STRATEGIC RESEARCH PLAN 2015 – 2020

Main aim: ‘to advance and encourage research excellence within the FHS, within the context of the vision and mission of the Faculty and UCT, and thereby improve and promote our national and international standing as a research-led institution’

Ultimate goal: to improve the health of the people of South Africa and beyond

To be achieved through: improving research infrastructure; building health research leadership and capacity for the future; enabling translation of research into public health impact; encouraging partnerships; increasing funding; strengthening governance and raising standards

BENCHMARKING

10 NRF A-rated scientists

122 rated researchers
(34 B-, 55 C-, 23 Y-rated) out of UCT’s 480

A-rating awarded in 2014
Professor Robert Wilkinson (director of the Clinical Infectious Diseases Research Initiative, IDM and Department of Medicine)

P-rating awarded in 2015
Dr Grant Theron (senior research officer in the Department of Medicine)

The 2014-15 Times Higher Education World University Rankings places UCT at 48th for clinical, pre-clinical and health universities

Accredited journal units
(Units are assigned to accredited research outputs and translate into a total monetary value)

528

raised via

879 contracts
(income increased by 23 percent from 2013)

R684 million

New Neurosciences Initiative

launched in partnership with Groote Schuur academic hospital complex to advance care and transform research and teaching by drawing together an array of expertise
Internal AWARDS

Professor Crick Lund (Department of Psychiatry and Mental Health) won UCT’s Alan Pifer Award in recognition of outstanding welfare-related research

Professor Gregory Hussey (director of Vaccines for Africa and acting dean) elected to UCT College of Fellows

Honorary Professor William Pick (School of Public Health and Family Medicine) awarded President of Convocation Medal (2014)

UCT College of Fellows Young Researcher Award: Dr Leigh Johnson (Centre for Infectious Disease Epidemiology Research)

External AWARDS

14 MRC (Medical Research Council) Strategic Health Innovation Partnerships Awards

MRC Flagship Award to Professor Robin Wood (Department of Medicine and Director of the Desmond Tutu HIV Centre)

MRC awarded Collaborating Centre for Malaria, a Gynaecological Cancer Research Centre, four Collaborating Centres for TB and/or HIV/AIDS, and a new MRC unit

MRC Platinum Medals for lifetime achievement awarded to Professors Gregory Hussey and Robin Wood (Department of Medicine and director of the Desmond Tutu HIV Centre)

Three Silver Medals were awarded by MRC to recent postdoctoral researchers for scientific or capacity building contributions

12 researchers received NRF Career Advancement Fellowships

NRF Lifetime Achievement Award: Professor Lionel Opie (Hatter Institute of Cardiovascular Research)

World Lung Health Award: Professor Heather Zar (Department of Paediatrics)

World Hypertension League Award: Professor Brian Rayner (Department of Medicine)

Wellcome Trust Senior Research Fellowship in Clinical Sciences: Professor Robert Wilkinson (Institute of Infectious Disease and Molecular Medicine and Department of Medicine)

Academy of Science of South Africa Young Scientist Award: Dr Keren Middelkoop

Next Einstein Forum Fellowship: Dr Tolu Oni (School of Public Health and Family Medicine)

POSTGRADUATES, POSTDOCTORAL FELLOWS AND EMERGING RESEARCHERS

Over 1 200 postgraduate students

514 FHS students received 862 funding awards to the value of over R47 million

54 doctoral graduates – the highest number yet in one academic year

108 postdoctoral fellows, close to a third of UCT’s total

176 fellowships totalling almost R24 million to postdoctoral fellows

164 academics participated in UCT’s Emerging Researcher Programme - the highest number from any faculty. Tenfold increase in participation from a decade ago

DST/NRF SARChI Chairs

DST/NRF SARChI Chair vacancies filled: Professors Anthony Figaji (Department of Paediatric Neurosurgery) in Clinical Neuroscience; Graeme Meintjes (Department of Medicine) in Lung Infection and Immunity; Stefan Barth (Department of Clinical Laboratory Sciences) in Cancer Biotechnology

Newly awarded DST/NRF SARChI Chair: Professor Aqiel Dalvie (SA – Swiss Bilateral Research Chair in Global Environmental Health, School of Public Health and Family Medicine)
**DOCTORAL GRADUATIONS**

**M.-R.H. ABRAHAMS (MEDICAL VIROLOGY)**
The transmitted HIV-1 subtype C: characterization of the transmitted/founder full-length virus genome and the influence of early immune selective pressure on virus replication
Supervised by Professor C. Williamson

**A.O. ADEFUYE (MEDICAL BIOCHEMISTRY)**
The role of seminal plasma in the regulation of inflammation and inflammatory pathways in the cervix: potential for cervical cancer progression and HIV transmission in South African women
Supervised by Dr K. Sales and Professor A.A. Katz

**S.K. ADJENI (ANATOMY & CELL BIOLOGY)**
An investigation into the ultrastructural parameters of abdominal muscles in children and adolescents with spastic type cerebral palsy and the effect on postural muscle performance
Supervised by Professor G. Louw, Professor M. Jelsma and Dr M. Unger

**S. ALIWAINI (ANATOMY & CELL BIOLOGY)**
Identification and characterization of a Novel Palladacycle, AJ-5, to treat advanced melanoma and breast cancer
Supervised by Associate Professor S. Prince and Professor S. Mapolie

**B.W. ALLWOOD (MEDICINE)**
Tuberculosis-associated obstructive pulmonary disease
A clinical, radiological and pathophysiological study of the contribution of previous pulmonary tuberculosis in a community-based study of patients with chronic obstructive pulmonary disease
Supervised by Emeritus Professor E. Bateman

**L.B. ARENDSE (MEDICAL BIOCHEMISTRY)**
Exploring the effects of polymorphic variation on the stability and function of human cytochrome P450 enzymes in silico and in vitro
Supervised by Professor J. Blackburn

**G.P. DESHPANDE (MEDICAL VIROLOGY)**
Understanding the interplay between HIV-1 diversity, humoral immune responses and viral fitness
Supervised by Professor C. Williamson

**J.C. BROWN (EXERCISE SCIENCE)**
Safer rugby through BokSmart? Evaluation of a nationwide injury prevention programme for rugby union in South Africa
Supervised by Professor M. Lambert, Professor W. Van Mechelen, Dr E. Verhagen and Dr C. Draper

**M.C. BURGER (EXERCISE SCIENCE)**
Genetic risk factors for carpal tunnel syndrome
Supervised by Professor M. Collins

**T. CARNEY (PSYCHIATRY)**
Evidence-based screening, brief intervention and referral to treatment for substance-using adolescents with delinquent-type behaviours
Supervised by Associate Professor B. Myers and Professor J. Louw

**N. CONRAD (MEDICAL BIOCHEMISTRY)**
Characterisation of the structural motifs involved in the cleavage and secretion of human angiotensin-converting enzyme
Supervised by Professor E. Sturrock and Ms S.L. U. Schwager

**M.B. CORNELL (PUBLIC HEALTH)**
The evolution and effectiveness of the South African antiretroviral therapy program
Supervised by Associate Professor L. Myer and Professor M. Jeebhay

**S.M. COTTON (PSYCHIATRY)**
Executive functioning in methamphetamine psychosis
Supervised by Professor D. Stein and Dr K.G.F. Thomas

**R. DENDERE (BIOMEDICAL ENGINEERING)**
Hand X-ray absorptiometry for measurement of bone mineral density on a slot-scanning X-ray imaging system
Supervised by Associate Professor T. Douglas and Dr S. Whiley

**G.P. DESHPANDE (MEDICINE)**
Testing metabolic and pharmacological agents for recovery against de novo acute heart failure in an isolated rat heart model
Supervised by Professor L. Opie

**O.B. DINTWE (CLINICAL SCIENCE AND IMMUNOLOGY)**
Characterisation of Mycobacterium tuberculosis specific T cell immunity with HLA class II tetramers
Supervised by Dr T. Scriba and Dr E. Nemes

**N. DLAMINI (CELL BIOLOGY)**
The early inhabitants of the Upemba depression, the Democratic Republic of Congo
Supervised by Professor A. Morris and Professor J.C. Sealy

**L. DU PLESSIS (BIOMEDICAL ENGINEERING)**
An investigation of components of the cerebellar-brainstem circuit involved in classical eyeblink conditioning in children with fetal alcohol spectrum disorders
Supervised by Associate Professor E. Meintjes

**R.G. ESSOMBA (CLINICAL SCIENCE & IMMUNOLOGY)**
Generation, genetic and immunological characterization of subtype G envelope expressing HIV-1 pseudoviruses
Supervised by Dr J. Dorfman
N.M. FRANCISCO (CLINICAL SCIENCE & IMMUNOLOGY)
The role of cell type-specific tumour necrosis factor in protective immunity against neurotuberculosis
Supervised by Associate Professor M. Jacobs

C.L. GRAY (PAEDIATRICS)
The prevalence and patterns of IgE-mediated food allergy and sensitisation in South African children with atopic dermatitis
Supervised by Associate Professor M. Levin and Dr G. du Toit

M. HENDRIKSE (MEDICAL BIOCHEMISTRY)
Interactions of GPR54 and GPR147 receptors with RF-amide ligands
Supervised by Professor A. Katz and Professor R.P. Millar

Z. HOLTMAN (PUBLIC HEALTH)
Neurobehavioural effects of pesticide exposure among emerging farmers in the Western Cape
Supervised by Professor L. London and Associate Professor M.A. Dalvie

J.R. HUNTER ADAMS (PUBLIC HEALTH)
Factors influencing migrant maternal and infant nutrition in Cape Town, South Africa
Supervised by Dr A. Rother

R.A. JACOB (CLINICAL SCIENCE AND IMMUNOLOGY)
Neutralizing antibody response to membrane proximal external regional (MPER) in highly neutralization resistant HIV-1; Implications for vaccine design
Supervised by Dr J. Dorfman

S.Z. JAUMDALLY (MEDICAL ViroLOGY)
Impact of immune activation and inflammation on the susceptibility to HIV infection and disease progression in HIV serodiscordant and seroconcordant couples
Supervised by Associate Professor J.-A. Passmore and Dr P. Gumbi

M.M. KGATLE (HUMAN GENETICS)
An investigation of genome-wide promoter region cytosine-phosphate-guanine (CpG) Island methylation Professorialles in patients with chronic hepatitis B virus infection
Supervised by Dr H. Hairwadzi, Professor R. Ramesar and Professor W. Spearman

J.A. LI (CELL BIOLOGY)
An investigation into the role of TBX3 in breast carcinogenesis and its regulation by the TGF-β1 signalling pathway
Supervised by Associate Professor S. Prince

F. LUTWAMA (CLINICAL SCIENCE AND IMMUNOLOGY)
Comparison of immune responses induced by bacillus calmette-guerin when given at birth or at 6 weeks of age in Ugandan Infants
Supervised by Professor W. Hanekom, Dr B.M. Kagina, Dr C.L. Day and Professor H. Mayaja-Kizza

G.J. MAARMAN (MEDICINE)
Melatonin as a novel cardioprotective therapy in pulmonary hypertension
Supervised by Associate Professor S. Lecour and Professor K. Sliwa-Hahnle

S. MARAIS (MEDICINE)
Investigations into HIV-associated tuberculous meningitis
Supervised by Professor R.J. Wilkinson, Associate Professor G. Meintjes and Associate Professor K.A. Wilkinson

M. MBELE (HUMAN GENETICS)
Molecular genetics of arrhythmogenic right ventricular and dilated cardiomyopathic in South Africans
Supervised by Professor B. Mayosi and Dr G. Shaboodien

L.M. MWAPAGHA (MEDICAL BIOCHEMISTRY)
The role of viral sequences in genetic aberrations and malignant transformation
Supervised by Professor I. Parker

S.A. NJIKAN (CLINICAL SCIENCE & IMMUNOLOGY)
Correlates of risk of TB disease in infants with differential response to BCG vaccination
Supervised by Professor W. Hanekom, Dr E. Nemes and Dr T.J. Scriba

K.S. O’CONNELL (EXERCISE SCIENCE)
Investigation of selected collagen genes in exercise-related musculoskeletal soft tissue phenotypes
Supervised by Professor M. Collins and Dr M. Posthumus

K.-M. OFFERMAN (MEDICAL ViroLOGY)
Investigation of local South African avipoxviruses as potential vaccine vectors
Supervised by Professor A.-L. Williamson and Dr N. Douglass

N.A.V. PARKER (MEDICAL BIOCHEMISTRY)
Characterizing the role of p21-Activated Kinase 3 (PAK3) in AP-1-induced transformation
Supervised by Associate Professor V. Leaner

T.C. PENNELL (CARDIOTHORACIC SURGERY)
Isolating and optimising transmural endothelialization as an independent mode of spontaneous vascular graft healing
Supervised by Dr D. Bezuindenhout and Professor P. Zilla

J.S. PETERS (MEDICAL BIOCHEMISTRY)
Comprehensive proteomic Professorilging of clinically relevant strains of Mycobacterium tuberculosis
Supervised by Professor J. Blackburn
P.M. PETERSEN WILLIAMS (PUBLIC HEALTH)
Maternal Alcohol and Other Drug (AOD) use among pregnant women attending Midwife Obstetric Units (MOUs) in the Cape Metropole, South Africa
Supervised by Dr C. Mathews and Dr C. Parry

S.M. PIENAAR (PAEDIATRICS)
Tuberculosis and genes of the IL12/IL23/IFNγ pathway: Exploring functional significance of novel mutations in the IL12p40 promoter
Supervised by Associate Professor B. Eley

U.K. ROHLWINK (NEUROSCIENCES)
Biomarkers of neurological tissue injury and inflammation in paediatric tuberculous meningitis
Supervised by Professor A. Figaji

N. SHUNMOOGAM-OUNGEND (MEDICAL BIOCHEMISTRY)
An investigation into the molecular mechanisms induced by derivatives of natural products in oesophageal cancer
Supervised by Associate Professor D. Hendricks and Professor K. Chibale

M. SINGATA-MADLIKI (NURSING)
A randomised control trial studying the effects of copper intrauterine device and injectable progestogen contraceptive on depression and sexual functioning of women in the Eastern Cape
Supervised by Emeritus Professor D. Khalil and Professor G.J. Hofmeyr

D. SMITH (HUMAN GENETICS)
Spinocerebellar ataxia type 7 in southern Africa: an epidemiological, molecular and cellular study
Supervised by Professor J. Greenberg and Professor S.H. Kidson

C. STEIN (EMERGENCY MEDICINE)
Emergency medical service response system performance in an urban South African setting: a computer simulation model
Supervised by Professor L. Wallis and Dr O. Adetunji

T.-L. STERLEY (PHYSIOLOGY)
A Role for glutamate and Gaba in attention-deficit/hyperactivity disorder: a study of the spontaneously hypertensive rat
Supervised by Professor V. Russell and Dr F.M. Howells

N. TAM (EXERCISE SCIENCE)
Towards an improved understanding of the biomechanical implications and risk of injury of barefoot running
Supervised by Dr R. Tucker

A.L.A. TANTOH (CLINICAL SCIENCE & IMMUNOLOGY)
High throughput RNA interference based screen for the identification of genes implicated in listeria monocytogenes infection
Supervised by Professor F. Brombacher, Dr N. Emans and Dr M. Mhlanga

A.M.S. TONGO PASSO (MEDICAL VIROLOGY)
Immunology and virology of HIV-1 infection in Cameroon
Supervised by Dr W. Burgers and Dr D. Martin

N. TSHABALALA (DISABILITY STUDIES)
An exploration of the parents’ experiences of the inclusion and retention of their disabled children in public schools in the Eastern Cape Province
Supervised by Associate Professor T. Lorenzo and Professor S. Pendlebury

M.-C. VAN DER WETHUIZEN (PSYCHIATRY)
Mental disorders and violence-related injuries: prevention opportunities in emergency centres
Supervised by Dr K. Sorsdahl and Professor D.J. Stein

J.S. WOMERSLEY (PHYSIOLOGY)
Methamphetamine and cocaine effects on dopamine neurons in a rat model of attention-deficit/hyperactivity disorder
Supervised by Professor V. Russell, Professor L.A. Kellaway and Professor D.J. Stein

S.P. ZVADA (PHARMACOLOGY)
Optimization of 1st-line antituberculosis dosing regimens using a population pharmacokinetic approach: food effects, drug combinations and pharmacological effects
Supervised by Associate Professor H. McIlleron and Associate Professor U.S.H. Simonsson

PATENTS

Filed Applications


**Granted applications**


DEPARTMENT OF ANAESTHESIA

Head of Department: Professor JLC Swanevelder
Second Chair: Professor RA Dyer

Departmental Profile

Permanent and Long-Term Contract Staff

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<td>Administrative and Support staff</td>
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<td><strong>Total</strong></td>
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Students

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<td>Doctoral</td>
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<tr>
<td>Masters (Registrars)</td>
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<td>Undergraduate 4th and 5th year MBCHB</td>
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<tr>
<td><strong>Total</strong></td>
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Clinical research

The Professor and Head of Department of Anaesthesia, Justiaan LC Swanevelder, has continued the research initiative in cardiovascular research in the Department. Professor Swanevelder is an international expert in the field of Transoesophageal (TOE) and Transthoracic (TTE) Echocardiography, and has played a central role in the development of this field, and formal guidelines for practice and accreditation in the United Kingdom. He is a prominent member of the European Association of Cardio-thoracic Anaesthesia (EACTA). The important collaborations established during 2013-2014, and research initiatives established involving teaching and research on TTE and TOE by visiting experts (Professors E Sloth, Denmark, A Dennis, Australia and J Ender, Leipzig), have given rise to a major publication which is in press in Anaesthesia. Further training and studies have been initiated in both intraoperative and point of care echocardiography, aided by the University Equipment Committee award of a state of the art echocardiography machine, the VividQ. A study has also been conducted on the use of ultrasound to train medical students. Numerous courses have been conducted on various aspects of medical ultrasound, and considerable outreach has involved Universities around the country.

The first incumbent of the combined clinical and research Specialist post, Dr Nkanyiso Hadebe, is making good progress with his PhD project on myocardial protection, and is about to start the clinical phase with his project, “Cardiac Protection with Intralipid or Remote Ischaemic Preconditioning during Coronary Artery Bypass Surgery”. He is collaborating with Professors S Le Coer and K Sliwa in the Hatter Institute of Cardiovascular Research.

The Red Cross Hospital (RCWMCH) operating theatre complex continued to create an environment conducive to research, and there are several MMed dissertations close to completion, as well as a number of recently initiated projects. These include a completed pharmacokinetic study of the antimicrobial agent cefazolin during cardiopulmonary bypass. The Department of Pharmacology has developed an assay for cefazolin, which should facilitate several further important clinical trials. Important projects in thromboelastography (TEG) are ongoing, and Dr Owen Hodges is in the process of writing up his PhD on the use of TEG during burns surgery. Valuable guidelines have been published for pain management and sedation in children. Further studies on pain management are envisaged. A further study on the noninvasive measurement of haemoglobin in paediatrics, is in the write-up stage.

Obstetric Anaesthesia remains an important area of investigation. The lead clinician is Dr D van Dyk. The project on spinal anaesthesia in preeclampsia is almost complete. As part of this investigation, a collaboration was initiated with the Department of Anaesthesia of the University of Washington. This aspect of the study will examine the population characteristics of the adrenaline β2-haplotype in preeclamptic women. Two MMed mini-dissertations are in progress in this regard. An abstract was presented on stroke volume responsiveness in preeclampsia at the Obstetric Anaesthetists’ Association Annual Meeting in Bournemouth in May 2013, and on vasopressor use during spinal anaesthesia at SASA in 2015. During the visit of Professor AT Dennis, from the University of Melbourne, data was collected on transthoracic echocardiography in pregnant women. Four abstracts were presented at the Obstetric Anaesthetists’ Association and Society of Obstetric Anaesthesia and Perinatology meetings in May 2014, including findings in patients with severe preeclampsia, and HIV positive women. The latter project is the subject of a MMed dissertation. During a further visit from Professor C Ortner from Seattle, a study was performed on acid base balance in preeclampsia; this paper is in press in the British Journal of Anaesthesia.
A member of this research group, Professor RA Dyer, is B-2 NRF rated, on the basis of completed research in the period of review from 2004-2011. Several further MMed projects are in progress in Obstetric Anaesthesia – please see detailed list below.

The Department has been an active research site for the international, multicentre POISE-2 trial of aspirin and clonidine for perioperative protection of high risk patients against perioperative myocardial events, and has recruited the second highest number of patients in South Africa. The South African principal investigator is Professor B Biccard, from the Department of Anaesthesia, UKZN. The local site was initially set up by Prof M James. The lead author is Dr A Myburgh, with Dr O Porrill as co-investigator. There have been two papers in the New England Journal of Medicine emanating from this work in 2014.

**Airway research**

2014 saw considerable advances in the Difficult Airway Facility, under the leadership of Dr R Hofmeyr. Dr D Miller, of Guy’s Hospital in London, collaborated with our Difficult Airway research group, and conducted original clinical research on the newly devised supraglottic device, the 3gLM, and in addition devised a laboratory model using cadavers, in order to compare the function of various supraglottic airways with respect to protection against passive regurgitation and active vomiting. This formed the basis for a prize-winning presentation at the SASA 2014 Congress. Dr Hofmeyr has also completed a MMed on tracheal intubation via the 3gLM, and a further project has involved the first assessment of the Totaltrack, a new device allowing for direct vision of the larynx during tracheal intubation via an LMA.

**Critical Care**

In the field of septic shock, two projects are in progress. The first involves high dose Vitamin C in the management of haemodynamic failure, and the second relates to markers of oxidative stress in this condition. Part of the latter theme has already been presented at the World Congress of Critical Care, and won an award. In the interests of improved quality assurance, a MMed project has addressed the important issue of ICU handoffs. This has improved patient care and will be the subject of two publications. A further study on semi-closed loop control of blood glucose is planned after a pilot study in 2013. An international collaborative study is in progress on the attitudes of physicians to the withdrawal of therapy. A further study will examine the efficacy of thoracic epidural anaesthesia in the Postoperative High Care Unit.

**Laboratory Research**

The Department was involved in several areas of research in 2014. Dr M Miller is the clinician in charge of the laboratory and Emeritus Professor James provides valuable advice. Lizel Immelman, our senior medical technologist, has been appointed to a permanent post and is performing an important research administrative role over and above her role in teaching and individual projects. She plays an important role in the teaching of the coagulation process and instruction on the use and utility of the TEG and ROTEM devices, which are based on viscoelastic changes during the clotting process. Ms M Flint, a PhD student in Physiology, is to be appointed as a Laboratory and Research Assistant in place of the retiring Mr H Stuurman, as of 01 01 2015. In the area of clinical fluid and coagulation research, further studies are in place on the effects of fluids on coagulation, in particular in the setting of cardiopulmonary bypass. Several studies are in progress examining coagulation in various disease states of relevance to Anaesthesia. Two completed studies involved the use of TEG to examine coagulation in HIV parturients, and in patients undergoing renal biopsy.

There is considerable ongoing animal research. Firstly, there are ongoing studies on coagulation, and an animal study of coagulation in a porcine model of acute liver failure, in collaboration with Dr C Senden of UCL. The Department is also collaborating with the Department of Cardiothoracic Surgery under Professor P Zilla. The research project entails the implantation of bio-prosthetic mitral valves into sheep to assess the degree of mineralisation over a period of 6 months. The ultimate aim is minimally invasive implantation of mitral valves in patients with Rheumatic Heart Disease. The Anaesthesia team, led by Professor Swanevelder, includes Dr A Myburgh, K Bergh and G Picken.

**Collaboration**

Once again, junior consultants and registrars were encouraged to participate in research activities wherever possible, and scientific writing skills were also improved in this way. Interdisciplinary collaboration at UCT remains strong, and includes the Departments of Cardiothoracic Surgery, Obstetrics and Gynaecology, Neonatology, Paediatrics, Critical Care, and the Hatter Institute of Cardiovascular Research. National collaboration has been strengthened, in particular with UKZN, where a study has been planned on biomarkers and echocardiography in patients with severe preeclampsia.

International collaboration continues, and is constantly expanding. The Department collaborates with the University of Aarhus, Denmark, the University of Melbourne, the University College London Hospitals, the University of Leipzig, the University of Toronto, Stanford University, the Rikshospitalet in Oslo, the University of Toronto, the University of Washington, and Glenfield Hospital, Leicester. In the field of echocardiography, there are ongoing collaborations with Professors E Sloth (Denmark), A Dennis (Australia), J Ender (Leipzig) and Andrew Roscoe (Toronto). In thoracic surgery, Professor
Peter Slinger of Toronto is a world leader and collaborator with the Department. In the area of the difficult airway, new ties have been established with Dr D Miller of Guy's Hospital in London, and Dr Ellen O’Sullivan of Dublin. Ongoing laboratory collaboration continues with Dr Monty Mythen of UCLH. In the area of acid base analysis in preeclampsia, there is ongoing collaboration with Dr C Ortner of Vienna.

Research Fields and Staff

SWANEVELDER, J.L.C.
Transoesophageal and transthoracic echocardiography (see above). Laboratory work on local anaesthetic toxicity in mice, employing TTE.

SWANEVELDER J., MYBURGH A., NEJTHARDT M., ROODT F., CLOETE E.
Transoesophageal echocardiography in cardiac anaesthesia; Point of care TTE; Medical student education in ultrasound.

HADEBE N., SWANEVELDER J.
Cardiac pre-conditioning.

MILLER M., JAMES M.F., IMMELMAN L., FLINT M.
Coagulation studies using thromboelastography and thromboelastometry.

JOUBERT I.A., PIERCY J., MILLER M.
Septic shock, ICU Quality Assurance, liver failure model.

Obstetric anaesthesia: Cardiac output studies during spinal anaesthesia in patients with preeclampsia; effects of fluid loading and vasopressors; the genetics of preeclampsia; effects of vasopressors on cord gases; spinal anaesthesia in the obese parturient; transoesophageal echocardiography. See also further MMed projects below.

THOMAS J., BESTER K., GRAY R., KEMP K., WILSON G.
Management of burns in children; pain management in children; Case reports; Fluid management in children; Noninvasive haemoglobin measurement; Pharmacokinetics of antimicrobial agents during cardiopulmonary bypass; Paediatric burns: Coagulation studies; Evaluation of the need for psychosocial services for paediatric burn patients at the RCWMCH.

HODGES O.
Coagulation in patients with paediatric burns.

LLEWELLYN R.
Drug errors in anaesthesia.

ROODT F., DE VAAL A., HOFMEYR R.
Airway research.

Contact Details
Postal Address: D23 Department of Anaesthesia, New Groote Schuur Hospital, Anzio Road Observatory, 7925, South Africa
UCT Telephone: SA (21) 406 6143
GSH Telephone: SA (21) 404 5004
Fax: SA (21) 406 6589
Email: justiaan.swanevelder@uct.ac.za
robert.dyer@uct.ac.za

Research Output

Articles in peer-reviewed journals


DEPARTMENT OF CLINICAL LABORATORY SCIENCES

Head of Department:  
Professor Carolyn Williamson

DIVISIONAL PROFILES

Division of Anatomical Pathology

Head of Division: Professor Dhiren Govender

The Division of Anatomical Pathology has both diagnostic and academic components. The diagnostic laboratories form part of the National Health Laboratory Service (NHLs) complex at Groote Schuur and Red Cross War Memorial Children’s hospitals.

The Diagnostic laboratories are at both sites and provide a diagnostic surgical pathology, cytopathology and autopsy services to GSH, the academic hospital complex and associated hospitals and clinics in the Western Cape. The division also serves as a public and private tertiary referral and consultation centre for Anatomical Pathology.

These service commitments drive most of the research programmes that are patient and disease orientated. The Division has recently acquired a research laboratory and had 3 PhD, 1 MSc, 17 MMed, 1 BSc Hon, 2 MPhil (Paediatric Pathology) and 1 Elective student during the reporting period. The Division has been involved in a range of research activities using a variety of techniques and continues to broaden its research base. The main research focus is in the field of molecular pathology pertaining to diseases that are common in South Africa and the Western Cape – these include various cancers, in particular those affecting disadvantaged population groups. Other research areas include tuberculosis, cardiomyopathy and foetal-alcohol syndrome.

The Division has been approached to provide support for Anatomical Pathology specialist training at the Universities of Botswana.

The Division successfully hosted a Placenta Pathology course in September 2014.

Collaborative Research

The Division continues to establish collaborations with other Academic Pathology departments in Africa. We have recently embarked on a joint breast cancer research project with the Aga Khan University in Nairobi. We
are exploring similar collaborations with the Pathology department at the Muhimbili University of Health and Allied Sciences in Dar es Salaam.

There are internal collaborations with the departments of Surgery, Medicine, Cardiology, Obstetrics and Gynaecology, Radiation Oncology, Human Genetics and Medical Biochemistry.

**Staff**

**Permanent and Long-Term Contract Staff on UCT Establishment**

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**Permanent Joint Academic Staff on NHLS Establishment**

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**Honorary Staff**

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**Students**

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| Elective students (Amanda Maolo Botswana) | 1 |
| **Total**                                | **926** |

**Visitors**

Dr N Wilkinson (United Kingdom)
Prof I Scheimberg (United Kingdom)
Prof C Wright (Port Elizabeth, RSA)
Dr N Morse (Cape Town)
Dr P Schubert (University of Stellenbosch)
Dr Benatar (United Kingdom)
Dr AA Atanda (Ibadan, Nigeria)
Mrs OJ Atanda (Ibadan, Nigeria)

**Research Fields and Staff**

**PROFESSOR DHIREN德拉 GOVENDER**
Pathobiology of cancers, especially breast cancer, gastrointestinal tract cancers and paediatric solid tumours.

**A/PROFESSOR RICHARD NAIDOO**
Molecular pathology and biomarkers in cancer.

**A/PROFESSOR HELEN WAINEWRIGHT**
Foetal, perinatal & neonatal pathology, placental pathology, respiratory pathology including TB, cardiac pathology including cardiomyopathy and liver disease.

**DR MAUREEN DUFFIELD**
Neuropathology, renal pathology and electron microscopy.

**DR MICHAEL LOCKETZ**
Gastrointestinal tract pathology, including hepatobiliary pathology.

**DR MICHAEL OTTO**
Breast, thyroid gland and foetal perinatal pathology and tissue microarrays.

**DR KOMALA PILLAY**
Paediatric pathology, lymphoma and fine needle aspiration cytology.

**DR RIYADH ROBERTS**
Dermatological pathology.

**DR RAVEENDRA SOOKHAYI**
Lymphoma and Soft tissue sarcoma.

**DR HUE-TSI WU**
Gynaecological pathology and tissue microarrays.

**Contact details**

Telephone +27-21-406 6162 (Secretary)
Fax +27-21-404 7611
Email: Dhiren.Govender@uct.ac.za
Computational Biology Group

Head of Group: Professor Nicola Mulder

Group Profile

The University of Cape Town Computational Biology (CBIO) Group is the centre of Bioinformatics activities at the university. It was originally set up as a Node of the National Bioinformatics Network, which aimed to develop capacity in bioinformatics in South Africa, and to perform world-class bioinformatics research. The CBIO Group is located within the Institute of Infectious Disease and Molecular Medicine (IDM) in the Health Science Faculty, and integrates researchers interested in bioinformatics at the university. The mission of the UCT Computational Biology Group is to become an exceptional, internationally recognized research and training center, addressing the challenges of bioinformatics capacity development in South Africa.

The group performs bioinformatics research and provides training and services in the discipline. Research focuses on infectious diseases from both the host and pathogen perspectives, particularly for TB and viral diseases. CBIO uses data mining and systems biology approaches to study the molecular biology and evolution of bacterial and viral pathogens and their interaction with their hosts. Through involvement in H3ABioNet, a pan African bioinformatics network for H3Africa, and the Human Heredity and Health in Africa (H3Africa) initiative, research has also focused on population genetics and GWA studies and the development of new algorithms to study the genetics of admixed populations.

CBIO has a large network of connections with other bioinformatics groups in Africa through the African Society for Bioinformatics and Computational Biology and H3ABioNet. The group also has close ties with the African Institute for Mathematical Sciences (AIMS) by supervising student essays.

Training Activities in the Group

Undergraduate and Postgraduate teaching

The group teaches a module for Molecular medicine students and several modules for the Health Science Honours programme. It also coordinates the Health Science Honours Programme in Bioinformatics. However, the main focus of the group is on postgraduate education, and the group supervises a number of students. The CBIO staff also organize and teach on a national course program for postgraduate bioinformatics students.
Other Training Activities

The CBIO groups run short specialized workshops for researchers. In 2014 this included:
- Data Management Workshop (June 2014)
- EMBO Protein Bioinformatics Course (October 2014)
In addition, Prof Mulder again organized the 7-week national bioinformatics course for postgraduate students.
The group hosted two interns from Tanzania and one from Nigeria during the course of the year, and also hosted the sabbaticals of two senior French researchers.

Bioinformatics Service-Related Outputs

The CBIO IT team provides services to researchers inside and outside UCT, as well as managing the server room which houses CBIO and other computing equipment. Below are some examples of services provided in 2014:

**WITHIN UCT**

**Human Genetics Division**
- Managed storage on UCT HPC
- Advised and assisted with acquisition of research data storage on UCT’s eResearch infrastructure
- Helped with variant calling pipeline documentation (Shareefa’s project)
- Helped with transfers between collaborators of H3Africa exome data
- Gave advice on using tools and processing data on UCT HPC.

**Medical Microbiology**
- Worked with JCVI to get Shantelle and Menna going with their 16S analysis
- Processed Grant/Elloise’s preliminary 16S datasets
- Did some assembly work for Felix Dube
- Managed storage on HPC
- Worked with ICTS to move their HPC data to a long term storage solution
- Some students attended the 16S workshop last June run by Gerrit Botha

**NHLS**
- Worked on Heidi’s viral exploration project, processed data -work is still ongoing
- Managed storage on HPC
- Helped with data transfers from sequencing company

**Immunology**
- Ran QC checks
- Ran 16S pipeline on preliminary data
- Helped with data transfers from sequencing company
- Helped students to get going with analysis
- Some students attended the 16S workshop last June
- Have been working with Katie to get some of their newer datasets analysed

**Medical Biochemistry**
- Blackburn Lab: Setup a Globus account on our instance and helped with data transfers

**ICGEB**
- Worked on viral integration project. Processed data and uploaded final results to Galaxy instance. Work is still ongoing
- Managed storage on HPC
- Worked with ICTS to move their HPC data to a long term storage solution

**Oceanography**
- 16S data analysis for Gerda’s project

**Molecular and Cell Biology**
- Managed accounts on Dakon (high memory CBIO machine). Installed software, managed resources (storage and computational)
- Helped with transfers between their collaborators

**Virology**
- Harris attended the 16S workshop last June run by Gerrit Botha. Gerrit also assisted him with analysis afterwards
- Helped with getting their shared netapp endpoint mounted to their Galaxy instance at UCT

**BIRTH training lab**
- Gave advice on resources required for their lab
- Helped with initial page setups

**General setup for IDM researchers at UCT HPC**
- Installed 16S and NGS tools that can be used by most users involved in 16S analysis
• Tools and references that can be used for human variant calling analysis are now available on the UCT Galaxy instance.

OUTSIDE UCT

Malariaigen/Sickle Cell project

• Hosted 2 interns from Tanzania for 2 weeks to assist with pre-processing of their SNP array dataset

CPGR

• Assisted CPGR in distributing their Ingenuity Pathway Analysis license to UCT groups

H3Africa

• Chip design. Held a workshop with collaborators from WITS and WTSI to begin the design of a genotyping microarray for H3Africa and other African populations
• Data transfers: initiated a project to measure Internet transfer speeds between institutions within and outside of Africa.
• Event registration: continued development of a system to capture registrations for H3Africa/ H3ABioNet events
• H3A Archive set up. Acquisition of resources for storage of genetic data produced by H3Africa projects

Wits

• Collaboration on South African Human Genome Project

Additional Achievements in the CBIO Group

Nicola Mulder was promoted to full Professor and placed on the Thomson Reuters highly cited list. In addition, she was awarded a new NRF grant in the Functional Genomics and Bioinformatics call. Prof Mulder gave invited talks at the eResearch conference in Cape Town, South Africa, at a Hunter College Symposium in New York, and at the South-South Symposium and Round Table discussions on Applications of Genomics technologies for Public Health in Tunis, Tunisia.

Darren Martin was promoted to Associate Professor and awarded a B3 rating by the NRF. He gave invited talks at the Jaques Monod Conference on Molecular Evolution in Roscoff, France and the Virus Evolution and Molecular Epidemiology Conference in Rome, Italy.

Group Members

Staff

Professor Nicola Mulder (Head of Group)
Associate Professor Darren Martin (Senior Lecturer)
Emile Chimusa (Lecturer)
Natasha Wood (Lecturer)
Ayton Meinjies (Software Developer)
Gerrit Botha (Software Developer)
Sumir Panji (H3ABioNet Project Manager)
Suresh Maslamoney (Systems Administrator)
Nazla Hassen (Administrator)
Abigail Abrahams (H3Africa Administrator)
Michelle Skelton (H3Africa Project Coordinator)

Students and postdoctoral fellows

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Contact details

Physical address:
UCT Computational Biology Group, Room N1.05
Werner Beit North Building Basement, Institute of Infectious Disease and Molecular Medicine, Anzio Rd
Observatory
Postal address:
UCT Computational Biology Group, Institute of Infectious Disease and Molecular Medicine, University of Cape Town Health Sciences Campus, Anzio Rd, Observatory, 7925
South Africa
Email: info@cbio.uct.ac.za
web: www.cbio.uct.ac.za/
Tel: 021-406 6058
DIVISION OF CHEMICAL PATHOLOGY

Head: Professor David Marais

Division Profile

The Division of Chemical Pathology integrates diagnosis, training and research in a platform comprising laboratories in Groote Schuur Hospital, Red Cross Children’s War Memorial Hospital, and the Falmouth Building at the University of Cape Town. Additionally, there is an overlap with clinical pathology training and research when these registrars rotate through chemical pathology.

The laboratory at C17 in Groote Schuur Hospital comprises chemical pathology, haematology, immunology, allergology, virology and microbiology. It provides routine diagnostic services to the local teaching hospital, other Western Cape provincial healthcare facilities, the University of Cape Town Private Academic Hospital as well as a clinical trials service.

This highly automated laboratory, accredited by the South African National Accreditation System (SANAS), offers a 24 hour service. Routine investigations are analysed on the Roche Modular and Cobas Intergra systems and a new Cobas 6000 machine is being introduced. Specialised tests available include protein and lipoprotein electrophoresis (semi-automated Sebia Minicap and Hydrasys systems), various manual assays and immunoassays. The radioimmunoassays include active renin, aldosterone, 17-hydroxypregesterone, acetylcholine receptor autoantibody and, uniquely to South Africa, 11-deoxycortisol. The molecular laboratory genetic testing repertoire includes pharmacogenetic tests, androgen receptor some mitochondrial genes. Inherited metabolic disease (IMD) assays are done at the Red Cross laboratory which laboratory is also SANAS accredited. Gas chromatography is used. Additional investigation is done in the Falmouth Building. During the year a new direct analysis in real time chromatography system was installed in the Falmouth Building.

Diagnostic Services

The laboratories endeavour to provide not only a routine service but to also solve clinical problems as they arise. The loss of staff as well as financial constraints has limited the capacity to perform this but fibroblast cultures, spectrophotometric, fluorimetric, some radioa-isotope and chromatographic studies can still be undertaken. A pyruvate kinase assay was set up for the work-up for haemolytic anaemia. Other assays set up included blood cyanide and Niemann Pick C disease. Genetic work-up has expanded from the existing list to include sterol biosynthetic errors (Mevalonate Kinase Deficiency, Smith Lemli Opitz Syndrome) and aldolase B for hereditary fructose intolerance. Furthermore, Glucose-6-phosphatase and SLP7A7 (lysinuric proteinuria) gene investigations are being set up in response to patient needs, the former with an enzyme assay as well.

Teaching, Training and Professional Development

Staff members perform under- and postgraduate teaching in Chemical Pathology. Registrars rotate between the different benches within the laboratories at the Groote Schuur and Red Cross Children’s hospitals to obtain skills across the discipline. They receive weekly tutorials on basic biochemistry, methodology, management, lipidology, molecular medicine. Journal discussions in chemical pathology are supplemented with endocrinology seminars, ward attendances, and post-clinic meetings in lipidology. There was only 1 chemical pathology registrar (Dr Ndlovu) until January 2014 when a second registrar was appointed (Dr Hack). A supernumery registrar from Malawi (Dr Chingwanda) finished his attachment. Dr Omar is the course convenor for clinical pathology which involved Dr Bosman, Dr Erasmus, Dr Swanepoel and Dr Swart. A phlebotomy training course ensures a high standard and uniformity of sample collection. The toxicology initiative by Dr van der Watt was supported this year by Dr Fortgens and Dr Omar.

Other Training Information

A course in DNA analysis is offered in the Falmouth Laboratory and was quite popular for its second year. Full day courses in Lipidology have been prepared and at least 2 are committed for the next year.

Research Activities

The diagnostic work simultaneously provides information on various disorders in the region; of particular interest being the inherited metabolic diseases and the mitochondrial disorders which may differ significantly from experience abroad owing to the different origins in the population. Metabolic disease interest notably for glutaric aciduria type 1 and galactosaemia, is expanding to a greater repertoire of tests at the Red Cross laboratory. Lipidology expertise spans electrophoresis, thin layer chromatography and genetics of familial hypercholesterolaemia and dysbetalipoproteinaemia. Chromatography is developing and has characterised fatty acids in the study of hominid nutrition, along with other macro- and micronutrients in the shoreline and inland aspects of the Western Cape. The work-up of heterozygous and homozygous familial hypercholesterolaemia permitted participation.
in international studies testing new therapeutic options with publications in the Lancet and New England Journal of Medicine. Additionally, the work was reviewed at the UK Heart meeting.

Research Units / Study Groups linked to the Department

MRC Cape Heart Group directed by Prof P Zilla involves investigation into cardiovascular health and disease, including the genetic dyslipidaemias of which high density lipoprotein metabolism is the focus lately and especially endothelial lipase.

Contact Details

Dr A D Marais, Professor, Chemical Pathology
6.33 Falmouth Building
University of Cape Town Health Science Faculty Anzio Rd, Observatory, 7925, South Africa
Tel: 27-21-4066192 or 4066185
Fax: 27-21-4488150
Email: david.marais@uct.ac.za

DIVISION OF FORENSIC MEDICINE

(Including the Gender, Health and Justice Research Unit)

Head of Division: Professor L.J. Martin

Divisional Profile

A large component of operational activity of the Division of Forensic Medicine is that of service delivery. The academic staff are on the joint staff establishment of the University of Cape Town and the WCG: Health: Forensic Pathology Service. This is a fairly new programme of the WCG: Health, established in April 2006, when the responsibility of "mortuary services" was transferred to the Province from SAPS. We are responsible for the medico-legal investigation of death of all persons who die within the Metropol, an area comprising approximately 4.5 million persons, stretching from Atlantis on the West Coast, the Peninsula, the City, to everything south of the N2 up to, but not including, Khayelitsha. Our clinical services are based at Salt River Mortuary and we perform approximately 3500 autopsies per annum.

The Division now has dedicated research laboratories in the Falmouth Building. We provide a clinical teaching neuropathology laboratory with a specialist neuropathologist. The Division has limited research activities due to our heavy investigative service load, but this is slowly increasing with our new M Phil offering in Biomedical Forensic Sciences.

There are active collaborations with the departments of Anatomical Pathology, Surgery, Obstetrics and Gynaecology, Human Genetics, Paediatrics and Psychiatry; and EMS and the Law Faculty.

A range of activities related to the role of Forensic Medicine in public policy and health promotion are being pursued. These relate specifically to violence against women and children, the deaths of children, the role of drugs and toxins in deaths, and firearm injuries. We provide input into the Provincial Injury Mortality Surveillance System (PIMSS).

Divisional Statistics

Permanent and Long-Term Contract Staff

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Senior Lecturer / Course Convener: 1
Lecturer: 1
Chief Medical Technologist: 1
Medical Technologist: 1
Administrative and clerical: 5
Laboratory Assistant: 1
Total: 19

Students

Masters (M Med): 4
Biomedical Forensic Science (M Phil): 15
Undergraduate (MBChB) – Year 5: 183
Undergraduate (LLB) – Final year: 10
Special Study Module – Year 2: 3
Total: 215

Research Fields and Staff

Permanent Staff

PROFESSOR L.J. MARTIN
Professor & Head: Clinical Department / Senior Lecturer: Child Death Reviews; Management protocols for rape survivors; domestic homicide; Firearm and Nonfirearm Homicide in Cape Town; monitoring implementation of rape law reforms; domestic violence guidelines for the health sector; Evaluating the effectiveness of the Western Cape Liquor Act in Khayelitsha; epidemiology of female murder; aortic disease; indicators for the Lodox Statscan in children; age estimations for children using Lodox statscans; paediatric trauma and World Cup Soccer; National study of female and children homicide in South Africa; identification of areas for quality improvements in preventable trauma deaths at Groote Schuur Hospital.

DR G.M. KIRK
Head: Clinical Unit & Senior Lecturer: Sudden deaths in sport; firearm injuries; death notification; drug-related deaths; forensic histopathology; history of forensic medicine

DR Y.Y. VAN DER HEYDE
Senior Specialist & Senior Lecturer: The effects of prenatal alcohol exposure; paediatric mortality; animal bites in children; early adolescent suicide, child homicide including child abuse; sudden unexpected death in childhood including SIDS.

DR L. LIEBENBERG
Senior Specialist & Senior Lecturer: Firearm fatalities and final judicial outcome; aortic disease project; mast cell Tryptase; case studies – curious deaths; atherosclerotic disease prevalence in the Cape Town population; Lodox X-ray application in the forensic setup. Supervisory projects: Marine decomposition; firearm deaths and judicial outcome; anaphylaxis – new histological stain for mast cells and eosinophils.

DR M. HEYNS
Senior Lecturer: Forensic Science; Educational Research; Gross Anatomy; Forensic Entomology; Blunt force trauma to the skull; Bloodstain pattern analysis; Entomotoxicology

DR I.J. MOLEFE
Specialist & Lecturer: Epidemiology and analysis of injury patterns of femicide and rape homicide in Cape Town: A 10-year follow-up study; opportunistic screening for cervical cancer in rape patients; Hep B prevalence in rape patients; medical education in forensic pathology; forensic neuropathology: clinical course and outcome of patients with acute subdural haemorrhage.

DR S. MAISTRY
Specialist & Lecturer: Deaths on Table Mountain 2000-2011; Epidemiology, genetics and neurobiology of suicides at Salt River Forensic Pathology Laboratory 2005-2015; Genetics of mood disorders and suicide ideation; Burnt bodies; Genetics in victims of intentional organophosphate ingestion

DR S. MFOLOZI
Specialist & Lecturer: Development of the NecroChronometer: determining the post-mortem interval using a combination of three methods and location-specific weather information; Thanatocronometry (mathematical estimation of the interval of death).

DR I.H. ALLI
Specialist & Lecturer: Forensic odontology; combatting human trafficking; Deaths from Explosions. Research studies: The incidence of rape associated with taxi as a mode of transport, in a single Thutuzela Centre over a 5 year period; Grading the degree of difficulty of post-mortems.

Contract staff

L.J. HEATHFIELD
Lecturer: Biomedical Forensic Science; molecular phenotyping, molecular autopsies, next generation sequencing, forensic DNA profiling, body fluid identification, epigenetics
GENDER, HEALTH AND JUSTICE RESEARCH UNIT

Director: Associate Professor Lillian Artz

Unit Profile

The GHJRU is an interdisciplinary research unit that unites scholars, NGOs and practitioners in pursuit of the elimination of violence against women and children in Southern Africa (and beyond). We develop and implement innovative, interdisciplinary research and social interventions to address violence against women and children in a variety of social, political and institutional settings. We have a proven history of empirical, evaluation and monitoring projects, many of which are well cited in the literature and are foundational studies in the areas of domestic violence, sexual offences and sexual and reproductive rights. We use our empirical research to develop well-informed, evidence-based advocacy positions to support legal and policy reform in South Africa and similarly situated countries. The Gender, Health & Justice Research Unit draws together scholars from various disciplines, including criminology, forensic pathology, sociology, social work and psychology. The mission of the Unit is to improve service provision to victims of crime, violence and human rights violations, to facilitate violence prevention, and to promote access to justice in Southern and Eastern Africa through interdisciplinary research, advocacy and education. The Unit aims to fulfil its mission by focussing on five core areas:

Research – Conducting rigorous, evidence-based research into experiences of victims and others involved in the criminal justice system, as well as responses to violence – particularly exploring the intersections between the health and criminal justice sectors – and developing a better theoretical understanding of the social factors that contribute to crime, violence and human rights violations.

Advocacy – Developing well-informed, evidence-based advocacy positions to support legal and policy reform in South Africa and similarly situated countries.

Education – Development of educational materials and teaching modules at both university and school levels, in order to create an understanding of the intersections of violence, social attitudes, service provision and violence prevention.

Training – Development and implementation of innovative training programmes to build the capacity of criminal justice and health personnel.
Technical Assistance – Providing technical assistance to a wide range of government departments, non-governmental organisations and community-based organisations.

The Gender, Health and Justice Research Unit was awarded the University of Cape Town’s first Social Responsiveness Award in 2009.

Unit Staff

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</table>

Research Fields and Staff

ASSOCIATE PROFESSOR LILLIAN ARTZ
Women, health and law reform; sexual offences; domestic violence; the medico-legal management of survivors of violence in conflict-affected and post-conflict states; incarcerated women; prison reform and torture prevention.

TALIA MEER
Gender-based violence, women’s rights, LGBTI rights, access to justice and disability rights.

DR CARMEN CORRAL-BULNES
Gender-based violence, incarceration, women’s mental health, domestic homicide and aggressive behaviour in intimate relationships.

DR ALEXANDRA MULLER
Gender, sexuality and health; access to health care; gender-based violence; heteronormativity and health professions education; sexual and reproductive health rights; sexual and gender minority health.

HAYLEY GALGUT
Human Rights, Gender and Labour Law; gender-based violence; access to justice; intersectionality and transitional/transformative justice in conflict-affected and post-conflict states.

Research Associates

PROFESSOR JEANNE FLAVIN (FORDHAM UNIVERSITY)
The impact of the criminal justice system on women; social and civil rights of women; sexual and reproductive rights.

PROFESSOR HELENE COMBRINCK (UNIVERSITY OF THE WESTERN CAPE)
Disability law and policy; domestic violence and disability.

JILLIAN BUTTERWORTH (PRIVATE)
Survivors and perpetrators of sexual violence, with a focus on childhood sexual abuse; adolescent sexual perpetrators, assessment and rehabilitation of perpetrators of sexual violence.

GRAY ASCHMAN (NEW YORK)
Protection of detainees’ and prisoners’ rights; improving the response to gender-based violence; changing societal attitudes towards gender and gender-based violence.

Administration

Selma Walters

Interns

Anna Brown
Rosanne Arnholt
Josephine Pringle
Haekyung Ham
Mary Danielle Malipiwa
Katarina Mattila
Kerry McPhee

Contact Details

Postal Address: Gender, Health & Justice Research Unit, Entrance 1, Level 1, Falmouth Building, Faculty of Health Sciences, UCT, Anzio Road, Observatory, 7925
Telephone: +27 21 406 6024
Fax: +27 21 406 6020
E-mail: mrd-gender@uct.ac.za or Lillian.Artz@uct.ac.za
Web: www.ghjru.uct.ac.za
DIVISION OF
HAEMATOLOGY AND
UCT LEUKAEMIA UNIT

Head of Division:
Professor Nicolas Novitzky

DIVISIONAL PROFILE

Diagnostic Services

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 laboratory continues to offer comprehensive diagnostic testing for the diagnosis and management of all haematological malignancies. It also offers diagnostic services for a Comprehensive Haemophilia Centre, as well as to a number of tertiary / quaternary programs. This laboratory also acts as a tertiary referral centre for local hospitals and outlying clinics of the Western Cape, as well for referral samples from the Eastern Cape. The routine and molecular haematology laboratories were again successfully accredited by SANAS. Samples from private laboratories and the Eastern Cape are referred for flow cytometry and molecular diagnosis of haematological malignancies.

Teaching and Training

The department remains a primary teaching and training site for medical technologists, technicians, undergraduate medical and science students of the University of Cape Town and registrars (specialising postgraduate doctors) in Haematological pathology and Clinical Haematology. Currently there are five haematology pathology registrars and one clinical pathology registrar who are enrolled in the UCT postgraduate program.

Dr Karen Shires continues to provide training in the molecular haematology course for haematology registrars and technologists together with Ms Iva Shankland. Dr Karen Shires and Ms Iva Shankland have provided PCR and DNA lectures/practical for Anatomical Pathology registrars.

Consultant pathologists: Dr Lee-Ann Phillips has been appointed as the director of the Red Cross Children’s War Memorial Hospital Haematology laboratory. Dr’s Jessica Opie and Monalisa Ntobongwana as well as Mr Francois Barton have delivered training courses to NHLS technologists from the Eastern Cape on basic and advanced morphology and haematological malignancies. These courses have been delivered both in the Eastern Cape and at NHLS Green Point Complex in Cape Town.

Distinguished Visitors

Dr Mathew Seftel from the Princess Margaret Hospital in Toronto.

Special awards / honours / promotions

Professor Novitzky was elected as President of the African Blood and Marrow Transplantation Society.

Dr Karen Shires was the recipient of the new AstraZeneca funding for cancer research award.

Dr Shaheen Mowla’s student, Ms Nontlantla Mdletshe passed her Master’s Degree with Distinction.

Haematology Research Projects

DR KAREN SHIRES
Mage antigen expression in Multiple Myeloma

PROF NICOLAS NOVITZKY
Immunomodulation of stem cells for transplantation

DR SHAHEEN MOWLA
Molecular Biology of Cancer; Burkitt’s lymphoma and HIV; Role of activation-induced cytidine deaminase in cancer; miRNA in cancer

DR JESSICA OPIE
Burkitt Lymphoma/Leukemia; HIV-Associated Hodgkin Lymphoma; Paediatric Acute Myeloid Leukaemia (AML)

Divisional Statistics

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<thead>
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<td>Chief Professional Nurse</td>
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<td>Diagnostic Service</td>
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<tr>
<td>Scientist</td>
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<td>Pathology Registrars</td>
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<td>Medical Technologists</td>
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<td>Student Medical Technologists</td>
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<tr>
<th>UCT Leukaemia Unit</th>
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<tr>
<td>Scientist</td>
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<td>Research Officer</td>
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<td>Research Technologist</td>
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<td>Clinical Research Co-Ordinator</td>
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<td>Administrative and clerical staff</td>
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<td>Laboratory assistants (medical school)</td>
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**Total** | **51** |

**Students**

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**Research Fields and Staff**

**PROFESSOR NICOLAS NOVITZKY**
Haematopoietic stem cell biology; clonogenic assays; haematopoietic stem cell transplantation; immune reconstitution; haematological malignancies

**DR CECILE DU TOIT**
Haematopoietic stem cell transplantation; haematological malignancies; haemophilia

**DR ESTELLE VERBURGH**
Haemophilia; thrombophilia; stem cell transplantation

**Contact Details**
Postal Address: 6th Floor, Chris Barnard Building, Anzio Road, Observatory, 7925
Telephone: +27 21 406 6154/404 3073
Fax: +27 21 448 8607
Email: Coleen.Fredericks@uct.ac.za
Web: web.uct.ac.za/depts/haem/
DIVISION OF HUMAN GENETICS

Including the MRC/UCT Human Genetics Research Unit and CANSA’s National Colorectal Cancer Research Consortium

Head of Division: Professor Raj S. Ramesar

Divisional Profile

The Division is unusual in that it conducts its business through three interacting ‘institutions’:

1. an extensive clinical service through the Provincial Government of the Western Cape;
2. its laboratory diagnostic services through the National Health Laboratory Services, and
3. its academic (research and teaching) activities through the University.

The UCT/MRC Human Genetics Research Unit was created while the Human Genome Project was underway. The mandate for this Unit was (i) primarily one of capacity development in the field of Genetics and Genomics, (ii) understanding the relevance of developments in genetics and genomics, as they may be applicable to South Africans, and (iii) the translation of research to the clinical environment.

An emphasis of this Unit is the investment in understanding the rich Human Diversity on our continent and relating this to disease and health. In this regard there has been a head-on engagement with state of the art high-throughput genetic studies of indigenous southern African population populations, which has resulted in the empowerment and capacity development of South African researchers in large scale data handling and analysis. The Division is also involved in several Human, Hereditary and Health in Africa projects in networks spanning the continent (www.h3africa.org), and which are funded by the National Institutes of Health (USA) and the Wellcome Trust (UK).

A further investment has been in taking genetics to the ‘clinical’ high street. A measure of relevance and success of the Unit in this regard, is its attraction to other mainstream clinical practitioners e.g. from the disciplines of Gastroenterology, Nephrology, Internal Medicine, Psychiatry, Surgery, and Dentistry (UWC) who are completing PhDs in Genetics, in this Unit. A substantial effort has been made into introducing genetics/genomics into the undergraduate MBChB curriculum and to specialist groups.

Divisional Statistics

UCT Staff

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Part Time Staff

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PGWC Personnel

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PGWC/UCT Personnel

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NHLS Personnel

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Honorary Staff

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Students and postdoctoral fellows

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Research Fields and Staff

**PROFESSOR RAJ S. RAMESAR (UCT/PGWC)**

Head of Division and Personal Chair
Director: MRC Human Genetics Research Unit
Chairman: NGO The Africa Genome Education Institute
Principal Investigator: Genetics of Bipolar Disorder; Genetics of Retinal Degenerative Disorders; Molecular Genetics of Complex Disorders; Pharmacogenetics – Adverse Drug Reactions in Cancers

**PROFESSOR JACQUIE GREENBERG (UCT)**

Principal Investigator: Genetics of Neurological Disorders; Genetics of Neuromuscular Disorders
Co-Principal Investigator: Genetics of Retinal Degenerative Disorders

**EMERITUS PROFESSOR PETER BEIGHTON**

Principal Investigator: Genetics Connective Tissue Disorders

**HONORARY PROFESSOR WILMOT JAMES**

Honorary Professor Charles Nohuoma Rotimi
Honorary Senior Lecturer Dr. Sol Zieff

**ASSOCIATE PROFESSOR AMBROISE WONKAM (UCT)**

Principal Investigator: Phenotypic correlation of sickle cell anemia to genotypic variations; Genetics of Deafness

**ASSOCIATE PROFESSOR COLLET DANDARA (UCT)**

Principal Investigator: Pharmacogenomics

**DR KAREN FIEGGEN (PGWC / UCT)**

Senior Specialist: Principal Investigator: X-linked Mental Retardation; Bardet-Biedl Syndrome

**MRS. THERESA RUPPELT (NHLS)**

Laboratory Manager: Cytogenetics

Contact Details

Postal Address:
Division of Human Genetics, Department of Clinical Laboratory Sciences, Level 3, Werner and Beit North Building; Institute of Infectious Disease and Molecular Medicine, Faculty of Health Sciences, University of Cape Town, 7925, Observatory
Telephone: SA (21) 406 6297; Fax: SA (21) 650 2010
DIVISION OF IMMUNOLOGY

Head of Division: Professor Clive Gray

Divisional Profile

The Division of Immunology is involved with a range of activities from identifying the basic mechanisms of immunity in infectious disease to laboratory diagnostic testing in the National Health Laboratory Services at Groote Schuur Hospital. The vision statement for the Division of Immunology is “Driving Science to promote World Health”. Numerous staff are also either Full or Associate members of the Institute of Infectious Disease and Molecular Medicine (IDM) and there is a very integrated relationship between the Division of Immunology and the IDM.

Basic Research: The Division houses the UCT/MRC Unit on Immunology of Infectious Diseases, an Allergy Section and the SARCHi chair on ‘Immunology of infectious diseases in Africa’. The Division has an internationally recognized expertise in generating transgenic mice, for use in a wide range of immunological studies applicable to communicable and non-communicable diseases. These have been used to make important advances in diseases, such as Tuberculosis, Bilharzia, African Trypanosomiasis, Candidiasis and cutaneous Leishmaniasis and have contributed significantly to identifying fundamental cellular and molecular immunological mechanisms. Together with international and national collaborations, these animal tools contribute to many advances in Immunology and other fields. Basic research in the Allergy Section has focused on the role of IL-4 and IL-13 in allergy as well as the application of novel assays to identify sensitivity profiles. There are very close ties with the South African component of the International Centre for Genetic Engineering and Biotechnology, providing a very strong genomics thrust to the Division.

Translational Research: There is also a strong clinical immunology emphasis in the Division, specifically in HIV and TB immunology where studies are underway to understand adaptive and innate immune responses during acute HIV infection and in infants exposed to HIV in utero and upon receiving different childhood vaccinations. Successfully funded grants have been garnered from the Canadian Institutes of Health Research and the South African Department of Science and Technology for investigating the link between breast-feeding practices and newborn infant immune activation status, which may impair EPI vaccine responses. A number of staff members have received successful funding from the NRF, NIH (R21 and R01 grants), CIHR.

NHLS activities: The combined functions of the Laboratory for Tissue Immunology (LTI) and the Clinical Immunology and Allergy Laboratory are responsible for providing NHLS activities. The LTI is responsible for HLA class I and class II typing for solid organ and bone marrow/stem cell matching. The Laboratory also performs cross-matching and pre-formed antibody testing for solid organ transplantation. LTI is accredited with the European Federation of Immunogenetics (EFI) and is the only such accredited laboratory in Africa. The Clinical Immunology and Allergy Laboratory perform routine diagnostic testing for autoantibodies and different allergies. The DOI plays a leading role in the Immunology Expert Committee of the NHLS, which is helping to shape the discipline in South Africa.

Teaching: The Division has an active teaching component in the medical undergraduate syllabus and provides cutting edge lectures on the basics of the immune system and integrates immunology concepts and principals with the case studies and problem based learning approach by the Faculty. More advanced courses are offered at the post-graduate level through the Honours in Infectious Disease and the Research in Immunology short course for postgraduate students. The Division also holds workshops on infectious disease and immunology and specifically trains students from other countries in Africa on advanced immunology related techniques and cutting-edge science.

International Links: There are very strong links between staff in the Division with international collaborators in other African countries, Europe, Japan, USA and Australia in both basic and applied research.

Divisional Statistics

Permanent & Long Term Contract Staff (UCT/NHLS)

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<td>Research Staff</td>
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<td>Technical Staff</td>
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Students and postdoctoral fellows

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<td>Postdoctoral</td>
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Staff Research Fields

Academic Staff

PROFESSOR CLIVE GRAY, PHD
Professor of Immunology
Wernher Beit Chair and HOD Immunology, Joint UCT/NHLS
Full member of the IDM and member of Exco; B rating by NRF; Research Profile: Immunology of HIV infection and antigen-specific T cell responses during acute infection.

PROFESSOR FRANK BROMBACHER, PHD
Professor of Immunology
UCT Fellow; SARCHi Chair, Director of an MRC Unit; ICGEB Coordinator & Group leader, Member of IDM; A1-rating by NRF; Research profile: Immunology of infectious diseases, including Tuberculosis, African Trypanosomiasis, Leishmaniasis, Bilharzia and other Helminth infections.

A/PROFESSOR MUZZAM JACOBS, PHD
NHLS Medical Scientist and UCT A/Professor; Full member of the IDM. Research profile: Understanding host pathogen interaction and associated immune mechanisms that bring about protection against tuberculosis infection.

DR WILLIAM HORNSELL PHD

DR HEATHER JASPAN MD, PHD, FAAP
Senior Lecturer. Associate member of the IDM. Research Profile: Investigating immune activation, T cell immunity and susceptibility to HIV in infants

DR JENNIFER CLAIRE HOVING

DR ROANNE KEETON

DR RETO GULER

DR NAi-JEN HSU

Postdoctoral Fellows

DR SURAJ PARIHAR
Investigate using 4 different pathogens, i.e. Listeria monocytogenes, mycobacteria tuberculosis, mycobacteria bovis BCG, and Leishmania major

DR TIROYAONE BROMBACHER
Neuro-immunological effects of Nippostrongylus brasiliensis on cognitive function.

DR HLMANI NDLLOVU

DR RAMONA HURDAYAL

DR JUSTIN NONO

DR OUSMAN TAMGUE

DR ANTHONIO ADEFUYE

DR SELENA FERRIAN

DR PAULIN ESSONE NDONGO

Visiting Professors

PROF GUIDO FERRARI
Professor, Duke University Medical Center, Durham, North Carolina, USA
Identifying CD8+ T cell activation, functional profile, and memory differentiation during acute HIV infection and role in in determining HIV escape mutants.

Dr HUMANI NDLOVU

PROF JIM ALEXANDER
Strathclyde University, Scotland

PROF MANFRED KOPIF
University of Munich

PROF GOTTFRIED ALBER
University of Zurich

Research Associates

PROF BERNARDT RYFFEL
Professor CNRS, Orleans France

A/PROF ANDREAS LOPATA
Associate Professor James Cooke University, Melbourne, Australia

Honorary Staff

PROF GORDON BROWN
University of Aberdeen

DR JEFFREY DORFMANN
ICGEB

Distinguished Visitors

Alan Aderem – Seattle Biomedical Institute
Harukazu Suzuki – Riken Institute-Japan
Rick Koup – NIH Vaccine Research Center
Zaza Ndlovu – Ragon Institute MIT & Harvard Faculty & UKZN
DeBroski Herbert – University of California
Alexi Crosby – Cambridge University
Lisa Frenkel – Seattle Children’s Institute
Sebastian Schmeier Massey – University, New Zealand
Justin Pollara – Duke University, USA
Mario Roederer – University of Oxford, UK
Simon Draper – Jenner Institute, UK
Tony Moody – Duke University
Yaw Bediako – KEMRI, Kenya
Martin Bachman – Cytos, Switzerland
Sefan Magez – Vrije University, Belgium
Tom Hope – North Western University, Chicago
Michael Betts – University Pennsylvania

Contact details
Tel: 021 406-6616
Fax: 021 406-6029
Email: dhuraiyah.abdullatief@uct.ac.za

DIVISION OF MEDICAL BIOCHEMISTRY
(including the Electron Microscope Unit)

Head of Division: Professor Peter Meissner

Divisional Profile
The Division of Medical Biochemistry is a preclinical, basic science division in the UCT Faculty of Health Sciences and is associated, either wholly or partly, with a number of advanced research entities. Some such entities are laboratory research groups contained entirely within Division, while some have certain components or personnel falling within the Division, affiliated to other Institutes or Departmental groupings.

Specifically: The Division incorporates the MRC/UCT Research Group for Receptor Biology (co-directed by A/Prof Arieh Katz and Dr Colleeen Flanagan, ex-UCT now at WITS, and Prof Bob Millar, Senior Scholar in our Division); the UCT Structural Biology Research Group (directed by Prof Trevor Sewell); members of the Institute of Infectious Disease and Molecular Medicine (IDM) at UCT (Profs Sturrock, Blackburn, Meissner, Parker, Katz and Leaner); and the International Centre for Genetic Engineering and Biotechnology (ICGEB) (Prof Iqbal Parker). Organisationally the Electron Microscope Unit (EMU) falls within the Division and the EMU facility offers a versatile range of instruments and techniques serving the Imaging and analytical needs of Biological, Earth and Physical Sciences, Engineering and Medicine. During 2014 the EMU equipment was moved and is now housed in temperature controlled, vibration- and magnetic field free conditions in the New Engineering Building.

Through 2014 there were 50 research postgraduate students registered for either Masters or PhD (47 in 2013), and a further 11 Honours students were based wholly in Medical Biochemistry for the duration of their research projects (April – November) (9 in 2013). The Division graduated 8 PhD and 6 MSc students during the course of 2014 (3 PhD and 6 MSc during 2013). Together with various scientific and academic staff our postgraduate students and 17 postdoctoral fellows (22 in 2013) continued to form the basis of a vibrant and on-going research thrust and culture in the Division, forming the core of our Divisional research strategy – out of which flows a contemporary and effective approach to teaching at both under- and post-graduate levels. During 2014 the Division and its affiliates published 64 papers in ISI accredited science journals, 5 non-accredited journal articles and 1 book chapter.
Research activities of the Division cover seven major areas:

1. GnRH receptors, signalling, structure – function and as a target for development of therapeutics for treatment of reproductive cancers (Katz & Millar labs);  
2. Molecular mechanisms of cervical cancer and oesophageal cancer development and progression (Leaner, Hendricks and Parker labs)  
3. Angiotensin converting enzyme (ACE) structure activity relationships and development of ACE inhibitors (drug design) for treatment of hypertension, congestive heart failure, myocardial infarction and renal disease (Sturrock lab);  
4. Application of functional proteomics for diagnostics, drug and vaccine development for infectious disease and cancers (Blackburn lab).  
5. Diagnostic, structure and function studies in the porphyrias and haem biosynthesis (Meissner lab – currently sited and staffed in the Dept. of Medicine)  
6. Structural basis for differential regulation of glutamine synthetase in humans and the malaria parasite, structural studies on the nitriase family of enzymes in the context of cancer, mycothiol synthetic pathway in Mycobacterium tuberculosis (Sewell lab- currently located on UCT upper campus)  

Physical space for the Structural biology research Unit and the Porphyria labs remain a problem.  

Research staff members, fellows, postgrad students participated in many local and international conferences during the year. Our Division considers such travel essential and worthwhile in that they give rise to new collaborations and maintenance of established collaborations and lab research visits.

**Divisional Statistics**

**Permanent and Long-Term Contract Staff**

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**Honorary Staff**

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**Students and postdoctoral fellows**

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<td>Undergraduate students taking Med. Biochem courses (MBChB semester 2,3,4 &amp; 5, and Intervention program)</td>
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**Staff and their Research fields**

**Professors**

**J M BLACKBURN (SOUTH AFRICAN RESEARCH CHAIR)**
Proteomics and genomics for diagnostics, drug and vaccine development for infectious disease and cancers

**P N MEISSNER (FELLOW OF UCT)**
Haem biosynthesis, disorders of porphyrin metabolism

**E D STURROCK**
Angiotensin converting enzyme (ACE) structure activity relationships and drug design related to ACE inhibitors for treatment of hypertension, congestive heart failure, myocardial infarction and renal disease
B T SEWELL
Structural biology related to regulation of glutamine synthetase in humans and the malaria parasite, nitrilases in the context of cancer, mycothiol synthetic pathway in Mycobacterium tuberculosis

A A KATZ
Gonadotropin-Releasing Hormone (GnRH) receptors: function regulation and ligand receptor interactions; role of cyclooxygenases and prostaglandins in cervical cancer and uterine pathologies.

Professors (emeritus) appointed as Senior Scholar
R P MILLAR (LIFE FELLOW OF UCT)
Endocrine receptor and molecular biology

Professors (working in affiliated Institutes)
M I PARKER (MASSAF)
(based in the International Centre for Genetic Engineering and Biotechnology – ICGEB, Cape Town)
Cellular and molecular biology of cancer; Regulation of gene expression in cancer

Associate Professors
DENVER HENDRICKS
Molecular biology of oesophageal cancer and development of novel chemotherapeutic drugs

VIRNA LEANER
Molecular mechanisms associated with the development and treatment of cervical cancer

CYNTHIA SIKAKANA
Medical education, Metabolism of xenobiotics

Honorary Professors
W-D SCHUBERT
CGP MATHEW
KR ACHARYA

Honorary Associate Professor
LUIZ ZERBINI

Emeritus Associate Professor
L R THILO

Honorary Senior Lecturer
COLLEEN FLANAGAN
Cyclooxygenases in gynaecological cancers

Honorary Research Associate
ARVIND VARSANI

Honorary Lecturer
KJ SALES

Junior Research Fellows
PAULINE VAN DER WATT
NELSON DE CRUZ SOARES
JEREMY WOODWARD

Postdoctoral fellows
Andrew JM Nel
Kate Hadley
Aron Abera
Ross Anderson
Claire Newton
Serah Kimani
Rebecca Tadokera
Joseph Raimondo
Afoloke Arowolo
Sankar Ramachandran
Kevin Dzobo
Nicolette Hendricks
Bridget Calder
Nina Holderness-Parker
Juliano Paccez
Melisew Tadele
Clemens Hermann

Chief Scientific Officer
SYLVA SCHWAGER

Chief Scientific Officer (EMU)
INNOCENT SHURO

Principal Scientific Officers (EMU)
MIRANDA WALDRON
MOHAMED JAFFER
BRANDON WEBER

Research Officer
GEORGIA SCHÄFER
(Katz/Millar lab, IIDMM)
DIVISION OF MEDICAL MICROBIOLOGY

Head of Division: Professor Mark Nicol

The Division of Medical Microbiology (www.medmicro.uct.ac.za) encompasses a tertiary diagnostic microbiology service, provided by the National Health Laboratory Service, Groote Schuur Hospital and an active research programme based at the Health Sciences Campus and in the diagnostic laboratory.

We aim to conduct research that is relevant to the needs of diagnostic microbiology services and focused on important infectious diseases in South Africa. This includes work on childhood febrile illness (pneumonia, meningitis and diarrhoea), the origin and evolution of the human microbiome, the development and evaluation of novel diagnostics for tuberculosis, the epidemiology of drug-resistant tuberculosis as well as the transmission and molecular epidemiology of drug resistant pathogens within our hospitals.

The Division is the academic home of the highly regarded Molecular Microbiology Research Unit (www.mrc.ac.za/mycobacteriology/mycobacteriology) headed by Professor Valerie Mizrahi and Dr Digby Warner which aims to develop and apply genetic tools for the identification, validation and characterisation of novel drug targets and vaccine candidates for tuberculosis. The Division is also the home of Professor Gregory Hussey who leads the ‘Vaccines for Africa’ Initiative (www.vacfa.com) which is a partnership of concerned individuals and organizations who have come together with the expressed purpose of increasing awareness of and promoting uptake of vaccines on the African continent. Two Wellcome Trust Fellows (Dr Helen Cox, Intermediate Fellow and Dr Mamadou Kaba, Research Training Fellow) are based in the Division.

The Division has been successful in attracting substantial research funding from the Wellcome Trust, EDCTP, National Institutes of Health, Carnegie Foundation, Howard Hughes Medical Institute and Bill and Melinda Gates Foundation in recent years. The composition of the Division is complex with staff drawn from the University of Cape Town, Groote Schuur Hospital and the National Health Laboratory Service and National Institute for Communicable Diseases. This mix of pathologists, scientists and students offers the opportunity for creative, cross-disciplinary research.

Permanent and Long-Term Contract Staff

<p>| | |</p>
<table>
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<tr>
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<tr>
<td>Professors</td>
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<td>Associate Professors</td>
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<td>Senior Lecturers</td>
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<td>Research Assistant</td>
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<td>Project Manager</td>
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**Honorary Staff**

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<td>Honorary Lecturers</td>
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**Students and postdoctoral fellows**

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<td><strong>Total</strong></td>
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**Research Fields and Staff**

**Permanent Staff**

**PROFESSOR MARK P NICOL**

Development and evaluating diagnostic tests for tuberculosis; the origin and evolution of the human microbiome in early childhood; aetiology and pathogenesis of pneumonia in children.

**PROFESSOR GREGORY HUSSEY**

Understanding the dynamics of TB infection and disease in adolescents; the epidemiology of TB in infants and young children; evaluation of new TB vaccines

**PROFESSOR VALERIE MIZRAHI AND DR DIGBY WARNER**

Investigate fundamental aspects of the metabolism and physiology of *Mycobacterium tuberculosis* of relevance to tuberculosis drug discovery and drug resistance

**DR C BAMFORD**

Laboratory detection of multi-resistant organisms; molecular epidemiology of hospital acquired infections; rational use of antibiotics and surveillance of antimicrobial resistance; appropriate use of microbiological investigations

**DR NATALIE BEYLIS**

Microbiological diagnosis of tuberculosis, mycobacterial susceptibility testing

**DR TINA WOJNO**

Infection control; new laboratory diagnostics

**DR PRENESHNI NAICKER**

New laboratory diagnostics

**DR LOURENS ROBBERT**

Enhanced surveillance for shiga toxigenic *Escherichia coli* in stool specimens from the Western Cape.

**DR CLINTON MOODLEY**

Carbapenemase Surveillance

**Contract staff**

**DR SINDILE NTULI**

Senior Registrar and Lecturer

**DR CHAD CENTNER**

Registrar and Lecturer

**DR HAFAH TOOTLA**

Registrar and Lecturer

**Honorary Staff**

**A/PROFESSOR DAVID LEWIS**

Gonococcal resistance; STI surveillance; Men’s sexual health

**DR NELESH GOVENDER**

Cryptococcal disease, deep fungal infections, antifungal susceptibility testing

**DR JOHN SIMPSON**

Laboratory diagnosis of tuberculosis and identification of drug-resistance
Fixed-term appointment staff

DR HELEN COX (WELLCOME TRUST INTERMEDIATE FELLOW)
A systems approach to evaluating prospects for the control of drug-resistant tuberculosis in Khayelitsha, South Africa

DR WIDAAAD ZEMANAY
Evaluation of novel diagnostic methods for tuberculosis in adults and children; evaluation of the impact of novel TB diagnostics on patient outcomes

DR LEMESE AH TOW EDRIES
The evaluation of inter-seasonal house dust microbiota in the Western Cape, South Africa.
Molecular detection of Helicobacter pylori in stool of apparently healthy children, the Drakenstein sub-district, South Africa.

DR LINDY DICKSON-HALL
Linkage to Care for drug resistant TB patients following Xpert implementation in SA.

POSTDOCTORAL STAFF
DR ELLOISE DU TOIT
Household dust microbial burden and the development of recurrent wheezing in children in the Western Cape: a cohort study.

DR MAMADOU KABA
The faecal microbial community and its association with wheezing illness in young Children – The Drakenstein Child Lung Health Study, South Africa.
Phenotypic and genomic study of the antibiotic resistome in a paediatric population, Drakenstein sub-district, South Africa.
Dynamics of faecal bacterial populations in early infancy as determined by massively parallel sequencing.
Epidemiology of extended spectrum beta-lactamase and carbapenemase-producing bacteria in apparently healthy children, South Africa.

DR VERONICA ALLEN
Rifampicin resistance in M. tuberculosis

Contact Details
Postal Address: Division of Medical Microbiology, University of Cape Town, Medical School, Anzio Road, Observatory, 7925
Telephone: Doris Moiloa at +27 21 406 6727

DIVISION OF MEDICAL VIROLOGY

Head of Division of Medical Virology – Professor Carolyn Williamson

Divisional Profile
The Division of Medical Virology contributes to the diagnosis, treatment, prevention and eradication of viral diseases in South Africa through a diagnostic laboratory service together with a dynamic research programme.

Research within the Division focuses on Human Immunodeficiency Virus (HIV), Human Papillomavirus (HPV), virus discovery and vaccinology. Research is performed in association with the Institute of Infectious Disease and Molecular Medicine and Groote Schuur NHLS diagnostic laboratory. In HIV prevention, transmission and pathogenesis research, the division has: contributed to our understanding of the role of viral determinants in eliciting broadly cross-neutralizing antibodies; transmission characteristics of HIV super-infecting viruses; elucidated the impact of mucosal inflammation and other sexually transmitted co-infections on HIV transmission risk. Application of next generation sequencing technology has resulted in the discovery of novel HPVs and other viruses as well as further characterisation of the cervical microbiome.
There has also been research on BCG and poxviruses as vaccine vectors. The diagnostic laboratory is involved in a variety of operational research projects: to detect and characterise new potential pathogens in diagnostic samples; evaluation of point of care technology for HIV viral load and early infant diagnosis; and studies to determine the epidemiology of hepatitis E in the Western Cape.

The Virology Diagnostic Laboratory is a SANAS accreditation facility within the National Health Laboratory Service, and is located at Groote Schuur Hospital (GSH). It provides a comprehensive service to both GSH and Red Cross Children’s Hospital, and serves as a regional reference centre providing a clinical and diagnostic service to local teaching hospitals and surrounding public health clinics.

The division contributes to undergraduate teaching and plays a major role in post-graduate training and currently hosts 33 post-graduate students (registered for, BMed Hons, MSc, PhD or Postdoc degrees).
Divisional Statistics

Permanent and Long-Term Contract Staff

<table>
<thead>
<tr>
<th>Position</th>
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<tbody>
<tr>
<td>Emeritus Professor</td>
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<td>Professor</td>
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<td>Departmental Assistant</td>
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<td>Lab Assistant</td>
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Honorary staff

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<tr>
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Students and postdoctoral fellows

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<td>Postdoctoral</td>
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<td>Honours</td>
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<td>Undergraduates MBChB semester 3,4 &amp; 5</td>
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Research Fields and Staff

Permanent staff

**PROFESSOR ANNA-LISE WILLIAMSON**
HIV/HPV, poxviruses, vaccine development, microbiome
anna-lise.williamson@uct.ac.za

**PROFESSOR CAROLYN WILLIAMSON**
Head of Division of Medical Virology, HIV diversity and pathogenesis; HIV-1 vaccine development, HIV cure
carolyn.williamson@uct.ac.za

**ASSOCIATE PROFESSOR DIANA HARDIE**
Head of Diagnostic Lab, viral infections in immunocompromised patients
diana.hardie@uct.ac.za

**ASSOCIATE PROFESSOR JO-ANN PASSMORE**
HIV/HPV Mucosal Immunology; genital tract, innate immunity, cytokine biomarkers, genital tract immune activation
jo-ann.passmore@uct.ac.za

**DR MARVIN HSIAO**
Pathologist and Senior lecturer, cytomegalovirus and molecular diagnostics
marvin.hsiao@nhls.ac.za

**DR STEPHEN KORSMAN**
Pathologist and Senior lecturer, Hepatitis B, molecular diagnostics and outreach
stephen.korsman@nhls.ac.za

**DR WENDY BURGERS**
Senior Lecturer, HIV Pathogenesis, HIV-TB co-infection, HIV Vaccine Immunology
wendy.burgers@uct.ac.za

**DR HEIDI SMUTS**
Senior Lecturer
Heidi.smuts@uct.ac.za

**DR ZIZIPHO ZIPOZAKE MBULAWA**
Scientist and Lecturer, HPV
zizipho.mbulawa@nhls.ac.za

**DR ZIYAAD VALLEY-OMAR**
Scientist and Lecturer, Viral Watch, influenza surveillance program in the Western Cape
z.valley-omar@uct.ac.za

Contract staff

**AABIDA KHAN**
Senior Registrar and Lecturer,
aabida.khan@nhls.ac.za

**NOKWAZI NKOSI**
Senior Registrar and Lecturer,
nokwazi.nkosi@nhls.ac.za

**ANNABEL ENOCH**
Registrar and Lecturer
Annabel.enoch@nhls.ac.za

**DR GERALD CHEGE**
Senior Lecturer and Senior Research Officer, HIV Vaccines
gerald.chege@uct.ac.za

**DR CATHERINE RIOU**
Senior Lecturer and Senior Research Officer, HIV T cell immunology, HIV/TB co-infection, HIV-viral co-infections
c.riou@uct.ac.za

**DR MELISSA-ROSE ABRAMHS**
Lecturer and Research Officer, molecular biology of HIV: viral sequencing, fitness and pathogenesis studies
melissa-rose.abrahams@uct.ac.za
DR ROSAMUND CHAPMAN
Lecturer and Research Officer, Vaccine vectors
ros.chapman@uct.ac.za

DR NIKI DOUGLASS
Lecturer and Research Officer, Pox viruses
niki.douglass@uct.ac.za

DR ANDREA SOARES
Lecturer and Research Officer, T and B cell immunity to HIV
ap.soares@uct.ac.za

DR DENIS CHOPERA
NRF Career Research Fellow and Lecturer, HIV and CTL pressure
denis.chopera@uct.ac.za

DR LINDI MASSON
NRF Career Research Fellow and Lecturer, HIV transmission and disease; sexually transmitted infections; bacterial vaginosis; mucosal immunology; cytokines; inflammation
lindi.masson@uct.ac.za

DR TRACY MEIRING
NRF Career Research Fellow and Lecturer, Genital viral and microbial communities and their association with human immunodeficiency virus and human papillomavirus infection
tracy.meiring@uct.ac.za

Emeritus Professor

PROFESSOR KEITH DUMBELL
Pox viruses

Honorary Research Associates

PROF DAVID KATZENSTEIN
Treatment and evaluation of HIV infection

DR ERICA ANDERSEN-NISSEN
HIV vaccinology and immunology

Postdoctoral Research Fellows

DR COLIN ANTHONY
Molecular biology/virology, Next generation sequencing and data analysis pipeline development

DR SHAMEEM JAUMDALLY
Genital Mucosal Immunology

DR COBUS OLIVIER
HIV Pathogenesis, Mucosal Immunology, STIs and Male Reproductive System

DR PHILIPPE SELHORST
HIV Pathogenesis and cell culture; Molecular biology

DR NATALIE STRICKLAND
The immune response to TB in HIV-TB coinfection

Distinguished Visitors

DR BARNEY GRAHAM
Vaccine Research Center, National Institutes of Health, USA
Advances in anti-viral vaccine development

PROFESSOR WILLIAM JACOBS, JR
Albert Einstein College of Medicine
Killing persistent Mycobacterium tuberculosis cells: Inspirations from Max Delbruck, Harry Houdini and Captain James Cook

DR MARIO ROEDERER
Vaccine Research Center, National Institutes of Health, USA
Antigenic heterogeneity of clonal envelopes: a novel immune escape mechanism

Contact Details

Postal address: Division of Medical Virology, S3.23 Wernher Beit South Building, Anzio Road, University of Cape Town, Observatory, 7925
Telephone: +27 21 406 6983
Fax: +27 21 406 6682
Email: nyameka.mhlonyelwa-mona@.uct.ac.za
Web: www.uct.ac.za/depts/CLS/virology/

RESEARCH OUTPUT

Edited books


Chapters in books


Articles in peer-reviewed journals


Müller, A. 2014. Professionalism is key in providing services to lesbian, gay, bisexual, transgender and intersex South Africans, South African Medical Journal, 104(8): 558-559.


Ndlovu, H. and Brombacher, F. 2014. Role of IL-4Rx during schistosomiasis in mice. Parasite Immunology, 36: 421-427.


DEPARTMENT OF HEALTH AND REHABILITATION SCIENCES

Head of Department: Associate Professor Shajila Singh

Departmental Profile

The Department of Health and Rehabilitation Sciences is a multi-professional department, which offers undergraduate and postgraduate programmes in Audiology, Speech and Language Pathology, Occupational Therapy, and Physiotherapy. The department also offers postgraduate diplomas, masters and PhD programmes in Disability Studies and Nursing and Midwifery. The department is characterised by diverse research interests and boasts a high level of research outputs. Much research is related to poverty and inequality, and HIV and AIDS, with a particular focus on disability and social inclusion. There is a strong engagement in research regarding health-related quality of life and the International Classification of Functioning and Disability. The department is home to researchers in Physiotherapy, Occupational Therapy, Communication Sciences and Disorders, Nursing and Midwifery and Disability Studies. The department has also developed expertise in clinical education research, to enhance student learning at undergraduate and postgraduate levels.

Departmental Statistics

Permanent and Long-Term Contract Staff

<table>
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<th>Position</th>
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<tr>
<td>Emeritus Professor</td>
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Honorary staff

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Students

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Research Fields and Staff

Permanent staff

PROFESSOR S.L. AMOSUN
Physiotherapy
Non-communicable diseases; disability prevention and health promotion

MRS ANTHEA BRINKMAN
Communication Sciences and Disorders; Disability Studies
Rehabilitation service delivery, community-based rehabilitation; health needs of people with disabilities in home and community settings

DR HELEN BUCHANAN
Occupational Therapy
Evidence-based practice; hand therapy; measurement instruments; occupational therapy for physical health conditions; clinical reasoning and reflection; education

DR THERESA BURGESS
Physiotherapy
Muscle damage and endurance exercise; clinical sports physiotherapy; research ethics and bioethics

MS LIZAHN CLOETE
Occupational Therapy
Foetal Alcohol Spectrum Disorders; community development & occupational therapy in primary health care

ASSOCIATE PROFESSOR SHEILA CLOW
Nursing and Midwifery
Midwifery; women’s health care; intrapartum care; mentorship

ASSOCIATE PROFESSOR SINEGUGU DUMA
Nursing and Midwifery
Sexual violence in higher education; violence against woman; sexual assault; interplay between HIV and
gender-based violence; forensic nursing and curriculum development; qualitative research.

ASSOCIATE PROFESSOR EVE DUNCAN
Occupational Therapy
Poverty, occupation and psychiatric disability; disability inclusion through participatory development in deep rural communities

MS EILEEN DU PLOOY
Occupational Therapy
Occupation based work practice; palliative care

DR GILLIAN FERGUSON
Physiotherapy
HIV, paediatric motor assessment and rehabilitation

DR NICKI FOUCHE
Nursing and Midwifery
Critical Care Nursing; Advanced Nursing Practice; End-of-life care/palliative care; Death and Dying (Thanatology); Curriculum Development; Phenomenology – especially Hegdegerian Hermeneutic Phenomenology

ASSOCIATE PROFESSOR ROSHAN GALVAAN
Occupational Therapy
Occupation-based community development practice; occupational justice; occupational choice; youth; OT curriculum and human rights

MS PAM GRETSCHEL
Occupational Therapy
Best paediatric occupational therapy practice

MS ZERINA HAJWANI
Occupational Therapy
Disability and employment equity; supported employment; mental health occupational therapy; occupational justice in forensic contexts

DR MICHAL HARTY
Communication Sciences and Disorders
Augmentative and Alternative Communication (AAC); family-centred intervention practices, and communication development in children with established disabilities

MS CANDICE HENDRICKS
Physiotherapy
Rehabilitation of sports-related orthopaedic and neuromusculoskeletal conditions

DR BUSAYO IGE
Disability Studies
Identity and student learning; teaching and learning

PROFESSOR JENNIFER JELMSA
Physiotherapy
Function in children with HIV/AIDS; health related quality of life; living conditions of people with disabilities; use of the ICF

ASSOCIATE PROFESSOR HARSHA KATHARD
Communication Sciences and Disorders
Communication development and impairment; disability innovation; rehabilitation service delivery

DR UNA KYRIACOS
Nursing and Midwifery
Role of biosciences in clinical nursing education; vital signs monitoring; early warning/modified early warning score systems; ophthalmic nursing; intervention research: cluster RCTs.

ASSOCIATE PROFESSOR THERESA LORENZO
Disability Studies
Disability rights and equity for youth and women; community based rehabilitation

MS SORAYA MAART
Physiotherapy
Incontinence and sexual dysfunction amongst sexually abused persons; HIV and community empowerment

MS SHAMILA MANIE
Physiotherapy
Intensive Care Unit management; cardio-pulmonary rehabilitation, TB

ASSOCIATE PROFESSOR PAT MAYER
Nursing and Midwifery
Mental health; support and training for primary health care providers/clinical nurse practitioners with special focus on HIV and ARV rollout; primary care practice teams

DR JUDITH MCKENZIE
Disability Studies
Disability and social change; intellectual disability in Africa

MS NIRI NAIDOO
Physiotherapy
Neuromusculoskeletal conditions (including hand rehabilitation); Higher Education practice and assessment strategies, Childhood obesity

MR DOUGLAS NEWMAN
Nursing and Midwifery
LGBTI health

MS VIVIENNE NORMAN
Communication Sciences and Disorders
Paediatric dysphagia and early intervention

MS CHIOMA OHAJUNWA
Disability Studies
Disability inclusion

DR MICHELLE PASCOE
Communication Sciences and Disorders
Speech, language and literacy difficulties in school-aged children
MS LUCRETIA PETERSEN  
Communication Sciences and Disorders  
Otoxicity; otoacoustic emissions; reliability and validity

ASSOCIATE PROFESSOR ROMY PARKER  
Physiotherapy  
Chronic pain and pain in HIV

DR LEBOGANG RAMMA  
Communication Sciences and Disorders  
Public Health Audiology

ASSOCIATE PROFESSOR ELELWANI RAMUGONDO  
Occupational Therapy  
Promoting childhood play in context; play, learning and development outcomes for children on anti-retroviral treatment; the politics of human occupation

MS CHRISTINE ROGERS  
Communication Sciences and Disorders  
Vestibular assessment and management; falls and fall prevention

ASSOCIATE PROFESSOR SHAJILA SINGH  
Communication Sciences and Disorders  
Dysphagia; adult motor speech; service delivery; linguistically relevant materials

MS AMSHUDA SONDAY  
Occupational Therapy  
Inclusive education; profound multiple intellectual disability and quality of life

Clinical Educator Staff

MRS FATEMAH CAMROODIEN-SURVE  
Communication Sciences and Disorders  
Early childhood intervention; parent training; clinical education

MS TRACEY-LEE CLOETE  
Communication Sciences and Disorders  
Public health audiology; developing programs for prevention and early identification of hearing loss; school-based screening services

MS INGE CROY  
Physiotherapy  
Sports Injuries and Rehabilitation; Clinical musculoskeletal injuries

MRS SHIREEN DAMONSE  
Occupational Therapy  
Paediatrics and school based occupational therapy.

MRS NAILA EDRIES  
Physiotherapy  
Occupational health and wellness; promoting behaviour change; musculoskeletal injury management; evaluation and feedback methods to drive learning

MRS CELESTE EDWARDES  
Communication Sciences and Disorders  
Right hemisphere communication disorders intervention and referral pathways; cerebral palsy and communication

MS HANSKE FLIERINGA  
Occupational Therapy  
Physical rehabilitation; paediatrics; work practice and community development

MRS FADIA GAMIELDIEN  
Occupational Therapy  
Health professionals’ attitudes towards mental health service users; disability, diversity and social change; community integration, community mental health and health promotion

MRS FAHMIDA HARRIS  
Physiotherapy  
Mental health; member profiles at senior service centres.

MS NIKKI KEETON  
Communication Sciences and Disorders  
Higher education and clinical teaching

MS JANE LE ROUX  
Communication Sciences and Disorders  
Language and literacy development in grade 2 and 3 learners

MS LOREN LEWIS  
Occupational Therapy  
Education

MS TASNEEM MOHOMED  
Occupational Therapy  
Child learning development and play; autism spectrum disorder

MR MARC NAIDOO  
Physiotherapy  
Clinical education models and strategies; rehabilitation in neuro patients; soccer injury prevention

MRS ELRIETHA OLIVIER  
Communication Sciences and Disorders  
Cochlear implants; bimodal fitting and FM use; balance disorders in cochlear implant recipients

MS LIESL PETERS  
Occupational Therapy  
Community development, human occupation and justice with a focus on issues related to vulnerability and vulnerable groups.

MRS LAURA RUSSELL  
Communication Sciences and Disorders  
Communication Sciences and Disorders  
Traumatic brain injury care pathways after discharge; assessment of aphasia in South African languages
MRS DES SCOTT
Physiotherapy
Group teaching in clinical practice; paediatric clinical practice

MRS HEATHER TALBERG
Physiotherapy
Clinical education best practice models and guidelines; developing professional and reflective practitioners

MS FREDA WALTERS
Communication Sciences and Disorders
Fluency, community based rehabilitation; clinical education

Contact Details
Postal address: Department of Health and Rehabilitation Sciences, Faculty of Health Sciences
University of Cape Town, Anzio Road, Observatory, 7925
Physical Address: Suite F45, Old Main Building, Groote Schuur Hospital
Observatory, Cape Town, 7945
Telephone: +27 21 406 6401
Fax: +27 21 406 6323
Email: debra.adams@uct.ac.za
Web: www.dhrs.uct.ac.za

RESEARCH OUTPUT

Articles in peer-reviewed journals


DEPARTMENT OF HUMAN BIOLOGY

Head of Department: Professor Malcolm Collins

Departmental Profile

The Department of Human Biology (HUB) includes Biomedical Engineering & Medical Imaging; Cell Biology; Clinical Anatomy and Biological Anthropology; Human Nutrition and Dietetics; Biokinetics; Exercise Science; Healthcare Technology Management; Neurosciences; Physiological Sciences and Sport and Exercise Medicine.

DIVISION OF BIOMEDICAL ENGINEERING

Head of Department: Div Associate Professor Thomas Franz

The Division of Biomedical Engineering covers a wide range of research topics including medical imaging, medical devices, musculo-skeletal biomechanics, cell and tissue mechanobiology, biomechatronics, signal processing, rehabilitation engineering, healthcare technology management, and health innovation. Our focus is on biomedical engineering that addresses health in Africa, yet is globally relevant.

DIVISION OF CELL BIOLOGY

Head of Department: Div Professor Susan Kidson

Research in the Division of Cell Biology encompasses diverse approaches to understanding normal cellular processes and how they are altered in disease. This includes the study of skin care and eye development and regeneration, vascular biology of the eye, melanocytes and melanoma, neuronal development and regeneration. A number of studies use stem cells and in addition, work on the identification of novel therapeutic approaches to treat diseases including pigmentary conditions, neuronal disorders and cancer are underway.

DIVISION OF CLINICAL ANATOMY AND BIOLOGICAL ANTHROPOLOGY

Head of Department: Div Professor Graham Louw

What is Biological Anthropology?

This is the field of study that tries to understand human variation and human evolution. It includes topics such as comparative growth studies, demography, primate behaviour, skeletal biology and forensic anthropology. Current research thrusts in the division focus on forensic anthropology.

What is Applied Anatomy?

This is the field of study that tries to understand human structure and function. It includes topics such as clinical anatomy, structural embryology, growth and development, and comparative anatomy.

DIVISION OF HUMAN NUTRITION

Acting Head of Department: Div Associate Professor Marjanne Senekal

Vision

To be recognised as Afrocentric, world class leaders in nutrition science and dietetics, while being committed to social involvement and community upliftment in these areas.

Mission

- To train versatile, excellent nutrition scientists and professional dietitians with a special expertise in addressing the needs of Africa, who will advance their own development and that of the profession.
- To produce innovative, relevant and rigorous research that contributes to the specialised, unique body of knowledge in nutrition science and dietetics, thereby increasing visibility and recognition.
- To develop strong internal and external networks and collaborations that will nourish and sustain the teaching and research activities.
- To promote good work ethos, team work and opportunities for staff career development.
- To direct the academic activities of the division toward public engagement, to contribute to community development and to the transmission of knowledge within the realm of nutrition, and in so doing, support the common good.
The Division of Physiological Sciences focuses on human physiology with particular emphasis on exercise and neurophysiology. Main research fields include:

- Cardiovascular physiology
- Effects of stress, aging and exercise on the brain
- Neurodegenerative disorders (e.g. Parkinson’s Disease) and Attention Deficit Hyperactivity Disorder (ADHD)
- Cellular architecture of the mammalian visual system
- Comparative aspects of neural development, regeneration and degeneration in lower and higher vertebrates.

The UCT/MRC Research Unit for Exercise Science and Sports Medicine is based at the Sports Science Institute of South Africa (SSISA). Prof Vicki Lambert was appointed as Acting Director in 2013 in preparation for the retirement of Prof Tim Noakes at the end of 2014. The Unit has four main research areas, namely, Health and well-being; Exercise in the management of chronic disease; Injuries and medical conditions associated with sport and exercise; and Exercise performance. During 2014, funding for research projects was received from UCT, MRC, NRF, Training Human Resources Industry Programme (THRIP), Discovery Health and other industry partners. Within the academic staff, there are 14 NRF-rated staff. Prof Noakes has the highest rating, namely, A1. A total of 28 students graduated during 2014 (11 Honours, 6 MSc, 4 PhD, 3 MPhil (Biokinetics) and 4 MPhil (Sport and Exercise Medicine). Several staff and students were recipients of awards during 2014:

- Alison September – MRC Strategic Health Innovations Partnership (medical devices category) funding as co-principle investigator with Prof Maritha Kotza (US) and Dr Junaid Gamieldien (UWC); the Faculty of Health Sciences Soft Funded Academic Research Staff Award; and an NRF C2 rating.
- Dheshnie Keswell, James Smith, Yumna Albertus – NRF Research Career Award. These five-year fellowships were very competitive with only about 60 awarded throughout the country.
- Tertius Kohn – NRF Competitive Programme for Rated Researchers Grant (3 years) to investigate the causes of capture myopathy in wild animals, for extrapolation to human exertional heatstroke.
- Mogamat Sharief Hendricks – NRF Post-Doctoral Innovation Fellowship (3 years); an ECSS Young Investigators Travel Grant Award towards attendance at the ECSS conference.
- Tim Noakes – Southern African Association for the Advancement of Science (S2A3) Gold Medal to recognise exceptional contributions to the advancement of science; a NRF 3-year competitive grant.

**Departmental Statistics**

**Permanent and Long-Term Contract Staff**

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**Students**

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</table>

**Research Fields and Staff**

**PROFESSOR MALCOLM COLLINS**

RUESSM: Chief Specialist Scientist; Biochemistry; Molecular and Genetic mechanisms – applied to performance and musculoskeletal soft tissue injuries.
PROFESSOR WAYNE Derman
RUESSM: Sport and Exercise Medicine Co-director, Clinical Sport and Exercise Medicine Research Group, Co-Convenor: MPhil (Sport and Exercise Medicine). Skeletal muscle dysfunction in chronic disease; exercise training in chronic disease

PROFESSOR TANIA DOUGLAS
Director of the MRC/UCT Medical Imaging Research Unit (MIRU); biomedical engineering, image processing

PROFESSOR SUE KIDSON
Developmental biology; melanocytes and hypopigmentary disorders; eye development and glaucoma

PROFESSOR MIKE LAMBERT
RUESSM: Exercise training and recovery; Science applied to rugby, Coordinator of the Exercise Science Honours Course

PROFESSOR ESTELLE V. LAMBERT
RUESSM: Physical activity epidemiology and chronic diseases of lifestyle; obesity and chronic disease

PROFESSOR GRAHAM J. LOUW
Human growth; medical education; skeletal analysis

PROFESSOR ALAN G. MORRIS
Human evolution; forensic anthropology, skeletal biology of early peoples in southern Africa; history of physical anthropology

PROFESSOR TIMOTHY D. NOAKES
Discovery Health Chair of Exercise and Sports Science and Director of UCT/MRC Research and Exercise Medicine Research Unit RUESSM: Regulation of exercise performance; sports medicine

EMERITUS PROFESSOR VIVIENNE RUSSELL
Neuropysiology: Development, stress, exercise and vulnerability to neuronal injury; Attention deficit hyperactivity disorder; Depression

PROFESSOR MARTIN P. SCHWELNNUS
RUESSM: Sport and Exercise Medicine, Convenor of the MPhil (Sport and Exercise Medicine) programme

ASSOCIATE PROFESSOR ANDREW BOSCH
RUESSM: Fuel substrate metabolism, exercise training

ASSOCIATE PROFESSOR DIRK M. LANG
Nervous system development; axon growth and regeneration

ASSOCIATE PROFESSOR ERNESTA MEINTJES
MIRU: NRF chair; magnetic resonance imaging

ASSOCIATE PROFESSOR EDWARD OJUKA
RUESSM: glucose disposal in muscle

ASSOCIATE PROFESSOR SHARON PRINCE
The cell and molecular biology of cancer and the identification of novel targets for anti-cancer drugs, with special focus on the T-box transcription factors Tbx2 and Tbx3.

ASSOCIATE PROFESSOR MARJANNE SENEKAL
Head: Division of Human Nutrition, Weight management and health interventions, dietary assessment, nutritional genomics

DR AMAAAL ABRAMAHMS
Lecturer; Cell Biology: Research Officer. Role and regulation of the T-box transcription factor TBX3 during the cell cycle

DR COLIN ANDREW
MIRU: Senior Lecturer (part-time); Biomedical signal processing

MS ELMIL BADENHORST
Lecturer; medical education, under-preparedness and academic performance

MS SHARMILAH BOOLEY
Lecturer; Division of Human Nutrition; Nutrition, HIV/AIDS and quality of life; nutrition related behaviour change interventions for prevention and management of chronic diseases of lifestyle (school and workplace based)

DR KISHOR BUGARITH
Senior Lecturer; physiology, neurobiology of stress, neurobiology of food intake

DR LESTER M. DAVIDS
Senior Lecturer; redox and antioxidant biology; skin cancer, pigmented disorders of the skin, vitiligo, hair follicle biology

MS ZARINA EBRHAIM
Clinical Educator (part-time); Division of Human Nutrition

DR JACQUI FRIEDLING
Lecturer; skeletal biology; physical anthropology, forensic anthropology

DR JULIA H. GOEDECKE
RUESSM: Specialist Scientist, MRC; Obesity in relation to disease risk; Exercise metabolism and sports nutrition

DR GENEY GUNSTON
Senior Lecturer; gross anatomy; clinical anatomy; medical education

DR ASFREE GWANYANYA
Senior Lecturer; cardiac pathophysiology, hypertrophy, ion channels
DR JANETTA HARBON
Senior Lecturer; Division of Human Nutrition; Obesity and other CDL intervention, Nutritional genomics; Sports nutrition.

MS FIONA HERRMANN
Clinical Educator (part-time); Division of Human Nutrition, risks for obesity development in SA communities, nutrition in palliative oncology

MS FATIMA HOosen
Clinical Educator (part-time); Division of Human Nutrition

DR SIKIRU JIMOH
Lecturer, division of Human Biology, Human anthropology; Gross and comparative anatomy.

DR LESTER JOHN
MIRU: Senior Lecturer and Software Specialist; Electromyography, Electroencephalography, Brain-Computer Interfacing, Medical Electronics & Devices

MS BAHEYA NAJAAAR
Lecturer, Division of Human Nutrition, community nutrition, infant and young child feeding

MR MLADEN POLUTA
Senior Lecturer; Director: Healthcare Technology Management

DR TINASHE MUTSVANGWA,
Lecturer, Division of Biomedical Engineering, Health Innovation and Design, 3D Shape Reconstruction of bone, Medical Imaging

DR DELVA SHAMLEY
Senior Lecturer; upper limb morbidity in breast cancer, molecular effects of adjuvant therapies in cancer

DR CHARLES P. SLATER
Senior Lecturer; anatomy, medical education

MR STEF STEINER
Lecturer; biomechanics

DR NELIA STEYN
Senior lecturer, Division of Human Nutrition, non-communicable diseases and their risk factors; food security; research methodology

DR SUDESH SIVARASU
Lecturer, biomechanics, biomechatronics, medical devices & rehabilitation engineering

DR LIZ VAN DER MERWE
Senior Lecturer; ocular development and regeneration, vascular biology, pancreatic islet regeneration, 3-D microscopic image reconstruction.

DR WILLEM VAN DER MERWE
RUSSM: Senior honorary lecturer: Sports orthopaedic research

DR CHRISTOPHER WARTON
Senior Lecturer; medical education, teaching materials, MRI analysis and cerebellar structure

Postdoctoral Fellows/Scientific and Research Officers, Research Associates

DR. PAUL TAYLOR
Human Biology: Postdoctoral research fellow. Biomedical Engineering: neuroimaging; fMRI and DTI techniques; neurodevelopment; prenatal alcohol exposure; HIV and anteretroviral treatment.

MAZIN S.SIRRY
Division of Biomedical Engineering: Postdoctoral Fellow. Title: Modelling of ventricular, myocardial and injectate mechanics from organ to sub-tissue scale.

DR KYLIE DE JAGER
Biomedical Engineering: Postdoctoral Fellow. Validation of non-invasive deep muscle EMG methods against invasive EMG techniques: Investigating the function of the popliteus muscle; Medical Device Development in South Africa: Network Analysis of Sectoral Collaboration; Automated Fluorescence Microscope for Tuberculosis Detection

DR GAURANG P DESHPANDE
Medicine: Postdoctoral Fellow “Expression, function and cell biology of FAM111B, a novel protein associated with multi-system fibrosis”.

DR JADE PERES
Human Biology: Postdoctoral Fellow. Molecular Biology, Cancer: The regulation of TBX3 by the AKT signalling pathway and miRNAs in melanoma progression.

DR REYNA DEEYA BALLIM
Human Biology: Postdoctoral Fellow. Molecular Biology, Cancer: The identification of target genes of the transcription factor TBX2 which mediate its pro-proliferative activities in cancer and the elucidation of its crystal structure with a view to designing drugs that inhibit TBX2’s oncogenic function.

DR AKEEM LAWAL
The Role of Extracts of Fermented Rooibos Tea (Aspalathus linearis) induction of NQO1 Expression in the Oxidative and Proinflammatory Effects of Diesel Exhaust Particles in systemic and vascular cells

DR OLAWALE AJUWON
Postdoctoral Fellow; Division of Cell Biology; Redox Laboratory; “Antioxidant Response and Pigmentation in Hypericin-Photodynamic Therapy Induced Cell Death Resistance in Melanoma”.

Postdoctoral Fellows/Scientific and Research Officers, Research Associates
ALI ALHAMUD
Developing new technologies for brain and cardiac Magnetic Resonance Imaging

DR. TAKER ABDALRAHMAN

DR RONALD DENDERE
Biomedical Engineering: Postdoctoral Fellow. Statistical modelling for 3D reconstruction of the proximal femur from 2D dual-energy X-ray images.

DR FRANCES ROBERTSON
MIRU: Postdoctoral Fellow, magnetic resonance imaging.

DR. NAILAH CONRAD
Health Innovation: Postdoctoral Fellow. Health Innovation and Design; university, industry and public sector interaction to promote health innovation; design, test and implement health innovations.

MALEBOGO NGOEPE
Computational biomechanics. Thrombosis in cerebral aneurysms. Retention and efficacy of hydrogel treatment in myocardial infarction.

DR LINDIE DU PLESSIS
Neuroimaging: Postdoctoral fellow. Functional magnetic resonance imaging; magnetic resonance spectroscopy; fetal alcohol spectrum disorders, early childhood trauma; HIV

DR SERAH KIMANI
Human Biology: Postdoctoral fellow. Cancer Biology: Targeting the T-box transcription factors, TBX2 and TBX3, for anticancer therapy; Identification and characterization of anticancer inhibitor molecules.

DR YUMNA ALBERTUS-KAJE
RUESSM: Research Officer. Electromyography in the prevention of chronic disease in patients, and neuromuscular adaptations to exercise in athletes, commercial research.

DR ROBEA BALLO
Cell Biology and genetics: Genetics of vitiligo.

DR MARCIN JANKIEWICZ
MIRU: Lecturer. Cape Universities Brain Imaging Centre: Magnetic Resonance Imaging

DR IAN BURGER
MIRU: Postdoctoral Fellow; magnetic resonance imaging

MS SUSAN COOPER
Microscopy Unit: Technical Officer

DR JACQUELINE DIMATELIS
Physiology: Postdoctoral Fellow. Neurophysiology: Development, stress, exercise and vulnerability to neuronal injury; Attention deficit hyperactivity disorder; Depression

DR CATHERINE DRAPER

DR JANINE GRAY
RUESSM: Honorary lecturer. Cricket research – research coordinator for Cricket South Africa

DR MARTHA HOLMES
MIRU: Postdoctoral Fellow, neuroimaging

MR NIKHIL DIVEKAR
RUESSM: Research Officer: Biomechanics research, Manager of the Biomechanics Lab., electronics

DR DHESHNIE KESWELL
RUESSM: Postdoctoral Fellow: Molecular and cellular aspects of obesity and type 2 diabetes

DR TERTIUS KOHN
RUESSM: Senior Research Officer. Skeletal muscle biochemistry of exercise adaptation, muscle fatigue and weakness

MR SRIRAM KRISHNAN
Development of a light microscope for automated identification of TB bacilli in ZN stained sputum smears

DR JACOLENE KROFF
RUESSM: Senior Lecturer, Physical activity and health; Co-ordinator of the BSc (Hons) Biokinetics and MPhil (Biokinetics) courses

DR WENDY KRÖGER
Postdoctoral fellow in cell biology: The molecular mechanisms by which the T-box transcription factor TBX3 contributes to tumorigenesis.

DR AMOD KULKARNI
Postdoctoral Fellow (Claude Leon Foundation). In vitro and in vivo neuro-pharmacokinetics and neuropharmacodynamics of natural neuroprotective agents.

DR ROBERT LAMBERTS
RUESSM: Senior Research Officer (UCT)/Head ofOrthopaedic Research (SUN), Predicting and monitoring performance, Thermoregulation, Biomechanics, Orthopaedics Cerebral Palsy and HIV

DR BARAK MORGAN
MIRU: Behavioural, physiological and neuroimaging studies in affective neuroscience

DR LISA MICKLEFIELD
RUESSM: Senior Researcher/Honorary Research Fellow (Wits University). Bone health and physical activity
MS LORREIN MUHWAVA
RUESSM: Research Officer. Epidemiology and biostatistics

DR MICHAEL POSTHUMUS
RUESSM: Senior Research Officer. Genetics – applied to performance and injuries, Sports orthopaedic research

DR DALE RAE
RUESSM: Senior Research Officer: Circadian rhythms and performance; Commercial research division manager

DR LAURIE RAUCH
RUESSM: Research Officer: Brain activity and cognitive stress

DR ALISON V. SEPTEMBER
RUESSM: Senior Research Officer. Molecular human genetics

DR JAMES SMITH
RUESSM: Research Officer: Diet, health, metabolism and exercise performance

DR JEROEN SWART
RUESSM: Honorary Research Associate. Sports medicine

DR ROSS TUCKER
RUESSM: Senior Research Officer: Central Governor research, Exercise training; Commercial Research division co-management

DR MOGAMAT SHARIEF HENDRICKS
RUESSM: Post Doctoral Fellow: Rugby Research

MRS HENDRIENA VICTOR
RUESSM: Senior Scientific Officer: HPLC analysis, Laboratory support

MR DEON AABRAHAMS
Technical Officer

MRS DESIRE BOWERS
Chief Technical Officer

MR MICHAEL CASSAR
Technical Officer/Embalmer

MS GABI DE BIE
Chief Scientific Officer

MR IKRAAM FAKIER
Chief Technical Officer

MR VERNON FOURIE
Senior Technical Officer

MS SANDRA JORDAAN
Senior Technical Officer

MRS MOREA PETERSEN
Chief Technical Officer

MR SAMUEL RAYISE
Senior Technical Officer

MR PAUL STEYN
Senior Technical Officer

Contact Details
Postal Address: Department of Human Biology, Health Sciences Faculty, Observatory, 7925, South Africa
Telephone: +27 21 406 6235
Fax: + 27 21 448 7226
Email: malcolm.collins@uct.ac.za
Web: www.uct.ac.za/departments/humanbio/

RESEARCH OUTPUT

Edited books

Chapters in books


Ojuka, E. and Goyaram, V. 2014. Mechanisms in exercise-induced increase in glucose disposal in skeletal muscle. In J. Goedecke and E. Ojuka (eds), Diabetes
Articles in peer-reviewed journals


Ellender, T.J., Raimondo, J.V., Irkle, A., Lamsa, K. and Akerman, C.J.A. 2014. Excitatory effects of parvalbumin-expressing interneurons maintain hippocampal...


Howells, F.M., Uhlmann, A., Temmingh, H.S., Sinclair, H., Meintjes, E.M., Wilson, D.A.B. and Stein, D.J. 2014. 1H-magnetic resonance spectroscopy (1H-MRS) in


Sivarasu, S., James, S.P. and Mathew, L. 2014. 3D reconstruction of knee joint from CT images and customized meniscus development. Biomedizinische Technik, 59(s1): s1132-s1135.


**Peer-reviewed published conference proceedings**


Department of Medicine

Head of Department: Professor Bongani M. Mayosi

Departmental Profile

The Department of Medicine is a large clinical department which plays a leading role in medical education and research, and provides clinical services to the communities of the Western Cape and, in the case of our highly specialised services, to patients throughout southern Africa. The Department consists of 21 clinical divisions, 11 major research units, and four affiliated departments of medicine at, Mitchell’s Plein, New Somerset, II Military, and Victoria hospitals (www.medicine.uct.ac.za). Each day, members of the department treat an average of 2,000 patients in our clinics, admit about 100 patients to our hospital services and perform over 210 medical procedures. The department offers a number of highly specialised services that are unique nationally such as allergology and clinical immunology, bone marrow, heart, kidney, and liver transplantation, cardiac electrophysiology, endobronchial ultrasound guided bronchoscopy, and double balloon enteroscopy for visualisation of the small bowel.

There are approximately 116 registrars and senior registrars who are training in various disciplines, 38 of whom are from other countries such as Botswana, Ghana, Kenya, Libya, Malawi, Namibia, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe. The department produces formularies and guidelines that are used in most health facilities in South Africa, such as the South African Medicines Formulary and the Practical Approach to Care Kit (PACK).

Departmental Statistics

Permanent and Long-Term Contract Staff

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<th>Grade</th>
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DIVISION OF CARDIOLOGY

Head of Division: Professor
Mpiko Ntsekhe

Divisional Profile

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

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

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

Divisional Statistics

Permanent Staff

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<tr>
<td>Research Coordinator Cardiac Clinic Research Unit</td>
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<td>Research Pharmacist</td>
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Research Fields and Staff

See Divisions and Research Units within the Department

Contact Details

Postal Address:
Department of Medicine, Faculty of Health Sciences, University of Cape Town, Observatory 7925, Cape Town
Telephone: +27 21 406 6542
Fax: +27 21 448 6815
Email: nandie.makatesi@uct.ac.za
www.medicine.uct.ac.za

Honorary Staff

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Students

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Honorary Staff

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Students

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Research Fields and Staff

See Divisions and Research Units within the Department

Contact Details

Postal Address:
Department of Medicine, Faculty of Health Sciences, University of Cape Town, Observatory 7925, Cape Town
Telephone: +27 21 406 6542
Fax: +27 21 448 6815
Email: nandie.makatesi@uct.ac.za
www.medicine.uct.ac.za
Honorary Staff

<table>
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<tr>
<th>Role</th>
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Students and postdoctoral fellows

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Research Fields and Staff

**NTSEKHE, MN – DIRECTOR OF THE CARDIAC CLINIC RESEARCH UNIT**
Pericardial disease, impact of HIV/TB on cardiovascular disease, coronary artery disease
Burden of cardiovascular disease in sub-Saharan Africa
Prospective registries of cardiovascular disease

**MAYOSI, BMM – HEAD MAYOSI RESEARCH UNIT**
Rheumatic heart disease, pericardial disease, cardiomyopathy, genetics of cardiovascular disease in Africa, global burden of cardiovascular disease

**SLIWA, K – DIRECTOR – HATTER INSTITUTE FOR RESEARCH IN AFRICA**
Heart failure, cardiac disease in pregnancy and the peripartum period, rheumatic heart disease, global burden of cardiovascular disease

**CHIN, A.**
Rheumatic heart disease, ARVC
Interventions to lower sudden cardiac death
Use of devices in heart failure, and diseases of rhythm abnormalities and pacing

**PANDIE, S.**
Pericardial disease, coronary artery disease

**CUPIDO, B.**
Rheumatic heart disease, congenital heart disease

**NTUSI, N.**
Magnetic resonance imaging in heart muscle disease, pericardial disease, and inflammatory diseases of the heart, HIV and the heart

**CHHIBA, M (DISCOVERY FELLOW)**
Immunology of Mycobacterium W

Contact Details

Postal Address:
Division of Cardiology UCT, E-17/25, New Groote Schuur Hospital, Anzio Road, Observatory, 7925
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Fax: (021) 448 7062
Email: mpiko.ntsekhe@uct.ac.za

MOSES, P (DISCOVERY FELLOW)
Natural History of HIV Cardiomyopathy
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 McIlerson heads our clinical pharmacokinetic group, which conducts a series of pharmacokinetic studies evaluating antitubercular drugs, antiretroviral drugs, and the interaction between them in adults and children with funding from the Wellcome Trust, NIH, and MRC. Our collaboration on population pharmacokinetics with Uppsala University is ongoing and we have a pharmacometric laboratory to perform these complex analyses.

Divisional Statistics

Permanent and Long-Term Contract Staff

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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; pharmacoeconomic 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.

Contact Details
Postal Address: Division of Clinical Pharmacology, University of Cape Town, K45, Old Main Building, Groote Schuur Hospital, Observatory, 7925
Telephone: (021) 406 6286
Fax: (021) 448 1989
Email: gary.maartens@uct.ac.za

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

Head of Division of Geriatric Medicine: Professor M Combrinck
Director of Institute of Ageing in Africa: Dr S. Kalula

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

Institute Statistics

Permanent and Long-Term Contract Staff

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Research Fields and Staff

DR SEBASTIANA KALULA
Senior lecturer Department of Medicine and Division of Geriatric Medicine
Research field: Epidemiology of falls in older people and quality of care.

DR LINDA DE VILLIERS
Senior lecturer Department of Medicine and Division of Geriatric Medicine
Research field: Quality, cost, resource utilisation and outcomes of stroke care.

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

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

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

DR CELESTE DE JAGER
Senior Lecturer in Clinical Neurosciences and Clinical Epidemiology
Research field: Neurocognitive disorders (in particular Alzheimer’s disease) from a neuropsychological perspective

Contact Details

Postal Address: The Albertina and Walter Sisulu Institute of Ageing in Africa, Faculty of Health Sciences, University of Cape Town, L51, Old Main Building, Groote Schuur Hospital, Observatory 7925, Cape Town, South Africa.
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E-mail: iaa-institute@uct.ac.za
Web: www.instituteofageing.uct.ac.za

HATTER INSTITUTE FOR CARDIOLOGY RESEARCH

Director: Prof. Karen Sliwa-Hahnle, MD, PhD, FESC, FACC

Institute Profile

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

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

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

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

Research Collaborative initiatives

Local collaborations

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

Collaborations in Africa

• Prof Albertino Damasceno, Eduardo Mondane University, Maputo, Mozambique
• Prof Ana Mocumbi, National Institute of Health, Maputo, Mozambique
• Prof Charles Mondo, Makerere University, Kampala, Uganda
• Prof Gerald Yonga, Nairobi, Kenya
• Prof E. Ogola, Nairobi, Kenya
• Dr R. Mvungi, Dar Es Salam, Tanzania
• Prof Mahmoud Sani, Kano University, Kano, Nigeria
• Dr O. Ogah, Lagos, Nigeria
• Dr D. Ojjii, Abuja, Nigeria
• Prof Amam Mbakwem, Lagos, Nigeria

International collaborators include

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

Institute Statistics

Permanent and Long-Term Contract Staff

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Research Fields and Staff

PROF KAREN SLIWA-HAHNLE (CARDIAC DISEASE IN MATERNITY AND HEART OF AFRICA STUDIES)
Cardiac disease in pregnancy and heart failure.

EMERITUS PROFESSOR LIONEL OPIE (ISCHAEMIA)
Delineation of cellular and molecular mechanisms promoting cardiac protection

PROFESSOR BONGANI MAYOSI (GENETICS GROUP LEADER)
Epidemiology, genetics, and treatment of non-ischaemic heart disease

ASSOCIATE PROFESSOR SANDRINE LECKOUR (CARDIOPROTECTION GROUP LEADER)
Delineation of cellular and molecular mechanisms promoting cardiac protection with special reference to Tumour Necrosis Factor alpha

MS TASNEEM ADAM
The anti-aging molecules sirtuins and their role in cardioprotection

Contact Details

Postal Address:
4th Floor Chris Barnard Building,
Private Bag X3,
Observatory, 7925
Tel: +27 (021) 406 6358
Fax: +27 (021) 650 4101
E-mail: Karen.Sliwa-Hahnle@uct.ac.za
Web addresses: www.hatter.uct.ac.za

DIVISION OF HEPATOLOGY
Head: A/Professor Wendy Spearman

DIVISIONAL PROFILE

Clinical service

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

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

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

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

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

Research

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

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

Dr Makgopo Kgatle is investigating the role of hypermethylation of the TUBA4A gene promoter in patients with HIV-HBV co-infection and the risk of developing hepatocellular carcinoma.
Dr Gogela is investigating the sero-prevalence of hepatitis C in the HIV infected male population of Heterosexual men and Men who have Sex with Men (MSM) in Cape Town.

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

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

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

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

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

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

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

**Divisional Statistics**

**Permanent and Long-Term Contract Staff**

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**Students and postdoctoral fellows**

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**Research Fields and Staff**

**A/PROF CWN SPEARMAN**
Liver transplantation, viral hepatitis, paediatric liver disease, acute liver failure and bioartificial liver support devices

**DR MW SONDERUP**
HIV and liver disease, drug-induced liver injury, viral hepatitis, porphyria

**DR M SETSHE DI**
Hepatocellular Carcinoma, Drug-induced liver injury

**Contact Details**

**Postal Address:** Division of Hepatology, Department of Medicine, University of Cape Town, Medical School, Observatory, 7925

Telephone: +27 21 406 6394
Fax: +27 21 448 6815
Email: wendy.spearman@uct.ac.za
DIVISION OF INFECTIOUS DISEASES AND HIV MEDICINE

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

Head of Division: Professor Marc Mendelson

Divisional Profile

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

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

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

Research Fields and Staff

PROFESSOR LINDA-GAIL BEKKER

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

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

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

DR PRUDENCE IVE
Registrar. Antiretroviral therapy clinical trials

DR ILAN SCHWARTZ
Honorary Research Associate; Emmonsiosis

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

PROFESSOR STEVE LAWN (HONORARY)
HIV-associated tuberculosis. Tuberculosis and mortality within antiretroviral treatment programmes.

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

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

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

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

Divisional Statistics

Permanent and Long-Term Contract Staff

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<tr>
<td>Honorary Professor</td>
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</table>
**PROFESSOR ROBERT WILKINSON**
Director University of CIDRI, Wellcome Trust Senior Fellow (Chair of Infectious Diseases) at Imperial College London and an MRC Programme Leader at the National Institute for Medical Research, UK (both posts held at UCT). Major research interest is immunology of tuberculosis.

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

**Contact Details**
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Fax: +27 21 406 6184
Email: marc.mendelson@uct.ac.za

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**DIVISION OF LIPIDOLOGY**

**Head of Division: Associate Professor D. Blom**

**Divisional Profile**

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

**Divisional Statistics**

**Permanent and Long-Term Contract Staff**

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<thead>
<tr>
<th>Position</th>
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<tbody>
<tr>
<td>Consultants</td>
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<td>Medical Officers</td>
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<td>Nursing sisters</td>
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<td>Contract Dietitian</td>
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Sonographers 1
Laboratory Technologists 1
Technical Support Staff 1
Administrative Staff 1
Total 11

Students

Doctoral 0
Masters 1
Total 1

Research Fields and Staff

AD MARAIS, DJ BLOM, BC BRICE, KH WOLMARANS, G SOLOMON, RJ JOOSTE
Severe dyslipidaemias including Familial Hypercholesterolaemia, Homozygous Familial Hypercholesterolaemia, Dysbeta lipoproteinaemia, Familial chylomicronaemia.

KH WOLMARANS, Z BEHARDIEN, DJ BLOM, AD MARAIS
Carotid intima-media thickness in dyslipidaemic patients

DJ BLOM, G SOLOMON, BD RATANJEE, AD MARAIS
Dysbeta lipoproteinaemia. Lipodystrophy.

DJ BLOM, KH WOLMARANS, BC BRICE, RJ JOOSTE, R TAYLOR, AD MARAIS.
Anti-sense oligonucleotides for limiting LDL production in homozygous familial hypercholesterolaemia and refractory heterozygous familial hypercholesterolaemia

DJ BLOM, BC BRICE, KH WOLMARANS, RJ JOOSTE, R TAYLOR
Microsomal triglyceride protein inhibition in homozygous familial hypercholesterolaemia

DJ BLOM, BC BRICE, KH WOLMARANS, RJ JOOSTE, R TAYLOR
PCSK-9 inhibition for the management of severe hypercholesterolaemia

DJ BLOM IN COLLABORATION WITH J DAVE OF THE DIVISION OF ENDOCRINOLOGY AND DIABETIC MEDICINE
Lipid metabolism in patients with HIV infection receiving antiretroviral therapy

DJ BLOM IN COLLABORATION WITH IL ROSS OF THE DIVISION OF ENDOCRINOLOGY AND DIABETIC MEDICINE
Glucocorticoid receptor polymorphisms in patients with Addison’s disease

DM BLACKHURST, AD MARAIS.
Anti-oxidant effects of wine.

AD MARAIS, BC BRICE, KH WOLMARANS, DJ BLOM, BD RATANJEE IN COLLABORATION WITH PROF G LAMBERT
Plasma PCSK9 levels in familial hypercholesterolaemia.

DJ BLOM IN COLLABORATION WITH PROF G LAMBERT
PCSK9 inhibition in patients with autosomal recessive hypercholesterolaemia

AD MARAIS, J COLE, D BLACKHURST, G LAMBERT
Endothelial Lipase mutations and hyperalphalipoproteinaemia

Contact Details

Postal Address:
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Fax: +27 21 406 6396
Email: elizabeth.phillips@uct.ac.za
Email: dirk.blom@uct.ac.za
DIVISION OF NEPHROLOGY AND HYPERTENSION

Head of Division: Professor B.L. Rayner

Divisional Profile

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

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

The main academic research activities of the division relate to:

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

Divisional Statistics

Permanent and Long-Term Contract Staff

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Students

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Research Fields and Staff

**DR Z BARDAY**
Kidney transplantation, renal denervation in kidney transplant patients

**ASSOCIATE PROFESSOR CHARLES SWANEPoEL**
Anaemia of CKD

**ASSOCIATE PROFESSOR IKE OKPECHI**
Lupus registry; mesangiocapillary GN, CAPD registry, Rapidly progressive GN

**DR WEARN E**
HIV and kidney, tenofovir nephrotoxicity, CAPD registry, HIV and diseases of lifestyle, TB and the kidney

**PROFESSOR BRIAN RAYNER**
Ethical considerations for dialysis rationing, Acute Kidney Injury, Physiological treatment of hypertension, Tik, hypertension and CKD, Therapeutic drug monitoring in hypertension, Salt sensitive hypertension, Diabetic nephropathy, MRI scanning and AV fistulas, genetics of hypertensive nephrosclerosis
**DR J NAIDOO**
Rapidly progressive GN, Tenofovir nephrotoxicity, genetics of hypertensive nephrosclerosis

**DR BIANCA DAVIDSON**
Transplant registry, Peritoneal dialysis registry, and adolescent nephrology care.

**DR PHETO MANGENA**
Adolescent Hypertension

**DR TOYIN AMEIH**
Membranous nephropathy

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

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**DIVISION OF NEUROLOGY**

**Head of Division: Associate Professor Alan Bryer**

**Divisional Profile**

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

**Areas of research include**

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

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

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

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

1. Understanding the molecular mechanisms underlying extraocular muscle damage in MG studied by Dr M Nel (MRC award) towards a PhD and Dr R Rautenbach (Discovery award) towards a MSc (Supervisor: JM Heckmann).

2. Ms Joy-Mari Buys was awarded a BSc Honours (Cell Biol) for her work on the functionality of TGFB polymorphisms (Supervisor: JM Heckmann) – she is extending this work by upgrading to a MSc.

**Neuromuscular Disease**

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

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

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

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

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

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

Opportunistic infections in HIV/AIDS subjects.

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

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

Research projects

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

DEMENTIA: PROF MARC COMBRINCK, DIVISIONS OF GERIATRIC MEDICINE AND NEUROLOGY

Research projects:

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

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

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

Permanent and Long-Term Contract Staff

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BSc Hons 1
Total 7

Research Fields and Staff

ASSOCIATE PROFESSOR A. BRYER
Cerebrovascular Disease; Neurogenetics.

ASSOCIATE PROFESSOR J. HECKMANN
Myasthenia gravis and neuromuscular disease; HIV-associated neuromuscular disease, Neurogenetics.

DR E. LEE PAN
Health systems information technology; multimedia teaching.

DR L TUCKER
Epilepsy.

DR BATEMAN
Infectious Disease Neurology; TBM, HIV peripheral nervous disease, Stroke

Contact Details

Postal Address: E8, New Groote Schuur Hospital, Observatory, 7925
Telephone: +27 21 404 3198
Fax: +27 21 406 6251
Email: alan.bryer@uct.ac.za

RESEARCH OUTPUT

Chapters in books


Articles in peer-reviewed journals


and Lung Disease, 18(7): 876-878.


Caire-Bandli, I., Papadopoulous, A., Malaga, W., Marais, A.D., Canaan, S., Thilo, L.R. and De Chastellier, C. 2014. Reversible lipid accumulation and associated division arrest of mycobacterium avium in lipoprotein-induced foamy macrophages may resemble key events during


hypercholesterolemia on maximally tolerated doses of statins: rationale and design of the ODYSSEY COMBO I and II trials. BMC Cardiovascular Disorders, 14: 121(10pp).


Kengne, A.P., Sliva, K., Mayosi, B.M., Murray, C.J.L. and Lim, S. 2014. Global, regional, and national incidence and mortality for HIV, tuberculosis, and malaria during


O’Byrne, P.M., Woodcock, A., Bleecker, E., Bateman, E.D., Lotvall, J., Forth, R., Medley, H., Jacques, L. and Busse, W. 2014. Efficacy and safety of once-daily fluticasone furoate...


Schwartz, P.J. and Volders, P.G. 2014. How far under the nerves should we dig to find out why LQT1 patients die? Journal of the American College of Cardiology, 63(8): 828-830.


Symons, G.J. 2014. Anticoagulation: where have we come from and where are we going? The evidence for and against novel anticoagulants. SAMJ South African Medical Journal, 104(2): 143-146.


Woodcock, A., Lotvall, J., Busse, W., Bateman, E.D., Stone, S., Ellsworth, A. and Jacques, L. 2014. Efficacy and safety of fluticasone furoate 100 g and 200 g once daily in the treatment of moderate-severe asthma in adults and adolescents: a 24-week randomised study. BMC Pulmonary Medicine, 14: 113(1-10).


Peer-reviewed published conference proceedings


DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

Head of Department: Professor Lynette Denny

Departmental Profile

Our Mission Statement

- To provide high quality care to all women seeking our services
- To foster a climate of intellectual enquiry
- To pursue excellence in research at every level of care
- To help create a world-class African University

Research is predominantly clinical some of which is aligned with our four sub-specialist areas: feto-maternal medicine, gynaecological oncology, reproductive medicine and Urogynaecology. However a large amount of research takes place at our secondary level hospitals, Mowbray Maternity Hospital and Somerset Hospital. Research is conducted at all levels of care and comprises participation in large, international, collaborative trials, cutting edge national research projects, self-initiated local and collaborative studies, as well as smaller individual projects. Several important clinical data bases have been established which provide valuable information in maternal and fetal medicine, Gynaecology oncology and reproductive medicine. More recently basic clinical science research is also becoming established with capacitating existing laboratory space to perform molecular work with particular emphasis on the understanding of early maternal-fetal dialogue, placentation, and the pathophysiology of preeclampsia. In addition, our Undergraduate Teaching Unit is actively engaged in education research. Research supervision is provided at the level of MMed and MPhil dissertations and PhD theses to registrars, sub-specialist trainees and staff.

Obtaining a MMed is now a compulsory requirement by the HPCSA for specialist registration, which has greatly increased the need for research supervisors. All our registrars participate in the research workshop facilitated by Faculty. In addition, our Department took the initiative to have all registrars undergo formal GCP (Good Clinical Practice) training. Our Department has 25 funded registrars in specialist training and 13 supernumerary registrars (all self-funded), the majority of who are non-South African from Malawi, Botswana, Uganda and Zimbabwe. The Department holds an annual registrar research day and an annual departmental research day showcasing research projects and results.
Research findings are also presented at national and international conferences and published in peer-reviewed journals. Maintaining research productivity against a backdrop of a high clinical and teaching workload is an ongoing challenge.

**Undergraduate teaching**

In 2014 there were 1261 students registered in the Faculty of Health Sciences over the 6 years of the MBChB course. The Department was responsible for tuition in Years 3, 4, 5 and 6 in both Obstetrics and Gynaecology. Thus during 2014 approximately 800 students were taught by the O&G Department.

**Awards and other major highlights**

Professor Lynette Denny: President – International Society of Gynecologic Cancer (ended Nov 2014); Chair – FIGO Gynaecologic Oncology Committee; Secretary Treasurer – AORTIC (African Organisation for Research and Training in Cancer); Programme convenor for biennial AORTIC international conferences; Finalist in 17th NSTF BHP Billiton awards for 2014-15; Chair of Data Safety Monitoring Boards (2 versus 3 doses of HPV vaccination spanning 10 sites in India; International Partnership for Microbiocides: randomised trial of vaginal dapavarine ring for prevention HIV transmission). In addition, Keynote lectures given at ANZGOG/ASGO 2014 Combined Scientific Meeting, Canberra, and the Royal Hospital for Women, Sydney, and presentations given at a number of International Conferences.

**Departmental Statistics**

**Permanent and Long-Term Contract Staff**

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<td>Chief Specialist and Level 2 Head</td>
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<td>Subspecialist trainees (full time)</td>
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**Students**

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**RESEARCH FIELDS AND STAFF**

**PROFESSOR LYNETTE DENNY**

Cervical cancer: prevention in low-resource settings; natural history; precursors in HIV positive women. Other gynaecological cancers: management of endometrial, ovarian cancer and advanced vulval cancer. HPV: prevalence, types; vaccination, DNA typing.

**PROFESSOR SILKE DYER**

Infertility: health-services in low-resource settings, psychosocial consequences, quality of life, HIV. Monitoring availability, effectiveness and safety of Assisted Reproductive Technology in sub-Saharan Africa.

**PROFESSOR SUSAN FAWCUS**

Maternal mortality; Perinatal mortality; Intrapartum asphyxia; Magnesium supplementation in pregnancy; Better Birthing Initiative. Calcium and pre-eclampsia trial (co-investigator Associate Professor John Anthony). Obstetric haemorrhage pilot project. Multicentre collaborative study. (Co-investigator Associate Professor J Anthony).

**PROFESSOR ZEPHNE VAN DER SPUY**

Contraceptive and interpretive development; Polycystic ovary syndrome; Reproductive failure; Endocrine dysfunction in pregnancy; Menopause; Nutrition and reproductive health; Genetics of benign gynaecological conditions.

**ASSOCIATE PROFESSOR JOHN ANTHONY**

Thrombophilia; Eclampsia; Bioethics.

**DR SAADIQA ALIE**

Obstetric hysterectomy; Teenage pregnancy.

**DR KENDALL BROUARD**

The effects of pelvic organ prolapse on female sexual function. Surgery for Pelvic organ prolapse. The role of urodynamic studies in the management of women with urinary incontinence.

**DR ANNE HORAK**

High risk obstetrics; Fetal cardiac abnormalities.
DR STEPHEN JEFFERY
Refractory overactive bladder syndrome: treatment, epidemiology; HIV and obstetric pelvic floor trauma; surgical repair of posterior compartment prolapse; interdisciplinary patient care;

DR LYNELLE KENNETH
IUCD in HIV positive women

DR MUSHI MATJILA
Fetal Anomalies: Antenatal Pyelectasis; Reproductive endocrinology in normal and abnormal pregnancies. PhD thesis (in process): “The role of Kisspeptin and cognate receptor GPR 54 in placentation”.

DR NOMONDE MBATANI
Uterine sarcomas: outcome of treatment; Treatment outcome and complications of gynaecological malignancy.

DR VANESSA PERROTT
Medical education

DR GREG PETRO
Clinical epidemiology; Haemorrhage and transfusion in the obstetric patient; Termination of pregnancy.

DR LINDA ROGERS
Vulval cancer, MRI Imaging in endometrial and cervical cancer, optimal management of early stage cervical cancer, outcome of ovarian cancer in developing countries.

DR LEANN SCHOEMAN
High-risk obstetrics; Audit of clinical obstetric management; cardiac disease in pregnancy.

DR VALENTIN STEFAN
Haemorrhage and transfusion in the obstetric patient.

DR CHANTAL STEWART
Fetal medicine; Women’s expectations of and attitudes to fetal anomaly scans; Preterm labour; Ultrasound screening for risk of pregnancy complications.

DR HENRIETTE VAN ZYL
Pre-eclampsia, eclampsia and complications; High risk obstetrics; Laparoscopic surgery; Caesarian section: prevalence and outcome.

DR LINDA WALMSLEY
Infertility: Quality of life, HIV

Sub-specialty trainees
Dr Dominic Richards: Gynaecological Oncology
Dr Kamendran Govender: Gynaecological Oncology
Dr Tebogo Deo: Reproductive Medicine (part-time)
Dr Nuru Nakintu: Reproductive Medicine (part-time)
Dr L Walmsley: Reproductive Medicine

Registered PhD Students
Dr Rakiya Saidu

General

Visitors
Professors Steve Lindow, Phil Steer, Rafique Parker, Debbie Murdoch-Eaton, Dr Frank Taulo, Dr Ron Mataya

Honorary Members
Professor Phil Steer
Associate Professor Steve Lindow
Associate Professor Catherine Mathews
Associate Professor Ivo Meinhold
Associate Professor Rafique Parker

Contact details
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Tel: work: 27 21 404 4485 (secretary: Jill Artlett)
Fax: 27 21 448 6921
Email: lynette.denny@uct.ac.za

RESEARCH OUTPUT

Articles in peer-reviewed journals


DEPARTMENT OF PAEDIATRICS AND CHILD HEALTH

Head of Department: Professor Heather Zar

Departmental Profile

The Department of Paediatrics and Child Health is a large department in the Faculty of Health Sciences, encompassing the field of general paediatrics as well as a full spectrum of paediatric medical subspecialties. Other disciplines affiliated with the Department make up the School of Child and Adolescent Health.

The department has a wide breadth of clinical research activities with a substantial research output especially in the areas of priority child health problems such as tuberculosis, pneumonia, infectious diseases and HIV. In 2013, a new, expanded clinical research unit, the Research Centre for Adolescent and Child Health (REACH) was opened at Red Cross War Memorial Children’s Hospital, as the existing unit had been outgrown. Current studies located in REACH include studies of childhood pneumonia, diarrhoea, pertussis, paediatric TB and of HIV-associated illness in adolescents. There are approximately 40 staff members located in REACH, funded on grant support, mainly awarded by international funding agencies including the National Institute of Health (NIH) USA, Wellcome Trust, and the Gates Foundation. REACH serves as a central hub supporting satellite clinical research sites in secondary and community based facilities. With the growth of clinical research in the Department there has been an exponential increase in the number of postgraduate masters and PhD students.

A unique birth cohort study, the Drakenstein Child Health study funded by the Gates Foundation, to investigate the early life determinants of child health is now well established in Paarl; this study involves collaborations across a number of departments in the Faculty of Health Sciences and with several international collaborators. In 2014 the MRC awarded a unit in Child and Adolescent Health, the first MRC unit to be established in the Department. There are 3 NRF rated researchers in the Department including one A-Rated person.

General Paediatrics

- Emergency Unit
- Inpatient unit
Subspecialties

- Adolescent Medicine
- Allergy
- Cardiology
- Critical Care
- Endocrine
- GIT
- Haematology/Oncology
- Infectious Diseases
- Neonatology
- Nephrology
- Neurodevelopment
- Neurology
- Pulmonology
- Rheumatology

Affiliated Disciplines

- Allied Health Sciences
- Child & Adolescent Psychiatry
- Child Health Unit
- Children's Institute
- Dermatology
- Nuclear Medicine
- Paediatric Anaesthesia
- Palliative Care
- Paediatric Pathology
- Paediatric Radiology
- Paediatric Surgery
- Poisons Centre
- South African Tuberculosis Vaccine Initiative (SATVI)-IIDMM

Departmental Statistics

Permanent and Long-Term Contract Staff

<table>
<thead>
<tr>
<th>Role</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professors</td>
<td>3</td>
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<tr>
<td>Associate Professors</td>
<td>10</td>
</tr>
<tr>
<td>Emeritus Professors</td>
<td>3</td>
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<tr>
<td>Emeritus Associate Professors</td>
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<tr>
<td>Honorary Senior Lecturers</td>
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<tr>
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</tr>
<tr>
<td>Senior Lecturers (full time)</td>
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<tr>
<td>Lecturers (full time)</td>
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<td>Senior Lecturers (part time)</td>
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<td>Research Staff</td>
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<td>Administrative and clerical staff</td>
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<td><strong>Total</strong></td>
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Students

<table>
<thead>
<tr>
<th>Degree</th>
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<td>Doctoral</td>
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<tr>
<td>Masters</td>
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<tr>
<td>M Phil</td>
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<tr>
<td>PG Diploma (Child Nurse Practice)</td>
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<tr>
<td>Undergraduate</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>710</strong></td>
</tr>
</tbody>
</table>

Research Fields and Staff

**J. AHRENS**
Review of respiratory virus infections of children admitted to the PICU; Analysis of reasons for refusals or acceptance of patient referrals to the PICU.

**A.C. ARGENT**
Respiratory mechanics in croup; respiratory mechanics and endotracheal suctioning; electrical impedance tomography and respiratory disease in the PICU; care practices and inter-personal relationships in ICU; quality of care and safety in the PICU; management of traumatic brain injury in PICU; HIV in the PICU; fluids in the critically ill; prevention of nosocomial infections including ventilator associated pneumonia and central line sepsis; viral infections in the PICU; cardiomyopathy / myocarditis in children; ethical issues in resource allocation in the PICU; severe sepsis and septic shock; “Pathways to care” for critically ill children; training and simulation training for healthcare workers working with critically ill or injured children.

**H. BARLOW**
Nurses and Care; protocols of care and quality in healthcare.

**H. BUYS**
Ambulatory, emergency and outreach care; paediatric HIV disease and nutrition; diarrhoeal disease.

**M. CARRIHILL**
Type 1 diabetes in the South African youth; Neonatal screening programmes; Disorders of sex development.

**M COETZEE**
Improvement science in clinical paediatrics; models of paediatric nursing care; participative approaches
– postgraduate curriculum development and clinical practice development

**G. COMITIS**
Rheumatic fever and rheumatic heart disease; the genetic basis of congenital and acquired heart disease; the cardiovascular health of patients on HIV therapy; the future cardiac health of normal children; operational research relating to the burden of disease of congenital and acquired heart disease in the Western Cape; myocarditis and cardiomyopathy.

**M.L. COOKE**
General paediatrics and gastroenterology

**A. DAVIDSON**
Paediatric brain tumours; B-cell malignancy and other HIV-related cancers in children; Genetic syndromes predisposing to childhood cancer; Stem Cell Transplantation for Immunodeficiency.

**C. DAVIS**
Paediatric critical care, nurse to nurse communication and the action research methodology

**R. DE DECKER**
Rheumatic fever and rheumatic heart disease; the genetic basis of congenital and acquired heart disease; the cardiovascular health of patients on HIV therapy; the future cardiac health of normal children; operational research relating to the burden of disease of congenital and acquired heart disease in the Western Cape; myocarditis and cardiomyopathy.

**R. DE LACY**
Cystic fibrosis; gastroenterology; liver transplantation.

**S. DELPORT**
Abnormalities of growth; abnormal pubertal development; advances in diabetes care.

**R. DIEDERICKS**
Emergency paediatrics; Infectious Diseases.

**K. DONALD**
Developmental disabilities as they manifest and are managed in resource limited settings such as South Africa (including Cerebral palsy, Autism, Intellectual disability, genetic syndromes). Specific interests include the preventable causes of neurodisability such as alcohol and methamphetamine exposure, organophosphate poisoning and the neurological and neurocognitive complications of HIV.

**R. DUNKLEY**
Learning from mortality; improving flow and bed management in the hospital to cope with the Surge season

**B.S. ELEY**
Primary immune deficiency disorders; paediatric tuberculosis; paediatric HIV/AIDS; paediatric infectious disease.

**P. GAJJAR**
Renal disease; paediatric organ transplantation especially infectious complications; paediatric hypertension including Takayasu’s Arteritis; acute renal failure and peritoneal dialysis; paediatric HIV nephropathy; adolescent medicine.

**E. GODDARD**
Paediatric liver disease; transplantation in children; immunology; paediatric infectious disease; paediatric gastroenterology and nutrition.

**C. GRAY**
Food allergies and eczema

**M. HARRISON**
Preterm outcomes; Neonatal respiratory disease; Hypoxic Ischaemic Encephalopathy.

**M. HENDRICKS**
Clinical Outcomes in children with rhabdomyosarcoma at Red Cross Children’s Hospital.

**M.K. HENDRICKS**
Public health nutrition; children’s rights; community child health

**I. HENDRY**
Post-graduate education; clinical nursing research and forensic nursing

**L. HENLEY**
Research ethics

**J. HEWITSON**
Resource allocation and cardiovascular disease; Trisomy 21 and cardiovascular disease; surgical management of patients with a single ventricle.

**A. HORN**
Hypoxic Ischaemic Encephalopathy and cost effective neonatal care.

**Y. JOOLAY**
Neonatology

**M. KIBEL**
Child Health generally (Community Paediatrics), and Childhood TB

**S.M. KROON**
Mother-to-child transmission of HIV; Human Milk Banking

**A. LEONARD**
Implementation research (evidence based practice and improvement research)
M. Levin
Genotypic and phenotypic features of allergic Xhosa children; Prevalence and associations of food allergy in unselected children in Cape Town and in the Eastern Cape; relationship between food allergy and atopic dermatitis; the impact of demographic, environmental, nutritional and infectious influences on the expression of allergy and atopy within the Drakenstein birth-cohort study; allergy and atopy in children with Vernal Kerato-conjunctivitis; communication issues in management of asthma and allergy in indigenous people in South Africa.

J. Lawrenson
Rheumatic fever and rheumatic heart disease; the genetic basis of congenital and acquired heart disease; the cardiovascular health of patients on HIV therapy; the future cardiac health of normal children; operational research relating to the burden of disease of congenital and acquired heart disease in the Western Cape; myocarditis and cardiomyopathy.

L. Linley
Kangaroo mother care; HIE and the effect of head cooling; ethical issues in neonatal care.

M. McCulloch
Acute kidney injury especially in PICU setting; Acute Peritoneal dialysis in Children and Infants; Fluid management in Emergency and PICU settings; Transplantation (Renal, Liver and Cardiac) as well as Development of Paediatric Transplantation programmes and Young Adult Transition; Long-term follow-up of steroid withdrawal in transplantation; Takayasu’s arteritis; Atypical hemolytic uremic syndrome; Training of African Fellows in PICU/Nephrology and Challenges faced on return home

G. Moller
Neonatal jaundice

B. Morrow
Paediatric respiratory disease; nosocomial infections in the PICU; respiratory mechanics; cystic fibrosis; resource allocation in PICU; mechanical ventilation; paediatric cardiopulmonary physiotherapy; research ethics.

R. Muloiwa
Pertussis in children with Respiratory Tract Infection (RTI).

S. Naidoo
Aeroallergen sensitisation and the prevalence of asthma, allergic rhinitis, and eczema in children with Vernal Keratoconjunctivitis.

A. Ndondo
Hydatid disease of the spine; epilepsies in childhood; neurometabolic disorders; the ketogenic diet in the African context; Rett syndrome; optimal management of refractory status; non-polio enterovirus infections; childhood stroke.

P. Nourse
Peritoneal dialysis; glomerulonephritis including HIV.

J. Nuttall
Infants, children and adolescents with HIV infection and HIV/TB co-infection including early infant diagnosis; performance of HIV rapid tests in young children; drug dosing and pharmacokinetics; treatment failure and drug resistance. Antimicrobial stewardship.

R. Petersen
Cerebral Palsy.

M.S. Raban
Neonatology

V. Ramanjam
Phenotype, neuroimaging and neurocognitive characteristics of children with neurofibromatosis type 1; DAX1 mutation; investigating the prevalence, comorbidities and responses to different forms of medical therapy for children and adolescents with ADHD.

M. Richards
General and Developmental medicine

G. Riordan
Paediatric epilepsy, mitochondrial disease and ADHD.

B. Rossouw
Cardiac critical care: dilated cardiomyopathy in RCWMCH PICU; ALCAPA in RCWMCH PICU

P. Roux
Early Childhood Development and psycho-social aspects of care for children and adolescents with HIV/AIDS.

S. Salie
Sepsis, HIV and fluid resuscitation.

B. Schlegel
Tuberculosis.

C. Scott
Paediatric Systemic Lupus Erythematosus; Juvenile Idiopathic Arthritis; Fibrodyplasia Ossificans Progressiva; HIV Arthropathy; Juvenile Dermatomyositis and Childrens Rights; Takayasus’ Arteritis.

A. Spitaels
Paediatric endocrinology, metabolism and diabetes; social circumstances, diabetes control, intersex.

G. Swingler
Systemic literature reviews; training & mentoring in midwifery, falls in the elderly; teaching decision making in complex systems; hypoxic ischaemic encephalopathy.

C. Thompson
Follow-up of the high risk infant; HIE and the effect of head cooling
L. TOOKE
Neonatal research especially congenital infections, HIV and the care of the VLBW.

A. (NIKI) VAN NIEKERK
Neonatology and Neonatal cardiology.

A. VANKER
Indoor air pollution and tobacco smoke exposure and the effects on lung health. Determinants of childhood respiratory diseases.

K. WALKER
Sydenham’s chorea: post streptococcal movement disorders. Point of care INR testing. Cardiac management of Duchenne’s Muscular Dystrophy. HIV encephalopathy and HIV associated neurocognitive deficits in children. Use of Methylphenidate and management of ADHD in HIV.

A.T. WESTWOOD
Coordination of health services; quality of health care; Epidemiology, diagnosis and management of cystic fibrosis in South Africa; management of acute diarrhoea; causes of death among children; epidemiology of chronic illness in South Africa; health systems for children with long-term health conditions; policy perspectives on children with long term health conditions; epidemiology of gastroenteritis in the Cape Metro.

P. WICOMB
Medical Education

J. WILMSHURST
Spinal muscular atrophy; limb girdle muscular dystrophy; peripheral neuropathies; congenital myopathies; complex epilepsies in childhood; role of video telemetry in paediatric neurology practice; neurofibromatosis; paediatric spinal pathologies; neuroradiological diagnostic and prognostic indicators of TBM, neurological manifestations of HIV; rare neuromuscular disorders; tuberous sclerosis; ketogenic diet in epilepsy; child neurology training in Africa; child neurology service capacity in Africa; guidelines for management of epilepsy disorders (for the ILAE).

M. ZAMPOLI
Childhood respiratory infections; HIV-associated lung disease; Cystic fibrosis; respiratory manifestations of neuromuscular disease and Sleep medicine.

H. ZAR
Childhood TB (specifically new diagnostic strategies), childhood pneumonia, HIV-associated lung disease; childhood asthma. Drakenstein child lung health study, a birth cohort study to investigate the antenatal and early life determinants of child health

Contact Details
Postal Address: Department of Paediatrics and Child Health, University of Cape Town, Red Cross Children’s Hospital, Rondebosch, 7700
Tel: +27 21 658 5324
Fax: +27 21 689 1287
Web: www.paediatrics.uct.ac.za
UCT General enquiries: +27 21 650 9111
UCT web: www.uct.ac.za
Research coordinator: Geanine Hopley @ 021-6860086
Email: geanine.hopley@uct.ac.za
ALLIED HEALTH SCIENCES

Unit Representative: Sameer Rahim

Department Structure

Manager [Head of Unit] of Allied Health Professionals: Dr Roshni Mistry
HOD of each department:
• Dietetics: Shihaam Cader
• Occupational Therapy: Mereille Pursad
• Physiotherapy: Sameer Rahim
• Audiology: Colleen Cox
• Social Worker: Carla Brown (acting)
• Speech Therapy: Lezanne le Roux

Unit Profile

The Unit of Associated Paediatric Disciplines is multidisciplinary, including all the paediatric therapy professions of Physiotherapy, Occupational Therapy, Dietetics/Nutrition, Speech Therapy, Audiology and Social Work. The Division undertakes undergraduate and postgraduate teaching and training in all aspects of paediatric care, both acute and chronic. The Division is active in conducting research in Paediatric fields, often collaborating with members of other Divisions. The individual departments also run departmental weekly and monthly CPD programs accredited by UCT. The division is actively involved in assisting with the development of local and National guidelines and is a resource nationally and internationally for the expertise held within the division.

The division has presented at various local and international congresses. Sameer Rahim is currently the Secretary of the World Federation of Haemophilia Musculo-Skeletal Committee. The division also regularly hosts locally and nationally recognised courses. Janine Verstraete lectured the 1st yr UCT Physiotherapy students. The division is actively involved in supporting the training needs of all 3 Western Cape Universities by providing a clinical training platform.

Unit Statistics

Permanent and Long-Term Contract Staff (PGWC)

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
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<tbody>
<tr>
<td>Permanent staff (Full time)</td>
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<tr>
<td>Permanent staff (Part time)</td>
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<tr>
<td>Community service</td>
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<tr>
<td>Total</td>
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Students

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<th>Level</th>
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<tbody>
<tr>
<td>Masters</td>
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<tr>
<td>Undergraduate students</td>
<td>126</td>
</tr>
<tr>
<td>Elective registered via UCT</td>
<td>4</td>
</tr>
<tr>
<td>Post graduate students (nursing and allied health)</td>
<td>Approx. 140</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>274</strong></td>
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Research Fields and Staff

LEZANNE LE ROUX (SPEECH THERAPY)
The Nature of Feeding and Swallowing Difficulties in the Paediatric Cerebral Palsy Population Who Have Had Videoflouroscopic Swallow Studies. (graduated June 2014)

SHAFEEQAH NANA (SPEECH THERAPY)
Master’s in Early Communication Intervention (course work) – Univ of Pretoria (completion expected November 2015)

DES SCOTT (PHYSIOTHERAPY)

JANINE VERSTRAETE (PHYSIOTHERAPY)
MSc Physiotherapy: Development of an English Health Related Quality of Life measure, for children under the age of 6, to be completed by proxy

LIESELOTTE CORTEN (PHYSIOTHERAPY)
PhD Student
The use of Assisted Autogenic Drainage in children with acute respiratory disease in a developing country.

SHIHAAM CADER [IN COLLABORATION WITH EDWARD KIJA FROM NEUROLOGY]
Bone metabolism abnormalities in children with Epilepsy at Red Cross War Memorial Children’s Hospital, Cape Town South Africa. (commence 2014)

TRACY HARRIS HORLIN (AUDIOLGY)
Masters in Public Health (University of Pretoria)
The Division of Child & Adolescent Psychiatry (DCAP), is based at 46 Sawkins Road, Rondebosch, and is part of the Department of Psychiatry and Mental Health. Clinical services are provided as part of Red Cross War Memorial Children’s Hospital. As such, DCAP therefore works in close collaboration between the departments of Psychiatry and Paediatrics. The clinical services are offered by four main teams: an Outpatient Team, a Consultation-Liaison Team, an Infant Mental Health Team and by the Therapeutic Learning Centre (TLC), an in-patient unit for children under 13 years. The Division is very active in training across disciplines, ranging from medical students, psychiatric registrars (M.Med) to advanced nursing students and clinical psychology interns. The Division offers a two-year M. Phil. (Child and Adolescent Psychiatry) degree, which leads to registration with the HPCSA as a sub-specialist in Child and Adolescent Psychiatry. In addition, staff members in the Division supervise candidates for postgraduate degrees such as Master’s and Doctoral degrees.

Research at DCAP is organised around five main themes:

1. Centre for Autism in Africa – an interdisciplinary, interfaculty research group with interest in building a research base for research about autism in Africa. Activities include tool development, translation, validation, training and involvement with NPO sector. (Director: Prof Petrus de Vries).

2. Adolescent Health Research Unit – a UCT-accredited research unit with specific focus on health and health promotion in adolescents. The AHRU has five key research themes that include sexual and reproductive health, adolescent mental health, intimate partner violence, abuse and bullying, and health systems research. Recent activities included a large-scale intervention trial of a school-based education programme to reduce risk behaviours and intimate partner violence in 12-14 year olds in the Western Cape Province (Director: Prof Petrus de Vries; Co-director: A/Prof Cathy Mathews).

3. Tuberous Sclerosis Complex Research Programme – an international research programme, specifically focusing on molecularly targeted treatments of TSC and the neuropsychiatry of TSC. Recent activities included development and validation of a checklist for the neuropsychiatric manifestations of the disorder (Lead: Prof Petrus de Vries).

4. Infant Mental Health Programme – A developmental research programme of parent-infant mental health work focusing on mentalisation and mentalisation-based interventions for high-risk families (Lead: A/Prof Astrid Berg)

5. DCAP Research Development Programme – a staff research development programme. Activities include research development workshops, writing workshops and research capacity building in existing staff (Lead: Prof Petrus de Vries)

Unit Statistics

**Joint staff**

<table>
<thead>
<tr>
<th>Role</th>
<th>Number</th>
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<tbody>
<tr>
<td>Professor</td>
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<tr>
<td>Associate Professor</td>
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</tr>
<tr>
<td>Emeritus Professor</td>
<td>1</td>
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<tr>
<td>Senior Lecturers</td>
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</tr>
<tr>
<td>Honorary Lecturers and Senior Lecturers</td>
<td>3</td>
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<tr>
<td>Administrative staff</td>
<td>1.2</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>13.2</strong></td>
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**Permanent provincial staff = 26**

**Trainee staff (junior registrars, senior registrars, intern psychologists) = 8**

**Students supervised by DCAP staff in 2014**

<table>
<thead>
<tr>
<th>Degree</th>
<th>Number</th>
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<tbody>
<tr>
<td>MSc (Neurosci)</td>
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<tr>
<td>M Med</td>
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<tr>
<td>M Phil</td>
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</tr>
<tr>
<td>PhD</td>
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</tr>
<tr>
<td>Other degrees</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

Contact Details

Postal Address: Division of Child and Adolescent Psychiatry, 46 Sawkins Road, Rondebosch, 7700
Tel: +27 21 685 4103
Fax: +27 21 689 1343
Please refer to the Psychiatry and Mental Health Research Report for publications by members of the Division of Child and Adolescent Psychiatry.
CHILD HEALTH UNIT

Director: Rotating Acting Head

Unit Profile

The Child Health Unit’s mission is to contribute to promoting equity in child health. The core business of the Unit is directed at children’s public health and community-oriented child health promotion, protection, care and rehabilitation.

The target of the Unit’s endeavours is those areas, which have a strong children’s public health and interdisciplinary focus, viz. child development and disability, community nutrition, infectious diseases and health policy and service development. The Unit has close links with the Children’s Institute.

Unit Statistics

<table>
<thead>
<tr>
<th>Permanent and Long-Term Contract Staff</th>
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<tbody>
<tr>
<td>Associate Professor (part-time)</td>
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<tr>
<td>Emeritus Professor (part-time)</td>
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<tr>
<td>Specialist</td>
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<td>Sub-specialist trainees</td>
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<tr>
<td>Administrative staff</td>
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<tr>
<td><strong>Total</strong></td>
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</tbody>
</table>

Research Fields and Staff

J. SHEA

Health promotion and education; the adaptation and piloting of a behavioural intervention to support HIV+ women in the core domains of health, mental health, parenting and HIV prevention for use by non-governmental organizations; an assessment of the feasibility of intervention trials on tuberculosis prevention in schools in the Western Cape Province; development of a certificate course in clinical research.

CHILDREN’S INSTITUTE

Director: Associate Professor Shanaaz Mathews

Institute Profile

The Children’s Institute aims to contribute knowledge and understanding to promotion of policies which govern improvement of child well-being, and fulfillment of the rights of all South Africa’s children, with special emphasis on children rendered vulnerable by a range of difficult circumstances. It addresses the needs and rights of South Africa’s children through policy research, advocacy and education and other academic activities that contribute to improvement in the policy analysis, formulation, implementation and evaluation processes.

Institute Statistics

<table>
<thead>
<tr>
<th>Permanent and Long-Term Contract Staff</th>
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<tr>
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<td>Senior Lecturers (Snr Researchers)</td>
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<td>Lecturers (Researchers)</td>
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<td>PASS (Administrative)</td>
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<tr>
<td>PASS (Scientific and Technical)</td>
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<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Students

| PhD                                    | 1 |
| Masters                               | 1 |
| Research intern                       | 1 |
| **Total**                              | **3** |

Research Fields and Staff

ASSOCIATE PROFESSOR SHANAAZ MATHEWS

Director; Children & violence, child protection, child abuse, gender policy, gender-based violence, evidence-based programming.

PROF RIA REIS

Honorary Professor; Transgenerational transmission of inequality, participatory approaches, parenting.

LIZETTE BERRY

Senior researcher; Social policy, early childhood development, child protection, child poverty.
PAEDIATRIC ANAESTHESIA

Head of Unit: Associate Professor
Jenny Thomas

Unit profile

The Unit of Paediatric Anaesthesia, a division of the Department of Anaesthesia (UCT) and SCAH, is responsible for the provision of anaesthesia for all children, infants and neonates undergoing surgery or procedures at the Red Cross War Memorial Children’s Hospital (RCWMCH) and Maitland Cottage Children’s Home. This department also provides acute, chronic and palliative care services for the children at this hospital, as well as providing input into the Paediatric Intensive Care services. The Paediatric Pain Team is a multidisciplinary group which falls under Paediatric Anaesthesia, run by Professor Thomas. These include SRN Angeline Schrikker (nurse practitioner in pain) and a number of other volunteers from nursing, child and family psychotherapists, child life specialists, aroma therapy, physiotherapy, and art therapy.

Staffing

The head of this clinical unit is Associate Professor Jenny Thomas, with the following fulltime paediatric anaesthesia specialists: Dr Graeme Wilson, Dr Rebecca Gray, Dr Karmen Kemp, Dr Kotie Bester and Dr Heidi Meyer. The other three specialists rotate on a regular basis between GSH, Maitland Cottage and RCWMCH. There are 5 positions for registrars in training at RCWMCH.

In addition to teaching, training and lecturing at both undergraduate and post graduate levels, members of the department have lectured nationally and internationally. They also teach and train members of other disciplines which include paramedics, nurses, surgeons, pharmacists, emergency medicine trainees and family medicine practitioners. Professor Thomas and Dr Myburgh also teach on APLS courses.

Ms Melissa Williams provides much-needed administrative assistance to all members of this division. This has made a considerable difference to the efficient functioning of our paediatric anaesthetic faculty. Her position has recently been made permanent, which is a very positive appointment.

Unit statistics

Permanent and long term contract staff

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Associate Professor</td>
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</tr>
<tr>
<td>Specialists</td>
<td>8</td>
</tr>
<tr>
<td>Registrars</td>
<td>5</td>
</tr>
</tbody>
</table>
### Research fields and staff

**ASSOCIATE PROFESSOR JENNY THOMAS**
Acute and chronic pain management, palliative care, analgesia and sedation, burns, conjoined twins, paediatric trauma and orthopaedics, HIV and Aids, transplantation, neonatal anaesthesia and pain, general paediatric surgery, peri-operative behavioural disorders, paediatric peri-operative audits of deaths and critical adverse event reporting.

**GRAEME WILSON**
Paediatric pharmacology, total intravenous anaesthesia techniques, target-controlled anaesthesia, cardiothoracic anaesthesia.

**REBECCA GARY**
Simulation in paediatrics and anaesthesia, Transfusion medicine, vascular access, premature infants, ultrasound applications, cardiacs, general paediatric surgery and burns.

**KARMEN KEMP**
Cardiac anaesthesia, childhood malignancies, general surgery, teaching, regional anaesthesia and pain medicine.

**KOTIE BESTER**
Ultrasound and echocardiography applications in paediatric anaesthesia, modalities for analgesia and sedation, interventional radiology and MRI.

**HEIDI MEYER**
Morbidity and mortality in anaesthesia, regional anaesthesia, neonatal surgery, spinal and orthopaedic surgery, analgesia and sedation techniques for children, Supernumerary fellowships in paediatric anaesthesia have been running for a number of years and two Kenyan anaesthetists have trained here, with another anaesthesiologist from Kenya training at present, as well as numerous South Africans.

The plan is to find funding for these to ensure sustainability for this training in paediatric anaesthesia.

A number of private paediatric anaesthetists do sessions at RCWMCH and Maitland Cottage Hospital, and these include Drs Tony Butt, Lance Thompson, Patrick Purcell, Dorothea Urbach, and Nicky Stilwell.

For the research and publication profile, please refer to the Department of Anaesthesia, UCT.

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**Contact Details**
Postal address: Division of Paediatric Anaesthesia, University of Cape Town, D Floor, Red Cross War Memorial Children’s Hospital, Klipfontein Road, Rondebosch, 7700, Cape Town, South Africa.
Tel: +27 21 6585003 / 6585105
Administrative: +27 21 6585183
Web: web.uct.ac.za/depts/ich
UCT General enquiries: +27 21 650 9111
UCT web: www.uct.ac.za
PAEDIATRIC DERMATOLOGY

Head of Unit: Dr Carol Hlela

Unit profile

Dr Carol Hlela is the Head of Paediatric Dermatology at Red Cross Hospital and managing of Adult inpatients and outpatients with varied skin conditions. She is the division’s only consultant that runs the clinical service and is assisted by dermatology registrars from Groote Schuur Hospital for two clinics a week and also two sisters of Red Cross Hospital.

Current Studies

She completed conducting a clinical trial at Red Cross entitled: Accessible and Affordable Moisturizers for Atopic Eczema, the 3AM Atopic Eczema Study. The aim of which is to find easily accessible moisturizers with a view to replace the standard of care regime. The intention of which is to empower patients and reduce the dependence on the health sector for moisturisers.

She is also currently conducting her own research in the following areas:

2. Epidemiology of HTLV-1 infection in South Africa, the forgotten epidemic. Carol Hlela, Maia Lesosky, Diane Hardie, Ravi Moodley, Edward Murphy. A project conducted in partnership with the national health services laboratory (NHLS).
3. Formulating a National Multicentre Registry of Infective Dermatitis Associated with HTLV-1 (IDH), a collaborative project with the South African Dermatology Society of SA.

Project collaborations are with

Prof Mike Levin from the Department of Allergy, University of Cape Town and the Switzerland based group of investigators including Drs. Akdis, Schmid-Grendelmeier and Weibel working on the research project entitled-Mechanisms of the Development of Allergy (SOS-ALL), which will aim to generate novel knowledge on the origin of the epidemic of IgE-associated allergic diseases, particularly mechanisms of initiation of allergy to propose early diagnosis, prevention and targets for therapy.

PAEDIATRIC NUCLEAR MEDICINE

Head of Unit: Dr A. Brink

Unit profile

The Paediatric Nuclear Medicine Service is part of the Department of Paediatric and Child Health. It provides the Nuclear Medicine investigations and therapy for all neonates and children being treated in facilities associated with UCT and supports State and Private Health Care facilities in the Western Cape and other provinces which do not have a dedicated Paediatric Nuclear Medicine Service. In addition, staff actively participate in the Division of Nuclear Medicine at Groote Schuur Hospital.

Registrars from a number of institutions spend time at the Children’s Hospital as part of their training, as do radiography students from Groote Schuur Hospital. Other activities include participation in International Congresses and the College of Nuclear Physicians.

Statistics

Permanent and Long-Term Contract Staff

<table>
<thead>
<tr>
<th>Role</th>
<th>Number</th>
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<tbody>
<tr>
<td>Senior specialist</td>
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<tr>
<td>Part-time specialist / Emeritus Associate Professor</td>
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<td><strong>Total</strong></td>
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Students

<table>
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</table>

Research fields

Renal scintigraphy, “milk” scans in gastro-intestinal motility disorders, limb perfusion in children with vascular compromise due to infection or burns, PET/CT applications in children, and brain perfusion scintigraphy.

Contact Details

Postal address: Paediatric Nuclear Medicine, University of Cape Town, 4th Floor, ICH Building, Red Cross War Memorial Children's Hospital, Klipfontein Road, Rondebosch, 7700, Cape Town, South Africa.
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UCT web: www.uct.ac.za
**PAEDIATRIC PATHOLOGY**

**Head of Histopathology Unit:**
Dr K. Pillay

**Unit profile**

The Unit of Paediatric Pathology is primarily an NHLS laboratory service unit to Red Cross Children’s Hospital and provides paediatric and neonatal services to other Western Cape Health Care Institutions. The pathology service functions as an amalgam of three sub units comprising: Anatomical Pathology, Chemical Pathology and Haematology. Undergraduate teaching activities are largely undertaken through equivalent disciplines at Groote Schuur Hospital and the Medical School of the University of Cape Town to medical and physiotherapy students. Postgraduate teaching is undertaken to MPhil (Paediatric Pathology), MMed (in all the pathology disciplines), and MSc and PhD students at UCT. Research activities are related to laboratory aspects of child health and molecular mechanisms underlying paediatric disease. Research also undertaken through collaborative projects with clinical colleagues, mainly in paediatrics and pediatric surgery.

**Unit Statistics**

**Permanent and Long-Term Contract Staff**

<table>
<thead>
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<th>Position</th>
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<tr>
<td>Senior Lecturers</td>
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<tr>
<td>NHLS Staff</td>
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**Students**

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<tr>
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</table>

**Research Fields and Staff**

**DR LEE-ANNE PHILLIPS**

Molecular genetics of paediatric leukaemias and neuroblastomas; paediatric myelodysplastic syndromes; haemophagocytic lymphohistiocytosis.

**DR KOMALA PILLAY**

Pathology of skeletal muscle; brain tumours; lymphomas.

**DR GEORGE VAN DER WATT**

Inherited metabolic disorders.

---

**Contact Details**

Postal Address: Paediatric Pathology, University of Cape Town, 3rd Floor, ICH Building, Red Cross Children’s Hospital, Klipfontein Rd, Rondebosch, 7700
Tel: +27 21 658 5209
Fax: +27 21 658 5206
Web: web.uct.ac.za/depts/ich/
UCT General enquiries: +27 21 650 9111
UCT web: www.uct.ac.za
PAEDIATRIC RADIOLOGY

Head of Unit: Dr. T. Kilborn

Unit profile

A clinical radiology department providing imaging to all divisions in the School, performing a total of approximately 40,000 examinations per annum. Imaging modalities include plain-film radiography, computed and digital radiography, digital fluoroscopy, ultrasound (including Doppler), computerised tomography (CT), magnetic resonance imaging (MRI), angiography and interventional radiology. The Division conducts a Postgraduate teaching program for three registrars registered for the M.Med (Diagnostic Radiology) at the University of Cape Town on an ongoing rotational basis and for one registrar registered at the University of Stellenbosch. An undergraduate lecture series in paediatric radiology is provided at 5th year level. Training in paediatric sonography is conducted for B.Tech (Ultrasound) students of the Cape Peninsula University of Technology.

In addition, the Division offers an annual Paediatric Radiology Fellowship, providing further training in the discipline for qualified radiologists. Fellows are registered for the University’s Postgraduate Diploma in Paediatric Radiology.

Unit Statistics

Permanent and Long-Term Contract Staff

| Lecturers | 3 |
| Radiographers and Aux. Staff | 30 |
| **Total** | **33** |

Students

| PhD | 0 |
| Registrars/Master’s | 4 |
| Fellow | 1 |
| **Total** | **5** |

Research Fields and Staff

T. KILBORN
Oncology, Neuro-imaging, HIV and TB, Pulmonary Imaging, Gastrointestinal

N. WIESELTHALER
Neuro-imaging; Orthopaedic imaging; Interventional Radiology

E. BANDERKER
Cardiac and Chest imaging, Orthopaedics, Imaging in Trauma

Contact Details

Postal Address: Paediatric Radiology, University of Cape Town, B Floor, Red Cross War Memorial Children’s Hospital, Klipfontein Rd, Rondebosch, 7700
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Fax: +27 21 658 5101
Web: web.uct.ac.za/depts/ich/
UCT General enquiries: +27 21 650 9111
UCT web: www.uct.ac.za

Please refer to the Department of Radiation Medicine Research Report for publications by members of the Division of Paediatric Radiology.
PAEDIATRIC SURGERY

Head of Unit: Prof. A. Numanoglu

Unit profile

The department functions as a tertiary and quaternary health care centre for paediatric surgery for the University of Cape Town and the Red Cross War Memorial Children’s Hospital. The department is a national/international centre for postgraduate paediatric surgical career development and is accredited with the HPCSA.

An extensive surgical outreach programme is in existence primarily to improve the surgical care of children at secondary and primary health care levels. The division is regarded as a national centre for minimally invasive surgery, surgical skills training, organ transplantation, specialized hepatobiliary surgery, oncology and burn care in children and for the separation of conjoined twins.

Research is being conducted in the department into a wide variety of aspects of paediatric surgical practice including gastrointestinal surgery, minimal invasive surgery, surgical skills training, trauma care and prevention, liver and renal transplantation, renovascular hypertension, burn therapy, pain assessment and management, conjoined twins and common diseases of Africa including tuberculosis and HIV/AIDS.

Unit Statistics

Permanent and Long-Term Contract Staff

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<td>Professor</td>
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<tr>
<td>Career Paediatric Surgical Registrars</td>
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<tr>
<td>African Fellowship Training Programme</td>
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<tr>
<td>Karl Storz Fellowship Programme</td>
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<tr>
<td>Research Technologists / Social Worker</td>
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<td>Administrative staff</td>
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Students

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<td>Master’s</td>
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<tr>
<td>Undergraduate</td>
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</table>

Research Fields and Staff

PROFESSOR A. NUMANOGLU
Minimal invasive surgery; transplantation; HIV/AIDS and diseases of the gastro-intestinal tract; teaching with technology; web based outreach; neonatal surgery

DR S. COX
Burns; surgical aspects of necrotising enterocolitis and other childhood general surgical conditions; Intussusception; surgical oncology; surgical neonatal outcomes

PROFESSOR A.B. VAN AS
Traumatology; child accident prevention; vascular injuries

PROFESSOR A.J.W. MILLAR
Biliary atresia, choledochal cysts, liver transplantation, renovascular hypertension, non-transplant surgery for short bowel syndrome, oesophageal replacement with colon, hepatoblastoma, bilateral Wilms’ tumour, surgical management of intestinal failure

EMERITUS PROFESSOR H. RODE
Burn and nutrition research; short bowel syndrome; HIV/AIDS; oncology and trauma.

ADJUNCT PROFESSOR R.A. BROWN
Gastrointestinal surgery; surgical endoscopy; constipation and gastro-intestinal polyposis.

DR D. VON DELFT
Laparoscopic & single port endoscopic surgery; thoracic surgery; surgical device development

DR R. ALBERTYN
Paediatric pain; rehabilitation and HIV/AIDS; web-based education

MS J. RAAD
Manometry and gastro-enterology.

Contact Details

Postal Address: Division of Paediatric Surgery, University of Cape Town, 6th Floor, ICH Building, Red Cross War Memorial Children’s Hospital, Rondebosch, 7700
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Fax: +27 21 685 6632

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UCT web: www.uct.ac.za
POISONS CENTRE

Head of Unit: Dr C. Roberts

Unit profile

The Poisons Information Centre maintains and distributes the AfriTox poisons information database designed to help clinicians in Southern Africa treat poisoned adults and children. All types of potentially toxic substances are included with a particular accent on local South African trade names and natural toxins. The treatment protocols are tailored for the South African situation. AfriTox is used at over 44 treatment centres countrywide and by both the other Poisons Centres, to underpin poisons advice given to health workers and the public. It is also distributed to centres in Botswana, Kenya, Mozambique, Nigeria and Zimbabwe. AfriTox is also used by doctors on smart phones, laptops and PCs.

The Poisons Emergency Telephone line is answered by the staff of the Poisons Information Centre during office hours on weekdays, and after hours in the Emergency Department of the hospital, using the AfriTox database. Data from telephone calls is collected in a database linked to AfriTox, called AfriTox TeleLog.

The Centre collects data on all children seen at Red Cross Children’s Hospital with known or suspected poisoning and on all calls received during working hours on the Poisons Emergency line.

Statistics

Permanent and Sessional Staff

| Medical officers | 2 |
| Pharmacists      | 2 |
| **Total**        | 4 |

Research Fields and Staff

All staff members are involved in data collection. Dr Kate Balme is responsible for case data on poisoning.

Contact Details

Postal Address: Poisons Information Centre, University of Cape Town, 4th Floor, ICH Building, Red Cross War Memorial Children’s Hospital, Klipfontein Rd, Rondebosch, 7700
Tel: +27 21 658 5308
Fax: +27 21 658 5331
Email: poisonsinformation@uct.ac.za

SOUTH AFRICAN TUBERCULOSIS VACCINE INITIATIVE (SATVI)

Head of Unit: Associate Professor Mark Hatherill

Unit profile

2014 was a year of change for SATVI, with the departure of Professor Willem Hanekom to join the Bill & Melinda Gates Foundation, several longstanding projects reaching successful completion, and two large proof-of-concept efficacy trials starting with a ‘bang’. It has also been an extraordinarily busy year, in which the SATVI clinical and laboratory teams have conducted clinical trials of no less than 7 tuberculosis vaccines and a novel jet injector device, in newborn, infant, adolescent, and adult study populations.

Highlights for the group include approval as an NIH Division of AIDS Clinical Research Site, formal accreditation as a University of Cape Town Research Centre, and renewal of the SATVI Laboratory SANAS accreditation. New operational systems developed by Chief Operating Officer Zameer Brey and Field Site Manager Marwou De Kock have improved efficiency across the board and renovations to the vaccination clinic will streamline procedures for the teams at the Worcester site. SATVI continued an excellent track record of research outputs, with 24 peer-reviewed publications for the year, with high impact publications including the findings of the RIFAQUIN tuberculosis treatment-shortening trial (Jindani et al), reported in the New England Journal of Medicine. There were many individual achievements, but two deserve special mention – Associate Professor Tom Scriba, Deputy Director Immunology and 2014 recipient of a Silver Medal from the Medical Research Council of South Africa, was awarded a high-profile grant from the MRC Strategic Health Innovation Partnership to study correlates of risk for tuberculosis; and Dr Michele Tameris was awarded her second Wellcome Trust grant, to study community engagement in tuberculosis research through street theatre.

Divisional Statistics

Permanent and Contract Staff

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<table>
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<td>Permanent staff</td>
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<tr>
<td>Fixed term contract staff</td>
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### Academic and Support Staff

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<tr>
<td>Academic staff</td>
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<tr>
<td>PASS staff</td>
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### Students and postdoctoral fellows

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<tr>
<td>Masters</td>
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### Research Fields and Staff

#### Research Staff

**MARK HATHERILL – DIRECTOR**  
TB vaccine development and testing; Epidemiology and diagnosis of TB in infants, adolescents and adults.

**THOMAS SCRIBA – DEPUTY DIRECTOR**  
Immunopathogenesis studies; TB vaccine development and testing; Correlates of risk of TB in infants and adolescents; adolescents and adults; Assay development.

**HENNIE GELDENHUYS**  
TB vaccine development and testing, including novel administration of vaccines; Epidemiology and diagnosis of TB in infants, adolescents and adults.

**ANGELIQUE LUBABA**  
TB vaccine development and testing; Epidemiology and diagnosis of TB in infants, adolescents and adults.

**MICHELE TAMERIS**  
TB vaccine development and testing; Epidemiology and diagnosis of TB in infants and adolescents; Drama as a vehicle for communicating research technology.

**ELISA NEMES**  
TB vaccine development and testing; Correlates of risk of TB disease in infants; Immunopathogenesis of TB and of TB/BCG/IRIS in infants, adolescents and adults.

**ADAM PENN-NICHOLSON**  
TB vaccine development and testing; Correlates of risk of TB disease in adolescents; Assay development.

**EDWARD MAKGOTHLO**  
Correlates of risk of TB disease in adolescents.

**HELEN MEARNS**  
Analysis of immune responses to novel vaccine strategies against TB.

### SARA SULIMAN
TB vaccine development and testing; Correlates of risk of TB disease in adolescents; Assay development.

### VIRGINIE ROZOT
TB vaccine development and testing; Correlates of risk of TB disease in infants; Immunopathogenesis of TB and of TB/BCG/IRIS in infants, adolescents and adults.

### MBANDI KIMBUNG
Correlates of risk of TB disease.

### Contact Details

South African Tuberculosis Vaccine Initiative (SATVI)  
Postal Address: Wernher and Beit Building South, Anzio Road, Observatory 7925  
Tel: +27 21 406 6791  
Fax: +27 21 406 6693  
Web: www.satvi.uct.ac.za  
UCT General enquiries: +27 21 650 9111  
UCT web: www.uct.ac.za

### RESEARCH OUTPUT

#### Authored books


#### Edited books


#### Chapters in books


Articles in peer-reviewed journals


Jindani, A., Harrison, T., Nunn, A.J., Phillips, P.P.J., Churchyard, G.J., Charalambous, S., Hatherill, M., Geldenhuys, H.D., McIlerson, H., Zvada, S.P., Mungofa,
violence: associations with low infant birthweight in a
L., Zar, H.J. and Stein, D.J. 2014. Intimate partner
Koen, N., Wyatt, G.E., Williams, J.K., Zhang, M., Myer,
One, 9(4): e93543(1-5).

Johnson, J.L., Geldenhuys, H.D., Thiel, B.A., Toefy, A.,
Suliman, S., Pienaar, B., Chcheng, P., Scriba, T.J., Boom,
W.H., Hanekom, W.A. and Hatherill, M. 2014. Effect of
isoniazid therapy for latent TB infection on QuantiFERON-
TB gold in-tube responses in adults with positive
tuberculin skin test results in a high TB incidence area: a

Kagina, B., Tameris, M.D., Geldenhuys, H.D., Hatherill,
M., Abel, B., Hussey, G.D., Scriba, T.J., Mahomed, H.,
Sadoff, J.C., Hanekom, W.A., Mansoor, N., Hughes, J., de
Kock, M., Whatnay, W., Africa, H., Krohn, C., Veldsman,
A., Luabeya, K.K.A., Douoguih, M., PAU, m., Hendriks, J.,
McClain, B., Benko, J., Snowden, M.A. and Hokey, D.A.
2014. The novel tuberculosis vaccine, AERAS-402, is safe
in healthy infants previously vaccinated with BCG, and
induces dose-dependent CD4 and CDBT cell responses.
Vaccine, 32: 5908-5917.

Ketharanathan, N., McCulloch, M., Wilson, C., Rossovou,
B. Salie, S., Ahrens, J., Morrow, B. and Argent, A.C.
2014. Fluid overload in a South African pediatric intensive

Kidzeru, E., Hesseling, A.C., Passmore, J., Myers, L.,
Gamieldien, H., Tchakoute, C.T., Gray, C., Sodora, D. and
Jaspan, H.B. 2014. In-utero exposure to maternal HIV
infection alters T-cell immune responses to vaccination in

Kleemann, B., Loos, B., Scriba, T.J., Lang, D.M. and
Davids, L.M. 2014. St John’s Wort (Hypericum perforatum
L.) photomedicine: Hypericin-Photodynamic therapy
induces metastatic melanoma cell death. PLoS One, 9(7):
e103762.

Knight, L., Muloiwa, R., Dlamini, S.K. and Lehloenya,
R.J. 2014. Factors associated with increased mortality in
aparently HIV-infected population with Stevens
Johnsson syndrome and toxic epidermal necrolysis. PLoS
One, 9(4): e93543(1-5).

Koen, N., Wyatt, G.E., Williams, J.K., Zhang, M., Myer,
L., Zar, H.J. and Stein, D.J. 2014. Intimate partner
violence: associations with low infant birthweight in a
South African birth cohort. Metabolic Brain Disease, 29:
281-299.

Kruger, M., Hendricks, M., Davidson, A., Stefan, C., Van
Childhood cancer in Africa. Pediatric Blood & Cancer, 61:
587-592.

Kruger, M., Stefan, D.C., Uys, R., van Zyl, A., Hesseling,
Pediatric Blood & Cancer, 61: 1525.

allergy in Africa: myth or reality? Clinical Reviews in Allergy & Immunology, 46: 241-249.

Kwiatkowski, M., Roos, A., Stein, D.J., Thomas,
K. and Donald, K.A.M. 2014. Effects of prenatal
methamphetamine exposure: a review of cognitive and
neuroimaging studies. Metabolic Brain Disease, 29:
245-254.

Ladapo, T.A., Nourse, P., Pillay, K., Frean, J., Birkhead,
M., Poonsamy, B. and Gajjar, P. 2014. Microsporidiosis in
pediatric renal transplant patients in Cape Town, South
Africa: two case reports. Pediatric Transplantation, 18:
e220-e226.


Le Roux, P., Menon, D.A., Citerio, G. and Figaji, A.A.
2014. Consensus summary statement of the International
multidisciplinary consensus conference on multimodality
monitoring in neurocritical care: a statement for
healthcare professionals from the Neurocritical Care
Society and the European Society of the Intensive Care
Medicine. Intensive Care Medicine, 40: 1189-1209.

Le Roux, P., Menon, D.A., Citerio, G., Vespa, P., Bader, M.K.,
Brophy, G., Diringer, M.N., Stocchetti, N., Videtta, W.,
Armonda, R., Badjatia, N., Boesel, J., Chestnut, R., Chou,
S., Claassen, J., Czosnyka, M., De Georgia, M., Figaji,
A.A., Fugate, J., Helbok, R., Horovitz, D., Hutchinson, P.
Kumar, M., McNett, M., Miller, C., Naidech, A., Oddo, M.,
Olson, D., O’Phelan, K., Provencio, J.J., Puppo, C., Riker,
The international multidisciplinary consensus conference on
multimodality monitoring in neurocritical care: a list of
recommendations and additional conclusions. Neurocritical
Care, 21: S282-S296.

Le Roux, P., Menon, D.K., Citerio, G., Vespa, P., Bader,
M.K., Brophy, G.M., Diringer, M.N., Stocchetti, N.,
Videtta, W., Armonda, R., Badjatia, N., Boesel, J.,
Chesnut, R., Chou, S., Claassen, J., Czosnyka, M.,
De Georgia, M., Figaji, A., Fugate, J., Helbok, R.,
Horovitz, D., Hutchinson, P., Kumar, M., McNett, M.,
Miller, C., Naidech, A., Oddo, M., Olson, D., O’Phelan,
K., Provencio, J.J., Puppo, C., Riker, R., Robertson, C.,
statement of the international multidisciplinary consensus
conference on multimodality monitoring in neurocritical
care: a statement for healthcare professionals from the
Neurocritical Care Society and the European Society of

family-friendly signage in a South African paediatric

Levin, M. 2014. Education for allergic rhinitis. Current
Allergy & Clinical Immunology, 27(2): 101-106.

S., Shah, N.A., Zizhou, S., Magweta, L., Shepherd, J.,
Nyrenda, S., van Dijk, J.H., Clouting, H.E., Coleman, D.,
Bateson, A., McHugh, T., Butcher, P.D. and Mitchison,
D.A. 2014. High-dose rifapentine with moxifloxacin
for pulmonary tuberculosis. New England Journal of
Medicine, 371: 1599-1608.


Wilmshurst, J., Birbeck, G.L. and Newton, C. 2014. Epilepsy is ubiquitous, but more devastating in the poorer regions of the world ... or is it? Epilepsia, 55(9): 1322-1325.


**Peer-reviewed published conference proceedings**


**PRIMARY HEALTH CARE DIRECTORATE**

Head of Department and Chair of Primary Health Care: Professor Steve Reid

Directorate Profile

The vision of the Primary Health Care Directorate is a Health Science Faculty that promotes equity and quality in health care, guided by the primary health care approach. The Directorate aims to promote the primary health care approach in teaching, research, policy, health services and community engagement by the Faculty of Health Sciences. Its objectives are to integrate a primary health care approach into the faculty’s undergraduate and postgraduate curricula by means of extending and developing the faculty’s clinical teaching platform in rural and primary care sites; deepening community engagement within the health service and the faculty’s curricula; enhancing the recruitment and support of students of rural origin in the faculty; and increasing interdisciplinary research in health sciences. The mission of the PHC Directorate is to promote equitable, comprehensive, compassionate and quality care at all levels of the health system by means of: the recognition of diversity and culture; evidence-based practice and policy; active health promotion; community-based education; and strategic partnerships.

Primary research interests in the PHCD include interdisciplinary research, climate change and public health, trauma and violence, medical anthropology, arts and medicine, health promotion, community oriented primary care, rural health, health science education, and human resources for health.

Research Highlights

Developing Medical Humanities in Africa: A Transdisciplinary Initiative: Prof Reid received an NRF Knowledge Fields Development Grant for a transdisciplinary initiative aimed at developing medical Humanities in Africa. The aim of the project is to establish the field of medical humanities in the African context with the primary objectives being to establish a network and collaborations in medical humanities in Africa, define and characterise the field in the African context, and generate a longer term plan for the development of the field. A number of publications, conference presentations and projects have arisen from the initiative as well as the hosting of conferences and the introduction of a postgraduate Medicine and the Arts course which commenced in 2014 co-convened with Dr Susan Levine in the Dept of Social Anthropology. A Medicine and the Arts Massive Online Open Learning (MOOC) course was formed for introduction in 2015.

Visiting Scholars: Prof Efthymios Papatzikis (University of London; Botin Foundation, Spain; Metropolitan College/University of East London postgraduate programme in Special Education) presented a video conference talk on “Starting and Ending with Music – A Neurotransmitter’s Circle of Life” in May 2014. Dr Enrique Falceto de Barros (Universidade de Caxias do Sul, Brazil) gave a presentation on “The Family Health System in Brazil” in September 2014.

Conference Presentations: Many researchers in the Directorate presented, including keynote presentations, at conferences during 2014, including: Steve Reid, James Irlam, Claudia Naidu, Sarah Crawford-Browne (SAAHE Conference 2014: Convergence/Divergence); Steve Reid, Claudia Naidu (6th Annual Health Education Research Day at UCT); Steve Reid (2nd Botswana National Family Medicine and Primary Health Care Conference; Prince Mahidol Award Conference 2014: Transformative Learning for Health Equity; 12th WONCA World Rural Health Conference: IV South Brazilian Congress of Family and Community Medicine); Dr Vivian (7th World Congress on Paediatric Intensive and Critical Care Conference); Sarah Crawford-Browne (Medical Humanities in Africa Conference); James Irlam (Western Cape Government: Health Climate Change Seminar).

Steve Reid was engaged with a number of ongoing research projects spanning the themes of primary health care; Collaboration for Health Equity through Education and Research (CHEER); human resources for health; medical education; family medicine in Africa; compulsory community service; rural health; district health systems; community based services support & intermediate care policy; continuity of care; community oriented primary care (COPC); population based approaches to health; community based education; primary care research capacity-building in Africa; reconceptualising education and training; student admission and processes; social accountability and medical education; arts and healthcare; and creativity and health. Prof Reid initiated the call for a Dean’s Forum in November to discuss the faculty’s response to the Ebola epidemic in Liberia, Guinea and Sierra Leone in order to activate UCTs support in West Africa. Sarah Crawford-Browne was able to highlight from first-hand experience as a trauma counsellor in Sierra Leone some of the social, historical and political factors that have contributed to the outbreak there and exacerbate the challenges in stemming the epidemic. She also participated in panel discussions at the UWC School of Public Health Journal Club, the Engen World AIDS Day and the AGM of the Western Cape branch of the SA Society of Occupational Health and supported her past Sierra Leonian colleagues as they developed plans for psychosocial programming, and sought funding to respond to the epidemic. The Directorate will be driving a process forward to respond to the crisis.
James Irlam continues to stand at the frontline of significant socially accountable primary health care/environmental issues. He was an interviewee and media respondent for the video ‘Clean the Air: How Eskom’s Coal Kills’; presented on ‘Policy Frameworks on Climate Change’ at the Western Cape Government Health Climate Change workshop; and was a People’s Health Movement committee member. He has initiated and chaired the Professional Standards Committee for a number of years.

**Directorate Statistics**

**Permanent and Long-Term Contract Staff**

<table>
<thead>
<tr>
<th>Position</th>
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<tbody>
<tr>
<td>Professors</td>
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<td>Senior Lecturers</td>
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<td>Lecturers</td>
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<td>Research Officer</td>
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<tr>
<td>Health Teaching Platform Manager</td>
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<tr>
<td>Site Facilitators</td>
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<td>Site Coordinators</td>
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<td>Facility Manager</td>
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<td>Admin Staff</td>
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**Honorary staff**

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<td>Honorary Lecturers</td>
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<td>Honorary Research Associate</td>
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**Research Fields and Staff**

**Permanent staff**

**PROF STEVE REID**
Head of Department & Chair of Primary Health Care: Primary health care; Collaboration for Health Equity through Education and Research (CHEER); human resources for health; medical education; family medicine in Africa; compulsory community service; rural health; district health systems; community based services support & intermediate care policy; continuity of care; community oriented primary care (COPC); population based approaches to health; community based education; primary care research capacity-building in Africa; reconceptualising education and training; student admission and processes; social accountability and medical education; arts and healthcare; creativity and health; rural community responses to a new contraceptive method; and rural hospital/clinics ARV programme assessment steve.reid@uct.ac.za

**MR JAMES IRLAM**
Senior Lecturer: Primary health care; evidence-based practice; climate change and health (James Irlam has been accepted for the MPhil in Climate Change and Sustainable Development programme in the Dept of Environmental and Geographical Sciences in 2015 and his interest in the programme has arisen from his advocacy in the area of public health and climate change over the past 3 years since attending the COP17 Climate and Health Summit. He aims to use the programme to lay the foundation for a PhD in the field of climate change and health.) james.irlam@uct.ac.za

**DR LAURAINE VIVIAN**
Senior Lecturer: Primary health care; medical anthropology; culture, psyche and illness; medical education; electromagnetic radiation health implications from cell phone technology lauraine.vivian@uct.ac.za

**DR CARLA Tsampiras**
Senior Lecturer: History; politics, polemics, practice and history of HIV/AIDS; disease and society in Africa; slavery and colonialism; woman and violence; gender and sexuality; medical humanities; culture, psyche and illness (Dr Carla Tsampiras joined the Directorate in November 2014 as the Senior Lecturer in Medical Humanities, taking over from Dr Vivian as convenor of the Culture, Psyche & Illness strand of the MBChB curriculum. Dr Tsampiras is recognized as distinguished teacher at Rhodes University. She is a social historian with a specific interest in the intersections of racism, class and gender in health care provision and access, including the historical-political context of HIV.) carla.tsampiras@uct.ac.za

**MRS JOHANNAH KEIKELAME**
Senior Lecturer: Primary health care; health promotion; community needs assessment; patient and carers perspectives on epilepsy (Mrs Johannah Keikelame, the 4th year MBChB ‘Health in Context/Health Promotion’ Course Convenor, received ad hominem promotion to Senior Lecturer in November 2014. She is currently completing her PhD on “Perspectives on epilepsy on the part of patients and carers in a South African urban township”.) johannah.keikelame@uct.ac.za

**MRS SARAH CRAWFORD-BROWNE**
Lecturer: Primary health care; culture, psyche and illness; psychological trauma; community based mental health programming
(Sarah Crawford-Browne undertook and circulated a quick mapping of gender based violence and victim empowerment within the MBChB responding to a query about the training that medical students receive in this area. She continued with her PhD research on “Meaning constructions about violence and psychological adjustment amongst women residing in a high violence community.”)
sarah.crawford-browne@uct.ac.za

MR DEHRAN SWART
Health Teaching Platform Manager: Community health; public health; health promotion; tobacco control; child energy related injuries
(Dehran Swart has applied for a grant to research kerosene-related injury prevention and conduct intervention trials and economic analyses. The goal of the proposed research is to investigate the efficacy of a community-based intervention to reduce kerosene-related injury in low-income communities of low- and middle-income countries. The widespread use of kerosene in South Africa results in high rates of injuries that have huge financial, and psychological impacts on individuals and communities.)
dehran.swart@uct.ac.za

MRS CHRISTOLENE BEAUCHEZAC
Site Facilitator Mitchell’s Plain: Christolene Beauzac continued with her PhD research on “Regulating the body: health promotion and diabetes in the Western Cape, South Africa”.

Contract staff
MRS CLAUDIA NAIDU
Research Officer: Collaboration for Health Equity through Education and Research; social accountability
(Claudia Naidu was engaged with her PhD research on “An evaluation of the development of social accountability of medical graduates at UCT”. Her PhD will contribute to a longitudinal view of the development of social accountability in medical students and graduates as they progress through the system.)
claudia.naidu@uct.ac.za

Honorary Lecturers & Honorary Research Associates

DR BEN GAUNT
Honorary Lecturer: Primary health care; rural health; district health systems; community based healthcare & development; health systems research; multi-disciplinary healthcare; clinical services; medical education & outreach programmes; clinical services; HIV/AIDS; obstetrics & gynaecology; nutrition research
gaunts@gmail.com

DR KARL DU PRE LE ROUX
Honorary Lecturer: Primary health care; rural health; district health systems; community based healthcare

(Prof. Gaunt, the Clinical Manager of Zithulele Hospital – a remote district hospital in the Eastern Cape – and Dr le Roux, the Principal Medical Officer have together been powerful role-models for students with respect to delivering primary care services, leadership and teaching, and their understanding of the PHC approach. They have addressed staff and students on rural health and presented the 4th year MBChB rural health block seminars, highlighting the challenges and rewards of working at the rural coalface, thereby promoting the agenda of PHC in the faculty.)

DR ROB BAUM
Honorary Research Associate: Playwriting; theatre, speech, choreography & dance; movement therapy; inter-disciplinary arts research; African dance ethnography; creative arts
(Dr Baum is an experienced academic in the field of dance and movement therapy and has brought in a trans-disciplinary approach to medical teaching. She has contributed to the Directorate publications output in the areas of dance movement therapy, trans-generational trauma and health, and the transformation of the body through art praxis.)
rob.baum@uct.ac.za

Contact Details
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Fax: +27 21 448 5653
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Web: www.primaryhealthcare.uct.ac.za

RESEARCH OUTPUT

Chapters in books

Articles in peer-reviewed journals


DEPARTMENT OF PSYCHIATRY AND MENTAL HEALTH

Head of department: Professor Dan J. Stein

Departmental Profile

The Department of Psychiatry and Mental Health is firmly committed to strengthening the integration between services, teaching, and research. Clinicians in each of the Divisions of the Department (addiction psychiatry, child and adolescent psychiatry, liaison psychiatry, forensic psychiatry, general psychiatry, intellectual disability, psychotherapy, neuropsychiatry, psychopharmacology and biological psychiatry, and public and community mental health) are active in research in their particular areas. Thus clinical research in the Department covers key clinical problems that are relevant in the South African context, including behavioural and neuropsychiatric aspects of HIV/AIDS, substance use disorders (including fetal alcohol spectrum disorder), adolescent risk-taking behaviour, posttraumatic stress disorder, and mental health policy and services.

In addition, the Department plays a key role in several cross-departmental and cross-institutional research initiatives:

- The Brain-Behaviour Initiative (BBI) is located within the Division of Psychopharmacology and Biological Psychiatry, and is one of UCT’s signature themes. The initial focus of the BBI was on trauma, but it has extended to include neuroHIV and substance use disorders. More details of the aims, methods, and partners, are available at – www.health.uct.ac.za/research/groupings/bbi/overview/

- The Adolescent Health Research Unit is located within the Division of Child and Adolescent Psychiatry, and is examining adolescent sexual behaviour, violence in intimate adolescent relationships, and other aspects of adolescence.

- The Alan J Flisher Centre for Public Mental Health is located with the Division of Public and Community Mental Health and addresses a range of questions in mental health policy and implementation science, and offers advanced training in public mental health. The Centre currently conducts research in 9 low and middle-income countries in Africa and south Asia, including the Programme for Improving Mental health care (PRIME) (www.prime.uct.ac.za), the Africa Focus on Intervention Research for Mental health (AFFIRM) (www.affirm.uct.ac.za), and
Emerging Mental Health systems in low and middle-income countries (EMERALD) research and capacity building initiatives. Within the Centre, The Perinatal Mental Health Project (PMHP) contributes research on maternal mental health from its own service and training initiatives as well as in collaboration with other partners.

- The HIV Mental Health Unit is newly accredited, within the Division of Neuropsychiatry. Its research focus is neurobiology of HIV-associated neurocognitive disorders in children and adults; and neuro-behavioural aspects of HIV, including adherence, and interventions to improve care. The Unit is funded by the NIMH, EDTCP and MRC.

**Research highlights from 2014**

- The Department continues to be successful when competing for international grants. Several major grants were awarded this year:
  - NIH grants were awarded to Jackie Hoare (HIV prevention in adolescents), John Joska (HIV psychotherapy in women with histories of sexual trauma, as well as a grant to study the feasibility and validity of tablet based screening for HIV-associated neurocognitive disorders), and Dan Stein (ENIGMA- HIV Imaging- a multi-site consortium grant).
  - The Wellcome Trust awarded a grant to Bronwyn Myers and Katherine Sorsdahl to study two approaches to integrating mental health assessment and treatment into chronic disease care (Project MIND).
  - We have also secured several PhD grants and post-doctoral grants (including 3 from the prestigious new MRC PhD scheme) and a NRF midcareer grant (to Jonathan Ipser)

**Departmental Statistics**

**Permanent and Long-Term Contract Staff**

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<th>Role</th>
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**Honorary Staff**

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**Students and postdoctoral fellows**

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**Research Fields and Staff**

**ADDITION PSYCHIATRY**
Substance use and anxiety disorders (Don Wilson); Interventions (Katherine Sorsdahl, Sonja Pasche)

**CHILD AND ADOLESCENT PSYCHIATRY**
Adolescent risk behaviour (Cathy Mathews), infant mental health (Astrid Berg), autism and pervasive development disorders (Petrus de Vries).

**CONSULTATION-LIAISON PSYCHIATRY**
Liaison psychiatry and HIV (Jackie Hoare and Kerry Louw), pain (Louise Frenkel)

**FORENSIC PSYCHIATRY**
Mentally ill offenders and femicide (Sean Kaliski and Tania Swart).

**GENERAL PSYCHIATRY**
mHealth interventions (Pete Milligan), bipolar disorder (Neil Horn), substance-induced psychosis (Henk Temmingh), clinical audit (Robin Allen).

**INTELLECTUAL DISABILITY**
Fetal alcohol spectrum disorder (FASD) neurobehaviour and brain imaging (Colleen Adnams)

**PSYCHOTHERAPY**
Intimate partner violence (Adele Marais), Recovery in serious mental illness (Sharon Kleintjes)

**NEUROPSYCHIATRY**
Neurocognitive disorders and neuropsychiatry of HIV, brain imaging and HIV (John Joska, Carla Freeman, Jonathan Ipser), ARV initiation and adherence (John Joska and Hetta Gouse), improving coping in women with histories of sexual trauma, and screening for cognitive disorders (John Joska, Dan Stein).
Psychopharmacology and Biological Psychiatry

Brain imaging (Samantha Brooks, Jonathan Ipser), Neurogenetics (Nastassja Koen), Evidence-based psychopharmacology (Dan Stein, Taryn Amos)

Public Mental Health

Mental health policy and services (Crick Lund), Green psychiatry (John Parker)

Contact Details

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Fax: +27 21 448 8158
Web: web.uct.ac.za/depts/psychiatry/
UCT General enquiries: +27 21 650 9111
UCT web: www.uct.ac.za

Research Output

Chapters in books


Articles in peer-reviewed journals


Atwoli, L., Knock, M.K., Williams, D.R. and Stein, D.J. 2014. Association between parental psychopathology and suicidal behavior among adult offspring: results from the


Bruwer, B., Govender, R., Bishop, M., Williams, D.R., Stein, D.J. and Seidat, S. 2014. Association between childhood adversities and long-term suicidality among South Africans from the results of the South African...


implementing integrated mental health care: a district and Prince, M. 2014. Challenges and opportunities for
V., Tomlinson, M., Lund, C., Breuer, E., De Silva, M.J.
Petersen, I., Jordans, M., Kigozi, F., Thornicroft, G., Patel,
S., Medhin, G., Ssebunny, J., Fekadu, A., Shidhaye, R.,
Petersen, I., Jordans, M., Kigozi, F., Thornicroft, G., Patel,
V., Tomlinson, M., Lund, C., Breuer, E., De Silva, M.J.
and Prince, M. 2014. Challenges and opportunities for
implementing integrated mental health care: a district
level situation analysis from five low- and middle-income
Hess, A., Jacobson, S.W., Jacobson, J.L., Molteno, C.D.,
comparison of spectral quality in magnetic resonance
spectroscopy data acquired with and without a novel EPI-
navigated PRESS sequence in school-aged children with
fetal alcohol spectrum disorders. Metabolic Brain Disease,
29: 323-332.
Hoare, J., Carey, P., Joska, J., Carrara, H., Sorsdahl,
K. and Stein, D.J. 2014. Escitalopram treatment of
deficiency virus/acquired
immunodeficiency syndrome. Journal of Nervous and
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Hoare, J., Ransford, G., Phillips, N.J., Amos, T., Donald,
K.A.M. and Stein, D.J. 2014. Systematic review of
neuroimaging studies in vertically transmitted HIV positive
children and adolescents. Metabolic Brain Disease, 29:
221-229.
Hortensius, R., van Honk, J., de Gelder, B. and Terburg,
D. 2014. Trait dominance promotes reflexive staring
Howells, F.M., Rauch, L., Ives-Deliperi, V., Horn, N. and
Stein, D.J. 2014. Mindfulness based cognitive therapy
may improve emotional processing in bipolar disorder:
pilot ERP and HRV study. Metabolic Brain Disease, 29:
367-375.
Howells, F.M., Uhlmann, A., Temmingh, H.S., Sinclair,
H., Meintjes, E.M., Wilson, D.A.B. and Stein, D.J. 2014. 1H-magnetic resonance spectroscopy (1H-MRS) in
methamphetamine dependence and methamphetamine
induced psychosis. Schizophrenia Research, 153:
122-128.
Hsieh, J.H.-W., Stein, D.J. and Howell, F.M. 2014. The
neurobiology of methamphetamine induced psychosis.
Frontiers in Human Neuroscience, 8: 537.
Hunt, G.E., Siegfried, N., Morley, K., Sitharthan, T. and
Cleary, M. 2014. Psychosocial interventions for people
with both severe mental illness and substance Misuse.
Idro, R., Namusoke, H., Abbo, C., Mutamba, B., Kakooza-
Mwesige, A., Optoka, R.O., Musubire, A., Mwaka, A.D.
and Opar, B.T. 2014. Patients with nodding syndrome in
Uganda improve with symptomatic treatment: a cross-
sectional study. BMJ Open, 4: e00647(1-8).
Jacobson, S.W. and Jacobson, J.L. 2014. Oculomotor
control as a biobehavioral indicator of impaired response
inhibition in children with fetal alcohol spectrum
Jacobson, S.W. and Jacobson, J.L. 2014. The risk of low-
to-moderate prenatal alcohol exposure on child academic
underachievement and behaviour may be difficult to


Kwiatkowski, M., Roos, A., Stein, D.J., Thomas, K. and Donald, K.A.M. 2014. Effects of prenatal


Myers, B.J., Kline, T.L., Doherty, I.A., Carney, T. and Wechsberg, W.M. 2014. Perceived need for substance use treatment among young women from...
disadvantaged communities in Cape Town, South Africa. BMC Psychiatry, 14: 100(1-10).


Pleddemann, A., Morojele, N., Myers, B.J., Townsend, L., Lombard, C., Petersen Williams, P., Carney, T. and Nel, E. 2014. The prevalence of risk for mental health problems among high school students in the Western


Sorsdahl, K., Stein, D.J., Carrara, H. and Myers, B.J. 2014. Problem solving styles among people who use alcohol...


DEPARTMENT OF
PUBLIC HEALTH AND
FAMILY MEDICINE

HoD and Director: Professor Mohamed F Jeebhay

School Profile

The School of Public Health and Family Medicine is a strong multidisciplinary department in the Faculty of Health Sciences. Its teaching, research and service extend to a wide range of settings and content areas consistent with the evolving disciplines of Public Health and Family Medicine. The School is currently organised into 8 disciplinary teaching and training divisions and 4 URC accredited research units. Three of these divisions, Public Health Medicine, Occupational Medicine and Family Medicine have a clinical service responsibility through joint appointments with Western Cape Government Department of Health (Directorate of Health Impact Assessment, Groote Schuur Hospital Occupational Medicine Clinic, Chief Directorate Metro District Health Services) respectively.

Teaching

The School runs a large postgraduate programme, including 7 postgraduate diplomas, 6 Master's programmes, 3 professional Master's programmes and a PhD programme. In 2014, there were 293 postgraduate students in the School including 41 PhD and 185 masters students and 67 postgraduate diplomas. A total of 89 postgraduate students graduated in 2014, including 5 PhDs, 39 Master's and 45 postgraduate diploma students (almost one third of all faculty diplomas awarded). The Master's in Public Health (MPH) is the School's flagship public health programme and the largest taught master's in the Faculty, with 223 students having graduated over the past decade. The School is also playing an increasing role in the new undergraduate medical curriculum and providing opportunities for undergraduate research projects in the community. The Family Medicine division has been closely involved in developing and supporting the rural teaching venue in Vredenburg.

Research – overview

There are four URC-accredited research entities within the School: Centre for Infectious Disease Epidemiology & Research (CIDER), Centre for Environmental and Occupational Health Research (COEHR), Health Economics Unit (HEU) and the Women's Health Research Unit (WHRU). Research outputs in 2014 included


The School’s research mission is reflected in the wide range of research activities and the associated research outputs are notable for their multidisciplinary perspective. In infectious diseases and women’s health, publications cover childhood and adult tuberculosis prevention, diagnosis and treatment; HIV epidemiology, transmission and treatment (including treatment outcomes, adherence and mortality); adolescent risk-taking behaviour and educational interventions; prevention of mother-to-child transmission of HIV infection; contraceptive services and women’s reproductive health more broadly; economic analyses of tuberculosis and HIV services; HPV vaccination and cervical cancer prevention and health systems aspects of care related to TB and HIV. The integration of human rights considerations into public health policy and health systems practice receives attention in a number of publications. The School continues its role as a national leader in occupational and environmental health research with investigations into occupational allergy, pesticides, endocrine disrupting chemicals, hazardous metals and lung disease due to mineral dust. Finally, the question of equity of resource allocation in health, and particularly in primary health care, continues to occupy researchers in health economics, who remain the leading South African source of peer-reviewed publications in this field. The School is also making a significant contribution to the development of health interventions (e.g., risk communication materials, translational science) based on research findings.

In 2014, the following awards were made to staff and students in the School:

- Aqiel Dalvie – SARCHi Chair in Global Environmental Health.
- Olufunke Alaba – Best Presentation by a staff member during the School’s Research Day.
- Annibale Cois – Best Presentation by a student during the School’s Research Day.
- Leigh Johnson – Young Researcher Award by the UCT College of Fellows, and Best publication by a young scientist award in FHS (public health category).
- Aqiel Dalvie, Mary-Ann Davies, John Ataguba – Top Soft-Funded Academic and Research Staff (SFARS) Awards in the Faculty.
- Tolu Oni – elected Co-chair of the South African Young Academy of Science.
- John Ataguba – Claude Leon Merit Award for Young Lecturers.
- Mireille Porter – David Bourne prize for the best student in the MPH programme.
- Zahida Sonday – Geoff Campbell prize for the best Diploma in Occupational Health student.

In addition to hosting two SARCHi Chairs (Health and Wealth, Di McIntyre; Global Environmental Health, Aqiel Dalvie), the School has 10 NRF-rated researchers: Chris Colvin, Leigh Johnson (Promising Young Researcher), Diane Cooper, Aqiel Dalvie, Richard Matzopoulos (Established Researcher), Lucy Gilson, Mohamed Jeebhay, Leslie London, Di McIntyre, Jonny Myers (Internationally Acclaimed Researcher).

**Centre for Environmental and Occupational Health Research (CEOHR)**

The Centre’s aim is to be a principal centre of EOH research, teaching and training, occupational medical clinical services, policy advisory, technical consultancy services, advocacy and a source of supportive outreach activities in South Africa, in the Southern and Eastern regions of Africa, Africa more generally, and internationally. The Centre’s research output represents the collective effort of staff from the 3 divisions in the School viz. Occupational Medicine, Environmental Health and Public Health Medicine Division, in the area of occupational and environmental health.

The major objectives of the Centre are firstly, to conduct multidisciplinary research, teaching and service provision of high priority in Southern Africa, integrating laboratory, clinical, epidemiological and policy skills. Another key objective is to explore and develop means of maintaining the health of workers and environmentally exposed communities. A third objective is to conduct policy research into issues ranging from toxic or injurious exposures through to health surveillance. Fostering inter-institutional research, teaching and service (including outreach) collaboration and capacity development constitutes another major objective. Finally, another aim is to foster local and global networks for occupational and environmental health promotion through collaboration with United Nations and other agencies.

Key research areas for the Centre currently include the identification of risk factors and evaluating preventive approaches for allergens and asthma in the workplace, health hazards of chemicals (such as pesticides and endocrine disruptors), silicosis elimination in gold miners and programmes to address the burden of alcohol and...
trauma. These areas are supplemented by a broader focus on research to address occupational and environmental health systems and worker's compensation, to promote ethical issues in occupational health practice and environmental health research as well as developing programmes to build OHS capacity through research and training in the SADC region. Aside from the ongoing research being conducted, a number of new projects have been initiated.

**Industrial Health Resource Group (IHRG)**

The Industrial Health Resource Group (IHRG) is an action research and socially responsive development group that was established at UCT in 1980. IHRG provides occupational health and safety research, curriculum development, training, advice, and resource development services to trade unions and individual workers. IHRG does representation, investigative and advocacy work for workers and trade unions in relation to workplace health and safety incidents and cases of work-related injury and disease.

IHRG assisted with 120 cases of occupational injury and disease during 2014. Cases came from a variety of workplaces and sectors including the public health, education, cleaning, clothing, construction, defence force, electrical, farming, information technology, manufacturing, mining, municipal, police services, retail and private households. IHRG has developed a training course for trade unionists in representing workers in Incapacity Dismissals related to occupational injuries and illnesses. In the course of 2014 IHRG produced a handbook for trade unionists that documents different investigative, research and training methodologies that contribute to challenging trade unions to return to the basics in organising at the workplace. IHRG also convened an Indaba where NUMSA shop stewards addressed the need for their union to include clear criteria in the NUMSA Service Charter for guiding union representatives in addressing workers’ health and safety needs.

IHRG continues its advocacy role in health and safety capacity building with trade unions confronting the increasing marginalisation and vulnerability of workers subjected to deregulation, outsourcing and the casualisation of labour – trends which enable public and private sector employers to shed responsibility for workplace health and safety. IHRG also provided health and safety training for DITSELA, farm workers, and the concluding workshops for a two-year project with aviation workers at the OR Tambo International Airport. In 2014 IHRG started a three-year project with the trade union SAMWU to further transform our training curriculum, materials and resources to guide trade union representatives in monitoring and enforcing employer compliance with health and safety legislation and to train union representatives and educators to provide ongoing health and safety training in the union.

**Centre for Infectious Disease Epidemiology and Research (CIDER)**

The Centre for Infectious Disease Epidemiology and Research (CIDER) is a multi-disciplinary research group which aims to conduct public health research integrating laboratory, clinical, epidemiological, social science and health systems perspectives into infectious diseases that have high priority in Southern Africa (in particular HIV, tuberculosis, lower respiratory tract infections, and sexually transmitted infections) in order to improve the prevention and management of these diseases.

A principle focus of the work of CIDER is in the epidemiologic and clinical aspects of HIV and related conditions. This encompasses an expanding portfolio of health systems research as well as the clinical epidemiology of management interventions. The Centre maintains platforms for health facility-based research in the field of HIV/AIDS in the Klipfontein-Mitchells Plain subdistrict. A major strength of the Centre is cohort analyses of patients receiving antiretroviral therapy, which includes work with individual cohorts in Khayelitsha and Gugulethu, as well as leading an NIH-funded data centre for collaborative cohort research combining data from 14 cohorts in South Africa. The Centre also has a strong track record in researching strategies for HIV prevention, including field studies of prevention of mother-to-child transmission of HIV, as well as mathematical modelling activities of HIV prevention modalities and their impact on the future of the epidemic in South Africa.

The Centre maintains an excellent working relationship with the Provincial Department of Health, with staff supporting the conduct and analysis of the annual antenatal HIV seroprevalence survey, the development and maintenance of information systems to monitor HIV and other chronic care programmes, and assistance with infectious disease surveillance and outbreak investigations. CIDER staff have developed and maintained one of the key information systems used for monitoring HIV and tuberculosis treatment in South Africa and provide support to users of the system in ten other countries. This work on context-appropriate information systems for HIV programmes has led to further collaborations nationally, regionally and with the World Health Organization.

In translating research into practice, staff routinely serve on provincial and national HIV guideline committees, and regularly participate in WHO reference groups on HIV treatment, PMTCT, and HIV information systems development. In addition CIDER works closely with a number of civil society organisations including a long standing collaboration with Médecins Sans Frontières, the Southern African HIV Clinicians Society, and the South African National AIDS Council. CIDER had another
productive year in terms of publication output, with staff being authors on over 80 peer reviewed articles, many in leading public health and medical journals and lead by CIDER staff.

**Health Economics Unit**

The Health Economics Unit (HEU) conducts research in health economics and health system issues. The HEU maintains a balance between conceptual and applied research as well as between topics of local and international relevance and focuses on four thematic areas of research, namely universal health coverage and health financing, economic evaluation, social determinants of health, and governance.

A five-year research project (UNITAS – Universal coverage in Tanzania and South Africa: Monitoring and evaluating progress) continued in 2014. The UNITAS project focuses on monitoring and evaluating policy formulation and implementation processes aimed at achieving universal health coverage in South Africa and Tanzania. The SARChI chair in Health and Wealth focuses on the interplay of health and wealth in the South African context and the impact of a range of government policies on health. Researchers contextualised the social determinants of health within an African context to increase awareness about this issue and to take into account health equity issues to address the root causes of socioeconomic health inequalities. The second cycle of the Chair (2013 -2017) will build upon the successes of the first cycle. The XTEND and XPHACTOR studies continued in 2014. The XTEND evaluates the impact and cost-effectiveness of Xpert MTB/RIF in the investigation of TB, and its impact on patient and programme outcomes and transmission at a population level, and thus informs policy on the scale up of Xpert MTB/RIF in low- and middle-income countries. The XPHACTOR project focuses on the Xpert MTB/RIF for people attending HIV clinics. It will identify an evidence-based algorithm, which is feasible to implement within HIV clinics, to guide the utilisation of TB investigations.

The HEU completed a cost analysis of an integrated community-based approach for the treatment of drug-resistant tuberculosis in partnership with the MSF and, the City of Cape Town and the Western Cape Government. Safe Generations continued in 2014 focusing on estimating the cost-effectiveness of Option B+ approach to antiretroviral therapy for HIV positive pregnant women in Swaziland. Resilient and Responsive Health Systems (RESYST) is a consortium that is undertaking health policy and systems research (with a focus on financing, health workers and governance) in a set of African and Asian settings. Funded by DFID, the consortium began in 2011 and will run until 2016.

**Women’s Health Research Unit (WHRU)**

The overall aim of the Unit is to improve the health of women through research that informs policy and practice. The Unit acts as a multidisciplinary centre for women’s health research in South Africa focusing on high priority women’s health, and gender and health issues. The Unit’s main activities include: Research; Health service support; Teaching; Social responsiveness and Advocacy. The Unit’s research is structured according to high priority areas identified by the government and in keeping with international trends: HIV/AIDS; health systems research: reproductive health; abortion; female cancers and contraception. Its links with the National, Provincial and Local Departments of Health ensures that our research is relevant and contributes to health policy development and programme implementation. The Unit’s research focus can be summarised into three thematic areas: socio-behavioural research; health services operational research and quantitative/epidemiological research.

Highlights for 2014 include:

- A wide range of research collaborators and other visitors visited the Unit, including from Ibis Reproductive Health; Brown University; the Susan Thompson Buffett Foundation; University College London and the International Women’s Health Coalition.
- The Unit continued to host a study abroad programme from New York University.
- The Unit continued with interdisciplinary and translational collaborations in Africa and the global South with Diane Cooper visiting colleagues at the University of Sao Paulo Brazil and University of Botswana and Lesotho as part of the Africa Knowledge Network for Southern Africa.
- The Unit received an International Collaborative Research Projects (ICRP) award from the UCT Research Office (Building a Southern African Coalition for Translational Research and training).
- Unit members continued to provide consultancies and advice on gender and sexual and reproductive health and rights issues, including Technical consultancy to the United Nations High Commissioner for Human Rights and Technical expert advice to the United Nations Health Coalition.
- Jane Harries acted as a technical advisor and external reviewer for the WHO Recommendations on health worker roles in provision of safe abortion and post abortion contraception.
- Unit members continue to attend and disseminate research at invited International Meetings including at WHO Headquarters in Geneva and the University of California, San Francisco.
• After 25 years at UCT, Diane Cooper takes up a position as Professor in the School of Public Health at the University of the Western Cape. Prof Cooper will remain a UCT Honorary Research Associate.

Health Policy and Systems Division

The Health Policy and Systems Programme in the HPS Division has a particular focus on health policy analysis and health systems research, adopting multi-and interdisciplinary approaches, and related networking activities. In 2014 we completed two projects, continued work in three others and initiated four new projects. The projects completed were: a three-country evaluative case study on Catholic maternal health service provision and systems interventions in Cameroon, Ghana and Malawi – funded by CORDAID, and an evaluation of the Health System Strengthening through Strategic Partnership (HESP) Project for the Hospice and Palliative Care Association of South Africa (HPCA).

Research continued within the District Innovation, Action and Learning for Health Systems development (DIALHLS) project, being implemented in collaboration with the SOPH at the University of the Western Cape, and colleagues from the Western Cape health department and City of Cape Town, within the Mitchell’s Plain/Klipfontein sub-structure of the Metro District Health System. Research also progressed in the Implementing large-scale health system strengthening interventions: experience from the Doris Dukes Charitable Foundation’s African Health Initiative project, working closely with colleagues in Mozambique and Zambia, and in the UNITAS (Universal coverage in Tanzanian and South Africa) project focuses on monitoring and evaluating policy formulation and implementation processes aimed at achieving universal health coverage in South Africa and Tanzania.

New projects initiated in 2014 were Partnership for Health Leadership and Management, supporting collaboration with the University of the Western Cape, the University of Stellenbosch and the Western Cape Department of Health to develop a strategy to strengthen health leadership throughout all levels of the health system; Sustaining South African health system leadership and management development, with the University of the Western Cape to support leadership and management development through engagement with alumni and a ‘learning-on-the-job’ approach; a 5-year CDC-funded project, led by the Medical Research Council, to strengthen implementation of the Integrated School Health Policy in a district in South Africa; and an historical case study with the University of the Western Cape, within the Mitchell’s Plain/Klipfontein sub-structure, with the University of the Western Cape and colleagues from the Western Cape health department and City of Cape Town, to think together about the nature and challenges of health system development.

Public Health Medicine Division

The Division of Public Health Medicine is responsible for a substantial component of undergraduate public health teaching in the Faculty and plays a key role in providing technical support and service to the Public Health directorates in the Provincial Health Department (Health Impact Assessment Directorate), as well as training Public Health Medicine specialists. The Division also houses an active research programme in Health and Human Rights.

Educational research in the Division looks at both undergraduate and postgraduate teaching, with a number of foci. Three staff members in the Division (Virginia Zweigenthal, Lorna Ockers, Feroza Amien) are pursuing PhD studies which focus on different aspects of these educational foci. The Division is assisting the Provincial Health Department in the creation of a health data centre and information exchange which houses and links patient-level data across multiple clinical and administrative databases. The project aims to improve continuity of clinical care, enhance operational reporting on service delivery, create the capacity for active surveillance, and provide improved health intelligence. This work facilitates a number of research foci.

Further research with the Provincial Health Department includes support for burden of disease research in the Western Cape Province; population projections of the Western Cape province; impact of migration on the health service in the Western Cape province; analysis of the drug resistant TB patients in the Western Cape province; the annual review of causes of mortality in the province; the review of mortality in children under 18 years of age at the Salt River mortuary; the review of mortality in children under 5 years of age in tertiary hospitals; the identification of missed opportunities at health facilities for immunization of children under 5 years of age; improving measles immunization coverage using community care worker visits to households and mobile immunization services; the state of the HIV epidemic in the province as well as a range of operational questions addressed through registrar and specialist work located in the Health Impact Assessment Directorate. The Division also co-hosts National Health Service fellows from the UK.
Additionally, there is an emphasis within the Division on (i) health aspects of urbanization, and (ii) communicable and non-communicable diseases and their interface.

In terms of the work on Health and Human Rights, research in the Division in 2014 concentrated on the roles of Health Committees in realizing the right to health through community participation. Ongoing work also includes research aimed at informing the provision of a professional South African Sign Language interpretation service for deaf patients. The HHRP continues to host the Learning Network for Health & Human Rights (LN), which explores models for linking civil society action to health rights and to identify best practice for realising health rights. The HHRP also convened two major research translation events on the question of community participation – a National Colloquium on Health Committees and a Regional Southern African Consultation on Health Committees.

**Family Medicine Division**

The Division of Family Medicine encourages its staff to conduct research relevant to their work and the mission of the Division. The broader mission is to graduate doctors who are able to enter internship and community service years with the appropriate level of confidence and competence when diagnosing and managing common primary care problems; and to train doctors who are able to function fully in the primary health care team and to take the lead in district-based health care, teaching and research in any community setting in South and Southern Africa. Our postgraduate students graduating from the M Fam Med; M Med (Fam Med) and M Phil (Pall Med) are required to complete a research dissertation and encouraged to publish it in a peer-reviewed journal.

Research highlights for 2014 include near-completion of the 5 research projects in the Family Medicine cluster of the SPHFM’s 30-month multi-package research project funded by an EU grant (EU Family Medicine Packages; PI D Hellenberg; approx. R5 million) aimed at strengthening PHC services and improving users’ experience of care. These include: (a) Package 17 (D Hellenberg) – This work package involves the extension of training of student health care professionals to attain a basic level of competency in oral communication with patients whose mother tongue is isiXhosa or Afrikaans; (b) Package 18 (D Hellenberg) – This activity aimed to use an existing curriculum for language training that was modified to equip the staff in the public healthcare sector with basic isiXhosa and Afrikaans communication skills in order to improve interaction with patients. The findings were presented at “Medical Humanities in Africa Conference” at UCT: Building Bridges after breaking barriers; (c) Package 19 (Liz Gwyther) – The IMPAQT study, a Palliative Care Audit of two Western Cape sites conducted by Palliative Medicine in association with King’s College London, is in the final stages; (d) Package 20 (G Bresick) – The baseline study on primary care performance and organisation in 13 clinics in the Cape Town Metro and Cape Winelands districts was completed. Results were presented at the 2014 Cape Winelands Rural Conference and National SAAFP Conference, and to senior managers in the Western Cape Department of Health and briefly to National DoH. A scientific paper is in press; (e) Package 21 (E De Vries – Chronic Disease Audit study adds a new dimension (patient perceptions of their disease care at CHCs) to the annual chronic diseases of lifestyle audit, Western Cape DoH.

Other research conducted in the Division included: CHC Prescription Costs studies (A Isaacs) – comparing medicine costs for chronic diseases at selected CHC’s in the Cape Town Metro District; Medical education (Drs Bresick and Saban) – reviewing videotaped consultations as a method for learning communication and behaviour change counselling skills; Diabetic Foot Study (Dr Bev Schweitzer) – the study will determine the prevalence of patients with foot problems at the CHCs in Cape Town; A Qualitative Evaluation of University of Cape Town Medical Students’ feedback of the Objective Structured Clinical Examination (Dr N Beckett); Intern Language Survey (D A Hellenberg) – survey to assess the usefulness of language learning during the BaDr course in the work environment.; MIT Sloan School of Management collaboration (A De Sa) – collaborative action research to reduce patient wait times in two high-demand public clinics in Western Cape.

Research related activities among undergraduate students included 6thyr MBChB family medicine projects, supervision of undergraduate students doing their special study modules (SSM’s) in Family Medicine, and collaboration in building a research partnership with the Health Impact Assessment (HIA) unit of the Western Cape Health Department.

**Social and Behavioural Sciences Division**

The Division of Social and Behavioural Sciences coordinates the School’s teaching and research in social and behavioural sciences. Their role in the field of public health is increasingly valued as part of a complex, people-centered approach to tackling the multifaceted challenges in public health. The Division is involved in wide-ranging research that attempts to understand the complex relationships between social and behavioural factors and dynamics and public health.

There are five Focal Areas of research in the Division:

1. **Men, Masculinities and Health:** This involves work on men, masculinities and health, in particular with respect to HIV, gender-based violence and gender transformation initiatives. The major highlight for 2014 was the awarding of a five-year, USD 1.7 million research grant from the NIH to examine men’s performance in the HIV treatment
and prevention cascade of care and to develop innovative ways of using health information to improve and align health and community services for men.

2. Health Governance and Activism: This research explores health governance, health activism and human rights. Ongoing projects examine the People’s Health Movement’s ‘Right to Health’ campaign, sanitation and health activism in Khayelitsha with the Social Justice Coalition, the Treatment Action Campaign (TAC) and health pluralism in the context of local politics, and the Learning Network for Health and Human Rights Project.

3. HIV and TB Prevention and Treatment Programmes: Much research is focused on understanding and supporting development of longer-term HIV and TB prevention and treatment programmes. In 2014, we initiated a 2-year project with Medecins san Frontieres in Cape Town to evaluate a caregiver-led model for child HIV disclosure. We were part of an NIH Supplemental Award made to Prof Landon Myer (CIDER) to examine experiences of pregnant HIV-positive women in new adherence clubs in Cape Town. We also initiated a partnership with Medecins san Frontieres in Swaziland to provide ongoing support and engagement in its operational research programme focused on HIV and TB services.

4. Qualitative Evidence Synthesis (QES) in Global Health Policy: This work involves developing new methods for conducting these kinds of reviews and translating their findings, as well as carrying out QES on specific topics such as CHW motivation, health systems barriers and enablers to maternal ART, and task shifting in midwifery programmes.

5. New Pedagogies for Community Health Research: We have an emerging interest in developing and evaluating new pedagogies for community health research, in particular, pedagogical research that assesses field-based approaches to experiential learning for community health research methods.

Another major area of teaching, supervision and research in the Division is the SASH Programme, officially launched in 2014. This cuts across the five Focal Areas and is supported by a 5-year, USD 1.8 million NIH grant to strengthen the HIV social sciences at UCT. In addition, in 2014 the British Council awarded the Division a Researcher Links workshop grant to host a UK-South Africa collaborative workshop on the topic of “Building the Critical Health Social Sciences in Southern Africa”, the Division co-organised two national conferences: one on ‘Heteronormativity and Health’ and the other on ‘The Medical Humanities in Africa’, and a new stream in the MPH Programme specialising in the “Social and Behavioural Sciences” (SBS) was approved and we admitted our first class of SBS students.

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### School Statistics

#### Permanent and Long-Term Contract Staff

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<th>Position</th>
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#### Honorary Staff

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#### Students

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Contact details

School of Public Health and Family Medicine, Faculty of Health Sciences, University of Cape Town, Observatory, 7925, South Africa
Telephone: +27 21 406 6300
Fax: +27 21 406 6459
Web: www.publichealth.uct.ac.za

Research Output

Chapters in books


Articles in peer-reviewed journals


and stillbirths: a retrospective cohort study of pregnant women in Cape Town, South Africa. BMC Pregnancy and Childbirth, 14: 204(1-10).


Colvin, C.J., Konopka, S., Chalker, J.C., Jonas, E., Albertini, j., Amzel, a. and fogg, k. 2014. A systematic review of...
health system barriers and enablers for antiretroviral therapy (ART) for HIV-infected pregnant and postpartum women. PloS One, 9(10): e108150.


Du Toit, E., van Schalkwyk, C., Dunbar, R., Jennings, K., Yang, B., Coetzee, D.J. and Beyers, N. 2014. Missed


Erasmus, E., Orgill, M.S., Schneider, H. and Gilson, L. 2014. Mapping the existing body of health policy implementation research in lower income settings: what is covered and what are the gaps? Health Policy and Planning, 29: iii35-iii50.


alcohol use, risky sexual practices and other negative consequences associated with alcohol use among safety and security employees in the Western Cape, South Africa. Substance Abuse Treatment Prevention and Policy, 9: 14(1-10).


Penazzato, M., Davies, M., Apollo, T., Negussie, E. and Ford, N. 2014. Task shifting for the delivery of pediatric...


Richter, M., Scorgie, F., Chersich, M. and Luchters, S. 2014. ‘There are a lot of new people in town: but they are here for soccer, not for business’ a qualitative inquiry into the impact of the 2010 soccer world cup on sex work in South Africa. Globalization and Health, 10: 45(1-11).


Zulliger, R., Moshabela, M. and Schneider, H. 2014. “She is my teacher and if it was not for her I would be dead”: exploration of rural South African community health workers’ information, education and communication activities. Aids Care, 26(5): 626-632.

DEPARTMENT OF RADIATION MEDICINE

Head of Department: Professor Raymond Abratt

DIVISION OF NUCLEAR MEDICINE

Head of Division: Dr Tessa Kotze

Divisional Profile

Nuclear medicine currently provides a wide spectrum of diagnostic procedures, in-vivo studies and therapy; all pertaining to the use of unsealed sources of radioactivity. Procedures cover the central nervous system, respiratory, cardiac, gastrointestinal, genitourinary, endocrine, lymphatic and skeletal systems. There is access to both SPECT/CT and PET/CT. All procedures are integrated into service provision, training and research. In the department is also an osteodensitometer.

Divisional Statistics

Permanent and Long-Term Contract Staff

Joint Staff (UCT/PGWC)

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<table>
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Research fields and staff

Specialist Staff

DR TESSA KOTZE
Thyroid; PET

DR RACHELLE STEYN
ERNA, Therapy

Undergraduate Staff

Supernumerary Registrar Dr Garba Yunusa
Registrar Dr Nerisha Govender
Supernumerary Registrar Dr Yaw A Amoako
Supernumerary Registrar Dr Sof

Contact Details

Division of Nuclear Medicine, Groote Schuur Hospital and University of Cape Town, Observatory, 7925 Cape Town. Telephone: +27 21 404-6747
Fax: +27 21 404-3402
Email: Tessa.Kotze@uct.ac.za
DIVISION OF RADIATION ONCOLOGY

Head of Division – Professor R P Abratt

Divisional Profile

The Division of Radiation Oncology provides the following services:

- Investigation, management and treatment of all forms of malignant disease. This is co-ordinated by 23 multidisciplinary clinics, which meet weekly.
- Participation in clinical studies, both investigator initiated and as part of co-operative groups.
- Teaching of undergraduate medical courses and provision of post graduate specialists training courses. Pre and post-diplomate instruction to radiographers and post-diplomate courses to nurses. Full training in Radiobiology from undergraduate to honours, masters and doctoral level.
- Provision of a comprehensive clinical radiobiological research facility.

Divisional Statistics

Permanent and Long-Term Contract Staff

University Staff

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Joint Staff (UCT/PAWC)

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Postgraduate Students

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Research Fields and Staff

Permanent Staff

Specialist Staff

**PROFESSOR RAYMOND ABRATT**
Chief Specialist Radiation Oncology & Head of Division; NRF Rated – Category B

**ASSOCIATE PROFESSOR JEANETTE PARKES**
Senior Specialist Radiation Oncology and Senior Lecturer; Main interests – neurological tumours, paediatric tumours, bones and sarcoma

**DR SAMEERA DALVIE**
Specialist Radiation Oncology Lung Cancer; Male genito-urinary tract cancer, Ear, nose and throat cancer

**DR ZAINAB MOHAMED**
Senior Specialist Radiation Oncology and Senior Lecturer; Main interests – Lymphoma, Myeloma, Melanoma, Hodgkin’s Disease

**DR BARBARA ROBERTSON**
Specialist Radiation Oncology & Lecturer; Main interests – Thyroid, Oesophageal and Gastro-intestinal cancers, stomach, pancreas, liver, unknown primary cancers.

**DR LEON VAN WIJK**
Senior Specialist Radiation Oncology & Senior Lecturer; Main interests – Gynaecological tumours.

**DR JULIE WETTER**
Specialist Radiation Oncology and Lecturer; Main interests – skin cancers, melanoma, eye Head and neck.

**DR T NAIKER**
Specialist Radiation Oncology – Main interests – breast cancer

**DR HENRIETTE BURGER**
Specialist Radiation Oncology – Main interests – Urology and Oesophagus
Medical Officers

**DR CINDY SHEPHERD**
Principal Medical Officer Radiation Oncology; Main interests – Lung cancer, Tumours of the thyroid, Male genito-urinary tract cancer.

Scientific Staff

**DR ANDRE HENDRIKSE**
Senior Medical Natural Scientist & Lecturer; Main interest – Research in Medical Natural Science Radiobiology (research on tumours with experimental animals)

**DR ALISTAIR HUNTER**
Medical Natural Scientist; Main interest – Research in Medical Natural Science Radiobiology (research on tumours with experimental animals)

Contract Research Staff

Part-Time Clerical Research Assistants (Data Managers)
Mrs Glynis Chilcott
Miss E Nel
Mrs B Williams

Contact Details
Postal address: Division of Radiation Oncology, Groote Schuur Hospital & University of Cape Town, Observatory, 7925, South Africa
Telephone: +27 21 404 4263/5
Fax: +27 21 404 5259
Email: Raymond.abratt@uct.ac.za

DIVISION OF MEDICAL PHYSICS

Head of Division: Ms Hester Burger

Divisional profile

The key project for 2014 for the Division of Medical Physics was the collaboration with Varian Medical Systems and CPUT to set up a brand new practical radiotherapy training facility. Agreement was finally reached in December 2014, and infrastructure work to set up the facility will start early in 2015. The project will allow for the use of a virtual training computer called the Seminar VERT system, specifically designed for Radiotherapy training. It will allow students hands-on training on this 3D computer system, as well as a fully equipment radiotherapy treatment planning computer laboratory.

The facility will allow for the training of UCT and CPUT students, but also give access to students from the rest of Africa through two month long training courses that will be hosted per annum. The project is linked to the global Varian Access to Care education programme.

Other activities included:

- PhD students (2)
- MSc student (1)
- National and international posters/presentations (6)
- Publications (4 published)
- External examiner/moderator (4)
- Research and development collaboration projects (2)

Ms N Bruwer, the Medical Physics intern, was awarded the Equra Health Prize for the best presentation by an intern at the South Africa Association of Physicists in Medicine and Biology annual congress. Ms N Joubert was also awarded the prize for the best poster presentation at the same congress.

Research Fields and Staff

Head of Department

**H. BURGER MSC (MED PHYS) (UP)**
Modern Radiotherapy and Radiosurgery Treatments and Treatment Planning

Deputy Manager

**C TRAUERNICHT MSC (MED) IN MEDICAL PHYSICS (UCT)**
Nuclear Medicine and Brachytherapy
Assistant Managers (Medical Physics):

**H MAC GREGOR BSC (HONS)**  
(Started November 2012)  
Radiotherapy and Advanced Techniques and Treatment Planning

**T KOTZE PHD (US)**  
Diagnostic Radiology teaching and Radiation Protection

**N JOUBERT (WILLEMSE) M.MED.SC MEDICAL PHYSICS (UFJ)**  
Slot-scanning mammography  
Radiotheraphy and Nuclear Medicine

Technical Staff

Chief Radiographer  
K Botha Nat Dipl Radiography (Therapy), Dipl Computer Science

**MOLD ROOM**

**S TOVEY**  
Chief Radiographer  
Dipl. Radiation Laboratory Technology (RLT), Nat Dipl Radiography (Diagnostic and radiotherapy), BTech (Radiography Radiotherapy)

**M HENDRIKS**  
Radiation Technologist  
Dipl. Radiation Laboratory Technology (RLT), Nat Dipl Radiography (Diagnostic)

**MARILYN MANUEL**  
Intern Radiation Technologist  
National Diploma in Radiography (Diagnostic)

Mechanical Workshop

**C THOMSON NTCII**

**CHIEF INDUSTRIAL TECHNICIAN**

**RE HISCOCK NIII**  
Artisan

**O KWAYIBA**  
Secretarial  
Senior Admin Clerk

Contact Details

Division of Medical Physics, Groote Schuur Hospital/University of Cape Town, Observatory, 7925 Cape Town  
Telephone: +27 21 404-6240  
Fax: +27 21 404-6269  
Email: Hester.Burger@uct.ac.za

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DIVISION OF RADIOLOGY

**Head of Division: Professor Stephen James Beningfield**

**Divisional Profile**

The Division of Radiology works closely with clinical colleagues and their patients throughout the hospital, both in service and academic capacities. This collaboration involves the major medical and surgical specialties and subspecialties. The recently acquired multi-slice CT’s are heavily utilised, especially for vascular and thoraco-abdominal problems. Red Cross is making good use of their new MRI and CT scanners. There is now also direct access to PET-CT scanning at Tygerberg. Close links are maintained with New Somerset Hospital which now employs 1 fulltime and one 5/8 radiologist, both of whom are UCT and GSH trained and who rotate through our unit and Red Cross Hospital to maintain expertise in advanced and specialized adult and paediatric imaging. The closure of GFJooste Hospital and the transfer to Mitchell’s Plain was smooth with the transfer of their 6 slice helical scanner to Victoria Hospital. Mitchell’s Plain acquired a new CT scanner which is operational during normal working hours. Sessional outreach and teaching activity occurs weekly at Victoria Hospital. The experience of our post-retirement sessional staff continues to benefit the Division. Digital radiology, PACS and RIS is now fully established with digital communication between Red Cross, Tygerberg, Somerset, Mitchell’s Plain, George and Worcester Hospitals.

All available posts are filled with continued strong interest in supernumerary registrar posts from within and outside the country.

**Research Fields and Staff**

**PROFESSOR STEPHEN BENINGFIELD**  
Hepatobiliary, vascular, interventive radiology, computer applications and digital radiology.

**DR NAZIR AHMED**  
Cross-sectional, Head and Neck and Colorectal imaging.

**DR E BANDERKER**  
Paediatric Radiology

**DR SALLY CANDY**  
Neuroradiology (with a special interest in HIV associated neuroimaging) and Magnetic Resonance Imaging.

**DR DILESH CHHIBA**  
Musculoskeletal radiology, Cross-sectional imaging, Interventive radiology.

**DR TRACY KILBORN**  
Paediatric radiology.
DR QONITA SAID-HARTLEY
High resolution chest, image guided biopsies, chest radiology, breast imaging and intervention and cardiac CT. In collaboration with the department of cardiology and cardiothoracic surgery she is responsible for specialist imaging required for Trans-catheter Aortic Valve replacement (TAVI). GSH is one of only a few centres in Africa offering this highly specialised service.

DR GARY SUDWARTS
Cross sectional Imaging, ultrasound, women’s imaging and intervention. Dr Sudwarts is expanding the uterine artery embolization service for the management of uterine fibroids to patients throughout South Africa as well as from other countries on the African continent.

DR THARBIT HARTLEY
Hepatobiliary, vascular, interventive radiology

DR ROBERT SEGIE
Ultrasound, computerised tomography and general radiology.

DR NICOLE WIESELTHALER
Paediatric radiology.

**Divisional Statistics**

**Permanent and Long-Term Contract Staff**

**University staff**

<table>
<thead>
<tr>
<th>Position</th>
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<tbody>
<tr>
<td>Professor and Head of Division</td>
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<tr>
<td>Administrative Staff</td>
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**JMS Staff**

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**Part-time JMS Staff**

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<td>Emeritus Associate Professors</td>
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**Part-time UCT Staff**

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<td>Digital imaging assistant</td>
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**Students**

| Masters [registrars] | 21 |

**Teaching**

**Postgraduate**

This major activity continues, with new inputs from the University, Colleges and the HPCSA having significant roles. More structured teaching, regular assessments and revised examination structure have been implemented over the past year. Since 2012 registrars entering the radiology training program are required to complete a MMed dissertation. At present 14 registrars have embarked on their theses. Most of these are being supervised by Prof Savvas Andronikou who was made an honorary professor at UCT in 2014.

The introduction of a fully digital radiology unit, with a formal Picture Archival and Communication Systems (PACS) and Radiology Information System (RIS) has had a major beneficial effect on the manner and quality of postgraduate teaching and supervision, both within radiology and in the combined clinical specialties (40 such meetings occur weekly between the various specialties and subspecialties throughout the teaching complex)

**Undergraduate**

Regular weekly structured teaching sessions continue, with the case-based multidisciplinary meetings in various specialties allowing both under- and post-graduate students to see the impact of imaging on clinical-decision making, to request appropriate imaging and to acquire skills that will serve them during their community service and in later practice.

**Research**

There are a number of collaborative and self-initiated projects running, including 14 MMed theses and 1 PhD. These continue to be largely on the basis of combined collaboration and multidisciplinary applied clinical research. Several of these examine the existing imaging indications and protocols within our hospital with a view to rationalisation of service. Some basic science research is being undertaken in collaboration with the Medical Imaging Unit, under the guidance of Professor Ernesta Meintjies and the departments of cardiology and psychiatry. A new state–of–the–art 1.5 T diagnostic MRI will replace the existing GSH machine in the first half of 2015. This together with the 3T research MRI which is being installed at GSH and is due to become operational mid February 2015, will allow advanced imaging and provide the platform for neuro-psychiatric, musculoskeletal, cardiological, gastrointestinal and oncological research.
Service

There is an increasing reliance on imaging (particularly CT and MRI) across all clinical disciplines, but especially in the setting of trauma and oncology. The 120 slice helical CT scanner provides excellent diagnostic quality but places a proportionately increased burden on radiological service delivery. Close interaction with the highly specialised UCT PAH clinical service up-skills the consultant body and the training provided to registrars.

Social responsiveness

There is ongoing collaboration with a number of the closer satellite hospitals, most notably Mitchells Plain, New Somerset and Victoria, but also II Military Hospital (with significant recent equipment upgrades), as well as with the newly-developed and refurbished regional hospitals such as George, Worcester and Paarl, Khayelitsha and Mitchells Plain, that are likewise converting to digital imaging and PACS.

Publications

These are mostly on the basis of close clinical collaboration and applied research, although some more basic MRI and digital radiography research has also been published

General

The transition to PACS and RIS has improved efficiency in the delivery of radiological services and the capacity for radiological research at GSH and in the secondary services.

Contact Details

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Telephone: +27 21 404 4184 or 406 6426
Fax: +27 21 404 4185
Email: Steve.Beningfield@uct.ac.za
candysally@gmail.com (Acting Head of Department)

RESEARCH OUTPUT

Chapters in books


Articles in peer-reviewed journals


DEPARTMENT OF SURGERY

Head of Department: Professor Del Kahn

Departmental Profile

The Department of Surgery comprises the nine Divisions: General Surgery, Cardiothoracic Surgery, Emergency Medicine, Neurosurgery, Ophthalmology, Orthopaedics, Otorhinolaryngology, Plastic Surgery and Urology.

Each of the Divisions functions very independently with regard to administration, clinical service, undergraduate and postgraduate teaching, and research. The Special Clinical expertise, research interests, and outstanding achievements over the last year, are documented in the individual divisional profiles.

The Department of Surgery Research Day, organised by Dr Michael Held, was a most successful collaboration between the Divisions. Professor Donald Hudson delivered the John Terblanche Lecture.

Division of General Surgery

Head of Division: Professor Del Kahn

Divisional Profile

The six surgical firms within the Division of General Surgery are responsible for Hepatobiliary Surgery, Surgical Oncology/Endocrine Surgery, Colorectal Surgery, Upper GI Surgery, Acute Care Surgery and Vascular Surgery. The Surgical Intensive Care Unit, the Trauma Unit, and the Transplant Unit are also part of the Division.

The Division prides itself on maintaining high standards of clinical service, and teaching of both undergraduates and postgraduates. The Division continues to function as a true academic unit, with its members making significant contributions at both local and international meetings, while at the same time maintaining a high research output.

Permanent and Long-Term Contract Staff

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<th>Role</th>
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Permanent Staff (Full-Time)

**PROFESSOR JEJ KRIGE**
Hepatobiliary Surgery

**PROFESSOR P NAVSARIA**
Trauma Surgery

**ASSOCIATE PROFESSOR A NICOL**
Trauma Surgery

**ASSOCIATE PROFESSOR P GOLDBERG**
Colorectal Surgery

**ASSOCIATE PROFESSOR E PANIERI**
Surgical Oncology

**ASSOCIATE PROFESSOR E MULLER**
Transplantation

**DR M BERNON**
Hepatobiliary Surgery

**DR A BOUTALL**
Colorectal Surgery

**DR S BURMEISTER**
Hepatobiliary Surgery

**DR L CAIRNCROSS**
Surgical oncology

**DR G CHINNERY**
Upper Gastrointestinal Surgery

**DR N CLOETE**
Vascular Surgery

**DR J KLOPPER**
Acute Care Surgery

**DR C KLOPPERS**
Acute Care Surgery

**DR NG NAIDOO**
Vascular Surgery

**DR D THOMSON**
Critical Care

**DR C WARDEN**
Acute Care Surgery

Contact Details

Division of General Surgery, University of Cape Town,
Groote Schuur Hospital, J45, Old Main Building,
Observatory 7925
Tel: +27 21 406 6475
Fax: +27 21 448 6461
UCT web: www.uct.ac.za
DIVISION OF OPHTHALMOLOGY

Head of Division: Professor C. Cook

Divisional Profile

The Division of Ophthalmology combines an academic hospital service with University teaching, clinical training and research.

Specialist tertiary care clinical services are provided to patients in the Western Cape and beyond.

Teaching is provided to fifth year medical students, and specialist training of both local graduates and graduates from other countries is provided.

A postgraduate diploma course in community eye health and a masters in public health with a community eye health track is provided for Vision 2020 programme managers working in sub Saharan Africa.

Permanent and Long-Term Contract Staff

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<table>
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Students

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<td><strong>Total</strong></td>
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Permanent Staff (Full-Time)

**PROFESSOR C. COOK**
Professor and Head, Division of Ophthalmology, UCT Faculty of Health Sciences, Groote Schuur Hospital and Red Cross Children’s Hospital. Community eye health, glaucoma.

**DR N. DU TOIT**
Consultant Specialist, Groote Schuur Hospital. Anterior segment surgery, glaucoma, ocular trauma.

**DR K. LECUONA**
Consultant Specialist, Groote Schuur Hospital. Prevention of blindness in developing countries, lacrimal drainage disorders, inflammatory eye disease, ocular oncology.

**DR T. POLLOCK**
Consultant Specialist, Red Cross Children’s Hospital. Paediatric ophthalmology.

**DR J. RICE**
Consultant Specialist, Groote Schuur Hospital. Vitreo-retinal disease.

**DR J STEFFEN**
Consultant Specialist, Groote Schuur Hospital. Vitreo-retinal disease.

**DR C. TINLEY**
Consultant Specialist, Red Cross Children’s Hospital. Paediatric ophthalmology.

Permanent Staff (Part-Time)

**DR E. ALBRECHT**
Medical retina.

**DR M. ATTENBOROUGH**
Cornea.

**DR N COCKBURN**
Oculoplastics

**DR J. DE VILLIERS**
Strabismus.

**DR R. GROTTÉ**
Paediatric ophthalmology

**DR D. HARRISON**
Oculoplastics

**EMERITUS PROFESSOR A. MURRAY**
Strabismus.

**DR A. PERROTT**
Glaucoma.

**DR P. STEVEN**
Neuro-Ophthalmology.

**DR K SUTTLE**
Surgical retina, oculoplastics.

**DR H. VAN VELDEN**
Surgical retina.

Honorary Staff

**PROFESSOR P COURTRIGHT**
Epidemiologist. Director of Kilimanjaro Centre for Community Ophthalmology.
DIVISION OF ORTHOPAEDIC SURGERY

Head of Division: Professor Robert Dunn

Divisional Profile

The Division of Orthopaedic Surgery continued to provide secondary and tertiary Orthopaedic services to the Western Cape and surrounding communities organized in the following sub-units: Trauma, Hands, Acute Spine Injury Unit, Spine Surgery Unit, Upper limb unit, Lower Limb unit and Orthopaedic Oncology. This comprehensive service is made possible with the input from enthusiastic sessional staff from private practice, highlighting the benefits of public-private partnerships.

This platform provides an excellent training experience for our 19 registrars and 4 clinical sub-specialist fellows.

We continue to increase our elective surgical outputs with public-private collaboration and additional operating lists. This has significant improved our arthroplasty outputs with a positive impact on the waiting lists.

Our research capacity has been enhanced with the establishment of the Orthopaedic Research Unit (ORU) under the directorship of Dr Michael Held.

Achievements

Dr Roche was promoted ad hominem to Associate Professor by UCT.

Productive clinical research many national and international podium presentations and publications.

Full time consultants recognized as national leaders by requests as faculty for national meetings and representing the respective societies on their EXCO’s – Prof Dunn SAOA EXCO, Dr Solomons Hands EXCO, Dr Roche SASAE EXCO, Dr Maqungo Trauma Society EXCO, Dr Dix Peek Paediatric Orthopaedic Society.
DIVISION OF EMERGENCY MEDICINE

Head of Division: Professor LA Wallis

Divisional Profile

Emergency Medicine is run as two academic Divisions (at UCT and SUN) but has a single Head. The Division utilises various academic and satellite hospitals for the purposes of teaching and research; these include: Groote Schuur, Red Cross War Memorial Children’s, Victoria, GF Jooste, Paarl, and New Somerset hospitals. The types of patients seen and emergencies treated vary among hospitals, allowing our MMed students to become fully competent Emergency Medicine specialists.

The Division places an emphasis on post graduate programmes, with 18 PhD, 8 MSc, and 50 MPhil students. In 2014, the Division produced 30 publications in peer-reviewed journals and contributed to 8 book chapters. The Division’s research has been focused in the following areas: emergency care systems, emergency ultrasound, pre-hospital care and disaster medicine, and mHealth.

The Division has 1 Professor, 2 Senior Lecturers, 3 Lecturers, and 1 Research Coordinator between SU and UCT. There are 9 honorary lecturers at SUN and an additional 10 honorary lecturers at UCT.

Head of Division (UCT, SU & WCG)
Professor Lee A. Wallis

Head of Education (UCT & WCG)
Dr Heike I. Geduld

MPhil Programme Convenor
Tyson B. Welzel

PhD Programme Convenor
Stevan R. Bruijns

Divisional Statistics

Permanent and Long-term UCT Contract Staff

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<tr>
<th>Role</th>
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<tr>
<td>Professor</td>
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<td>Senior Lecturers</td>
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<td>Research Staff</td>
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Honorary staff

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Students

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<tr>
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Achievements:

Faculty members in the academic division currently hold a number of international and national leadership positions within Emergency Medicine including:

- Current President African Federation for Emergency Medicine (Prof L Wallis)
- Secretary: African Federation for Emergency Medicine (Dr H Geduld)
- President: Emergency Medicine Society of South Africa (Dr M Stander)
- Vice President: Emergency Medicine Society of South Africa (Dr R Dickerson)
- College of Emergency Medicine President (Dr R Dickerson), Secretary (Dr H Geduld) and 3 elected members of Council (Dr A Kropman, Dr K Vallabh and Dr S Lahri)
- President elect of the International Federation for Emergency Medicine (Prof L Wallis)
- African Journal of Emergency Medicine Editors-in-chief (Dr SR Bruijns and Prof L Wallis) and editorial board members (Dr M Stander, Dr R Dickerson, Dr DJ Van Hoving, Dr W Smith, Dr H Lamprecht and Dr K Cohen)

Contact Details

Divisional Website: www.emct.info
Telephone: +27 21 948 9908
Fax: +27 21 948 7925
Lee.wallis@uct.ac.za
Postal Address: Division of Emergency Medicine, University of Cape Town, Medical School, Groote Schuur Hospital, J46 Old Main Building, Observatory, 7925
Tel: +27 21 948 9908
Fax: +27 21 948 9909
UCT General enquiries: +27 21 650 9111
UCT web: www.uct.ac.za
DIVISION OF NEUROSURGERY

Head of Division: Professor G Fieggen

Divisional Profile

2013 saw the fruition of a number of long-term objectives concerning infrastructure and staffing. The establishment of the UCT/GSH Neurosurgery Clinical Hub in the F3 Core Area has transformed our meetings and we were delighted to acknowledge the donors who made it possible, especially the Parker family and the Mauerberger Foundation Fund at an opening ceremony on 22 August 2013. A new Cathlab at UCTPAH enhanced the neurointerventional program and the first fluorescence-guided glioma resection was performed by Dr Sally Rothemeyer.

Members of the Division collaborated with our counterparts in Neurology to run a very successful GP Refresher Course in February and this was matched by the first edition of Continuing Medical Education (March 2013) devoted entirely to neurosurgical topics. Dr Rothemeyer and Dr David Le Feuvre organised the Surgical Research Day and the year ended on a high note on the international front with Professor Anthony Figaji hosting the 4th biennial meeting of the International Society for Intraoperative Neurophysiology (ISIN).

Well-deserved promotions went to Professor Allan Taylor (Head of Clinical Unit), Professor Patrick Semple (Professor) and Dr David Le Feuvre (Associate Professor). This year saw the award of a number of substantial research grants and training fellowships. Dr Tiago Morgado was appointed as the inaugural Neurocritical Care Fellow (funded by Johnson and Johnson) and the Division hosted our first ever postdoctoral student in Dr Nelleke Langerak (UCT Postdoctoral Award) who received a prestigious CIPHER grant from the International AIDS Society which will enable her to stay on as a Senior Research Officer. Dr Llewellyn Padayachy received a Harry Crossley Award for his doctoral research, Ursula Rohlwink a CIDRI Wellcome Trust Postdoctoral Award pending completion of her PhD in 2014 and Professor Figaji received a substantial research grant from the Cancer Research Initiative of South Africa (CARISA) and was nominated by the University Selection Committee for the very prestigious SARChI Chair in Clinical Neuroscience.

We were fortunate to have Dr Nte Mjoli stay on as Chief Registrar while Dr Edwin Mogere passed the FCNeurosurg(SA) exam. Two registrars received major international awards. Dr David Roytowski received the International Abstract Award from the American Association of Neurological Surgeons and was invited to present at the main plenary session, an extraordinary achievement while Dr Mogere received the Professor Ming Chien Kao Scholarship from the World Federation of Neurosurgical Societies and presented his work at the

14th World Congress of Neurosurgery in Seoul, Korea where he also participated in the Pediatric neurosurgery Pre-Congress Course, talking on Management of asymptomatic patients: chronic subdural haematoma.

Dr Rohen Harrichandparsad, a neurosurgeon from Durban, completed training in neuro-intervention and is now running a service at the Inkosi Albert Luthuli Central Hospital. Visiting professors included Dr Abhaya Kulkarni (Hospital for Sick Children, Toronto, Canada) and Dr Mohamed Raji Mahmud (National Hospital Abuja, Nigeria).

We were greatly honoured by the generous establishment of the Estelle Yach Award by the Mauerberger Foundation Fund and this will be used to establish an annual neurosurgical meeting in Cape Town. A great deal of work went into organizing an annual ISPN/ESPN African Paediatric Neurosurgery Course which will kick off in Pretoria in March 2014. Finally, the plans to return the academic department to J Block, co-located with Neurology and Neuropsychology as a Clinical Neurosciences Centre were formally approved by the hospital and submitted to the Provincial Department of Health with a request for support.

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Fax: +27 21 406 6555
UCT General enquiries: +27 21 650 9111
UCT web: neurosurgery.uct.ac.za/
DIVISION OF UROLOGY

Head of Division – Associate Professor JM Lazarus

Divisional Profile

The Division of Urology renders a urological service to Groote Schuur Hospital, Red Cross War Memorial Children’s Hospital and Somerset Hospital. An operating list is done once per week at Eerste river Hospital, operating on Groote Schuur Hospital patients.

A Prof John Lazarus is head of Paediatric Urology at Red Cross Hospital and Dr Lisa Kaestner attends Somerset Hospital for ward rounds and outpatients. The operating list at Eerste River Hospital is done by a Senior Registrar assisted by Professor Johan Naudé (ex head of Division of Urology).

Undergraduate teaching is provided to 6th year medical students, who do a two week block in Urology. Postgraduate training is provided to Urology Registrars and also to supernumerary registrars. The members of our division make significant contributions at both local and international meetings. A number of our members have attended instructional courses both locally and overseas. The Division has maintained its productivity despite staff shortages and the financial crisis.

The Division is involved with two combined clinics – Urological Oncology Clinic (with Radiation Oncologists) and Female Continence Clinic (with Gynaecologists). We run a number of other specialised clinics – Adolescent Spinal Defects Clinic, Haematuria Clinic, Stricture Clinic, Erectile Dysfunction Clinic, Reconstructive Urology Clinic and Metabolic Stone Clinic.

Divisional Statistics

Permanent and Long-Term Contract Staff

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Students

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<td>Undergraduate (6th years)</td>
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</table>

Research Fields and Staff

**PROFESSOR J LAZARUS**
All aspects of Paediatric Urology; Surgical Treatment of Renal Calculi

**DR S SINHA**
Widening indications for laparoscopic surgery in urology; double J stent insertion under local anaesthetic; radical cystectomy and extended pelvic lymphadenectomy

**DR L KAESTNER**
Prostate cancer; Renal Transplantation; Urogynaecology

**DR A VAN DEN HEEVER**
Results of urethroplasty for urethral strictures

**DR M KOLIA**
Retrospective Review Prostatectomies done between 2005 and 2011 at Groote Schuur Hospital

**DR F CASSIM**
Retrospective Review of Bladder of Open versus Laparoscopic Radical Cystectomy for the Treatment of Bladder Cancer: Complications and Oncological Outcome

Divisional Contact Details

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Fax: SA (021) 406 6122
Email: lesley.burke@uct.ac.za
DIVISION OF OTOLARYNGOLOGY

(Including Red Cross War Memorial Children’s and New Somerset Hospitals)

**Head of Division: HOD Professor**
**Johannes Fagan**

**Divisional Profile**

The Division of Otolaryngology combines an academic hospital clinical service with university teaching, training and clinical research. It provides specialist clinical services to patients in the Western Cape and beyond. Its university responsibilities include in-hospital and community-based training of 5th year medical students, teaching of dental and paramedical students, and specialist training of both local graduates and graduates from other countries. An outreach programme supplements the training of students and primary health care workers in the fundamentals of ear care.

We continue to provide specialist training to supernumerary registrars from other African countries, always having 2-3 such trainees on our staff; we have trained 13 ENT surgeons from other African countries to date. We recently accepted our 10th **UCT Karl Storz Fellow in Advanced Head and Neck Surgery from Zimbabwe**. Previous fellows are from Senegal, Nigeria, Ghana (2), Kenya, Uganda, Malawi, Rwanda and Tanzania. All have returned to teaching hospitals in their home countries. This fellowship training, the only such training in Africa, has made a significant contribution to the quality of head and neck care in Sub-Saharan Africa, and strengthened UCT’s connections with other African countries.

**Highlights**

Dr Darlene Lubbe was awarded an **Ad Hominem Associate Professorship**, based on her academic track record and that she has established an international reputation as an endoscopic anterior cranial base surgeon.

The Division of ENT convened the **50th National Conference of the South African Society of Otorhinolaryngology, Head and Neck Surgery** at the ICC in November 2014. It was the best attended conference in the history of the society, and attended by a large international contingent of speakers and attendees.

**Divisional Statistics**

**Permanent and Long-Term Contract Staff**

<table>
<thead>
<tr>
<th>Position</th>
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<tbody>
<tr>
<td>Professors</td>
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<td>Associate Professors</td>
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<td>Lecturers (part-time)</td>
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<td>Audiologists</td>
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**Students**

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<td>Masters</td>
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<td>Honours</td>
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<td>Undergraduate</td>
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<td>Karl storz Fellow in advanced Head &amp; Neck Surgery</td>
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</table>

**Staff and Research Fields**

**Permanent Staff**

**PROFESSOR JJ FAGAN**

Johan Fagan is the Leon Goldman Professor and Chairman of the Division of Otorhinolaryngology at the University of Cape Town. Following his ENT training at the University of Cape Town, he worked at the Royal Marsden Hospital in London for 6 months, before completing two clinical fellowships at the University of Pittsburgh, USA in Head and Neck/Cranial base surgery and in Otology/Neurotology. He has written >100 peer reviewed articles and book chapters. He is President of the South African College of Otorhinolaryngology, and serves on the executive committees of the Colleges of Medicine of South Africa, the Pan African Federation of Otalaryngologic Societies (PAFOS), and represents Africa and the Middle East on the Executive Committee of the International Federation of Otolaryngologic Societies (IFOS). A major interest of his has been to advance head and neck surgery in Africa and the Developing World. He established the Karl Storz Fellowship in Advanced Head and Neck Surgery at the University of Cape Town, and is currently training the 10th African Head and Neck fellow. He maintains an educational website for ENT surgeons in the Developing World (www.entdev.uct.ac.za/), and initiated and edits “The Open Access Atlas of Otolaryngology, Head & Neck Operative Surgery” and the “Open Access Guide to Audiology and Hearing Aids”, chapters of which have been downloaded >500 000 times (www.entdev.uct.ac.za/guides/)
ASSOCIATE PROFESSOR D LUBBE
Darlene Lubbe is an Associate Professor in the Division of Otorhinolaryngology at Groote Schuur Hospital (University of Cape Town). She has been a consultant since 2003 with main interests in Rhinology and Skull Base Surgery. Prof Lubbe works closely with the departments of Ophthalmology and Neurosurgery to address tumours involving the sinonasal cavity, orbit and anterior skull base. She has presented at many national and international meetings and has published numerous papers in peer reviewed journals.

DR GJ COPLEY
Dr Copley has special expertise in Paediatric ENT with interests in hearing screening in neonates and children. He is the MBCHB undergraduate teaching convener for otorhinolaryngology, UCT.

DR TASHNEEM HARRIS
Dr Harris has a special interest in Otology, Neurotology and Lateral skull base surgery. She completed an otology and lateral skull base fellowship in Switzerland under the auspices of Prof Ugo Fisch and Prof Thomas Linder. She is also a co-convener of the fifth year medical student training. She currently serves on the faculty of a number of temporal bone courses including the Bloemfontein Temporal Bone Course, the Tygerberg Temporal Bone Course and has been invited to be on the faculty of the Fisch International Microsurgery Fellow Foundation in Zurich, Switzerland. Dr Harris Coordinated the first lateral skull base course in South Africa in 2014.

DR E. MEYER
Dr Myer is an ENT specialist with a specific interest in endoscopic ear surgery, vestibular problems and BAHA surgery.

DR O. EDKINS
Dr Edkins is Specialist & HOD, Department of Otorhinolaryngology, New Somerset Hospital. He is the representative for ENT Surgery, Level 1 & 2 ENT services, Metro West. He is a member of the following committees: Somerset Hospital Academic Fund - Vice Chair; Somerset Hospital Theatre and Management Committee; and UCT Skills Steering Committee. His clinical interests are in General ENT with a special interest in Sialendoscopy and Salivary gland disease. He is involved in postgraduate training of registrars and undergraduate training of medical students. He is an active primary investigator and supervisor on various current research projects.

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UCT General enquiries: +27 21 650 9111
UCT web: www.uct.ac.za

CHRIS BARNARD DIVISION OF CARDIOTHORACIC SURGERY

Head of Division: Professor Peter Zilla

Divisional Profile

The Division continues to offer the full range of adult and paediatric cardiac and thoracic surgery services, catering to all forms of congenital heart disease, myocardial revascularisation (on- and off-pump), cardiac valvular repair and replacement surgery as well as thoracic aortic surgery and heart transplantation. Research will still need to be conducted within the Division’s Cardiovascular Research Unit to evaluate an affordable Left Ventricular Assist Device (VAD) to be able to offer intermediate and long-term support as they hold the promise of providing a period of stability which could lead to recovery of the heart, or alternatively allow survival until cardiac transplantation in otherwise inoperable cases. Currently, the use of such first world commercially available devices is prohibitively expensive in a developing world scenario.

The Division’s transcatheter valve programme, launched in 2013 is now firmly established, but remains limited by financial constraints with regard to the cost of these prostheses. The development of low cost TAVI solutions appropriate to Sub-Saharan Africa is currently being conducted by a University of Cape Town startup company (Strait Access Technology) based and rooted in the Cardiovascular Research. The goals of this initiative are in the first stages aimed at collaborative studies together with the medical device industry and other international academic units to produce cost-effective devices which are more readily available to the developing world. Preclinical testing of prototype designs has been commenced in various animal models in 2014 and a second phase of funding has secured a further 33mio Rand for the next two years of this project.

Minimally invasive/minimum access procedures are also now well established in the Division and the first 50 cases of minimally invasive mitral valve procedures with good results were reported in 2014.

The envisaged ‘hybrid’ operating theatre for this purpose has been approved and building construction is planned for April/May 2015. While funding of the imaging and other equipment is yet to be obtained, funding has been secured for the construction phase. This facility will not only offer to reduce hospital stays but reduce the costs of open heart surgery thereby bringing heart valve treatment closer to the third world where rheumatic valvular disease remains highly prevalent.

In our Paediatric subdivision based at Red Cross children’s Hospital, previous analysis of outcomes for palliative pulmonary artery banding led to a significant change in
our clinical practice. This is being followed up with an analysis of the outcomes of another form of palliation, pulmonary-systemic shunting, with a view to further adjusting our practice away from palliation to early complete primary repair.

Approval was granted by management to investigate the initiation of the use of extracorporeal membrane oxygenation (ECMO) as support for critical patients. In 2015 we will embark on a staff-training program in the use of ECMO with a view to introducing a pilot clinical ECMO program in 2016.

Preparations for the introduction of a new Digital Patient Management system to collate all patient data from outpatients, admission and surgery, to long-term follow-up, from both the cardiological and the surgical services have commenced. Once implemented, this system will not only help greatly in management patient planning, it will also be an invaluable research tool.

With respect to Paediatric Thoracic Surgery, we decided to retrospectively analyze our surgical management of pulmonary hydatid disease, in the expectation that we will be able to demonstrate that lung-sparing surgical principles are a better approach in these patients than the more traditional resectional approach. With the addition to staff of Prof. Linegar who has extensive thoracoscopic expertise, we will begin introducing this minimally invasive approach to our thoracic practice in children.

Whilst research in the field of General Thoracic Surgery over the past two decades has been slow, there have been a number of recent developments that hold potential for improving the research output of this department. The operating repertoire has been expanded to offer a broader base of treatment options for the community. There have been significant improvements in operating technologies with addition of video equipment for thoracoscopic, airway and upper GIT endoscopy work. An application to acquire a 1318nm ND:YAG laser specifically for lung and airway and upper GIT endoscopy work. An application to add bioactive hydrogels for growth factor delivery. Heparin derivatised hydrogels in a collaboration with the University of Pavia, Italy were shown to improve engraftment of delivered stem cells and result in substantially increased function of myocardial infarcted rat hearts. Synthetic ‘smart’ hydrogels were also designed from outsider our Faculty and University. We commend the hard work of all members of our Division for the dedication in producing a self-review document of great quality. The review will be held during a week in February 2015.

### Divisional Profile (Cardiovascular Research Unit)

The planned dissolution of the Western Cape Heart Research Grouping of the Medical Research Council, of which the Cardiovascular Research Unit is a member, again offers new challenges for funding for 2015. The Unit nevertheless relies on Competitive Programme for Rated Researchers, bilateral (SA/India), Blue Skies and incentive funding from the National Research Foundation. An International Centre for Genetic Engineering and Biotechnology (ICGB) grant has also been awarded. Individual researchers have also applied for MRC self-initiated research grants (SIR). Plans to establish an MRC-funded Cardiovascular Research Centre of Excellence to retain this expertise in its historical home at UCT are underway.

The Biomaterials group concentrated mainly on two aspects in 2014. The first relates to the transfer of principles learnt from the spontaneously endothelializing foamed polyurethane grafts, to decellularized tissue and to nano-to-micro fibrillar scaffolds produced by electrospinning. As standard electrospun scaffolds have limited porosity, structural polyurethane fibres were spun together with water soluble fibres, followed by dissolving the sacrificial fibres to yield materials with improved porosity that were shown to be superior to controls with regards to cellular infiltration in vivo; further work on this project involves delivery of drugs from the nanofibrillar materials, and the use of degradable materials and related mechanical properties. The second comprises the development and evaluation of bioactive hydrogels for growth factor delivery. Heparin (and analogues) were modified and covalently cross-linked into injectable polyethylene glycol hydrogels. Growth factors delivered from these gels were shown to significantly increase vascularization of polyurethane scaffolds. These technologies hold promise for, and will be further evaluated in, a circulatory vascular graft and other cardiovascular applications.

Research continued to focus on regenerative medicine approaches based on remodeling of synthetic engineered hydrogels. A model for assessment of the regenerative capacity of these synthetic hydrogels in the treatment of myocardial infarction has generated further promising results. Heparin derivatised hydrogels in a collaboration with the University of Pavia, Italy were shown to improve engraftment of delivered stem cells and result in substantially increased function of myocardial infarcted rat hearts. Synthetic ‘smart’ hydrogels were also designed that can control the ingrowth of invading tissue cells,
an important step towards developing scaffolds for tissue regeneration.

The Pathobiology group has revealed tantalising evidence suggesting a link between residual bacterial antigens present in porcine and bovine pericardial tissue typically obtained from abattoirs and used in the construction of commercial bioprosthetic heart valves, the ensuing humoral host response and the subsequent mineralisation of the tissue in vivo which inevitably leads to valve stenosis and structural deterioration of the leaflet cusps. This link will be further examined in 2015. Additionally, the group has published data confirming the immunoglobulin response to aggregated human interferon in a transgenic model – an important consequence with respect to pump delivery of the drug in patients.

Divisional Statistics

Permanent and Long-Term Contract Staff

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<tr>
<th>Position</th>
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<td>Senior Consultants</td>
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Students and postdoctoral fellows

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<td><strong>TOTAL</strong></td>
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Research Fields and Staff

Permanent Staff

PROFESSOR PETER ZILLA
Head of Division

ASSOCIATE PROFESSOR JOHAN BRINK
Clinical Director

DR PAUL HUMAN
Research Director, Section Head Pathobiology

ASSOCIATE PROFESSOR JOHN HEWITSON
Section Head: Paediatric Surgery

ASSOCIATE PROFESSOR ANTHONY LINEGAR
Section Head: Thoracic Surgery

ASSOCIATE PROFESSOR DEON BEZUIDENHOUT
Senior Lecturer, Section Head Polymer Sciences

ASSOCIATE PROFESSOR NEIL DAVIES
Senior Lecturer, Section Head Biology and Regeneration

DR ANDRE BROOKS
Senior Consultant

DR JACQUES SCHERMAN
Senior Consultant

Contact Details

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Cardiovascular Research Unit

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Tel: +27 21 406 6476/6385
Fax: +27 21 448 5935

RESEARCH OUTPUT

Edited books

Franz, T., (ed) 2014. Cardiovascular and Cardiac
Therapeutic Devices. 100pp. Heidelberg: Springer Berlin

**Chapters in books**


**Articles in peer-reviewed journals**


Andriamanjato, H.H., Mathenge, W., Kalua, K., Courttright, P. and Lewallen, S. 2014. Task shifting in primary eye care: how sensitive and specific are common signs and symptoms to predict conditions requiring referral to specialist eye personnel? Human Resources for Health, 12(Supplement 1): S3(1-6).


Burga, H.G., Hinds, C., Lansingh, V., Samudio, M., Lewallen, S., Courttright, P., Duerksen, R., Cibils, P. and...


Williams, D. 2014. There is no such thing as a biocompatible material. Biomaterials, 35: 10009-10014.
