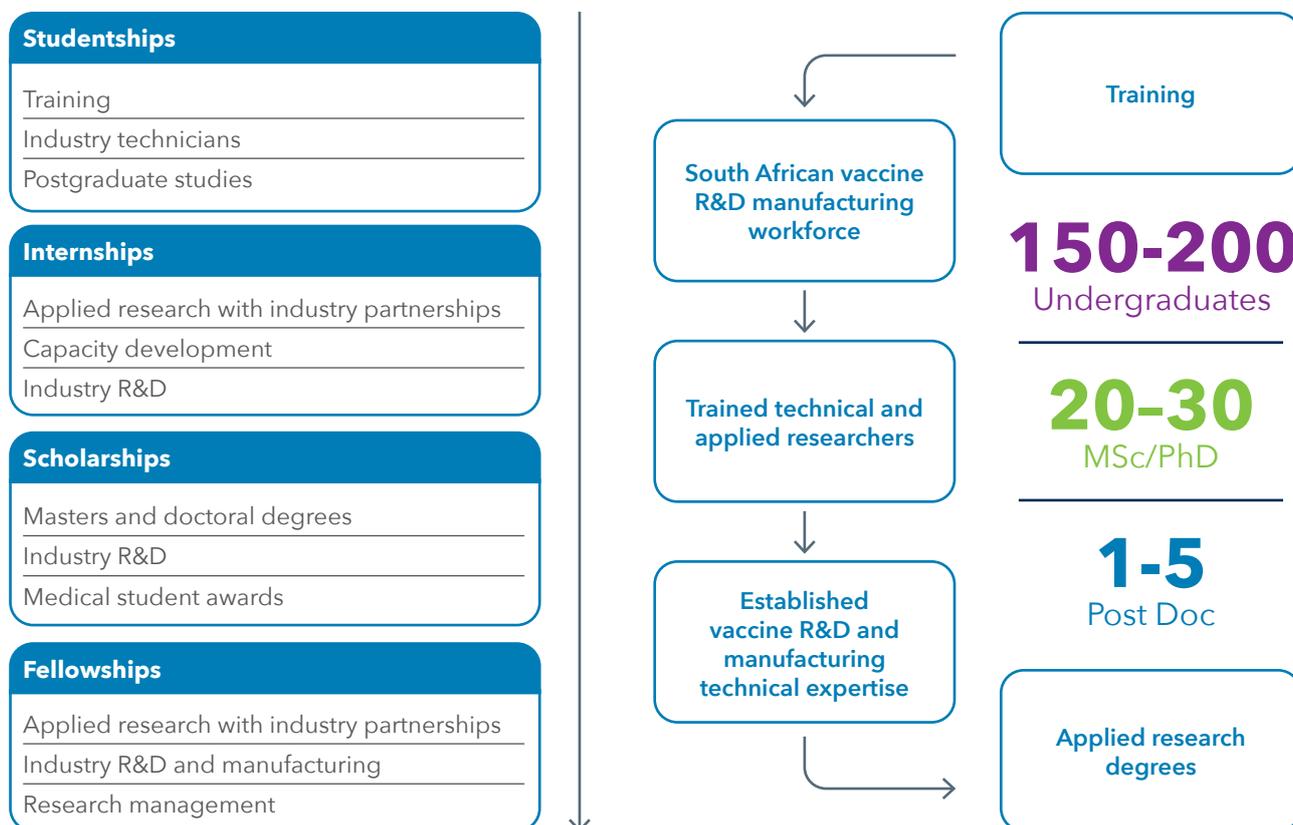


The programme commenced in the 2022/23 financial year with the first cohort of studentships. This is an ambitious programme to build a vaccine manufacturing workforce, with a commitment of R100M over 5 years from the Chan Soon-Shiong Family Foundation and co-funding from the SAMRC. The programme (as depicted in the Figure) includes Studentships, Scholarships for Masters and Doctoral degrees and Fellowships aimed at graduates and researchers in vaccine related disciplines in the health, life and allied sciences. The first call for Studentships was launched in August 2022 and two cohorts of students have been selected. The first cohort of 15 trainees commenced their training in February 2023 and the second cohort will commence in July 2023. They are receiving technical training that will equip them to work in a commercial biomanufacturing environment, including in laboratory science, process engineering and quality assurance as well as scientific and research processes, such as experimental design and scientific writing. Promising candidates may

be offered industry internships or opportunities for postgraduate studies upon completion of their training. An open competitive call was also run for Masters and Doctoral scholarships for studies focused on vaccine-related research to build the next generation of researchers.

These will commence in the next financial year. The CSSFF-SAMRC Fellowship programme will also be initiated in 2023/24. These fellows will be expected to build vaccine research in Africa, provide mentorship and establish robust industry partnerships. The CSSFF-SAMRC capacity development programme will grow the next generation of vaccine professionals, researchers, and technical experts, build much needed capacity and infrastructure, and establish a network through which vaccine R&D and innovation can be nurtured and thrive. Ultimately, this is aimed at growing the industry, contributing to the economy and ensuring that LMICs, including South Africa, are prepared to rapidly respond to the next pandemic.

Overview of the Chan Soon-Shiong Family Foundation – SAMRC Biomanufacturing Capacity Development Programme



SUSTAINABLE HEALTH RESEARCH THROUGH CAPACITY DEVELOPMENT

The overarching objective of the SAMRC is to enhance the long-term sustainability of health research in South Africa by providing funding for the next generation of health researchers. We support health research capacity development by offering scholarships, fellowships and research grants to post-graduate and postdoctoral students and early and mid-career scientists at South African universities.

Most of these awards are aimed at individuals from historically disadvantaged backgrounds. In 2022/2023, our programmes have continued to

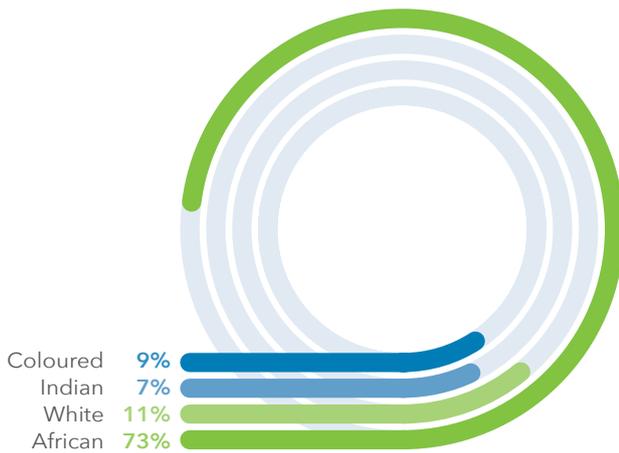
contribute to the SAMRC's strategic objectives of administering health research effectively and efficiently, leading the generation of new knowledge and building human capacity for the long-term sustainability of health research in South Africa

The number of beneficiaries and the amount invested in 2022/23 for each programme are listed in the table below. The total number of funded beneficiaries (grants and scholarships), including new intake for the 2022/23 reporting period, exceeded the annual target by 23%.

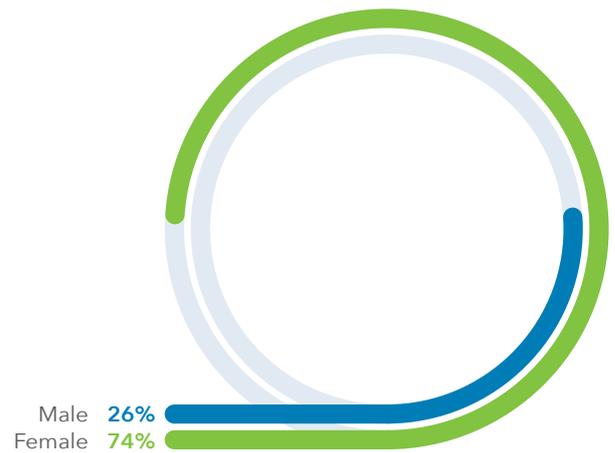
Name of Programme	Number of beneficiaries		Amount invested
SAMRC Mid-Career Scientist	9	Scientists (PI)	12,658,000
SAMRC Research Capacity Development Initiative	19	Scientists (PI)	6,605,600
	9	Post-doctoral Fellows	3,150,000
	4	PhD	800,000
SAMRC Extramural Post-doctoral Fellowship Programme	5	Post-doctoral Fellows	1,750,000
SAMRC Intramural Post-doctoral Fellowship Programme	12	Post-doctoral Fellows	2,950,000
SAMRC Clinician Post-doctoral Career Development Award	3	Clinician Post-PhD	1,675,000
SAMRC Early Investigators Programme	12	Scientists (PI)	6,000,000
SAMRC Researcher Development Grant	11	PhD	1,153,318
Bongani Mayosi-National Health Scholars Programme	35	PhD	12,114,654
Biostatistics Capacity Development Programme	3	MSc	480,000
SAMRC Clinician Researcher Development Programme	15	PhD	5,950,000
SAMRC Internship Scholarship Programme	34	PhD	6,339,720
Total	171		61,626,292

The **scholarships portfolio** at RCD comprises 5 programmes as listed in the figure above. Overall, these programmes have continued to make excellent progress in transformation and strengthening research capacity at the Historically Disadvantaged Institutions (HDIs). In 2022/23, RCD supported 94 PhD and 4 MSc scholarships, of which 74% were

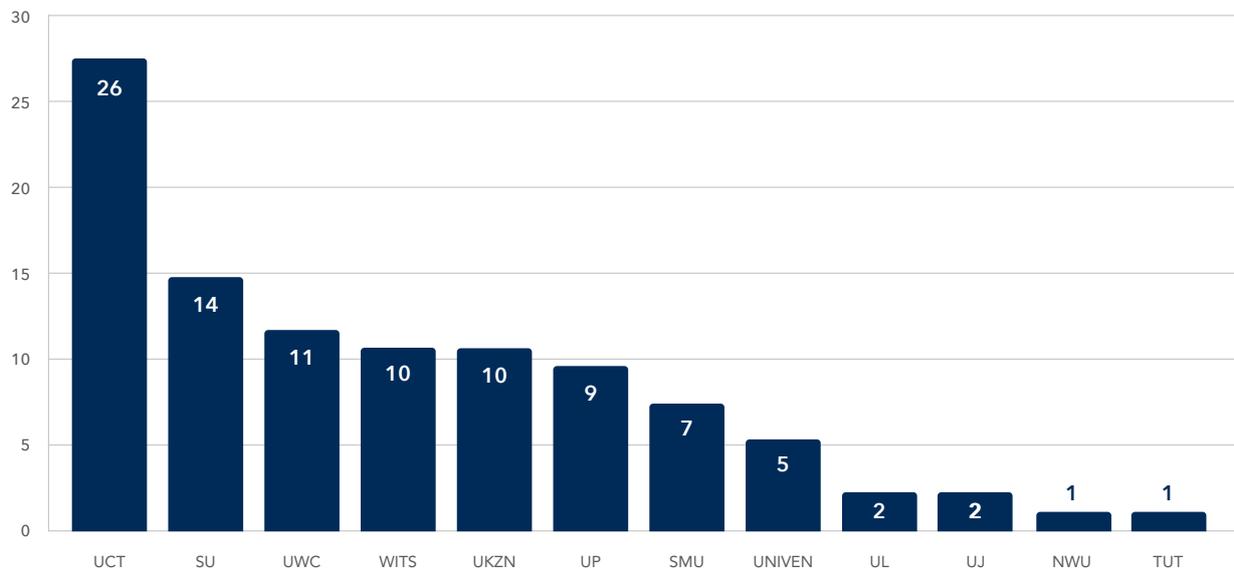
awarded to female candidates and 73% to African Black candidates. Over a quarter of the scholarships were awarded to scholars registered in HDIs, which is a substantial improvement over previous year. The distribution of scholarships by gender, ethnic group, and institution for 2022/23 are depicted in the figure below.



Scholarship awards by ethnic group: 2022/23



Scholarship awards by gender: 2022/23



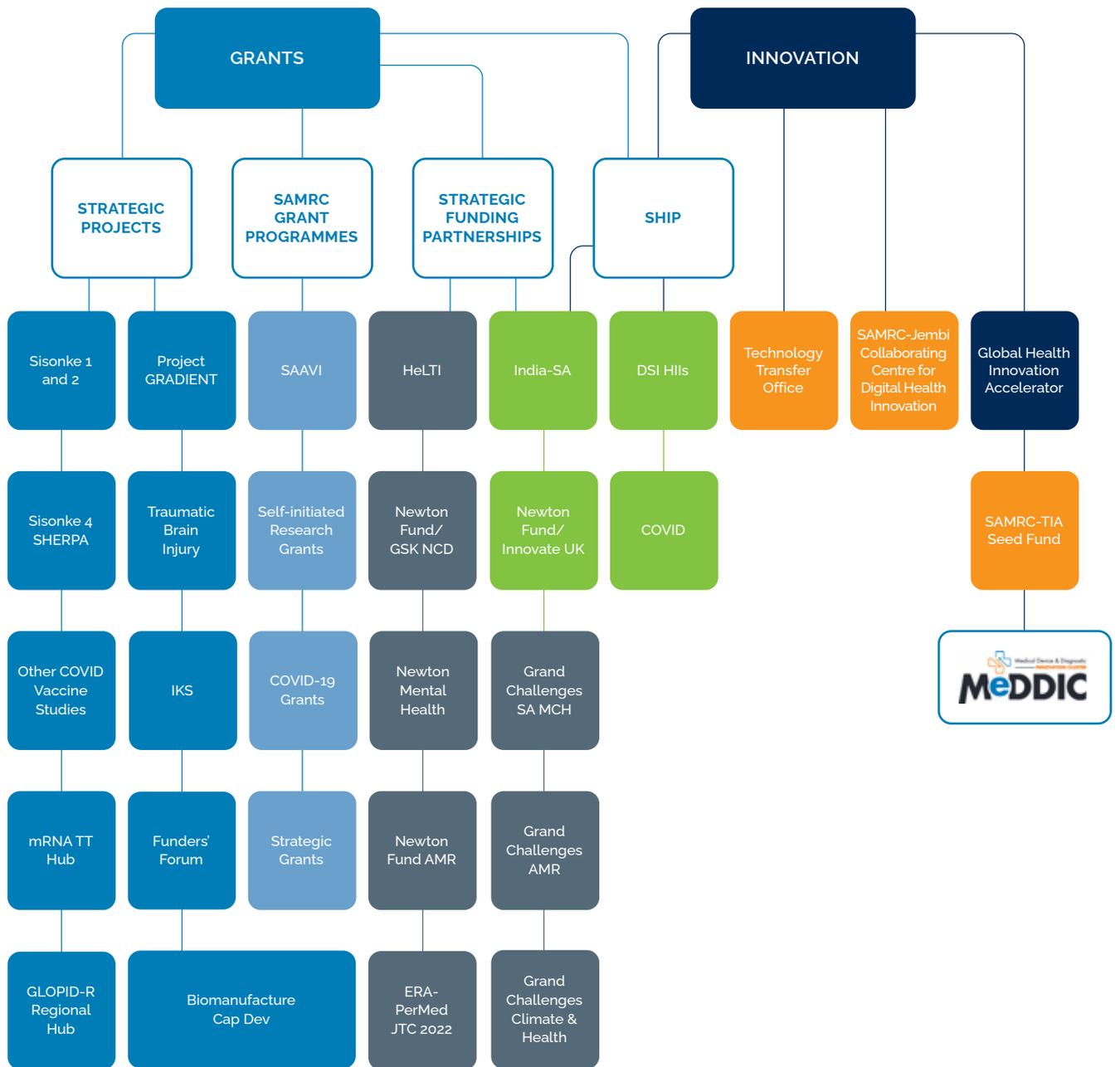
Scholarship Awards by Institution: 2022/23

GRANTS INNOVATION PRODUCT DEVELOPMENT

Funding research and facilitating innovation are two of the core activities of the SAMRC that enable the organisation to achieve its broad mandate. While designing and implementing ambitious and impactful grant programmes and strategic projects requires highly skilled individuals supported by experienced project managers and coordinators, there remains a commitment to maximise the proportion of funding that directly funds research and innovation. As such, the Grants, Innovation and Product Development (GIPD) Unit has a small but skilled team that, together, manages more than 260 active grants under 11 programmes and 5 strategic projects (depicted in the figure below), with a total spend on research and innovation of R298,204,103 during the 2022/23 financial year.

These funds contribute directly to the generation of new knowledge by the SAMRC's grantees, with high impact publications, capacity development and the advancement of innovations being some of the key outputs that speak directly to the SAMRC's strategic objectives. The unit's robust grant management standard operating procedures ensure that health research funding is effectively and efficiently administered by the SAMRC.

Innovation is supported by GIPD both internally and externally. The unit manages funding programmes aimed at delivering new health solutions, including the Strategic Health Innovation Partnerships (SHIP) Programme and Grand Challenges South Africa. It also hosts the SAMRC's Technology Transfer Office (TTO), the Global Health Innovation Accelerator (GHIA) and the Medical Device and Diagnostic Innovation Cluster (MeDDIC), all of which provide innovation support to protect and advance technologies towards commercialized products in response to strategic goal 3 of the SAMRC. Strategic partnerships with local and global funders enable the SAMRC to substantially expand the funding pool for research and innovation and most of these are managed by GIPD. The SAMRC's major funding partners over the last 5-10 years include the Department of Science and Innovation (DSI), the Newton Fund, the Bill and Melinda Gates Foundation (BMGF) and the Technology Innovation Agency (TIA). More recently, the SAMRC has established important partnerships with additional funders such as the ELMA Vaccines and Immunization Foundation, the Solidarity Response Fund, the Michael and Susan Dell Foundation, and the Gabriel Foundation.



Overview of the grant and innovation programmes and strategic projects managed by the Grants Innovation and Product Development unit

REPORT OF THE CHIEF EXECUTIVE OFFICER & PRESIDENT

General financial review

(All figures R'000, prior year in parenthesis.)

Revenue for the year showed an increase of 0.2% to R1 270 637 (R1 267 979). This consists of a decrease in government grants of 8.5% to R677 264 (R740 057) offset by an increase in contract income of 12.4% to R593 373 (R527 921).

Other income has increased significantly by 59.1% to R28 030 (R17 613) driven by exchange gains generated on foreign currency grant income of R8 459.

Operating expenses reflected an increase of 2.05% to R1 333 008 (R1 306 199). This is mainly the result of continued increased research activities following the relaxation of Covid 19 lockdown restrictions.

This has resulted in an operating deficit of R34 340 for the year compared to an operating deficit of R20 608 in 2021/22. A significant increase in investment income of 65.4% to R42 546 (R25 730) due to an increase in the average balance of investments during the year under review as well as an increase in interest rates resulted in a net surplus for the year of R7 545 compared to a net surplus of R6 021 in 2021/2022.

The organisation remains financially strong with accumulated reserves of R434 315 (R426 770).

Total assets have increased by 10.4% to R1 171 837 (R1 061 674) due mainly to an increase in cash and cash equivalents of R24 087 as well as an increase of R66 400 in receivables from exchange transactions. Property, Plant and Equipment has increased by R22 143 due to increased capital expenditure on Infrastructure and Information Technology.

Deferred income has increased by R99 130 to R549 633 due to additional funds received for research activities not yet performed.

The SAMRC generated a positive operating cashflow of R75 981 compared to a positive operating cashflow of R146 813 in the prior period due mainly to an increase in receivables from exchange transactions.

Net cash flows from investing activities were negative due mainly to capital expenditure of R52 981 (R48 943).

The net impact of the above is an increase of R24 087 in cash and cash equivalents compared to an increase of R94 241 in cash and cash equivalents in the prior year.

Spending trends

Operating expenses reflected an increase of 2.05% to R1 333 008 (R1 306 199). This is mainly the result of continued increased research activities following the

relaxation of Covid 19 lockdown restrictions and includes increases in employee costs of R47 261, travel and subsistence of R20 262, and collaborative research costs of R9 843. This is offset by the one-off cost of R58 982 for the donation of vaccines to the National Department of Health in the prior year.

Employee related costs have increased by 10.8% to R484 065 (R436 775) driven mainly by basic salary costs which have increased by 13.9% to R399 495 (R350 753). Employee related costs include net bonus provision costs of R6 391 (R5 876). The net asset pertaining to the Pension Fund and Post-Retirement medical aid obligations has increased by R2 428 compared to a reduction of R2 775 in the prior year.

The net surplus for the year of R7 545 compared to a final budget deficit of R 105 904. Revenue was R118 319 over budget while expenditure was R4 870 over budget. This was due to higher than anticipated contract income recognised of R85 524 due to the increase in research activity as well foreign exchange gains of R8 459 and interest income of R14 346 over budget.

Collaborative research costs were R54 715 below budget due mainly to completion of Covid 19 research projects later than anticipated offsetting the general increase in research expenditure over budget.

Requests for roll over of funds

The organisation remains financially strong with accumulated reserves of R434 315 (R426 770). The necessary approvals will be sought for the rollover of funds received from Government but not yet spent.

Supply chain management

There were no unsolicited bid proposals received during the year. The revised Materiality Framework was approved by the Minister.

Audit report matters

There were no matters to report.

Events after the reporting date

No significant events were identified after the reporting date that may have an impact on the financial statements.

Economic viability

Funding allocations of R693 563 for 2023/24 have been approved by Government. This together with accumulated reserves of R434 315 and the increase anticipated in the value of grants received will ensure that the SAMRC will continue to operate as a going concern.

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