

DEPARTMENT OF MEDICINE

Research Report 2010

Head of Department: Professor B.M. Mayosi

Departmental Profile

The Department consists of 21 clinical divisions and 10 major research units. The clinical divisions are Acute General Medicine, Cardiology, Clinical Haematology, Clinical Immunology, Clinical Pharmacology, Clinical Skills Centre, Critical Care Medicine, Dermatology, Emergency Unit, Endocrinology and Diabetes Medicine, Geriatric Medicine, General Medicine, Hepatology, Infectious Diseases and HIV Medicine, Lipidology, Medical Gastroenterology, Medical Genetics Unit, Nephrology & Hypertension, Neurology, Occupational Medicine Unit, Pulmonology, and Rheumatology.

The Department has 10 major Research Units: Albertina and Walter Sisulu Institute of Ageing in Africa, Centre for excellence for Chronic Disease in Sub-Saharan Africa, Desmond Tutu HIV Research Centre, Hatter Institute for Cardiovascular Research, Lennox Eales Porphyria Lab, Lung Infection & Immunity Unit, Mycobacterial Immunology Group, UCT Leukaemia Unit, UCT Lung Institute and MRC/UCT Drug Discovery & Development (DDD) Research Unit.

Departmental Statistics

Permanent and Long-term Contract Staff

Professors	20
Associate Professors	18
Senior Lecturers/lecturers Full-time	85
Administrative and clerical staff	37
Total	160

Honorary Staff

Honorary Professors	7
Emeritus Professors	4
Honorary Associate Professors	3
Honorary Senior Lecturers	40
Honorary Research Associates	5
Total	59

Students

Doctoral	39
Masters	122
Undergraduates	1134
Total	1295

Research Fields and Staff

See Divisions and Research Units within the Department

Contact Details

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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 a multi-disciplinary activity that includes teaching of undergraduate and post-graduate students, evaluation of immune function in patients with suspected immune deficiency, and a translational research programme focussed on immunology of autoimmunity, HIV and TB. This year saw additional expansion of staff and research projects of the Lung Infection and Immunity Unit, under the leadership of Associate Professor Keertan Dheda. He also hosted several visitors who gave invited talks.

Divisional Statistics

Permanent and Long-term Contract Staff

Associate Professors	2
Postdoctoral scientists	5
Research Staff (nurses)	5
Technical Support Staff	4
Administration	2
Total	18

Students

Masters	4
Doctoral	9
Total	13

Research Fields and Staff

Associate Professor Stanley Ress

Immunology of tuberculosis, Autoimmunity

Associate Professor Keertan Dheda

Research Interests

Immunopathogenesis, diagnosis, management and outcomes of lung diseases associated with poverty including TB, HIV and pneumonia.

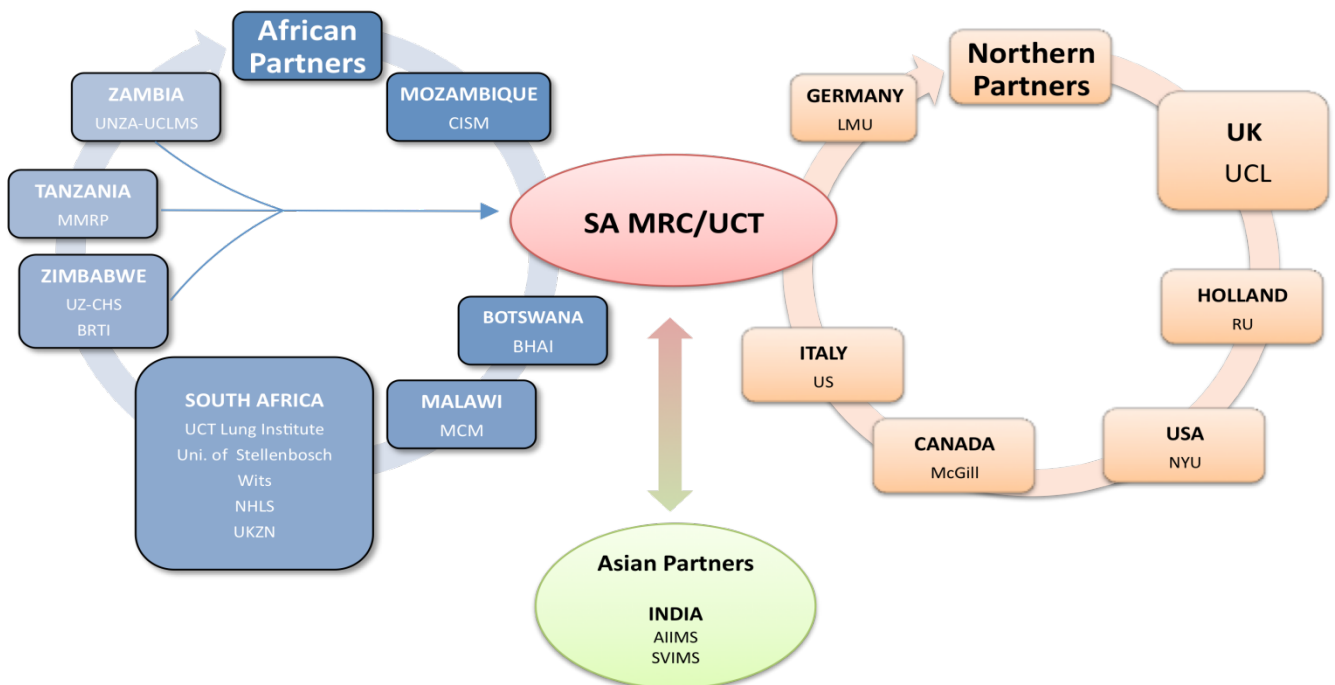
Specific areas of interest and ongoing work:

1. Pathogenesis, transmission dynamics, and clinical outcomes of MDR-TB and XDR-TB.
2. Development and validation of field-friendly diagnostics for TB.

3. Immunopathogenesis of pulmonary TB using cells obtained from the lung

Current research is in conjunction with several African (Zambia, Zimbabwe, Botswana, Mozambique, Tanzania and South Africa), and European (Denmark, Italy, UK, Netherlands, Germany, Sweden) sites, Canada, and the USA (see later for research networks developed – Figure 1).

Existing SA-led Projects	Existing collaborations	Strategic partners		
TBSusgent (finishing in 2011)	PANACEA (Hoelscher, Dawson UCT)	EDCTP	NIH	AERAS
SAIGRA (Completed)	REMOX (Zumla, Gillespie UCL)	EC:FP7	GLOBAL ALLIANCE	TRD/WHO
TBNEAT (finished in 2013)	TESA-NOE (Pym SA MRC)	UK MRC	FIND & SSI	STOP TB



Group 1 DIAGNOSTICS

GROUP LEADER

Grant Theron

MEMBERS

Brian Matinyanya	Jonny Peter
Shahieda Adams	Tapuwa Muchinga
Vivienne Woodburne	Richard Meldau

PROJECTS

1. Evaluation of the Gene Xpert and LAM technologies for the diagnosis of TB
2. NAATs for the diagnosis of tuberculosis
3. Unstimulated interferon gamma for the diagnosis of extrapulmonary TB
4. Diagnosis of TB meningitis
5. Screening and diagnosis of active TB in healthcare workers
6. Randomised control trial of the utility of sputum induction for the diagnosis of TB in primary care
7. Performance of outcome of RD-1-specific skin test for TB

COLLABORATORS

1. Mark Nicol National Health Laboratory Services and UCT (South Africa)
2. Lynn Zijenah University of Zimbabwe College of Health Sciences (Zimbabwe)
3. Alexander Pym Medical Research Council S.A - Unit for Clinical and Biomedical TB Research (South Africa)
4. Peter Mwaba University Teaching Hospital (Zambia)
5. Bram van Ginneken Radboud University Nijmegen Medical Centre (Netherlands)
6. Alimuddin Zumla University of College London (United Kingdom)
7. Michael Hoelscher Klinikum der Universität München, Department of Infectious Diseases & Tropical Medicine (Germany)
8. Marcus Maeurer MTC, Karolinska Institutet (Sweden)
9. Catharina Boehme Foundation for Innovative Diagnostics (FIND) (Germany)
10. Stephen Gordon Liverpool School of Tropical Medicine (United Kingdom)
11. Lionel Gresh Council for Scientific and Industrial Research (South Africa)
12. Rosemary Musonda Botswana Harvard AIDS Institute Partnership for HIV Research and Education (Botswana)
13. Gerhard Walzl Stellenbosch University (South Africa)
14. Peter Mason Biomedical Research & Training Institute (Zimbabwe)
15. Exnevla Gomo Research Support Centre, College of Medicine, University of Malawi (Malawi)
16. Eusébio V Macete Centro de Investigação em Saúde da Manhica (CISM) (Mozambique)

Group 1 IMMUNOLOGY

GROUP LEADER

Anke Binder

MEMBERS

Malika Davids	Richard Meldau
Lynn Semple	Barbara Nurse
Richard van Zyl-Smit	Anil Pooran

PROJECTS

1. The study of regulatory T-cells in the immunopathogenesis of tuberculosis using samples from the lung
2. The role of TH2-like cytokines in pulmonary TB
3. Study of cigarette smoke and its impact on host immune responses to M. tb
4. Comparison of innate and adaptive immune responses in those with and without laboratory evidence of TB
5. The immunology of XDR TB

COLLABORATORS

1. Maddy Noursadeghi University College of London (United Kingdom)
2. Stephan Schwander University of Medicine and Dentistry of New Jersey (United States)
3. Bill Rom New York University School of Medicine (United States)
4. Leonardo Sechi Dipartimento di Scienze Biomediche (Italy)
5. Tom Ottenhoff Leiden University Medical Center (LUMC) (Netherlands)

Group 3 DRUG RESISTANT

GROUP LEADER
Grant Theron

MEMBERS

Brian Matinyemba	Jonny Peter
Shahieda Adams	Tapuwa Muchinga
Vivienne Woodburne	Richard Meldau

PROJECTS

1. Prospective study of clinical and radiological outcomes of patients with XDR-TB
2. Retrospective study of surgical outcomes in patients with XDR-TB
3. The relationship of capreomycin resistance to patient outcomes in XDR-TB
4. Cost analysis in XDR-TB treatment strategies
5. Cross infection in the MDR and XDR-TB wards
6. A historical study of XDR-TB in the WC.
7. Impact of high dose INH on treatment outcomes
8. Studies evaluating HAIN si for the rapid diagnosis of XDR-TB
9. Transmission dynamic studies

COLLABORATORS

1. Rob Warren (University of Cape Town)
2. Paul Wilcox (University of Cape Town)
3. Luven Moodley (University of Cape Town)
4. Ruth McNerney (London School of Tropical Health and Hygiene)
5. Nigel Cline (University College London)
6. Kevin Fennelly (University of Florida)
7. G.B Migliori (FSM, Italy)
8. Giovanni Sotgiu (FSM, Italy)

Group 4 PNEUMONIA AND OTHER INTERVENTIONAL STUDIES

GROUP LEADER
Anke Binder

MEMBERS

Malika Davids	Richard Meldau
Lynn Semple	Barbara Nurse
Richard van Zyl-Smit	Anil Pooran

PROJECTS

1. Randomized control trial of TB re-challenge in patients with CADR
2. RCT of the impact of GeneXpert in the ICU
3. RCT of the impact of steroids in community-acquired pneumonia

COLLABORATORS

1. Jonny Peter University of Cape Town (South Africa)
2. Grant Theron University of Cape Town (South Africa)
3. Surendra Sharma (SVIMS and AIMS respectively)
4. Mohan Ajadi (SVIMS and AIMS respectively)
5. Grant Wartra (University of Western Australia)

Contact Details

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DIVISION OF DERMATOLOGY

HEAD OF DIVISION - Professor Gail Todd

DIVISION PROFILE

Teaching

The Division's training programme includes undergraduate teaching of 2nd to 6th year MBChB students. Postgraduate students include 8 registrars, 1 MRC fellow and 2 PhD fellows. Despite limited staff our division supervised 15 second year students in 5 research projects and 2 fifth year students during their electives in 2010.

The core undergraduate dermatology module is taught as part of the mixed specialities block of the 5th year of the new curriculum. Students in the dermatology 7 day block benefit from intense small group, facilitated problem orientated, patient-based tutorials and receive in course assessments based on case presentations. An OSCE, held at the end of each block, and a final scenario-based examination using slides and short answers completes the assessment and appears to offer a discriminatory student assessment. Course evaluation (one station of the OSCE) highlights the time constraints students experience with a unanimous request for more time to be allocated for the teaching of these specialities. A favourite student and staff component of this 8 week block continues to be the monthly two-day field trip to outlying clinics. Here students see and manage dermatology and ENT cases under the supervision of consultants and registrars from both divisions, giving them a taste of clinical practise. These clinics are a perfect example of how service can be linked with teaching at all levels of health care as up to 200 patients may be seen on any trip.

Our e-health and distance-based teaching platform, a joint project with CHED, assesses participants' ability to identify morphology, use it to reach a diagnosis and then implement appropriate therapy. The course is designed in such a way that a limited number of attempts are allowed to answer each set of questions, after which participants are asked to read given literature before starting again. To prevent rote learning subsequent attempts make use of different case scenarios randomly selected from a central bank. It was hoped that the service would relieve the pressure on our small department for teaching both locally and nationally. Although our first module has been designed and piloted on Vula it awaits additional case scenarios for completion and new modules need addition. The project remains stalled due to lack of finances and key CHED staff resignations

Postgraduate dermatology training is continuous and intense. Our division remains active in facilitating a unified national dermatology examination platform as 3 of our consultants are on the committee of the College of Dermatology. In recent years the training base of these registrars has been slowly undermined. Problems with National Health Service appointments have meant that dermatopathology, which is an integral component of our HPCSA approved curriculum, has been gradually reduced. Teaching has to be provided by private pathologists on a sessional basis paid with Departmental of Medicine DOE funding. In recent years medical consultations for skin problems within the hospital complex has declined decreasing the medical and infectious skin disease exposure of the registrars. A resurgence in

the spirit of academic learning and knowledge sharing is soely needed. A portfolio of in-course training, including clinical competency in procedures essential to the practice of dermatology will be required from 2011 as will a research component. The additional time and supervision needed for both these additions to the MMed will severely stress the 4 consultant staff equivalents in our Division.

The division contributes significantly to the occupational health curriculum. Occupational Health registrars spend 6 months in our Division rotating through the occupational skin clinic and general clinic. They provide a service and do regular work place visits writing a review article based on a case seen for publication.

Ten nurses successfully completed the Dermatology Nurse Course run in collaboration with the Division of Nursing, including a candidate from Kenya. This brings to 150 the total number of nurses trained to date. PN Patricia Kelly is the course convenors. Dermatology nurse run services are offered throughout southern Africa and local clinics are being incorporated into our teaching platform as primary health care teaching nodes. The first formal dermatology day care centre will open in Mitchells Plain in 2011. A post graduate diploma in Dermatology Nursing will start in 2012. The course and nurses continue to be supported by Rotary with the awarding of annual Rotary bursaries and prizes. The International Federation of Anti-Leprosy Associations lists the course as approved for leprosy field worker training internationally.

Interns rotate erratically through the division for periods of one week. The rotation helped to address the lack of undergraduate exposure identified by the HPCSA and national primary health care units especially with outreach sessions at dermatology nurse-led clinics in Hout Bay. Dr Rannoeke Lehloenya provides annual dermatology refresher courses for the intern group.

Academic activities

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

Our work in atopic eczema has brought further collaboration with overseas researchers and the role of filaggrin gene mutations in local Africans with atopic eczema is the basis of a PhD project for Dr Fatems Esmail, a joint project with the University of Dundee, Scotland, University of Dublin, Ireland and Zurich University, Switzerland.

Professor Nonhlanhla Khumalo and **Dr Laduma Ngwanya** continue to research African hair disorders. A study on cytokine profiles of the scalp after hair straightener use together with Dr Rene Beach, a visiting registrar from Canada, has been completed. The management of acne keloidalis a uniquely African problem is the MMed project for Dr Nomphele Ganthso.

Dr Motsepe completed her ALLSA funded study of the relevance of a positive latex specific IgE result in a non-medical occupational setting. She will submit the study for her MMed in 2011.

Dr Thuraya Isaacs is comparing the clinical patterns of Kaposi's sarcoma relative to HHV8 clades in a joint project with the Dr Arie Katz of the Division of Medical Biochemistry

Dr Anita Bonthys, our current MRC research fellow, is currently completing her MSc evaluating epidemiology and molecular aspects of pigmented naevi in collaboration with the Department of Human Biology. Disorders of pigmentation including 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, Dr Lester Davids and Dr RRoeba Ballo of the Department of Human Biology.

Service and outreach

Divisional teamwork has made the substantial contributions of 2010 possible, as, in addition to teaching, our small staff is responsible for in excess of 90,000 patient contacts per annum. The selfless efforts of the supernumerary staff and many visitors to South Africa are acknowledged. Visitors and unpaid staff who deserve special mention include our willing supernumerary registrars, Dr Fatema Esmail, Dr Didi Motsepe, Dr Thuraya Isaacs and Dr Ilana Steenkamp.

In line with the 2010 health plan for the Western Cape we continue to try and improve community based dermatology patient care. Following a land mark meeting with Dr Keith Cloete and regional directors from the Provincial Government of the Western Cape, Tygerberg, Groote Schuur and Red Cross Hospitals administrators, nurses and dermatologists, a platform of care for dermatology for the Western Cape was proposed and accepted. Pilot, nurse-led day-care centres at key community health care centres will be supported by direct contact and telemedicine backup from tertiary care centres. The first facility is being built at Michel's Plain for commissioning in 2011. Integral to this nurse-led service is the requirement that the nurses receive appropriate training and recognition. A diploma in post graduate nursing for registered nurses has been approved by UCT and the Department of Education and will start in 2012.

Outpatient attendances remain unchanged despite a relentless reduction in state funded staff and represent an enormous increase in divisional and individual output. The demand for dermatology services continues to be fuelled by the HIV epidemic and increasing population in the Cape Town area. Patients with HIV disease present the biggest challenge as the recalcitrant nature of the skin diseases often leads to increased inpatient admissions. Inpatient numbers thus remain unchanged with bed capacity at above 85%. The burden on the nursing staff has increased beyond what a simple analysis of figures shows. Skilled core staff, who leave the service for a variety of reasons, are not replaced and reliable skilled relief staff is seldom available. Severe drug reactions are a daily challenge to the small group of loyal nursing staff. These reactions are usually caused by antituberculosis therapy, cotrimoxazole or nevirapine. Each patient requires high care, barrier nursing, the cornerstone of management, and this must be accommodated in a busy routine daily

schedule. The need for high care beds to manage these patients was formally acknowledged in 2010 but acceptance of the need for appropriate nursing remains a stumbling block despite a patient charter of rights. PN Wallace, PN Kennedy and the nursing staff of Ward G23 need to be acknowledged for the huge burden they shoulder, the sterling care they render and the extremely low mortality and morbidity record achieved.

Professor Nonhlanhla Khumalo was appointed to a full time senior consultant position at Red Cross Hospital. This has meant an improved and sustainable skin service for children again. SEN Williams in the Oasis Crescent Trust day care unit treats and educates up to 200 children with severe skin diseases monthly. The approximately 5000 outpatients, inpatients and consultations managed during the past year require a team of health care workers. The paediatric service and its outputs represent the combined effort of the Division of Dermatology as a functional single unit.

Specialist problem clinics have grown in recent years. The occupational skin disease clinic has been running since 2000 and is increasingly used as a tertiary referral for occupational doctors and nurses. A specialised clinic for problems of the hair and scalp, run by Dr Nonhlanhla Khumalo and Dr Ngwanya remains a service in demand. Outpatient tertiary specialised clinics for children with specific, complicated skin diseases such as disorders of keratinisation, epidermolysis bullosa, and vascular anomalies have improved care for children with these problems. Phototherapy clinics are run twice monthly and a recently introduced infectious skin disease clinic managing increasing numbers of patients with leprosy and other tropical infectious provide unique opportunities of learning for registrars. Combined clinics for the management of skin cancer and lymphoma are held in collaboration with the Department of Radiation Oncology. A problem patient clinic is held monthly with dermatologists in the private sector.

PN Lynne Kennedy and ENA Athena Israel handle a steady patient load of 400 to 500 patient visits per month in the dermatology day-care centre, including children as it is the referral unit for Red Cross Hospital. It is the only training and referral centre of its kind in South Africa drawing patients from all over southern Africa for management of difficult skin conditions. New bed phototherapy equipment acquired in 2010 means that the service will be improved.

The teledermatology service and distance-based teaching platform continues with daily teledermatology clinics being a regular features of both registrar and consultant rotations (dermatol@uct.ac.za). The acceptability of the programme to provider and patient and its educational value has been accepted for publication. The suitability of a cell phone based network approach forms the basis of a research project for Dr Samantha Eisman. She was awarded the Dermatology Society of South Africa research award for their project. In 2009 we became one of a team of international referral centres for Medicines Sans Frontiers and have received 50 requests from all over the world.

Southern African outreach remains a significant part of divisional service and teaching. Professor Gail Todd serves on two subcommittees of the International Federation of Dermatology to establish global patterns of skin disease and develop a

curriculum for all levels of health care allowing for local adaptations. Dr Rannakoe Lehloenyha and Dr Fatema Esmail were guest speakers at the annual continuing medical research meeting at the Regional Dermatology Training Centre in Moshi Tanzania. Monthly outreach teaching clinics to rural areas in the Western Cape as part of undergraduate teaching are increasingly popular for patients and staff who benefit from on site appropriate training. Registrars and consultants from the Division provided popular monthly teaching session for health care providers at Kayelitsha. PN Pat Kelly runs a weekly dermatology clinic in Hout Bay and is the African representative of the International Skin Care Nursing Group.

The private and public service delivery divide of recent years continues to deprive our registrars of exposure to a sector of health care that the University of Cape Town, Skin & Hair Centre at the UCT Lung Institute provides. This complementary service for colleagues in private practice continues to grow as a specialist referral facility for outpatient management of private patients with skin diseases. It is an essential postgraduate teaching resource. Dermatology registrars participate in specialist clinics, phototherapy and research conducted at the centre.

The first public skin laser unit that was commissioned in 2008. Despite increasing numbers of referrals it was unilaterally closed in January with the withdrawal of the sister appointed to run the service by the Nursing administration. This left the hospital and division in the embarrassing position with the donor, Oasis Crescent Trust. The unit has since been re-opened in the spirit of the public private partnership that underpinned the donation. The unit and facilities will be maintained by Groote Schuur and revenue generated from cosmetic hair removal will be used to fund PN Hilary Lochner, the nurse-tutor employed to run the service and provide training for registrars via a UCT research fund. The unit is available to all hospitals in the Western Cape and it is hoped that it will develop into a national training centre.

DEPARTMENTAL STATISTICS 2007

PERMANENT AND LONG TERM CONTRACT STAFF

Associate Professors	2
Senior Lecturers (full-time)	1
Senior Lecturers (part-time, 5/8)	2
(part-time, sessional)	4
Lecturer (part-time, 5/8)	1
(sessional, DOE funds)	1
Research Staff	4
Administrative and Clerical Staff	4
Honorary Lecturers	3
TOTAL	20

STUDENTS

Doctoral	2
Masters	9
Undergraduate	784
TOTAL	795

RESEARCH FIELDS

PERMANENT STAFF

Associate Professor Gail Todd

Head of Division; Genetic basis for atopic eczema in African children, collaborative project with Universities of Dundee, Dublin and Zurich; 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 re-challenge regimes; African councillor on the International Psoriasis Council; Convener of 5th year MBChB Mixed Specialties program MDN500W.

Dr Susan Jessop

IT use in teaching and service delivery; 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.

Associate Professor Nonhlanhla Khumalo

African scalp and hair disorders. Blistering dermatoses. Vulval disorders. Evidence-based dermatology.

Dr Laduma Ngwanya (5/8)

Dermatopathology; Diseases of the hair and nails

PN Patricia Kelly (part-time lecturer)

Lecturer and nurse convener for the 5th year MBChB dermatology student block; Course convener and lecturer for the UCT Dermatology Nurse Course; Follow-up study on post-graduate dermatology nurses; International Skin Care Nursing Group South African representative

REGISTRARS

Dr Didi Motsepe (supernumerary registrar)

Relevance of a positive specific latex IgE (RAST) result in a non-medical occupational setting

Dr Fatema Esmail (supernumerary registrar)

Genetic basis for atopic eczema with special relevance to filaggrin gene defects in African children and their patterns of sensitization, collaborative project with University of Dundee, Dublin and Zurich

Dr Vanessa Lapiner

Quality of life in patients with vitiligo, genetic skin diseases

Dr IIsphi Browne (5/8 supernumerary post)

Changing pattern of skin diseases in HIV-infected patients

Dr Thuraya Isaacs (5/8 supernumerary registrar)

The clinical patterns of Kaposi/s sarcoma relative to HHV8 clades

Dr Nompheho Gantsho (5/8 supernumerary post)

The epidemiology and treatment of acne keloidalis

RESEARCHERS

Dr Rannakoe Lehloenya (Discovery Health PhD Fellow)

Drug reactions and hypersensitivity testing; Immune reconstitution syndrome in HIV

Dr Samantha Eisman (sessional consultant)

Teledermatology and the use of cell phone technology; Laser therapy

Dr Anita Bonthys (MRC research fellow)

A study of pigmented naevi

Dr Bianca Tod (supernumerary research fellow)

Spectrum of skin rashes in measles and the effect of HIV co-infection

PN Judy Wallace (Sister - Ward G23)

Nursing care of severe drug reactions; Re-challenge of TB medication following serious cutaneous drug reactions; Management of leg ulcers

PN Nora Christians

Lecturer for the UCT Dermatology Nurse Course; RegiSCAR data capture; Applied research

S. Woods (IT consultant – part-time)

Development and maintenance of dermatology databases and teaching slides

HONORARY STAFF

Honorary Lecturers: Emeritus Associate Professor Norma Saxe (dermatopathology), Dr Chris Walker (lecturer dermatopathology) PN Nora Christians (lecturer UCT Dermatology Nurse Course), Mr Ockie Kruger, African Director, Leprosy Mission (leprosy module convener and lecturer for the UCT Dermatology Nurse Course); Mr Gerard Botha, Johnson and Johnson (leg ulcer module convener and lecturer for the UCT Dermatology Nurse Course).

VISITORS

Prof Peter Schmidt, University of Zurich, Switzerland, Prof Ben Naafs, The Netherlands; Dr Alan Mentor, Baylor University, USA; Mr. Ockie Kruger, African Director, The Leprosy Mission; Mr. Gerard Botha, Johnson and Johnson, South Africa; Dr Manu Shah, Mid-Yorkshire Hospital UK; Dr Glenda Sobey Mid-Yorkshire Hospital UK; Dr Rene Beach, Toronto University, Canada; Dr Allison Bruce, Mayo Clinic, USA; Mr Lars Ettarp, Stockholm Sweden; Ms Birgitta Rehnby, Stockholm Sweden.

DERMATOLOGY NURSE GRADUATES 2010

RN Evelyn Philander, Mitchells Plain; RN Aysha Asmal, Lenasia; RN Tintstwalo Grace Bepe, Luis Trichardt; RN Sinbongile Mdze, Lusikisiki; RN Ntombizandile Ndesi, Mitchells Plain; RN Pamela Hangana, Mthatha; RN Lucy Gichuru, Kenya; RN Lorencia Jordaan, Worcester; RN Brenda Theunissen, Bishop Lavis

ELECTIVE STUDENTS

Dr Chikote Mibenge, Duke University, USA; Ms Lilian van der Vem, Utrecht University, The Netherlands; Dr Imitiaz Bahemia, University of Cape Town, Mohamed Ebrahim, University of Cape Town.

CONSULTANCY AND OTHER ACTIVITIES

Members of the department continue to act as consultants and serve on editorial boards and many committees at local, national and international level in addition to their routine commitments. This has meant that our dermatology teaching and research functions at an internationally high standard.

We remain dependent on clinical drug trials to sustain and develop dermatology teaching, research and services. While these appear to compete with basic research time, they continue to generate peer-reviewed publications and international collaborations while providing registrars exposure to good clinical practise, the basics of medical dispensing and sound research methodology.

DEPARTMENT OF MEDICINE

Chronic Diseases Initiative in Africa (CDIA)

Director: Professor N.S. Levitt
Associate Director: Dr Krisela Steyn
Centre Manager: Carmelita Sylvester

Divisional Profile

The Chronic Diseases Initiative in Africa (CDIA), funded by the United Health Chronic Disease Initiative and the National Heart Lung Blood Institute (NHLBI), was launched in November 2009. It forms part of an 11 centre Global Health Initiative focussing on non communicable disease research in the developing world. CDIA comprises of a network of researchers drawn from the University of Cape Town, Stellenbosch University and the University of the Western Cape, along with the South African Medical Research Council, Harvard University and Shree Hindu Mandal Hospital, Tanzania, in addition to representatives from local and national Departments of Health. CDIA's mission is to serve as a collaborating initiative for the development, evaluation and dissemination of methods and programmes to prevent chronic non-communicative diseases, and improve the quality of care for people with these diseases and their risk factors.

Research

Currently funded projects:

Develop, evaluate and implement integrated chronic disease management guidelines for primary care providers

Eden District Randomised, Controlled-Trial for Primary Care of Chronic, Non-Communicable Diseases (NCDs) will be conducted to test the effectiveness of a novel training approach based on a previously tested model of syndromic screening and management of patients with conditions such as chronic obstructive pulmonary disease, asthma, or TB. A written guideline (101 pages) has been prepared for the management of chronic diseases by primary care nurses and doctors. The trial will test whether the approach, previously shown to be effective for respiratory diseases including tuberculosis and HIV/AIDS, will remain effective when expanded to include the primary care management of other major categories of chronic diseases (hypertension, diabetes, depression).

To calibrate and validate a non-laboratory based screening tool for cardiovascular disease (CVD) risk prediction in South Africa

The predictive performance and risk discrimination of the non-laboratory-based risk score to five commonly used laboratory-based scores (Framingham CHD and CVD, SCORE for low and high risk settings, CUORE) was evaluated in 11 South African cohorts, which represents all cross sectional studies conducted in the country over the past 25 years for which the necessary data were available.

Develop, evaluate and implement an economic model to assess the cost-effectiveness of interventions.

This project aims to develop a CVD Prevention and Management Model that would allow us to predict CVD events accurately and be used in cost-effectiveness analyses comparing the use of different screening and intervention strategies.

Develop the capacity of community health workers, primary care facilities and managers in the area of chronic diseases

This project aims, in collaboration with the provincial DOH to define the role of a community health worker in caring for patients with NCDs and to develop suitable NCD training materials and tools for this group.

Develop, evaluate and implement lifestyle tools for the general public and patients.

“Putting Prevention into Practice” This project aims to produce and pilot a resource package for primary health care providers and community health workers to enable them to offer brief, best practice, behavioural change counselling in a variety of settings, on the topics of smoking; poor diet; obesity and overweight and lack of physical activity.

Develop, evaluate and implement new models for health education, communication and empowerment of patients

The evaluation, by means of a pragmatic cluster randomized controlled trial, the effectiveness of a group diabetes education programme delivered by health promoters with a guiding (motivational interviewing) style, in community health centres in Cape Town.

Divisional Statistics

CDIA/UCT Permanent and Long-term Contract Staff

Professor	1
Professor (Visiting)	1
Social Scientist	1
Administrative and Clerical Staff	2
Total	5

Prof Naomi Levitt	Professor
Prof Krisela Steyn	Professor
Mrs Kathy Murphy	Social Scientist
Carmelita Sylvester	Centre Manager
Susan Botha	Administrative

UCT Network Members

Professor	5
Professor (Hon)	
Senior Lecturer	1
Other (Senior Researcher)	1
Total	7

Prof Bongani Mayosi	Professor
Prof Eric Bateman	Professor
Prof Vicky Lambert	Professor
Prof Karen Sliwa-Hahnle	Professor
A/Prof Alan Bryer	A/Professor

Dr Tracy Kolbe-Alexander	Senior Lecturer
Dr Lara Fairall	Senior Researcher

NON-UCT Network Members

Professor	5
Professor (Hon)	
Senior Lecturer	1
Senior Clinical Research Fellow	
Senior Registrar in Training	
Medical Officer (sessional)	
Diabetes Specialist Nurse	
Other	2
Total	8

Prof Thandi Puoane (UWC)	Professor
Prof Bob Mash (Stellenbosch)	Professor
Prof Debbie Bradshaw (MRC)	Professor
Prof Carl Lombard (MRC)	Professor
Dr Thomas Gaziano (Harvard)	Adjunct Assistant Professor
Dr Kaushik Ramaiya (Shree Hindu Mandal Hospital, Tanzania)	Senior Lecturer
Mr Jimmy Ledwaba (Provincial Government, Dept. of Health)	Other
Ms Unita Van Vuuren (Provincial Government, Dept. of Health)	Other

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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. It has close clinical links with Paediatric Endocrinology and Diabetes, Reproductive Endocrinology and Chemical pathology. We are currently training our first endocrinology senior registrar from Zambia, Dr Brown who has come to us as an experienced physician.

Research

The Division is involved in a wide range of research activities, interacts with a number of international and local collaborators and is a member of the recently established Chronic Disease Initiative in Africa. The primary areas of research are:

Metabolic consequences of antiretroviral therapy in HIV+ patients: Cross-sectional and longitudinal studies examining the metabolic consequences of HAART are underway. 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 is being studied in collaboration with Dr Debbie Bradshaw, BOD Group, MRC. A cross sectional survey of diabetes and other cardiovascular risk factors in the Black African community in Cape Town has been completed.

Obesity: In collaboration with the Department of Human Biology, a number of studies are in progress. These examine the mechanisms underlying the aetiology of obesity and insulin sensitivity in black and white African women.

Addison's Disease: Cardiovascular risk factors in Addison's disease has been investigated in collaboration with the University of Gothenberg. The impact of glucocorticoid receptor polymorphisms on cardiovascular risk factors has been assessed in Addison's disease.

Health Systems Research: The Division collaborates in projects being conducted by the Chronic Diseases Initiative in Africa. These include: a pragmatic cluster randomised trial of an integrated guideline for the management of diabetes and other chronic diseases in primary care centre, a randomised controlled trial to evaluate the effectiveness of a group diabetic education programme using motivational interviewing in underserved communities; and the development of a resource package for primary health care providers and community health workers to enable them to offer brief counselling on lifestyle.

Divisional Statistics

Permanent and Long-term Contract Staff

Professor	1
Professor (visiting)	1
Senior Lecturers	2
Senior Registrar in Training	1
Medical Officer (sessional)	1
Diabetes Specialist Nurse	2
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, mechanisms underlying the metabolic sequelae of obesity, metabolic consequences of HAART

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's Disease and polyglandular autoimmune syndrome

Dr J Dave

Incidence of osteoporosis and vertebral fractures in patents with inflammatory bowel disease
Metabolic consequences of antiretroviral therapy

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

Acting Head of GI Clinic: Professor JEJ Krige
Head: Medical Gastroenterology: Dr GA Watermeyer

Divisional Profile

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

Divisional Statistics

Permanent and Long-term Contract Staff

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

Students

Masters	4
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Research Fields and Staff

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

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

Dr Naayil Rajabally: Clostridium difficile in IBD.

Dr Eduan Deetlefs: TB in IBD

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**DEPARTMENT OF CLINICAL LABORATORY SCIENCES
DIVISION OF HAEMATOLOGY and UCT LEUKAEMIA UNIT**

Head of Division: Professor N. Novitzky

Divisional Profile

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

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

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

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

haematopoiesis, detection of minimal residual disease in patients with leukaemia, cellular therapies and stem cell transplantation.

Divisional Statistics

Permanent and Long-term Contract Staff:

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

Students

Doctoral	2	Ms J Peres	Co-supervised: Dr S Mowla
		Mrs G Davison	Supervised: Prof N Novitzky
Masters	3	Mr A Morris	Supervised: Dr K Shires
		Mr S Njikan	Supervised: Dr K Shires
		Ms A Stavridis	Supervised: Dr K Shires
MMed	2	Dr T Gerdener	Supervised: Dr K Shires
		Dr A du Pisani	Supervised: Dr K Shires
Honours	1	Mr B Krivokiev	Supervisor: Dr S Molwa

Research Fields and Staff

Professor Nicolas Novitzky

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

Dr Cecile du Toit

Haematopoietic stem cell transplantation; haematological malignancies; haemophilia

Dr. Andrew McDonald

Haemophilia; thrombophilia; stem cell transplantation

Dr Maureen Stein

Haematopoietic stem cell biology

Dr Jessica Opie

Molecular biology of neoplasia: chronic myelogenous leukaemia; coagulation abnormalities

Dr Karen Shires

Molecular biology and diagnostics

Dr Shaheen Mowla

Minimal residual disease and flow cytometry.

Mrs Rygana Abdulla

Cellular biology of neoplasia; clonogenic assays

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DEPARTMENT OF MEDICINE DIVISION OF HEPATOLOGY

Head: A/Professor Wendy Spearman

Divisional Profile

The Division of Hepatology runs the only dedicated liver clinic as well as the only state liver transplant programme in the country. We also run a Porphyria clinic.

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 service telephonic 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 major areas of research include: viral hepatitis, autoimmune liver disease, immune abnormalities in liver disease, HIV and liver disease, porphyria, liver transplantation and development of bioartificial liver support devices.

The unit is actively involved in drawing up national guidelines for the management of Hepatitis B / HIV coinfection Hepatitis B and Hepatitis C.

Divisional Statistics

Permanent and Long-term Contract Staff

Associate Professors	1
Senior Lecturers / Research Officers	2
Technical Support Staff	2
Total	5

Honorary Staff

Honorary staff	1
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Research Fields and Staff

H.N. Hairwadzi

Autoimmune liver disease; viral hepatitis, bone disease in chronic liver disease

M.W. Sonderup

HIV and liver disease; viral hepatitis; porphyria

C.W.N. Spearman

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

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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) 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	2
Total	3

Students

Doctoral	3
Masters	3
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 mechanisms of neuro-degeneration with specific reference to cognitive impairment in the 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.

Dr John A. Joska

Senior Lecturer, Division of Neuropsychiatry, Department of Psychiatry and Mental Health: neurocognitive disorders in HIV infection.

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

Heads of Division: Associate 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 out reach 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 and professions allied to medicine. The division also supports training of renal technologists and the nephrology course for nurses.

The main academic research activities of the division relate to renal bone disease; systemic lupus erythematosus (SLE); genetics of salt sensitive hypertension; diabetic nephropathy; classification, genetics, prevalence and treatment of HIV associated nephropathy; the genetics of ACE inhibitor related angioedema in black and coloured South Africans; treatment of renal artery stenosis due to atherosclerosis; vascular calcification in CKD stage 5 and its effects on central aortic BP; detection of vascular calcification; and the effects of antiviral treatment on BP in patients living with HIV.

Divisional Statistics

Permanent and Long-term Contract Staff and students

Associate Professors	2
Senior Lecturers	2
Emeritus Professor	1
Senior registrar	5
Part-time consultant	1
Medical officers	3
Medical registrars	3
PhD Students	0
Total	15

Research Fields and Staff

(i) Associate Professor C.R. Swanepoel

Contract research:

- a) A Phase 2, randomized, double-blind, placebo-controlled, parallel-group, multi-centre study to evaluate the efficacy and safety of once-daily administration of a phosphodiesterase 5 inhibitor (PF-00489791) in adults with type 2 diabetes and overt nephropathy. Designation: National PI
- b) A Phase III, Multicentre, Open Label, Flexible dose, Long term Safety Study of MCI-196 in Chronic Kidney Disease Stage V Subjects on Dialysis with Hyperphosphataemia (incorporating a Comparison with Sevelamer). Designation: PI
- c) An Open-label, Randomised, Active-controlled, Parallel Group, Multicentre, Phase 3, Study to Investigate the Safety and Efficacy of PA21 Compared with Sevelamer Carbonate Followed by a Randomised Comparison of PA21-Maintenance Dose Versus PA21-Low Dose in Dialysis Patients with Hyperphosphataemia. Designation: National PI. (Due to start in 2011)

Research interests:

HIV and the kidney – worked on the development of a HIV and renal disease classification. Principal researcher is Dr N Wearne.

Conferences and presentations:

- a. President of SARS meeting held in Cape Town in April 2010
- b. EDTA conference June 2010 in Munich
- c. Presented: Cardio-renal syndrome. 7th FME Middle East and Africa Nephrology Forum. Vienna. July 2010
- d. American Society of Nephrology conference Sept 2010 in Denver, USA.
- e. Spoke on: Anaemia management in CKD patients. Amgen educational symposium, Prague, October, 2010.
- f. Presented: BMD in CKD patients. Amgen Educational symposium in Dubai. December 2010.

Special points:

- a. President of South African Renal Society
- b. Successfully applied to host the World Congress of Nephrology in Cape Town in 2015.

ii) Dr Z Barday

Contract research:

- a) Abatacept in Lupus Nephritis - 1 patient in open label phase
- b) Ramipril/Placebo in renal transplant patients converted to Sirolimus

Conferences and presentations:

- a) The Transplant Society World Congress Vancouver August 2010
- b) Fresenius Forum on Dialysis in Vienna in July 2010
- c) SA Renal Society/Biannual SA Congress of Nephrology April 2010
- d) Surgical Society UCT Transplant Forum – Transplant Immunology and Care of the Transplant Recipient

Special points:

- a) Convener MBCHB Semester 6(3rd year) Adult Health

b) Secretary, SA Renal Society

iii) Dr Yvonne Trinder

Contract research

Clinical Study Protocol CSPA100A2307 A randomized, 32 week double-blind, parallel-group, multicenter study to compare the efficacy and safety of initiating treatment with combination (aliskiren/amlodipine) therapy in comparison with the sequential add-on treatment strategies in patients with essential hypertension

Effects of ivabradine in patients with stable coronary artery disease and preserved left ventricular systolic function. A three-year randomised double-blind placebo-controlled international multicentre study. Study assessing the morbi-mortality benefits of the f inhibitor ivabradine in patients with coronary artery disease (SIGNIFY)

A Randomised double blind, placebo-controlled clinical trial to assess the effects of taspoglutide (RO5073031) on cardiovascular outcomes in subjects with inadequately controlled type 2 diabetes and established cardiovascular disease

A double-Blind Randomized, Placebo-Controlled, Parallel Group study to assess safety, Tolerability, Pharmacokinetics and Pharmacodynamics of SLV337 in patients with Type 2 Diabetes on Metformin Monotherapy - S337.2.001

Congress attended:

- i) American Society of Hypertension, New York, May 2010
- ii) South African Hypertension Congress, February 2010

iv) Dr Ike Okpechi

Contract research:

- a) A randomized, double blind, placebo-controlled, parallel group study to determine whether, in patients with type 2 diabetes at high risk for cardiovascular and renal events, aliskiren, on top of conventional treatment, reduces cardiovascular and renal morbidity and mortality

Research Activities:

- a) Lupus registry
- b) Quality of life in CAPD patients

Conferences and presentations:

- a) Nephrology at the Limits, Cape Town, 2010.
- b) South African Renal Society 2010
- c) SA Hypertension Congress, 2010
- d) ERA-EDTA (EUROPEAN RENAL ASSOCIATION) Munich Germany (June 2010)

v) Associate Professor Brian Rayner

Contract Research:

- a) As for Dr Trinder and Dr Okpechi
- b) National Principal Investigator (PI) for Altitude Study
- c) National Principal Investigator for the CORAL study

Conferences and Presentations:

- a) American Society of Hypertension, New York, May 2010
- b) SA Hypertension Congress, Johannesburg, February, 2010
- c) Nephrology at the Limits, Cape Town, February 2010 (organiser)
- d) SA Renal Society, April 2010 (Best overall presentation)

Research Work:

- i. Cardiovascular outcomes in renal atherosclerotic lesion (CORAL Study):
A prospective, multi-center, unblinded, two-arm, randomized trial
- ii. Genetics of salt sensitive hypertension (PhD dissertation)
- iii. PTH and low renin hypertension
- iv. The genetics of ACE inhibitor related angioedema in black and coloured South Africa

Special points:

- i) Treasurer of SA Hypertension Society

vi) **Dr Craig Arendse**

Research:

- a) Prospective observational study of all HIV positive patients who undergo a renal biopsy at GSH hospital to establish best medical management, mortality and spectrum of disease.

Conferences and presentations:

- i. European Dialysis & Transplantation Association – June 25 – 28 2010.
Munich Germany
- ii. Nephrology at the Limits 2010
- iii. South African Renal Society meeting 2010

viii) **Dr Nicola Wearne**

Research work:

- a) Retrospective analysis of all HIV positive renal biopsies between 2004 and 2008 at GSH hospital.
- b) Prospective observational study of all HIV positive patients who undergo a renal biopsy at GSH hospital to establish best medical management, mortality and spectrum of disease.
- c) HIV related renal disease: Histological Classification.
- d) Randomised controlled study: Treatment of HIV +ve patients with confirmed HIVAN on renal biopsy with Corticosteroids.
- e) Epidemiology of renal dysfunction and chronic kidney disease in HIV positive HAART naïve patients

Conferences and Presentations:

- 1. Dept of Medicine Annual Research Day (Best Clinical Presentation)
- 2. Nephrology at the Limits 2010
- 3. South African Renal Society meeting 2010

ix) **Dr Bonginkosi Mahala**

Conferences and presentations:

- 1. South African Renal Society, March 2010
- 2. Nephrology at the limits, 2010

Research:

- a) Retrospective analysis of biopsy proven focal segmental glomerulosclerosis
- b) MYH9 polymorphisms and susceptibility to FSGS, HIVAN and hypertensive nephrosclerosis
- c) Cardiovascular outcomes in renal atherosclerotic lesion (CORAL Study): A prospective, multi-center, unblinded, two-arm, randomized trial

Special point:

- a) Successfully completed Certificate of Nephrology

x) **Stella Alagbe**

Research:

- a) New Onset Diabetes in renal transplant recipients

Conferences:

- a) South African Renal Society meeting, Cape Town, 2010
- b) Nephrology at the Limits, 2010

xi) **Dr Rob Freercks**

Research:

- a) Impact of Vascular calcification on central blood pressure in CKD-5D
- b) Ambulatory blood pressure monitoring in CKD-5D
- c) Detection of vascular calcification in CKD-5D

Conferences:

- a) Nephrology at the limits 2010
- b) Asia Pacific Congress of Nephrology 2010
- c) South African Renal Society Congress 2010
- d) American Society of Nephrology congress 2010
- e) Peritoneal Dialysis Academy 2010
- f) Novartis Transplantation Preceptorship 2010

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DIVISION OF MEDICINE
DIVISION OF NEUROLOGY
ANNUAL RESEARCH REPORT 2010

Head of Division: Associate Professor A. Bryer

Divisional Profile

A general clinical neurology service is operated at Groote Schuur Hospital. This provides a full range of clinical activities, including in-patients, consultative, and emergency services. Additionally, there is a clinical neurophysiology laboratory, a dedicated acute stroke unit, and specialised clinics for stroke, myasthenia gravis, HIV neurology, neuro-genetic disorder and epilepsy.

Areas of research include:

Stroke: A large cohort of stroke patients were followed up for 6 months post incident stroke to determine survival, disability and functional outcomes following their discharge from an acute stroke unit to community-based health care and rehabilitation. Factors predictive of poor outcome were identified. Data from this study are being used to develop a community based model of stroke care. An in-service training program for health care workers involved in stroke care in under-resourced settings is being developed. The new South African National Guideline for the management of acute ischaemic stroke and TIA has been published with substantial input from the GSH/UCT stroke Unit. A longitudinal study of HIV associated stroke to evaluate the underlying biological mechanisms (specifically endothelial dysfunction and ultrasonographic vascular phenotypes) has been undertaken.

Myasthenia gravis: Clinical and Laboratory-based research projects are focussed on improving therapeutic strategies and increasing understanding of disease pathogenesis.

- a. Methotrexate vs. azathioprine randomized trial completed. Presented at NASA and ANA 2010. Submitted to Neuromuscular Dis. 2011
- b. A Multi-center, Randomized Study comparing Thymectomy to No Thymectomy in Myasthenia Gravis- International study NIH funded. On advisory committee.
- c. The psychiatric manifestations in thymomatous MG (Dr Freeman, Psychiatry) Complement regulation in MG subjects with DAF promoter SNP and the effect of therapies. This work done by the Neurology Research Group in partnership with Human Biology laboratory. PI J Heckmann with Dr's Amaal Abrahams and Sharon Prince. MSc student Ms J Auret.
- d. TGFb polymorphisms and their association with extraocular muscle MG damage- in collaboration with Dr C Dandara, Human Genetics.

HIV/AIDS: Clinical and Laboratory-based research projects studying the risk factors for developing neuropathy in HIV-infected subjects.

- a. Research collaboration with Endocrine (UCT) and Neurology (Emory University) – longitudinal prevalence study of HIV neuropathy and risk factors at the Crossroads CHC.
Dr Johan van der Watt, received the CIDRI Post Graduate Scholarship award to study inflammation in HIV- associated toxic neuropathy
- b. Dr Chad Centner is studying Pyridoxine & NAT – 2 genotypes as risk factors for HIV- associated neuropathy.
- c. Dr John- Randel Vermaak is studying the incidence of HIV- neuropathy since the cART regimen has changed from d4T to Tenofovir.
- d. Collaboration with Dr's Todd Hulgán (Vanderbilt University) and Dr P Sinxadi, Pharmacology, UCT to investigate mitochondrial DNA haplotype and susceptibility to HIV- associated toxic neuropathy by examining mitochondrial haplogroups and association with HIV- associated neuropathy in African subjects on d-drugs.
- e. Dr Friedrich Thienemann is performing a retrospective analysis of demyelinating CNS disease in HIV- infected subjects.
- f. Pilot project examining the efficacy and CSF drug penetration of cART in patient with neurological HIV- associated disease. Dr's Thienemann, Vermaak and Decloedt (Pharmacology)

Dementia: A longitudinal study of cognitive impairment in the elderly, with an emphasis on the role of inflammation in the pathogenesis of Alzheimer's disease. The study includes imaging techniques such as magnetic resonance spectroscopy (MRS) of the brain and volumetric MRI analyses of various brain regions.

Neurogenetics: A clinical and counselling service for patients with Huntington disease and familial spinocerebellar ataxia (SCA) with a study to find an appropriate SNP to target for SCA1 gene silencing and to knock down the expression of mutant Ataxin1.

Multi-media teaching: The use of clinical encounter simulations is being explored.

Drug trials: The division is active in phase 3 drug trials for Parkinson's disease, epilepsy and multiple sclerosis.

Divisional Statistics

Permanent and Long-term Contract Staff

Associate Professors (Full-time)	4
Senior Lecturers (Full-time)	1
Lecturers (Part-time)	2
Total	7

Postgraduate Students

B.Sc Hons	2
M. Sc.	4
PhD	1
M. Med (Psychiatry)	1
M. Med (Family Med)	1
MA (Neuropsychology)	2

Awards:

Associate Professor Eastman was awarded UCT's distinguished teacher award in 2010.

Research Fields and Staff

Associate Professor A. Bryer

Stroke; neuro-genetics.

Associate Professor B. Kies

Parkinson's disease; clinical trials, neurology education.

Dr E. Lee Pan

Health systems information technology; multi-media teaching.

Associate Professor J. Heckmann

Myasthenia gravis; HIV neurological disease, HIV neuropathy, neuro-immunology; neuro-genetics.

Associate Professor M. Combrinck

Neuro-inflammation, HIV dementia, cognitive impairment in the elderly, Alzheimer's disease.

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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 pharmacoeconomic 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 2010

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

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

Smith, PJ. 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.

Divisional Contact Details

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**DEPARTMENT OF MEDICINE
DIVISION OF RHEUMATOLOGY**

Head of Division: **Professor Asgar Ali Kalla**

Divisional Profile

The Division of Rheumatology has several research interests relating to different aspects of the rheumatic diseases. Osteoporosis is an area of interest for many years and there is ongoing collection of longitudinal bone mineral density data in patients with rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE). Age-related bone loss at different skeletal sites is being prospectively studied in collaboration with the Department of Nuclear Medicine and the Endocrine Unit. Recently, collaborative studies with the Division of Hepatology have been carried out to see the relationship between bone mineral density (BMD) and auto-immune hepatitis. Clinical drug trials are in progress to study the safety and efficacy of the newer biological DMARDs in RA and SLE.. Recently, the trials of coxibs are concentrating on cardiovascular outcomes to a greater extent than their gastro-toxicity. We have also been looking at SLE genetics in collaboration with the Hepatology, with particular reference to the Vitamin D receptor and its role in the pathogenesis of auto-immune diseases. Newer areas of research include the study of chronic tophaceous GOUT; community aspects of diagnosing and treating rheumatic diseases at CHC's; early rheumatoid arthritis; genetics of bone loss in SLE; and functional problems in ankylosing spondylitis. The rheumatic diseases unit provides inpatient 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. We have recently extended the service to Guguletu CHC as well. Training is provided on a continuous basis for medical students, allied health professionals, a medical officer, two rotating medical registrars and two career registrars. Research is largely clinically orientated, but a laboratory-based approach is being used to study the genetics of SLE and the differentiation between flares and infection in SLE patients. Family studies have also been started in patients with SLE and RA. In addition, there is significant involvement in clinical drug trials in rheumatoid arthritis, systemic lupus erythematosus and osteoarthritis.

Divisional Statistics

Permanent and Long-term Contract Staff

Professor	1
Lecturers	3
Research Staff	2
Nurse practitioner	1
Administrative and Clerical staff	1
Total	8

Honorary Staff

Honorary Lecturers	3
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Students

Rotating Medical Registrar	2
Medical Officers (SHO)	1
Total	3

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