OUR MISSION

OUR MISSION IS TO BE AN OUTSTANDING TEACHING AND RESEARCH UNIVERSITY, EDUCATING FOR LIFE AND ADDRESSING THE CHALLENGES FACING OUR SOCIETY.

EDUCATING FOR LIFE MEANS THAT OUR EDUCATIONAL PROCESS MUST PROVIDE:

- a foundation of skills, knowledge and versatility that will last a lifetime, despite a changing environment;
- research-based teaching and learning;
- critical enquiry in the form of the search for new knowledge and better understanding; and
- an active developmental role in our cultural, economic, political, scientific and social environment.

Addressing the challenges facing our society means that we must come to terms with our past, be cognisant of the present, and plan for the future.

IN THIS, IT IS CENTRAL TO OUR MISSION THAT WE:

- recognise our location in Africa and our historical context;
- claim our place in the international community of scholars;
- strive to transcend the legacy of apartheid in South Africa and to overcome all forms of gender and other oppressive discrimination;
- be flexible on access, active in redress, and rigorous on success;
- promote equal opportunity and the full development of human potential;
- strive for inter-disciplinary and inter-institutional collaboration and synergy; and value and promote the contribution that all our members make to realising our mission.

TO EQUIP PEOPLE WITH LIFELONG SKILLS WE MUST AND WILL:

- promote the love of learning, the skill of solving problems, and the spirit of critical enquiry and research; and
- take excellence as the benchmark for all we do.

We are committed to academic freedom, critical scholarship, rational and creative thought, and free enquiry. It is part of our mission to ensure that these ideals live; this necessarily requires a dynamic process of finding the balance between freedom and responsibility, rights and obligations, autonomy and accountability, transparency and efficiency, and permanence and transience; and of doing this through consultation and debate.

APRIL 1996
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Detailed information on the 2007 research output produced by the University of Cape Town is available at [http://www.research2007.uct.ac.za](http://www.research2007.uct.ac.za)
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Since assuming the role of Vice-Chancellor of the University of Cape Town (UCT) in 2000, I have witnessed impressive advances in the research arena. In the past seven years, the University has earned increased international respect as a research-led university and has consolidated its position as one of Africa’s leading research institutions.

Evidence of our research-led status is evident, from the steadily increasing lists of publications that make up the bulk of this report to the number of national and international awards made to UCT and its academics in the past year.

Since 2003, UCT has been the highest-ranked South African and African university, according to the Academic Ranking of World Universities (ARWU) conducted by the Institute of Higher Education at Shanghai Jiao Tong University in China. In 2007 we also earned a place in the top 200 of the respected Times Higher Education – QS World University Rankings, moving up 57 places from 2006.

UCT is now well positioned to continue to improve its research output and impact thanks to growth in all sectors of research at UCT. We have seen an increase in research income from R240 million in 2001 to R547 million in 2007. Our government subsidy for research publications increased from 563 units in 2003 to 907 units in 2006 and our postgraduate scholarships grew from R10 million in 2003 to R21 million in 2007.

Central to our programme of boosting and supporting ongoing research excellence at the University has been the Emerging Researcher Programme that offers mentoring and funding support to junior and mid-level academics. The programme has now ended its fifth year of operation and has expanded from an initial 44 participants recorded in 2003 to 262 participants at present.

I would like to extend my deepest appreciation to researchers and staff members at UCT for their support during my tenure. A special thanks to Professor Cheryl de la Rey, Deputy Vice-Chancellor, who is leaving UCT to take up the position of CEO of the Council on Higher Education, for her leadership and management of research at UCT. I wish to thank all donors, funders, research partners and collaborators.

**UCT is now well positioned to continue to improve its research output and impact thanks to growth in all sectors of research at UCT.**

We take pride in the quality and impact of the research conducted at UCT, but we could not achieve such success without the commitment, hard work and dedication of the entire university community.

Professor Njabulo S. Ndebele
Vice-Chancellor and Principal
Sedert ek in 2000 die posisie van Visekanselier van die Universiteit van Kaapstad aanvaar het, het ek indrukwekkende vordering in die navorsingsarena beleef. In die afgelope sewe jaar het die Universiteit toenemende internasionale respek as ‘n navorsinggedrewe universiteit te beurt geval, en het hy sy posisie as een van Afrika se toonaangewende navorsingsinstansies verstewig.

Bewyse van ons navorsinggedrewe status blyk uit die gestadig groeiende lys van publikasies wat die grootste deel van hierdie verslag behels, asook die aantal nasionale en internasionale toekennings wat die UK en sy akademici in die afgelope jaar te beurt geval het.


Sentraal in ons program om voortdurende navorsingsuitnemendheid by die Universiteit te verstewig en te ondersteun, was ons Program vir Ontluikende Navorsers, wat mentorskap en befondsingsondersteuning aan junior- en middelvlak-akademici bied. Die program het nou sy vyfde bedryfsjaar afgesluit, en van die aanvanklike 44 deelnemers in 2003 het dit tot die huidige 262 deelnemers uitgebrei.

Ek wil graag aan navorsers en personeellede by die UK my diepe waardering betuig vir hul ondersteuning tydens my dienstyd. Spesiale dank aan Professor Cheryl de la Rey, Adjunkvisekanselier wat die UK verlaat het om die posisie van HUB by die Hoër Onderwysraad te beklee, vir haar leierskap en bestuur van navorsing by die UK. Ek wil ook graag alle donateurs, befondsers, navorsingsvennotes en medewerkers bedank.

Ons is trots op die gehalte en impak van die navorsing wat by die UK onderneem word, maar sonder die betrokkenheid, harde werk en toewyding van die hele universiteitsgemeenskap sou ons nie sulke welslae kon behaal het nie.

Professor Njabulo S. Ndebele
Visekanselier en Prinsipaal
UKUSUSELA OKO NDAQALIA UMSEBENZI WAM WOKUBA
NGUSEKELA-TSHANSELA WEYUNIVESITHI YASEKAPA NGO-
2000, Ndibe Nakubonela Imitshi Ebonakalayo Kwicandelo
Lophando. Kule minyaka isixhenxe idluLileyo Iyunivesithi
Le Izuze ukuhlonitshwa Nangakumbi Kwizizwe Zehlabathi
Yaye Isibethelele Isidima Sayo Sokuba YeYona Yunivesithi
Inkqenkqaza Phambili Ngezophando E-Afrika.

Ubungqina Bewonga Lethu Lokuba YeYona Yunivesithi
Inkqenkqaza Phambili, Libubungqina Boluhlwuwawawawawana
Enza Indikimba Yale Ngxelo Ukuya Kutsho Kwinani
Lamawonga Kazwelonde NaweHeLabathi Afikilele EUCT Kunye
Nenkubabuchopho Zayo Kulo Nyaka UpeHelileyo.

IUCT NGOKU ISENDAWENI ENLE
EKUQHUBEKENE IPHUCULA IZIPHUMO
ZOPHANDO LWAYO YAYE IDLULISELA
UMBULELO WAYO KUKHULO KWUO ONKE
AMACANDELO OPHANDO EUCT.

UKUSUSELA NGO-2003, IUCT YAYONA YUNIVESITHI IGQWESILEYO
eMZANTSi AFRIKA NASE-AFRiKA IPHELA, NGOKWE-ACADEMIC
RANKING OF WORLD UNIVERSITIES (ARWU) EBiqhutywa
YINSTITUTE OF HIGHER EDUCATION EShanghai Jiao Tong
University eChina. Ngowe-2007 Siphinde Sabalwa KuluLhu
Iwama-200 Eeyunivesithi Ezihloniphileleko KwiTImes
Higher Education-QS World University Rankings, Sinyuka

IUCT NGOKU ISENDAWENI ENLE EKUQHUBEKENI IPHUCULA
IZIPHUMO ZOPHANDO LWAYO YAYE IDLULISELA UMBULELO WAYO
KUKHULO KWUO ONKE AMACANDELO OPHANDO EUCT. Sibona
Ukukhula Kwengeniso Yophando UkusaKu Kuma-R240
Esigidi Ngo-2001 Ukuya Kutsho Kuma-R547 Esigidi Ngowe-
2007. Isabela Sethu Semali Esiphuma Kuruhlumente
Semisebenzi Epapashiweyo Siye Sakhula Ukusa Kwinani
Eliyi-563 Yemivo Ngo-2003 Ukuya Kuma-R97 Yemivo Ngo-
2006 Yaye Inkxaso YeZifundo Zezidanga Eziphakamileyo Iye
Yakhula Ngo-R10 Yesigidi Ngo-2003 Ukuya Kuma-R21 Esigidi

Nyengentsika Kwinkubo Yokunyusa Nokuxhasa Impumelelo
Etethe Gqolo Kuphando KwiYunivesithi Yi-Emerging Researcher
Programme Enika Inkxaso Yokutatamisa Abaphandi
Abasakhulayo Nasele Bekhulile. Le Nkubo Ngoku Iqgiba
Unyaka Wayo WesiHlanu Nsebenza Yaye Sele Ikhulu Ukusa
Kuma-44 Abathathi Nxaxheba Ababhalisiweyo Ngonyaka
Wama-2003 Ukuya Kutsho Kuma-262 Abathathi Nxaxheba
Abakhayo Ngoku.

Ndingathanda Ukubulela Ngokungazezisayo Kubaphandi
Nakumalungu Abasebenzi BaseUct Ngenkxaso Yabo
Nokuthembeka Kwabo Ngexesa Lokuphatha Kwam.
Umbulelo Owodwa KulNjingalwazi Cherly De La Rey,
OsiSandla-SeSekela Tshansela, Oyishiyayo IUCT Ukuya
Kuthathaba Isikhunfdla SobuCEO Kwicouncil On
Higher Education, Negegalelo Alenzileyo Lokubeka I-Uct KwimePHu
Yehlabathi. Okokugqibela, Kunyego Nto Incinci Noko,
Umbulelo Omkhulu Kubo Bonke Abantu Abathe Bafaka
Isandla Abafana Nababoneleli Ngezimali, Abahlulelani
Ngophando Kunye Namahlabakani.

SiyaZinga Ngexabiso Negalelo Lophando Olwenziwa EUCT,
Kodwa Oko Bhekugjenakuzhe KubuBumplelelo Ngaphandle
Kokuzinikezela Nokubhalisa Koluntu Lwalo Mzi Luphela.

UNjingalwazi NJjabulo S. Ndebele
ISekela-Tshansela & NeNqununu

IMBULA MBETHE
I am pleased to report that in 2007 the University of Cape Town showed considerable progress towards the institutional strategic objective of being a research-led university with international and national impact.

A number of milestones were achieved last year. Chief among these was the outcome of the second round of South African Research Chairs. UCT was awarded a further 19 Research Chairs (out of 51 nationally). Also pleasing were the results of the 2007 National Research Foundation (NRF) ratings. There were five new A-rated researchers – Professors Drucilla Cornell, Cyril O’Connor, Clifford Shearing, Dan Stein and Danie Visser – as well as an overall increase in the total number of rated researchers such that UCT now has 279 NRF-rated scholars. Moreover, the new A ratings mean that UCT now has 30 A-rated scholars, out of a national total of 71.

Total research income increased from R399.7 million in 2006 to R547.5 million in 2007. This is primarily attributed to major increases in the value and the number of research-related contracts entered into over the last two years. During 2007, UCT entered into 890 research-related contracts to the value of R496 million. Over the last few years there was a notable increase in funding from international sources, and for the first time in 2007, the value of contracts entered into with foreign entities has surpassed that of local funders.

A total number of 3,178 awards to the value of R67 million were offered to 4,737 honours, masters and doctoral students who were registered for full-time study in 2007. The NRF remains the major funder of postgraduate students at UCT. Postgraduate study and research received focused attention in 2007 with the consideration of specific developmental initiatives to improve coordination and optimise resources.

Three new signature themes were developed in 2007. These include: Cities in Africa, Drug Discovery and Minerals to Metals. These three new themes add to the existing initiatives in Brain-Behaviour and Marine Research that were selected as the first two themes in 2006. The three new signature themes have been recognised as Research Niche Areas (RNAs) by the NRF and two of them have been awarded Institutional Research Development Grants for 2007 under these RNAs.

Looking ahead, a key focus for further strategic development research endeavour in 2008/9 will be the opportunities arising from the Technology Innovation Agency (TIA), a new Government initiative seeking to stimulate innovation. The University will also need to continue to ensure that its framework for research development is strengthened. To this end, our Emerging Researchers Programme continues to go from strength to strength. The programme now has 262 active participants and is fulfilling a vital skills transfer role as retired academics give of their time and expertise to the next generation of researchers.

This is my final report as Deputy Vice-Chancellor at UCT as I am about to assume office as the Chief Executive Officer at the Council on Higher Education. Thank you to all researchers for your support during the past six years and especially to the staff of the Department of Research and Innovation. I also wish to thank the numerous agencies and sponsors with whom I have worked. It has been a privilege and pleasure to contribute to the research endeavours at UCT.

Best wishes for the future.

Professor Cheryl de la Rey
Deputy Vice-Chancellor
The Research Office is responsible for grants funding, research quality assurance and the management of an information system that serves multiple research-specific purposes. The Office supports research planning and policy implementation, and manages the government requirements for research subsidy. Besides contributing to academic staff development through a series of targeted interventions to enhance research capacity, the Office is responsible for a range of annual reports, international research exchange and a series of research benchmarking activities. It further drives and supports the research activities that ensue from strategic partnerships and formal agreements with research councils, research institutions and government departments.

The Framework for Research Development, described in previous reports, includes support structures that are designed to serve researchers at different levels of their research careers, and includes the Emerging Researcher Programme (ERP), which has now ended its fifth year of operation. The ERP continues to operate within a structure that combines one-on-one interaction, a seminar and retreat programme, and the support to apply for capacity-building grants. The transfer of research skills from an experienced to an inexperienced generation of researchers remains central to the programme, with a small cadre of retired academics (the ‘Senior Research Scholars’) providing a hands-on mentoring service. October saw the launch by UCT Press/ Juta of a book documenting the ERP. Entitled The Emerging Researcher: Nurturing Passion, Developing Skills, Producing Output, the book serves as a resource for both emerging researchers and those mentoring them, with relevance at UCT and at higher education institutions nationally, as well as in other parts of Africa.

The three-year Mellon Visiting Mentors Project entered its second year in 2007. Conceived as an extension of the Emerging Researcher Programme, the project aims to extend discipline-specific mentorship to a cohort of developing academics. To this end, selected senior mentors are matched with individual staff members, postdoctoral fellows or postgraduate students to strengthen their research with a view to a career in academia. The faculties identify the ‘mentees’ as well as suitable high-level experts (mostly from abroad) who spend up to six months at UCT and help them achieve their goals through a series of clearly defined mentoring activities. Five scholars were selected to visit the University in the course of 2007, where the outcome of their mentoring interventions ranged from higher degree completion and debut publications to introducing a research culture in professionally orientated disciplines.

The University’s 57 formally constituted research groupings are submitted to a quality assurance review once every five years. Based on a self-evaluation portfolio and a site visit, the external panellists produce a review report that informs the relevant grouping’s subsequent endorsement or the development of an improvement plan. Whilst the first cycle of reviews (anticipated to be completed at the end of 2008) is formative and helps to shape each faculty’s objectives in relation to the relevant groupings, the second round (to commence in 2009) will be more ambitious in scope and will assess the international competitiveness of each grouping.

Support to prepare applications for National Research Foundation rating – a national benchmarking system whereby researchers are rated in terms of their national standing – is provided by the Research Office in conjunction with senior academic staff. The Office similarly draws on senior researchers to advise on the preparation of competitive funding applications. This includes proposal development for flagship programmes such as the South African Research Chairs Initiative and international or bilateral granting opportunities. As a service department the Research Office continues to work closely with the faculties to implement selected mechanisms such as research signature themes and institutional partnerships.

Dr Marilet Sienaert
Director: Research Office
Research Contracts and Intellectual Property Services (RCIPS) is responsible for co-ordinating the research contract and intellectual property activities.

The past year has again been a busy and productive year for the Office. A record 890 research contracts were approved in 2007, valued at a new high of over R490 million. This includes contracts to the value of R290 million with entities from 26 foreign countries, the remainder being from local entities.

We have revisited our technology transfer and commercialisation strategy during 2007 and have adopted a proactive approach versus the previous strategy of advocacy and information provision. The new approach pursues a more intimate working relationship between the faculties and RCIPS and relies on institutional commitment and faculty buy-in. Efforts will increasingly focus on identifying those structural arrangements and behavioural practices that will best support the achievement of successful commercialisation of the university’s research.

An immediate spin-off of our new strategy was the establishment of the “Pre-Seed” Fund with support from the University Research Committee. The purpose of this fund is to bridge the funding gap that exists in the innovation chain, before other funding streams can be accessed (such as the Innovation Fund, Biotechnology Regional Innovation Centres (BRICS), Industrial Development Corporation, venture capital, etc.) or a rounded technology package can be licensed.

There is an increasing focus by government on the effective management of Intellectual Property by universities and the dissemination of research results through commercialisation. In this regard, cognisance should be taken of the Bill on Intellectual Property Rights from Publicly Financed Research. The promulgation of the Bill, which is expected to occur during the second half of 2008, will have a dramatic impact on the operations of RCIPS. However, we remain optimistic that the Bill will stimulate disclosure and raise awareness about securing inventions.

Piet Barnard
Director: Research Contracts and Intellectual Property Services

Postgraduate Centre and Funding Office

The Postgraduate Centre and Funding Office are accountable to the University’s Postgraduate Studies Funding Committee, which in turn reports to the Board for Graduate Studies, both of which are in the academic cluster of committees, reporting to Senate.

The Office is responsible for monitoring the postgraduate sector and the development of policies and procedures for financial and other types of support to the postgraduate sector. This includes selection of candidates for the disbursement of awards sourced from central university funds, donations and investments, as well as the administration of awards funded by the National Research Foundation and the Medical Research Council. The Office and Centre have also had interim responsibility for the provision of infrastructural and financial support to the Postgraduate Students Association (PGSA). The PGSA will in future be incorporated – as a body – into the Student Representative Council, at which time responsibility for the PGSA will revert to the Department of Student Affairs.

Linda Vranas
Director: Postgraduate Centre and Funding Office

“The Emerging Researcher: Nurturing Passion, Developing Skills, Producing Output” was published in 2007, co-authored by senior research scholar Emeritus Professor John de Gruchy and Dr Lyn Holness, manager of the Emerging Researcher Programme. The book stems from UCT’s successful Emerging Researcher Programme, one that caught the attention of other institutions grappling with similar problems. The programme was launched in 2003 in response to an urgent need to build research capacity – and a new generation of researchers. The book is an account of that process and the challenges and lessons learnt. The publication was underpinned by a grant from Atlantic Philanthropies and funding from the National Research Foundation.
SIGNATURE THEMES FOR RESEARCH

UCT Signature Themes provide a framework for interdepartmental and interfaculty research and contribute to cultural and operational transformation on various levels. Selected to drive research in a strategic manner, they are grounded in existing areas of internationally recognised excellence whilst being aligned to institutional, regional and national priorities.

The following Signature Themes have been formally established at UCT and are recognised as Research Niche Areas (RNAs) by the National Research Foundation: Cities in Africa, Drug Discovery, Minerals to Metals, the Brain-Behaviour Initiative (BBI) and the Marine Research (MARE) Institute.

CITIES IN AFRICA

There is growing recognition worldwide of the importance of cities, and particularly cities in the developing world. In South Africa, this is reflected in the increasingly urban emphasis in policy documents at both national and provincial level. The sense is one of impending crisis; with the realisation that rapid urbanisation also raises issues of adequate food supply, affordable shelter, employment opportunities, water and waste management, public transportation, crime and disease, and environmental degradation and climate change. These challenges intertwine with critical social processes such as exclusion and conflict, which require effective political management of institutions and processes. Achieving well-governed and sustainable cities is becoming increasingly important to the future health of the planet.

The Cities in Africa Signature Theme has twin objectives: Firstly, to partner closely with African policy-making centres in the public sector in order to provide an alternative perspective on dealing with critical urban issues. Secondly, to provide an intellectual base and home for interdisciplinary, urban-related research at UCT, from which relations can be established with selected international funders and think tanks.

Located in the Faculty of Engineering and the Built Environment (EBE), the Signature Theme builds on an interdisciplinary network of academics across EBE, Science and Humanities and has a DST/NRF Research Chair in Urban Policy as Director, Professor Edgar Pieterse.
DRUG DISCOVERY

The burgeoning burden of disease on the one hand and the huge market for leading therapeutic drugs of over $350 billion per year on the other is driving the pursuit of new methods in synthesis and drug development and drug target identification. The need for safe, effective medicines must take into account the fierce competition in the drug-development industry, that is experiencing considerable cost pressures. A traditional drug-discovery approach is to identify a therapeutic target, link this to a specific biological mechanism, and thereby provide a focus for a discovery effort. Identification of effective or lead compounds has benefited from the advent of high-throughput screening methods that enable a large number of compounds to be screened in a relatively short time. Recent advances in the methodology of synthetic chemistry have facilitated the rapid construction of lead analogs. These lead compounds can then be subjected to a variety of substrate binding and toxicological tests to determine their efficacy as drugs.

The Drug Discovery Signature Theme aims to foster new collaborations and strengthen existing ones between UCT researchers, build enabling technological platforms to increase research capacity, provide interdisciplinary undergraduate and postgraduate training in drug-discovery to drive research and build a critical mass of future scientists, and create mechanisms for securing interdisciplinary and overarching funding.

Professor Edward Sturrock of the Institute of Infectious Disease and Molecular Medicine (IIDMM) was appointed the Director of the Signature Theme, with team member Professor Kelly Chibale being awarded a DST/NRF Research Chair in the area of Drug Discovery.

MINERALS TO METALS

South Africa’s economic growth is greatly dependent on the efficiency and sustainability of its mining industry. In that regard the efficient and sustainable processing of ores in the entire beneficiation chain from ‘Minerals to Metals’ is of paramount importance. Worldwide there is an ever-increasing focus on ensuring that minerals are processed more efficiently, especially in the context of a much greater emphasis on three important imperatives, viz. preserving water resources, minimising power consumption and the need to beneficiate lower-grade ores in remote areas.

The main aim of this Signature Theme is to integrate, synchronise and enhance the activities of four major research units located within the Department of Chemical Engineering, all of which presently enjoy international reputations for their research in the general area of the beneficiation of minerals i.e. the complete extraction of metals, from ore to final saleable metal, in a clean and sustainable manner. These groups are the Minerals Processing Research Unit, the Bioprocess Engineering Research Unit, the Precipitation and Crystallisation Research Unit and the Environmental Process Engineering Research Unit. These units/groups are actively involved in mineral-related research at various stages of the mineral beneficiation value chain. Most are funded by the world’s five large mining groups and all are funded by the major South African mining companies. The director of the Theme is Professor Cyril O’Connor. As research area, the theme is supported by two DST/NRF Research Chairs, namely Professor J-P Franzidis in Minerals Beneficiation, and Professor Sue Harrison in Bioprocess Engineering.

BRAIN BEHAVIOUR INITIATIVE

The Brain-Behaviour Initiative (BBI) is a cross-faculty, multidisciplinary, collaborative framework to promote research in the cognitive and affective neurosciences and bring together expertise on phenotyping, genotyping, cognotyping, brain imaging and molecular signatures to address brain-behaviour issues. New experimental techniques – including brain imaging, genetic testing
and neuropsychological assessment – combined with new theoretical insights have opened up significant potential for the advancement of novel diagnostic tools and treatments for people with mental disorders. The initial focus is on trauma and resilience to help understand why some people develop conditions such as post-traumatic stress disorder or substance abuse in response to stressors.

Two researchers have been awarded DST/NRF Research Chairs in 2007 under the auspices of the BBI. Associate Professor Ernesta Meintjes occupies the Chair in Brain Imaging from 1 January. Dr Marc Combrinck was appointed Chair of Clinical Neuroscience in September.

The BBI has been instrumental in establishing two new neuroscience degrees for 2008, Master’s in Medicine (Neuroscience), and Master’s in Neuropsychiatry. These degrees will foster research capacity development in the area of neuroscience, and graduates will supplement the body of postgraduate researchers currently employed on BBI projects (including two postdoctoral fellows, several PhD students, and a number of master’s and honours students).

Key players in the BBI are generating substantial funds that help build critical mass in this area and that include grants from the National Institutes of Health, the Medical Research Council, the University of Michigan, the Hope Depression Foundation and the National Research Foundation. A one-day symposium on the topic of “Trauma and resilience” was attended by over 130 people (including more than 30 postgraduate students), and provided an opportunity for members of the BBI to showcase their projects. The keynote speaker was Professor Jaak Panksepp of Washington State University, an internationally recognised scholar in the field of cognitive-affective neuroscience.

**MARINE RESEARCH INSTITUTE**

The Marine Research Institute (MA-RE) was instrumental in making successful nominations for two DST/NRF Research Chairs: Professor George Philander (Department of Oceanography) and Associate Professor Astrid Jarre (Department of Zoology). The MA-RE Institute hosted five international conferences and various seminar series and workshops in 2007, bringing together researchers from oceanography, marine biology, fisheries and conservation groups. Formal partnerships were established with Scripps, Plymouth Marine Laboratory, National Geography Centre (Southampton, United Kingdom) and the University of Bergen, and four research contracts were concluded during this period.

At a national level MA-RE has contributed to the establishment of the Africa Centre for Climate and Earth System Science (ACCESS) and was a driving force in negotiations with the Department of Science and Technology, the National Research Foundation, the South African Weather Service, Marine and Coastal Management, the Centre for Scientific and Industrial Research and other academic research stakeholders to co-ordinate climate change, atmospheric and marine research under one umbrella. There have also been ongoing discussions with the management of the Two Oceans Aquarium about a joint research venture to develop an Antarctic Gateway.

International highlights include its membership of the Euro-Oceans network of Excellence, through which several students have benefited; representing GOOS-Africa at the launch of the DELOS underwater observatory in Scotland to be deployed at 1400m depth off the Angolan oilfields by BP-Angola; and representing IBSA-Ocean in the India-Brazil-South Africa trilateral programme.
The first seven Chairs awarded to UCT were Professor Erwin de Blok (Astrophysics and Space Science), Professor Daya Reddy (Computational Mechanics), Professor George Philander (Modelling of the Coupled Ocean-Land-Atmosphere Phenomena Related to Climate), Associate Professor Kevin Naidoo (Scientific Computing), Professor Iqbal Parker (Cancer Biology), Associate Professor Ernesta Meintjes (Brain imaging) and Professor Clifford Shearing (Security and Justice). The outcomes of the second round, which were announced in September 2007, secured 19 Chairs for UCT (out of 51 Chairs awarded nationally).

PROFESSOR JONATHAN BLACKBURN
APPLIED PROTEOMICS AND CHEMICAL BIOLOGY
Professor Blackburn, located in the Institute of Infectious Disease and Molecular Medicine (IIDMM) at UCT, was awarded this Chair in view of the increasing strategic importance internationally of pursuing molecular approaches to personalised medicine. He will continue his role as Director of the Centre for Proteomic and Genomic Research, a DST-funded, R20 million core technology facility located in the IIDMM, and will also play a key role in the development of a new National Functional Genomics Network.

PROFESSOR FRANK BROMBACHER
IMMUNOLOGY OF INFECTIOUS DISEASES IN AFRICA
Professor Brombacher is a molecular biologist, immunologist and parasitologist, Fellow of the University of Cape Town, acting Head of the Division of Immunology, Director of a Medical Research Council Unit on Immunology of Infectious Disease and Member of the IIDMM, as well as designated programme co-ordinator on Immunology and Infectious Diseases for the International Centre for Genetic Engineering and Biotechnology. He and his team work on immunological mechanisms in health and disease and generate experimental transgenic murine models. Major diseases under investigation include tuberculosis, African trypanosomiasis (sleeping sickness), leishmaniasis, schistosomiasis (bilharzia) and, more recently, inflammatory bowel disease and pulmonary diseases, including allergic asthma.

PROFESSOR KELLY CHIBALE
DRUG DISCOVERY
Professor Chibale was appointed as Chair in view of the national strategic significance of drug discovery in addressing the many challenges associated with the burden of disease in the country. He is also one of the co-directors of the UCT Signature Theme in Drug Discovery. Professor Chibale will continue with his joint appointments in the Department of Chemistry and the IIDMM. His UCT laboratory hosts the World Health Organisation Tropical Diseases Research Synthetic Medicinal Chemistry Centre.

DR MARC COMBRINCK
CLINICAL NEUROSCIENCES RESEARCH
Dr Combrinck is a neurologist who trained in medicine and biochemistry at the University of Cape Town and Groote Schuur Hospital. He was a Research Fellow at the University of Oxford before returning to South Africa in 2004. His interests are dementia, neuro-inflammation and mechanisms of neuro-degeneration. He will continue this work in Cape Town using clinically-based observational studies of cognitive impairment in the elderly and in HIV-associated brain disorders.

PROFESSOR DRUCILLA CORNELL
CUSTOMARY LAW, INDIGENOUS VALUES, AND DIGNITY JURISPRUDENCE
Professor Cornell joined UCT as a professor in private law in July 2007. As Chair, she will focus on developing jurisprudence adequate to the complex demands of the South African Constitution. Work under the Chair will involve ethnography in six of the nine provinces to study the on-the-ground developments of the customary law.

ASSOCIATE PROFESSOR KEERTAN DHEDA
LUNG INFECTION AND IMMUNITY IN POVERTY-RELATED DISEASES
Associate Professor Dheda directs a lung-health-research programme focusing on the pulmonary immunology, pathology and physiology of four diseases (tuberculosis, HIV, pneumonia and chronic obstructive pulmonary disease), which predominantly or significantly involve the lung, and are public health priorities in South Africa. He serves as the Director of the Lung Infection and Immunity Unit within the...
Division of Pulmonology, Department of Medicine. The Unit’s activities, encompassing diagnosis and control of poverty-related disease, drive disease-related strategic objectives outlined by the Medical Research Council, HIV/AIDS/STD Strategic Plan for South Africa and the National Research and Development Strategy.

PROFESSOR J-P FRANZIDIS
MINERALS BENEFICIATION
Professor J-P Franzidis was recruited to this position in the Department of Chemical Engineering from the Julius Kruttschnitt Mineral Research Centre at the University of Queensland in Australia. He aims to work together with four major established research groupings within the Department to research minerals beneficiation across the whole value chain, to address key challenges facing the minerals industry in South Africa such as improving process performance, minimizing power/water/waste and promoting cleaner production process options and technologies.

PROFESSOR CAROLYN HAMILTON
ARCHIVE AND PUBLIC CULTURE
Professor Hamilton was awarded this Chair in view of the strategic significance of the country’s archival estate, the importance of its interpretation in open and critical ways and the national priority of developing social cohesion. The appointment was made in view of UCT’s already significant investments and achievements across a number of disciplines, in critical archival engagements, archive curation projects and collaborations with public culture institutions, including collaborations in heritage training carried out in partnership with the University of the Western Cape.

PROFESSOR SUSAN HARRISON
BIOPROCESS ENGINEERING
Professor Harrison was appointed to strengthen her contribution to an integrated approach to optimisation and modelling of bioprocess systems and sub-processes for use in bioprocesses for economic, environmental and social benefit. The research programme centres on the establishment of generic knowledge at the molecular and metabolic, unit operation and the sustainable process levels, for benefit across specific bioprocesses. These contribute across water treatment, human health, minerals beneficiation, resource productivity and renewable resources. Professor Harrison will continue in her role as Director of the Bioprocess Engineering Research Unit.

PROFESSOR BRUCE HEWITSON
CLIMATE CHANGE
Professor Hewitson leads the Climate System Analysis Group. This is one of the largest climate research groups in Africa with a core focus on climate change, arguably one of the major long-term challenges facing the continent. The appointment strengthens this key strategic activity in its core research to increase understanding of regional implications of climate change, and to build the relevant science-society linkages. The Chair also explicitly links across scientific disciplines and the social dimension of impacts and adaptation.

ASSOCIATE PROFESSOR DAVID JACOBS
ANIMAL EVOLUTION AND SYSTEMATICS
Associate Professor Jacobs was appointed to this position as a researcher of international standing in animal evolution and systematics. Prof Jacobs’ research, which combines organismal field biology with molecular approaches to address questions of evolution, is strongly aligned with the National Research and Development Strategy in terms of its specific reference to the geographical advantage for biodiversity research in South Africa.

ASSOCIATE PROFESSOR ASTRID JARRE
MARINE ECOLOGY AND FISHERIES
Associate Professor Astrid Jarre was recruited for this Chair from the National Institute of Aquatic Resources at Denmark’s Technical University. The focus of her Chair is threefold: (i) Marine Ecology of the Benguela Current and comparable ecosystems, (ii) Fisheries management and conservation, and (iii) Capacity-building in South Africa and the SADC region. Having worked in well-recognised international research institutes, as well as national and intergovernmental fisheries agencies, Professor Jarre brings to UCT international experience that will make a critical contribution to the management of human activities in marine ecosystems under climate change. Her Chair is established as part of the MA-RE Institute (one of the UCT Signature Themes), and has very strong ties with Marine and Coastal Management. Furthermore, Professor Jarre’s focus on interdisciplinary natural and social research will be a cornerstone in developing an ecosystem approach to fisheries, as required by South African National Policy.

PROFESSOR MURRAY LEIBBRANDT
POVERTY AND INEQUALITY RESEARCH
There is widespread recognition of the importance of ensuring that South Africa’s growth processes embrace the
poor and those in the bottom half of the income distribution. The appointment of Professor Murray Leibbrandt, Director of the Southern African Labour and Development Research Unit (SALDRU), facilitates a sustained programme of research to measure and analyse South Africa’s unfolding poverty and inequality dynamics. For the last thirty years, SALDRU has been conducting large social surveys to generate the data needed to inform such analysis of poverty and inequality. An ambitious programme of new data gathering, with a particular emphasis on longitudinal data, will underpin the work of Prof. Leibbrandt and his team.

PROFESSOR DI MCINTYRE
HEALTH AND WEALTH IN SOUTH AFRICA
Professor McIntyre was appointed to this position in view of the strategic significance of health economics. Her research contributes to identifying ways of improving the health status of South Africans (both through equitable economic development and through health-system improvements) as well as providing important insights into how economic growth in South Africa can be strengthened through population health status improvements.

PROFESSOR RAJEND MESTHRIE
MIGRATION, LANGUAGE AND SOCIAL CHANGE
Professor Mesthrie was awarded this Chair in view of the significance of Sociolinguistics in understanding heritage, culture and social change in a multilingual society. The chief focus of the Chair will be on migration, language and social change, examining sociolinguistic practices “from below” in relation to the fostering of multilingualism, the further intellectualisation of local languages and the continuing prestige of English. Professor Mesthrie will continue as Head of the Linguistics Section of the Department of English Language and Literature and as President of the Linguistics Society of Southern Africa.

PROFESSOR LUNGISILE NTSBEZA
LAND REFORM AND DEMOCRACY IN SOUTH AFRICA: STATE AND CIVIL SOCIETY DYNAMICS
Professor Ntsebeza is Principal Researcher in a major partnership initiative with the Human Sciences Research Council that focuses on the Land Reform programme in South Africa with specific reference to the lands rights of rural women. This initiative will be used as a base to develop and highlight the importance of conducting research on the land question, a topic that is often marginalised in South Africa.

PROFESSOR EDGAR PIETERSE
URBAN POLICY
Professor Edgar Pieterse was appointed to drive the establishment of a new interdisciplinary research centre on the sustainability challenges associated with differential patterns of urbanisation in the global south, especially in Africa. This work seeks to respond to the globally recognised challenges of deepening urban inequality associated with urban-anchored processes of economic globalisation. The work forms a central part of UCT’s Signature Theme ‘Cities in Africa’.

PROFESSOR ABDULKADER TAYOB
ISLAM, AFRICAN PUBLICS AND RELIGIOUS VALUES
Professor Tayob’s appointment to this position in the Humanities Faculty strengthens the study of Islam in Africa. He will draw on his considerable international experience, most recently as named Chair at the Dutch-based International Institute for the Study of Islam in the Modern World from 2002 to 2006, to develop a community of researchers in this field. The research will enhance South Africa’s capacity in international relations with regard to national, regional and global Islamic developments.

PROFESSOR ANNA-LISE WILLIAMSON
VACCINOLOGY
Professor Williamson is on the joint staff of the National Health Laboratory Service and UCT and is a founding member of the IIDMM. Her major research interests are human papillomavirus and HIV/AIDS vaccine development. She has headed a large multidisciplinary research group making candidate HIV vaccines since 2000. The first two vaccines are due to enter clinical trials in 2008.
The aim of these centres is to act as nodes for research and development in fields identified as strategically important to South Africa. The centres hosted at UCT include members from universities around South Africa. They enjoy significant student involvement and serve as important research training sites for postgraduate students.

**DST-NRF CENTRE OF EXCELLENCE IN CATALYSIS, C*CHANGE**

The technical scope of c*change is now exceeding the capacity originally anticipated in the Centre of Excellence Proposal of 2004 in terms of the number of postgraduate students (now 45 compared to a minimum target of 30), further comprising five postdoctoral researchers, and nominally 22 academics from 14 research groupings in 10 participating South African higher education institutions. Three institutions were active in the Syngas Programme, four institutions were active in the Paraffin and Small Volume Chemicals Programmes respectively and five institutions were active in the RSA Olefin Programme. A total of 18 projects were funded during the course of 2007, of which nine were multiinstitutional and/or interdisciplinary projects. Several joint venture postgraduate student-training initiatives were undertaken to forge closer ties in collaborative projects. Working relationships between the host institution and the participating institutions as well as between the participating institutions themselves continue to strengthen as evidenced by a significant growth in scientific collaboration, with half of all projects now being multi-institutional ones.

In meeting its goal in terms of the development of its Scientific Programmes and the targets set by the NRF, c*change supported some 45 postgraduate students (of whom 78% were South African, with 44% and 60% of the South African student target being female and black respectively) and five postdoctoral fellows. A total of 11 publications, three published conference proceedings and 35 unpublished conference contributions form part of the specific 2007 c*change-related research output of the participating catalysis community, which exceeds targets set by the NRF.

In terms of the non-scientific key performance areas (KPA), policies and guidelines in respect of both the Knowledge Brokerage and Service Rendering KPA have successfully been implemented in 2007. c*change held its third annual Symposium in November 2007 in Richards Bay, an occasion which brought together academic, postdoctoral and postgraduate researchers to report on the technical output of the Scientific Programmes. This has now become a well-established event in the c*change calendar. Moreover, the year 2007 also saw several initiatives to establish international collaboration/interaction, including a Royal Society Chemistry-NRF-funded workshop with members of c*change and study leaders from several UK universities.

Professor Jack Fletcher relinquished the c*change directorship in the light of his additional commitments with effect from 1 January 2008, and Associate Professor Michael Claeyts has been appointed as new director.

**DST/NRF CENTRE OF EXCELLENCE AT THE PERCY FITZPATRICK INSTITUTE, “BIRDS AS KEYS TO BIODIVERSITY CONSERVATION”**

The Centre of Excellence at the Percy FitzPatrick Institute undertakes scientific studies involving birds that contributes to the theory and practice affecting the maintenance of biological diversity and the sustained use of biological resources. The Centre continued to increase the number and quality of its scientific publications, with 70 peer-reviewed papers published in Science Citation Index.
Index (SCI) rated journals in 2007, including 14 in journals with a SCI impact factor rating of at least 3.5. Three books, 21 technical reports and 50 semi-popular articles were also published. The Centre supported 8 postdoctoral fellows, 18 PhD, 34 MSc, and 6 BSc honours students. Three Centre members received awards during 2007. Dr Andrew McKechnie (Wits) was awarded a prestigious President's Award rating by the NRF for his research in the field of ecological physiology. Professor Graeme Cumming (UCT), the Pola Pasvolsky Chair in Conservation Biology, received (1) the Meiring Naudé Medal from the Royal Society of South Africa for scientific excellence exhibited by a scientist under the age of 35 and (2) a UCT Fellow's Award as an academic under the age of 40 who has made significant independent contributions to research in his research fields of landscape ecology and spatial parasitology and epidemiology. Professor Timothy Crowe was awarded a UCT Fellowship for original and distinguished academic work in his research field on the taxonomy, phylogeny and biogeography of game birds. After guiding the formation of the Centre so successfully, Professor Morné du Plessis (Director) left the Centre in August to take up the position of CEO of the World Wide Fund for Nature (WWF) South Africa. Professor Phil Hockey will lead activities as interim director until the appointment of a new director in the course of 2008.

CENTRE FOR HIGH PERFORMANCE COMPUTING

The Centre for High Performance Computing (CHPC) is a national joint initiative funded by the Department of Science and Technology and co-managed by UCT and the Meraka Institute of the Centre for Scientific and Industrial Research. Under the supervision of the CHPC executive, which includes Dr Happy Sithole (interim director), Professor Daya Reddy (interim Head of Research) and Dr Khomotso Kganyago (Technical Operations Manager), the Centre has made significant progress in the 2007-2008 financial year. The building plan for Phase II of the CHPC refurbishment was completed and the refurbishment process will commence from May 2008 in order to accommodate the Phase II CHPC computational resource as well as the IBM Blue Gene donation. A Request for Proposals for the Phase II CHPC computational resource was circulated for open tender and the procurement progress is currently on track.

In December 2007, the CHPC hosted its annual National Meeting in the Cape Town International Convention Centre, which attracted the participation and support of more than 250 researchers, students and vendors. Three peer-reviewed publications in noteworthy international journals as well as numerous conference proceeding papers were published by the existing three Flagship Projects. In an attempt to stimulate the innovation aspect of computational research in South Africa, while emphasising human capital development within the field, a call for project proposals commenced at the end of September 2007. Four Flagship Projects and two Consortium Projects were approved for financial and technical support. These projects cover a wide range of scientific domains and encompass multiple research organisations and tertiary educational institutions. Four UCT staff members are involved in the projects.

Four Research Scientists have been appointed to support the communities whilst establishing their own research records of accomplishment. They are Dr Kevin Colville (computational mathematics and software engineering), Dr Daniel Moeketsi (computational physics and outreach), Mrs Mary-Jane Kgatuke (computational meteorology and natural earth science) and Mr Sebastiaan Wynaard (computational graphics and virtual reality). Together they have hosted four workshops and two scientific training courses. With the implementation of the Advanced Computer Engineering Laboratory, Professor Michael Inggs has accepted a joint appointment between CHPC and UCT. Six postgraduate students have been recruited to investigate topics such as Field Programmable Gate Array, Cell Computing, Hypertransport and other advanced computational fabrics.

Official visits were made by the CHPC staff to international high performance computing partners including the NCSA (US), ESC (Japan), NCHC (Taiwan), EPCC (UK) and HPCx (UK). Numerous collaborative projects and staff exchange programmes will be implemented in the upcoming financial year. It is expected that in the same financial year the CHPC will also focus on similar collaborations with India, Brazil and other African countries.

AFRICA EARTH OBSERVATORY NETWORK

The Africa Earth Observatory Network (AEON) is a centre for Earth Systems Science that provides a research and educational environment for consilience between earth and life sciences, engineering, resource economics and the
human sciences. AEON is developing Earth Stewardship as a science and cultivates cutting-edge globally competitive research and analytical learning, using advanced tools and technologies. The purpose is to promote an interdisciplinary view and exploration of our Earth, and society, particularly in Africa. An AEON science advisory group comprises 18 members spread across four continents, five South African universities and industry.

Over the last two years, AEON has taken delivery of and commissioned three of the four state-of-the-art instruments purchased through a R25 million grant from the Innovation Fund. The fourth instrument was delivered at the end of 2007, but for lack of adequate space has not yet been installed. Two AEON scientific research officers, funded through the Faculty of Science, were appointed to run two of the instruments – the only ones of their kind in Africa. One of these will be used to age-date geological materials. Significant groups of academic and industry professionals have been keenly waiting for this new national and African facility to materialise, and AEON has started to host the first visiting researchers using these instruments. Fundraising for a new AEON building is ongoing. Lonmin Plc has donated R7 million towards this R30 million project. Meetings with companies and foundations in South Africa, the UK and Europe are in the pipeline and AEON hopes to reach its fundraising target in the course of 2008.

Forty articles were published in international peer-reviewed journals during 2007, bringing the total number of peer-reviewed publications by AEON researchers to 52. Nine MSc and PhD students and two postdoctoral researchers work as a core AEON-group at UCT and the University of Fort Hare. This group has now solidified a robust integration between geology and biology with a prime focus to understand the

**President Mbeki Unveils ICGB Cape Town Component**

On 10 September 2007, President Thabo Mbeki officially opened the third component of the International Centre for Genetic Engineering and Biotechnology (ICGEB), which will be based in UCT’s Faculty of Health Sciences. Joining its sister components in Trieste, Italy, and New Delhi, India, the Cape Town component will be part of one of the most powerful international facilities for scientific research and training in bioscience. The ICGEB is an autonomous organisation operating within the United Nations framework.
paleo-ecodynamics and evolution of south-central Africa and Madagascar. AEON has started a Report Series aimed at bridging a gap between its research and the wider community and has appointed its first outreach officer, based at the University of the Free State, to focus on training of high school teachers in earth, rock and mineral systems, and to develop new training tools.

AEON formally twinned with the GeoForschungsZentrum (GFZ) in Potsdam, Germany’s national Helmholtz centre for geosciences research (earth and environment). The GFZ has pledged to second 3 to 4 senior postdoctoral researchers to work at AEON for a 5-year period and help with technical developments. It is anticipated that these posts will be taken up in 2008/2009. In 2007, AEON established Earth Stewardship Science fellowships for African nationals and/or permanent residents in African countries with funding of R3 million per year through the John Ellerman Foundation, the Eranda Foundation, and Lonmin Plc. AEON will appoint its first postdoctoral and senior fellows in 2008.

AEON continues to lead the German-RSA multidisciplinary ‘Inkaba yeAfrica’ (IyeA) project. The first 5-year phase of this project was successfully concluded at the end of 2007. A special issue of the South African Journal of Geology was published in time for the fifth joint scientific workshop in KwaZulu-Natal. This volume comprises 23 joint papers, with contributions from 14 students, five of whom are first authors. A second 5-year science plan, to start in 2008, was submitted to the respective governments for a €20 million total investment. IyeA is now well recognised globally as a role-model research programme linking first and third world research communities to train a new generation of multidisciplinary geoscientists. At the end of 2007, a similar France-RSA collaborative project, named !Khure Africa, was initiated. This 3-year, R15 million project is co-ordinated by AEON and the world-class French Institute Physique du Globe in Paris (IPGP), and aims to incorporate up to 20 graduate students. Both IyeA & !Khure Africa are financed through bilateral funding and have the support of the DST and the NRF. These two projects act as ‘blueprints’ for plans to further twin AEON formally with other world-class institutions, for which competitive interest is growing. The concepts of a third AEON project, ‘African Corridors’, will be presented at the Africa launch of the International Year of Planet Earth (2008) in Arusha, Tanzania. This project will form the backbone of AEON’s Pan African science and cultural collaborations and networking.

**INSTITUTE OF INFECTIOUS DISEASE AND MOLECULAR MEDICINE (IIDMM)**

The IIDMM has maintained its position as one of the premier centres of research excellence in South Africa. The research output of the members, including publications and research grant income, increased significantly compared to the previous year.

Members of the IIDMM secured five of the DST/NRF Research Chairs awarded to UCT in the past two rounds. The recipients are Professors Jonathan Blackburn, Frank Brombacher, Kelly Chibale, Iqbal Parker and Anna-Lise Williamson. In addition, a number of emerging research scientists in the IIDMM have received prestigious awards from international funding agencies, including the Wellcome Trust (UK) and the National Institutes of Health (USA).

One of the highlights of the year was the official opening on 10 September of the third component of the International Centre for Genetic Engineering and Biotechnology (ICGEB) by President Thabo Mbeki. This African component of the ICGEB is hosted in UCT’s Faculty of Health Sciences. Together with its older sister components in Trieste, Italy, and New Delhi, India, it operates as an influential international facility for scientific research and training in the biosciences.

A number of Institute members are actively involved in translational research, which ensures that discoveries are taken from our laboratories and applied to our communities. Of particular significance is a HIV vaccine developed at UCT by the South African AIDS Vaccine Initiative, under the leadership of Prof Anna-Lise Williamson, and approved by the USA Food and Drug Administration for testing in humans. These trials are due to start in 2008 in the USA and South Africa.
The University's benchmarking practice is informed by internationally accepted indicators such as the number and quality of peer-reviewed journal articles and books, the success rate and quality of postgraduate students, the income generated through agency funding (quality is a significant criterion in their evaluation procedures), the income generated through contracts, and the international standing of our researchers (NRF rating).

RESEARCH FUNDING

The main sources of research funding are awards made by national funding agencies, contracts with external constituencies and awards made internal to the institution by the University Research Committee. The figures reported in the sections below are primarily for new awards, and do not necessarily include income received or accrued for the reporting period.

NATIONAL AGENCY FUNDING

The NRF continues to be a major source of funding for UCT researchers. At the end of 2007, UCT had a total of 352 NRF grantholders across a variety of funding categories, holding 584 grants with a cumulative value in excess of R107 million. The annual Focus Area awards was the main funding programme from the NRF, having allowed researchers to apply for comprehensive ‘block’ grants to cover most aspects of required funding such as student bursaries, equipment, running expenses, etc. Because this programme is in the process of being phased out, awards made under the last call for applications (in 2007) were made for a period of up to four years, with UCT being awarded a total amount of R32,285,542.

The Thuthuka Programme is a capacity-building programme of the NRF through which young, black and women researchers are supported in a funding partnership between the institution and the NRF. The number of participants in the Thuthuka Programme has trebled in the period from 2004 to 2007 (12 to 47), with funding over the past year remaining relatively consistent, reflecting a small increase from R3,180,000 (2006) to R3,358,000 (2007).

The Technology and Human Resources for Industry Programme (THRIP) is managed by the NRF on behalf of the Department of Trade and Industry (dti). It is a partnership programme which challenges industry to match government funding for innovative research and development in South Africa. Although the number of projects supported by the THRIP Programme decreased from the previous year’s 49 to 40 in 2007, funding from THRIP for 2007 increased by 40% to R20,225,942. In addition to this, the industry contributions for 2007 also increased from R19,728,336 (2006) to R31,301,264.
UCT researchers continue to take advantage of the funding opportunities provided by the NRF's International Science Co-operation (ISC) programme, which aims to forge and maintain strategic and intellectual alliances between individuals, institutions and organisations in research communities nationally and internationally, in order to support the international competitiveness of South Africa. In addition to multiyear funding opportunities, researchers have also been able to access funding through once-off ISC awards via the NRF’s various bilateral agreements. In 2007, UCT’s ISC awards had a value in excess of R21,250,908, as compared to the previous year’s total of R13,847,000.

UCT also receives funding for individual projects, as well as for ten research units, groups and centres, from the Medical Research Council (MRC). The MRC aims to improve the nation’s health and quality of life through promoting and conducting relevant and responsive health research. Funding received in 2007 increased by 27% over the previous year, to R11,540,896. This is in addition to the individual research contracts signed between the two institutions.

RESEARCH CONTRACTS

Externally funded research through formal contracts forms an integral part of the University’s research endeavour. In the context of this report ‘contracts’ can be any of the following: Memoranda of Understanding, Collaboration Agreements, Consortium Agreements, Service Agreements, Consultancy Agreements, Grants (e.g. European Commission, National Institutes of Health), Tenders, Material Transfer Agreements and Confidentiality Agreements.

In 2007 the Research Contracts and Intellectual Property Services Office processed a record 844 contracts to the value of R496.7 million, an increase of 40% on the 2006 figure of R354 million. These contracts vary from short-term contracts of under R10 000 to multiyear contracts with multimillion rand budgets and involve a variety of local and foreign clients as shown in Figure 1.

Contracts to the value of R$9.21 million were entered into with South African governmental entities during 2007, while South African Science Councils and National Research Centres accounted for R$43.6 million worth of income. Contracts to the value of R$21.1 million and R$68.4 million were respectively concluded with South African non-profit entities and South African companies. At an international level, 250
contracts to the value of R289.9 million (vs R165.85 million in 2006) were entered into with entities from 26 countries over this period. The major source of foreign funding is the USA (R133.53 million), followed by the United Kingdom (R101.18 million), The Netherlands (R8.3 million), Australia (R6.1 million), Germany (R5.2 million), Canada (R5.1 million), France (R4.1 million) and Switzerland (R3.6 million).

The National Institutes of Health was the most prominent American funder of research contracts to the value of R72.5 million (vs R31.8 million in 2006) which were, directly or indirectly (through collaboration with USA universities), entered into in 2007. Other major sponsors from the USA were Aeras Global TB Vaccine Foundation (R31.6 million in 2007 vs R19.1 million in 2006) and the Population Council (R8.9 million in 2007 vs R11.35 million in 2006).

The major United Kingdom contributor was the Department for International Development, with whom a contract to the value of R47.3 million was signed. A contract to the value of R20.9 million was entered into with the University of Oxford as partner in the European Union’s European and Developing Countries Clinical Trials Partnership (EDCTP) programme. The contribution from the Wellcome Trust was R10.1 million (vs R7.9 million in 2006).

The University Research Committee (URC) award processes resulted in the allocation of a total of R18,978,362 via the Faculty block grant allocation, conference travel grants, awards to host conferences and visiting scholars, research development awards and grants to purchase new research equipment.

The NRF continues to be a major funder of postgraduate students at UCT. In 2007, 740 bursaries and scholarships were offered to postgraduate students at UCT, to a total value of R21,634,380. By comparison in 2006, 659 bursaries and scholarships were awarded to a total value of R18,214,680.

The MRC provides support for master’s and doctoral students who are studying in areas of the Health Sciences. In 2007, 22 awards to a total value of R685,000 were taken up by UCT students. The MRC and the NRF target the same student market for awards and, where students apply for and are offered both, they accept the NRF awards, owing to their higher value.

UCT Research Scholarships. In 2007, 215 UCT Research Scholarships were awarded to a total value of R841,000. These scholarships vary in value and are awarded to honours, master’s and doctoral students who are eligible but unsuccessful in their applications to the MRC and the NRF.

The UCT Research Associateship awards are made annually to recognise excellence among master’s and doctoral student researchers. Each year a limited number of high-value awards are made. In addition, the Associateships include a monetary contribution to the successful candidate’s research costs. In 2007, 21 master’s and doctoral students received awards to a total of R637,000 for their work in the following areas of research: Human Biology, Pharmacology, Drama, English, Film and Media Studies, Music, Religious Studies, Commercial Law, Mathematics and Applied Mathematics, and Molecular and Cell Biology.

Conference Travel. Master’s and doctoral students and postdoctoral researchers are encouraged to attend conferences to present their work. In 2007, 60 postgraduate students and 10 postdoctoral researchers were awarded totals of R391,600 and R46,850 respectively towards the cost of travelling to local and international conferences.
Scholarships for International Travel. In addition to the above, 12 master’s and doctoral students successfully applied for UCT Scholarships for international travel, which enabled them to spend periods from 2 to 10 months at approved institutions abroad. These awards were made to a total value of R378,857.

The S2A3 Bronze Medal, donated by the South African Association for the Advancement of Science, together with a monetary prize of R15,000 from UCT, was awarded to MSc student Ms Serah Wangari Kimani from the Department of Molecular and Cellular Biology for her thesis entitled The crystal structure of an aliphatic amidase from Geobacillus pallidus RAPc81.

The UCT Equity Development Programme was established to support increased participation rates by students from designated groups. The Programme currently consists of 8 separate fellowships sourced from donated funds, and provided support to 90 master’s and doctoral students from designated groups, to a total of R4,172,215. Funds for the UCT Equity Fellowships Programme are sourced from the University’s General Operating Budget and, in 2007, 104 awards were made to a total of R1,324,495.

The UCT/CSIR Scholarship Programme. The University of Cape Town and the CSIR entered into a collaborative partnership in 2003. Included in various initiatives is the UCT/CSIR Scholarship Programme. In 2007, Information and Communication Technologies, Environmental Technologies, Natural and Physical Sciences, Materials Science and Engineering were identified by the CSIR as preferred areas of study for the Scholarship Programme. Nine students received awards to a total value of R560,000.

The Commonwealth Scholarships Programme. In 2007, 10 candidates were shortlisted for Commonwealth Scholarships, 5 of whom received offers of Scholarships to register for master’s and doctoral degrees at various institutions in the UK, to study in areas of Chemistry, Immunology, Synthetic and Mechanistic Chemistry, and Economics.

The Rhodes Scholarships. Five of UCT’s top master’s and doctoral students were awarded prestigious Rhodes Scholarships in the following areas of study to enable them to take up their studies at Oxford University in the UK: Astrophysics, English, Economics, Integrative Bioscience and Theoretical Physics.

PRESTIGIOUS FELLOWSHIPS AND SEMINAR PROGRAMMES

UCT has a number of prestigious fellowships that offer full-cost support and provide additional funds to cover research and conference-travel costs. These fellowships are further distinguished by the requirement that fellows plan and present a seminar based on their research-work. The seminar programmes afford students the opportunity to present their work outside of their departments and, in some cases, to contribute to scholarly debate about issues that are socially relevant.

These programmes include:

- The David and Elaine Potter Charitable Trust Fellowships provide full-cost fellowships to excellent master’s and doctoral students who intend to contribute to civil society in South Africa by leveraging their educational advantage in any discipline. Each student is required to plan and organise one seminar per degree. In 2007, 11 awards were made (including continuing students) to a total value of R750,000.

- The Harry Crossley Research Fellowships are full-cost and are available to South African students for full-time study in any research-related degree, with the exception of students whose studies are in the areas of Politics or Religion. The fellowships are granted on the basis of academic merit and financial need to students proceeding to the honours, master’s and doctoral degrees. In 2007, 19 students received Harry Crossley Research Fellowships (including continuing students) to a total value of R1,121,500. The Harry Crossley Foundation is one of UCT’s most generous and long-standing donors. In addition to the Fellowship Programme, the Foundation provides further support to postgraduate students in the form of need-based bursaries, for research in Health Sciences and for the supply and maintenance of equipment in the Postgraduate Centre.

- The Thabo Mbeki Leadership in Africa Scholarship Programme. This Scholarship programme is intended to support master’s students who aspire to leadership on the continent of Africa and who intend to become outstanding African leaders. Candidates for these awards must indicate their intended contribution to society and show attributes including courage, honesty, entrepreneurship and social consciousness. Evidence of social responsibility and leadership roles in academic, community and/or civic life is also required. In 2007, 7 students were supported by the Thabo Mbeki LiA Scholarship Programme to a total value of R470,000.
The Stephen Bantu Biko Leadership Fellowships have been established to nurture and develop individuals from South Africa and the continent of Africa who differentiate themselves as “makers of history” and who encapsulate the essence of Steve Biko. The programme seeks to develop highly-qualified locally-trained postgraduate teachers, researchers, government and social leaders who will register at the University of Cape Town for full-time study in the Gender Studies, Economics, Politics, Philosophy, Health Sciences, Governance and related disciplines. In 2007, the Fellowship programme supported six honours, master’s and doctoral students to a total value of R365,000.

Two new categories of honours award were created in 2007, in line with the institutional priority of increasing the proportion of postgraduate students relative to undergraduates for the period 2007 to 2010. To assist the University in achieving this objective, the Claude Leon Foundation donated funds to significantly augment the University’s own resources. The University was able to provide 48 merit awards valued at R12,000 each, 58 need-based awards valued at R20,000 each to financially needy honours students and 26 awards to students proceeding from a 4th year Bachelor degree to the master’s degree. A total of 132 awards were made to a combined value of R1,901,000.

POSTGRADUATE FUNDING SUMMARY TABLES

Table 1: Number of honours, master’s and doctoral students registered and awards made in 2007 per faculty

<table>
<thead>
<tr>
<th>FACULTY</th>
<th>NUMBER OF STUDENTS REGISTERED</th>
<th>NUMBER OF AWARDS MADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commerce</td>
<td>745</td>
<td>157</td>
</tr>
<tr>
<td>Engineering &amp; the Built Environment</td>
<td>787</td>
<td>534</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>958</td>
<td>579</td>
</tr>
<tr>
<td>Humanities</td>
<td>1133</td>
<td>778</td>
</tr>
<tr>
<td>Law</td>
<td>232</td>
<td>57</td>
</tr>
<tr>
<td>Science</td>
<td>882</td>
<td>1073</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4737</strong></td>
<td><strong>3478</strong></td>
</tr>
</tbody>
</table>

Three Electron Microscope Unit (EMU) postgraduate students working on atriumvirate of structural biology notched up an exceptional achievement in 2007: their work appeared on the front covers of three respected journals.

PhD student Jason van Rooyen’s research on a type III glutamine synthetase enzyme was selected for the cover of the Journal of Molecular Biology, whilst Robert Ndoria’s paper was published in the FEBS Journal (April issue). Mr Ndoria is pursuing high-resolution studies by cryo-electron microscopy and X-ray structure analysis of various mutants of the Rhodococcus rhodochrous nitrilase. PhD student in the Department of Molecular and Cell Biology, and based at the EMU, Ms Kimani’s paper was published in Biological Crystallography. It describes her determination of the crystal structure of the amidase enzyme from Geobacillus pallidus RAPc8 thermophilic bacteria. Ms Kimani was also the 2007 recipient of the S2A3 Bronze Medal, donated by the South African Association for the Advancement of Science.
Table 2: Source of funds for honours, master’s and doctoral students

<table>
<thead>
<tr>
<th>SOURCE OF FUNDS</th>
<th>NUMBER OF AWARDS MADE</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Councils (NRF and MRC)</td>
<td>762</td>
<td>R22,319,380</td>
</tr>
<tr>
<td>University Central Funds (GOB)</td>
<td>636</td>
<td>R7,206,885</td>
</tr>
<tr>
<td>Income from Donated Funds</td>
<td>543</td>
<td>R11,668,220</td>
</tr>
<tr>
<td>Income from University Investments</td>
<td>587</td>
<td>R6,119,157</td>
</tr>
<tr>
<td>Income from Departmental Funds</td>
<td>650</td>
<td>R19,292,653</td>
</tr>
<tr>
<td>Total</td>
<td>3178</td>
<td>R66,606,295</td>
</tr>
</tbody>
</table>

POSTDOCTORAL FELLOWSHIPS

The University is continually seeking support to host postdoctoral researchers. In 2007, 197 postdoctoral fellowships were awarded to 156 postdoctoral researchers, to a total value of R19,215,547. Support for postdoctoral research is sourced from the NRF, the MRC, the URC, income from departmental funds, donations and investments. The majority of support for postdoctoral researchers comes from departmental funds. Departmental and donated funds are sourced from corporations and industry, as well as from trusts and foundations. One such Foundation is the Claude Leon Foundation, which contributed R1,382,180 in support of 14 postdoctoral researchers in 2007.

Table 3: Postdoctoral fellowships by faculty

<table>
<thead>
<tr>
<th>FACULTY</th>
<th>NUMBERS OF REGISTERED POSTDOCTORAL RESEARCHERS</th>
<th>NUMBER OF AWARDS MADE</th>
<th>VALUE OF AWARD MADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commerce</td>
<td>1</td>
<td>1</td>
<td>R20,000</td>
</tr>
<tr>
<td>Engineering &amp; the Built Environment</td>
<td>19</td>
<td>23</td>
<td>R1,913,700</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>48</td>
<td>61</td>
<td>R8,171,150</td>
</tr>
<tr>
<td>Humanities</td>
<td>8</td>
<td>10</td>
<td>R806,500</td>
</tr>
<tr>
<td>Law</td>
<td>1</td>
<td>1</td>
<td>R120,000</td>
</tr>
<tr>
<td>Science</td>
<td>79</td>
<td>101</td>
<td>R8,184,197</td>
</tr>
<tr>
<td>Total</td>
<td>156</td>
<td>197</td>
<td>R19,215,547</td>
</tr>
</tbody>
</table>

Table 4: Source of funds for postdoctoral fellowships

<table>
<thead>
<tr>
<th>SOURCE OF FUNDS</th>
<th>NUMBER OF AWARDS MADE</th>
<th>VALUE OF AWARD MADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Councils: NRF and MRC</td>
<td>58</td>
<td>R3,695,017</td>
</tr>
<tr>
<td>University funds</td>
<td>18</td>
<td>R1,650,000</td>
</tr>
<tr>
<td>Donated funds</td>
<td>20</td>
<td>R2,002,180</td>
</tr>
<tr>
<td>Departmental funds</td>
<td>99</td>
<td>R11,798,350</td>
</tr>
<tr>
<td>Investments</td>
<td>2</td>
<td>R70,000</td>
</tr>
<tr>
<td>Total</td>
<td>197</td>
<td>R19,215,547</td>
</tr>
</tbody>
</table>
**BENCHMARKING OF UCT’S RESEARCH**

**NRF EVALUATION AND RATING OF RESEARCHERS**

The National Research Foundation’s cyclical evaluation and rating of individual researchers provides a benchmark of excellence in terms of international impact and standing. The rating application is based primarily on the quality of the research output in the recent past and is undertaken by national and international peers who are requested to critically scrutinise the completed research. In February 2007, UCT submitted 28 applications for new ratings and 61 applications for re-evaluation to the NRF. The latter included the first re-evaluation cycle for applications submitted in 2002 from the humanities, social sciences and law disciplines.

Five new A-ratings were awarded to UCT during this cycle, bringing the total in this category to 30, out of some 65 A-rated researchers nationally. These were awarded to Professor Cyril O’Connor (Chemical Engineering), Professor Drucilla Cornell (Private Law), Professor Clifford Shearing (Centre of Criminology), Professor Dan Stein (Psychiatry and Mental Health) and Professor Danie Visser (Private Law). Professor Cornell is UCT’s first woman to receive an A-rating from the NRF. In addition to these new A-ratings, six applicants retained their A-ratings on re-evaluation: Professor Igor Barashenkov (Mathematics and Applied Mathematics), Professor John de Gruchy (Religious Studies), Professor Gerd Gäde (Zoology), Professor Johann Lutjeharms (Oceanography), Professor Lionel Opie (Medicine) and Distinguished Professor Philippe-Joseph Salazar (Rhetoric Studies). The prestigious NRF President’s Award (P-rating) was made to Dr Lindsey Gillson (Botany).

**Table 5: Summary of NRF-rated researchers at UCT**

<table>
<thead>
<tr>
<th>Year</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>P</th>
<th>Y</th>
<th>L</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>21</td>
<td>86</td>
<td>121</td>
<td>7</td>
<td>17</td>
<td>3</td>
<td>255</td>
</tr>
<tr>
<td>2006</td>
<td>24</td>
<td>86</td>
<td>133</td>
<td>7</td>
<td>22</td>
<td>3</td>
<td>275</td>
</tr>
<tr>
<td>2007</td>
<td>30</td>
<td>87</td>
<td>130</td>
<td>5</td>
<td>26</td>
<td>1</td>
<td>279</td>
</tr>
</tbody>
</table>

**DESCRIPTIONS OF NRF RATING CATEGORIES**

A - World leaders renowned for the high quality and impact of their research.

B - Researchers with considerable international stature.

C - Established researchers who produce research of an international standard.

P - Young researchers (normally younger than 35 years of age) who obtained their doctoral degrees not more than 5 years ago and who, on the basis of their performance, are recognised internationally as having the potential to become future leaders in their field.

Y - Younger researchers (normally younger than 35 years of age) who obtained their doctoral degrees not more than 5 years ago and who, on the basis of their performance, are recognised as showing promise of establishing themselves as researchers within a 5-year period after evaluation.

L - Academics (normally younger than 55 years) who have demonstrated potential or ability as researchers in the past, and who now can show promise of being able to establish or re-establish themselves as researchers within a 5-year period after submission of evaluation documents.
NRF-RATED RESEARCHERS AT UCT DURING 2007

Newly rated researchers from the 2007 cycle are listed in bold text.

Abratt, RPA
Abratt, VR
Ackermann, RR
Adhikari, M
Alexander, MG
Alexeeva, N
Allie, MS
Altwegg, R
Ansorge, IJ
Armitage, NP
Auerswald, L
Barashenkov, IV
Barr, GDI
Beighton, PH
Bennett, TW
Bhorat, HI
Bickford-Smith, JV
Blackburn, JM
Blake, EH
Bolton, JJ
Bond, WJ
Bosch, AN
Bourne, SA
Bowen, PA
Bradshaw, DJ
Branch, GM
Brandt, WF
Bratka, V
Breen, CJ
Britton, DT
Brombacher, FH
Bronner, GN
Brown, ITJ
Brown, GD
Bryns, PV
Buffler, A
Burgers, W
Burman, SB
Burton, SG
Butler, AM
Butterworth, DS
Caira, MR
Cameron, RG
Case, J
Chakraborty, A
Chan, A
Chibale, K
Chidester, DS
Chinsamy-Turan, A
Claeys, MC
Cleymans, JWA
Cochrane, JR
Collins, M
Combrinck, MI
Compton, JS
Comrie, CM
Cooper, BL
Corder, HM
Cornell, D
Cornille, JL
Coyne, VE
Cramer, MD
Cranksaw, O
Crowe, TM
Cumming, G
Dalvie, MA
Dandara, C
De Jager, K
De Jager, G
De Villiers, M
De Wit, MJ
Deglon, DA
Denny, LA
Dheda, K
Dominguez, CA
Douglas, TS
Driver, KA
Du Plessis, MA
Dunsky, PKS
Eckardt, FD
Edwards, LJ
Egan, TJ
Ekama, GA
Ellis, GFR
Ensor, P
Farrant, JM
Fearick, RW
February, EC
Fedderke, JW
Field, JG
Firer, C
Flanagan, CA
Fraser, DM
Gade, G
Gain, J
Gammon, DW
Gillson, L
Glazewski, JJ
Gobodo-Madikizela, P
Goedecke, JH
Govan, V
Greenberg, LJHL
Griffiths, CL
Guo, R
Haines, LM
Hapgood, J
Harley, EH
Harris, C
Harris, MC
Harrison, STL
Hart, M
Haertling, M
Hedderston, TAJ
Hellaby, CW
Herman, R
Hewitson, BC
Hockey, PAR
Hoffman, MT
Horwitz, FM
Hunter, R
Hutton, AT
Illing, N
Ings, SC
Jackson, GE
Jacobs, M
Jacobs, DS
Janelidze, G
Jeebhay, M
Jelsma, J
Joubert, AR
Kalla, AA
Kalula, ER
Kaminer, D
Kidson, S
Klatzow, PHL
Knutsen, RD
Koelble, TA
Kraan-Korteweg, RC
Kritzinger, PS
Kunzi, H-P A
Lambert, MI
Lang, DM
Lang, CI
Langerman, FS
Laugksch, RC
Le Roex, AP
Lecour, S
Leibbrandt, M
Lewis, AE
Lindsey, G
London, L
Lopata, AL
Louw, J
Low, I
Lutjeharms, JRE
Maartens, G
Mail, AS
Marais, AD
Marco, H
Marsden, G
Martin, DP
Mattes, RB
Mayosi, BN
McIntosh, DB
McIntyre, D
Meadows, ME
Meintjes, EM
Meissner, P
Mesthrie, R
Meyers, PR
Midgley, JJ
Moller, KP
Moloney, CL
Morris, AG
Moss, JR
Moyo, P
Muasya, M
Muller, IP
Myers, TG
Naidoo, KJ
Nassimbeni, MC
Nassimbeni, LR
Dr Lindsey Gillson, Recipient of the NRF President’s Award

Dr Gillson’s research focuses on vegetation dynamics, and how landscapes change over time. She uses fossil pollen, charcoal and other environmental archives to reconstruct vegetation and fire history and the ecological processes that cause vegetation change. She uses these data to address questions of conservation and ecosystem management such as: What determines spatial and temporal variation in tree abundance? Can habitat degradation be distinguished from background variability? What are the critical climatic thresholds and disturbances at which ecosystems undergo rapid change? And at what point should managers intervene? Her current projects are in the Kruger National Park, the Hluhluwe-iMfolozi Park and central Tanzania, and she is also supervising postgraduate research in the Cederberg Wilderness Area and the littoral Forests of Madagascar.
FACULTY OF ENGINEERING
& THE BUILT ENVIRONMENT

ARCHITECTURE, PLANNING AND GEOMATICS
CHEMICAL ENGINEERING
CIVIL ENGINEERING
CONSTRUCTION ECONOMICS AND MANAGEMENT
ELECTRICAL ENGINEERING
MECHANICAL ENGINEERING
The faculty prides itself on its research activities, which have grown significantly over the last number of years. The research income of the faculty has grown from ±R20 million in 1999 to ±R80 million in 2007 – an annual after-inflation growth rate of about 12%. During this period, staff numbers increased minimally from 98 to 110. To continue producing quality research at this rate to funders who expect delivery ‘on time’ as well represents a major challenge to our academics and research officers.

A significant growth in student numbers continues to place enormous pressure on the physical resources of the faculty for both its teaching and research activities. To sustain and grow our contributions to national research and development remains a major challenge, particularly in critical areas such as power engineering, mineral, chemical and petrochemical processing, bioprocessing, water treatment, concrete and structural engineering, energy, fuels, materials, telecommunications, manufacturing, urban development and the management of cities, procurement policies, transport studies, and infrastructure and facilities management.

The faculty is well positioned to contribute significantly to the country by virtue of the current and planned focus of its research activities.

Noteworthy research achievements in the faculty during the past year include the following: A research team led by Professor Jack Fletcher won the Best Research Collaboration Award from the Technology and Human Resource for Industry Programme (THRIP) for their “substantial and sustained” team work and collaboration with industrial and commercial partners. Professor Sue Harrison from the Department of Chemical Engineering received the DST Distinguished Woman Scientist Award and was also awarded a DST/NRF Research Chair in Bioprocess Engineering. Two further SARCHI Research Chairs were awarded to Professors Edgar Pieterse (Urban Policy) and J-P Franzidis (Minerals Beneficiation). Professor Pragasen Pillay of the Department of Electrical Engineering received the TW Kambule Award for senior black researcher over the past five to 10 years, awarded by the National Science and Technology Forum. Finally, Professor Mark Dry from the Department of Chemical Engineering received an honorary doctorate from the University in recognition of his outstanding international reputation as a world leader in the area of synthetic fuel production.

The Centre for Transport Studies was established as a multidisciplinary research and postgraduate teaching body with significant funding from the South African Rail Commuter Corporation (formerly Metro Rail) and the Department of Transport and Public Works (Western Cape).

The African Centre for Cities (Cities in Africa project) continues to grow and attract significant interest and funding from the corporate and public sector. As a research signature theme it serves as a platform for interdisciplinary research on urban issues – both theoretical and applied – across the University.

The Department of Science and Technology awarded R30 million over five years to the Department of Chemical Engineering to establish a Catalysis Competence Centre, a virtual hub that will develop advanced hydrogen and fuel-cell technologies in South Africa.

The faculty is facing some exciting opportunities in terms of its research strategy for the next 10 years. The remarkable growth in the country’s economy, coupled with related challenges as most dramatically illustrated recently by the energy supply crisis, represents a broad set of ongoing and exciting opportunities. The faculty is well positioned to contribute significantly to the country by virtue of the current and planned focus of its research activities. Moreover, its researchers are ready and more than competent to respond to these challenges.

Professor Cyril O’Connor
Dean of Engineering & the Built Environment
RESEARCH groupings

BIOPROCESS ENGINEERING RESEARCH UNIT
The Department of Chemical Engineering has been known for its interest in bioprocess engineering for over 3 decades. The Bioprocess Engineering Research Unit (BERU), constituted in 2001, formalised this research focus and its role in the development of human capacity in this field. BERU aims to underpin the growth and exploitation of the biological sciences in South Africa through a national centre of expertise in bioprocess engineering through maintaining a balance between research centred on the fundamental understanding of biological processes at the mechanistic level, the interaction of these processes with their environment and the application of biological principles to bioprocesses of economic, social and environmental importance. The multidisciplinary team brings together expertise in reactor studies, process modelling, biokinetics, microbial metabolism, biocatalysis, micro- and molecular biology and hydrometallurgy to develop detailed understanding of bioprocess systems. Our key foci include biominerals engineering for the extraction of metals as well as the prevention and remediation of metal-rich effluents, biotransformation for value addition, bioprocess optimisation through reactor modelling, mass transfer optimisation, product liberation and recovery and bioprocess integration. Application of life-cycle assessment tools to bioprocesses is used to nurture sustainable process development. Current areas of application include heap bioleaching of base metals, biocconversion of hydrocarbons, biofuels, energy and value addition from waste, bioresource productivity diagnostic and synthetic enzymes.

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BLAST IMPACT AND SURVIVABILITY RESEARCH UNIT
The Department of Mechanical Engineering has been involved in impact dynamics for over 25 years. In particular, research has focused on experimental and computational techniques to provide solutions for blast and structural impact scenarios. The Blast Impact and Survivability Research Unit (BISRU) has developed experimental facilities, which include a blast chamber, a selection of drop testers, material characterisation systems, and a sled tester for impact biomechanics. This collection of equipment is unique in that no other university laboratory worldwide has this full suite of facilities in one area. The research activities are aimed at promoting the study and understanding of impact dynamics through projects at senior undergraduate level and master’s, doctoral and postdoctoral levels. The research objectives are to reduce the risk of injuries and save lives through fundamental principles of science and engineering using experimental, analytical and computational tools and techniques to understand the mechanics and dynamics of blast and impact loads. BISRU currently has several international interactions through collaborative projects with universities in Australia, Argentina, Europe, and the USA.

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CENTRE FOR CATALYSIS RESEARCH
The Centre for Catalysis Research concerns itself with both fundamental and applied research and development in the general field of heterogeneous catalysis—encompassing all of catalyst synthesis, physico-chemical characterisation and performance evaluation for industrially interesting chemical conversions. The principal fields of investigation include Fischer-Tropsch synthesis, zeolite/acid catalysis (especially as applied to hydrocracking and the transformation of phenols and derivatives) and catalysis by platinum group metals and gold. In addition, the Centre for Catalysis Research is the host laboratory for the DST-NRF Centre of Excellence in Catalysis (c*change) and the recently announced DST Competence Centre in Hydrogen and Fuel Cell Catalysis.

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CENTRE FOR MATERIALS ENGINEERING
The Centre for Materials Engineering strives to educate and train students in techniques and fundamentals in the broad field of Materials Engineering. It also seeks to serve a wide range of engineering activities, giving advice concerning material processing, properties and performance whilst maintaining an international profile for its research. The research activities of the Centre are aimed at addressing national needs in terms of both the provision of technological solutions and the development of skilled graduates.

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FAculty of engineering & the built environment

Research Groupings

Centre for Minerals Research
The Centre for Minerals Research is a multidisciplinary, interdepartmental research centre based in the Department of Chemical Engineering. The focus of research is on the processes of froth flotation and comminution, arguably two of the most important unit operations in mineral beneficiation. Inefficiencies in these processes translate into both an enormous loss of revenue and an unnecessary waste of the world’s valuable and steadily declining mineral reserves. The Centre enjoys excellent international collaborations with all of the world’s leading mining companies.

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Centre for Research in Computational and Applied Mechanics
The Centre for Research in Computational and Applied Mechanics (CERECAM) provides a coherent focus and point of interaction at UCT for research in mechanics by promoting and supporting fundamental research, applied research, and industrial interaction in computational mechanics and associated disciplines. Its activities are multidisciplinary, and its membership is drawn from four engineering departments, applied mathematics, and physics. The research interests of the Centre involve the broad field of non-linear problems in solid, structural and fluid mechanics, with a particular emphasis on the application and development of the finite element method. There is a strong emphasis on postgraduate training, at the master’s and doctoral levels. The South African Research Chair in Computational Mechanics, occupied by Professor B.D. Reddy, is located within CERECAM.

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Centre for Research in Engineering Education
The Centre for Research in Engineering Education (CREE) focuses on research in engineering education that informs the development of the learning environment and the educational process, in order to improve student learning and success. CREE has established itself as the leading player in the promotion of engineering education research and development in South Africa and one of the leading such units in the world.

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Crystallisation and Precipitation Unit
Industrial crystallisation research was initiated in the Department of Chemical Engineering in 2000 and the Crystallisation and Precipitation Unit was formally accredited in 2006. Although industrial applications of crystallisation and precipitation have a long history and precipitation has been studied scientifically since the 1930s, understanding of this operation is still very limited. In this context, the main aim of the Unit is to advance existing fundamental knowledge in the fields of crystallisation and precipitation, especially related to the South African and international mineral processing and extractive metallurgy industries. Particular interests of the research group are modelling and simulation approaches to industrial research, such as the particle rate process approach for modelling of industrial crystallisation processes, aqueous chemistry modelling and computational fluid dynamics modelling. All of these modelling techniques are aimed at deepening the understanding of these chemically complex, multiphase processes. The ultimate objective of furthering this scientific understanding is to optimise and control industrial crystallisation and precipitation processes, including treatment of effluent streams. A particular interest of the research unit is the modelling and treatment of hypersaline brines. The Research Unit is also involved in the development and presentation of various continuing professional education courses. These courses satisfy the interest in and demand for skills in this area from both an industrial and an academic standpoint.

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Energy Research Centre
The Energy Research Centre (ERC) is the result of the logical merger of activities of the Energy Research Institute and the Energy Development Research Centre. The staff of the ERC have qualifications in engineering, natural and environmental sciences, urban and regional planning, economics, law, politics, sociology and anthropology. The multidisciplinary ERC conducts high-quality, targeted and relevant research as well as offering postgraduate opportunities at master’s and PhD levels.

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DOCTORAL graduations

P.S. BARENDESE (ELECTRICAL ENGINEERING)
The application of advanced signal processing techniques to the condition monitoring of electrical machine drive systems
Supervised by Professor P. Pillay

N. BATUNGI (ARCHITECTURE, PLANNING AND GEOMATICS)
Land reform in Uganda: Harmonising the land tenure systems of Uganda, 1900-2003
Supervised by Professor H. Ruther

D. BONORCHIS (MECHANICAL ENGINEERING)
Analysis and simulation of welded plates subjected to blast loading
Supervised by Professor G.N. Nurick and Professor B. Tait

J.I. BROADHURST (CHEMICAL ENGINEERING)
Generalised strategy for predicting environmental characteristics of solid mineral wastes – a focus on copper
Supervised by Professor J. Petrie and Dr H. von Blottnitz

E. BURDUKOVA (CHEMICAL ENGINEERING)
Surface properties of New York talc as a function of pH, polymer adsorption and electrolyte concentration
Supervised by Associate Professor D. Bradshaw and Professor J.S. Laskowski

N.T.L. CHIGORIMBO-MUREFU (CHEMICAL ENGINEERING)
Production of bio-active compounds from ferulic acid using biocatalysis
Supervised by Professor S. Burton

B.I. COLLIER-REED (CHEMICAL ENGINEERING)
Pupils' experiences of technology. Exploring the nature of technology and technological literacy
Supervised by Associate Professor J. Case and Professor C. Linder

G.R. FORBES (CHEMICAL ENGINEERING)
Texture and bubble size measurements for modelling concentrate grade in flotation froth systems
Supervised by Professor G. de Jager and Associate Professor D. Bradshaw

K.A. FORBES (ELECTRICAL ENGINEERING)
Calibration, recognition, and shape from silhouettes of stones
Supervised by Dr F. Nicolls and Professor G. de Jager

A.W. GRUTTER (MECHANICAL ENGINEERING)
A multi-case investigation into the effectiveness of shop floor improvement teams at South African manufacturers
Supervised by Associate Professor T. Ryan

D. JOHNSON (ELECTRICAL ENGINEERING)
Design considerations and implementation of an electro-mechanical battery system
Supervised by Professor P. Pillay and Mr M. Malengret

S.W. MUMENYA (MECHANICAL ENGINEERING)
Evaluation of mechanical properties of textile concrete subjected to different environmental exposures
Supervised by Professor B. Tait and Professor M. Alexander

S.W. NCANANA (CHEMICAL ENGINEERING)
Biocatalytic studies of phenol oxidases producing antioxidants
Supervised by Professor S. Burton

A.J.H. NEWELL (CHEMICAL ENGINEERING)
An evaluation of sulfidisation in the flotation recovery of heavily oxidised sulfide minerals - with particular reference to oxidised Merensky ores
Supervised by Associate Professor D. Bradshaw and Professor P. Harris

C.J. NISSING (CHEMICAL ENGINEERING)
Creative deployment of technology in urban planning for sustainable energy use and supply in a South North comparison
Supervised by Dr H. von Blottnitz and Professor J. Heil

S. NXUMALO (MECHANICAL ENGINEERING)
The PT8V ordering transformation in PT 11 AT. % V
Supervised by Associate Professor C.I. Lang

B.A. PRENZLOW (ELECTRICAL ENGINEERING)
Ultrasonic spectroscopy of liquid filled piezoelectric tube
Supervised by Professor J. Tapson

G.E. SEARBY (CHEMICAL ENGINEERING)
An investigation of the kinetics of thermophilic microbial ferrous iron oxidation in continuous culture
Supervised by Emeritus Professor G.S. Hansford

N.J. SHACKLETON (CHEMICAL ENGINEERING)
Surface characterisation and flotation behaviour of the platinum and palladium arsenide, telluride and sulphide mineral species
Supervised by Professor C.T. O’Connor

M. THEOBALD (MECHANICAL ENGINEERING)
Blast loading of sandwich panels with thin-walled tube cores
Supervised by Professor G.N. Nurick

D. WEI (ELECTRICAL ENGINEERING)
Clustering Algorithm for sensor networks and mobile ad hoc networks to improve energy efficiency
Supervised by Professor H. Chan

C.A. WELKER (CHEMICAL ENGINEERING)
Ruthenium based Fischer-Tropsch synthesis on crystallites and clusters of different sizes - from “Nano” to “Angstrom”
Supervised by Associate Professor M. Claeyns, Professor J. Moss and Professor E.W.J. van Steen
PATENTS


RESEARCH OUTPUT

SCHOOL OF ARCHITECTURE, PLANNING AND GEOMATICS

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


Kevin Harding, from the Department of Chemical Engineering, received the Environmental Life Cycle award from the United Nations Environment Programme for the pioneering new research he is involved in to measure the environmental impact of sugar production in South Africa. The award recognises work from academics and private companies in developing and emerging economies who have started visionary and innovative projects based on the “cradle to cradle” or “life cycle approach”. Kevin is doing his PhD under the supervision of Professor Sue Harrison and Dr Harro von Blottnitz.


EXHIBITIONS


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DEPARTMENT OF CHEMICAL ENGINEERING
(INCLUDING BIOPROCESS ENGINEERING RESEARCH UNIT, CENTRE FOR CATALYSIS RESEARCH, C*CHANGE – DST-NRF CENTRE OF EXCELLENCE IN CATALYSIS, CENTRE FOR MINERALS RESEARCH, THE CENTRE FOR RESEARCH IN ENGINEERING EDUCATION AND THE CRYSTALLISATION AND PRECIPITATION RESEARCH UNIT)

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


CHEMICAL ENGINEER CONTINUES LEGACY

Professor Sue Harrison, as pictured above, has netted the Distinguished Woman Scientist award, announced at the 2007 annual Women in Science ceremony. The prize is one of several accolades created by the Department of Science and Technology to recognise women in science and their role in improving the economic status and quality of life of South Africans. Prof Harrison has an enviable international reputation as a leading researcher in bioprocess engineering and is involved in regional biotechnology initiatives. Also flying UCT’s flag at the awards was Dr Éva Plagányi-Lloyd (Department of Mathematics and Applied Mathematics), a finalist in the Best Emerging Young Scientist category.


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DEPARTMENT OF CIVIL ENGINEERING
EDITED BOOKS

ARTICLES IN PEER-REVIEWED JOURNALS


**PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS**


ANGLO PLATINUM BOOSTS THE DEVELOPMENT OF MINERALS PROCESSING RESEARCH

Anglo Platinum announced the establishment of an Endowed Chair in Mineral Processing in 2007. The sponsorship of this Chair highlights Anglo Platinum’s commitment to building research capacity and the development of skills in South Africa. The first occupant of the Anglo Platinum Chair in Minerals Processing is Professor Cyril O’Connor, who is also the Director of the Centre for Minerals Research and former Dean of the Faculty of Engineering & the Built Environment. One of the fundamental aims of the Chair will be to promote minerals research amongst key role players in South Africa and through effective collaboration, assist in building research capacity at previously disadvantaged universities. Significantly, through this Endowed Chair, Anglo Platinum will provide the Centre of Minerals Research with in perpetuity funding to the value of R18 million.

Mr Mike Halhead of Anglo Platinum together with Professor Cyril O'Connor, first occupant of the Anglo Platinum Chair in Minerals Processing


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DEPARTMENT OF CONSTRUCTION ECONOMICS AND MANAGEMENT

ARTICLES IN PEER-REVIEWED JOURNALS


RESEARCH OUTLINES


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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DEPARTMENT OF ELECTRICAL ENGINEERING
CHAPTERS IN BOOKS

ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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DEPARTMENT OF MECHANICAL ENGINEERING

(INCLUDING: BLAST IMPACT AND SURVIVABILITY RESEARCH UNIT (BISRU), CENTRE FOR MATERIALS ENGINEERING (CME), CENTRE FOR RESEARCH IN COMPUTATIONAL AND APPLIED MECHANICS (CERECAM), ENERGY RESEARCH CENTRE (ERC), ENGINEERING MANAGEMENT, ISIQU ORTHOPAEDICS, AND THE SASOL ADVANCED FUELS LABORATORY)

BLAST IMPACT AND SURVIVABILITY RESEARCH UNIT (BISRU)

ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


**PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS**


**CENTRE FOR RESEARCH IN COMPUTATIONAL AND APPLIED MECHANICS**

**ARTICLES IN PEER-REVIEWED JOURNALS**


**PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS**


**ENERGY RESEARCH CENTRE**

**AUTHORED BOOKS**


**ARTICLES IN PEER-REVIEWED JOURNALS**


ARTICLES IN PEER-REVIEWED JOURNALS


SASOL ADVANCED FUELS LABORATORY

PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


_MECHANICAL ENGINEERING_

ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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Dr Phillip Lloyd (left) and Eugene Visagie in the Mechanical Engineering Laboratory. They tested ethanol gel fuels and compared them to alternative fuel for cooking in low income homes.

BEST PAPER AWARD FOR GEL FUEL RESEARCH

The Energy Research Centre’s Dr Phillip Lloyd and Eugene Visagie won the Best Paper Award at the 2007 International Conference on the Domestic Use of Energy. The paper details their efforts to test gel fuels and compare these to alternative cooking fuels. According to Dr Lloyd there has been much interest in the use of ethanol gel fuels for cooking in low-income homes. “Paraffin, used in appliances that have recently been banned, has been very dangerous. Gel fuels seemed to provide some hope of a safer alternative.”

Lloyd and Visagie obtained most of the gel and ethanol fuels available on the South African market and most of the appliances designed to use the fuels, in an attempt to identify the best combination. All were unsatisfactory, mainly because they gave off too much soot and carbon monoxide for use indoors. They also found that the weight of gel fuel used to cook a meal was four times higher than paraffin or LP gas. Also, gel fuel costs about as much as paraffin, making it economically unfeasible.
FACULTY OF COMMERCE

ACCOUNTING
ECONOMICS
GRADUATE SCHOOL OF BUSINESS
INFORMATION SYSTEMS
MANAGEMENT STUDIES
The Faculty of Commerce continues to improve on its contribution to the overall research activities and outcomes in the University. In this regard, our main thrust is to produce research that directly addresses, in practical ways, the socio-economic issues in both South Africa and the rest of the region. The quality and relevance of our research is reflected in the confidence it enjoys within the international community. For instance, during the year under review, research contracts in the faculty accounted for over fifty percent of the total UCT contract value from foreign governments, as well as the highest per unit value of all research contracts.

**our main thrust is to produce research that directly addresses, in practical ways, the socio-economic issues in both South Africa and the rest of the region**

Some of the key research highlights for 2007 include the dissemination of the hugely successful research on Black Diamonds by the UCT Unilever Institute of Strategic Marketing. More than 6000 marketers and managers around South Africa benefited from this pioneering research into the consumption profile of the black middle class. Utilising the insights generated thus far, the Institute is currently developing a sophisticated black middle class market segmentation model that will further illuminate the wealth dynamics of this growing consumer market. In addition, the Institute is consolidating its position as a premium source of marketing research by developing a brand model for emerging economies.

The Centre for Actuarial Research (CARe) presented their findings on the demographic impact of HIV/AIDS in Botswana to both local and international audiences. CARe has also started a major consultancy project for the Provincial Government of Gauteng, aimed at forecasting Gauteng’s demographics to 2015 for the purpose of socio-economic planning.

The School of Economics has continued its outstanding research performance as evidenced by increasing publications and vibrant research initiatives and groupings. One of the prominent initiatives is the international donor-funded collaborative research programme in environmental economics with the University of Gothenburg. Additionally, the School, in conjunction with other UCT research units, has embarked on a study that focuses on the “neuroeconomics” of gambling addiction. The study, which extends previous exploratory studies, is to date the largest and most rigorous survey with a focus on impulsive behaviour ever undertaken anywhere.

The Development Policy Research Unit continues to contribute to policy formulation on issues such as labour markets, poverty and inequality. The Unit’s work on the Employment Promotion Programme funded by the Department for International Development is now in its second phase, with a budget of £2.5 million for the period 2007-9.

Overall, we can look forward to continuing the tradition of a locally relevant and internationally competitive research strategy.

Professor Melvin D. Ayogu
Dean of Commerce
CENTRE FOR ACTUARIAL RESEARCH
The Centre for Actuarial Research is the only unit of its kind at an African university. It brings together multidisciplinary teams to build capacity, improve techniques and produce independent research in demography, healthcare financing, social security and HIV/AIDS modelling. The main focus of the Centre is on training and research in demography and modelling the demographic impact of HIV/AIDS in Southern Africa.

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DEVELOPMENT POLICY RESEARCH UNIT
The Development Policy Research Unit (DPRU) specialises in socio-economic research with a focus on labour markets, poverty and inequality. Through the application of economic and statistical techniques, our aim is to produce academically rigorous policy analysis. The DPRU’s mission is to undertake high-quality policy-relevant research, maintain and develop effective networks with government, civil society and the research community in Southern Africa, engage in training and teaching activities and participate directly in the process of formulating, implementing and evaluating policy.

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SOUTHERN AFRICA LABOUR AND DEVELOPMENT RESEARCH UNIT
The Southern Africa Labour and Development Research Unit (SALDRU) conducts research directed at improving the well-being of South Africa’s poor. It was established in 1975 and played a central role in documenting the human costs of apartheid through conferences and the Second Carnegie Enquiry into Poverty and Development in South Africa (1983-1986). Over the 1992-1994 period SALDRU co-ordinated South Africa’s first non-racial national living standards sample survey. In the post-apartheid period, SALDRU has continued to gather data and conduct research directed at informing and assessing anti-poverty policy. The unit has a multidisciplinary focus, attracting research associates from Economics, Management Studies, Sociology and Statistical Sciences and a number of international research collaborators, especially from the University of Michigan.

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RESEARCH groupings

T. DOMINGO (ACCOUNTING)
The application of activity based cost and management to support competitive strategy in the banking sector: A South African case study
Supervised by Associate Professor R. Chivaka

K. GRATWICK (GRADUATE SCHOOL OF BUSINESS)
Independent power projects in Africa: Balancing development and investment outcomes
Supervised by Associate Professor A. Eberhard

S.J. HASSAN (SCHOOL OF ECONOMICS)
Three Essays: Applications of continuous-time finance methods to dynamic rivalry in oligopoly; and an essay on the monetary policy response to currency crises
Supervised by Professor H. Abraham, Professor J. Fedderke and Professor D. Ross

T.O. IYAMU (INFORMATION SYSTEMS)
Impact of organisational politics on information technology strategy
Supervised by Professor J.D. Roode

I.B. KAMARA (SCHOOL OF ECONOMICS)
Public infrastructure and economic growth in sub-Saharan Africa
Supervised by Professor J. Fedderke

R. KEKWALETSE (INFORMATION SYSTEMS)
Knowledge transformation in a mobile learning environment: An interpretive inquiry of ubiquitous context and social presence awareness
Supervised by Professor J.D. Roode and Dr D. Ng’ambi

J. KIKOOMA (SCHOOL OF MANAGEMENT STUDIES)
Doing entrepreneurship in Uganda: The social construction of gendered identities among male and female entrepreneurs
Supervised by Mr J. Bagrain and Associate Professor B. van Lill

M. MARCUS (ACCOUNTING)
A qualitative and quantitative analysis of the South African tax system: 1995-2005
Supervised by Associate Professor J. Roeleveld

L. MBABANE (GRADUATE SCHOOL OF BUSINESS)
Broad-based black economic empowerment: A human capital development approach
Supervised by Professor F. Horwitz

DOCTORAL graduations
DOCTORAL GRADUATIONS

S. RIORDAN (SCHOOL OF MANAGEMENT STUDIES)
Career psychology factors as antecedents of career success of women academics in South Africa
Supervised by Professor J. Louw-Potgieter

M. TWUM-DARKO (INFORMATION SYSTEMS)
The role of information systems in legislation led reforms: A case study in the context of the new municipal rates act in South Africa
Supervised by Professor J.D. Roode

H. VAN ZYL (SCHOOL OF ECONOMICS)
Property price approaches to the valuation of urban wetlands: Theoretical considerations and policy implications
Supervised by Associate Professor A. Leiman

SCHOOL OF ECONOMICS
(INCLUDING THE AIDS AND SOCIETY RESEARCH UNIT (ASRU), THE DEVELOPMENT POLICY RESEARCH UNIT (DPRU), ECONOMIC RESEARCH SOUTHERN AFRICA (ERSA), THE ENVIRONMENTAL POLICY RESEARCH UNIT (EPRU) AND THE SOUTHERN AFRICA LABOUR AND DEVELOPMENT RESEARCH UNIT (SALDRU))

AUTHORED BOOKS

RESEARCH OUTRUNT


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


In his doctoral thesis, Anthony Black, associate professor in the School of Economics, describes how the SA car industry managed to turn its fortunes around, steered by strong pro-trade policy. Tariffs were slashed, and producers were encouraged to rationalise, but offered a carrot in return. Under the Motor Industry Development Programme, vehicle exporters can import other models duty-free. “The rationale was to make the industry more competitive, lower car prices and give consumers more choice,” says Black.


PEER-REVIEVED PUBLISHED CONFERENCE PROCEEDINGS


AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


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PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS

DEPARTMENT OF INFORMATION SYSTEMS

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


UCT RESEARCHER WINS PRESTIGIOUS BOOK AWARD

Professor Nicoli Nattrass was named as the 2007 recipient of the prestigious Bill Venter/Altron Literary Award for her 2004 book, The Moral Economy of AIDS in South Africa. In the text, she unpacks South Africa’s AIDS crisis, and argues for an aggressive public policy to address it, namely universal access to antiretroviral drug treatment for HIV positive patients. “This is . . . a profoundly impressive work,” noted one critic, “written with appropriate passion and argued with intellectual command”. 
RESEARCH OUTCOME


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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SCHOOL OF MANAGEMENT STUDIES
[INCLUDING THE CENTRE FOR ACTUARIAL RESEARCH (CARE)]

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


CENTRE FOR HIGHER EDUCATION DEVELOPMENT

ACADEMIC DEVELOPMENT PROGRAMME
EDUCATIONAL TECHNOLOGY
HIGHER AND ADULT EDUCATION STUDIES AND DEVELOPMENT UNIT
INFORMATION LITERACY
OPEN LEARNING
DEAN’S OFFICE
The vision of the Centre for Higher Education Development (CHED) is to be a cross-faculty unit that contributes to continual improvement in the quality of higher education through widening access, promoting excellence through equity, developing the curriculum in partnership with faculties, and enhancing the competence of graduates by ensuring the provision of key skills.

CHED's research mission is to ensure that its educational development work is based on rigorous and ethical research that will serve the objectives of providing equitable access to higher education, enabling social redress through higher education, and generally strengthening the quality of teaching and learning in higher education at UCT, in South Africa, and in countries with similar needs. CHED's research arises from both institutional need and individual interest, comprising all areas connected to teaching and learning, including the basic disciplines in which some of us are based.

A further objective is to enable systemic improvement through the research-led development of policy options at national and institutional level. For this reason, a considerable proportion of the research efforts of CHED staff goes into institutional research (for example, into the impact of the introduction of anonymous marking on student performance, or the reasons why some students in good academic standing drop out of the system), and national research (for example, in response to requests from such agencies as the Department of Education or the Higher Education Quality Committee).


CHED's research output reflects the diversity of academic development in contemporary South Africa and internationally, and the potential contribution of this work to a wider domain than the university alone. This diversity is illustrated by the range of journals in which CHED staff publish, which also provides another indication of the cross-faculty nature of the unit. The range includes titles as diverse as Computers and Composition, Information Development, the International Journal of Learning, Journal of Multilingual and Multicultural Development, Quaestiones Mathematicae, Nuclear Science and Engineering, Southern African Linguistics and Applied Language Studies, South African Journal of Economics, South African Journal of Higher Education, Social Dynamics, Teaching in Higher Education, Perspectives in Education, and Social Science and Medicine.

CHED's level of research activity and output continues to increase, and we are confident that our contributions to ‘research-led’ teaching and learning processes at the University will grow apace, as well as our contributions to the growing international field of higher education studies in its broadest sense.

Associate Professor Nan Yeld  
Dean of Higher Education Development
ACADEMIC DEVELOPMENT PROGRAMME

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNAELS


**PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS**


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**CENTRE FOR HIGHER EDUCATION DEVELOPMENT**

**ARTICLES IN PEER-REVIEWED JOURNALS**


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**CENTRE FOR EDUCATIONAL TECHNOLOGY**

**CHAPTERS IN BOOKS**


As the new National Senior Certificate looms for 2008, higher education institutions are scratching their heads about how to interpret the results that will spring from the new exams. The National Benchmark Tests Project, led by Professor Nan Yeld, pictured above, and colleagues Dr Alan Cliff and George van der Ross, will look at how well the new curriculum prepares learners for university, specifically around the entry-level academic and quantitative literacy. Through the provision of diagnostic information, the project will also assist institutions to draw up suitable curricula, particularly in foundation courses.


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


CENTRE FOR OPEN LEARNING

CREATIVE WRITING

POEMS PUBLISHED IN ANTHOLOGIES


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DEAN’S OFFICE

AUTHORED BOOKS


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SHUTTLEWORTH FOUNDATION FUNDS UCT PROJECT

The Shuttleworth Foundation funded the Opening Scholarship Project, which explored the use of information and communication technologies in transformation through a series of case studies at UCT. The year-long project focussed on how technology impacts on communication patterns between researchers, lecturers and students. Its aim was to identify how new technologies, such as interactive Web 2.0 and social networking tools, can expand research and connect the university community with important cross-cutting issues.
FACULTY OF SCIENCE

ARCHAEOLOGY
ASTRONOMY
BOTANY
CHEMISTRY
COMPUTER SCIENCE
ELECTRON MICROSCOPE UNIT
ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE
 GEOLOGICAL SCIENCES
MATHEMATICS AND APPLIED MATHEMATICS
MOLECULAR AND CELL BIOLOGY
OCEANOGRAPHY
PHYSICS
STATISTICAL SCIENCES
ZOOLOGY
Congratulations to our scientists on growth in the quality, impact and number of our research publications. With over 75% of our academic staff holding a current NRF rating, our faculty is well positioned to play a key role in contributing to national and global research scholarship.

The Faculty of Science was awarded seven DST/NRF South African Research Chairs (SARChI) during 2006/7. These SARChI awards reflect appropriate recognition of the quality and impact of our research nationally and internationally and provide a wonderful capacity-building opportunity for our faculty. Our SARChI Chair holders are Professor George Philander (Modelling of the Coupled Ocean-Land-Atmosphere Phenomena related to Climate), Professor Erwin de Blok (Astrophysics and Space Science), Associate Professor Kevin Naidoo (Scientific Computing), Professor Bruce Hewitson (Climate Change), Professor Kelly Chibale (Drug Discovery), Associate Professor David Jacobs (Animal Evolution and Systematics) and Associate Professor Astrid Jarre (Marine Ecology and Fisheries).

Our previous Dean of the Science Faculty, Professor Daya Reddy, was awarded a SARChI Chair in Computational Mechanics in the Faculty of Engineering & the Built Environment. Congratulations to UCT SARChI recipients and welcome to our newly appointed colleagues.

With over 75% of our academic staff holding a current NRF rating, our faculty is well positioned to play a key role in contributing to national and global research scholarship.

Our academic colleagues and our postgraduate students received several research awards during 2007. Professor George Ellis was inducted into the Royal Society in London for his scientific contributions, notably in relativity and cosmology. He joins the ranks of a Society whose previous members include Isaac Newton, Charles Darwin and Ernest Rutherford. Professor Theo Stewart was awarded the Gold Medal of the International Society on Multiple Criteria Decision Making, Professor Jill Farrant won the senior (silver) medal of the SA Association of Botanists, Professor Graeme Cumming was awarded the Royal Society of South Africa’s Meiring Naudé Medal and Professor Doug Butterworth received the National Science and Technology Forum’s Category A Award for Contributions over a Lifetime. Professors Cesarea Dominguez and Timothy Crowe were elected as Fellows of the University of Cape Town.

Our postgraduate students won several awards and competitions for the quality of their work. Sarah Goodier and Riahsna Sithaldeen won awards at the SA Systematic Biology conference; Julia Wakeling, Diane Southey, Ryan Blanchard and Heidi Hawkins won student prizes at SA Botany congresses; and the UCT team of Bruce Merry, Carl Hultquist, James Gray and Chris de Kadt won the 2007 Standard Bank IT challenge.

Professor Kathy Driver
Dean of Science
AVIAN DEMOGRAPHY UNIT
The mission of the Avian Demography Unit (ADU) is to contribute to the understanding of bird populations, especially bird population dynamics, and thus contribute to the conservation of avian biodiversity. The ADU achieves these goals through a variety of projects in which para-ornithologists throughout southern Africa can participate. These projects range from identifying bird species, through undertaking census surveys, to making detailed observations on breeding productivity.
Director: Professor L.G. Underhill
E-mail: Les.Underhill@uct.ac.za
Web: http://web.uct.ac.za/depts/stats/ado/index.html

CENTRE FOR SUPRAMOLECULAR CHEMISTRY RESEARCH
This group was constituted in 1997 and focuses on the physical chemistry of supramolecular systems. Various host-guest compounds are synthesized, their structures analysed by means of powder and single crystal X-ray diffraction, as well as thermal and spectroscopic techniques, and the results related to their physical properties. Our research efforts concentrate on polymorphism and solvation of insoluble drug molecules as well as their inclusion in cyclodextrins, on the characterisation of open framework transition metal structures and the study of guest selectivity in organic host-guest systems.
Director: Professor M.R. Caira
E-mail: Mino.Caira@uct.ac.za
Web: http://www.uct.ac.za/faculties/science/research/cscr/

ELECTRON MICROSCOPE UNIT
The Electron Microscope Unit (EMU) provides a central microscopy service to all departments of UCT as well as to other universities, research institutions and private companies. The Unit is able to advise users on many aspects of electron microscopy, light microscopy and digital imaging and can take on joint research. The EMU is a key resource in the South African Structural Biology Initiative and is offering postgraduate degrees in Structural Biology jointly with others at UCT and the University of the Western Cape. In 2007, the Unit took delivery of an FEI Tecnai F20 field emission cryo-transmission electron microscope – the first instrument in this class in Africa. This instrument enables the determination of the three-dimensional structures of biological objects, including viruses and protein complexes at high resolution.
Director: Professor B.T. Sewell
E-mail: Trevor.Sewell@uct.ac.za
Web: http://sbio.uct.ac.za/Webemu

ENVIRONMENTAL EVALUATION UNIT
The Environmental Evaluation Unit (EEU) is an independent, self-funded research, consulting and training unit based at the University of Cape Town. Founded in 1985, the EEU has established itself as a leader in the fields of integrated environmental and coastal management and sustainable development responding to local, regional and global environmental challenges using an interdisciplinary and participatory approach. During this time, the EEU has undertaken work throughout South Africa and Southern Africa, has participated in global research and policy initiatives, and has provided expertise to leading private and public corporations, research institutions, planning and development organisations, state departments, local authorities and communities. The EEU has implemented a wide diversity of projects that have contributed to academic debates, and informed policy whilst having practical impacts on the ground. The EEU works in five main thematic areas: (1) Integrated environmental planning, management and assessment; (2) Integrated coastal and small-scale fisheries management; (3) Biodiversity use, trade, livelihoods and social justice; (4) Sustainable business and cross-sector collaboration; and (5) Public participation.
Director: Associate Professor M. Snowman
E-mail: Merle.Snowman@uct.ac.za
Web: http://www.eeu.uct.ac.za

FRESHWATER RESEARCH UNIT
Since its inception in 1984, the Freshwater Research Unit has become one of the country’s leading centres of research and teaching on the ecology and management of Southern Africa’s inland waters. It is informally recognised by the Water Research Commission as a Centre of Expertise and its members are sought after nationally and internationally in a range of aquatic and scientific fields.
Director: Associate Professor J.A. Day
E-mail: Jenny.Day@uct.ac.za
Web: http://www.zoology.uct.ac.za/docs/fresh.html

CENTRE FOR THEORETICAL PHYSICS AND ASTROPHYSICS
The Centre for Theoretical Physics and Astrophysics (CTPA) is an interdepartmental research unit devoted to the promotion of interdisciplinary research in the areas of Astronomy and Astrophysics, Cosmology and General Relativity, and Theoretical Physics (Particle and Astro-Particle Physics). The Centre endorses and supports the new National Astrophysics and Space Science Program, hosted by UCT since 2003. CTPA has become a part of the National Institute of Theoretical Physics, located at Stellenbosch, and launched in 2006 by the Department of Science and Technology, and by the National Research Foundation. CTPA has eleven local members from UCT’s departments of Astronomy, Mathematics and Applied Mathematics, and Physics. It also has five international
members who visit the Centre on a regular basis. Postgraduate students doing theses on the above research fields are admitted to CTPA for the duration of their studies. An International Advisory Board of seven internationally acclaimed scientists was appointed in 2006.

**Director:** Professor C.A. Dominguez  
E-mail: Cesareo.Dominguez@uct.ac.za  
Web: http://www.uct.ac.za/faculties/science/research/astrophysics/

**MARINE BIOLoGY RESEARCH CENTRE**  
The Marine Biology Research Centre was established in 1985 as an umbrella organisation to market the marine expertise for which both the Botany and Zoology departments at UCT have been renowned over a period of many decades. It aims to advertise UCT as a centre of marine research to funding organisations, potential donors and organisations seeking consultants in the field of marine biology, and to market UCT and our specialist courses and experience as teachers in marine biology to prospective undergraduate and particularly graduate students from Africa and around the world.

**Director:** Professor C.L. Griffiths  
E-mail: Charles.Griffiths@uct.ac.za  
Web: http://www.uct.ac.za/faculties/science/research/marinebiology/

**MARINE RESEARCH (MA-RE) INSTITUTE**  
The Marine Research (MA-RE) Institute was officially constituted in October 2006 as one of the first signature themes at UCT. This was the culmination of a consultative process involving all marine researchers at UCT, with the view that marine research at UCT would greatly enhance its strength in research and teaching through formalised collaboration and co-ordination of all marine researchers and academics across disciplinary boundaries. The MA-RE Institute is an umbrella body covering all departments and faculties involved in marine research at UCT, and currently includes some 40 permanent UCT researchers. MA-RE hosts two Research Chairs under the DST-NRF South African Research Chairs Initiative (SARCHI) and provides administrative support for the Africa Centre for Climate and Earth System Science (ACCESS), a joint venture between UCT, CSIR and several other institutions. The MA-RE Institute’s principal focus is research, which underpins its teaching, training and consultancy activities. The Institute brings together active researchers in the field who add value to, and benefit from this collaborative structure. MA-RE co-ordinates and fosters cross-disciplinary, interfaculty and interinstitutional research projects. MA-RE also develops marine curricula and raises funds for improved bursaries and mentoring. The MA-RE Institute strives to transform the marine field through capacity building and skills development. Areas of particular development and capacity building include marine law and policy, coastal zone management, marine biotechnology, operational oceanography, southern ocean research, satellite oceanography and numerical modelling, marine engineering, an ecosystem approach to fisheries, seabird research and marine biodiversity studies.

**Director:** Professor John Field  
E-mail: ma-re@uct.ac.za  
Web: http://www.ma-re.uct.ac.za/

**PERCY FITZPATRICK INSTITUTE OF AFRICAN ORNITHOLOGY**  
The Percy FitzPatrick Institute of African Ornithology (affectionately known as the Fitztitute) is housed within the Zoology Department. Situated at the tip of Africa, the Fitztitute has an international reputation for research and teaching excellence in African ornithology and conservation biology. The DST-NRF Centre of Excellence in Birds as Keys to Biodiversity Conservation at the Percy FitzPatrick Institute is now one of only six nationally recognised Centres of Excellence in science and technology in South Africa. Fitztitute members are committed to developing a greater understanding of the form, functioning and conservation of Africa’s rich biodiversity, through the training of scientists and the pursuit of primary research, from evolutionary ecology to conservation biology.

**Acting Director:** Associate Professor P.A.R. Hockey  
E-mail: Phil.Hockey@uct.ac.za  
Web: http://www.fitzpatrick.uct.ac.za/

**PLANT CONSERVATION UNIT**  
The Plant Conservation Unit, located within the Botany Department, undertakes research and teaching directed at improving the conservation status of the Cape Floristic Region, including the Fynbos and Succulent Karoo biomes.

**Director:** Professor M.T. Hoffman  
E-mail: Timm.Hoffman@uct.ac.za  
Web: http://www.pcu.uct.ac.za/

**UCT-CERN RESEARCH CENTRE**  
The UCT-CERN Research Centre was established in 2003 out of a confluence of certain research programmes within the Department of Physics. As implied by the name of the Centre, there is extensive collaboration with CERN, the European Centre for Particle Physics, which is one of the most prestigious research laboratories in the world. In particular, the UCT-CERN Research Centre has close collaboration with the next generation ultra-relativistic heavy-ion experiment at CERN’s Large Hadronic Collider (LHC), named ALICE - A Large Ion Collider Experiment.

**Director:** Professor J.W.A. Cleymans  
E-mail: Jean.Cleymans@uct.ac.za  
Web: http://hep.phy.uct.ac.za/
DOCTORAL graduations

A. ARNAB (COMPUTER SCIENCE)
Towards a general framework for Digital Rights Management (DRM)
Supervised by Professor A. Hutchinson

K. BARNES (ZOOLOGY)
The phylogenetics and evolution of Africa’s larks (Alaudidae)
Supervised by Associate Professor P.G. Ryan

B. BECKER (PHYSICS)
Development of a high-level trigger for the dimuon spectrometer of the ALICE experiment at the Large Hadron Collider
Supervised by Professor J. Cleymans and Dr Z. Vilakazi

S. BLYTH (PHYSICS)
Using the phi-meson to probe the medium created in Au+Au collisions at RHIC
Supervised by Professor J. Cleymans

C. COETSEE (BOTANY)
Long-term effects of fire on nitrogen cycling in a broad-leaf savanna, Kruger National Park, South Africa
Supervised by Professor W. Bond and Dr E. February

T.S. CRAIG (MATHEMATICS AND APPLIED MATHEMATICS)
Promoting understanding in mathematical problem-solving through writing: A piagetian analysis
Supervised by Professor T.T. Dunne and Professor J. Webb

M.C. CRAMPTON (MOLECULAR AND CELL BIOLOGY)
The development of a flagellin surface display expression system in the gram-positive bacterium, bacillus halocurans Alk 36
Supervised by Associate Professor S.J. Reid and Dr M. Louw

N.C. DEPPA (CHEMISTRY)
Rarity of kidney stones in South African’s black population: Studies of urinary macromolecules, crystal matrix extract containing osteopontin, and bone turnover markers in urine and serum from black and white subjects as a key to understanding this paradox
Supervised by Professor A.L. Rodgers

G. DEWAR (ARCHAEOLOGY)
The archaeology of the coastal desert of Namaqualand, South Africa: A regional synthesis
Supervised by Professor J. Sealy

F.J. DURRELL (MATHEMATICS AND APPLIED MATHEMATICS)
Constrained portfolio selection with Markov and non-Markov processes and insiders
Supervised by Dr P. Ouwehand and Associate Professor H. Abraham

L.C. FOXCROFT (BOTANY)
Pattern and process of plant invasion in an African savanna ecosystem, with emphasis on multiple spatial and temporal scales
Supervised by Associate Professor D.M. Richardson and Professor M.T. Hoffman

D.Y. GHEBREHIWET (ZOOLOGY)
Assessing the effects of fishing on fish communities using South African case studies: Empirical and theoretical approaches
Supervised by Professor J.G. Field, Dr R. Leslie and Dr Y. Shin

D. GUO (STATISTICAL SCIENCE)
Contributions to spatial uncertainty modelling in GIS: Small sample data
Supervised by Associate Professor C. Thiart

H.C. HAUP (CHEMISTRY)
Strategies toward the synthesis of prostaglandin analogues
Supervised by Professor R. Hunter and Dr E. Sickle

M. HORN (MATHEMATICS AND APPLIED MATHEMATICS)
Systematic studies of low and intermediate-pt correlated angular distributions in Au+Au collisions at sqrt(sNN) = 200 GeV from the STAR experiment
Supervised by Professor J. Cleymans

B. KIRBY (MOLECULAR AND CELL BIOLOGY)
The characterisation of actinomycetes isolated from diverse South African sources, with emphasis on the genus Kribbella
Supervised by Dr P. Meyers

D. LOEWENTHAL (ZOOLOGY)
The population dynamics and conservation of the African Black Oystercatcher, Maematopus moquini
Supervised by Associate Professor P.A.R. Hockey

B.C. MERRY (COMPUTER SCIENCE)
A linear framework for character skinning
Supervised by Dr P. Marais and Dr J. Gain

N. MHLAHLO (ASTRONOMY)
The study of the accretion dynamics and behaviour in intermediate polars
Supervised by Dr P.A. Woudt

D. NUNEZ (COMPUTER SCIENCE)
A capacity limited, cognitive constructionist model of virtual presence
Supervised by Professor E. Blake
DOCTORAL graduations

N. OCTOBER (CHEMISTRY)
Design, synthesis and evaluation of potential dual drugs targeting the haemoglobin degradation pathway in the malaria parasite Plasmodium falciparum
Supervised by Professor K. Chibale

O.F. OXTOBY (MATHEMATICS AND APPLIED MATHEMATICS)
Solitons and radiation in nonintegrable systems
Supervised by Professor I.V. Barashenkov

L.N. PETERSEN (MOLECULAR AND CELL BIOLOGY)
The regulation and role of Oxidative Signal-Inducible1 protein kinase in Arabidopsis thaliana
Supervised by Dr K.J. Denby and Dr M. Sickle

D.S. PORTER (GEOLOGICAL SCIENCES)
An integrated geochemical and microbiological investigation of sulphate reductions in hypersaline pans
Supervised by Dr A. Roychoudhury and Dr D. Cowan

S.C.M. REES-JONES (CHEMISTRY)
Studies towards the enantioselective synthesis of (+)-castanospermine
Supervised by Professor R. Hunter

D. ROBERTSON-ANDERSSON (BOTANY)
Biological and economical feasibility studies of using seaweeds Ulva lactuca (Chlorophyta) in recirculation systems in abalone farming
Supervised by Professor J.J. Bolton, Dr T. Probyn and Associate Professor M. Troell

R.E. ROMAN (OCEANOGRAPHY)
Red sea intermediate water in the greater Agulhas current system
Supervised by Professor J.R.E. Lutjeharms

N.N. SHIPONENI (BOTANY)
Spatio-temporal distribution of grass and shrubs at the ecotone between an arid grassland and succulent shrubland: Ecological interactions and the influence of soils
Supervised by Professor M.T. Hoffman

S. STOFFBERG (ZOOLOGY)
Molecular phylogenetics and the evolution of high-frequency echolocation in horseshoe bats (genus rhinolophus)
Supervised by Associate Professor D. Jacobs and Dr C. Matthee

N.M.S.M. TECHOW (MOLECULAR AND CELL BIOLOGY)
Phylogeny and phylogeography of four Southern Ocean Petrels
Supervised by Dr C. O’Ryan and Associate Professor P.G. Ryan

S.J. THOMALLA (OCEANOGRAPHY)
Particulate organic carbon and mineral export from the North and South Atlantic gyres: The 284TH/285U disequilibrium approach
Supervised by Dr M. Lucas

P. VERMAAK (ASTRONOMY)
Fitting binary lens gravitational microlensing events with example-based algorithms
Supervised by Professor B. Warner and Dr J. Menzies

N. VIGAUD (OCEANOGRAPHY)
Water vapour transport from the South Atlantic and Indian Oceans and summer rainfall over Southern Africa
Supervised by Dr M. Rouault and Professor C.J.C. Reason

M.N. WABIRI (STATISTICAL SCIENCES)
Variable modelling of spatially distributed random interval observations
Supervised by Associate Professor C. Thiart and Professor R. Guo

R.M. WANLESS (ZOOLOGY)
Impacts of the introduced house mouse on the seabirds of Gough Island
Supervised by Associate Professor P.G. Ryan and Dr G. Hilton

A. WOLFAARDT (STATISTICAL SCIENCES)
The effects of oiling and rehabilitation on the breeding productivity and annual moult and breeding cycles of African Penguins
Supervised by Professor L. Underhill and Dr A.J. Williams

M. YAMAN (PHYSICS)
Scientific visualization of stress tensor information with applications to stress determination by X-ray and neutron diffraction
Supervised by Professor M. Haerting


DEPARTMENT OF ARCHAEOLOGY

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


RESEARCH OUTREACH


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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DEPARTMENT OF BOTANY

(INCLUDING THE BOLUS HERBARIUM AND THE PLANT CONSERVATION UNIT)

ARTICLES IN PEER-REVIEWED JOURNALS


86


RESEARCH output


CLUES GO BACK 3.8 BILLION YEARS

UCT Professor Maarten de Wit features among an international team that found evidence of tectonic movement much earlier than previously thought. A fragment of ancient seafloor, a serendipitous find by a team of international geologists in remote southwest Greenland, shows evidence that Earth’s crustal plates were shifting as far back as 3.8 billion years ago. The team’s observations, printed in the 23 March, 2007, edition of *Science*, indicate that this tectonic activity began before any known structural geological record of Earth, and provides new clues to understanding Earth’s geochemical evolution.


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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DEPARTMENT OF COMPUTER SCIENCE

ARTICLES IN PEER-REVIEWED JOURNALS


RESEARCH OUTPUT


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ELECTRON MICROSCOPE UNIT

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DEPARTMENT OF ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE
(INCLUDING THE ENVIRONMENTAL EVALUATION UNIT AND THE DISASTER MITIGATION FOR SUSTAINABLE LIVELIHOOD PROJECT)

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


GENETICALLY MODIFIED FOODS THE ANSWER

Microbiologist Professor Jennifer Thomson remains unmoved in her stance that genetically modified (GM) foods can help to alleviate huge food shortages in Africa, and the rest of the developing world. In her book *Genes for Africa: Genetically Modified Crops in the Developing World*, Thomson provides a layperson’s guide to the topic and a book she hopes will balance the picture, albeit a fiercely controversial solution to many of the continent’s food woes. As a microbiologist, Thomson has run laboratories at the forefront of GM research in Southern Africa since 1978 and participates in conferences on the topic throughout the world.
RESEARCH OUTPUT


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DEPARTMENT OF GEOLOGICAL SCIENCES

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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DEPARTMENT OF MATHEMATICS & APPLIED MATHEMATICS

(INCLUDING THE GENERAL RELATIVITY AND COSMOLOGY RESEARCH GROUP, THE LABORATORY FOR FORMAL ASPECTS OF COMPUTER SCIENCE (FACS-LAB), THE MARINE RESOURCE ASSESSMENT AND MANAGEMENT GROUP (MARAM), THE RANGELAND MODELLING GROUP, AND THE TOPOLOGY RESEARCH GROUP)

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


SCIENISTS PROPOSE NEW BARCODE FOR PLANTS

International scientists, among them Professor Terry Hedderson of the Bolus Herbarium in UCT’s Department of Botany, have proposed a set of genetic tools to classify and identify all the world’s land plants. The means to sort and tag all the land plants in the world using genetic information, telling one family or genus or species from another by virtue of their DNA, has eluded scientists for some time now. In a paper in the May edition of Taxon, the journal of the International Association for Plant Taxonomy, the consortium of 39 scientists proposes the use of three regions of DNA found in chloroplasts, the structures responsible for photosynthesis in plants. This plastid DNA matches animal mitochondrial DNA in a number of ways. For one, it abounds in cells, making it easy to track down and extract. It also meets a very tricky second criterion. It offers the variation that scientists are after but, no mean feat, can also be found in all land plants, produced by more than 400 million years of evolution.


RESEARCH output


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DEPARTMENT OF MOLECULAR AND CELL BIOLOGY

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


FarrAnt, J.M., brAndt, W.F. And lindsey, g.g. 2007. An overview of mechanisms of desiccation tolerance in selected angiosperm resurrection plants. Plant Stress Journal, 1: 72-84.


Karrman, r., dague, e., gaboriaud, F., quiLs, F. And duval, J. And lindsey, g.g. 2007. The stress response protein Hsp22p increases the flexibility of the yeast Saccharomyces cerevisiae cell wall. Biochimica Et Biophysica Acta-Proteins and Proteomics, 1774(1): 133-137.


Melo, M. And o’rYan, C. 2007. Genetic differentiation between Principe Island and mainland population of the grey parrot (Psittacus erithacus), and implications for conservation. Molecular Ecology, 16: 1673-1685.


RESEARCH OUTLET

DEPARTMENT OF OCEANOGRAPHY

(INCLUDING THE RESEARCH DIVING UNIT)

ARTICLES IN PEER-REVIEWED JOURNALS


SHOREBIRD RESEARCH MAKES WAVES

When Douglas Loewenthal started research for his doctorate in zoology at UCT, he didn’t expect it to influence conservation legislation before his official graduation. But not only has it helped sway government policy with the banning of off-road vehicles on South Africa’s beaches, it has also helped raise awareness regarding the threats facing other coastal fauna. More than 400 Oystercatcher Conservation Programme participants helped to gather data on the biology of the near-threatened African Black Oystercatcher, which culminated in Loewenthal’s thesis, *The population dynamics and conservation of the African Black Oystercatcher, Haematopus moquini*. 

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PROJECT FLUTTER BY

A new Animal Demography Unit (ADU) project will map the distribution of butterfly species across Southern Africa and spotlight conservation challenges over the next four years, mapping the distribution and conservation priorities of the rich butterfly fauna found in South Africa, Lesotho and Swaziland. South Africa is home to 17% of Africa’s 4,000 butterfly species and, of these, two species, possibly three, have become extinct. Another 38 species are named in the Red Data list which catalogues the threat categories for respective species. The project was launched under the umbrella of the Southern African Butterfly Conservation Assessment.


SEAWEED RESEARCH MAKES WAVES

Doctoral researcher in the Department of Botany Deborah Robertson-Andersson won the University of British Columbia award – the second prize – in the student presentation category at the 19th International Seaweed Symposium in Kobe, Japan. Robertson-Andersson made it to the conference after landing the South African Network for Coastal and Oceanographic Research prestige student travel award. Her research on “integrated aquaculture” – it spans botany, oceanography, zoology, even economics – explores seaweed and abalone growth rates. Specifically, Robertson-Andersson is investigating the effects of DMSP, a chemical compound found in high quantities in seaweed, and its effect on the taste of abalone.
RESEARCH output


ARTICLES IN PEER-REVIEWED JOURNALS


BARHAM, P., UNDERHILL, L.G., CRAWFORD, R. AND LESHORO, U. 2007. Differences in breeding success between African Penguins (Spheniscus demersus) that were and were not oiled in the MV Treasure oil spill in 2000. Emu, 107: 7-13.


FRESH KNOWLEDGE ON ANCIENT PEOPLE

Genevieve Dewar’s doctoral thesis contributes fresh knowledge on the ancient inhabitants of the coastal desert of Namaqualand. In her study, titled The Archaeology of the Coastal Desert of Namaqualand, South Africa: A regional synthesis, Dewar shows that human settlements are closely linked to climate change and the availability of water. Dewar’s thesis makes a significant contribution to the long-term history of Southern Africa and to our knowledge of human survival in coastal and desert environments.
RESEARCH OUTPUT


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**Bolus Herbarium curator and African Plant Initiative project leader Terry Trinder-Smith with project manager Erika Mias (right) and digitising officer Sandy Sauls. The team is digitising the herbarium’s collection for an online resource that is free to African universities.**

**PLANT COLLECTIONS DIGITISED FOR WORLD’S SCHOLARS**

Thanks to a three-year digitising project that wrapped up at the end of 2007, part of the valuable plant specimen collection in UCT’s Bolus Herbarium is now also available freely to the world’s scholars online. The work is part of an international project, the African Plant Initiative, to digitise the Type specimens of African plants in major herbaria worldwide. With a collection of over 350,000 specimens, the Bolus Herbarium is the third largest university herbarium in the Southern Hemisphere.
RESEARCH


**PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS**


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**SHELTERS FOR SILVERMINE FYNBOS PROJECT**

Dr Adam West’s climate manipulation experiment in the Silvermine Nature Reserve will provide valuable data on how fynbos react to drought. West, a postdoctoral fellow (Department of Integrative Biology at the University of California, Berkeley, and UCT’s Department of Botany) has erected a series of rain exclusion roofs deep within the reserve to keep rain off sections of the fynbos. The drought-simulating exercise, which will take place over two-and-a-half years, will gauge the impact of climate change on the Western Cape’s unique floral heritage.
RESEARCH OUTPUT


CLEANING UP ASTROPHYSICS

Three researchers have used an estimation system to clean up data on exploding stars. Astrophysics master’s student Renée Hlozek, Associate Professor Bruce Bassett of UCT (pictured above) and Professor Martin Kunz from the University of Geneva, have made headlines with their paper that’s been accepted by Physical Review D. The paper, titled Bayesian Estimation Applied to Multiple Species, covers the researchers’ work on an estimation method that makes working through a mass of cosmology data a cinch.
RESEARCH OUTCOME


ARTICLES IN PEER-REVIEWED JOURNALS


RESEARCH OUTLOOK


RESEARCH OUTLINE


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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COMMERCIAL LAW
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PRIVATE LAW
PUBLIC LAW
SOCIO-LEGAL RESEARCH
The Faculty of Law continues to provide a wonderfully diverse and stimulating context for the research endeavour. The University-wide focus on being research-led is now firmly established within our ranks, and managed effectively by the Director of Research, Professor Danie Visser, and the Research and Social Responsiveness Committee. An innovation in early 2007 was the appointment of a senior administrator, Sue Wright, to assist with every aspect of the co-ordination and reporting of research by both individuals and units, and the benefits of her great efficiency and conscientiousness have been increasingly evident. Another aspect of the infrastructural support provided by the faculty to its researchers, be they academic staff or postgraduate students, is to be seen in the increasing prominence of the Ethics in Research Committee, under Anne Pope’s leadership, which provides invaluable guidance, particularly in regard to research involving human subjects. In the past year, the Faculty Board adopted Ethical Guidelines for Research drafted by this Committee.

A further task undertaken by the Faculty Research Committee is the organisation of the annual Emerging Researchers’ Weekend, which in May 2007 returned to the venue first used several years ago, Mont Fleur near Stellenbosch, and which was attended by fourteen younger staff members and nine senior researchers. Those registered for doctorates also profited greatly from the presence in the faculty for six weeks in March and April of Professor Hudson Janisch, Emeritus Professor of the University of Toronto, who visited under the auspices of the Mellon-funded ‘Visiting Mentors’ initiative of the University’s Research Office. Another innovation in the year under review was the faculty Research Prize, open to those at senior lecturer or lecturer levels, for an excellent piece of research published in 2006. Two such prizes, generously sponsored by the firm of attorneys Cliffe Dekker, were presented to Jaco Barnard-Naude and Waheeda Amien at an event towards the end of the year. Those registered for doctorates also profited greatly from the presence in the faculty for six weeks in March and April of Professor Hudson Janisch, Emeritus Professor of the University of Toronto, who visited under the auspices of the Mellon-funded ‘Visiting Mentors’ initiative of the University’s Research Office. Another innovation in the year under review was the faculty Research Prize, open to those at senior lecturer or lecturer levels, for an excellent piece of research published in 2006. Two such prizes, generously sponsored by the firm of attorneys Cliffe Dekker, were presented to Jaco Barnard-Naude and Waheeda Amien at an event towards the end of the year. All in all this represents a substantially supportive environment for the pursuit of high-quality research and a remarkable improvement when compared with that which existed a decade ago.

The graduation of four doctoral candidates in 2007 (with all of whom Professor Evance Kalula was associated as supervisor or co-supervisor, a remarkable feat) also augurs well for this level of study and research in the faculty.

As to research achievements and highlights, the year under review will in all likelihood be remembered as rather special for the faculty. Professor Clifford Shearing’s DST/NRF Research Chair in African Security and Justice created an impressive infrastructure and began to deliver on its research plans. We were immensely pleased when a second Chair was awarded to Professor Drucilla Cornell, who had joined us from the USA shortly before, with its focus on Customary Law, Indigenous Values and Dignity Jurisprudence. This means that two of the four SARChI awards in Law throughout the country have come to UCT.

The national and international reputation of faculty members was further emphasised when the NRF ratings were made known towards the end of the year: the faculty now boasts three A, three B and three C-rated researchers, including (in Professor Cornell) the first A1-rated female researcher at UCT. The other two A-rated researchers are Professor Clifford Shearing and Professor Danie Visser. Professor Jonathan Burchell was elected as a Fellow of the University, and the third edition of his Cases and Materials on Criminal Law was published, while the third edition of his book on the Principles of Criminal Law received a Meritorious Publication Award from the University. Dr Danwood Chirwa received a Fellows’ Award, given to a younger researcher of exceptional promise.

This represents a substantially supportive environment for the pursuit of high-quality research and a remarkable improvement when compared with that which existed a decade ago.

On the publications front, the long-awaited ninth edition of the leading private law text, Wille’s Principles of South African Law, appeared early in the year. The book has been associated with the faculty over its 70-year history, and this edition marked a substantial revision to take into account South Africa’s transition to a constitutional democracy since it was last published. Professor Francois du Bois did an outstanding job as general editor, while he and eight other members of the faculty contributed the bulk of the contents. Two important conferences were held during the year (on Labour Market Regulation and on Dignity Jurisprudence), the proceedings of the last one making up the contents of the 2008 edition of Acta Juridica.

I trust that this very strong performance in research will contribute further to the existence of a vibrant, critical, and socially-engaged scholarship in law in this country and increasingly abroad, as foreign legal scholars discover that they have much to learn from such works.

Professor Hugh Corder
Dean of Law
Since 1983, the Centre has done socio-legal research on how existing legislation affecting women, children, and the family operates in practice, with a view to pinpointing urgently needed reforms of South Africa’s legal and social welfare systems. An aim has been to propose legally, economically, and politically viable and appropriate alternatives to deficient procedures and, within existing constraints, to assist in alleviating current problems.

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**CENTRE OF CRIMINOLOGY**

The Centre of Criminology (previously the Institute of Criminology), founded in 1977, is a research unit which aims to initiate, co-ordinate and develop research in the broad field of criminology, and to promote public interest in all aspects of criminology. The Centre’s research programme focuses primarily on state policing, plural policing, crime prevention and environmental security, in particular the mitigation of and adaptation to climate change, with particular reference to the African context. Teaching support to the criminology focus within the Department of Public Law and research support is provided by the Centre’s Multi-Media Electronic Research Library.

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**INSTITUTE OF DEVELOPMENT AND LABOUR LAW**

The Institute of Development and Labour Law was established in 1996 through the merger of the Labour Law Unit and the Institute of Development Law. The Institute (through the former Labour Law Unit) has played a leading role in labour law teaching and research. It provides training courses in South Africa and other countries in Southern Africa. It also regularly contributes to training programmes of other organisations and collaborates closely with other leading university centres and NGOs.

**Director:** Professor E.R. Kalula  
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**DOCTORAL GRADUATIONS**

**PROFESSOR N.N. RUBIN (COMMERCIAL LAW): DOCTOR OF LAW**
- Readings in African Law
- Annual Survey of African Law
- Code of International Labour Law

**T. ACKSON (COMMERCIAL LAW)**
Social security law and policy reform in Tanzania with reflections on the South African experience  
Supervised by Professor E.R. Kalula and Professor B. Rutinwa

**Y. NDEMA (COMMERCIAL LAW)**
A critical analysis of the law on sexual harassment in the workplace in South Africa in a comparative perspective  
Supervised by Professor J. Burchell and Professor E.R. Kalula

**A. SCETHAUSER (COMMERCIAL LAW)**
Polygraph testing in the workplace in South Africa with reflections on the ILO standards, USA and Germany  
Supervised by Professor E.R. Kalula

**M. BUDLEI (COMMERCIAL LAW)**
Freedom of association and trade unionism in South Africa: From apartheid to the democratic constitutional order  
Supervised by Professor E.R. Kalula and Professor M.C. Okpaluba
RESEARCH OUTUT

DEPARTMENT OF COMMERCIAL LAW
(INCLUDING THE INSTITUTE OF DEVELOPMENT AND LABOUR LAW)

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


**UNIONS MUST STAND ON THEIR OWN FEET**

Trade unions should stand on their own and deal with the burning issues of the workers’ rights instead of spending too much time on political matters. So says Mpfariseni Budeli, who graduated with a PhD in common law, in her thesis, *Freedom of association and trade unionism in South Africa: From apartheid to the democratic constitutional order*. Budeli argues that union federations such as COSATU should divorce themselves from politics and focus on issues affecting workers, such as empowering new leaders about strategies.
DEPARTMENT OF CRIMINAL JUSTICE
(INCLUDING THE CENTRE OF CRIMINOLOGY)

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


SCHWIKKARD, P.J. 2007. Evidence. Juta Quarterly Review, Vols 1, 2, & 3 [Published on CD Rom].


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AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


TRIO OF A-RATED RESEARCHERS FOR LAW

Three researchers in the Faculty of Law were awarded A-ratings from the National Research Foundation, including Professor Drucilla Cornell (pictured above), UCT’s first woman to receive the prestigious ranking. Cornell is one of only seven A-rated women in the country. She joined UCT just last year as professor in private law, taking up the new DST/NRF South African Research Chairs Initiative (SARCHI) chair in Customary Law, Indigenous Values and Dignity Jurisprudence. Formally, her work is to develop a jurisprudence that encompasses Roman Dutch Law and ubuntu, or “people’s law”, an amalgam of ethics that can deal with the complex demands of the South African Constitution. The second is Professor Clifford Shearing, an internationally acknowledged leader in the field of security governance. He is director and chair of the Centre of Criminology in the Department of Criminal Justice, and holds the DST/NRF Research Chair in African Security and Justice. He is often sought out by governments worldwide to advise on how policing and security can be provided more effectively. Professor Danie Visser’s A-rating recognises that his research has helped foster understanding between differently-configured legal systems, as well as his contribution to the creation of a comparative law of unjustified enrichment. Professor Visser teaches comparative law, comparative legal history, the law of delict, and unjust enrichment. For the past five years he has taught comparative law in the Juris Doctor programme at the University of Melbourne, Australia, as a visiting professor. He is chair of the South African chapter of the International Academy of Comparative Law, and a former president of the Southern African Society of Legal Historians.


ARTICLES IN PEER-REVIEWED JOURNALS


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DEPARTMENT OF PUBLIC LAW
(INCLUDING THE INSTITUTE OF MARINE AND ENVIRONMENTAL LAW)

AUTHORED BOOKS

EDITED BOOKS

CHAPTERS IN BOOKS


**ARTICLES IN PEER-REVIEWED JOURNALS**


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FACULTY OF HUMANITIES

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CONFLICT RESOLUTION
DANCE
DRAMA
EDUCATION
ENGLISH LANGUAGE AND LITERATURE
FILM AND MEDIA STUDIES
FINE ART
HISTORICAL STUDIES
ISAAC AND JESSIE KAPLAN CENTRE
FOR JEWISH STUDIES AND RESEARCH

LANGUAGES AND LITERATURES
MUSIC
PHILOSOPHY
POLITICAL STUDIES
PSYCHOLOGY
RELIGIOUS STUDIES
SOCIAL ANTHROPOLOGY
SOCIAL DEVELOPMENT
SOCIAL SCIENCE RESEARCH
SOCIOLOGY
UCT LIBRARIES
A number of developments have taken place over the past year which hold great promise for the faculty, in each of its three research and teaching clusters: the Arts, the Social Sciences, and the Performing and Creative Arts. Colleagues in all three areas have excelled in the period of review.

Four DST/NRF Research Chairs have been awarded to Professors Carolyn Hamilton (Archive and Public Culture), Raj Mesthrie (Migration, Language and Social Change), Lungisile Ntsebeza (Land Reform and Democracy) and Abdulkader Tayob (Islam, African Publics and Religious Values). These Chairs will contribute to developing areas of research excellence at UCT and expanding the number of postgraduate students and postdoctoral fellows in the faculty.

There are now 40 NRF-rated scholars in the faculty. In 2007, NRF A-ratings were secured for the second time by Professors John de Gruchy and Philippe-Joseph Salazar.

These Chairs will contribute to developing areas of research excellence at UCT and expanding the number of postgraduate students and postdoctoral fellows in the faculty.


Colleagues in the Creative and Performing Arts have continued to produce work of national and international significance. In 2007, Professor Jane Alexander exhibited in Spain, Italy, Germany, Sweden and the USA, as well as in South Africa. La Noire Galerie presented Gavin Younge’s retrospective exhibition ‘Prothesis’ in Paris, and Pippa Skotnes produced the widely acclaimed monograph *Claim to the Country: The Archive of Wilhelm Bleek and Lucy Lloyd* (Ohio University Press). The research report details the wide repertoire of the South African College of Music, in terms of compositions and performances, and the innovative contributions of Drama, Dance, Film and Media, and Creative Writing. Last year the faculty, together with the Baxter Theatre Centre, established the Institute for the Performing and Creative Arts to promote interdisciplinary activity across the performing and creative arts departments, through exhibitions, performances, and festivals.

The past year saw a significant increase in the number and quantum of research contracts, with the faculty now drawing the largest number of contracts from the science councils of any faculty at UCT. We are fortunate to have secured significant Mellon funding for postdoctoral fellows, for bringing distinguished visiting scholars to UCT and enabling young scholars to make contact visits abroad. A substantial grant to the Centre for Social Science Research will support research activity in the social sciences over the next few years.

Overall 2007 was an excellent year for research activity in the faculty, and initiatives have been taken which will reap rewards for many years to come.

Professor Paula Ensor
Dean of Humanities
RESEARCH groupings

CENTRE FOR CONTEMPORARY ISLAM
The Centre for Contemporary Islam was established in 1996. It is devoted to the study of Islam and Muslim communities, especially those on the African continent. The Centre is based in the Department of Religious Studies but it has the active participation of scholars from outside the department as well.

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CENTRE FOR CREATIVE WRITING
The Centre for Creative Writing fosters the development of, and attracts attention to, the literary arts, both at UCT and in the wider community. It is fast becoming the premier creative writing centre on the African continent and has established links with writers throughout South Africa and internationally. Boasting two Nobel Prize nominees among its teaching staff, the Centre offers its students exceptional and world-class teaching expertise.

Director: Professor S.F.T. Watson
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CENTRE FOR POPULAR MEMORY
The Centre for Popular Memory prioritises the stories of marginalised peoples. Central activities are research projects on memory, identity, place, space and trauma; training students in memory studies and oral history methodology; archiving oral, visual and audio-visual sources; and disseminating peoples’ stories to on and off-campus audiences through academic/popular history books and articles, travelling exhibitions, radio programmes, film documentaries and an online digital database.

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CENTRE FOR RHETORIC STUDIES
The Centre was founded in 1995, as an academic response to the establishment of democracy in South Africa, and in the wake of a large international conference on “Persuasion and Power” held in July 1994. The Centre is unique on the Continent and concerns itself with interdisciplinary research in public rhetoric, deliberative democracy and argumentative culture. The Centre’s brief is to foster research in the interface between rhetoric (the study of deliberation in the public sphere) and the development of democracy, by engaging in three main activities: hosting research Fellows, organising academic conferences and registering postgraduate students. The Centre is the site for a number of international research projects (funded by the NRF).

Director: Distinguished Professor Ph.-J. Salazar
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CENTRE FOR SOCIAL SCIENCE RESEARCH
The Centre for Social Science Research (CSSR) is an interdisciplinary research centre dedicated to conducting and building capacity for systematic, policy-relevant social science research in South Africa, the region and across Africa. CSSR projects are usually team-oriented, bringing together multiple local and international researchers, and offering postgraduate students significant opportunities for hands-on training by involving them in all stages of projects. Research findings are presented and discussed at regular weekly seminars and published as CSSR Working Papers. Substantively, the CSSR conducts research in the broad areas of democratisation, development, poverty and public health. The Social Surveys Unit conducts research on a range of social dynamics using survey data (especially the Cape Area Panel Survey and the Cape Area Survey) and related qualitative data. The Democracy in Africa Research Unit conducts research on a range of issues around democratisation in South and Southern Africa, using public opinion data but also creating new systematic databases on elections, legislatures and local government. Finally, the AIDS and Society Research Unit conducts research on the social impacts of HIV/AIDS, including issues of parenting, disclosure, sexual behaviour and public welfare, again using both survey and qualitative data.

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INSTITUTE FOR COMPARATIVE RELIGION IN SOUTHERN AFRICA
The Institute for Comparative Religion in Southern Africa (ICRSA) is dedicated to the postcolonial study of religion and religions in South Africa and the Southern African region. In addition to developing resources for the study of religions and reconfiguring the study of religion from a Southern African perspective, ICRSA has developed applied research projects in religion education by negotiating policy, providing materials for teachers, conducting workshops, and participating in the International Network for Interreligious and Intercultural Education.
RESEARCH GROUPINGS

UNIT FOR INTERCULTURAL AND DIVERSITY STUDIES
Our increasingly interconnected and diverse world requires that people have the insight, skills and capacities to handle human differences constructively. South Africa is no exception, and needs to foster a national culture that values communities of difference in organisational, public and civic life within a context of social equity. The Unit for Intercultural and Diversity Studies (INCU DISA) aims to contribute to these needs through formal and informal teaching and learning, and contextually sound research into questions of intercultural communication, social identity, co-existence and diversity. As a regional resource centre, INCU DISA is developing the interface between academic theory and social practice, drawing together expertise in the Southern African region, and linking to other institutions globally that share similar objectives.

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ISAAC AND JESSIE KAPLAN CENTRE FOR JEWISH STUDIES AND RESEARCH
The Isaac and Jessie Kaplan Centre for Jewish Studies and Research was established in 1980 under the terms of a gift to the University of Cape Town by the Kaplan Kushlick Foundation and is named in honour of the parents of Mendel and Robert Kaplan. It is an autonomous centre, with its own governing body. The Centre is the only one of its kind in South Africa. It seeks to stimulate and promote the whole field of Jewish studies and research at the University with a special focus on the South African Jewish community. The Centre is multidisciplinary in scope and encourages the participation of scholars in a range of fields including history, political science, education, sociology, comparative literature and the broad spectrum of Hebrew and Judaic studies.

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LUCY LLOYD ARCHIVE, RESOURCE AND EXHIBITION CENTRE
The Lucy Lloyd Archive, Resource and Exhibition Centre (LLAREC) is a research centre aimed at the promotion of the visual as a site of meaning and knowledge. Its focus is on collections and curatorship through which objects are allowed to become both sites of knowledge and mnemonics through which reference can be made to a wider resonance of meaning. At the heart of our curatorial practice is the issue of representation, and many of our projects have interrogated the ways in which the historical, social and medical construction of identity has been revealed through representation. Major projects have included the publication of the Bleek and Lloyd archive, the production of portfolios and artists' books and the installation of exhibitions at a variety of venues. LLAREC incorporates the Katrine Harries Print Cabinet.

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RESEARCH INSTITUTE ON CHRISTIANITY AND SOCIETY IN AFRICA
The Research Institute on Christianity and Society in Africa (RICSA) engages in high-quality research on religion in public life in the context of challenges of globalisation, diversity and identity, and public health in Africa. Its major current activity is through the African Religious Health Assets Programme (ARHAP), a multi-institutional, multisite, interreligious, transdisciplinary collaborative research project, with the co-ordinating hub at UCT. Initiated in 2003 with colleagues from Emory University, USA, it includes two other Collaborative Centres at Wits University and the University of KwaZulu-Natal, and works with several other collaborating partners in Africa, Europe and the USA (including a three-year partnership agreement with the Religion and the Human Spirit Initiative at Emory University). ARHAP, focused on the interface between religion and public health in Africa, engages in mapping and assessment of religious health assets (RHAs), policy development and practice, capacity building (especially through supporting master's and doctoral research), publications, a resource centre, and building a long-term network of scholars and practitioners. Targeted country assessment of RHAs in Lesotho and Zambia under contract to the WHO, a case study on Masangane, an integrated faith-based initiative in response to HIV and AIDS in the Eastern Cape, and further country studies commissioned by a major foundation in Zambia, Mali and Uganda are complete, while country studies are currently underway for UNAIDS/Tearfund in Kenya, Malawi and the DRC. RICSA has also completed a multiyear project on The Social History of Christianity in South Africa, 1487-1994, with multiple volumes, archives and a database now available on CD-ROM, two volumes of which will also be published by Unisa Press in 2008.

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DOCTORAL
graduations

PROFESSOR P.A. SKOTNES (FINE ART): DOCTOR OF LITERATURE
Representing the Bleek and Lloyd Archives: Selected work from 1991-2007
The Archive of Lucy Lloyd and Wilhelm Bleek: Claim to the country

J. AABOÉ (RELIGIOUS STUDIES)
The other and the construction of cultural and Christian identity: The case of the Dutch Reformed Church in transition
Supervised by Emeritus Professor J.W. de Gruchy

P.R. ANDERSON (ENGLISH LANGUAGE AND LITERATURE)
The host of vagabonds: Origins and destinations of the vagrant in Cape history and literature
Supervised by Professor D. Schalkwyk and Associate Professor N. Penn

A.H. BLACK (ECONOMICS)
Automotive policy and the restructuring of the South African industry, 1990-2005
Supervised by Professor D. Kaplan

L.J.K. BONATE (HISTORICAL STUDIES)
Traditions and transitions: Islam and chiefship in northern Mozambique, 1850-1974
Supervised by Dr S. Jeppie and Professor D. Hedges

R. BRANDT (PSYCHOLOGY)
Does HIV matter when you are poor and how? The impact of HIV/AIDS on the psychological adjustment of mothers in the era of HAART
Supervised by Dr L. Wild and Emeritus Professor A. Dawes

J. BROWNE (ENVIRONMENTAL AND GEOGRAPHICAL SCIENCES)
Policy communities and local governance: The socio-spatial intersections of urban transformation in post-apartheid South Africa
Supervised by Professor S. Parnell

R.J. CHADWICK (PSYCHOLOGY)
Paradoxical subjects: Women telling birth stories
Supervised by Professor D.H. Foster and Professor T. Shefer

R.N. FARIS (RELIGIOUS STUDIES)
A changing paradigm of mission in the Protestant churches of Mozambique: A case study of Eduardo Mondlane
Supervised by Emeritus Professor J.W. de Gruchy

T.L. GIRAUD (LANGUAGES AND LITERATURES)
La Fable comme dixième «forme simple»: une étude comparative du « Crépuscule des Loups » de Jean Dutourd avec les « Fables » de Jean de La Fontaine
Supervised by Professor J.L. Cornille and Dr E. Sienaert

A.J. HADLAND (CENTRE FOR FILM AND MEDIA STUDIES)
The South African print media, 1994-2004: An application and critique of comparative media systems theory
Supervised by Professor I.E. Glenn

S.M. HOFFMAN (PSYCHOLOGY)
Breaking the silence on violation in South African prisons
Supervised by Professor D.H. Foster and Associate Professor C.T. Tredoux

J.P. JAWITZ (EDUCATION)
Becoming an academic: A study of learning to judge student performance in three disciplines at a South African university
Supervised by Associate Professor S. Shay and Associate Professor J. Case

C. KRONENBERG (ENGLISH LANGUAGE AND LITERATURE)
Manifestation of humanism in Cuban history, politics and culture
Supervised by Professor J. Higgins

C.M. KWENDA (EDUCATION)
Reconceptualising the child within the family and the school: An investigation into how Zimbabwean children orphaned by AIDS negotiate their personal identity within a stigmatising society
Supervised by Professor C. Soudien and Dr M.J. Baxen

M.G. MAKOAE (SOCIOLOGY)
An experiential study of caregiving for HIV and AIDS patients in the ‘pre-arv era’ in Lesotho
Supervised by Associate Professor K. Jubber

L. MAREPO (HISTORICAL STUDIES)
The role of Umkhonto we Sizwe (MK) in the national liberation struggle in South Africa with reference to the rural far Northern Transvaal, 1976-1990
Supervised by Professor C.C. Saunders

B.J. MYERS (PSYCHOLOGY)
Access to alcohol and drug treatment for people from historically disadvantaged communities in the Cape Town metropole
Supervised by Professor J.A. Louw

J.H. NIEDER-HEITMANN (RELIGIOUS STUDIES)
Christendom at the Cape: A critical examination of the early Dutch Reformed Church
Supervised by Emeritus Professor J.W. de Gruchy

E.M. ONDARI-OKEMWA (INFORMATION AND LITERACY STUDIES)
An investigation into the practices, procedures, and challenges of knowledge management in government-owned organisations in Kenya
Supervised by Dr G. Smith
G.W. OUMA (EDUCATION)
Reducing resource dependence on government funding: The case of public universities in Kenya and South Africa
Supervised by Professor C. Soudien and Dr N. Cloete

J. PATRICK (ENGLISH LANGUAGE AND LITERATURE)
O. Douglas and the borders of fictional identity
Supervised by Dr P. Knox-Shaw

M.F. RICKARDS (CENTRE FOR FILM AND MEDIA STUDIES)
Screening interiority: Dream, the unconscious, emotion and imagination in cinematic language
Supervised by Dr J. Stadler and Associate Professor L. Marx

I. RIJSDIJK (CENTRE FOR FILM AND MEDIA STUDIES)
Seeking the other shore: Myth and history in the films of Terrence Malick
Supervised by Associate Professor L. Marx

D. ROUX (ENGLISH LANGUAGE AND LITERATURE)
Presenting the prison: The South African prison auto-biography under apartheid
Supervised by Professor D. Schalkwyk

L.Y. SHACKLETON (AFRICAN GENDER INSTITUTE)
Negotiating institutional transformation: A case study of gender-based change in a South African university
Supervised by Associate Professor J. Bennett and Professor A. Mama

L.E. SIKOYO (EDUCATION)
Primary teachers’ recontextualisation of a curriculum innovation in Uganda
Supervised by Dr H. Jacklin

F.A.H. SMITH (LANGUAGES AND LITERATURES)
Letterkunde en die dood: Onmoontlikheid en die moontlikhede van die teks
Supervised by Professor H.J. Snyman

C. STEINER (ENGLISH LANGUAGE AND LITERATURE)
Translated people, translated texts: Language and migration in some contemporary African fiction
Supervised by Professor B.L. Cooper

D. TALJAARD (SOCIOLOGY)
Tracking the risk factors and impact of an intervention to reduce the spread of the HIV/AIDS epidemic in Carletonville, South Africa
Supervised by Professor O. Crankshaw

K. THOMAS (ENGLISH LANGUAGE AND LITERATURE)
Between life and death: HIV and AIDS and representation in South Africa
Supervised by Professor J. Higgins

C.J. THURMAN (ENGLISH LANGUAGE AND LITERATURE)
Guy Butler from a post-apartheid perspective: Reassessing a South African literary life
Supervised by Professor S.F.T. Watson

L.K. VON DEN STEINEN (HISTORICAL STUDIES)
Experiencing the armed struggle: The Soweto generation and after
Supervised by Professor C.C. Saunders

M.M. WATSON-SEOIGHE (CENTRE FOR FILM AND MEDIA STUDIES)
The cutting edge: Deviant realisms and cinematic disruption
Supervised by Professor J. Higgins

T. YANNAY (HEBREW AND JEWISH STUDIES)
The didactic utilization of the Bible and Midrash in the plays of Zalman Aaron Lison
Supervised by Dr A. Reisenberger

C. YU (PSYCHOLOGY)
Brain mechanisms of dreaming
Supervised by Professor M. Solms
AFRICAN GENDER INSTITUTE

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


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CENTRE FOR AFRICAN STUDIES

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


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CENTRE FOR CONFLICT RESOLUTION

EDITED BOOKS


CHAPTERS IN BOOKS


ADEBAJO, A. 2007. Pope, pharaoh, or prophet? The Secretary-General after the Cold War. In S. Chesterman (ed.), *Secretary or General? The UN Secretary-General in World Politics*, pp. 139-157. Cambridge, UK: Cambridge University Press.


ARTICLES IN PEER-REVIEWED JOURNALS


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DEPARTMENT OF DANCE

ARTICLES IN PEER-REVIEWED JOURNALS


CREATIVE WORK

COMPOSITIONS


PERFORMANCES


PRODUCTIONS


THE UNHAPPY MK AND APLA SOLDIERS

Many cadres of the African National Congress and Pan Africanist Congress military wings are finding life difficult in the new South Africa. While some are doing well in their lives, many had great difficulty making the transition to normal life, felt betrayed and abandoned by their organisations and marginalised in society. So says Lynda von den Steinen, who graduated with a PhD in history, in her thesis, Experiencing the Armed Struggle: The Soweto generation and after.
ARTICLES IN PEER-REVIEWED JOURNALS


RESEARCH OUTCOME


REAT-STAGINGS


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DEPARTMENT OF DRAMA
(INCLUDING THE LITTLE THEATRE)

CREATIVE WORKS


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SCHOOL OF EDUCATION
(INCLUDING THE SCHOOLS DEVELOPMENT UNIT (SDU) AND THE CENTRE FOR APPLIED LANGUAGE AND LITERACY STUDIES AND SERVICES IN AFRICA (CALLSSA))

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE

(INCLUDING LINGUISTICS AND THE CENTRE FOR CREATIVE WRITING)

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


RESEARCH OUTLOOK

ARTICLES IN PEER-REVIEWED JOURNALS


CLARKSON, C.P. 2007. Who are ‘we’? don’t make me laugh. Law and Critique, 18: 361-374.

DISTILLER, N. 2006. ‘There was a woman known to be so bold’: Gender in Petrarchism. The Southern African Journal of Medieval and Renaissance Studies, 16: 61-91.


EDGECOMBE, R.S. 2007. Irving’s Chronicle of Wolfert’s Roost, Goldsmith’s The Deserted Village, and Gray’s Ode on a Distant Prospect of Eton College. Explicator, 65: 139-42.


CREATIVE WRITING

COLLECTION OF POEMS


ANTHOLOGY OF POEMS


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CENTRE FOR FILM AND MEDIA STUDIES

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


**RESEARCH OUTLET**


**PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS**


**CREATIVE WRITING**

**NOVELS**


**SCREENPLAYS AND PLAYS**


**SHORT STORIES PUBLISHED IN A COLLECTION**


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**MICHAELIS SCHOOL OF FINE ART**

*(INCLUDING THE LUCY LLOYD ARCHIVE, RESOURCE AND EXHIBITION CENTRE LLAREC)*

**AUTHORED BOOKS**


**CREATIVE WORKS**

**ARTISTS’ BOOKS AND CATALOGUES**


EXHIBITIONS

SOLO EXHIBITIONS


CURATED GROUP EXHIBITIONS


RARE DOCTORATE FOR FINE ART SCHOLAR

Director of the Michaelis School of Fine Art, Professor Pippa Skotnes, received a Doctorate of Literature from UCT, becoming the third and probably the last recipient. The honour recognises the recipient’s lifetime contribution to scholarly publications, and Skotnes has done work focusing on the Bleek and Lloyd Archive and “on the visual as a site of interpretation”. It proposes that research potential may be limited by a dependency on text alone and that interpretation is enriched by expanding the ways in which research is expressed in publication. In its focus on the archive, it addresses questions about the relationship of text to image and object, about methods of analysing past societies, and about the “potential of knowing through making”. On publication, it raises questions about what a book is, its possibilities and its limits and about the ways in which publication can elude the written word through exhibition and display.
RESEARCH


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DEPARTMENT OF HISTORICAL STUDIES
(INCLUDING THE CENTRE FOR POPULAR MEMORY)

AUTHORED BOOKS


EDITED BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


**CREATIVE WORKS**

**EXHIBITIONS**


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**ISAAC AND JESSIE KAPLAN CENTRE FOR JEWISH STUDIES AND RESEARCH**


**SCHOOL OF LANGUAGES AND LITERATURES**

**AUTHORED BOOKS**


**TRANSLATED BOOKS**


Healing words: Assoc. Prof. Pumla Gobodo-Madikizela and Assoc. Prof. Chris van der Merwe have married literature and psychology in their new book, *Narrating our Healing: Perspectives on Working through Trauma*.

**LITERATURE AND PSYCHOLOGY BOOKED TOGETHER**

A new book, born out of a postgraduate course and a Summer School programme, combines two disciplines – literature and psychology – to offer victims of trauma hope for a new lease on life. What’s been running as a master’s course since 2003 and developed into a series of summer school lectures in 2005 has now been turned into a book that marries literature and psychology. The book, *Narrating our Healing: Perspectives on Working through Trauma*, was co-authored by Associate Professor Chris van der Merwe of the School of Languages and Literatures and Associate Professor Pumla Gobodo-Madikizela of the Department of Psychology.
EDITED BOOKS


CHAPTERS IN BOOKS


Articles In Peer-reviewed Journals


Peer-reviewed Published Conference Proceedings


CREATIVE WRITING

NOVELS


POEMS PUBLISHED IN ANTHOLOGIES


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SOUTHERN AFRICAN COLLEGE OF MUSIC

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


CREATIVE WORKS

ARRANGEMENTS


ANDREWS, D.I. 2007. Requested by UCT Big Band. Trumpet, Big Band. 3 min.


COMPOSITIONS


PERFORMANCES


BACHAROVA, F.A. (leader) 2007. *Piano Quartet in G minor (Mozart), Piano Quartet in B flat major (Weber), Piano Quartet in C minor (Fauré)*. With Louw, M. (viola) and DeHaviland, C. (cello), Kettle, S. (piano). La Motte Estate Concert Hall, Lindbergh Arts Foundation. 2 x 120 min. 24th February, 21 October.

BACHAROVA, F.A. (leader), Du Toit, G.F. (piano) 2007. *“Gypsy” Trio (Haydn), Trio (Tchaikovsky), Café Music (Schoenfeld)*. With Van Der Westhuizen, A. (cello). Baxter Concert Hall. 120 min. 13 March.


BACHAROVA, F.A. (leader) 2007. *First String Quartet, world premiere of Second String Quartet, Of Darkness and the Heart (Hofmeyr)*. With Zanne Stapelberg (soprano), Lucia di Blasio Scott (violin), Paula Fourie (viola), Marian Lewin (cello). Baxter Concert Hall. 70 min. 29 May.


CAMPBELL, M.I. (conductor, composer, arranger) 2007. *Awesome Big Band*. With the SJ0, Swiss and Norwegian musicians. Standard Bank Joy of Jazz Festival, Grahamstown. 2 x 75 min. 28 and 30 June.


DU TOIT, F. (piano) 2007. *Works by Haydn, Mendelssohn, Gershwin and Chopin*. Lied Education Centre for the Arts, Creighton University, Omaha, Nebraska, USA. 70 min. 8 September.

DU TOIT, F. (piano) 2007. *Same as above, plus Tristia, Toccata (Arnold van Wyk)*. Mills Concert Hall, University of Wisconsin, Madison, USA; La Motte Wine Estate, Franschhoek; Centre for the Book, Cape Town. 3 x 70 min. 21, 29 September, 24 October.

DU TOIT, F. (piano) 2007. *Concert tour: Sonata N. 3 (Leclair), Kleine Suite (Rozsa), Sonata No. 2 (Prokofiev), Sonata No. 5 (Beethoven), Tsigane by (Ravel)*. With Russian American violinist, Philippe Quint. UNISA, Pretoria; Lindner Auditorium, Johannesburg; Jewish Hall, Durban; DR Church, Knysna; Baxter Concert Hall, Cape Town. 5 x 70 min. 4, 10, 12, 13, 17 November.


Klatzow, P.J.L. (composer) 2007. Dances of Earth and Fire for solo marimba. As part of Percussion Explosion, Stony Brook Campus, USA. 8 min. 13 May.

Klatzow, P.J.L. (composer) 2007. Prayers and Dances of Praise from Africa. St George’s Singers under the direction of Barry Smith Collaborators. Malvern Priory, UK, as part of the Elgar Festival, UK. 20 mins. 30 May.

Klatzow, P.J.L. (composer) 2007. Songs of Princess Magogo KadiniZulu, with accompaniments composed and orchestrated by Peter Klatzow. With Rotterdam Chamber Orchestra with Tania Kross (mezzo-soprano) under Conrad van Alphen. Great Hall of the Concertgebouw, Amsterdam. 30 minutes. 20 July.


PRACTISING SCALES IN ALL KEYS

Professor Michael Rossi’s latest book, Uncommon Etudes from Common Scales, was composed and written to better equip students and challenge improvisers of all levels with etudes that travel through all keys using common chord types found in jazz. The book also aims to expand one’s melodic and creative ability as an improviser and composer by applying melodic contrast to diatonic phrases. A Japanese edition of the book was released in 2007 by Advance Music, ATN.


LIEBL, L.B. (baritone) 2007. Title role in the oratorio The Selfish Giant (Peter van Dijk). With the Eastern Cape Philharmonic Orchestra. Feather Market Centre, Port Elizabeth. 30 min. 20 May.


ROSSI, M.J. (lecturer, saxophone) 2007. University of South Florida Jazz Department presents Dr Mike Rossi. With Dr Phil Swanson & Mike Rossi. Salem State College, Salem, MA, USA. 120 min. 5 February.


RECORDINGS


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DEPARTMENT OF PHILOSOPHY

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


BENATAR, D. 2007. Moral theories may have some role in teaching applied ethics. Journal of Medical Ethics, 33: 671-672.
PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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DEPARTMENT OF PSYCHOLOGY

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


RESEARCH OUTPUT


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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DEPARTMENT OF RELIGIOUS STUDIES

EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


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DEPARTMENT OF SOCIAL ANTHROPOLOGY

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS

BOURNE, A. 2007. Another world is possible? A critical exploration of escobar's 'other worlds/worlds otherwise'. Anthropology Southern Africa, 30(1&2): 36-44.


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DEPARTMENT OF SOCIAL DEVELOPMENT

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


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CENTRE FOR SOCIAL SCIENCE RESEARCH


DEPARTMENT OF SOCIOLOGY

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS

RESEARCH output


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CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


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FACULTY OF HEALTH SCIENCES

ANAESTHESIA
CHILD AND ADOLESCENT HEALTH
CLINICAL LABORATORY SCIENCES
HEALTH AND REHABILITATION SCIENCES
HUMAN BIOLOGY
MEDICINE
OBSTETRICS AND GYNAECOLOGY
PRIMARY HEALTH CARE
PSYCHIATRY AND MENTAL HEALTH
PUBLIC HEALTH AND FAMILY MEDICINE
RADIATION MEDICINE
SURGERY
One of the major highlights for the faculty in 2007 was the award of eight chairs under the DST/NRF Research Chairs Initiative. These included Professor Jonathan Blackburn (Applied Proteomics and Chemical Biology), Professor Frank Brombacher (Immunology of Infectious Diseases in Africa), Dr Marc Combrinck (Clinical Neurosciences Research), Associate Professor Keertan Dheda (Lung Infection and Immunity in Poverty-related Diseases), Professor Diane McIntyre (Health and Wealth in South Africa), Associate Professor Ernesta Meintjes (Brain Imaging), Professor Iqbal Parker (Cancer Biology), and Professor Anna-Lise Williamson (Vaccinology). These chairs represent a third of those awarded to UCT and more than 10% of the national total.

Dr Heidi Segal, whose research involves a detailed analysis of isolated strains of bacteria, was the winner of the TW Kambule NRF Research Award by the National Science and Technology Forum in the category Distinguished Young Black Researcher. Professor Alan Morris, who co-authored a paper in *Science* on the human skull from Hofmeyr in the Eastern Cape, was recognised by *Time* magazine which listed his paper as one of the “Top 10 Scientific Discoveries in 2007”. Professor Kit Vaughan won a Technology and Human Resource for Industry Programme (THRIP) award for “Most Advanced Technology” for his research on low dose digital X-rays to detect breast cancer.

Our academic staff members have been increasingly successful in securing highly competitive research grants from international agencies such as the Wellcome Trust and the National Institutes of Health (NIH). Particularly noteworthy were the three NIH grants awarded to principal investigators Associate Professor Tania Douglas, Dr Mark Hatherill and Professor Anna-Lise Williamson. In 2007, 303 projects were funded and the income of R262 million represented almost 60% of the University’s total research revenue.

The faculty has continued its strong support of the NRF rating system, increasing the number of rated researchers to 57, the largest among the Health Science faculties in the country. This includes 6 with an A rating, 14 with a B rating and 27 with a C rating. Particularly encouraging for the future is the number of young researchers who have secured ratings – 1 with a P rating and 11 with a Y rating. Our academic staff members have been increasingly successful in securing highly competitive research grants from international agencies such as the Wellcome Trust and the National Institutes of Health (NIH). Particularly noteworthy were the three NIH grants awarded to principal investigators Associate Professor Tania Douglas, Dr Mark Hatherill and Professor Anna-Lise Williamson. In 2007, 303 projects were funded and the income of R262 million represented almost 60% of the University’s total research revenue.

Our faculty stands ready to pursue high-quality scholarship that focuses on both the national and global burden of disease and, as highlighted above, implements a strategy that embraces the full spectrum of research questions, from bench to bedside to population.
RESEARCH groupings

ADOLESCENT HEALTH RESEARCH INSTITUTE
Adolescents face a wide range of health problems owing to a combination of biological, social and psychological factors. There is thus a niche for a research facility that focuses specifically on the health needs of adolescents. The Adolescent Health Research Institute builds on existing research and collaborations to co-ordinate, promote and facilitate research on all aspects of adolescent health. The specific aims of the Institute are to facilitate cutting-edge interdisciplinary research that addresses key national public adolescent health priorities; promote networking among adolescent health researchers, practitioners and policy makers; increase the profile of the Faculty of Health Sciences, UCT, with regard to world-class adolescent health research; provide policy consultation at local, provincial, national and international levels; and increase and improve educational offerings in adolescent health at undergraduate and postgraduate levels.

Director: Professor A. Flisher
E-mail: Alan.Fisher@uct.ac.za

CARDIOVASCULAR RESEARCH UNIT
The core research pursuit of the Cardiovascular Research Unit centres around the concept of “regenerative medicine” with the goal of engineered regeneration of diseased structures through co-ordinated and site-directed signalling to facilitate gradual in situ remodelling of surgically replaced hybrid biosynthetic devices while offering patients an immediate dramatic improvement in quality of life through return to functionality of these diseased structures.

Director: Professor P. Zilla
E-mail: Peter.Zilla@uct.ac.za
Web: http://www.uct.ac.za/depts/cts

GENDER, HEALTH AND JUSTICE RESEARCH UNIT
The mission of this Unit is to improve service provision to victims of violence against women in South Africa through research, advocacy and education. Drawing together established researchers with a strong record of social-action research in disciplines including law, criminology, forensic sciences and pathology, gynaecology, and psychology, this Unit is the first of its kind in South Africa to respond to the pressing need for research and interventions that crosses disciplines in support of our efforts to address the alarmingly high levels of violence against women in this country.

Director: Ms L. Artz
E-mail: Lillian.Artz@uct.ac.za
Web: http://www.uct.ac.za/departments/genhealthjust/index.php

HATTER CARDIOVASCULAR RESEARCH INSTITUTE
The Hatter Institute of the Department of Medicine and the Cape Heart Centre has two divisions, Heart Protection and Cardiovascular Genetics. The Heart Protection programme aims to promote the scientific education of young South African researchers and the better understanding of heart attacks and heart failure at a molecular and cellular level, and to prevent the adverse effects of diabetes and coronary disease on the heart muscle. These are diseases predicted to increase substantially in South Africa within the next decade. The Cardiovascular Genetics Laboratory aims to discover the genetic basis of inherited heart diseases that cause sudden death. This work involves the study of rare families with monogenic disease (i.e. inherited cardiomyopathies and arrhythmogenic disorders), and the delineation of the genetic architecture of complex traits associated with sudden death (such as cardiac hypertrophy). These studies hold promise in discovering the critical biological pathways that can be targeted by drugs to prevent sudden cardiac death.

Directors: Emeritus Professor L.H. Opie and Professor B. Mayosi
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Web: http://web.uct.ac.za/depts/chc/hatter/intro.htm

HEALTH ECONOMICS UNIT
The Health Economics Unit (HEU) was established in early 1990 in the School of Public Health and Family Medicine and was accredited as a formal research entity in the University in 2007. The HEU works to improve the performance of health systems through informing health policy and enhancing technical and managerial capacity in Sub-Saharan Africa. Its foundation is academic excellence in health economics and management.

Director: Dr S. Cleary
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INDUSTRIAL HEALTH RESEARCH GROUP
The Industrial Health Research Group is a multidisciplinary unit providing research and technical support to trade unions in issues relating to occupational health and safety. The broad areas of our work include policy development and research on health problems affecting workers; basic conditions of employment, working hours and occupational safety; healthcare funding and medical schemes; the provision of occupational medical services; education and training of workers and their health and safety representatives in the workplace; and developing educational media on health and safety.

Director: Mr N. Henwood
E-mail: Nicholas.Henwood@uct.ac.za
INSTITUTE OF AGEING IN AFRICA
The Albertina and Walter Sisulu Institute of Ageing in Africa is a cross-disciplinary group within the Department of Medicine and incorporates the divisions of Geriatric Medicine, Psychology and Gerontology. The Institute has been operational since 2001. The Institute's mission is achieved through interdisciplinary and cross-national partnerships and research collaboration, human resource development, and continuous risk assessment in the national context and in the African continent.

Acting Director: Dr S. Kalula
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INSTITUTE OF INFECTIOUS DISEASE AND MOLECULAR MEDICINE
The Institute of Infectious Disease and Molecular Medicine aims to be an African Centre of Excellence as a large-scale assembly of highly talented research leaders working in one place in a collegial federation, with many external collaborations and partnerships addressing the common theme of major infectious diseases such as HIV/AIDS, tuberculosis and malaria as well as non-communicable diseases such as cancers and genetic disorders. It has a demonstrably strong scientific base that spans most of the major areas of modern biomolecular enquiry (membrane receptors, pumps and trafficking; cellular signaling; enzymology; cancer biology; molecular genetics; bacteriology; virology), linking these to applied biology and biotechnology on the one hand, and public benefit on the other.

Director: Professor G. Hussey
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MRC/UCT CAPE HEART CENTRE
This combined research entity is the largest heart research group in South Africa and forms part of the Cape Heart Group that links research between UCT and the other universities in the region. The Hatter Institute is involved in the study of the molecular and cellular biology of ischaemic heart disease, as well as the molecular and cellular pathophysiology of cardiac hypertrophy and heart failure. The goals of the research programme are to contribute to the fundamental understanding of the mechanisms in the development of ischaemic heart disease, cardiac hypertrophy and heart failure. The Cardiovascular Research Institute, to which is allied the Medtronic Institute, is studying biocompatible materials for vascular and valvular prostheses. Lipidology is concerned with the research into lipid and lipoprotein disorders in patients in the region and novel treatment strategies for these disorders. Additionally, their research includes new diagnostic assays for local problems in healthcare and lipid peroxidation.

Director: Professor P. Zilla
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MRC/UCT HUMAN GENETICS RESEARCH UNIT
The group's current focus is on the genetics of colorectal cancer, inherited forms of blindness and neuropsychiatric diseases. Recent breakthroughs include identifying the genetic basis of retinitis pigmentosa and developing therapeutics to stem loss of vision in individuals shown to carry the disease causing mutation.

Director: Professor R. Ramesar
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MRC/UCT IMMUNOLOGY OF INFECTIOUS DISEASE RESEARCH UNIT
Human infectious diseases are a high-priority area for South Africa and Africa, where they continue to be a leading cause of childhood and adult morbidity and mortality. Thus, the MRC/UCT Immunology of Infectious Disease Research Unit focuses on understanding of host protective immune responses and the development of effective vaccine strategies for eradication of diseases which are identified as priority areas by the World Health Organisation: tuberculosis, leishmaniasis, helminthiases (bilharziosis) and African trypanosomiasis (sleeping sickness). The unit’s mission is to be relevant as an excellent multidisciplinary and international team, embracing both basic and applied research, in order to improve capacity, teaching and training in the immunology of infectious diseases.

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MRC/UCT LIVER RESEARCH CENTRE
The MRC/UCT Liver Research Centre is multidisciplinary, with its members comprising physicians, surgeons, biochemists and immunologists. The Centre's mission is to better understand the liver and its related processes in health and disease, focusing on those diseases occurring in Southern Africa with a view to identification, prevention and improving healthcare of patients with liver disease. Apart from its laboratories in the Departments of Medicine and Surgery, the Centre runs the only multidisciplinary, comprehensive liver clinic, including a liver transplantation programme, in Africa. The world's only fully integrated
porphyria clinic, laboratory, diagnostic and drug information service is run by specialist Liver Centre personnel. Since 2000 the Centre has published 190 articles, including 130 papers, 53 published abstracts, 6 PhD theses, 1 book and 32 chapters in scholarly books.

Co-directors: Professor D. Kahn and Associate Professor P. Meissner
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Web: http://web.uct.ac.za/depts/liver/ and http://porphyria.uct.ac.za

MRC/UCT MEDICAL IMAGING RESEARCH UNIT
The mission of the MRC/UCT Medical Imaging Research Unit is to conduct world-class research in medical imaging that specifically addresses the healthcare needs of Africa. Research in the unit focuses on the role of medical imaging in healthcare problems such as brain and behaviour, trauma, cancer, tuberculosis (TB), neuromuscular disorders, cardiovascular disease, and alcohol abuse. The unit has a multidisciplinary focus, attracting talented physicists, sports scientists, engineers, computer scientists and medical doctors.

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Web: http://www.uct.ac.za/faculties/health/research/miru/

UCT OCCUPATIONAL AND ENVIRONMENTAL HEALTH RESEARCH UNIT
The MRC/UCT Occupational and Environmental Health Research Unit aims to be a principal centre of occupational and environmental health research in South Africa, in the SADC region of Africa and other African countries, and internationally. It further aims to conduct multidisciplinary research integrating laboratory, clinical, epidemiological and policy research into occupational health problems that have high priority in Southern Africa, in order to facilitate identification and improve characterisation of these and other problems and to better understand the determinants and modifiers of such problems.

Director: Professor J. Myers
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Web: http://www.uct.ac.za/departments/occup_enviro/index.php

MRC/UCT OESOPHAGEAL CANCER RESEARCH GROUP
The MRC/UCT Oesophageal Cancer Research Group is an interdisciplinary and inter-institution group (UCT, MRC and the University of Stellenbosch) established by the MRC in 1997. Squamous cell carcinoma of the oesophagus is one of the eight most common cancers worldwide. High incidence areas include China, Japan, certain hot spots in France, Iran, South America and several South and East African countries. This group is investigating the environmental and genetic factors that predispose South Africans to this disease.

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MRC/UCT RECEPTOR BIOLOGY RESEARCH GROUP
The mission of the Group is to study the structure and function of G protein-coupled receptors and to apply the research to understanding and treating diseases that have major effects on the social and economic welfare of South Africa. The Group focuses on the gonadotropin-releasing hormone receptor, which is the central regulator of reproductive function, on the prostaglandin receptors and their role in cervical cancer and on the CCR5 chemokine receptor, which is the primary co-receptor utilized by the Human Immunodeficiency Virus (HIV) to infect human cells.

Co-Directors: Associate Professor Arieh A. Katz, Dr Colleen A. Flanagan and Professor R.P. Millar
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MRC/UCT RESEARCH UNIT FOR EXERCISE SCIENCE AND SPORTS MEDICINE
This unit exists to research factors influencing physical performance and health, and to disseminate knowledge and skills through education. Areas of research that are covered include the effectiveness of sports-specific training protocols, and predictability of athletic ability or performance, as well as the exercise metabolism and fluid balance during endurance and ultra-endurance exercise.

Director: Professor T.D. Noakes
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MRC/UCT TRADITIONAL MEDICINES RESEARCH GROUP
The MRC/UCT Traditional Medicines Research Group was founded in 1997, with the principal objectives of establishing a research culture, introducing modern research methodologies around the use and understanding of traditional medicines, and creating of an environment that will attract young scientists and potential leaders in the field.

Director: Associate Professor P. Smith
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The Institute of Child Health (ICH) was established in the early 1970s bringing together all personnel concerned with child health, for the purpose of supporting research, providing teaching facilities and promoting awareness of children and their needs. The ICH supports researchers in the field of child health by making core facilities available and by dispersing funds for research in child health for self-initiated projects.

Director: Professor D. Beatty
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The UCT Leukaemia Centre has been established with the objective of fostering basic and clinical research in the area of haematological stem cell disorders and blood malignancies. Some of the current interest includes the marrow microenvironment in multiple myeloma, molecular genetics of acute or chronic leukaemias and clinical studies in lymphoproliferative disorders. As a consequence, a laboratory with a comprehensive array of equipment is available where honours, master’s and doctoral students are running research projects. Based on these studies, a number of clinical and laboratory programmes have been developed. In this regard, the only university-based haematopoietic stem cell transplantation programme in the country is located at Groote Schuur Hospital and has become of international reputation. Parallel studies focusing on haematopoietic stem cell biology and immune reconstitution after transplantation are ongoing.

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The Women’s Health Research Unit (WHRU), established in 1996 in the School of Public Health and Family Medicine, is involved in research, teaching, technical health service support, and advocacy in the area of women’s health and gender and health. It is made up of a multidisciplinary team of researchers with expertise in public health, epidemiology, psychology, sociology and anthropology. Key research areas include HIV and reproductive health, gender and HIV, health systems research (reproductive health), female cancers, contraception and termination of pregnancy.

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Web: http://www.whru.uct.ac.za

Professor S.R. Benatar
(Health, Ethics and Society): Doctor of Science (Medicine)

Professor W.U. Utian
(Obstetrics and Gynaecology – Menopause): Doctor of Science (Medicine)

A. Abraham (Clinical Laboratory Sciences)
Regulation of the anti-senescence factor, Tbx2, by the UV stress signalling pathway and the mitotic cyclin dependent kinases
Supervised by Dr S. Prince and Professor M.I. Parker

L. Bezuidenhout (Surgery)
Angiopoietin-2 and Platelet-Derived growth BB factor cooperatively affect peripheral blood monocyte fibrinolysis
Supervised by Professor N. Davies

M. Blecher (Public Health and Family Medicine)
Analysis and reform of public health care financing in South Africa
Supervised by Professor J. Myers

D. Blom (Medicine)
Dysbetalipoproteinaemia - Changes in laboratory aspects, changes in lipoprotein composition and remnant metabolism associated with lipid lowering drugs
Supervised by Professor A.D. Marais

N. Chin’ombe (Clinical Laboratory Sciences)
Recombinant Salmonella Enterica serovar typhimurium vaccine vector expressing green fluorescent protein as a model antigen or human immunodeficiency virus 1 subtype C gag
Supervised by Professor A.-L. Williamson and Dr W. Bourn

S. Cleary (Public Health and Family Medicine)
Equity and efficiency in health and health care for HIV-positive adults in South Africa
Supervised by Associate Professor D. McIntyre

L. Fairall (Medicine)
The costs and effects of the practical approach to lung health in South Africa
Supervised by Professor E.D. Bateman and Professor M. Bachmann

J. Friedling (Human Biology)
Grave tales: An osteological assessment of health and lifestyle from 18th and 19th century burial sites around Cape Town
Supervised by Professor A. Morris

M.J. Futter (Clinical Laboratory Sciences)
Predictive testing and clinical genetic counselling services for Huntington disease in the Western Cape: An evaluation over eleven years
Supervised by Associate Professor J. Greenberg and Associate Professor A. Smit
H.H. HABTE (SURGERY)
The inhibition of HIV-1 activity of crude mucus and purified mucin (mucous glycoproteins) from saliva, breast milk and the cervical tract of normal subjects, HIV positive individuals and patients with HIV-AIDS
Supervised by Professor A. Mall

T. HEW-BUTLER (HUMAN BIOLOGY)
Dynatremia and the endocrine regulation of fluid balance during exercise
Supervised by Professor T.D. Noakes and Professor J.G. Verbalis

N. J. HSU (HUMAN BIOLOGY)
The expression and functional analysis of neurite outgrowth inhibitors in the nervous system of Xenopus Laevis
Supervised by Dr D. Lang

N. P. KHUMALO (PUBLIC HEALTH AND FAMILY MEDICINE)
The epidemiology of hairstyle related African hair disorders in an urban township in South Africa
Supervised by Professor L. London

A. JITHOO (MEDICINE)
Respiratory symptoms and chronic obstructive pulmonary disease: Prevalence and risk factors in a predominantly low-income urban area of Cape Town, South Africa
Supervised by Professor E.D. Bateman and Professor P. Burney

M. V. MABANDLA (HUMAN BIOLOGY)
Exercise induced neuroprotection in spontaneously running rats
Supervised by Professor V. Russell

R. MCBRIDE (HUMAN BIOLOGY)
The expression and functional role of Tenascin-R during axon regeneration in the adult goldfish, Carassius auratus
Supervised by Dr D. Lang

W. MUKOMA (PSYCHIATRY AND MENTAL HEALTH)
Process and outcome evaluation of a school-based HIV/AIDS prevention intervention in Cape Town high schools
Supervised by Professor A. Flisher

N. E. NIEUWENHUIZEN (CLINICAL LABORATORY SCIENCES)
Immune and allergic responses to Anisakis pegreffii, with focus on the roles of IL-4, IL-13 and the IL-4 receptor alpha
Supervised by Dr A. Lopata

E. NYATIA (HUMAN BIOLOGY)
Localisation and expression pattern of the Nogo receptor and its ligand, Nogo-A in cells of the mammalian central nervous system
Supervised by Dr D. Lang

D.E. RAE (HUMAN BIOLOGY)
The effect of chronic exposure to endurance exercise on the skeletal muscle of distance runners
Supervised by Associate Professor M. Collins

J. N. SAUNDERS (PSYCHIATRY AND MENTAL HEALTH)
Neuropsychiatric features of HIV/AIDS
Supervised by Professor A. Flisher

C. SCHMIDT (SURGERY)
Stimulating angiogenesis into biomaterials through the delivery of growth factors
Supervised by Professor N. Davies

V. SEWRAM (PUBLIC HEALTH AND FAMILY MEDICINE)
Risk factors for oesophageal cancer in the Eastern Cape Province of South Africa
Supervised by Professor J. Myers and Dr F. Sitas

M. L. TSELANYANE (MEDICINE)
The isolation, characterization and antiplasmodial activity of two novel dimeric sesquiterpenes from Dicoma anomala
Supervised by Emeritus Professor P. Folb, Dr B. Campbell and Dr M.G. Matsabis

M. L. WILLIAMS (CLINICAL LABORATORY SCIENCES)
Conditions affecting ergothioneine levels in Mycobacterium Smegmatis and the attempted isolation of alpha-N,N,N - histidine methyltransferase, the first enzyme in Ergothioneine biosynthesis
Supervised by Associate Professor D. Steenkamp and Professor L. Steyn

M. ZUNGU (MEDICINE)
Characterisation of molecular and functional changes regulating Hypobaric hypoxia-induced right ventricular hypertrophy
Supervised by Dr F. Essop
ACHARYA, R. AND STURROCK, E.D.  


CAMPELL, W.E., FOLB, P.I., MATSABISA, M. AND SMITH, P.  

CAMPELL, W.E., FOLB, P.I., MATSABISA, M. AND SMITH, P.  

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GAMMON, D.W., LE ROES, M. AND MEYERS, P.  
Streptomycete and Bioactive Compound Produced Thereby. PCT Application, PCT/IB2007/052468.

HORN, A.R.  

HUNTER, R., PARKER, M.I. AND KASHULA, C.H.  

JOHNSTON, R.E., KARIM, S.A., MORRIS, L., SWANSTROM, R.I. AND WILLIAMSON, C.  

OPIE, L.H.  

STURROCK, E., NCHINDA, A. AND CHIBALE, K.  

STURROCK, E., NCHINDA, A. AND CHIBALE, K.  

STURROCK, E., NCHINDA, A. AND CHIBALE, K.  
Angiotensin 1 – Converting Enzyme (ACE) Inhibitors (1). National Phase Patent Application Europe, 06744781.3.

STURROCK, E., NCHINDA, A. AND CHIBALE, K.  

STURROCK, E., NCHINDA, A. AND CHIBALE, K.  

STURROCK, E., NCHINDA, A. AND CHIBALE, K.  
HIV/AIDS PREVENTION PROGRAMMES DIFFICULT AT SCHOOLS

Overcrowding, teachers’ limited skills and lack of discipline hinder the success of a school-based HIV/AIDS prevention programme. As a result, the expected behaviour-change objectives – to delay sexual debut and increase condom-use among adolescents – were not achieved. These findings have been revealed by PhD graduate in psychiatry and mental health, Wanjiru Mukoma, in her thesis, Process and outcome evaluation of a school-based HIV/AIDS prevention intervention in Cape Town high schools. She based her research on the project, Promoting Sexual and Reproductive Health: School-based HIV/AIDS intervention in Sub-Saharan Africa, funded by the European Commission.
DEPARTMENT OF ANAESTHESIA

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


RUTTMANN, T.G., MONTOYA-PELAEZ, L.F. AND JAMES, M.F.M. 2007. The coagulation changes induced by rapid in vivo crystalloid infusion are attenuated when magnesium is kept at the upper limit of normal. Anesthesia and Analgesia, 104(6): 1-5.


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SCHOOL OF CHILD AND ADOLESCENT HEALTH

(INCLUDING THE FOLLOWING DIVISIONS/INSTITUTES: ASSOCIATED PAEDIATRIC DISCIPLINES, CHILD AND ADOLESCENT PSYCHIATRY, CHILD DEVELOPMENT AND NEUROSCIENCES, CHILD HEALTH UNIT AND CHILDREN’S INSTITUTE, CRITICAL CARE AND CHILDREN’S HEART DISEASE, NEONATAL MEDICINE, PAEDIATRIC ANAESTHESIA, PAEDIATRIC MEDICINE, PAEDIATRIC PATHOLOGY, PAEDIATRIC RADIOLOGY AND PAEDIATRIC SURGERY)

EDITED BOOKS


CHAPTERS IN BOOKS


VACCINE COULD LEAVE A SWEET TASTE IN THE MOUTH

Vaccines are so expensive to produce and administer – usually through injections – that they drain the pockets of developing countries. Many, like PhD graduate in medical virology/microbiology Nyasha Chin’ombe, believe that hope will come in the form of cost-cutting oral vaccines, shown in his work on the South African AIDS Vaccine Initiative (SAAVI) programme with Professor Anna-Lise Williamson. Chin’ombe constructed a live but crippled Salmonella (typhoid bacterium) that could carry jellyfish and HIV and subunit vaccines to the immune system via the oral route. He then produced a recombinant Salmonella bacterium – featuring a new combination of genes – with high levels of the jellyfish and HIV vaccines. When he fed the bacterium to mice, they developed the hoped-for immune responses against the jellyfish and HIV subunits.


ARTICLES IN PEER-REVIEWED JOURNALS


REPORT MAPS POVERTY

With the African National Congress declaring 2007 as The Year to Intensify the Struggle against Poverty, the timing could not have been more perfect for the Children’s Institute to release the South African Child Gauge 2006.

The book is an annual snapshot of the realities South African children face. The latest volume explains that HIV/AIDS exacerbates the high levels of child poverty in South Africa, which are attributed to high unemployment and our apartheid legacy.


THE HIDDEN COSTS OF LUNG DISEASE IN MINERS

Professor Rodney Ehrlich of the School of Public Health and Family Medicine has been examining mineworkers for 23 years, focusing on the incidence of silicosis and pulmonary tuberculosis. According to Prof Ehrlich, too little is still known about silicosis among former gold miners, particularly black miners, even after a century of lung disease in mining in South Africa. Much of the blame could go to racial differentiation in access to epidemiologic surveillance, medical examination and compensation for miners over the past century.

• Anaesthesia, for publications by Paediatric Anaesthesia (page 180)
• Psychiatry and Mental Health, for publications by Child and Adolescent Psychiatry (page 211)
• Radiation Medicine, for publications by Paediatric Radiology (page 220)
• Surgery, for publications by Paediatric Surgery (page 221)

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EXPERIMENTAL DESIGN

1. Identify the key findings or results from the research output.

2. Summarize the methodology used in the research.

3. Discuss the implications of the findings in the context of the field.

4. Highlight any potential future research directions.

5. Evaluate the significance of the research in terms of its impact or potential applications.

6. Analyze the data and results presented in the research output.

7. Compare the findings with existing research or theoretical frameworks.

8. Consider the limitations of the research and suggest areas for improvement.

9. Reflect on the ethical considerations involved in the research.

10. Summarize the key takeaways and conclusions from the research output.
RESEARCH OUTLET


CUPIDO, C.L. AND RAYNER, B.L. 2007. Life-threatening angio-oedema and death associated with the ACE inhibitor enalapril. SAMJ South African Medical Journal, 97: 244-245.


JEEBHAY, M.F., BAATJIES, R., CHANG, Y.S., KIM, Y.K., KIM, Y.Y., MAJOR, V. AND LOPATA, A.L. 2007. Risk factors for allergy due to the two-spotted spider mite (Tetranychus urticae) among table grape farm workers. International Archives of Allergy and Immunology, 144: 143-149.


NEW INSIGHTS ON KEY PROTEIN IN FUNGAL INFECTIONS

Wellcome Senior Fellow Associate Professor Gordon Brown and his group have published research in the Nature Immunology journal (January 2007) showing how Dectin-1, a cell-surface protein, protects the body from common fungal infections like Candida and Aspergillus.

“This is a major advancement in our understanding of how the immune system recognises and responds to fungal infections,” said Brown, based at UCT’s Institute of Infectious Disease and Molecular Medicine. Fungal infections are more common today than ever before, a result of compromised immune systems. Those with advanced HIV are also particularly susceptible to fungal infections.


RESEARCH OUTLET


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SCHOOL OF HEALTH AND REHABILITATION SCIENCES

(INCLUDING THE DIVISIONS OF COMMUNICATION SCIENCES AND DISORDERS, NURSING AND MIDWIFERY, NUTRITION AND DIETETICS, OCCUPATIONAL THERAPY AND PHYSIOTHERAPY)

ARTICLES IN PEER-REVIEWED JOURNALS


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DEPARTMENT OF HUMAN BIOLOGY

EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


The Hofmeyr Skull shows that Africans and Europeans looked very similar around 36,000 years ago. It was discovered near the Karoo town of Hofmeyr, about 70km north-east of Cradock, but was dated only recently, using new techniques. The fossil also shows characteristics of modern humans: it lacks “beetle brows”, and has smaller jaws and teeth than earlier, non-modern human fossils.

MORRIS’S FINDING LISTED IN TIME TOP 10

The 24 December, 2007, edition of Time magazine has listed the Hofmeyr skull finding among its top 10 scientific discoveries of 2007. Titled Man’s Migration out of Africa, the article came in ninth on the list and eighth on their website. It’s significant that the Hofmeyr skull, found in the Eastern Cape in 1952, was dated only recently in 2007 by an international team of scientists, which included UCT’s Professor Alan Morris (Human Biology). The skull revealed the first fossil evidence that modern humans left Africa between 65,000 and 25,000 years ago.


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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RESEARCH OUTCOME

DEPARTMENT OF MEDICINE

INCLUDING THE ALBERTINA AND WALTER SISULU INSTITUTE FOR AGING IN AFRICA, UCT BIOETHICS CENTRE, DESMOND TUTU HIV RESEARCH CENTRE, UCT/UCL HATTER INSTITUTE FOR CARDIOLOGY RESEARCH, UCT LEUKAEMIA UNIT, UCT LUNG INSTITUTE, MRC/UCT LIVER RESEARCH CENTRE, MRC/UCT/ UWC RESEARCH UNIT FOR TRADITIONAL MEDICINES AND THE WORLD HEALTH ORGANISATION COLLABORATING CENTRE FOR DRUG POLICY.

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


BENATAR, D. 2007. Moral theories may have some role in teaching applied ethics. Journal of Medical Ethics, 33: 671-672.


CUPIDO, C.L. AND RAYNER, B.L. 2007. Life-threatening angio-oedema and death associated with the ACE inhibitor enalapril. SAMJ South African Medical Journal, 97: 244-245.


POPPULAR HAIRSTYLES MIGHT CAUSE HAIR LOSS

Braiding and popular corn rows can lead to permanent hair loss, a new UCT study published in the *British Journal of Dermatology* has found. The study, by Dr Nonhlanhla Khumalo of the Division of Dermatology, of nearly 2,000 adults and children in South Africa found that one in seven schoolgirls and a third of women were suffering from traction alopecia, hair loss, thought to be caused by excessive and prolonged pulling of the hair. The research also found that very short haircuts, like the “brush cut”, made men more prone to developing severe acne on the scalp, thought to be caused by the hair clippers damaging the scalp when pressed hard.


RESEARCH OUTLOOK


RESEARCH OUTLOOK


High-level awards: Drs Shaheen Mowla (left) and Zenda Woodman have bagged Sydney Brenner Fellowships.

TOP FELLOWSHIPS FOR TWO UCT MEDICINE WOMEN

Drs Zenda Woodman and Shaheen Mowla received prestigious Sydney Brenner Fellowships for their groundbreaking work in HIV and cancer research respectively. Mowla (Human Biology), identifies genes involved in cancer formation. Cancer among South Africans is increasing rapidly. She is investigating the Tbx3 protein implicated in the development of certain cancers of the lung, breast, liver and bladder. Woodman (Institute of Infectious Disease and Molecular Medicine) researches HIV inhibitor drugs and different approaches to vaccine development.
DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


RESEARCH OUTSTANDING

PRIMARY HEALTH CARE DIRECTORATE

ARTICLES IN PEER-REVIEWED JOURNALS


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DEPARTMENT OF PSYCHIATRY AND MENTAL HEALTH

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


RESEARCH OUTLINES


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SCHOOL OF PUBLIC HEALTH AND FAMILY MEDICINE

EDITED BOOKS


AUTHORED BOOKS


CHAPTERS IN BOOKS


STUDY COULD HELP IN FIGHT AGAINST PARKINSON’S DISEASE

PhD graduate Musa Mabandla has discovered that voluntary exercise in rats can prevent dopamine neurons, nerve-impulse transmitters essential for effective motor-function, from dying. In his thesis, Exercise induced neuroprotection in spontaneously running rats, Mabandla (Human Biology) studied the behaviour of rats in a cage with running wheels and allowed to run freely. After a week, they were given a neurotoxin to kill dopamine neurons, and put back into the cage. Behavioural testing showed a consistent decrease in motor-function impairment and an increase in dopamine neuron survival. Mabandla’s findings are indispensable to the study of Parkinson’s disease.


ARTICLES IN PEER-REVIEWED JOURNALS


JEEBHAY, M.F., BAATJIES, R., CHANG, Y.S., KIM, Y.K., KIM, Y.Y., MAJOR, V. AND LOPATA, A.I. 2007. Risk factors for allergy due to the two-spotted spider mite (Tetranychus urticae) among table grape farm workers. International Archives of Allergy and Immunology, 146: 143-149.


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**SALIVA PREVENTS HIV TRANSMISSION**

PhD graduate Habtom Habe has discovered that mucous glycoproteins known as mucins from crude saliva, breast milk and cervical secretions block HIV-1 activity. In a first-of-its-kind study, *The inhibition of HIV-1 activity by crude mucus and purified mucin from saliva, breast milk and the cervical tract of normal subjects, HIV-positive individuals and patients with HIV-AIDS confirms the suspicion that a macromolecular component in saliva traps the HIV virus completely, making transmission impossible.*
RESEARCH OUTCOME


ZWANE, E.N. 2007. Analysing capture-recapture data when some variables of heterogeneous catchability are not collected or asked in all registrations. *Statistics in Medicine*, 25: 1069-1089.


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DEPARTMENT OF RADIATION MEDICINE
(INCLUDING THE FOLLOWING DIVISIONS: MEDICAL PHYSICS, NUCLEAR MEDICINE, RADIATION ONCOLOGY, RADIOLOGY)

CHAPTERS IN BOOKS

ARTICLES IN PEER-REVIEWED JOURNALS


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DEPARTMENT OF SURGERY
(INCLUDING THE FOLLOWING DIVISIONS/INSTITUTES:
GENERAL SURGERY, CARDIOTHORACIC SURGERY
(INCLUDING THE CARDIO-VASCULAR RESEARCH UNIT),
NEUROSURGERY, OPHTHALMOLOGY, ORTHOPAEDIC SURGERY,
OTOLARYNGOLOGY, PLASTIC, RECONSTRUCTIVE AND MAXILLO-
FACIAL SURGERY, UROLOGY, AND EMERGENCY MEDICINE)

CHAPTHeRS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


RESEARCH


