

UNIVERSITY OF THE  
WITWATERSRAND,  
JOHANNESBURG



# 2019 | FACULTY OF HEALTH SCIENCES

# Contents

About the Faculty.....2

Schools in the Faculty.....3

Academic Excellence.....5

Health Sciences  
Changemakers.....6

Faculty Stats.....7

Research.....10

Research Entities..... 12

Other Centres and  
Institutes.....13

Partnerships &  
Collaborations.....15

Transforming Healthcare.....17

Driving Innovation &  
Change.....18



# About the Faculty

Established 100 years ago, the Faculty of Health Sciences has long been regarded as one of most reputable institutions for health sciences education in sub-Saharan Africa.

Today, the Faculty is ranked among the top 100 universities in the world for clinical, preclinical and health subjects by the Times Higher Education World Ranking system.

Our reputation is built on a number of important milestones. Wits Medical School took in its first students in 1919 and it was the first in South Africa to train and graduate dentists. Our research into HIV, Tuberculosis (TB), malaria and non-communicable diseases has transformed the way the international community approaches health care. In response to this, the Faculty established one of the first research entities in the country to combat infectious diseases.

We currently have 91 National Research Foundation (NRF) rated scientists of which nine are NRF A-rated scientists. Our more than 25 000 graduates are pioneers across the world, helping to improve health care services in diverse and unique ways. Our responsibility to be relevant and responsive to the health needs of the communities we serve, and those of the country, remains our guiding light. With health sciences deeply embedded in the fabric of social justice in South Africa and on the African continent, our vision is to teach, practice and investigate health sciences to realise a healthy and wealthy society.



# Schools in the Faculty

The Faculty of Health Sciences is composed of seven schools with a fully comprehensive offering.

## **ANATOMICAL SCIENCES**

The School was established as the Department of Anatomy in 1919 and is one of the oldest divisions of the university. The School currently comprises of three academic divisions, namely morphological anatomy, structural biology (histology), and biological anthropology.

## **CLINICAL MEDICINE**

The School of Clinical Medicine is the largest School in the Faculty with nine departments and about 40 divisions, which include sub-specialities. The School's candidates constitute the majority of those sitting for the Colleges of Medicine of South Africa Examinations, with a pass rate often above the average.

## **PHYSIOLOGY**

The School is the largest entity teaching physiology in South Africa, and probably on the continent. It plays a significant role in the training of physiologists; some of its graduates hold high-profile and prestigious appointments in South Africa and throughout the world.

## **PUBLIC HEALTH**

The School of Public Health enjoys an exceptional national and international reputation in teaching, research, academic service and partnerships. The School's endeavours reflect its values of academic excellence, diversity, equity, human rights, social justice and responsiveness.





## THERAPEUTIC SCIENCES

The staff, students and partners of the School of Therapeutic Sciences are committed to inquiry, the search for knowledge and excellence in teaching and service provision. The School specialises in nursing, occupational therapy, pharmacy studies and physiotherapy.

## ORAL HEALTH SCIENCES

The School of Oral Health Sciences is a leader in Dental Education in South Africa. It qualified the first dentists trained in South Africa in 1927, and continues to graduate thousands of oral health care experts.

## PATHOLOGY

The School of Pathology provides excellence in pathology in the form of service, teaching and research. It has responsibilities to the Faculty of Health Sciences and the National Health Laboratory Service (NHLS) with staff offered dual appointments within both.

# Academic Excellence

The Faculty has an exceptional reputation for training and developing the world's finest health care professionals.

**25%**  
Increase in student enrolment since 2010.

A comprehensive Faculty with more than 6500 students, the Faculty offers undergraduate degrees in dentistry, medicine, medical and health sciences, nursing, occupational therapy, physiotherapy and pharmacy. It also offers a Bachelor of Health Science degree, a Graduate Entry Medical Programme, Master's degrees in science and medicine and multiple PhD programmes.

Offering extensive teaching platforms to its students, the Faculty uses the Chris Hani Baragwanath Hospital, the Charlotte Maxeke Johannesburg Academic Hospital, the Helen Joseph Hospital, the Rahima Moosa Mother and Child Hospital, and the Donald Gordon Medical Centre as its teaching hospitals. An additional 20 hospitals and clinics spread from the border of the Kruger Park, to Krugersdorp and beyond to Mafikeng extend our teaching platform to well over 6000 hospital beds. Added to this is a Simulation Lab in our Medical School, and other school and unit based training facilities to ensure comprehensive exposure to clinical theory and practice.

The Faculty benefits from a uniquely dedicated academy across Wits, the Province and various research entities. Part time staff help to structure and supervise the teaching and learning experience of every student, with the intention of developing the best health science graduates possible.

# HEALTH SCIENCES CHANGEMAKERS



## **SHABIR MADHI**

Professor Shabir Madhi is a Professor of Vaccinology and Director of the Medical Research Council Respiratory and Meningeal Pathogens Research Unit at Wits. His research focus is currently on the prevention of infectious diseases during early infancy.



## **HELEN REES**

Professor Helen Rees, founder and executive director of the Wits Reproductive Health and HIV Institute – the university's largest research entity, is an internationally renowned expert in HIV prevention, reproductive health, and vaccines.



## **JOHNNY MAHLANGU**

Professor Johnny Mahlangu is Head of the School of Pathology and Head of the Haematology Diagnostic Section in the Department of Molecular Medicine and Haematology. He recently published a ground-breaking study set to revolutionise the treatment of haemophilia.



## **SHAKIRA CHOONARA**

Dr Shakira Choonara is a young leader, researcher and activist at the forefront of public health. She is an award winning health researcher and the 2017 Woman of the Year in Health in South Africa.



# Faculty Stats

*Ranked*  
**83rd**

In the world in the Times Higher Education World Subject Rankings 2019.



**6000**

Students registered within the Faculty.

**20 000**

Applications received each year.



1200

FHS students graduated in 2018, and as a result we remain a leading research hub on the continent and in the world. Our research continues to impact directly on improving and saving the lives of people every day.

1st

Centres of Research in SA: HIV/TB & Malaria

91

NRF-rated Researchers

Largest Faculty in South Africa

9

A-rated Researchers

8

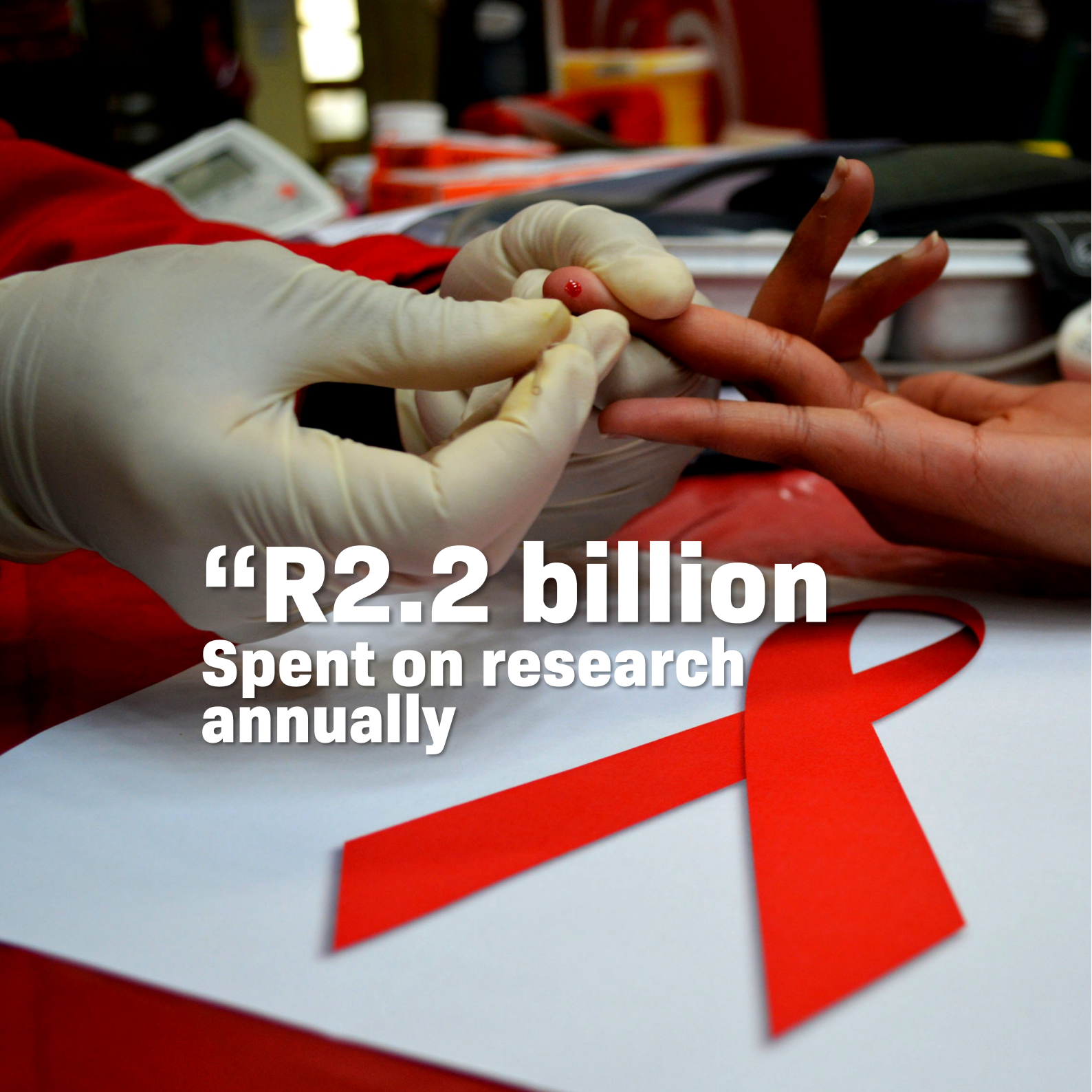
SARCHI Chairs

24

Research entities. The entities conduct research across a wide range of health sciences disciplines including HIV/Aids, malaria, tuberculosis, hepatitis B, health policy, and drug delivery, among others.

15% 

Increase in the research output within the Faculty between 2017 and 2018.

A close-up photograph showing a person's finger being pricked for a blood sample. A hand wearing a white latex glove is holding the finger, and a small drop of blood is visible on the tip. In the foreground, a red ribbon is draped across the frame. The background is blurred, showing medical equipment and a red surface.

**“R2.2 billion**  
**Spent on research**  
**annually**

# Research

The Faculty of Health Sciences is internationally recognised for its cutting edge research, conducted across 24 research entities.

The entities conduct research across a wide range of health sciences disciplines including HIV/Aids, malaria, TB, hepatitis B, health policy, and drug delivery, among others.

The Faculty has 91 NRF-rated scientists in the Faculty; nine are A-rated and 31 are B-rated. In addition, eight of our researchers hold Department

of Science and Technology (DST)/ NRF South African Research Initiative Chairs (SARChI) in their specific areas. The Faculty is home to the DST/NRF Centre of Excellence for Biomedical Tuberculosis Research.

Our researchers publish in excess of 1500 papers annually and we are one of only two Health Sciences faculties in Africa to have been published extensively in high impact journals.

Chair	School	Title
Maureen Coetzee	Wits Research Institute for Malaria	Medical Entomology & Vector Control
John Eyles	School of Public Health	Health Policy and Systems
Shabir Madhi	School of Pathology/Respiratory and Meningeal Pathogens Research Unit	Vaccine Preventable Diseases
Penny Moore	Department of Virology in School of Pathology	Virus-host Dynamics for Public Health
Viness Pillay	School of Therapeutic Sciences - Pharmacy and Pharmacology	Pharmaceuticals Biomaterials and Polymer-Engineered Drug Delivery Technologies
Laetitia Rispel	School of Public Health	Public Health
Mary Scholes	School of Animal, Plant and Environmental Sciences	Global Change and Systems Analysis
Caroline Tiemessen	School of Pathology/Centre for HIV and STIs (NICD)	HIV Vaccine Translational Research

## LOCAL RESPONSIVENESS

- Establishing the first centres of research in the country in HIV, TB and Malaria, the Faculty has gained a significant reputation for its impact in the infectious diseases. Our researchers have made a major contributor to SA's HIV and TB research, so much so that they have helped change the course of these diseases in South Africa.
- Our researchers have brought their considerable knowledge and experience to bear on the challenges of cancer, genetics, endocrinology and inherited high cholesterol to find new treatments, new drugs and new understanding.
- Exceptional work by the MRC/Wits Rural Public Health and Health Transitions Research Unit (Agincourt) in the School of Public Health has brought new insight to population health, migration and poverty enabling hundreds of studies to be conducted, many of which have helped inform health policy in South Africa.

**“We value  
excellence.**

We attract the best students each year receiving more than 20 000 applications for our coveted training. Many of our staff have international reputations.



# Research Entities

Each entity is based in one of the Schools of the Faculty of Health Sciences and has a Director or Leader. Four of the Faculty's entities are co-recognised by the Medical Research Council of South Africa.

## **School of Anatomical Sciences**

Human Variation and Identification Research Unit

## **School of Clinical Medicine**

Carbohydrate and Lipid Metabolism Research Unit

Clinical HIV Research Unit

Developmental Pathways for Health Research Unit (MRC)

Effective Care Research Unit

Empilweni Services and Research Unit

Hepatitis Virus Diversity Research Unit

Maternal, Adolescent and Child Health (MatCH) Research Unit

Perinatal HIV Research Unit

Pulmonary Infections Research Unit

Project for Improving Neonatal Care (PRINCE) Research programme

Wits Reproductive Health Institute

## **School of Oral Health Sciences**

Bone Research Laboratory Unit

## **School of Pathology**

Antiviral Gene Therapy Research Unit

Respiratory and Meningeal Pathogens Research Unit (MRC)

HIV Pathogenesis Research Unit

## **School of Pathology and Therapeutic Sciences**

Wits Institute for Malaria

## **School of Public Health**

Centre for Health Policy (URC)/Health Policy Research Group (MRC)

Rural Public Health and Health Transitions Research Unit (MRC)

Priority Cost Effective Lessons for System Strengthening South Africa (PRICELESS SA)

## **School of Physiology**

Brain Function Research Group

Cardiovascular Pathophysiology and Genomics Research Unit

## **School of Therapeutic Sciences**

Wits Advanced Drug Delivery Platform

Sydney Brenner Institute for Molecular Bioscience

# OTHER CENTRES / INSTITUTES



Named after Nobel Laureate and Wits University graduate, Sydney Brenner, the Sydney **Brenner Institute for Molecular Bioscience** is a burgeoning multi-disciplinary research institute dedicated to investigating the molecular and genomic aetiology of diseases among African populations.

By creating a world-class research environment, where top scientific and clinical researchers can tackle the big scientific questions in biomedical molecular research areas, the SBIMB aims to enable the development of new and innovative solutions to some of Africa's greatest health challenges.

The **Centre of Excellence in Biomedical TB Research** was instituted in 2004 as a joint unit co-hosted by the South African Department of Science & Technology and the National Research Foundation.

It is located at the former Molecular Mycobacteriology Research Unit at Wits, the Division of Molecular Biology and Human Genetics at The University of Stellenbosch, and most recently at The Institute for Infectious Disease and Molecular Medicine at the University of Cape Town,

Research at the Wits node covers identification and validation of novel drug targets for TB, with a particular focus on peptidoglycan, DNA repair and mycobacterial oxidative phosphorylation as tractable areas for the discovery of new drugs.

# **“Globally competitive, locally responsive.”**

The Wits Faculty of Health Sciences is the Faculty of choice for undergraduate, post-graduate and professional training particularly for the South African and sub-Saharan context.



The Faculty has always strived to be at the forefront of social justice and health. We advocated for critical reforms in policy related to diagnosis and treatment in the areas of TB, HIV/AIDS, malaria and non-communicable diseases. In pursuit of excellence in teaching and research, we have taken excellent clinical care to the underserved populations of South Africa.

Building on our strengths in Mpumalanga (Wits Rural Facility, Agincourt Research Unit, academic programmes, a strong partnership with the Provincial government and local communities), we intend to establish the Wits Rural Clinical School in Tintswalo Hospital.

Through our partnerships, we continue to support capacity development in clinical, health systems and public health research, to develop innovative methods of service delivery.

One such partnership is the CARTA (Consortium for Advance Research Training in Africa) initiative, jointly led by the Wits School of Public Health and the African Population Health and Research Centre. CARTA aims to build and retain a vibrant African academy able to lead world-class multidisciplinary research that impacts positively on public and population health.

Through the Universities Consortium—a council consisting of the Wits Health Consortium, Wits University, and five other academic institutions—the National Department of Health is able to provide placement of healthcare professionals, and the piloting of NHI reforms.

# Partnerships & Collaborations

Acknowledging our role in the training of health professionals, in furthering knowledge through research, we have built strong collaborations with industry and government.



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## **Our industry partnerships extend across 750 formal associations in the healthcare sector.**

In partnership with the Gauteng Health Department and the National Health Laboratory Service, the Faculty employs over 1100 medical and dental consultants who are involved in teaching undergraduates and post-graduates and in the research programmes, with a further 330 staff employed by the Faculty. Our students receive academic training and practical experience in five major hospitals in Johannesburg, the Wits Donald Gordon Medical Centre as well as several clinics and rural hospitals in Gauteng. This offers a real-world training experience that prepares students for a future in the healthcare sector across the globe.

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# Transforming healthcare

Our platforms extend knowledge and exposure and ultimately provide our students and researchers with a competitive edge. Flagship examples are:

**Wits Health Consortium (WHC)** was formed in 1998 to harness and stimulate the commercial potential within the Faculty, and in particular to capitalise on clinical research. The flexible manner in which WHC is structured encourages academics to operate their enes along entrepreneurial lines with strong investigator ownership. In addition to significant revenues generated to run trials, WHC has also been the fertile breeding ground for many initiatives. The most not able being the formation of the Wits Donald Gordon Medical Centre which was incubated within WHC and eventually established as its own entity.

The **Wits Donald Gordon Medical Centre** was established in 2002 and is the only private academic hospital in South Africa. The hospital was established to create a facility to train and retain

specialists and sub-specialists in South Africa, for South Africa. Not only does this 200 bed hospital run at maximum capacity operationally, it has entrenched itself as a referral centre for complex surgery in the fields of Hepatobiliary, colorectal surgery, Oncology, and vascular surgery in particular. The first private Liver Transplant Unit was formed in 2004, which hosts the largest Solid Organ Transplant Programme in the country.

To help to grow and develop Faculty members as educators, we established the Centre for Health Science Education. It has enabled us to develop teaching expertise among faculty, enhancing our lecturers' capabilities to leverage the best from their students.

# DRIVING INNOVATION & CHANGE

The Faculty is a leader in developing platforms for enhanced research and innovation.

In subject areas such as research informatics we led the hosting and support of the **Research Electronic Data Capture (REDCap) system** for Africa, enabling researchers and administrators to easily create their own web-based data capture tools and make data driven research possible.

Collaborating with the likes of Vanderbilt University, IBM, Right-to-Care and CARTA we intend to build capacity leadership in these areas. In clinical informatics we have developed electronic patient information systems being used by the Department of Surgery at Charlotte Maxeke Johannesburg Academic, Helen Joseph and Chris Hani Baragwanath Hospitals, as well as by the Departments of Orthopaedic Surgery and Ophthalmology at Charlotte Maxeke Johannesburg Academic Hospital today.

In clinical governance we intend to fill a critical gap in sound clinical governance in healthcare systems. We introduced the Clinical Governance Initiative in 2015 based on an interdisciplinary approach, which actively seeks to bring together the relevant expertise, skills and experience to build an African platform for the research and teaching of clinical governance.

And in our multidisciplinary 21st Century Research Institute – the Sydney Brenner Institute for Molecular Bioscience – we envisage becoming a leader in biomedical research on the African continent. The research institute provides a platform for relevant research into non-communicable diseases and is building capacity through access to state-of-the-art technical platforms.

*Professor Martin Veller*  
*Dean of the Faculty of Health Sciences*

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