

Faculty of Health Sciences
Department of Medicine
Research report 2014

Head of Department: Professor B.M. Mayosi

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 21 clinical and service divisions, 11 major research units, and four affiliated departments of medicine at, Mitchell's Plein, New Somerset, Il Military, and Victoria hospitals (www.medicine.uct.ac.za). 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, and double balloon enteroscopy for visualisation of the small bowel.

There are approximately 116 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	
Masters	
Undergraduates	1275
Total	

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 Clinical Pharmacology

Head of Division: Professor Gary Maartens

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, pharmacokinetics, pharmacogenomics, clinical trials, pharmacoepidemiology, and pharmaco-economic evaluation. The analytical laboratory plays a key research role with small animal models for drug discovery and in patient samples for drug concentrations. A large multicentre malaria clinical research group headed by Prof Karen Barnes has secured substantial funding from the Gates Foundation and the Global Fund – this programme is at the forefront of translational malaria research in Africa. The MRC South African Traditional Medicines Research Group is a drug discovery programme: Prof Kelly Chibale, Dept Chemistry, UCT and Prof Peter Smith from our division are co-directors. Compounds with antimalarial, antibacterial (including antitubercular) and antifungal activity are identified and optimised from plants used in traditional medicine. The analytical laboratory has recently been awarded funding from NIH as an International Pharmacology Specialty Laboratory. Prof Helen McIlleron heads our clinical pharmacokinetic group, which conducts a series of pharmacokinetic studies evaluating antitubercular drugs, antiretroviral drugs, and the interaction between them in adults and children with funding from the Wellcome Trust, NIH, and MRC. Our collaboration on population pharmacokinetics with Uppsala University is ongoing and we have a pharmacometric laboratory to perform these complex analyses.

Divisional Statistics

PERMANENT AND LONG TERM CONTRACT STAFF

Professors	2
Associate Professors	3
Senior Lecturer	3
Senior Research Officer	1
Medical Research Officer	1
Registrars	4
Research Fellow	1
Technical Support	10
Database Manager	1
Quality Assurance Manager	1
Information Pharmacist	4
Editor SAMF	1
Clinical Trial Monitors	1
Administrative and Clerical Staff	7
Departmental Assistance	1
TOTAL	41

HONORARY STAFF

Honorary professor	1
Honorary Lecturers	2
Honorary Research Associates	1
TOTAL	4

POSTGRADUATE STUDENTS

Post Doctoral	1
Doctoral	13
Masters	1
TOTAL	15

Research Fields and Staff

Barnes, KI.

Malaria, combination antimalarial therapy – operational and policy research. Antimicrobial pharmacokinetic studies to inform optimal dosing in vulnerable populations

Blockman, M.

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

Campbell, WE.

Phytochemical studies on indigenous Amaryllidaceae species; structural studies on active compounds isolated from traditional medicinal plants

Cohen, K.

Antiretroviral pharmacokinetics and efficacy; pharmacokinetics of antiretrovirals in children; pharmacoepidemiology.

Gabriels, G.

Analytical chemistry, pharmacokinetics, traditional medicines, drug discovery and development, drugs and sport performance

Maartens, G.

Adherence to antiretroviral therapy; immunopathology & diagnosis of HIV-associated tuberculosis; pharmaco-economic evaluation of antiretroviral therapy; pharmacogenomics of antiretrovirals

McLlerron, H.

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

Smith, P.J.

Mechanisms of antimalarial drug resistance; pharmacokinetics of anti-tuberculosis drugs; isolation of novel drugs from traditional medicines; development of new drug assays.

Wiesner, L.

Pharmacokinetics of antimalarial drugs; drug assay development; metabolite identification; drug formulation.

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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: Prof. 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. Ojji, 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 Depart 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, Type 1 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 Groote 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 Groote Schuur Hospital provides tertiary level care for specialist ID and HIV patients in Medicine, Surgery, Psychiatry, Obstetrics and Gynaecology at Groote 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 clincial trials

Dr Ilan Schwartz

Honorary Research Associate; Emmonsiosis

Dr Sipho 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 Reasearch 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 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
Part-time consultant	0
Medical officers	2
Medical registrars	3
PhD Students	0
M Phil Students	5
M Med	4
Total	19

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.

Contact Details

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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 Groote 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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