



2020

ANNUAL
RESEARCH
REPORT

FACULTY OF HEALTH SCIENCES



Table of Contents

A) Executive Summary	3
B) Special achievements of the Faculty of Health Sciences.....	3
C) Performance against the Faculty Research and Postgraduate Plan	5
Research outputs.....	6
Postgraduate student enrolments and completions	7
Enhancing the Postgraduate Student Experience.....	9
MRC Research Units, Research Entities, DST/NRF South African Research Chair Initiative and Centres of Excellence.....	10
NRF Rated Scientists 2020	10
Contribution of postdoctoral fellows	11
Knowledge Transfer and Innovations.....	11
Health Sciences Research Office (HSRO) short courses, workshops and consultations.....	12
D) Self-assessment of Schools' and research entities' contributions.....	12
E) Financial reporting	14
F) Challenges	14
Financial sustainability	14
Issues around efficiency and productivity of staff in key support posts.....	15
Infrastructure issues	15
Service commitments versus research time	15
G) Other important information.....	15
Health Sciences Research Office (HSRO).....	15
Prestigious Research lectures and Research Awards Celebrations	15
Carnegie-WITS Alumni Diaspora Programme	15
Appendix 1:.....	16
Appendix 2:.....	17
Appendix 3:.....	20
Appendix 4:.....	21
Appendix 5:.....	22
Appendix 6:.....	23
Appendix 7:.....	25

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A) Executive Summary

In the face of the most daunting global health crisis of our generation, the staff and students of the Faculty of Health Sciences at the University of the Witwatersrand demonstrated their fearless and unwavering commitment to serving the South African community. We honour all our healthcare workers, from the front-line staff tending to our most critically ill patients and saving lives, the clinical trial site staff conducting COVID-19 vaccine trials, the laboratory staff who developed standards for, and conduct SARS-CoV-2 testing, to researchers who provide data on vaccine effectiveness against novel variants, amongst others, while our students volunteered in hospitals and clinics. In the midst of the crisis, our community continued to work unabated to ensure recalibrated teaching and training, and the focus on research, discovery, public health impact and service delivery continued.

As at December 2020, the Faculty staff complement was 3802 individuals, comprised of 356 (269 full time) Academic Wits staff and 2732 joint staff (of which 1447, or 52,96% were registrars) with either the Department of Health or the National Health Laboratory Services, 54 postdoctoral fellows, 579 Honorary staff, 60 visiting staff and 21 retired staff. Additionally, the total Wits Health Consortium staff was 4901.

Total DoHET research output units allocated to the Faculty were **927,78**. There was a decrease in the number of publication outputs and postgraduate completions during 2020, as compared to 2019. The Faculty contributed **580,78 verified DoHET publication units**, a 2,91% decrease from 2019, however, not all publications were submitted to the DoHET which would have translated into a significant increase in publication research units. A total of 647 postgraduate students completed qualifications in 2020, including **3 MDs, 71 PhD students, 79 Masters by research, 285 Masters by coursework and research report, 31 postgraduate diploma and 178 BHSc Hons**, marking an overall decrease of 5.82% from 2019.

During 2020, the Research Entities remained unchanged, and the Faculty housed eight Department of Science and Technology/National Research Foundation South African Research Initiative Chairs, four centres of excellence, six South African Medical Research Council (MRC) Research Units, and 24 recognized Research Entities. Ninety eight members were recognized as NRF rated researchers during 2020, with ten being A-rated scientists. Research excellence of numerous staff and postgraduate students was acknowledged through various international and national grants, awards and prizes. For example, two scientists won prestigious gold medals at the South African Medical Research Council Scientific Merit Awards in 2020. For a second year running, grant funding of approximately **ZAR 2.7 billion** for research and development aid work purposes was secured by Faculty researchers.

The Faculty continues to be the largest in South Africa, and based on the Academic Ranking of World Universities (ARWU) ShanghaiRanking's Global Ranking of Academic Subjects 2020, the Faculty of Health Sciences was ranked 76-100 in Public Health, and 101-150 in Clinical Medicine. The 2020 Times Higher Education World University rankings placed the Faculty at 85 for clinical, preclinical and health subjects.

B) Special achievements of the Faculty of Health Sciences

There were a number of notable achievements in 2020, with selected highlights listed below:

Professor Shabir Madhi, South African Medical Research Council (SAMRC) Vaccines and Infectious Diseases Analytics Research Unit (VIDA), led Africa's first Covid-19 vaccine trial. The trial was conducted in collaboration with the University of Oxford and the Oxford Jenner Institute. The first patient was vaccinated on 23 June 2020.

In association with Wits University Press, the Faculty produced South Africa's first clinical data on Covid-19, with a special Issue of the Wits Journal of Clinical Medicine. Chaired by **Professor Pravin Manga**, the journal included articles authored by **Professor Laurel Baldwin-Ragaven** (Family Medicine), **Professor Charles Feldman** (Pulmonology), and **Professor Ismail S. Kalla** (Pulmonology).

Professor Feroza Motara, head of Emergency Medicine, together with colleagues **Prof. A Laher**, **Dr M Moolla** and **Dr J du Plessis**, from the Emergency Department and Intensive Care Units at CMJAH designed the Intubox, which protects hospital workers and other critical care patients from SARS-CoV-2 infected patients virus-spreading particles during any intubation, extubation or aerolising procedure.

Professor Michèle Ramsay (Director of the Sydney Brenner Institute for Molecular Bioscience, SBIMB) and **Professor Janusz Paweska** (Head of the Centre for Emerging, Zoonotic and Parasitic Diseases, NICD), School of Pathology, were each awarded the 2020 SAMRC Scientific Achievement Award – Gold Medal in recognition of excellence in research.

Professor Michèle Ramsay, SBIMB, received the **2020 NSTF-South32 Lifetime Award** for her pioneering genomic medicine approaches in Africa and leading the transcontinental study on factors that contribute to African diseases. Professor Ramsay is a Professor of Human Genetics, Director of the SBIMB, and holds the DSI/NRF Research Chair: Bioinformatics and Genomics of African Populations.

Associate Professor Mark Collinson, Wits Rural Public Health and Health Transitions Research Unit, and his colleague Dr Kobus Herbst, received the **2020 NSTF-South32 Data for Research Award** for conceiving, developing and implementing the South African Population and Research Infrastructure Network, which produces up-to-date information on health and socio-economic wellbeing.

Professor Johnny Mahlangu was the recipient of the Vice-Chancellor's Research Award for 2020. He is Head of the School of Pathology, and a Consultant Clinical Haematologist in charge of Haematology at CMJAH and Director of the International Haemophilia Training Centre in Johannesburg.

Professor Karen Hofman was the recipient of the first Vice-Chancellor's Social Impact Research Award. Professor Hofman is the Director of PRICELESS SA based in the School of Public Health. PRICELESS SA is a research team providing information on "Best Buys" for health in SA.

Professor Lizette Koekemoer, Wits Research Institute for Malaria, was awarded the African Union Kwame Nkrumah Regional Award for Scientific Excellence. This award honours outstanding scientific achievement and contribution through scientific research for the socio-economic development of Africa.

Professor Lenore Masterson, School of Public Health, was made a Member of the Order of Australia in the 2020 Australia Day Honours List. The citation reads: "For significant service to education, particularly medical anthropology, and to public health."

Professor Shane Norris, Director of the SA MRC Developmental Pathways For Health Research Unit and DSI-NRF CoE Human Development, and **Professor Yahya Choonara**, Head of Department of Pharmacy and Pharmacology and Director of the Wits Advanced Drug Delivery Platform (WADDP) Research Unit, were each elected as a Fellow of the African Academy of Sciences.

Associate Professor Pradeep Kumar, School of Therapeutic Sciences, was selected as a member of the Global Young Academy from June 2020 until May 2025.

Professor Benita Olivier, WiSH and the School of Therapeutic Sciences, is the joint recipient of the SARIMA/Department of Science and Innovation Early Career Award for Excellence. She is also the recipient of the Johannesburg Women in Sports – Sports Confederation President’s Award for 2020.

Professor Johnny Mahlangu (School of Pathology), **Professor Ames Dhai** and **Emeritus Professor Guy Richards** (School of Clinical Medicine), and **Professor Lizette Koekemoer** (Wits Research Institute for Malaria) were inaugurated into the Academy of Sciences of South Africa at a virtual ceremony. Professor Mahlangu was also elected President of the College of Pathologists for a three-year term.

Professor Aletta Millen, School of Physiology, was inaugurated into the South African Young Academy of Science at a virtual ceremony.

Professor Kathleen Kahn, School of Public Health, was awarded the Harvard T.H. Chan School of Public Health Alumni Merit Award for substantial contributions to research.

Dr Paula Barnard-Ashton, School of Therapeutics and Manager of eFundanathi, was awarded the Global Edutech Leadership award.

Ms Thulile Khanyile, School of Pathology, was named one of Mail and Guardian’s 200 Young South Africans in the Science and Technology category.

Ms Kimberleigh Tommy, a 2nd year PhD Student in the School of Anatomical Sciences, was named one of Mail and Guardian’s 200 Young South Africans in the Science and Technology category. She was also recently named as one of the Inspiring Fifty Women in STEM by CoCreate SA, an initiative of the Kingdom of the Netherlands in South Africa.

Ms Amanda Calitz, School of Therapeutic Sciences, was named as one of the Inspiring Fifty Women in STEM by CoCreate SA. She was also invited by the Minister of Basic Education to be part of the curriculum development team for the new coding and robotics curriculum for Grades r-9; and selected to be part of the 2020-2021 TechWomen mentorship and exchange program by the U.S. Department of State’s Bureau of Educational and Cultural Affairs (ECA).

Associate Professor Ahmed Adam, School of Clinical Medicine, was inducted as an international member of the Societe Internationale D’Urologie (SIU) Innovators, a global think tank of innovation and advancement of early career urologists within the global organization of Urology - the SIU.

C) Performance against the Faculty Research and Postgraduate Plan

Despite all the challenges faced during 2020, staff and postgraduate students continued to make progress towards meeting the Faculty Strategic goals, in line with the Research and Postgraduate Strategy 2018-2022.

Research outputs

Total units awarded by the Department of Higher Education and Training (DoHET) to the Faculty for 2020 amounted to **580,78** from 1257 publications (including 21 book chapters and books) and are shown in **Figure 1**. However, during 2020, FHS staff published at least 1744 publications, and for various reasons, 487 publications, which translate into an additional 259.11 units, were not verified and hence not submitted to DoHET. Thus, the Faculty could have potentially had 839,89 publication output units in 2020.

Based on the unverified numbers above, the Faculty recorded an impressive overall increase in publication numbers as well as publication units in 2020, but the verified numbers show a decrease of 2,91% from 2019 (**Figure 1, Table 1**). Publication units awarded to each of the seven Schools within the Faculty for the period 2013 – 2020 is reflected in **Table 1**. The list of top publishing authors in the Faculty of Health Sciences (drawn from Scopus) in 2020, as well as top citations of Faculty authors over a 10 year period (2010-2020), are included in **Appendix 1 and 2**, respectively.

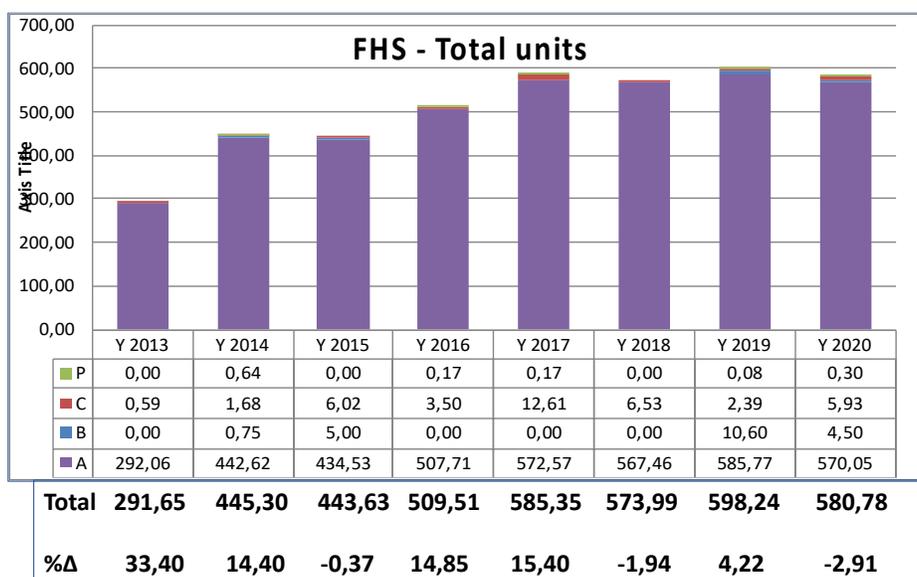


Figure 1: A comparison of the total units awarded to the Faculty of Health Sciences by DoHET for publications submitted for subsidy (2013 – 2020). A= journal articles, B=books, C= chapters and P= conference proceedings.

FHS researchers continued to publish in high impact journals such as the New England Journal of Medicine (IF 74.699), Lancet (IF 60.392), Nature (IF 42,778) British Medical Journal (IF 39,890), etc.

An analysis of the breakdown of authorship contribution by Wits staff (including joint staff, etc) showed that they were either sole, first or senior authors on 69,46% of the 1257 publications. The 1236 journal articles were published in 534 different journals, with PLOS ONE being the most popular journal (68 articles), followed by the South African Medical Journal (47 articles). Interestingly, approximately 25% of the publications were from Wits only (including joint staff, etc) authors, with the remaining 75% including collaborators. This shows that FHS staff are the key drivers of the majority of the research conducted.

Table 1: A breakdown of units per School, T&L/HSRO offices, awarded to the Faculty of Health Sciences by DoHET for publications submitted for subsidy (2013 – 2020). The two institutes, SBIMB and WRHI (highlighted in red text) were historically included in the School of Pathology and School of Clinical Medicine (SOCM) numbers, respectively, up until 2016. WRHI is included with SOCM for 2019.

School	2013	2014	2015	2016	2017	2018	2019	2020
SOAS	13.57	11.9	10.06	23.01	27.77	35.98	22.95	22,63
SOCM	142.42	158.4	163.4	190.55	197.87	209.10	238.71	228,19
WRHI	-	-	-	-	27.25	25.95	-	20,37
SOHS	3.00	18.32	12.99	20.68	18.52	20.07	21.80	9,08
SPATH	69.96	63.03	74.66	82.9	87.35	83.01	81.36	80,25
SBIMB	-	-	-	-	2.27	6.41	3.72	6,22
SOP	34.74	37.15	33.2	38.28	36.56	32.13	34.90	37,59
SPH	66.82	93.45	85.4	88.25	106.26	88.82	111.30	133,90
STS	56.40	61.66	60	63.5	70.84	70.38	81.29	39,38
T&L; HSRO	1.00	1.39	3.92	2.34	3.74	2.14	2.81	3,17
Total	389.11	443.91	439.71	509,51	585.35	573.99	598.84	580,78

Undeniably, the COVID-19 pandemic curtailed various areas of basic and clinical research, but refocused and shaped research on COVID-19 and changed the way the Faculty, and the world, conducts scientific research together. Within months after SARS-CoV-2 emerged at the close of 2019, faculty were conducting research aimed at COVID-19 clinical management and outcomes research, diagnostics, epidemiology, SARS-CoV-2 pathogenesis, immunology, therapeutics and vaccine development and testing in human clinical trials. Significantly, we contributed to key research findings which advanced the emergency use of specific COVID-19 vaccines globally and influenced the type of vaccines used in the South African national vaccine rollout.

In the midst of the crisis, other outstanding work continued unabated. For example, Professor Zane Lombard and colleagues published a groundbreaking study that informs African population history, environmental adaptation, and susceptibility to disease. The article featured on the cover of *Nature*, and is one of the most extensive studies of high-depth-sequenced African genomes reported to date.

Postgraduate student enrolments and completions

During 2020, 44.7% of the total Faculty student population was registered for postgraduate degrees (2974 of 6656) in line with the University strategy to increase the percentage of postgraduate students. The unit allocations (347,00) for postgraduate students who completed qualifications in 2020 for PhD (D), Masters by dissertation (R), coursework and research report (C), as compared to previous years are shown in **Figure 2**, and increased marginally by 0,87% from 2019. The total student numbers per school, as well as the actual student numbers including D, R, C, Postgraduate Diploma (X) and BHSc Hons (H) with comparative data for 2013 -2020, is shown in **Figure 3**, and **Appendix 3, respectively**.

Overall, a total of 647 postgraduate students completed qualifications in 2020, including 3 MDs, 71 PhD students, 79 Masters by research, 285 Masters by coursework and research report, 31 postgraduate diploma and 178 BHSc Hons, marking an overall decrease of 5.82% from 2019.

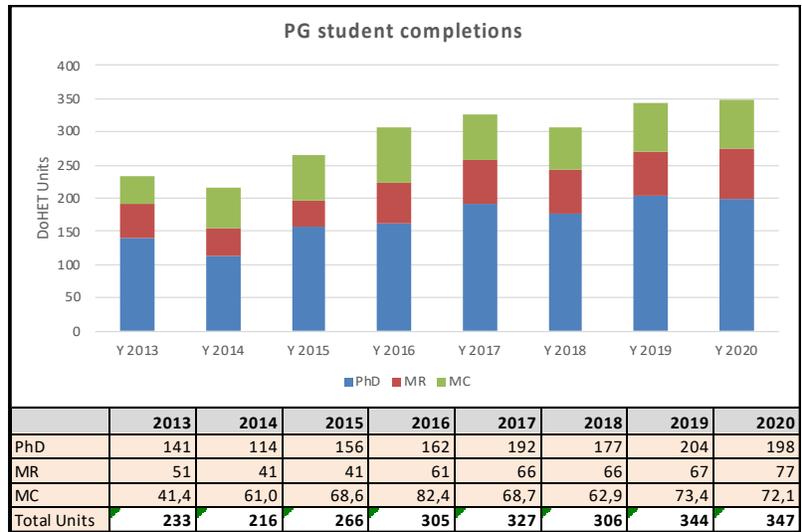


Figure 2: Total units allocated for PhD (D), Masters by dissertation (R), coursework and research report (C) completions for the period 2010-2020 in the Faculty of Health Sciences.

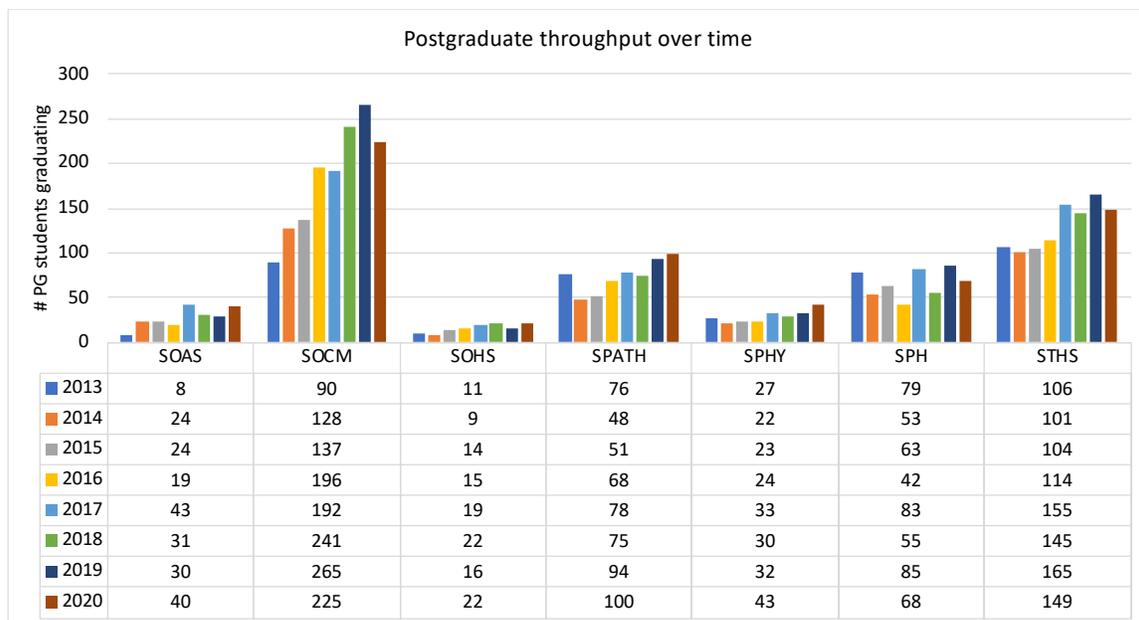


Figure 3: The number of postgraduate students graduating from each School from 2013 -2020 in the Faculty of Health Sciences.

The total number of postgraduate students enrolled in the Faculty, and the number of postgraduate students graduating in a given year is shown in **Figure 4**. Overall, trends show an increase in the number of enrolled and graduating students over time, but with a plateau (0.24% increase) in enrolled students, and a 5,822% decrease in graduating students in 2020, as compared to 2019. A decrease in graduations was expected since registrars were redirected to assist with the COVID-19 response, and laboratory based and clinical research was at a standstill during the South African level 5 lockdown, and/or access restricted for several months. The percentage of the students graduating decreased to 21,75% of those

registered. The throughput rates for each degree were impacted, for example, the Masters by Research (Masters R; n+1 years) percentage should be closer to 50%, but is below 20%.

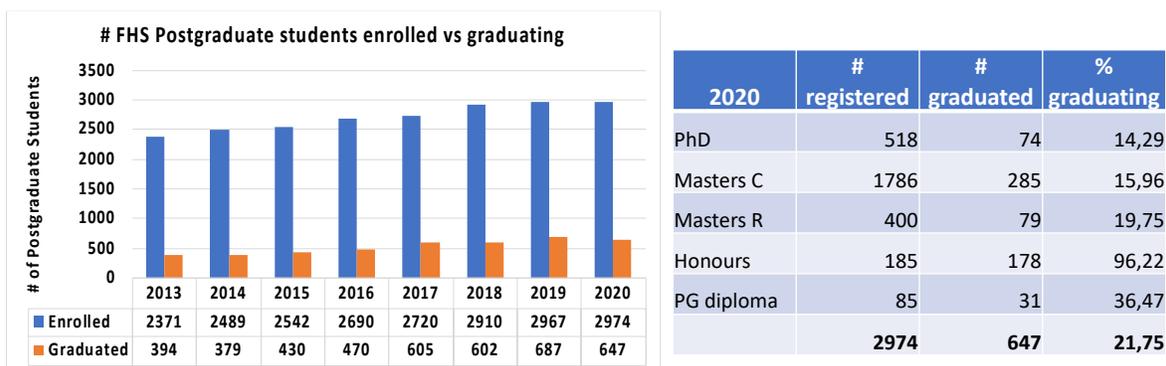


Figure 4: Number of postgraduate students enrolled vs completing in the Faculty of Health Sciences between 2013 and 2020 (left). The percentage of postgraduate students completing a particular degree during 2020 is shown on the left.

In summary, in line with our Strategic Research goals, the Faculty of Health Sciences has steadily increased the total Research Output Units which include DoHET units allocated for publications and postgraduate throughput (PhD and Masters only) over time (**Table 2**).

Table 2: Total Research Output Units (ROU) allocated by the DoHET for publications and postgraduate throughputs.

YEAR	2013	2014	2015	2016	2017	2018	2019	2020
Publication ROU	291,65	445,3	443,63	509,51	585,35	573,99	598,24	580,78
Postgraduate ROU	233	216	266	305	327	306	344	347
TOTAL ROU	525	661	709	815	912	880	943	928

Enhancing the Postgraduate Student Experience

One of the four Faculty Strategic goals is to enhance the postgraduate student experience. Strategies to increase postgraduate throughputs, increase supervisory capacity and quality and provide postgraduate students with a transformational experience continued during 2020. As with all academic institutions worldwide, the COVID-19 pandemic and response impacted research activities and the social and educational aspects of our postgraduate students' lives.

The HSRO provided several face-to-face (until end of March, 2020) and then continued with online courses and workshops throughout the year to assist the postgraduate students with research methodology, quantitative and qualitative data analysis, introductory and advanced biostatistics and research writing skills, as well as one-on-one biostatistics support (see below for further information). The pool of available supervisors as well as internal examiners in the Faculty has steadily increased over time (**Figure 5**). Junior staff attended HSRO run Research methodology courses, Supervisors workshops and Examiners workshops throughout 2020. But it is clear from the total number of staff, vs the number supervising that there is still scope to increase the number of supervisors and postgraduate students in the Faculty.

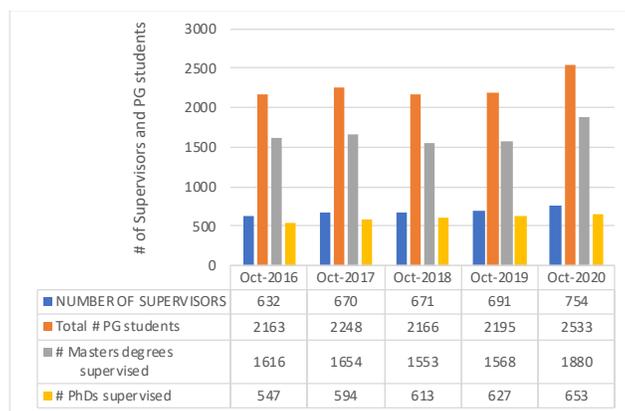


Figure 5: The number of Faculty of Health Sciences staff supervising Masters and Doctoral degrees.

An updated Postgraduate Information booklet is available annually on the Faculty of Health Sciences website. This booklet has two sections: the first provides information about postgraduate admission and registration, assessments of research protocols, thesis formats, examination and graduations processes and the second section includes information about funding, facilities available to postgraduate students and the relevant policies as well as contact details of the postgraduate office staff and Assistant Dean.

Due to circumstances, only one Q&A session with the Assistant Dean of Research and Postgraduate Support and FHS Postgraduate Students was held via MS Teams during 2020, and provided a platform to address any major challenges postgraduate students were facing and answer general queries. The HSRO Postgraduate Support portal where students can submit their queries or concerns (<https://www.wits.ac.za/health/faculty-services/postgraduate-support/>) remained active.

MRC Research Units, Research Entities, DST/NRF South African Research Chair Initiative and Centres of Excellence

The six MRC Units hosted by the Faculty of Health Sciences include the Rural Public Health and Health Transition Research Unit (Prof S. Tollman), Development Pathways Research Unit (Prof S. Norris), Respiratory and Meningeal Pathogens Research Unit (Prof S. Madhi), the Antiviral Gene Therapy Research Unit (Prof P. Arbuthnot) the Centre for Health Economics and Decision Science Research Unit (Prof K. Hoffman) and Antibody Immunity Research Unit (Prof L. Morris). Additionally there are 24 research entities (**Appendix 4**), eight DST/NRF South African Chairs (**Appendix 5**) and four Centres of Excellence (COE): DST/NRF COE for Biomedical Tuberculosis Research (Prof B. Kana), COE in Human Development (Prof L. Richter) , ANDI COE in Advanced Drug Delivery Technology (Prof V. Pillay) and ANDI COE for Viral Gene therapy (Prof P. Arbuthnot). Annual Reports for each research entity are submitted and reviewed by the FRC Research Entity review committee (available upon request).

NRF Rated Scientists 2020

The number of NRF-rated researchers in the Faculty of Health Sciences has steadily increased from 2013-2020, as depicted in **Figure 6**. The Faculty of Health Sciences had a total of 98 NRF rated researchers in 2019, with 10 A rated, 27 B rated, 46 C rated and 15 Y rated (**Appendix 6**). A list of the ten NRF A-rated scientists in the Faculty is shown in **Table 3**.

Table 3: List of NRF A-rated scientists in the Faculty of Health Sciences during 2020.

Name	School	A rating	Valid until
Gray, G	Clinical Medicine	A2	2023
Brouwer, DH	Public Health	A2	2022
Coetzee, M	Pathology	A2	2024
Feldman, C	Clinical Medicine	A2	2021
Jewkes, RK (JS)	Public Health	A2	2022
Madhi, SA	Pathology	A2	2022
Manderson LH	Public Health	A2	2021
Mathew CGP	Pathology	A2	2021
Morris, L (JS)	Pathology	A2	2021
Richter L	Public Health	A1	2023

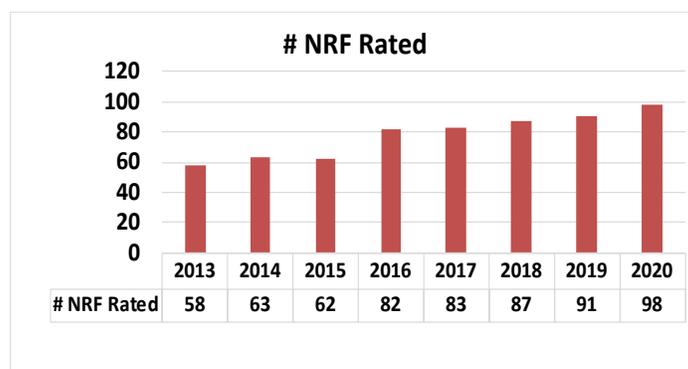


Figure 6: SA NRF Rated Scientists in the Faculty of Health Sciences (2012-2019).

Contribution of postdoctoral fellows

The Faculty of Health Sciences hosted a total of 59 postdoctoral fellows throughout 2020, where they contributed to 59 publications or 1.94% (11,27/580,78) units to the Faculty. This is translated into an expected income of R 1 511 619.00 for the University in 2022.

Knowledge Transfer and Innovations

A key Faculty strategic research goal is to strengthen and contribute to the sustainability of the Faculty in the long term. This includes developing innovation, commercialization and entrepreneurial areas. During 2020, progress towards establishing the FHS Research and Innovation Hub slowed down considerably.

The Wits Health Consortium (WHC) kindly provided funding under their Faculty Strategic project funds, and together with the Innovation Support office at Wits Enterprise we sent out an RFA in mid 2020. The Wits Biomedical Innovation fund shortlisted and funded four applications. These four projects have patents in place and a clear road to commercialization.

1. *Prof B Kana: Biomimicry for supporting Diagnosis for diseases.* Commercialization will take place through a license to SmartSpot, well geared to commercialize.
2. *Prof P Kumar: Polymer Engineered Spinomimetic Scaffold (PESMS).*
3. *Prof P Manger: A novel and readily commercialized method to enhance sleep timing and maintenance.*
4. *Prof L Scott: Quality assurance for TB LAM Assay, Route to market will also be through SmartSpot.*

Health Sciences Research Office (HSRO) short courses, workshops and consultations

Short Courses and Workshops run by the HSRO are aimed at advancing our Faculty strategic goals by strengthening research capacity of students and staff members. The COVID-19 pandemic impacted on how the workshops were run, with all having to move to an online platform. Despite the challenges, a minimum of 956, up to over 1200 candidates attended the various courses and workshops during 2020 (**Figure 7; Appendix 7**). The online Research Methodology Course that was launched in 2019 proved particularly valuable during 2020, and served as a model for structuring the other courses. The HSRO continues to offer one-on-one statistical consultations to staff and students in the Faculty, all conducted via Teams or Zoom calls and email communication, with a 58% increase in uptake of these services during 2020.

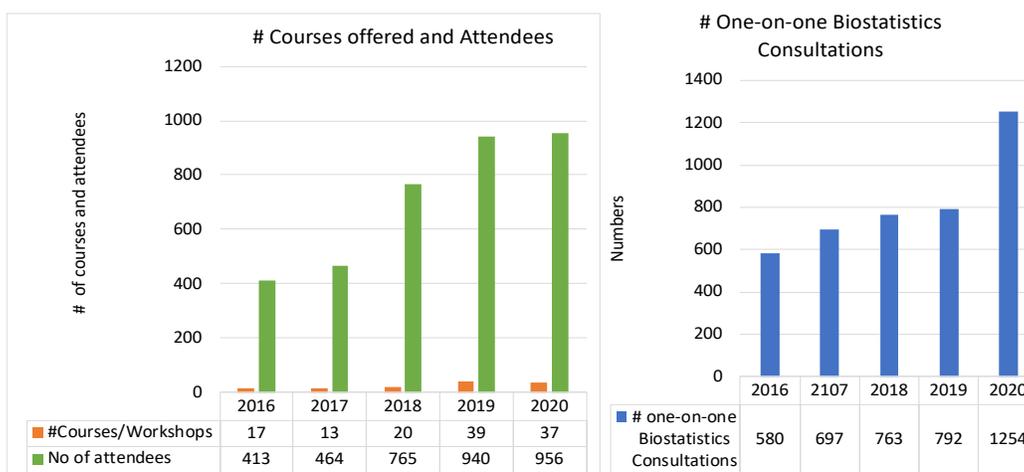


Figure 7: The number of Faculty of Health Sciences staff and students who attended various courses/workshops and one-on-one biostatistical consultations from 2016-2020.

D) Self-assessment of Schools' and research entities' contributions

Each School submits an annual report to the Faculty Research Office, and these are available upon request. As in previous years, the School of Clinical Medicine recorded the highest number of publication output units, followed by the Schools of Public Health and Pathology. The breakdown of the units across publication types and Schools from 2013-2020 is depicted in **Figure 8**. Please note that the outputs from the two institutes, SBIMB and WRHI, are not depicted in Figure 8. Two Schools, Public Health and Physiology showed an increase in publication units from 2019, whereas the remainder Schools either showed a plateau or a decrease relative to the previous year. It is difficult to interpret the individual contributions from each School in light of the high number of unverified DoHET publication research output units. For example, the School of Therapeutic Sciences calculated that approximately 40 research output units were not verified, which would make a significant change to the data. The proportion of publication research output units attributed to Research Entities versus the remainder researchers in each School are shown in **Figure 9**.

The contribution of each School to postgraduate throughput is shown in **Figure 3**, and **Appendix 3**. As in previous years, the clinical disciplines, Clinical Medicine, Therapeutic Sciences and Pathology were the major contributors to postgraduate throughputs, while the School of Public Health graduated the

highest number of PhD students.



Figure 8: DoHET Publication output units for each of the seven schools in the Faculty of Health Sciences for the period 2013-2020.

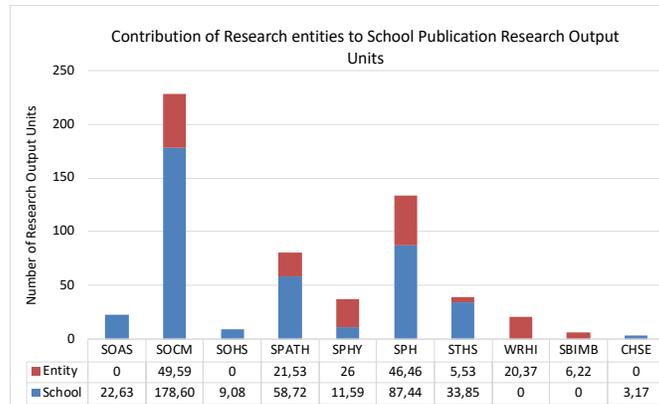


Figure 9: The contribution of Research Entities to publication research output units in each School during 2020.

E) Financial reporting

The Faculty of Health Sciences received a total of **R 2 694 188 893,00** in external income specifically for research and development aid work purposes during the course of 2020. This included **R 91 893 374,00** administered through the University, and **R 2 602 295 519,00** administered through the Wits Health Consortium. The COVID-19 pandemic saw several funding agencies changing their research priorities, resulting in some funding being withdrawn, but provided the opportunity to apply for new funding. The FHS budget received from the URC was R 14 034 450,00 which was completely allocated towards RINC payouts (R 10 086 300,00 for publications and R 3 948 150,00 (discretionary fund) which was allocated for postgraduate throughputs) to all authors and postgraduate supervisors. There was no WHC dividend allocated to the FRC for strategic projects.

F) Challenges

The COVID-19 pandemic has challenged every one of us in different ways and to varying degrees. We found ourselves tasked with learning how to adapt in real time amid the pandemic, and the precautionary and preventative measures taken to contain viral transmission impacted on our Research outputs and postgraduate throughputs. It is difficult to list and/or predict every short- and long-term impact of the COVID-19 pandemic, but we continue to try mitigate some of the damage.

The below challenges are highlighted annually, yet continue to be ongoing major concerns that impact on progress and optimal functioning of all emergent researchers, research active staff and related structures/systems in the Faculty of Health Sciences, and affect postgraduate throughput rates.

Financial sustainability

The proportion of funding that the URC directly allocates to the Faculty of Health Sciences FRC is decreasing annually, and is predominantly comprised of the abovementioned RINC and discretionary fund allocations. The annual WHC dividend has not been received since 2018, and since this funding provides critical core support to all Faculty researchers, particularly emergent researchers, there will definitely be a knock on effect. Together with the effects that the COVID-19 crisis has placed on research, we are concerned about our researchers career trajectories and outputs.

Issues around efficiency and productivity of staff in key support posts

Human Research Ethics Committee (HREC) administrative staff

The same complaint has been lodged with the University Research office for the last four years, yet little/no improvement or changes have been made. The Ethics committee chair and office administrators that supports the HREC report to the University research office, but do not meet the needs of the University and the Faculty, with major implications for research and postgraduate outputs. There are numerous complaints they don't respond timeously to emails, answer phone calls or have an acceptable turnaround time. Implications are: increases the time a postgraduate student is registered for their degree, which has implications for subsidy; Faculty researchers lose grant funding due to delays in getting ethics approval; University reputation is at risk. During 2020, despite committing to "fast track" COVID-19 related research ethics applications, there were several complaints of long delays.

Infrastructure issues

a. School of Oral Health Sciences

The infrastructure issues raised by the staff and students in the School of Oral Health Sciences have not been resolved. This impacts both undergraduate as well as postgraduate teaching, training and research.

b. Central Animal Services (CAS) in the FHS

The CAS is a University Core Facility, providing research support to predominantly the Faculty of Health Sciences and the Faculty of Science. These facilities have received URC funding to start major upgrades and maintenance, but ongoing support is required.

Service commitments versus research time

Faculty joint staff in the clinical schools are employed by the Department of Health or National Health Laboratory Services. Although they are allocated a percentage of their time to devote to academic work, including research, it is impossible to monitor and manage. Lower than expected research outputs in this group are attributed to several reasons such as the clinical and teaching burden placed on individuals, leaving little/no time research. Despite the challenges, there are examples of successful Clinician scientists who have been major contributors to the international standing of the Faculty.

G) Other important information

Health Sciences Research Office (HSRO)

Remit of the HSRO: The aim of the HSRO is to operationalise the strategic goals of the Faculty. The strategic research and postgraduate goals centre around increased outputs of publications, increased quality of publications (ISI journals) increased throughput and quality of postgraduate students and support (financial where possible, strategic collaborations and courses) for all researchers.

Prestigious Research lectures and Research Awards Celebrations

Due to COVID-19 restrictions, no Prestigious Research Lectures were delivered in 2020, and no Research Award celebrations were held.

Carnegie-WITS Alumni Diaspora Programme

The Carnegie-WITS Alumni Diaspora Programme, established by the Health Science Research Office in 2010, strives to enhance and build new research connections by supporting continued collaboration and partnership exchanges between Wits researchers and alumni at international health sciences research institutions. In 2020, the Programme had to be suspended due to travel restrictions, and a no cost extension was approved until conditions become more favourable.

Appendix 1: List of top publishing authors in the Faculty of Health Sciences, 2020 (List drawn from Scopus).

Name	School/Department	Number of papers
Madhi, S.A.	Pathology	54
Norris, S.A.	Clinical Medicine	37
Klipstein-Grobusch, K.	Public Health	28
Kahn, K.	Public Health	26
Kumar, P.	Therapeutic Sciences	21
Pillay, V.	Therapeutic Sciences	19
Choonara, Y.E.	Therapeutic Sciences	16
Gómez-Olivé, F.X.	Public Health	15
Feldman, C.	Clinical Medicine	14
González-Gay, M.A.	Physiology	14
Manger, P.R.	Anatomical Sciences	14
Naicker, S.	Clinical Medicine	14
Strehlau, R.	Clinical Medicine	13
Twine, R.	Public Health	13
Beksinska, M.	Clinical Medicine	12
Fox, M.P.	Clinical Medicine	12
Nunes, M.C.	Pathology	12
Otwombe, K.	Public Health	12
Venter, W.D.F.	Clinical Medicine	12
Wagner, R.G.	Public Health	12
Bhagwandin, A.	Anatomical Sciences	11
Dhai, A.	Clinical Medicine	11
Duarte, R.	Clinical Medicine	11
Gray, G.E.	Clinical Medicine	11
Raal, F.J.	Clinical Medicine	11
Ramsay, M.	SBIMB	11
Rosen, S.	Clinical Medicine	11
Smit, J.	Clinical Medicine	11
Govender, N.P.	Pathology	10
Pettifor, A.	Public Health	10

Appendix 2: Most cited publications in the Faculty of Health Sciences based on the ISI Web of Knowledge and Scopus in a 10-year period (2010 –2020).

Authors	Title	Year	Source Title	Cited by	Document Type
Lozano R., Naghavi M., Foreman K., Lim S., Shibuya K., Aboyans V., Abraham J., Adair T., Aggarwal R., Ahn S.Y., AlMazroa M.A., Alvarado M., Anderson H.R., Anderson L.M., Andrews K.G., Atkinson C., Baddour L.M., Barker-Collo S., Bartels D.H., Bell M.L., Benjamin E.J., Bennett D., Bhalla K., Bikbov B., Bin Abdulhak A., Birbeck G., Blyth F., Bolliger I., Boufous S., Bucello C., Burch M., Burney P., Carapetis J., Chen H., Chou D., Chugh S.S., Coffeng L.E., Colan S.D., Colquhoun S., Colson K.E., Condon J., Connor M.D. , <i>et al.</i>	Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: A systematic analysis for the Global Burden of Disease Study 2010	2012	The Lancet	8459	Article
Murray C.J.L., Vos T., Lozano R., Naghavi M., Flaxman A.D., Michaud C., Ezzati M., Shibuya K., Salomon J.A., Abdalla S., Aboyans V., Abraham J., Ackerman I., Aggarwal R., Ahn S.Y., Ali M.K., AlMazroa M.A., Alvarado M., Anderson H.R., Anderson L.M., Andrews K.G., Atkinson C., Baddour L.M., Bahalim A.N., Barker-Collo S., Barrero L.H., Bartels D.H., Basáñez M.-G., Baxter A., Bell M.L., Benjamin E.J., Bennett D., Bernabé E., Bhalla K., Bhandari B., Bikbov B., Carmona L., Cella C., Charlson F., Chen H., Cheng A.T.-A., Chou D., Chugh S.S., Coffeng L.E., Colan S.D., Colquhoun S., Colson K.E., Condon J., Connor M.D. , <i>et al.</i>	Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990-2010: A systematic analysis for the Global Burden of Disease Study 2010	2012	The Lancet	5492	Article
Cohen M.S., Chen Y.Q., McCauley M., Gamble T., Hosseinipour M.C., Kumarasamy N., Hakim J.G., Kumwenda J., Grinsztejn B., Pilotto J.H.S., Godbole S.V., Mehendale S., Chariyalertsak S., Santos B.R., Mayer K.H., Hoffman I.F., Eshleman S.H., Piwowar-Manning E., Wang L., Makhema J., Mills L.A., De Bruyn G. , Sanne I. , <i>et al.</i>	Prevention of HIV-1 infection with early antiretroviral therapy	2011	New England Journal of Medicine	4870	Article
Vos T., Flaxman A.D., Naghavi M., Lozano R., Michaud C., Ezzati M., Shibuya K., Salomon J.A., Abdalla S., Aboyans V., Abraham J., Ackerman I., Aggarwal R., Ahn S.Y., Ali M.K., Almazroa M.A., Alvarado M., Anderson H.R., Anderson L.M., Andrews K.G., Atkinson C., Baddour L.M., Bahalim A.N., Barker-Collo S., Barrero L.H., Bartels D.H., Basáñez M.-G.,.....Condon J., Connor M.D. , <i>et al.</i>	Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990-2010: A systematic analysis for the Global Burden of Disease Study 2010	2012	The Lancet	4604	Article
Vos T., Barber R.M., Bell B., Bertozzi-Villa A., Biryukov S., Bolliger I., Charlson F., Davis A., Degenhardt L., Dicker D., Duan L., Erskine H., Feigin V.L., Ferrari A.J., Fitzmaurice C., Fleming T., Graetz N., Guinovart C.,	Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: A systematic analysis for the Global Burden of Disease Study 2013	2015	The Lancet	3436	Article

Haagsma J., Hansen G.M., Hanson S.W., Heuton K.R., Higashi H., Kassebaum N., Kyu H., Laurie E., Liang X., Lofgren K., Lozano R., Pesudovs K., Peterson C.B., Petzold M., et al.					
Vos T., Allen C., Arora M., Barber R.M., Brown A., Carter A., Casey D.C., Charlson F.J., Chen A.Z., Coggeshall M., Cornaby L., Dandona L., Dicker D.J., Dilegge T., Erskine H.E., Ferrari A.J., Fitzmaurice C., Fleming T., Forouzanfar M.H., Fullman N., Mohammed S., Barregard L., Petzold M. , Barrero L.H., Basu A., Chisumpa V.H., et al.	Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015	2016	The Lancet	3132	Article
GBD 2015 Mortality and Causes of Death Collaborators, Wang H., Naghavi M., Allen C., Barber R.M., Carter A., Casey D.C., Charlson F.J., Chen A.Z., Coates M.M., Coggeshall M., Dandona L., Dicker D.J., Erskine H.E., Ferrari A.J., Petzold M. , Barrero L.H., Basu A., Basu S., Bayou Y.T.,Takahashi K., Chisumpa V.H., et al.	Global, regional, and national life expectancy, all-cause mortality, and cause-specific mortality for 249 causes of death, 1980–2015: a systematic analysis for the Global Burden of Disease Study 2015	2016	The Lancet	2969	Article
Vos T., Abajobir A.A., Abbafati C., Abbas K.M., Abate K.H., Abd-Allah F., Abdulle A.M., Abebo T.A., Abera S.F., Aboyans V., Abu-Raddad L.J., Ackerman I.N., Adamu A.A., Adetokunboh O., Afarideh M., Afshin A., Agarwal S.K., Aggarwal R., Agrawal A., Agrawal S., Ahmad Kiadaliri A., Ahmadieh H., Ahmed M.B., Aichour A.N., Aichour I., Aichour M.T.E., Aiyar S., Akinyemi R.O., Akseer N., Al Lami F.H., Alahdab F., Al-Aly Z., Alam K., Alam N., Alam T., Alasfoor D., Alene K.A., Ali R., Alizadeh-Navaei R., Alkerwi A., Alla F., Chisumpa V.H. , Chittheer A.A., Christopher D.J., Pesudovs K., Peterson C.B., Petzold M., et al.	Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990-2016: A systematic analysis for the Global Burden of Disease Study 2016	2017	The Lancet	2407	Article
Di Cesare M., Bentham J., Stevens G.A., Zhou B., Danaei G., Lu Y., Bixby H., Cowan M.J., Riley L.M., Hajifathalian K., Fortunato L., Taddei C., Bennett J.E., Ikeda N., Khang Y.-H., Kyobutungi C., Laxmaiah A., Li Y., Lin H.-H., Miranda J.J., Mostafa A., Turley M.L., Paciorek C.J., Gunter M., Ezzati M., Abdeen Z.A., Hamid Z.A., Abu-Rmeileh N.M., Acosta-Cazares B., Adams R., Aekplakorn W., Aguilar-Salinas C.A., Wade A.N., et al.	Trends in adult body-mass index in 200 countries from 1975 to 2014: A pooled analysis of 1698 population-based measurement studies with 19.2 million participants	2016	The Lancet	2185	Article
Victora C.G., Bahl R., Barros A.J.D., França G.V.A., Horton S., Krasevec J., Murch S., Sankar M.J., Walker N., Rollins N.C., Allen K., Dharmage S., Lodge C., Peres K.G., Bhandari N., Chowdhury R., Sinha B., Taneja S., Giugliani E., Horta B., Maia F., de Mola C.L., Hajeerhoy N., Lutter C., Piwoz E., Martinez J.C., Richter L.	Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect	2016	The Lancet	2133	Review
Feigin V.L., Forouzanfar M.H., Krishnamurthi R., Mensah G.A., Connor M. , Bennett D.A., Moran A.E., Sacco R.L., Anderson L., Truelsen T., O'Donnell M.,	Global and regional burden of stroke during 1990-2010: Findings from the Global Burden of Disease Study 2010	2014	The Lancet	2131	Article

Venketasubramanian N., Barker-Collo S., Lawes C.M.M., Wang W., Shinohara Y., Witt E., Ezzati M., Naghavi M.,					
Bentham J., Di Cesare M., Bilano V., Bixby H., Zhou B., Stevens G.A., Riley L.M., Taddei C., Hajifathalian K., Lu Y., Savin S., Cowan M.J., Paciorek C.J., Chirita-Emandi A., Hayes A.J., Katz J., Kelishadi R., Kengne A.P., Khang Y.-H., Laxmaiah A., Li Y., Ma J., Miranda J.J., Mostafa A., Neovius M., Padez C., Rampal L., Zhu A., Bennett J.E., Danaei G., Bhutta Z.A., Ezzati M., Abarca-Gómez L., Abdeen Z.A.,Voutilainen S., Vrijheid M., Wade A.N., et al.	Worldwide trends in body-mass index, underweight, overweight, and obesity from 1975 to 2016: a pooled analysis of 2416 population-based measurement studies in 128.9 million children, adolescents, and adults	2017	The Lancet	2089	Article
Forouzanfar M.H., Afshin A., Alexander L.T., Biryukov S., Brauer M., Cercy K., Charlson F.J., Cohen A.J., Dandona L., Estep K., Ferrari A.J., Frostad J.J., Fullman N., Godwin W.W., Griswold M., Hay S.I., Kyu H.H., Larson H.J., Lim S.S., Liu P.Y., Lopez A.D.,Barregard L., Petzold M., Barrero L.H., Basu S., Chisumpa V.H., et al.	Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015	2016	The Lancet	1958	Article
Jha V., Garcia-Garcia G., Iseki K., Li Z., Naicker S., Plattner B., Saran R., Wang A.Y.-M., Yang C.-W.,	Chronic kidney disease: Global dimension and perspectives	2013	The Lancet	1945	Review
Naghavi M., Abajobir A.A., Abbafati C., Abbas K.M., Abd-Allah F., Abera S.F., Aboyans V., Adetokunboh O., Ärnlöv J., Afshin A., Agrawal A., Kiyaliri A.A., Ahmadi A., Ahmed M.B., Aichour A.N., Aichour I., Aichour M.T.E., Aiyar S., Al-Eyadhy A., Alahdab F., Al-Aly Z., Alam K., Alam N., Alam T., Alene K.A., Ali S.D., Alizadeh-Navaei R., Alkaabi J.M., Alkerwi A., Alla F., Allebeck P., Allen C., Al-Raddadi R., Alsharif U., A., Chisumpa V.H., Petzold M., et al.	Global, regional, and national age-sex specific mortality for 264 causes of death, 1980-2016: A systematic analysis for the Global Burden of Disease Study 2016	2017	The Lancet	1934	Article

Appendix 3: Numbers of postgraduate students graduating from each School in the Faculty of Health Sciences for the period 2013 to 2020.

Calendar Instance Year	Program Type	School of Anatomical Sciences	School of Clinical Medicine	School of Oral Health Sciences	School of Pathology	School of Physiology	School of Public Health	School of Therapeutic Sciences
2013	C		74	11	7		39	32
	D	1	10		12	8	5	8
	R	1	5		19	6	0	11
	X		1		9		31	25
	H	6			29	13		25
Total per School		8	90	11	76	27	79	106
2014	C		83	9	2		47	34
	D	1	12		10	3	4	7
	R	5	7	0	13	5	2	9
	X		6		3		0	26
	H	18	10		20	14		25
Total per School		24	128	9	48	22	53	101
2015	C		89	14	9		29	35
	D	6	16	0	14	2	7	7
	R	4	2	0	14	4	0	22
	X		22		0		27	18
	H	14	8		14	17		22
Total per School		24	137	14	51	23	63	104
2016	C		138	15	9		30	40
	D	4	14		13	3	11	9
	R	2	9		15	7	1	27
	X		27		7			7
	H	13	8		24	14		31
Total per School		19	196	15	68	24	42	114
2017	C		152	19	12		46	46
	D	3	13		12	6	8	16
	R	4	2		19	8	1	27
	X	12			2		28	14
	H	24	25		33	19		52
Total per School		43	192	19	78	33	83	155
2018	C		153	21	5		44	51
	D	3	19	0	11	8	10	8
	R	21	45		28	19		46
	X	7	9	1	23	3	0	23
	H		15		8		1	17
Total per School		31	241	22	75	30	55	145
2019	C		191	13	21		49	44
	D	4	14	1	10	7	18	14
	R	6	14	2	15	7		24
	X		15		11		18	16
	H	20	31		37	18		67
Total per School		30	265	16	94	32	85	165
2020	C		173	20	13		52	27
	D	11	12	1	14	6	16	14
	R	3	6	1	20	19		30
	X		12		16			3
	H	26	22		37	18		75
Total per School		40	225	22	100	43	68	149

Appendix 4: List of Research Entities in the Faculty of Health Sciences, 2020.

Research Entity	School/Department	Status	Recognition Cycle	Director/Leader
1. Antiviral Gene Therapy Research Unit	Pathology/ Molecular Medicine & Haematology	FRC/MRC/URC Unit	2015 until 2019	Prof Patrick Arbuthnot Patrick.Arbuthnot@wits.ac.za 01 1717 2365
2. Bone Research Laboratory Unit	Clinical Medicine	FRC/URC Unit	2018 until 2022	Prof Ugo Ripamonti Ugo.Ripamonti@wits.ac.za 011717 2300
3. Brain Function Research Group	Physiology	FRC/URC Group	2018 until 2022	Prof Andrea Fuller Andrea.Fuller@wits.ac.za 011717 2359
4. Carbohydrate & Lipid Metabolism Research Unit	Clinical Medicine/Internal Medicine	FRC/URC Unit	2015 until 2019	Prof Frederick Raal Frederick.Raal@wits.ac.za 011488 3538
5. Cardiovascular Pathophysiology and Genomics Research Unit	Physiology	FRC/URC Unit	2015 until 2019	Prof Gavin Norton Gavin.Norton@wits.ac.za 011717 2354
6. Clinical HIV Research Unit	Clinical Medicine/Internal Medicine/WHC	FRC/URC Unit	2015 until 2019	Prof Ian Sanne Isanne@witshealth.co.za 011 274 9200
7. Developmental Pathways for Health Research Unit	Clinical Medicine/Paediatrics	MRC/URC Unit	2016 until 2020	Prof Shane Norris San@global.co.za 011933 1122
8. Effective Care Research Unit	Clinical Medicine/Obstetrics & Gynaecology	FRC/URC Unit	2015 until 2019	Prof Justus Hofmeyr Justhof@gmail.com 083 280 9402
9. Empilweni Services and Research Unit (ESRU)	Clinical Medicine/Paediatrics	FRC/URC Unit	2015 until 2019	Prof Ashraf Coovadia Ashraf.Coovadia@wits.ac.za 0114709290
10. Health Policy Research Group Centre for Health Policy	Public Health	FRC/URC Group	2014 until 2018	Assoc Prof Jane Goudge jane.goudge@gmail.com 011717 3425/ 489 9931
11. Hepatitis Virus Diversity Research Unit	Clinical Medicine/Internal Medicine	FRC/URC Unit	2015 until 2019	Prof Anna Kramvis Anna.Kramvis@wits.ac.za 011488 3100
12. HIV Pathogenesis Research Unit	Pathology// Molecular Medicine & Haematology	FRC/ URC Unit	2015 until 2019	Prof Maria Papathanasopoulos Maria.Papathanasopoulos@wits.ac.za; 0117172618
13. Human Variation and Identification Research Unit	Anatomical Sciences	FRC/URC Unit	2016 until 2020	Prof Maryna Steyn Maryna.Steyn@wits.ac.za 0117172405
14. Maternal, Adolescent and Child Health (MatCH) Research Unit	Clinical Medicine/Obstetrics & Gynaecology	FRC/ URC Unit	2016 until 2020	Prof Jennifer Smit jsmit@matchresearch.co.za 031 001 1904
15. Perinatal HIV Research Unit	Clinical Medicine/Paediatrics	FRC/ URC Unit	2015 until 2019	Prof Neil Martinson (Acting Director) martinson@phru.co.za 011989 9700
16. PRICELESS (Priority Cost Effective Lesson for System)	Public Health	FRC/ URC Unit	2018 until 2022	Prof Karen Hoffman Karen.Hoffman@wits.ac.za 0117172083
17. Project for Improving Neonatal Care (PRINCE)	Clinical Medicine/Paediatrics	FRC Programme	2016 until 2020	Prof Daynia Ballot Daynia.Ballot@wits.ac.za 0114884232

18. Pulmonary Infection Research Unit	Clinical Medicine/Internal Medicine	FRC/URC Unit	2016 until 2020	Prof Charles Feldman Charles.Feldman@wits.ac.za 011488 3840
19. Respiratory & Meningeal Pathogens Research Unit	Pathology/ NICD	MRC/URC/NHLS Unit	2015 until 2019	Prof Shabir Madhi ShabirM@nicd.ac.za 011489 8723
20. Rural Public Health and Health Transitions Research Unit (Agincourt)	Public Health	MRC/URC Unit	2018 until 2022	Prof Stephen Tollman Stephen.Tollman@wits.ac.za 011717 2085
21. Sydney Brenner Institute for Molecular Biosciences	Faculty	FRC/URC Institute	2016 until 2020	Prof Michele Ramsay Michele.Ramsay@wits.ac.za 0117176635
22. Wits Advanced Drug Delivery Platform (WADDP)	Therapeutic Sciences/ Pharmacy & Pharmacology	FRC/URC Unit	2014 until 2018	Prof Viness Pillay Viness.Pillay@wits.ac.za 0117172274
23. Wits Reproductive Health and HIV Institute (WRHI)	Faculty	FRC/URC Institute	2015 until 2019	Prof Helen Rees hrees@wrhi.ac.za 011933 1228
24. Wits Research Institute for Malaria (WRIM)	Pathology/ Therapeutic Sciences	FRC/URC Institute	2018 until 2022	Prof Robyn van Zyl Robyn.VanZyl@wits.ac.za Prof Lizette Koekemoer Lizette.Koekemoer@wits.ac.za 0117172271

Appendix 5: DST/NRF South African Research Chairs Initiative (SARChI chairs) in the Faculty of Health Sciences in 2020.

GrantHolder	Department/School	Short Title
Coetzee, M	Wits Research Institute for Malaria, School of Pathology	Medical Entomology and Vector Control
Eyles, JD	School of Public Health	Health Policy and Systems
Madhi, SA	Respiratory and Meningeal Pathogens Research Unit, School of Pathology	Vaccine Preventable Diseases
Moore, PL	Department of Virology, School of Pathology	Virus-Host Dynamics for Public Health
Pillay, V/ Choonara Y	Pharmacy and Pharmacology, School of Therapeutic Sciences	Pharmaceutical Biomaterials and Polymer-Engineered Drug Delivery Technologies
Ramsay, M	Human Genetics, SBIMB, School of Pathology	Bioinformatics of African Populations
Rispel, LC	School of Public Health	Research on the Health Workforce 4 Equity and Quality
Tiemessen, C	School of Pathology/Centre for HIV and STIs, NICD	HIV Vaccine Translational Research

Appendix 6: Faculty of Health Sciences SA NRF Rated researchers as at end of 2020.

Title	Surname	Initials	Rating	Rating End
Prof	Gray	G	A1	2023/12/31
Prof	Richter	LM	A1	2023/12/31
Prof	Coetzee	M	A2	2024/12/31
Prof	Feldman	C	A2	2021/12/31
Prof	Jewkes	RK	A2	2022/12/31
Prof	Madhi	SA	A2	2022/12/31
Prof	Manderson	LH	A2	2021/12/31
Prof	Mathew	CGP	A2	2021/12/31
Prof	Morris	L	A2	2021/12/31
Dr	Cohen	C	B	2022/12/31
Prof	Arbuthnot	PB	B1	2024/12/31
Prof	Moore	PL	B1	2026/12/31
Prof	Rees	H	B1	2025/12/31
Prof	Ripamonti	U	B1	2022/12/31
Prof	Brooke	BD	B2	2021/12/31
Prof	Fuller	A	B2	2021/12/31
Prof	Glencross	DK	B2	2022/12/31
Prof	Kana	BD	B2	2021/12/31
Prof	Koekemoer	LL	B2	2023/12/31
Prof	Mahlangu	JN	B2	2024/12/31
Prof	Mathee	A	B2	2021/12/31
Prof	Naicker	S	B2	2021/12/31
Prof	Norton	G	B2	2023/12/31
Dr	Nunes	MN	B2	2026/12/31
Prof	Paweska	JT	B2	2023/12/31
Prof	Raal	FJ	B2	2021/12/31
Prof	Ramsay	M	B2	2025/12/31
Prof	Rispel	LC	B2	2026/12/31
Prof	Ruff	P	B2	2022/12/31
Prof	Schepartz	LA	B2	2024/12/31
Prof	Steyn	M	B2	2023/12/31
Prof	Tiemessen	CT	B2	2023/12/31
Prof	Van Vuuren	SF	B2	2026/12/31
Dr	Violari	A	B2	2022/12/31
Prof	von Gottberg	AM	B2	2022/12/31
Prof	Woodiwiss	AJ	B2	2021/12/31
Prof	Behrens	KG	C1	2021/12/31
Prof	Daniels	WMU	C1	2026/12/31
Dr	Groome	MJ	C1	2023/12/31
Prof	Papathanasopoulos	MA	C1	2021/12/31
Prof	Scott	LE	C1	2022/12/31
Prof	Baeyens	AJC	C2	2023/12/31
Prof	Ballot	DE	C2	2021/12/31
Prof	Bruce	JC	C2	2024/12/31
Prof	Chivandi	E	C2	2025/12/31
Prof	Choonara	YE	C2	2024/12/31
Prof	Crowther	NJ	C2	2022/12/31

Dr	Draper	CE	C2	2022/12/31
Dr	du Plessis	M	C2	2023/12/31
Dr	Evans	DH	C2	2024/12/31
Dr	Flanagan	CA	C2	2023/12/31
Prof	Goedecke	JH	C2	2023/12/31
Dr	Govender	NP	C2	2022/12/31
Prof	Gulumian	M	C2	2022/12/31
Dr	Hunt	GM	C2	2025/12/31
Prof	Kruger	D	C2	2026/12/31
Prof	Libhaber	EN	C2	2021/12/31
Prof	Maree	JE	C2	2026/12/31
Prof	Micklesfield	LK	C2	2021/12/31
Dr	Muller	EE	C2	2024/12/31
Dr	Munhenga	G	C2	2024/12/31
Prof	Myezwa	H	C2	2021/12/31
Prof	Nelson	G	C2	2026/12/31
Prof	Ntsiea	MV	C2	2024/12/31
Dr	Orkin	FM	C2	2025/12/31
Prof	Patel	M	C2	2025/12/31
Prof	Potterton	JL	C2	2021/12/31
Dr	Prabdial-Sing	N	C2	2026/12/31
Dr	Raman	J	C2	2026/12/31
Dr	Thobakgale	CF	C2	2025/12/31
Dr	Treurnicht	FK	C2	2026/12/31
Prof	Van Aswegen	H	C2	2023/12/31
Dr	Weyer	J	C2	2022/12/31
Dr	Yah	CS	C2	2026/12/31
Prof	Brooksbank	RL	C3	2021/12/31
Prof	Erlwanger	KH	C3	2021/12/31
Prof	Ihunwo	AO	C3	2021/12/31
Dr	Michel	F	C3	2023/12/31
Prof	Musenge	E	C3	2021/12/31
Prof	Naicker	NN	C3	2021/12/31
Dr	Wade	AN	C3	2024/12/31
Dr	Ware	J	C3	2023/12/31
Dr	Singh-Moodley	A	Y	2023/12/31
Prof	Dangor	Z	Y1	2025/12/31
Prof	du Toit	LC	Y1	2021/12/31
Dr	Iacovides	S	Y1	2026/12/31
Prof	Kumar	P	Y1	2025/12/31
Dr	Prioreschi	A	Y1	2026/12/31
Dr	Wareham	CS	Y1	2024/12/31
Dr	Ahmad	A	Y2	2023/12/31
Prof	Ely	A	Y2	2021/12/31
Dr	Kondiah	PPD	Y2	2025/12/31
Dr	Mall	S	Y2	2024/12/31
Dr	Moeno	SGKM	Y2	2021/12/31
Dr	Olivier	B	Y2	2022/12/31
Dr	Wadley	AL	Y2	2024/12/31
Dr	Yousif	MIA	Y2	2026/12/31

Appendix 7: Breakdown of courses and number of individuals attending offered by the Health Sciences Research Office during 2020.

2020 Courses and Workshops			
Month	Date	Name of Course/Workshop	Attendees
Feb	4th	Data Management Workshop	18
	6th	How to use STATA	40
	13th	How to use STATISTICA	16
	18th	Scientific Writing Skills	Between 75 and 115 (2 Registers were ci
	24th to 28th	FAHS1595 Research Methodology Course	Between 48 and 55 over 5 Days
	26th	Qualitative Data Analysis (MAXQDA)	5
Mar	3rd	Data Analysis Workshop	5
	10th to 12th	Supervisors Course	Between 55 and 58 over 3 Days
May	14th and 15th	Basic Statistics via MS Teams	Between 21 and 24 over 2 Days
	21st and 22nd	Basic Statistics via MS Teams	Between 37 and 44 over 2 Days
	28th and 29th	Basic Statistics via MS Teams	Between 27 and 37 over 2 Days
Jun	4th to 5th	Basic Statistics via MS Teams	Between 12 and 13 over 2 Days
	9th	Data Management Workshop	15
	19th	Data Management Workshop	15
	23rd to 25th	Sample Size Calculation	Between 35 and 44 over 2 Days
	29th	Qualitative Data Analysis (MAXQDA)	8
	30th	Data Management Workshop	9
Aug	6th	Data Analysis Workshop (STATA)	15
	11th to 13th	Advanced Statistics with STATA and STATISTICA	Between 33 and 34 over 3 Days
	20th	Data Analysis Workshop (STATISTICA and SPSS)	14
Sep	2nd	How to use STATISTICA	33
	3rd and 4th	Scientific Writing Skills	Between 66 and 85 over 2 Days
	9th	Data Management Workshop	6
	15th	Data Analysis Workshop	3
	22nd and 23rd	Basic Statistics via MS Teams	Between 41 and 43 over 2 Days
	30th	How to use STATA	40
Oct	22nd	Introduction to Questionnaire Design	15
Nov	3rd and 4th	Basic Statistics via MS Teams	13 Both days
	10th	Data Management Workshop	22
	17th	Data Analysis Workshop	16
	20th	How to use STATA	29
	24th, 25th and 27th	Advanced Statistics with STATA and STATISTICA	Between 11 and 13 over 3 Days
	30th	Qualitative Data Analysis (MAXQDA)	4
Dec	1st	How to use STATISTICA	19
	7th	Qualitative Data Analysis (MAXQDA)	5
			930

2020 Online courses via Ulwazi

Name of Course	Attendees
FAHS1595 Research Methodology	118
Online Supervisors Course	86
	204

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