

Acting Head of Department: Professor Gary Maartens

Departmental Profile

The Department of Medicine is a large clinical department which plays a leading role in medical education and research, and provides clinical services to the communities of the Western Cape and, in the case of our highly specialised services, to patients throughout southern Africa. The Department consists of 19 clinical and service divisions, 10 major research units, and affiliated departments of medicine at Mitchell's Plain, New Somerset, George, and Victoria hospitals. Each day, members of the department treat an average of 2,000 patients in our clinics, admit about 100 patients to our hospital services and perform over 210 medical procedures. The department offers a number of highly specialised services that are unique nationally such as allergology and clinical immunology; bone marrow, heart, kidney, and liver transplantation; cardiac electrophysiology; endobronchial ultrasound guided bronchoscopy; porphyria; and double balloon enteroscopy for visualisation of the small bowel.

There are approximately 109 registrars and senior registrars who are training in various disciplines, 38 of whom are from other countries such as Botswana, Ghana, Kenya, Libya, Malawi, Namibia, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe. The department produces formularies and guidelines that are used in most health facilities in South Africa, such as the *South African Medicines Formulary* and the *Practical Approach to Care Kit (PACK)*.

Departmental Statistics

Permanent and Long-term Contract Staff	2014
Professors	19
Associate Professors	12
Senior Lecturers	29
Lecturers	28
Administrative and clerical staff	157
Total	245

Honorary Staff	2014
Emeritus Professors	7
Emeritus Associate Professors	6
Honorary Professors	14
Honorary Associate Professors	8
Honorary Senior Lecturers	28
Honorary Lecturers	4
Honorary Research Associates	16
Total	83

Students	2014
Doctoral	52
Masters	19
Undergraduates	1275
Total	1346

Research Fields and Staff

See Divisions and Research Units within the Department

Contact Details

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Department of Medicine
Division of Cardiology

Head of Division: Professor Mpiko Ntsekhe

Divisional Profile

There are 2 overarching Clinical Research streams in the Division of Clinical Cardiology. The first consists of disease based investigator-led cross-disciplinary collaborative research projects. The second consists of Industry funded multi-centre pharmacological and device based interventional studies run through the Cardiac Clinic Research Unit.

Within the first clinical research theme, focus areas of research over the last decade have included: 1] pericardial disease; 2] rheumatic heart disease; 3] dilated cardiomyopathy 4] Arrhythmogenic right ventricular dysplasia 5] HIV and Tuberculosis and their impact on Cardiac Disease in Africa. Research questions in all of these diseases have focussed on: epidemiology and determinants of outcome, mechanism of disease, genetics markers and determinants, biomarkers, imaging, systematic reviews and randomized control trials to test novel interventions.

Industry funded research conducted through the Cardiac Clinic research unit have focused on: 1] novel pharmacological interventions to treat heart failure, atrial fibrillation, coronary artery disease and related risk factors; 2] device based interventions to treat coronary artery disease, rhythm abnormalities, heart failure, and hypertension 3] prospective registries on infective endocarditis and atrial fibrillation

Permanent Staff

Professors	3
Emeritus Professors	2
Associate Professors	1
Senior Lecturer	3
Research Fellows/Officers	2
Medical Research Officer	1
Registrars	5
Research Coordinator Cardiac Clinic Research Unit	1
Research Nurse Cardiac Clinic Research Unit	1
Research Pharmacist	1
TOTAL	20

Honorary Staff

Honorary professor	3
Honorary Lecturers	3
TOTAL	6

Postgraduate Students

Post-Doctoral	1
Doctoral	5
Masters	8
TOTAL	16

Research Fields and Staff

Ntsekhe, MN- Director of the Cardiac Clinic Research Unit

Pericardial disease, impact of HIV/TB on cardiovascular disease, coronary artery disease

Burden of cardiovascular disease in sub-Saharan Africa

Prospective registries of cardiovascular disease

Mayosi, BMM- Head Mayosi Research Unit

Rheumatic heart disease, pericardial disease, cardiomyopathy, genetics of cardiovascular disease in Africa, global burden of cardiovascular disease

Sliwa, K-Director Hatter Institute for Research in Africa

Heart failure, cardiac disease in pregnancy and the peripartum period, rheumatic heart disease, global burden of cardiovascular disease

Chin, A.

Rheumatic heart disease, ARVC

Interventions to lower sudden cardiac death

Use of devices in heart failure, and diseases of rhythm abnormalities and pacing

Pandie, S.

Pericardial disease, coronary artery disease

Cupido, B.

Rheumatic heart disease, congenital heart disease

Ntusi, N.

Magnetic resonance imaging in heart muscle disease, pericardial disease, and inflammatory diseases of the heart, HIV and the heart

Chhiba, M (Discovery Fellow)

Immunology of Mycobacterium *W*

Moses, P (Discovery Fellow)

Natural History of HIV Cardiomyopathy

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**DEPARTMENT OF MEDICINE
DIVISION OF HAEMATOLOGY and UCT LEUKAEMIA UNIT**

Head of Division: Professor N. Novitzky

Divisional Profile

The Division of Haematology at Groote Schuur Hospital is a complex unit with multi-disciplinary activities that include outpatient clinics, admission beds as well as diagnostic and research laboratories. The clinical services are organised under the umbrella of the Department of Internal Medicine, while the laboratory diagnostic sections are under the broader organisation of the Department of Clinical & Laboratory Sciences and National Health Laboratory Service (NHLS). The Haematology section of the laboratory was accredited with SANAS 3 years ago and after review, this accreditation was confirmed last year.

Patients with elaborate clinical problems, bone marrow failure or requiring stem cell transplantation are referred from all provinces; particularly the Northern and Eastern Cape and particularly we receive referrals from foreign institutions in Sub-Saharan Africa. In addition, individuals with multiple myeloma and other lymphoproliferative disorders are treated together with the Department of Radiation Oncology in combined clinics. Of concern is that a substantial increase in the numbers of HIV related malignancies and particularly Burkitt's lymphoma and leukaemia that have significantly strained our hospital beds.

The Division of Haematology provides training for both undergraduate and postgraduate students at the Medical Faculty. Registrars and consultants participate in undergraduate training, facilitating various modules focussing in blood disorders. At the postgraduate level, training is given at the level of Masters and PhD courses in cell biology as well as specialist training in haematopathology for medical graduates. In addition, within the Department of Clinical and Laboratory Sciences 3 divisions participate in the training provided to Clinical Pathology candidates. Regular experiential teaching and microscope tutorials are given to registrars in Haematopathology. Journal Clubs, seminars and group teaching is offered to Haematopathology, Clinical Haematology and general medical registrars. Interdepartmental meetings are held with academic staff from Tygerberg Hospital and Red Cross War Memorial Children's Hospital. Faculty members from the division also regularly contribute to the teaching programmes of the basic sciences as well as Departments of Internal Medicine and Clinical and Laboratory Sciences.

In addition a University of Cape Town Leukaemia Unit established within the division, has now been reviewed and approved by the University Research Committee and will continue focusing its research work in the area of haemopoietic stem cell biology and stem cell transplant immunology. The research laboratory located at the medical school campus is well equipped to support undergraduate and postgraduate pathology and science students. Dr Shaheen Mowla has joined Dr Karen Shires to expand the molecular and cellular research in the Leukaemia Unit laboratory. The main objective will be to pursue further research into the area normal and malignant haematopoiesis, detection of minimal residual disease in patients with leukaemia, cellular therapies and stem cell transplantation.

Divisional Statistics

Permanent and Long-term Contract Staff:

Professor	1
Clinical Service	
Senior Specialists	2
Clinical Registrars	3
Senior House Officers	2
Chief Professional Nurse	2
Administrative and clerical staff	3
Diagnostic Service	
Senior Pathologist	1
Pathologists	2
Pathologist part-time	1
Scientist	1
Pathology Registrars	5
Laboratory Manager	1
Medical Technologists	17
Technicians	4
UCT Leukaemia Unit	
Scientist	1
Research Officer	1
Research Technologist	1
Clinical Research Co-Ordinator	1
Administrative and clerical staff	1
Laboratory assistants (medical school)	2

Students

Doctoral	2
Masters	3
MMed	2
Honours	1

Research Fields and Staff

Professor Nicolas Novitzky

Haematopoietic stem cell biology; clonogenic assays; haematopoietic stem cell transplantation; immune reconstitution; haematological malignancies

Dr Cecile du Toit

Haematopoietic stem cell transplantation; haematological malignancies; haemophilia

Dr. Estelle Verburgh

Myelodysplastic syndrome

Dr Maureen Stein

Haematopoietic stem cell biology

Dr Jessica Opie

Molecular biology of neoplasia: chronic myelogenous leukaemia; coagulation abnormalities

Dr Karen Shires

Molecular biology and diagnostics

Dr Shaheen Mowla

Minimal residual disease and flow cytometry.

Mrs Rygana Abdulla

Cellular biology of neoplasia; clonogenic assays

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DEPARTMENT OF MEDICINE
DIVISION OF CLINICAL PHARMACOLOGY

Acting Head of Division: Professor Karen I Barnes

Divisional Profile

The major research thrusts of the division are focused on drugs for malaria, tuberculosis and HIV. The research in these fields is broad and encompasses drug discovery through to pre-clinical and clinical development, pharmacokinetics, pharmacodynamics, pharmacogenomics, clinical trials, pharmacovigilance and pharmaco-economics.

The MRC Collaborating Centre for Optimising Antimalarial Therapy (CCOAT) headed by Prof Karen Barnes is at the forefront of translational *malaria* research that focuses on the development of new antimalarials and improving the availability, dosing and selection of antimalarial drugs, particularly in vulnerable populations (young children, pregnant women, and people with other diseases like HIV/AIDS or malnutrition).

Professor Gary Maartens runs a broad research programme focused on the clinical pharmacology of *HIV and tuberculosis*. A/Prof Helen McIlleron heads our clinical pharmacokinetic group, which conducts studies evaluating pharmacokinetic-pharmacodynamic relationships of anti-tuberculosis and antiretroviral drugs, and the interaction between them in adults and children. The pharmacometric laboratory, headed by Dr Paolo Denti, performs modelling and simulation of pharmacokinetic/pharmacodynamic analyses. Dr Karen Cohen runs a research programme on adverse drug reactions to antiretroviral and anti-tuberculosis drugs.

The *analytical laboratory*, run by A/Prof Peter Smith and Dr Lubbe Wiesner, plays a key research role for drug discovery and development, including measurement of drug concentrations in small animal models and in clinical trial participants. The interdisciplinary H3D Drug Discovery Centre based in the Department of Chemistry has embedded its research in parasitology, ADME and preclinical pharmacokinetics within the Division of Clinical Pharmacology. The analytical laboratory has been awarded funding as an International Pharmacology Specialty Laboratory from two different NIH groups (ACTG and IMPAACT).

Divisional Statistics

Permanent and long term contract staff

Professors	2
Associate Professors	3
Chief / Principal Scientific Officers	9
Senior Lecturers / Senior Research Officers / Consultants	8
Research / Quality Assurance Managers	4
Medical Research Officers	2
Scientific / Scientific / Technical Officers	7
Editor (SAMF)	1
Medicines Information Pharmacists	6
Medical Technicians	6
Registrars	3
Project coordinators	2
Administrative and Clerical Staff	6
Technical / Laboratory Assistants	5
TOTAL	64

Honorary staff

Honorary Professors	2
Honorary Senior Lecturers	1
Honorary Research Associates	1
TOTAL	4

Postgraduate students

Honours	4
MMed (also listed as registrars)	3
MPhil	4
MSc	11
PhD	17
Postdocs	2
TOTAL	41

Research Fields of Academic Staff

Barnes, KI.

Antimalarial therapy: drug development, pharmacokinetic studies to inform optimal dosing in vulnerable populations, operational and policy research.

Blockman, M.

Rational and cost-effective prescribing of medicines; drug utilisation review; adverse drug reaction monitoring; drug policy and regulation; human research ethics.

Cohen, K.

Antiretroviral pharmacokinetics, adverse drug reactions, and effectiveness; HIV and non-communicable diseases; anti-tuberculosis drug-induced liver injury; adherence-resistance relationships in antiretroviral therapy

Denti, P

Pharmacokinetic and pharmacodynamic modelling of antiretroviral, anti-tuberculosis, and antimalarial drugs.

Maartens, G.

Adherence-resistance relationships in antiretroviral therapy; treatment algorithms for HIV-associated tuberculosis; tuberculosis preventive therapy for people living with HIV; pharmacoeconomic evaluation of antiretroviral therapy; pharmacogenomics and adverse drug reactions of antiretrovirals; HIV and non-communicable diseases.

McIlleron, H.

Pharmacokinetic-pharmacodynamic relationships of anti-tuberculosis and antiretroviral drugs; pharmacogenomics; population pharmacokinetics; drug interactions between antiretrovirals and anti-tuberculosis drugs.

Smith, P.J.

Pharmacokinetics of anti-tuberculosis and antiretroviral drugs; in vitro antimalarial assays, toxicology, drug development

Wiesner, L.

Pharmacokinetics and pharmacodynamics of new antimalarial and anti-tuberculosis compounds in small animal models; intracellular pharmacokinetics of anti-tuberculosis drugs; bioanalysis of clinical pharmacokinetic studies.

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**DEPARTMENT OF MEDICINE
DIVISION OF DERMATOLOGY**

HEAD OF DIVISION: Associate Professor Nonhlanhla P. Khumalo

DIVISION PROFILE

The Division's training programme includes undergraduate teaching of 2nd to 6th year MBChB students. Postgraduate students include 8 registrars, 1 MRC fellow and 2 PhD fellows. The main research contributions of the Division are in the epidemiology, treatment and prevention of hair disorders and drug-induced skin injury.

**DEPARTMENTAL STATISTICS
PERMANENT AND LONG TERM CONTRACT STAFF**

Associate Professor	1
Emeritus Professor	1
Senior Lecturers (full-time)	2
Senior Lecturers (part-time, 5/8)	2
(part-time, sessional)	4
Lecturer (part-time, 5/8)	1
(sessional, DOE funds)	1
Research Staff	4
Administrative and Clerical Staff	4
Honorary Lecturers	3
TOTAL	23

STUDENTS

Doctoral	3
Masters	9
Undergraduate	784
TOTAL	796

RESEARCH FIELDS

Associate Professor Nonhlanhla Khumalo

Professor Khumalo is NRF rated and runs the only academic hair research clinic in the country (with Dr. Laduma Ngwanya). Her research interests include the epidemiology and treatment of hair and scalp disorders that uniquely affect individuals with afro-textured hair. Her international collaboration studies use various research tools - scanning (and transmission) electron microscopy and amino acid analysis of hair. Current studies are investigating the link between folliculitis keloidalis nuchae and HIV transmission. She is also developing a hair classification tool that will be useful for elucidating the relationship between the pathogenesis of alopecia and hair phenotype.

Dr Rannakoe Lehloenya

Dr Rannakoe Lehloenya leads a study of the clinical, molecular and genetic aspects of severe cutaneous adverse drug reactions (SCAR). Intrinsic to this will be the development of a predictive model for ascribing causality to ensure safe drug reintroduction especially for antituberculosis treatment reactions. Several other closely related clinical studies include a follow up of patients to assess long term sequelae, evaluation of placenta and newborn following SCAR in pregnancy and the use of clobetasol to prevent nail sequelae of SCAR. The division has become the only African member of the international group, RegiSCAR, contributing

cases to the group database, essential as the cause of these reactions in Africa is very different from Europe and Asia.

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DEPARTMENT OF MEDICINE
DIVISION OF ENDOCRINOLOGY AND DIABETIC MEDICINE

Head of Division: Professor N.S. Levitt

Divisional Profile

The Division of Endocrinology and Diabetic Medicine provides a comprehensive in and outpatient service, the latter often as part of a multidisciplinary team with other departments. The Division continues to have close clinical linkages with Paediatric Endocrinology and Diabetes, Reproductive Endocrinology and Chemical Pathology and remains an important site for subspecialisation. In the past year we have had two supernumerary senior registrars undertaking their subspecialisation training

The Division has a wide range of research activities and is an active member of the Chronic Diseases Initiative for Africa with which it shares office space. .

The primary areas of research are:

Phenotype of patients presenting with diabetic ketoacidosis in Cape Town. This is an ongoing study that seeks to describe the phenotype and type of diabetes in people presenting with diabetic ketoacidosis in Cape Town, to develop standardized strategies for the safe withdrawal of insulin and prediction models to aid in identifying patients that may not require lifelong insulin.

The epidemiology of diabetes: The division is one of the centres undertaking the H3A Diabetes Study. This is a multi-centre study of the prevalence and environmental and genetic determinants of type 2 diabetes in sub-Saharan Africa. The study is funded by Wellcome Trust

Metabolic consequences of antiretroviral therapy in HIV+ patients a cross-sectional and longitudinal study examining the metabolic consequences of HAART is currently being analysed and written up. Ms Zulfa Abrahams is in the midst of her PhD based on these studies. Which were funded by the World Diabetes Foundation and Department of Health.

Understanding the epidemiology, health system impact and the effect on the individual of the overlap between infectious and non-communicable diseases in low- and middle-income countries. These ongoing studies are being undertaken in collaboration with the School of Public Health and Family Medicine, and international collaborators from the Universities of Southampton and Penn State.

Developing and testing models of care for people with Chronic Diseases The Division collaborates in numerous projects being conducted by the Chronic Diseases Initiative for Africa. These include:

1 Integrated intervention for diabetes risk after gestational diabetes (iindiago). This research study involves developing and evaluating an innovative intervention for the South African health system that will help prevent women with previous GDM from developing type 2 diabetes in the years after pregnancy. The study is funded by the Canadian IDRC and is a collaboration between the Universities of Cape Town, Montreal and Witwatersrand. There are four PhD students and one master's student working on this study.

2 Studies aimed at understanding the role of community health workers in non-communicable disease care in the primary care setting are being undertaken in collaboration with national and international members of CDIA.

3 Mobile phone text-messaging to support treatment for people with Type 2 diabetes in Sub-Saharan Africa: This pragmatic individually randomized trial (StARIID) will test the effectiveness of sending short message service (SMS) texts in improving health outcomes and supporting medication adherence in patients with type 2 diabetes in the context of implementing a low-cost, mobile-health communication infrastructure in an operational setting in three settings- Cape Town, Soweto and Lilongwe Malawi. This is funded by the UK MRC and Professor Andrew Farmer from Oxford University is the Chief Investigator

Diabetes in the older person in collaboration with the Division of Geriatrics, this study aims to develop a self-Management care program for Older People with Type 2 diabetes attending Community Health Centres in Cape Town. This underpins the PhD of Mahmoud Werfalli.

Addison's disease: The impact of cardiovascular risk, metabolic phenotype and Addison's disease is being investigated in collaboration with the University of Gothenburg, Sweden. We are continually researching novel ways in which to monitor adequacy of hydrocortisone replacement therapy including salivary cortisone and salivary cortisol. We continue to examine the psychological impact of having Addison's disease and the influence of hydrocortisone on sleep disturbance, which will culminate in Michelle Henry's PhD thesis. We are also examining whether hypoadrenalism in advanced HIV can explain the high mortality.

Differentiated Thyroid carcinoma: We are currently investigating the association between known genetic mutations and clinical progression of various forms of thyroid carcinoma. We are also examining potential novel genetic associations. This will hopefully culminate in the development of a cost-effective management strategy for differentiated thyroid cancer. This has been funded by the National research Foundation (Thuthuka grant).

Prednisolone Pharmacokinetics and Tuberculous Pericardial Effusions: We are trying to understand whether prednisolone has a beneficial impact on the survival of patients with tuberculous pericardial effusions. Through a Medical Research Council grant, we are investigating the pharmacokinetics of prednisolone and tuberculous therapy in association with inflammatory markers in patients with pericardial effusions, in the hope that we can optimise these forms of therapy in the future and identify appropriate biomarkers that will indicate disease improvement.

Coeliac disease: This condition has been thought to be relatively uncommon. We are developing a registry of patients with coeliac disease so that we can identify the genetic predetermines, the clinical picture, the complications and possible cardiovascular risk. This is so far been conducted in collaboration with the gastrointestinal unit and will culminate in Dr Sabelo Hlatswayo's PhD thesis under our division's guidance.

Thyrotoxicosis and HIV: We are currently looking at the impact of HIV on the presentation of thyrotoxicosis. Specific areas of interest include whether thyroid autoimmunity is provoked by coexistence of HIV and whether the antiretroviral treatment impacts on the presentation.

Paraganglioma genetics: We are investigating the genetics of the various paraganglioma syndromes in collaboration with the Division of Human Genetics. This is important because it had never been done on the African continent and will be very helpful in counselling family members who are at risk of this condition.

Divisional Statistics

Permanent and Long-term Contract Staff

Professor	1
Associate Professor	1
Professor (visiting)	1
Senior Lecturers	1
Senior Registrar in Training	3
Part-time senior consultant	1
Diabetes Specialist Nurse	2
Administrative and Clerical Staff	1
Total	11

Research Fields and Staff

Professor N S Levitt

Diabetes and hypertension health systems research, diabetes burden of disease, mechanisms underlying the metabolic sequelae of obesity, metabolic consequences of HAART and the interaction between the overlap between infectious and non-communicable diseases in low- and middle-income countries.

Professor K Steyn

Hypertension health systems research, burden of chronic disease

Associate Professor I L Ross

National registry for Study of Addison's Disease and polyglandular autoimmune syndrome

Dr J Dave

Metabolic consequences of antiretroviral therapy

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Department of Medicine

Division of Geriatric Medicine/The Albertina and Walter Sisulu Institute of Ageing in Africa

Head of Division of Geriatric Medicine: Professor M Combrinck

Director of Institute of Ageing in Africa: Dr S. Kalula

Institute Profile

The Albertina and Walter Sisulu Institute of Ageing in Africa (IAA) is a Cross-Disciplinary Group. The IAA represents a coalescence of institute – wide disciplines with a focus on ageing: specifically Geriatric Medicine; Geriatric Neurology; Geriatric Neuropsychology and Old Age Psychiatry. The International Longevity Centre–South Africa is incorporated in the Institute. The vision of the IAA is to be an academic, clinical, research and policy centre of excellence and relevance in Africa. Its mission is to facilitate the delivery of the highest standard of inter-disciplinary, in-context training for health and allied professionals and evidence-based clinical and social care for older people, whilst undertaking appropriate research and audit upon which policy and planning for older persons may be based. The mission is achieved through inter-disciplinary partnerships and teamwork, and human resources development within current legal, ethical and financial constraints. The IAA is a leader in the area of research on ageing in sub-Saharan Africa, and enjoys international recognition and acclaim.

Institute Statistics

Permanent and Long-term Contract Staff

Associate Professor	1
Senior Lecturers	5
Senior Scientific Officer	1
Medical registrars	2
Administrative and Clerical Staff	1
Total	10

Honorary Staff

Visiting Researcher	1
Senior Lecturer	1
Total	2

Students

Doctoral	2
Masters	8
Total	10

Research Fields and Staff

Dr Sebastiana Kalula:

Senior lecturer Department of Medicine and Division of Geriatric Medicine

Research field: Epidemiology of falls in older people and quality of care.

Dr Linda de Villiers

Senior lecturer Department of Medicine and Division of Geriatric Medicine

Research field: Quality, cost, resource utilisation and outcomes of stroke care.

A/Professor Marc Combrinck
Neurologist and William Slater Chair of Geriatric Medicine:
Research field Neuro-inflammation and mechanisms of neuro-degeneration with specific reference to cognitive impairment in the elderly and in HIV-associated encephalopathy.

A/Professor Kevin G.F. Thomas
Senior Lecturer, Department of Psychology.
Research field: Geriatric neuropsychology; dementia; impact of stress on memory; impact of life stressors on age-related cognitive decline.

A/Professor John A. Joska
Senior Lecturer, Division of Neuropsychiatry, Department of Psychiatry and Mental Health.
Research field: Neurocognitive disorders in HIV infection, neurobehavioural aspects of HIV, including adherence, depression and post-traumatic stress disorder (PTSD)

Dr Celeste De Jager
Senior Lecturer in Clinical Neurosciences and Clinical Epidemiology
Research field: Neurocognitive disorders (in particular Alzheimer's disease) from a neuropsychological perspective

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**Department of Medicine
Hatter Institute for Cardiology Research**

Director: Professor Karen Sliwa-Hahnle, MD, PhD, FESC, FACC

Institute Profile

Under the directorship of Professor Karen Sliwa, the Hatter Institute for Cardiovascular Research in Africa (HICRA) has been expanded from basic science to encompass more clinical research. Our focus is (1) to investigate cardiac disease interlinked with pregnancy (Cardiac Disease and Maternity Group); (2) to undertake African population studies with a focus on translational research (Heart of Africa studies); (3) to develop awareness projects linked to health education in South Africa and Africa (HEDU-Africa), (4) to study the mechanisms of protecting the heart against insults such as lack of blood flow (Cardiac Protection Group) and (5) the genetic basis of cardiomyopathy and other forms of heart disease (Cardiovascular Genetics Group).

Our major goal is to deliver first-class internationally competitive research on the pathogenesis, treatment and prevention of heart disease in Africa. We have set ourselves the goal of taking a dual approach to heart disease research; at the molecular-cellular level and at the population epidemiological level.

Our vision is to facilitate national and international collaborations in its fields of expertise. We therefore have facilitated a number of MOUs with prestigious universities in Australia, Germany and France. In order to achieve research excellence we strive to produce work that is published in high impact factor journals and is of relevance to the society in which we live.

HICRA trains a number of Honours, Masters and PhD students in cardio-protection, cardiac signalling, cardiovascular genetics, acute heart failure, pulmonary arterial hypertension and translational preventative research. Several students from other African countries, including Mozambique, Nigeria, Burundi, Zimbabwe, Ruanda and Cameroon, are currently undertaking PhD training under the supervision of Professor Sliwa, Professor Lecour, Professor Mayosi and Professor. Opie

Research Collaborative initiatives

Local collaborations

- Prof Zilla, Dr Davies, Cardiovascular Research Unit, University of Cape Town
- Prof D. Bloom, Dr Blackhurst, Lipid laboratory, University of Cape Town
- Dr Roisin Kelly, Human Biology Department, University of Cape Town
- Prof Justiaan Swanevelder, Department of Anaesthesia, University of Cape Town
- Dr Tony Lachmann, Dept Obstetrics & Gynaecology, University of Cape Town
- Dr John Anthony, Dept Obstetrics & Gynaecology, University of Cape Town
- Dr Friedrich Thienemann, Institute of Infectious Disease & Molecular Medicine, University of Cape Town and [IntegerAFRICA](#)
- Prof Amanda Lochner, Prof Faadiel Essop, Prof Florian Bauer, University of Stellenbosch

Collaborations in Africa

- Prof Albertino Damasceno, Eduardo Mondane University, Maputo, Mozambique
- Prof Ana Mocumbi, National Institute of Health, Maputo, Mozambique
- Prof Charles Mondo, Makerere University, Kampala, Uganda
- Prof Gerald Yonga, Nairobi, Kenya
- Prof E. Ogola, Nairobi, Kenya
- Dr R. Mvungi, Dar Es Salam, Tanzania

- Prof Mahmoud Sani, Kano University, Kano, Nigeria
- Dr O. Ogah, Lagos, Nigeria
- Dr D. Ojiji, Abuja, Nigeria
- Prof Amam Mbakwem, Lagos, Nigeria

International collaborators include:

- Prof Bernard Gersh, Prof Lori Blauwet, Mayo Clinic, Rochester, USA
- Prof D Yellon, Hatter Institute, University College London;
- Prof Simon Stewart, Baker IDI Melbourne Australia;
- Prof Denise Hilfiker-Kleiner, University of Hannover, Germany;
- Prof Michael Boehm, University of Saarland, Germany;
- Prof Salim Yusuf, McMaster University, Alberta, Canada
- Prof Marcelo Iriti, University of Milan, Italy
- Prof Anne Jonassen, University of Bergen, Norway
- Prof Richard James, University of Geneva, Switzerland
- Prof Luc Rochette, University of Burgundy, France
- Prof Michael Sack, National Health Institute, New Bethesda, USA
- Prof Hugh Watkins and Dr Martin Farrall, Department of Cardiovascular Medicine, University of Oxford, UK
- Prof Bernard Keavney and Professor Peter Avery, Institute for Life, University of Newcastle-upon-Tyne, UK
- Prof Peter Schwartz, University of Pavia, Italy
- Dr Debo Adeyemo, Howard University, Washington DC, USA
- Dr Guillaume Pare, McMaster University, Hamilton, Ontario, Canada
- Prof Jim Dale, University of Memphis, USA
- Prof Jonathan Carapetis, Menzies School of Health Research, Darwin, Australia
- Prof Abraham Haileamlak, University of Jimma, Ethiopia
- Dr Ganesan Karthikeyan, All India Institute of Medical Science, Delhi, India
- Prof Luiza Guilherme, University of Sao Paulo, Sao Paulo, Brazil

Institute Statistics

Permanent and Long-term Contract Staff

Director/Professor	1
Emeritus Professor	1
Associate Professor	1
Clinical Staff	2
Senior Lecturers	2
Senior Researcher	1
Research Staff	6
Laboratory Assistants	2
Administrative and Clerical Staff	1
Total	16

Honorary Staff

Honorary Professors	4
Total	4

Students

Post-Doctoral	1
Doctoral	11
Masters	3
Honours	0
Total	15

Research Fields and Staff

Prof Karen Sliwa-Hahnle (Cardiac Disease in Maternity and Heart of Africa studies)

Cardiac disease in pregnancy and heart failure.

Emeritus Professor Lionel Opie (Ischaemia)

Delineation of cellular and molecular mechanisms promoting cardiac protection

Professor Bongani Mayosi (Genetics Group Leader)

Epidemiology, genetics, and treatment of non-ischaemic heart disease

Associate Professor Sandrine Lecour (Cardioprotection Group leader)

Delineation of cellular and molecular mechanisms promoting cardiac protection with special reference to Tumour Necrosis Factor alpha

Ms Tasneem Adam

The anti-aging molecules sirtuins and their role in cardioprotection

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Department of Medicine
Division of Hepatology

Head: A/Professor Wendy Spearman

Divisional Profile

Clinical service

The Division of Hepatology runs a dedicated liver and porphyria clinic as well as the only state liver transplant programme in the country. We run a combined research and diagnostic porphyria laboratory.

The Unit is referred patients from all provinces in South Africa as well as from neighbouring countries such as Zimbabwe and Namibia for assessment regarding the aetiology and management of both acute and chronic liver disease and suitability for liver transplantation. These referrals come from both the private and public sector.

We provide a direct call-in telephonic service to primary, secondary and tertiary medical centres regarding management of liver disease. The Liver unit works closely with the Surgical Hepatobiliary unit and collaborates with the Surgical Research laboratory.

The Unit is actively involved in drawing up national guidelines for the management of Hepatitis B/HIV coinfection, Hepatitis B and Hepatitis C. Prof Spearman is on the review panel updating the World Gastroenterology Organisation Guidelines on Hepatitis B for 2015 and Dr Sonderup was on the WHO review panel for the 2015 Hepatitis B treatment guidelines. Our senior registrar, Dr Neliswa Gogela has returned from a one year Discovery/Harvard Study Fellowship at Massachusetts General Hospital in Boston where she gained experience in the use of the fibroscan, a non-invasive method of assessing liver fibrosis.

The Liver Unit in conjunction with SAGES and The Gastroenterology Foundation of South Africa runs regular Liver Updates.

Research

The Division is involved in a wide range of research activities and interacts with a number of international and local collaborators.

Viral hepatitis: In collaboration with Royal Cornwall Hospital Trust and European Centre for Environment and Human Health, University of Exeter, UK and Department of Viroscience, Erasmus Medical Centre, Rotterdam, The Netherlands have recently completed an epidemiological study assessing the seroprevalence of Hepatitis E in the Western Cape.

Dr Makgopo Kgatle is investigating the role of hypermethylation of the *TUBA4A* gene promoter in patients with HIV-HBV co-infection and the risk of developing hepatocellular carcinoma

Dr Gogela is investigating the sero-prevalence of hepatitis C in the HIV infected male population of Heterosexual men and Men who have Sex with Men (MSM) in Cape Town.

Dr Rozie Nordien is performing a cross-sectional analysis of Hepatitis C patients attending our Liver clinic.

Ruud Roos, a visiting Dutch student has completed a cross sectional clinico-pathological study of 750 HBeAg negative chronic hepatitis B patients attending the Liver Clinic.

HIV and liver disease: A clinico-pathological cohort study of liver pathology in 301 patients demonstrated that drug-induced liver injury was the dominant pathological process with cotrimoxazole and the antiretroviral drugs, efavirenz and nevirapine being the most common offending drugs. This is an ongoing study as HIV continues to contribute significantly to the burden of liver disease in South Africa.

Drug-induced Liver Injury: We are in process of setting up a Drug-induced Liver Injury Registry which we hope to expand nationally. Dr Debbie Maughan, a fellow in the unit is investigating the clinical, genetic and biological markers of risk associated with Efavirenz drug induced liver injury in HIV/AIDS.

Autoimmune liver disease: We are continuing the clinico-pathological study of the role of ethnicity, genetics, Type1 Interferons and Dendritic cells in the phenotypic expression of autoimmune hepatitis and are extending this to Primary Sclerosing cholangitis.

Porphyria: We are analysing the molecular characterisation of our Acute intermittent porphyric patients and correlating the genetic mutations with the clinical and biochemical presentations.

Acute Liver Failure and Development of bioartificial liver support devices: A collaborative study between the Division of Hepatology, Departments of Anaesthetics (Dr Malcolm Miller) and Surgery (Prof Kahn) and the UCL Institute for Liver and Digestive Health (Dr Selden) demonstrated in an acute ischaemic liver failure animal model, the ability of a bioartificial liver that was developed by the Liver Group at UCL to improve synthetic liver function and detoxification processes. At present, we are testing the clinical prototype as well as the efficacy of cryopreserved hepatocytes.

Divisional Statistics

Permanent and Long-term Contract Staff

Associate Professors	1
Senior Lecturers / Research Officers	2
Senior Research Officer	1
Technical Support Staff	1
Senior Registrar in Training	1
Administrative and Clerical Staff	1
Total	7

Postgraduate Students

Post-Doctoral	1
Masters	4
TOTAL	5

Research Fields and Staff

A/Prof CWN Spearman

Liver transplantation, viral hepatitis, paediatric liver disease, acute liver failure and bioartificial liver support devices

Dr MW Sonderup

HIV and liver disease, drug-induced liver injury, viral hepatitis, porphyria

Dr M Setshedi

Hepatocellular Carcinoma, Drug-induced liver injury

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Department of Medicine
Division of Infectious Diseases and HIV Medicine

(Partners include the Grootte Schuur ID Unit, Desmond Tutu HIV Centre, and the Centre for Infectious Diseases Research [CIDRI])

Head of Division: Professor Marc Mendelson

Divisional Profile

The Clinical Infectious Diseases (ID) Unit at Grootte Schuur Hospital provides tertiary level care for specialist ID and HIV patients in Medicine, Surgery, Psychiatry, Obstetrics and Gynaecology at Grootte Schuur, and outreach & support to UCT-affiliated hospitals. We run a busy inpatient consult service and an HIV outpatient clinic. The work of the Division is intimately linked to the NHLS departments of Microbiology and Virology, providing a comprehensive ID service. A team of HIV counsellors, infection control nurses and clinic staff provides vital ancillary services to the Division.

We lead antibiotic stewardship activities at GSH and affiliated hospitals in support of the national strategy framework for antibiotic resistance. The unit is home to the Cape Town GeoSentinel Travel Surveillance Network Site and is a European Society of Clinical Microbiology and Infectious Diseases Collaborating Centre.

The major research thrusts of the division are in HIV, Tuberculosis and Antimicrobial Resistance. Specific research areas are outlined below:

Divisional Statistics

Permanent and Long-term Contract Staff

Professor	4
Associate Professor	1
Senior Lecturers	3
Registrars	1
Research Medical Officer	0
Total	9

Honorary Staff

Honorary Professor	2
Honorary Senior Lecturer	2
Honorary Lecturers	0
Honorary Research Associates	1
Total	5

Research Fields and Staff

Professor Linda Gail Bekker

Phase I-III clinical trials in HIV prevention strategies. Research focus on HIV and TB interaction in the field. Operational research interest in antiretroviral programs and adherence strategies and training of lay HIV counsellors. Significant interest in adolescent HIV prevention.

Professor Chris Kenyon

Honorary Professor; HIV and gender dynamics. Emmonsiosis and fungal infections in HIV

Dr Tom Boyles

Senior Lecturer. Main research area surrounds rational use and development of diagnostics for infectious disaeses, including rapid diagnostic tests for Ebola;

Dr Helen Struthers

Honorary Senior Lecturer; main research area in masculinity and HIV in MSM

Dr Prudence Ive

Registrar. Antiretroviral therapy clinical trials

Dr Ilan Schwartz

Honorary Research Associate; Emmonsiosis

Dr Siphon Dlamini

Senior Lecturer; research interests in neglected tropical diseases, Hydatid Disease, Leprosy, HIV-drug reactions and Infectious Diseases Education

Professor Steve Lawn (Honorary)

HIV-associated tuberculosis. Tuberculosis and mortality within antiretroviral treatment programmes.

Associate Professor Graeme Meintjes

TB-Immune Reconstitution Inflammatory Syndrome (TB-IRIS), mortality in HIV-tuberculosis coinfection, and cryptococcal meningitis.

Professor Marc Mendelson

Clinical algorithms for HIV patients with suspected tuberculosis, HIV+/HIV+ renal transplantation, Epidemiology and diagnosis of travel-related infections; Antibiotic stewardship interventions.

Dr Kevin Rebe

Senior Lecturer. Men's Health Project – Cape Town. Recruitment and retention strategies for men having sex with men in HIV vaccine research; STDs in MSM; Hepatitis C in MSM

Dr Katalin Wilkinson

Senior Investigator Scientist at the National Institute for Medical Research, London (Medical Research Council UK), seconded to the Institute of Infectious Disease and Molecular Medicine. Research interest is the immunology of tuberculosis.

Professor Robert Wilkinson

Director University of CIDRI, Wellcome Trust Senior Fellow (Chair of Infectious Diseases) at Imperial College London and an MRC Programme Leader at the National Institute for Medical Research, UK (both posts held at UCT). Major research interest is immunology of tuberculosis.

Professor Robin Wood

Director of clinical trials of novel antiretroviral drugs; HIV-associated tuberculosis; HIV modelling; large scale rollout of antiretroviral therapy at primary care; mortality within antiretroviral programmes.

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**Department of Medicine
Division of Lipidology**

Head of Division: Associate Professor D. Blom

Divisional Profile

Lipidology at UCT is currently spread over two Departments. The Department of Medicine houses the Division of Lipidology (Head: Associate Professor D. Blom) while the Lipid Laboratory is located within the Division of Chemical Pathology (Head: Professor A.D. Marais) in the Department of Clinical Laboratory Sciences. The two components of Lipidology co-operate very closely in the investigation and management of patients. The Division of Lipidology in the Department of Medicine performs the following functions within the limits of funding, staff and facilities: expert clinical consultation, clinical research including drug development studies with the pharmaceutical industry, and ultrasonography for assessment of carotid intima media thickness. The Lipid laboratory provides specialized diagnostic investigations including determination of lipoprotein particle size by non-denaturing gradient gel electrophoresis, ultracentrifugation and analysis of VLDL composition for the diagnosis of dysbetalipoproteinaemia and genotyping to detect mutations in the LDL-receptor, apolipoproteinE and lipoprotein lipase. More specialized investigations such as measurement of 7-dehydrocholesterol for the diagnosis of Smith-Lemli-Opitz syndrome, measurement of plant sterols for the diagnosis of sitosterolaemia, cell culture and analysis of other genes are performed as required. The staff, service and research are funded chiefly by contract research. The Lipid Laboratory receives limited support from the Medical Research Council. The clinical research describes the severe dyslipidaemias occurring in the public health sector of the province but includes some referrals from the private sector and academic institutions in the country. Pharmaceutical studies investigate novel lipid modifying agents in severe hypercholesterolaemia, management of severe hypertriglyceridaemia, novel anti-diabetic therapies and studies of cardiovascular outcome with novel agents.

Divisional Statistics

Permanent and Long-term Contract Staff

Consultants	1
Medical Officers	2
Nursing sisters	
PGWC	1
Contract research	2
Contract Dietitian	1
Sonographers	1
Laboratory Technologists	1
Technical Support Staff	1
Administrative Staff	1
Total	11

Students

Doctoral	0
Masters	1
Total	1

Research Fields and Staff

AD Marais, DJ Blom, BC Brice, KH Wolmarans, G Solomon, RJ Jooste

Severe dyslipidaemias including Familial Hypercholesterolaemia, Homozygous Familial Hypercholesterolaemia, Dysbetalipoproteinaemia, Familial chylomicronaemia.

KH Wolmarans, Z Behardien, DJ Blom, AD Marais

Carotid intima-media thickness in dyslipidaemic patients

DJ Blom, G Solomon, BD Ratanjee, AD Marais
Dysbetalipoproteinaemia. Lipodystrophy.

D J Blom, KH Wolmarans, BC Brice, RJ Jooste, R Taylor, AD Marais.
Anti-sense oligonucleotides for limiting LDL production in homozygous familial hypercholesterolaemia and refractory heterozygous familial hypercholesterolaemia

DJ Blom, BC Brice, KH Wolmarans, RJ Jooste, R Taylor
Microsomal triglyceride protein inhibition in homozygous familial hypercholesterolaemia

DJ Blom, BC Brice, KH Wolmarans, RJ Jooste, R Taylor
PCSK-9 inhibition for the management of severe hypercholesterolaemia

DJ Blom in collaboration with J Dave of the Division of Endocrinology and Diabetic Medicine
Lipid metabolism in patients with HIV infection receiving antiretroviral therapy

DJ Blom in collaboration with IL Ross of the Division of Endocrinology and Diabetic Medicine
Glucocorticoid receptor polymorphisms in patients with Addison's disease

DM Blackhurst, AD Marais.
Anti-oxidant effects of wine.

AD Marais, BC Brice, KH Wolmarans, DJ Blom, BD Ratanjee in collaboration with Prof G Lambert
Plasma PCSK9 levels in familial hypercholesterolaemia.

DJ Blom in Collaboration with Prof G Lambert
PCSK9 inhibition in patients with autosomal recessive hypercholesterolaemia

AD Marais, J Cole, D Blackhurst, G Lambert
Endothelial Lipase mutations and hyperalphalipoproteinaemia

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DEPARTMENT OF MEDICINE
DIVISION OF MEDICAL GASTROENTEROLOGY

Head of GI Clinic: Professor S Thomson

Divisional Profile

The Gastrointestinal Clinic is a multi-disciplinary clinical unit consisting of Medical and Surgical components. This report primarily reflects the Medical component. The Clinic carries a large clinical load and offers a number of specialised services, with clinical and applied research interests in: Hepatobiliary disease; Colorectal disease; Oesophageal disease; Inflammatory bowel disease; *H.pylori* related disease; and Nutrition. The Clinic is involved in a number of collaborative research projects.

Divisional Statistics

Permanent and Long-term Contract Staff

Lecturers	5
Research Staff	1
Administrative and Clerical Staff	1
Total	5

Students

Masters	4
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Research Fields and Staff

Dr Gill Watermeyer: Risk of malignancy in inflammatory bowel disease treated with Azathioprine or 6-Mercaptopurine; Predicting bad outcome in Crohn's disease; drug trials – various

Dr Dion Levin: Bleeding Peptic Ulcer Disease; *Helicobacter.pylori* testing.

Dr Sabelo Hlatshwayo: Achalsia.

Dr Mashiko Setshedi: Drug induced liver injury.

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**DEPARTMENT OF MEDICINE
DIVISION OF OCCUPATIONAL MEDICINE**

Head of Division: Professor Rodney Ehrlich

Divisional Profile

Occupational Medicine is the branch of medicine concerned with the study, diagnosis, treatment and prevention of disease and ill-health attributable to work.

The Division of Occupational Medicine is a joint division of the School of Public Health and Family Medicine and the Department of Medicine at UCT.

The Division runs the Occupational Medicine Clinic at Groote Schuur Hospital, provides diploma (DOH) training to medical practitioners and a postgraduate clinical specialisation in Occupational Medicine, and conducts research into occupational disease causation, risk and means of prevention, workers' compensation, occupational health service provision, and the occupational health needs of health care workers.

Divisional Statistics

Permanent and long term contract staff

Professors	2
Lecturers / Consultants (part-time)	1
Administrative and Clerical Staff	1
TOTAL	4

Honorary and Emeritus staff

Honorary or Emeritus Professors	2
Honorary Senior Lecturers	6
Honorary Research Associates	3
TOTAL	11

Postgraduate students

MMed	5
PhD	2
TOTAL	7

Research Fields of Academic Staff

Ehrlich, Rl

Occupational lung disease in mining; tuberculosis in health care workers; worker's compensation; social epidemiology.

Jeebhay, M

Occupational lung disease epidemiology and prevention with a specific focus on work-related asthma.

Burdzik, A

Occupational dermatology.

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**DEPARTMENT OF MEDICINE
DIVISION OF NEPHROLOGY AND HYPERTENSION**

Head of Division: Professor B.L. Rayner

Divisional Profile

Currently the new division offers a wide range of clinical services including chronic and acute dialysis, renal transplantation, assessment and treatment of a broad range of kidney disease and resistant hypertension, 24 blood pressure monitoring renal biopsies, prevention of chronic kidney, and cardiovascular risk assessment. The unit is supported by a dedicated team of transplant surgeons. Treatment is offered to both private and indigent patients. It also offers outreach programmes to Khayelitsha Community Health Centre and GF Jooste Hospital locally, and to George Hospital, the Northern and Eastern Cape.

There is active training programme for senior registrars in Nephrology and the unit is currently training 5 nephrology fellows. The division supports the Department of Medicine training of medical students, specialist physicians, professions' allied to medicine, renal technologists and the nephrology course for nurses.

The main academic research activities of the division relate to:

1. Vitamin D and outcomes in SLE
2. Systemic lupus erythematosus (SLE) registry
3. Genetics of salt sensitive hypertension
4. Diabetic nephropathy and treatment of type 2 diabetes
5. Classification, genetics, prevalence and treatment of HIV associated nephropathy
6. HIV associated nephropathy and chronic diseases of lifestyle
7. Tenofovir nephrotoxicity
8. Physiological treatment of hypertension in indigenous people
9. Ethical consideration for dialysis rationing
10. Prevalence and outcome of AKI
11. Assessment of adherence to anti-hypertensive treatment through drug monitoring
12. Mesangiocapillary glomerulonephritis
13. CAPD registry
14. Association of the use of TIK with hypertension and CKD
15. Epidemiology of membranous nephropathy
16. Renal denervation for hypertension in transplant patients
17. Rapidly progressive glomerulonephritis
18. Diagnosis of Renal Tb in HIV+ve patients
19. Assessment of AV fistulas using MRI scanning
20. Transplant outcomes
21. Young hypertensives

Divisional Statistics

Permanent and Long-term Contract Staff and students

Full Professor	1
Associate Professors	1
Senior Lecturers	2
Emeritus Professor	1
Emeritus AProfessor	1
Senior registrar	5
Medical officers	2
Medical registrars	3
PhD Students	0
M Phil Students	5
M Med	4

Total	19
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Research Fields and Staff

Dr Z Barday

Kidney transplantation, renal denervation in kidney transplant patients

AProf Charles Swanepoel

Anaemia of CKD

AProf Ike Okpechi

Lupus registry; mesangiocapillary GN, CAPD registry, Rapidly progressive GN

Dr Wearne

HIV and kidney, tenofovir nephrotoxicity, CAPD registry, HIV and diseases of lifestyle, TB and the kidney

Professor Brian Rayner

Ethical considerations for dialysis rationing, Acute Kidney Injury, Physiological treatment of hypertension, Tik, hypertension and CKD, Therapeutic drug monitoring in hypertension, Salt sensitive hypertension, Diabetic nephropathy, MRI scanning and AV fistulas, genetics of hypertensive nephrosclerosis

Dr J Naidoo

Rapidly progressive GN, Tenofovir nephrotoxicity, genetics of hypertensive nephrosclerosis

Dr Bianca Davidson

Transplant registry, Peritoneal dialysis registry, and adolescent nephrology care.

Dr Pheto Mangena

Adolescent Hypertension

Dr Toyin Ameh

Membranous nephropathy

Dr Erika Jones

Assessment of adherence to antihypertensive medication through therapeutic drug monitoring; Tik, hypertension and CKD; Physiological treatment of hypertension in Africa.

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Department Of Medicine
Division of Neurology

Head of Division: Associate Professor Alan Bryer

Divisional Profile

We operate a general clinical neurology service at Grootte Schuur Hospital. This provides a comprehensive range of clinical activities, including in-patient, consultative, and emergency services. Additionally, there is a clinical neurophysiology laboratory and a dedicated acute stroke unit, as well as specialised clinics for stroke, myasthenia gravis, motor neurone disease, HIV neurology, neuro-genetic disorders, dystonia, and epilepsy.

Areas of research include:

Stroke: Clinical and laboratory based research projects are focussed on causes of stroke in young persons. A longitudinal study of HIV-associated stroke to evaluate the underlying biological mechanisms (specifically endothelial dysfunction and ultrasonographic vascular phenotypes) was commenced in 2010 and continues to date (Dr Alan Stanley).

Dr Isma-eel Ebrahim has commenced a retrospective cohort study of the time in the therapeutic range (TTR) for patients on warfarin at a tertiary and district level hospital in the Western Cape (MMed Pharmacology, supervisors: A Bryer and M Blockman)

Our unit is developing an in-service training program for health care workers involved in stroke care in under-resourced settings. The pilot module has been completed and tested for efficacy with favourable result and funds have been secured to produce the remaining 9 modules.

Myasthenia gravis (MG): Clinical and laboratory-based research projects (in collaboration with Cell Biology) are focussing on improving therapeutic strategies and increasing understanding of disease pathogenesis. These include the following:

1. Understanding the molecular mechanisms underlying extraocular muscle damage in MG studied by Dr M Nel (MRC award) towards a PhD and Dr R Rautenbach (Discovery award) towards a MSc (Supervisor: JM Heckmann).
2. Ms Joy-Mari Buys was awarded a BSc Honours (Cell Biol) for her work on the functionality of TGFB polymorphisms (Supervisor: JM Heckmann) – she is extending this work by upgrading to a MSc.

Neuromuscular Disease:

A dedicated motor neurone disease clinic has been started at GSH where clinical and genetic research projects will study this disease in an African context. Some of the research is in collaboration with Neurology at University of Stellenbosch.

As the MMed dissertation, Dr A Waweru is studying the clinical aspects of an unusual muscle dystrophy in collaboration with identifying the pathogenic gene by exome sequencing bioinformatics performed by SANBI. (Supervisor: JM Heckmann).

HIV/AIDS: Clinical and laboratory-based research projects related to:

Distal sensory polyneuropathy incidence and risk factors in HIV-infected subjects on anti-retroviral therapy.

Dr J-R Vermaak has completed his MSc thesis related to the frequency of HIV-associated sensory neuropathy in an African cohort after 12 months of ART initiation and the association of metabolic risk factors with incident neuropathy.

Visiting student from Kansas University, Nick Faunce, assisted with the 24 month longitudinal HIV neuropathy database and Dr C Centner is presently performing data analysis.

Opportunistic infections in HIV/AIDS subjects.

Dr C Albertyn was awarded an MMed in Neurology for her dissertation: Subacute Measles Encephalitis: The Neurological Sequelae of the Measles outbreak in South Africa.(Supervisor: JM Heckmann). Dr Albertyn (Discovery award) is now studying the cognitive outcome of TB meningitis in HIV-infected patients at 6 months (Supervisors: K Bateman and S Marais).

Neurogenetics: *The Division runs clinical and counselling services for patients with Huntington disease, familial spinocerebellar ataxia (SCA) and other inherited neurodegenerative conditions.*

Research projects:

Dr Danielle Smith was awarded a post-doctoral fellowship. Her work will involve optimizing the sequencing protocol to screen for Friedreich's Ataxia point mutations, setting up a triplet primed PCR protocol to screen for large SCA2 and SCA 7 mutations, and a "gene-hunting" study to screen those families that have tested negative for one of the SCA mutations. (Supervisor: A Bryer)

Dementia: *Prof Marc Combrinck, Divisions of Geriatric Medicine and Neurology.*

Research projects:

- 1 The role of systemic inflammation and the apolipoprotein E gene in human immunodeficiency virus-associated cognitive impairment (Dr Elana van Brakel, passed MSc with distinction in June 2014).
- 2 The association between physical neurological signs and cognitive impairment in young adults with newly diagnosed Human Immunodeficiency Virus infection (MSc student, Dr Harshadh Jeena).
- 3 A prospective, observational cohort study of tuberculous meningitis in adults in Cape Town (study completed, manuscript in preparation. Dr Kathleen Bateman, neurologist).
- 4 The relationships between Vitamin B12, folate, homocysteine, apoE gene and cognition in older South Africans. Dr Ilhaam Mohamed, MSc passed in June 2014.
- 5 The role Von Willebrandt Factor and its cleaving enzyme ADAMTS13 in HIV associated stroke. Dr Sameera Allie, MSc Med passed with distinction June 2013. Manuscript under review.
- 6 A folder review of cases of motor neurone disease seen at Groote Schuur Hospital 2005 to 2010. Dr Amina Daude passed with distinction MMed part 3, in June 2014)
- 7 Familial Alzheimers disease in an Eastern Cape family. MMed part 3 student, Dr MV Gule.
- 8 Intra-individual variability in cognitive scores in mild cognitive impairment/early Alzheimers disease. PhD Psychology student. Mr Bjorn Christ.
- 9 Biomarkers of HIV dementia. MPhil Psychiatry student, Dr Lina Groenewald.

Epilepsy: The Neurology Unit is in the process of constructing a web-based distance neurophysiology course for training in electroencephalography (EEG). To this end, approximately R800, 000-00 has been raised to date from the World Federation of Neurology, the International League Against Epilepsy, the Neurological Association of South Africa and a pharmaceutical company. It is anticipated that the majority of sub-Saharan career neurology registrars will enroll for the 6-month course and that the programme will be up and running by September of 2015. The course will be tested for efficacy.

Multi-media teaching: The use of clinical encounter simulations is currently being developed by Dr Lee-Pan in collaboration with Dr Rachel Weiss.

Permanent and Long-term Contract Staff

Associate Professors (Full-time)	2
Senior Lecturers (Full-time)	3
Lecturers (Part-time)	1
Total	6

Postgraduate Students

MSc Med	3
M. Med	3
BSc Hons	1

Grants:

MRC Self-initiated grant 2014-2016 (Prof J Heckmann)

Post-internship MRC fellowship (M Nel)

Discovery fellowships (R Rautenbach; C Albertyn)

Harry Crossley Postdoctoral Fellowship (D Smith)

Research Fields and Staff

Associate Professor A. Bryer

Cerebrovascular Disease; Neurogenetics.

Associate Professor J. Heckmann

Myasthenia gravis and neuromuscular disease; HIV-associated neuromuscular disease, Neurogenetics.

Dr E. Lee Pan

Health systems information technology; multi-media teaching.

Dr L Tucker

Epilepsy.

Dr Bateman:

Infectious Disease Neurology, TBM, HIV peripheral nervous disease, Stroke

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**DEPARTMENT OF MEDICINE
DIVISION OF RHEUMATOLOGY**

Head of Division: Professor Asgar Ali Kalla

Divisional Profile

The Division of Rheumatology has several research interests relating to different aspects of the rheumatic diseases. Osteoporosis is an area of interest for many years and there is ongoing collection of longitudinal bone mineral density data in patients with rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE). Age-related bone loss at different skeletal sites is being prospectively studied in collaboration with the Department of Nuclear Medicine and the Endocrine Unit. Recently, collaborative studies with the Division of Hepatology have been carried out to see the relationship between bone mineral density (BMD) and auto-immune hepatitis. Clinical drug trials are in progress to study the safety and efficacy of the newer biological DMARDs in RA and SLE. Recently, the trials of coxibs are concentrating on cardiovascular outcomes to a greater extent than their gastro-toxicity. We have also been looking at SLE genetics in collaboration with the Hepatology, with particular reference to the Vitamin D receptor and its role in the pathogenesis of auto-immune diseases. Newer areas of research include the study of chronic tophaceous GOUT; community aspects of diagnosing and treating rheumatic diseases at Community Health Centres; early rheumatoid arthritis; genetics of bone loss in SLE; and functional problems in ankylosing spondylitis. We have embarked on the ALUGEN project which comprises a registry of SLE patients and their follow-up. This study aims to document clinical features of SLE patients and to monitor our outcome.

Divisional Statistics

Permanent and Long-term Contract Staff

Professor	1
Senior Lecturer	2
Lecturers	2
Research Staff	2
Nurse practitioner	1
Administrative and Clerical staff	1
Total	8

Honorary Staff

Honorary Lecturers	3
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Students

Rotating Medical Registrar	2
Medical Officer	1
Total	3

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