

DEPARTMENT OF MEDICINE

Research Report 2007

(Including the Albertina and Walter Sisulu Institute for Aging in Africa, UCT Bioethics Centre, Desmond Tutu HIV Research Centre, UCT/UCL Hatter Institute for Cardiology Research, UCT Leukaemia Unit, UCT Lung Institute, MRC/UCT Liver Research Centre, MRC/UCT/UWC Research Unit for Traditional Medicines and the World Health Organisation Collaborating Centre for Drug Policy).

Head of Department: Professor B.M. Mayosi

Departmental Profile

The Department consists of 16 clinical divisions and eight major research units. The clinical divisions are Acute General Medicine, Cardiology, Clinical Haematology, Clinical Immunology, Clinical Pharmacology, Dermatology, Endocrinology and Diabetology, Geriatric Medicine, Hepatology, Infectious Diseases and HIV Medicine, Lipidology, Medical Gastroenterology, Nephrology and Hypertension, Neurology, Pulmonology, and Rheumatology.

The Department has 9 major Research Units: the Allergy Diagnostic and Clinical Research Unit, Albertina and Walter Sisulu Institute for Aging in Africa, UCT Bioethics Centre, Desmond Tutu HIV Research Centre, UCT/UCL Hatter Institute for Cardiology Research, UCT Leukaemia Unit, UCT Lung Institute, MRC/UCT Liver Research Centre, MRC/UCT/UWC Research Unit for Traditional Medicines and the World Health Organisation Collaborating Centre for Drug Policy.

Departmental Statistics

Permanent and Long-term Contract Staff

| | |
|--------------------------------------|-----------|
| Professors | 12 |
| Associate Professors | 21 |
| Senior Lecturers/lecturers Full-time | 28 |
| Administrative and clerical staff | 34 |
| Total | 95 |

Honorary Staff

| | |
|-------------------------------|-----------|
| Honorary Professors | 5 |
| Emeritus Professors | 3 |
| Honorary Associate Professors | 2 |
| Honorary Senior Lecturers | 39 |
| Honorary Research Associates | 2 |
| Total | 51 |

Students

| | |
|----------------|-------------|
| Doctoral | 33 |
| Masters | 77 |
| Undergraduates | 936 |
| Total | 1046 |

Research Fields and Staff

See Divisions and Research Units within the Department

Contact Details

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**DEPARTMENT OF MEDICINE
UCT BIOETHICS CENTRE**

Director: Professor S.R. Benatar

Centre Profile

Diploma in International Research Ethics

We have completed five years of the IRENSA Programme sponsored by the Fogarty International Center of the US National Institutes of Health.

We hosted our Fifth Annual International Research Ethics Seminar on 13th and 14th August 2007 and a Reunion of the IRENSA students of 2003-2006 on 14th and 15th August 2007.

The UCT Bioethics Centre in conjunction with the University of Toronto and the Department of Health in the Western Cape hosted a Workshop on Resource Allocation on 1- 3 August 2007. Over 30 senior staff from health management and clinical services attended and participated. The purpose of this Workshop was to follow up on the workshop held in March 2006 to plan and to implement the Accountability for Reasonableness decision-making process widely throughout the Western Cape Health System. A report of the workshop is available on request from Anne-Rita Toua, Atoua@pgwc.gov.za

Other activities

Our undergraduate and general postgraduate activities, clinical consultation service and research work (see publications) continue on a satisfactory trajectory. Prof Benatar continues to serve as the international member of the Standing Committee on Ethics for the Canadian Institutes of Health Research. He also served on a US National Academy of Science Institute of Medicine Committee.

He has been invited to be an Advisor to Benevolent Organisation for Development, Health and Insight - based in Australia. He has accepted invitations to be a member of the Editorial Board of a new Journal - Public Health Ethics - and a member of the International Advisory Board of the Journal of Bioethical Inquiry (both international peer-reviewed scholarly journals).

Centre Statistics

Permanent and Long-term Contract Staff

| | |
|-------------------|----------|
| Professor | 1 |
| Admin/secretarial | 1 |
| Total | 2 |

| | |
|----------------|----|
| Honorary staff | 22 |
|----------------|----|

Research Fields and Staff

Professor Solly Benatar
Research ethics (including International Research Ethics); global bioethics

Professor David Benatar
Moral philosophy; applied ethics

Dr Lesley Henley
End of life decisions – with special reference to a children’s hospital

Dr Paul Roux
The impact of informed consent with regard to HIV/AIDS in a children’s hospital

Dr Terry Fleischer
Resource allocation / priority setting within the context of shrinking resources

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**DEPARTMENT OF MEDICINE
DIVISION OF CARDIOLOGY
(Cardiac Clinic)**

Head of Division: Professor P.J. Commerford

Divisional Profile

The Cardiac Clinic continues to provide an in – and outpatient clinical service in cardiology as well as training for registrars in the subspecialty. We are very fortunate in the quality and dedication of staff at all levels. Dr Brian Vezi joined the Consultant staff in March 2007 and his expertise enhances our electrophysiological services. Congratulations to Drs Vezi and Makanjee on award of the Discovery Academic Fellowships. Research activities and interests remain predominantly clinical including the continuous evaluation of new pharmaceutical agents and adaptations of practice to suit local conditions. Professor Bongani Mayosi's group, in co-operation with the Division of Human Genetics and Directorate of Primary Health Care, is actively investigating aspects of the genetics and epidemiology of heart disease.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|--------------------------------------|-----------|
| Professor | 1 |
| Associate Professor | 1 |
| Senior Lecturers | 2 |
| Part-time Senior Lecturer | 2 |
| Registrars-in-training | 4 |
| Secretarial Staff and Research staff | 5 |
| Technologists | 2 |
| ECG Technicians | 8 |
| Honorary staff | 1 |
| Nursing staff | 17 |
| Radiographers | 5 |
| GSH Administrative | 6 |
| Total | 54 |

Students

| | |
|---------------------------|-----------|
| Learner Technologists | 4 |
| Clinical Research Fellows | 2 |
| PhD | 2 |
| Masters | 2 |
| Honours | 1 |
| Total | 11 |

The clinical research fellows; PhD; Masters and Honours students form part of Professor Mayosi's research group.

Research Fields and Staff

Professor P.J. Commerford
Heart failure; acute coronary syndromes; epidemiology; treatment

Associate Prof. A.M. Okreglicki
Arrhythmias; pacemakers; electrophysiology

Dr M. Ntsekhe
Pericarditis and infectious diseases

Dr Brian Vezi
Arrhythmogenic right ventricular cardiomyopathy

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**DEPARTMENT OF MEDICINE
DIVISION OF CLINICAL IMMUNOLOGY**

Head of Division: Associate Professor S.R. Ress

Divisional Profile

The Division of Clinical immunology undertakes multi-disciplinary activities that include the evaluation of immune function in patients with suspected immune deficiency, and a basic and translational research programme focussed largely on HIV and TB immunology. The latter are done in collaboration with Pulmonology and include clinical trials, while the clinical immune diagnostic studies are undertaken in collaboration with the National Health Laboratory Service (NHLS). Associate Professor Keertan Dheda has established a Lung Infection and Immunity Unit and is involved in a new initiative of establishing a Clinical Translation Research Facility in conjunction with Cardiology (Mayosi Group), Pulmonology, Endocrinology and Allergology. We hosted several visitors who are involved in collaborative research projects with A/Professor K. Dheda and who gave invited talks. These included Dr. A. Hugget and Prof A. Zumla (UCL), Prof S. Schwander (New Jersey, USA), Prof Madhu Pai and Dr Pant Pai (McGill University).

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|-------------------------|----------|
| Associate Professors | 2 |
| Postdoctoral scientists | 2 |
| Research Staff | 2 |
| Technical Support Staff | 1 |
| Total | 7 |

Students

| | |
|----------|---|
| Doctoral | 3 |
|----------|---|

Research Fields and Staff

Associate Professor Stanley Ress
Immunology of tuberculosis, neonatal immunity and BCG vaccination;

Associate Professor Keertan Dheda
Innate immunity in TB infection, TH2 cytokines and T-reg in pulmonary host immunity, novel and emerging technologies in TB diagnostics, Drug resistant TB, smoking and TB, diagnostic markers in pleural effusions.

Ms. Patricia Semple
CTL mediators granulysin and perforin expression in response to BCG vaccine and IFN- γ treatment in TB.

Dr. Richard van Zyl Smit
Smoking and TB, IFN- γ release assays in TB diagnostics and pleural effusions

Ms Marcia Watkins
Neonatal immunity and dendritic cells

Dr. Alice Maredza
Treg in TB

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**DEPARTMENT OF MEDICINE
DIVISION OF DERMATOLOGY**

Head of Division: Professor Gail Todd

Divisional Profile

Academic activities

Dr Khumalo graduated with a PhD for her thesis on the epidemiology of hairstyle related hair disorders in Langa, Cape Town. Her publications in this field made “waves” in the British media being featured by *The Times* and on BBC. She was appointed as a Deputy Editor of the *South African Medical Journal* and the Founding Editor of the *South African Journal of Child Health* in 2007. A specialised clinic for problems of the hair and scalp, run by herself and Dr Ngwanya remains a service in demand.

Ongoing clinical research includes the following: A study on contact hypersensitivity reactions in atopic eczema children and a comparative study of allergic reactions in atopic compared to normal people. Dr Omar will complete his study following a group of first year trainer hairdressers prospectively to document the development of skin disease and factors associated with these reactions in this vulnerable population. Dr Motsepe has been awarded the UCB ALLSA award to study the relevance of a positive latex (RAST) result in a non-medical occupational setting.

The molecular basis of vitiligo, the role of khellin in repigmentation, and the low incidence of cancers in vitiligo patients remain an important focus of our collaborative research work together with Professor Sue Kidson and Dr Lester Davids of the Department of Human Biology. Dr Vanessa Lapiner received an MRC fellowship enabling her to work as a supernumerary registrar doing dermatology research to determine whether there is a correlation between melanocyte stem cells in vitiliginous skin and response to treatment.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|-----------------------------------|-----------|
| Associate Professor | 1 |
| Senior Lecturers (full-time) | 1 |
| Senior Lecturers (part-time, 5/8) | 2 |
| (part-time, sessional) | 4 |
| Research Staff | 8 |
| Administrative and Clerical Staff | 4 |
| Honorary Lecturers | 4 |
| Total | 24 |

Students

| | |
|---------------|-------------|
| Doctoral | 1 |
| Masters | 7 |
| Undergraduate | 1146 |
| Total | 1154 |

Research Fields and Staff

Associate Professor Gail Todd

Head of Division: Prospective longitudinal study of new born infants in rural and urban communities in South Africa, followed for development of atopic eczema and identification of predisposing factors, collaborative project with the University of Nottingham; Genetic basis for atopic eczema in African children, collaborative project with Universities of Dundee and Dublin ; Occupational skin disease; All aspects of vitiligo especially national epidemiology and cancer risk; Community dermatology; IT use in teaching and service delivery; Systemic drug reactions, predictive testing for culprit drug and rechallenge regimes.

Dr Susan Jessop

Microbial infections in patients with severe cutaneous drug reactions; IT use in teaching and service delivery; Melanoma epidemiology in collaboration with the Division of Oncology and CANSA; Evidenced-based dermatology in collaboration with the Cochrane Skin Group as a lead editor, Nottingham UK; Medical education; Convener of the 5th year MBChB program.

Dr Laduma Ngwanya (5/8)

Dermatopathology; Diseases of the hair and nails

Dr Nonhlanhla Khumalo (PhD fellow)

African hair and hair disorders. Blistering dermatoses. Vulval disorders. Evidence-based dermatology. Deputy editor South African Medical Journal.

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**DEPARTMENT OF MEDICINE
DIVISION OF ENDOCRINOLOGY AND DIABETIC MEDICINE**

Head of Division: Professor N.S. Levitt

Divisional Profile

The Division provides an inpatient and outpatient clinical service and sub-speciality training in adult endocrinology and diabetes. A recipient of an International Diabetes Training Fellowship for sub-Saharan Africa has undergone training in Endocrinology and Diabetes during the past year. It has close clinical links with Paediatric Endocrinology and Diabetes and Reproductive Endocrinology.

Research

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

Metabolic consequences of antiretroviral therapy in HIV+ patients: Cross-sectional and longitudinal studies are underway examining the metabolic consequences of HAART. These are being funded by the World Diabetes Foundation and Department of Health.

Burden of disease: The contribution of diabetes and other chronic diseases to the overall burden of disease pattern in the South African context has been studied in collaboration with Dr Debbie Bradshaw, BOD Group, MRC.

Early Antecedents of Adult Onset Chronic Diseases: We are engaged in examining whether low birth weight is associated with programming of the neuro-hormonal axes in particular responses to exercise and psychological stimuli in a cohort in Cape Town. We are also involved in the Birth to Ten and related Bone Health Study in Johannesburg and Soweto. This study provides an opportunity to evaluate the interrelationship between birth weight and subsequent growth on the development of the various components of the metabolic syndrome in up to 2000 black African subjects.

Obesity: A number of studies are in progress examining the mechanisms underlying the aetiology of obesity and the metabolic sequelae thereof in black and white African women as well as insulin secretion and sensitivity in these women.

Addison Disease: The pathogenesis of Addison disease is being investigated in collaboration with the Universities of Florida, USA and Uppsala, Sweden. Additionally a genetic component is being undertaken with Prof She, Augusta, USA. The metabolic and cardiovascular consequences of hydrocortisone replacement are currently being investigated in relation to Addison disease.

Health Systems Research: Major projects include: i) an investigation of staff knowledge, practices and perceived barriers to the provision of lifestyle

education for chronic diseases of lifestyle at the primary care level in the Western Cape and ii) interventions directed at improving healthcare delivery for diabetes and hypertension at the primary care level.

Smoking in pregnancy. The development and testing of interventions directed at reducing smoking rates during pregnancy.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|-----------------------------------|----------|
| Professor | 1 |
| Professor (Hon) | 1 |
| Senior Lecturer | 1 |
| Senior Clinical Research Fellow | 1 |
| Senior Registrar in Training | 1 |
| Medical Officer (sessional) | 1 |
| Diabetes Specialist Nurse | 1 |
| Administrative and Clerical Staff | 1 |
| Total | 8 |

Research Fields and Staff

Professor N S Levitt

Diabetes and hypertension health systems research; diabetes burden of disease; the foetal origins of chronic diseases; mechanisms underlying the metabolic sequelae of obesity; metabolic consequences of HAART

Honorary Professor K Steyn

Hypertension health systems research; burden of chronic disease; and smoking in pregnancy

Dr I L Ross

National Registry for Study of Addison Disease and polyglandular autoimmune syndrome; cortisone replacement therapy and impact on multiple organ syndromes in Addison Disease; assessment of quality of care in the Diabetic Clinic at Groote Schuur Hospital.

Dr J Dave

Prevalence of undiagnosed hyperglycaemia in patients presenting with acute stroke; incidence of osteoporosis and vertebral fractures in patients with inflammatory bowel disease; metabolic consequences of antiretroviral therapy

Dr A R Isiavwe

Carotid intima media thickness measurement in subjects with type 2 diabetes.

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**DEPARTMENT OF MEDICINE
DIVISION OF GASTROENTEROLOGY
(Gastrointestinal Clinic)**

Acting Head of GI Clinic: Professor P.C. Bornman

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 | 3 |
| Research Staff | 1 |
| Administrative and Clerical Staff | 1 |
| Total | 5 |

Students

| | |
|---------|---|
| Masters | 3 |
|---------|---|

Research Fields and Staff

Dr Gill Watermeyer

Risk of malignancy in inflammatory bowel disease treated with Azathioprine or 6-Mercaptopurine; TB versus Crohn disease; genetics of gastric cancer (with Prof Schalk van der Merwe, University of Pretoria); evaluation of mucins in IBD; NOD2 mutations in TB (with Prof Schalk van der Merwe, University of Pretoria); drug trials – various

Dr Dave Epstein

GIT diseases in HIV; Osteoporosis in IBD; creation of a national IBD registry; Azathioprine in Ulcerative Colitis; differentiating intestinal TB from Crohn Disease; endoscopy database design

Dr Dion Levin

Bleeding Peptic Ulcer Disease; *Helicobacter pylori* testing.

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**DEPARTMENT OF MEDICINE
THE ALBERTINA AND WALTER SISULU INSTITUTE OF AGEING IN
AFRICA/ DIVISION OF GERIATRIC MEDICINE**

Acting Head of Institute of Ageing in Africa and Head of Division of Geriatric Medicine: Dr S. Kalula

Institute Profile

The Albertina and Walter Sisulu Institute of Ageing in Africa (IAA) was established as a Cross-Disciplinary Group in 2001. The IAA represents a coalescence of institute – wide disciplines with a focus on ageing: specifically Geriatric Medicine: Geriatric Neurology – headed by Dr M Combrink; and Geriatric Neuropsychology – headed by Dr K Thomas. 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 | 3 |
| Lecturers | 2 |
| Technical Assistant | 1 |
| Administrative and Clerical Staff | 1 |
| Total | 8 |

Honorary Staff

| | |
|---------------------|----------|
| Visiting Professor | 1 |
| Visiting Researcher | 2 |
| Senior Lecturer | 1 |
| Lecturer | 1 |
| Total | 5 |

Students

| | |
|--------------|----------|
| Doctoral | 2 |
| Masters | 2 |
| Honours | 2 |
| Total | 6 |

Research Fields and Staff

Dr Sebastiana Kalula
Epidemiology of dementia; falls; quality of care.

Dr Linda de Villiers
Stroke risk factors and rehabilitation; post-discharge stroke community care.

Associate Professor Marc Combrinck
NRF Research Chair in Clinical Neurosciences: neuro-inflammation and mechanism of neuron-degeneration specifically cognitive impairment in elderly and in HIV-associated encephalopathy.

Dr Kevin G.F. Thomas
Senior Lecturer, Department of Psychology: geriatric neuropsychology; dementia; impact of stress on memory; impact of life stressors on age-related cognitive decline.

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**DEPARTMENT OF MEDICINE
DIVISION OF HAEMATOLOGY**

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 Medicine, while the laboratory diagnostic sections are under the broader organisation of the Department of Clinical & Laboratory Sciences and National Health Laboratory Service (NHLS). 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 transplant immunology. A second scientist has now been appointed to head molecular and cellular research in the Leukaemia Unit laboratory. The task of this scientist will be to pursue further research into the area haematopoiesis, cellular therapies and stem cell transplantation. Additionally Medical Research Council funded projects continue to improve our understanding of haematological malignancies.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|--|-----------|
| Professor | 1 |
| Senior Specialist | 1 |
| Specialist | 1 |
| Specialist part-time | 1 |
| Chief Professional Nurse | 2 |
| Laboratory Manager | 1 |
| Clinical Registrars | 3 |
| Senior House Officers | 2 |
| Medical Technologists | 18 |
| Technicians | 3 |
| Pathologists | 3 |
| Pathology Registrars | 6 |
| Scientist | 1 |
| Research staff | 1 |
| Clinical Research coordinator | 1 |
| Administrative and clerical staff | 4 |
| Laboratory assistants (medical school) | 2 |
| Total | 51 |

Students

| | |
|--------------|----------|
| Doctoral | 2 |
| Masters | 1 |
| Honours | 1 |
| Total | 4 |

Research Fields and Staff

Professor N. Novitzky

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

Dr Maureen Stein

Haematopoietic stem cell biology

Dr Cecile du Toit

Haematopoietic stem cell transplantation; haematological malignancies; haemophilia

Dr Jessica Opie

Molecular biology of neoplasia: chronic myelogenous leukaemia; coagulation abnormalities

Dr Karen Shires

Molecular biology and diagnostics

Ms Rygana Mohamed

Cellular biology of neoplasia; clonogenic assays

Dr Andrew McDonald

Haemophilia; thrombophilia; stem cell transplantation

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**DEPARTMENT OF MEDICINE
HATTER INSTITUTE FOR CARDIOLOGY RESEARCH**

Directors: Emeritus Professor L.H. Opie and Professor B.M. Mayosi

Institute Profile

The focus of the Hatter Institute is to study: 1) ways of protecting the heart against insults such as lack of blood flow (ischaemia) (Cardiac Protection Unit), and 2) the genetic basis of cardiomyopathy and other forms of heart disease (Cardiovascular Genetics Unit).

To achieve research excellence, we aim at producing work that achieves publication in the best internationally recognised journals and work that is of relevance to the society in which we live.

We also have an important teaching role, not only within the Medical School, but also by virtue of conferences and courses organised with our sister Hatter Institute at University College London, directed by Professor Derek Yellon. The annual Cardiology at the Limits meeting promotes high level postgraduate education. It brings together cardiologists from the United Kingdom and all over South Africa to listen to an intense updating on crucial cardiological issues “at the limits” of modern knowledge.

Research Collaborative initiatives:

1. Division of Lipidology, Department of Medicine, University of Cape Town.
2. Cardiovascular Research Unit, Department of Cardiac Surgery, University of Cape Town.
3. University of Stellenbosch (Professor Amanda Lochner’s and Associate Professor Hanlie Moolman-Smook’s groups).

Other collaborations

1. Collaboration with University College London, Hatter Institute, Division of Cardiology
2. University of Tromso, Norway
3. Harvard Medical School, Boston
4. Division of Cardiovascular Medicine, Mayo Clinic and Mayo Medical School, Rochester, Minnesota
5. Department of Pharmacology, University of Dijon, France
6. Department of Medicine, Turku University, Finland, together with Positron-Centre
7. Department of Cardiology, University of Geneva, Switzerland

Institute Statistics

Permanent and Long-term Contract Staff

| | |
|-----------------------------------|-----------|
| Emeritus Professors | 1 |
| Professor | 1 |
| Clinical Staff | 1 |
| Senior Lecturers | 1 |
| Research Staff | 3 |
| Laboratory Assistants | 2 |
| Administrative and Clerical Staff | 1 |
| Total | 10 |

Honorary Staff

| | |
|---------------------|----------|
| Honorary Professors | 2 |
| Total | 2 |

Students

| | |
|---------------|----------|
| Post-Doctoral | 2 |
| Doctoral | 2 |
| Masters | 2 |
| Honours | 1 |
| | 7 |

Research Fields and Staff

Professor Lionel Opie
delineation of cellular and molecular mechanisms promoting cardiac protection

Professor Derek Yellon
delineation of cellular and molecular mechanisms promoting cardiac protection

Professor Bongani Mayosi / Associate Professor Hanlie Moolman-Smook
Epidemiology, genetics, and treatment of non-ischaemic heart disease

Professor Peter Schwartz / Associate Professor Hanlie Moolman-Smook
Genetics of arrhythmogenic heart disease

Dr Sandrine Lecour
Delineation of cellular and molecular mechanisms promoting cardiac protection

Dr Roisin Kelly
Delineation of cellular and molecular mechanisms promoting cardiac protection

Dr Joy McCarthy
Molecular regulation of cardiac energy metabolism and its contribution to heart disease

Ms Lydia Lacerda
Delineation of cellular and molecular mechanisms promoting cardiac protection

Mr. Sarin Somers
Molecular regulation of cardiac energy metabolism and its contribution to heart disease

Ms Tasneem Adam
Molecular regulation of cardiac energy metabolism and its contribution to heart disease

Mr Jamie Imbriolo
Molecular regulation of cardiac energy metabolism and its contribution to heart disease

Mr Jonathan King
Delineation of cellular and molecular mechanisms promoting cardiac protection

Ms Makhosazane Zungu
Molecular regulation of cardiac energy metabolism and its contribution to heart disease

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**DEPARTMENT OF MEDICINE
MRC/UCT LIVER RESEARCH CENTRE
(incorporating DIVISION OF HEPATOLOGY)**

Directors: Professor D. Kahn (Surgery) and A/Professor P.N. Meissner (Medicine)

Head (Liver Clinic): A/Professor Wendy Spearman

Divisional Profile

The Centre is multidisciplinary and its members consist of physicians, surgeons, biochemists, immunologists and pathologists. Apart from its laboratories in the Departments of Medicine and Surgery, the Centre runs the only multidisciplinary, comprehensive, liver and porphyria clinics, including a liver transplantation program, in Africa. Major areas of research include: porphyria, viral hepatitis, chronic hepatitis, immune abnormalities in liver disease, liver transplantation, the role of portal systemic shunting in abnormal energy metabolism of liver disease, laparoscopic cholecystectomy, the treatment of bile duct calculi, the management of portal hypertension, and new methods of liver resection.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|--------------------------------------|-----------|
| Professors | 2 |
| Associate Professors | 4 |
| Senior Lecturers / Research Officers | 9 |
| Technical Support Staff | 10 |
| Total | 25 |

Honorary Staff

| | |
|----------------|---|
| Honorary staff | 3 |
|----------------|---|

Students

| | |
|--------------|---|
| PhD students | 5 |
|--------------|---|

Research Fields and Staff

P.C. Bornman
Management of portal hypertension; new methods of liver resection
laparoscopic cholecystectomy; treatment of bile duct calculi

H.N. Hairwadzi

Autoimmune liver disease; viral hepatitis

D. Kahn

Liver transplantation; liver regeneration

J.E.J. Krige

Management of portal hypertension; new methods of liver resection
laparoscopic cholecystectomy; treatment of bile duct calculi

E.G. Shephard

Development of HIV vaccines; immunology of liver disease

C.W.N. Spearman

Liver transplantation; viral hepatitis; non-alcoholic fatty liver disease

A.V. Corrigall

Porphyria

A. Mall

The role of mucus in the pathogenesis of gallstones

P.N. Meissner

Porphyria

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**DEPARTMENT OF MEDICINE
DIVISION OF INFECTIOUS DISEASES AND HIV MEDICINE**

(Partners include the Groote Schuur Infectious Diseases/HIV Unit, GF Jooste HIV Unit, Desmond Tutu HIV Centre, and the Laboratory of Mycobacterial Immunology [IIDMM])

Head of Division: Dr Marc Mendelson

Divisional Profile

The Groote Schuur Clinical Infectious Diseases / HIV Unit provides tertiary level care (i.e., level 3) for Infectious Disease (ID) and HIV patients within the hospital and to UCT's allied secondary level hospitals. A clinical consult service is provided, which handles over 40 referrals per month. Four in-patient beds are nested within the Department of Medicine and a busy outpatient clinic provides both level 3 follow-up and continues to act as a primary rollout centre for antiretroviral therapy to the surrounding population. Infectious Diseases and HIV Medicine at UCT is intimately linked to the NHLS departments of Microbiology and Virology, thereby providing a comprehensive ID/HIV service. A team of HIV counsellors, infection control nurses and clinic staff provide vital ancillary services to the Division. GSH-HIV, a collaboration between the Clinical ID/HIV unit, the Paediatric HIV unit (Dr P Roux) and HIV Neuropsychiatry (Dr John Joska) has been formed to expedite, optimize and increase access to ARV treatment at Groote Schuur and outreach sites. GSH-HIV is funded by the Presidential Emergency Plan for AIDS Relief (PEPFAR) through the Perinatal HIV Research Unit (PHRU), part of the Wits Health Consortium.

GF Jooste Hospital serves a population of 1.3 million people with local HIV prevalence levels of approximately 30%. Medical in-patient HIV prevalence is >50% and most patients are admitted with advanced stages of immunosuppression. TB incidence in Khayelitsha is >1600/100000 and 76% of TB patients attending the hospital are HIV co-infected. The hospital is a centre of excellence for HIV and TB management and offers three main areas of HIV care:

- Consultation service to HIV positive patients or patients with complicated infectious diseases admitted to GF Jooste hospital wards.
- Anti-retroviral treatment (ART) roll out clinic. This clinic is a primary level treatment site and has started approximately 650 patients on ART.
- HIV Referral Unit: This clinic provides support to all primary ART clinics in the hospitals catchment area (>12,000 patients on ART - approximately 36% of all patients on ART in the Western Cape). The Unit is able to help support primary ART clinics in both the work-up of complicated patients who require ART as well as provide help when patients develop new opportunistic infections, immune reconstitution syndromes or drug complications after starting ART

The major research thrusts of the division are in tuberculosis and HIV. Specific research areas are outlined below

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|--------------------------|----------|
| Professor | 1 |
| Associate Professors | 2 |
| Senior Lecturers | 3 |
| Registrars | 2 |
| Research Medical Officer | 1 |
| Total | 9 |

Honorary Staff

| | |
|------------------------------|----------|
| Honorary Senior Lecturer | 1 |
| Honorary Lecturers | 2 |
| Honorary Research Associates | 3 |
| Total | 6 |

Research Fields and Staff

Dr Steve Andrews

Phase III trials of novel antiretrovirals; Epidemiology of HCV in HIV patients; Training interventions and self-assessed HIV management outcomes in general practice.

Dr Helga Antonissen

Occupational exposure to blood/body fluid exposures; the relationship between the HIV positive health care workers and their susceptibility to infectious diseases, especially TB in the workplace.

Associate 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.

Dr Joe Jarvis

Clinical trial of Immunotherapy for Cryptococcal Meningitis, Prevalence and natural history of cryptococcal antigenaemia in HIV positive patients.

Dr John Joska

Neurocognitive disorders in HIV, mental health services, neuropsychiatry

Dr Chris Kenyon

Neurological manifestations of Immune Reconstitution Inflammatory Syndrome; Psychology of HIV denialism; Climate Change and Health in South Africa; Optimal strategies of Health Care Rationing in South Africa

Dr Steve Lawn

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

Dr Graeme Meintjes

Major research area is the TB-Immune Reconstitution Inflammatory Syndrome (TB-IRIS): MRC-funded randomised controlled trial of prednisone vs placebo for the treatment of mild and moderate TB-IRIS; Clinical, proteomic and genomic characterisation of the immune reconstitution inflammatory syndrome in HIV-associated tuberculosis; lactic acidosis complicating ART; TB diagnosis in HIV-infected people; Aetiology of clinical deterioration in patients on TB treatment; cryptococcal meningitis.

Dr Marc Mendelson

Novel diagnostics for tuberculosis – biomarker discovery; Dendritic Cell responses to *Mycobacterium tuberculosis*; Pyrexia of Unknown Origin in HIV; Occupational exposure to blood borne viruses.

Dr Mark Nicol

Novel diagnostics for TB; Host-Pathogen interactions in TB.

Dr Molebogeng Rangaka

Epidemiology and treatment of tuberculosis in HIV-infected patients; the role of isoniazid preventive therapy in reducing TB infections in patients starting highly active antiretroviral treatment.

Dr Kevin Rebe

Adjunctive Interferon-gamma treatment for Cryptococcal Meningitis; Recruitment and retention strategies for men having sex with men in HIV vaccine research; Sensitivity and specificity of EBV PCR in primary CNS lymphoma; Prednisone for the treatment of mild to moderate TB-IRIS

Professor Robert Wilkinson

Wellcome Trust Senior Fellow (Chair of Infectious Diseases) at Imperial College London and an MRC Programme Leader at the National Institute for Medical Research, Mill Hill, London, UK. He is seconded to the University of Cape Town, where he is based in the IIDMM. Research is aimed at understanding the determinants and ameliorating the consequences of tuberculosis. Several projects are underway including:

1. A clinical trial of isoniazid preventive therapy plus combined antiretroviral therapy versus antiretroviral therapy alone for the prevention of tuberculosis in HIV infected people
2. A clinical trial of prednisone versus placebo in the adjunctive management of mild-moderate HIV-TB associated immune reconstitution inflammatory syndrome

3. A biomarker discovery programme ultimately aimed at improving the diagnosis of tuberculosis in HIV infected children and adults
4. Immunological characterisation of both protective and pathological immune responses to tuberculosis that arise during antiretroviral therapy
5. Immunological characterisation of pericardial tuberculosis
6. Steroid modulation of immune responses in tuberculosis
7. The clinical consequences of strain variation in *M. tuberculosis*
8. The prevalence, mechanisms and rapid diagnosis of anti-tuberculosis drug resistance
9. *M. tuberculosis* antigen discovery in the context of the biology of latent tuberculosis infection

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 A.D. Marais

Divisional Profile

Lipidology is a division of the Department of Medicine that performs the following functions: expert clinical consultation, specialised diagnostic laboratory, clinical research including drug development studies with the pharmaceutical industry, and laboratory research with students and on contract with industry. The staff, service and research are funded chiefly by contract research but there is support from the Medical Research Council. The clinical research describes the severe dyslipidaemias occurring in public health sector of the province but includes some referrals from the private sector and academic institutions in the country. The laboratory research involves the setting up of cost-effective special assays for diagnosis of severe dyslipidaemias. The pharmaceutical studies have involved the development lipid modifying agents in severe dyslipidaemia and their effects on the carotid artery intima-media thickness.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|-------------------------|-----------|
| Professor | 1 |
| Consultants | 1 |
| Medical Officers | 2 |
| Nursing sisters | 3 |
| Contract Dietitian | 1 |
| Postdoctoral scientist | 1 |
| Junior Research Fellow | 1 |
| Technical Support Staff | 3 |
| Administrative Staff | 2 |
| Total | 15 |

Students

| | |
|--------------|----------|
| Doctoral | 1 |
| Masters | 2 |
| Total | 3 |

Research Fields and Staff

A.D. Marais, S. Jones, D J Blom, J C Firth, K H Wolmarans, R J Jooste

Severe dyslipidaemias including Familial Hypercholesterolaemia, Dysbetalipoproteinaemia, chylomicronaemia.

K. H. Wolmarans, J.E. Freislich, Z. Behardien, A. D. Marais
Carotid intima-media thickness in dyslipidaemic patients

D.J. Blom, S. Jones, P. Byrnes, A. D. Marais
Dysbetalipoproteinaemia. Lipodystrophy.

J.C. Firth, S. Jones, R.J. Jooste, S.J. Delport, P.L.E. Cowie C.A. Fuller
Familial hypercholesterolaemia responses to colesvelam, atorvastatin and torcetrapib, and ezetimibe and simvastatin.

F.H. O'Neill, A. D. Marais
Phyosterolaemia; Fatty acid profiles and changes during peroxidation

D.M.Blackhurst, A. D. Marais. Also collaboration with Universities of Western Cape and Stellenbosch.
Anti-oxidant effects of wine. Lipid peroxidation in rodent diabetes model.

M. Le Riche, B.D. Ratanjee, A.D. Marais
Lipoprotein X

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

Head of Division: Dr M.D. Pascoe (Nephrology); Associate Professor B.L. Rayner (Hypertension)

Divisional Profile

a) Nephrology

The Division remains actively involved in contract research in the fields of transplantation immunosuppression the anaemia of chronic kidney disease and in SLE. The 2 major community projects that have been investigating genetic and other factors in hypertensive patients attending community hospitals are bearing fruit. We hope to be able to continue these projects into the next 2 to 3 year period. A further project is designed to address HIV/AIDS related kidney diseases.

b) Hypertension

The Hypertension Clinic is a consultant clinic, which provides a specialist, in- and out-patient service for patients with severe and/or secondary hypertension. It also provides specialist health care service to various Community Health Care Centres and a 24 hour Ambulatory Blood Pressure service to the entire community. Active research projects are continuing and a community outreach programme has continued to operate.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|----------------------|-----------|
| Emeritus Professors | 1 |
| Associate Professors | 3 |
| Consultant | 1 |
| Senior Lecturers | 2 |
| Registrar | 1 |
| Medical Officers | 3 |
| Chief Prof. Nurse | 1 |
| Research Staff | 1 |
| Total | 13 |

Students

| | |
|--|----------|
| Medical Registrars (1 senior) | 3 |
| PhD student | 2 |
| International Society of Nephrology Fellow | 1 |
| Total | 6 |

Research Fields and Staff

Dr M.D. Pascoe

Cost effective drug strategies in transplantation; new immunosuppression protocols for renal transplantation

Associate Professor C.R. Swanepoel

New immunosuppressive drugs in systemic lupus erythematosus; renal anaemia

Dr Z Barday

HIV related renal disorders; new therapeutic agents in transplantation and in SLE.

Professor Brian Rayner

Clinical research; genetics of salt sensitive hypertension in blacks; epithelial sodium channel gene mutations in hypertension

Dr Yvonne Trinder

Genetics of severe hypertension in blacks

Dr Ike Okpechi

Metabolic syndrome and chronic kidney disease in blacks

Dr Erica Jones

The R563Q mutation of the epithelial sodium channel gene mutations in hypertension

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DEPARTMENT OF MEDICINE DIVISION OF NEUROLOGY

Head of Division: Associate Professor R.W. Eastman

Divisional Profile

A general clinical neurological service is maintained at Groote Schuur Hospital, including inpatients, outpatients, and a referral and emergency service. In addition, there is a dedicated stroke unit, a clinical neurophysiology laboratory, and specialised clinics for stroke, myasthenia gravis, epilepsy and neuro-genetics. Areas of research include:

1. Stroke: The division runs a 6-bed acute stroke unit and maintains a database on all stroke patients. In collaboration with the Swedish International Development Agency, and the Department of Geriatrics, stroke outcomes and rehabilitation are being studied at tertiary and district level.
2. Myasthenia gravis: A large cohort of patients is being followed prospectively. Studies on this group include the molecular mechanisms of complement regulation (with the Department of Human Genetics and Cell Biology) and the pharmacokinetics of azathioprine in the various ethnic groups of patients (with the Department of Pharmacology).
3. Neuro-genetics: A clinical and counselling service, is run in conjunction with the Dept. of Genetics. A wide variety of disorders are seen, and especially spino-cerebellar ataxia and Huntington disease.
4. Inflammation in the central nervous system: Cytokines and other inflammatory mediators are studied in Alzheimer's disease and HIV encephalopathy.
5. Epilepsy surgery: A video-EEG long-term monitoring unit studies and selects patients with chronic intractable epilepsy for surgical treatment.
6. Multi-media teaching: The use of this modality is being explored for local teaching.

Drug trials: The division is active in phase 3 drug trials, especially in Parkinson disease and epilepsy.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|------------------------------|----------|
| Associate Professors | 4 |
| Senior Lecturers (Full-time) | 2 |
| Junior Lecturers (Full-time) | 0 |
| Lecturers (Part-time) | 2 |
| Total | 8 |

Students

| | |
|---------------|---|
| MMed students | 3 |
| M. Sc. | 1 |
| PhD | 1 |

Research Fields and Staff

Associate Professor R.W. Eastman
Epilepsy; epilepsy surgery; EMG

Associate Professor B. Kies
Parkinson disease; epilepsy; neurotherapeutics; primary care management of common neurological conditions

Associate Professor A. Bryer
Stroke; neuro-genetics; spinocerebellar ataxias

Associate Professor M. Combrinck
Neuroinflammation; cytokines in the cerebrospinal fluid; HIV mechanisms, HIV encephalopathy

Dr E. Lee Pan
Health systems information technology; computer-based medical education

Dr J. Heckmann
Myasthenia gravis; neuro-immunology; neuro-genetics; HIV-related neurological disorders

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**DEPARTMENT OF MEDICINE
DIVISION OF CLINICAL PHARMACOLOGY**

(Including the MRC/UCT/UWC Research Unit for Traditional Medicines and the World Health Organisation Collaborating Centre for Drug Policy Research)

Head of Division: Professor Gary Maartens

Divisional Profile

The major research thrusts of the division are in malaria, tuberculosis and HIV. The research in these fields is very broad, encompassing basic science, pharmacokinetics, clinical trials and pharmacoeconomic evaluation. The malaria cell biology programme is lead by the Senior Wellcome Trust Fellow, Heinrich Hoppe – this programme draws to a close at the end of 2007. A large multicentre malaria clinical research group has secured substantial funding from the Global Fund – this programme is at the forefront of translational malaria research in Africa. The MRC South African Traditional Medicines Research Group (joint UCT and UWC) was extended for a further 5 years in 2004. This is a drug discovery programme. Compounds with antimalarial, antibacterial (including anti-tubercular) and antifungal activity are identified from plants used in traditional medicine. A series of pharmacokinetic studies evaluating antitubercular drugs and the interaction between rifampicin and antiretroviral drugs in adults and children has commenced with funding from the Wellcome Trust, Department of Health and the EDCTP. Our collaboration on population pharmacokinetics with Uppsala University is ongoing, funded by NRF. A study on the pharmacokinetic-pharmacodynamic interaction of antitubercular drugs has been funded by the MRC. An NIH-funded study of an intervention to improve antiretroviral adherence is ongoing. Pharmacoeconomics is an emerging interest, with several studies on antimalarial and antiretroviral drugs. A study funded by MRC and the Wellcome Trust has commenced to evaluate the role of corticosteroids in paradoxical reactions in tuberculosis patients induced by antiretroviral therapy (in collaboration with Robert Wilkinson, IIDMM). Scholarships were awarded for two students to present their research orally at international scientific meetings: Yuan Ren (14th Conference on Retroviruses and Opportunistic Infections, Los Angeles, February 25-28, 2007) and Dr Karen Cohen (8th International Workshop on Clinical Pharmacology of HIV Therapy; 16-18 April 2007; Budapest, Hungary).

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|----------------------|---|
| Professor | 1 |
| Associate Professors | 3 |
| Senior Lecturers | 1 |
| Lecturers | 3 |
| Registrars | 3 |

| | |
|-----------------------------------|-----------|
| Senior Wellcome Fellow | 1 |
| Technical Support Staff | 7 |
| Information pharmacists | 4 |
| Administrative and Clerical Staff | 6 |
| Laboratory Assistants | 2 |
| TOTAL | 31 |

Honorary Staff

| | |
|------------------------------|----------|
| Honorary Lecturers | 2 |
| Honorary Research Associates | 2 |
| TOTAL | 4 |

Postgraduate Students

| | |
|---------------|-----------|
| Post Doctoral | 4 |
| Doctoral | 13 |
| Masters | 4 |
| Honours | 2 |
| TOTAL | 27 |

Research Fields and Staff

Barnes, KI

Malaria, combination antimalarial therapy – operational and policy research

Blockman, M

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

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 tuberculosis; clinical and pharmacoepidemiology; prescribing of antimicrobials by primary care practitioners; pharmacovigilance.

Evans, A

Drug assay development

Gabriels, G

Analytical Chemistry, Pharmacokinetics, Traditional Medicines, Drug Discovery and Development, Drugs and Sport Performance

Hoppe, HC

Malaria parasite cell biology

Maartens, G

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

McIlleron, H

Pharmacokinetics and pharmacodynamics of anti-tuberculosis drugs; population pharmacokinetics; drug interactions between antiretrovirals and rifampicin.

Mehta, U

Adverse drug reaction monitoring; pharmacovigilance; vaccines safety, drug regulation

Smith, PJ

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

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**DEPARTMENT OF MEDICINE
DIVISION OF PULMONOLOGY**

(Including the Lung Clinical Research Unit in the UCT Lung Institute)

Acting Head of Division: Associate Professor G.M. Ainslie

Divisional Profile

The Division provides an inpatient and outpatient clinical service and sub-speciality training in pulmonology. In addition, it runs specialised clinics in interstitial lung disease, cystic fibrosis, work health (together with the Dept of Occupational Medicine) and lung cancer (together with the Dept of Radiotherapy & Oncology) and allergy. Prof Ainslie is the Past President of the South African Thoracic Society (SATS) and is a long-standing council member. Prof Bateman is Managing Director of the UCT Lung Institute and is currently chair of the Science Committee of the Global Initiative against Asthma (GINA), and serves on the Executive of the Global Alliance against Respiratory Diseases (GARD) of the World Health Organisation. Prof Paul Potter, Head of the Allergology Clinics, has recently been elected to the Board of Directors of the World Allergy Organization (WAO) and is also a member the WHO ARIA (Allergic Rhinitis and its Impact on Asthma) Executive Committee. The Division, in addition to a productive year for research outputs, has also established a new basic science research centre in the form of the Lung Infection and Immunity Unit, and a newly endowed NRF-funded research Chair is now embedded with the Division.

Research projects currently in progress are the following:

1. Respiratory epidemiology: Assessment of the prevalence and risk factors associated with COPD, using the Burden of Obstructive Lung Disease (BOLD) methodology.
2. Lung Drug Research: This unit has completed 7 studies and a further 11 studies are underway (5 being phase II trials) on new treatments for asthma and COPD.
3. Tuberculosis vaccines: Assessment of the potential pulmonary consequences of vaccination with new tuberculosis vaccines.
4. Research into new treatments and drugs for tuberculosis: The Centre for Tuberculosis Research Innovation projects include a NIH-funded project on host defences in tuberculosis, the role of inhaled and subcutaneous interferon-gamma on active pulmonary tuberculosis, and two studies on new drugs for the treatment of tuberculosis. The latter has become an urgent need in view of the development of multidrug and extreme drug resistant strains of mycobacteria.
5. Use of the Chest Radiography Recording and Reporting System (CRRS) for use by non-radiologists for field studies: (in collaboration with Stellenbosch University and the International Union Against Tuberculosis and Lung Disease). The CRRS system was developed at the Lung Institute and is being promoted for epidemiological field studies of tuberculosis and lung diseases.
6. Practical Approach to Lung Health and HIV/AIDS in South Africa (PALSA PLUS): The results of a field trial involving 46 facilities is running parallel to

- the province-wide implementation of the programme in the Western Cape.
7. Cohort analysis of patients enrolled in the Free State Comprehensive Care, Treatment and Care of HIV/AIDS Programme: Data routinely collected by the clinical programme was used to analyse outcomes including survival, blood (CD4, viral load) and clinical (weight) parameters.
 8. The STRETCH trial (Streamlining Tasks and Roles to Expand Treatment and Care for HIV): An intervention to broaden the role of nurses in the anti-retroviral roll-out is being subjected to a rigorous evaluation in 31 Free State facilities.
 9. Studies of pulmonary host immunity: These studies are evaluating the role of regulatory immune pathways in pulmonary tuberculosis, using cells from the lung and peripheral blood. A second study is evaluating the role of Th2-like cytokines in human tuberculosis.
 10. TB-NEAT Study (Tuberculosis- novel and emerging technologies): The performance outcomes and feasibility of several new TB diagnostics (T cell assays, LAM antigen detection, serology, urine PCR etc) are being evaluated in pulmonary and extra-pulmonary TB.
 11. Drug-resistant TB: Comparative prospective outcome and cost analysis study of drug-sensitive and resistant tuberculosis.
 12. Smoking and tuberculosis: Immunological study evaluating the role of cigarette smoke on mycobactericidal host immune responses. The effect of smoking intervention on TB outcomes will start shortly.
 13. SAIGRA study (SA IFN-gamma release assay study): This examines the utility of T cell immune assays in the diagnosis of pulmonary and extra-pulmonary TB.
 14. Diagnostic Biomarkers in Pleural Effusion: examines the utility of several novel biomarkers, including proteomics, for the diagnosis of malignant and TB-related pleural effusions.
 15. Efficacy and Quality of Life for patients on Sublingual Allergen Immunotherapy: 2 studies in progress on this safe form of immunotherapy in patients with house dust mite and grass pollen allergies.
 16. Long term follow up studies on Health Care Workers with latex allergy: These studies are not only looking at natural history but also exploring new diagnostic techniques, e.g. micro array, to improve diagnosis.
 17. Natural history and intervention strategies in patients with chronic urticaria: specifically in relation to avoidance of preservative sensitivity identified by the CAST (sulphido leukotriene release) test.
 18. Long term follow up studies of patients who have C6 complement deficiency and recurrent meningococcal meningitis.

Visitors

Dr Marina Erhola, Finland; Professor Henk Hoogsteden, Erasmus University, Rotterdam, Netherlands; Professor Richard Chaisson, Dr Don Enarson, International Union Against Tuberculosis and Lung Disease, Paris; Dr Max Bachmann, University of East Anglia, UK; Dr Merrick Zwarenstein, University of Toronto; Professor Philip Hopewell, University of California, San Francisco; Professor Jeffrey Garrett, Auckland, New Zealand; Professor Madhu Pai, McGill University, Canada, Professor Ali Zumla, UCL, London.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|---------------------------------------|-----------|
| Professors | 2 |
| Associate Professors | 3 |
| Senior Lecturers | 3 |
| | |
| Research Staff | |
| Medical Officers | 8 |
| Nursing study co-ordinators | 7 |
| Scientists | 4 |
| Clinical Technologists in Pulmonology | 6 |
| Administrative and clerical staff | 5 |
| Total | 38 |

Students

| | |
|----------------------|-----------|
| Post-Doctoral Fellow | 1 |
| PhD | 6 |
| MPhil | 3 |
| Total | 10 |

Research Fields and Staff

Professor Eric Bateman

Epidemiology of lung disease; asthma management; chronic obstructive pulmonary disease; tuberculosis immunology and host defences, and management; respiratory disease management and knowledge translation

Associate Professor Gillian Ainslie

High resolution CT scanning in idiopathic pulmonary fibrosis; asthma education

Professor Paul C Potter

Clinical, diagnostic and laboratory allergology; immunotherapy; drug allergy; complement deficiency; latex allergy; antihistamines

Associate Professor Paul Willcox
Multi-drug-resistant tuberculosis; lung cancer; cystic fibrosis; community-acquired pneumonia

Associate Professor Keertan Dheda
Immunology of tuberculosis and lung disease; TB diagnostics; cigarette smoke and pulmonary pathogens; drug-resistant TB; poverty-related lung disease; cost-analysis studies and pulmonary infections

Dr Richard Raine
Epidemiology of sleep-disordered breathing; effects of cortisol on dreaming and sleep; dynamic hyperinflation during exercise

Dr Rodney Dawson
Immunology of tuberculosis; new drugs in tuberculosis

Dr Richard van Zyl Smit
Effect of cigarette smoke on pulmonary host immune responses to *Mycobacterium tuberculosis*

Dr Lara Fairall
Guideline development and integrated management in primary health care; asthma, COPD tuberculosis and HIV treatment, knowledge translation

Dr Mary Bateman
Smoking cessation; pharmacology of asthma and COPD

Dr Anamika Jithoo
Epidemiology of lung disease

Dr Kim Narunsky
Tuberculosis drug development

Dr Clare Duffett
Asthma and COPD drug development

Dr Geoffrey Fatti
Asthma and COPD drug development

Dr Ruth Cornick
Integrated care guideline development and PALSAPlus training

Dr Kerry Uebel
PALSAPlus STRETCH programme for nurses in the Free State Province

Dr Di Hawarden
Latex allergy; Drug allergy

Jo Stein

Qualitative research on PALSAPlus programme

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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. Clinical drug trials are in progress to study the safety and efficacy of the newer non steroidal anti inflammatory drugs (NSAIDS), in collaboration with the GIT Unit. These newer COXIBS are being evaluated in patients with RA and osteoarthritis (OA). All of these include collaborative participation with the GIT Unit, where gastropathy is an outcome variable, measured by gastroscopy. We have also looked at SLE genetics in collaboration with the Hepatology Unit at UCT. The rheumatic diseases unit provides in- and outpatient rheumatology services for the entire Western Cape region. Sessions are carried out at the Heideveld and Khayelitsha Community Health Centres 6 times a year. Training is provided on a continuous basis for medical students, allied health professionals, a senior house officer, and two registrars. Research is largely clinically orientated, but a laboratory-based approach is being used to study the genetics of SLE and the pathogenesis of reactive arthritis. Family studies have also been started in patients with SLE. In addition, there is very significant involvement in clinical drug trials in both rheumatoid arthritis, systemic lupus erythematosus and osteoarthritis. Collaborative research is being carried out with the Liver Unit to study bone density.

Divisional Statistics

Permanent and Long-term Contract Staff

| | |
|-----------------------------------|----------|
| Professor | 1 |
| Lecturers | 2 |
| Research Staff | 2 |
| Nurse practitioner | 1 |
| Administrative and Clerical staff | 1 |
| Total | 7 |

Honorary Staff

| | |
|--------------------|---|
| Honorary Lecturers | 3 |
|--------------------|---|

Students

| | |
|----------------------------|----------|
| Rotating Medical Registrar | 1 |
| Medical Officers (SHO) | 1 |
| Total | 2 |

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Research Output

Chapters in books

Benatar, S.R. 2007. Justice and priority setting in international health research. In R.E. Ashcroft, A. Dawson, H. Draper, J.R. McMillan (eds), Principles of health care ethics: 733-741. 2nd ed. Chichester, England: John Wiley & Sons Ltd.

Benatar, S.R. 2007. New perspectives on international research ethics. In M. Hayry, T. Takala and P. Herissone-Kelly (eds), Ethics in biomedical research: international perspectives: 9-19. Amsterdam & New York: Rodpoi Press.

Orbinski, J. and Benatar, S.R. 2007. Drug development for visceral Leishmaniasis: a failure of the market and public policy. In J.V. Lavery, C. Grady, E.R. Wahl and E.J. Emanuel (eds), Ethical issues in international biomedical research: 90-96. New York, USA: Oxford University Press.

Peer-reviewed Journals (DoE Accredited)

Abera, A., Marais, A.D., RAAL, F., Leisegang, F., Jones, S., George, P. and Henderson, H.E. 2007. Autosomal recessive hypercholesterolaemia: Discrimination of ARH protein and LDLR function in the homozygous FH phenotype. *Clinica Chimica Acta*, 378(1-2): 33-37.

Albert, H., Trollip, A.P., Seaman, T., Abrahams, C., Mole, R.J., Jordaan, A., Victor, T. and Hoosain, E. 2007. Evaluation of a rapid screening test for rifampicin resistance in re-treatment tuberculosis patients in the Eastern Cape. *SAMJ South African Medical Journal*, 97(9): 858-863.

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