UCT MISSION STATEMENT

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 interdisciplinary and interinstitutional 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 2008 research output produced by the University of Cape Town is available at: www.research2008.uct.ac.za
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In 2008 the University of Cape Town maintained - its record of excellence in the field of research. This report underlines the quality of our research output — attested by the extent of local engagement and international competitiveness — whereby the University of Cape Town has again been able to confirm its position as a leading university in Africa.

The Times Higher Education QS (THE-QS) World University Rankings for 2008 placed UCT at position 179 (21 places higher than in 2007, and 78 places higher than in 2006). According to both the THE-QS ranking and the Shanghai Jiao Tong University’s Academic Ranking of World Universities, UCT maintains its position as the highest-ranked university on the African continent.

At the national level, 2008 presented various challenges in terms of the funding environment and opportunities for partnerships. Financial constraints in both the National Research Foundation and the Department of Science and Technology had an impact on research funding in South Africa’s Higher Education sector. These challenges notwithstanding, the University managed to position itself at the top of the national funding scale. This was accomplished by enhancing the focus of our research efforts and expanding our resources. Curiosity-driven, discipline-specific research continues to form the basis of the UCT research endeavour. Yet, by making use of five different collaborative instruments, the University successfully leveraged an increased number of external grants as well as bursaries for postgraduate students and for postdoctoral fellows. These instruments are: (a) the South African Research Chairs Initiative; (b) the UCT Signature Themes for Research; (c) the national Centres of Excellence and Competence Centres; (d) the University Research Committee accredited research groupings; and (e) strategic partnerships with external research organisations. Progress on these initiatives is flagged throughout this report.

A major challenge for Higher Education in South Africa is to nurture the next generation of scholars and to transform the current profile of active researchers. A range of academic staff development programmes is being implemented, and an ongoing review process shows that these programmes are already bearing fruit. We are grateful to the donors whose support facilitates our efforts at capacity building and transformation of the South African research workforce.

As we strive to maintain our position as a top research institution, quality assurance will continue to underpin research at UCT. We aim to continue to be a hub of expertise and knowledge production in Africa, and a sought-after research partner for this very reason.

I wish to thank all our donors, partners and research collaborators. My appreciation also goes to the entire University community, whose tireless dedication and commitment to the research endeavour continues to shape our role on the African continent as well as the international stage.

Dr Max Price
Vice-Chancellor
In 2008 het die Universiteit van Kaapstad sy rekord van uitnemendheid op die terrein van navorsing gehandhaaf. Hierdie verslag onthoud die geloste navorsingsuitsit – soos blyk uit die omvang van ons plaaslike betrokkenheid en internasionale mededingendheid – waardoor die Universiteit van Kaapstad weereens in staat was om sy posisie as ‘n toonaangewende universiteit in Afrika gestand te doen.

In die Times Higher Education QS (THE-QS) se rangordering vir 2008 van universiteite wêreldwyd is die UK in posisie 179 geplaas – 21 posisies hoër as in 2007, en 78 posisies hoër as in 2006. Vir sowel die THE-QS se ranglys as die Shanghai Jiao Tong se ranglys vir die akademiese rangordering van universiteite wêreldwyd, het die UK sy posisie as die universiteit met die hoogste rangordening op die vasteland van Afrika gehandhaaf.

Op die nasionale toneel het die jaar 2008 verskeie uitdagings gebied met betrekking tot befondsing en geleentheid vir vennootskappe. In sowel die Nasionale Navorsingstigting as die Departement van Wetenskap en Tegnologie het finansiële beperkinge ‘n impak op navorsingsbepondsing van die Hoër Onderwyssektor in Suid-Afrika gehad. Ondanks hierdie uitdagings was die Universiteit in staat om die topposisie in die nasionale befondsingskaal te beklei. Dit is bereik deur die fokus van ons navorsingspogings te versterk en ons hulpbronne uit te brei. Dissiplinegerigte navorsing met die oog op kennisvermeerdering vorm steeds die grondslag van die UK se navorsingstrew. Deur egter van vyf verskillende samewerkingsinstitusies gebruik te maak, kon die Universiteit daarin slaag om eksterne toekennings sowel as beurse vir nagraadse studente en postdoktorale genote te bewerkstellig. Hierdie instrumente is: (a) die Suid-Afrikaanse Navorsingsleerstelinisiatief (SARCHI); (b) die UK se Voorkeurtemas vir Navorsing; (c) die nasionale Sentruns van Uitnemendheid en Bekwaamheidsentrens; (d) navorsingsgroeperinge wat deur die Universiteit se Navorsingskomitee (URC) geërkend is; en (e) strategiese vennootskappe met eksterne navorsingsorganisasies. Vordering met hierdie inisiatiewe word reg deur die huidige verslag gemeld.

‘n Groot uitdaging vir Hoër Onderwys in Suid-Afrika is om met welslae die volgende geslag van geleerdes te kweek, en om die huidige profiel van aktiewe navorsers te transformeer. Om hierdie dringende uitdaging die hoof te bied, word ‘n reeks ontwikkelingsprogramme vir akademiese personeel geïmplementeer, en uit ‘n voortgaande beoordelingsproses blyk dit dat hierdie programme reeds vrugte afwerp. Ons is dank aan die donateurs verskuldig wie se ondersteuning van hierdie inisiatiewe ons pogings fasiliteer om kapasiteit te bou en om die profiel van Suid-Afrikaanse navorsers te transformeer.

Terwyl ons poog om ons posisie as ‘n toonaangewende navorsingsinstantie te handhaaf, sal gehalteversekering steeds die hoeksteen van navorsing aan die UK wees. Voeg hierby die strewe om meer ‘afropolitaans’ te wees: ’n middelpunt van deskundigheid en kennisvorming wat by ons posisie in Afrika pas, en wat van die UK ’n uitverkore vennoot vir navorsing in die Suiderwêreld maak.

Ek wil graag al ons donateurs, strategiese vennote en navorsingsmedewerkers bedank. My waardering gaan aan die hele universiteitsgemeenskap wie se onvermoeide toewyding en verbintenis tot die navorsingspoging steeds beslag aan ons rol op sowel die vasteland van Afrika as die internasionale verhoog gee.

Dr. Max Price
Visekanselier
The year 2008 was, on the one hand, a year of consolidating the initiatives that have brought the University of Cape Town such success in research over the past decade and, on the other, one of planning to increase the impact of our research, to deepen student experience of the value of research, and to strengthen our efforts at innovation, including social innovation.

In the national arena, the University’s high quality research continues to be recognised. The outcome of the National Research Foundation (NRF) evaluation and rating of individual researchers – which represent a benchmark of excellence in terms of international impact and standing – affirms this as a case in point, with four new A-ratings affirming UCT as the leading institution in terms of its number of NRF-rated academics. The new higher international rankings, too, reflected the increased international visibility of the University. The UCT publication count submission to the Department of Education (DoE) grew by 12.1%. This growth represents an impressive achievement in view of the fact that there was an overall national decrease in published research outputs that were submitted to the DoE for subsidy. Total research income increased by 26% to R651.7 million in 2008, which is made up of contract income (R437.3 million), government-related grants (R128.1 million), private-sector grants and donations (R47.6 million) and University internal grants (R38.8 million). Scholarship awards to postgraduate students rose to R83 million from R67 million the previous year, with 3,317 awards having been made over this period.

One of our strategic objectives during 2008 was to focus on growing a research culture in professionally oriented disciplines and in the creative and performing arts. This was based partly in response to the NRF's 2015 Vision and the Department of Science and Technology’s Ten Year Plan, both of which emphasise the importance of increasing the number of PhD graduates in the country. Although considerable progress towards growing research culture in these disciplines has already been made – as exemplified by criteria for incorporating creative work into a doctoral thesis – this is work in progress that will continue to evolve.

The University has now reached a stage where it wishes to give its aspiration to be research-led a specific focus. The designation ‘research-led’ signifies that we accept the responsibility of being one of the core sites in South Africa that aims to make the country competitive in the global knowledge economy and to educate its future leaders. Being research-led firstly presupposes that quality is at the forefront of our research endeavour. Secondly, it requires us to place research at the centre of what we do and for it to give direction and permeate the other components of our core business, namely teaching and socially responsive work. The University is keen to sustain this ongoing challenge.

I wish to express my gratitude to my colleagues in the Faculties for their collaboration and the enthusiasm with which they are taking up the research-led challenge. Thank you to the staff of the Department of Research and Innovation for their wonderful support. I would also like to thank all the agencies and funders with whom we collaborate. It is this collective effort that enables the University of Cape Town to sustain the production of cutting-edge socially engaged research.

Professor Danie Visser
Deputy Vice-Chancellor
RESEARCH OFFICE
The Research Office supports research planning and policy implementation and manages internal and external grants funding, research quality assurance, the government’s higher education subsidy distribution requirements, and the research information system. Besides administering internal grant programmes that accommodate a range of research needs, we seek to expand access to national and international grants through enhanced relations with funding agencies, research councils, the city, and regional and government departments.

In addition, and as mandated by the University Research Committee, the Office is responsible for a number of academic staff development programmes aimed at supporting researchers at different stages of their academic careers, from emerging, through established (mid-career), to advanced researchers. These interventions draw on the expertise and mentorship of current senior academic staff as well as a small group of Senior Research Scholars. The Emerging Researcher Programme, launched in 2003, targets academic staff at an early stage of their research careers to assist them in becoming established researchers capable of sustaining quality research outputs. By the end of 2008 the initial figure of 44 participants enrolled in 2003 had increased to 289. Core components of the programme are career planning, mentorship, project funding and skills development. Support is administered through a combination of mentoring interventions that include ongoing personal interaction with the programme coordinators, and Senior Research Scholars who help to pinpoint participants’ research needs and the measures required to meet these.

The Programme for the Enhancement of Research Capacity (PERC) was launched in 2008 as a three-year pilot initiative and consists of interactive workshops to advise the more established or mid-career researcher on good research practice (managing large international grants, collaboration with industry and government departments, etc.). PERC also runs a meta-project aimed at stimulating inter- and multidisciplinary research to produce new knowledge pertinent to the University’s location in South Africa, the continent, and the international arena. A seminar series conducted by seasoned scholars in the field of knowledge production provides the theoretical basis for research that will help to break through the assumption that any world view (European, African, Western, Southern, whatever) may be uniform and hierarchical. The Programme seeks to engage scholars across disciplinary boundaries and is starting to bear fruit in the form of collaborative groupings and co-authored papers.

Moreover, under the Visiting Mentors Programme significant results are being recorded. Aimed at providing discipline-specific mentoring to small cohorts of selected staff, visiting mentors are recruited for periods ranging from two to six months at a time. The impact of these interventions includes successful grant applications, scientific publications, conference presentations, and higher degrees. Another outcome worthy of mention is increased awareness of, appreciation for and acquisition of a culture of mentorship in the Faculties. This is in line with our vision for engaged scholarship, and contributes to the University’s skills development objective.

Benchmarking remains a key focus and includes the evaluation and rating of individual researchers by the National Research Foundation, the quality assurance reviews of our Units, Centres and Institutes, and increasingly nuanced comparative reporting and analysis of our publication data. In addition, our role as a service department continues to be shaped by the ongoing scrutiny of our own systems and procedures through international benchmarking exercises.

Dr Marilet Sienaert
Director: Research Office
RESEARCH CONTRACTS AND INTELLECTUAL PROPERTY SERVICES

UCT’s research enterprise is active and healthy. A clear indication thereof is the dramatic increase, from R337 million (2006) to R471 million (2007) to R547 million (2008) in the value of the research-related contracts approved by Research Contracts and Intellectual Property Services (RCIPS) in the respective years over the period. In addition, the value of contracts entered into with foreign entities has increased from 46 percent in 2006 to 62 percent of the total, an indication that our research activities are highly regarded internationally.

The implementation of a new technology transfer and commercialisation strategy during 2007, adopting a proactive approach versus the previous strategy of advocacy and information provision, has shown dividends. Thirty-one invention disclosures were received and 27 provisional patents were filed in 2008, compared with the seven disclosures (four provisional patents) in 2006 and nine disclosures (five provisional patents) in 2007. The University has also, over the last 12 to 18 months, entered into more interinstitutional agreements (joint IP ownership), option agreements, assignment agreements and licence agreements than the previous six years combined. RCIPS has been actively involved in business plan development and negotiations relating to three start-up or spin-out businesses in which UCT will potentially take equity. UCT’s performance in this area has been acknowledged in the Innovation Fund-run ‘Most Innovative Higher Education Institution Competition’. UCT received a certificate of recognition for coming second overall, and won the ‘Best Case Study’ category as well as the category for the ‘Best Improvement in Technology Transfer Capacity’.

Two important pieces of legislation were approved by Parliament in 2008, i.e. the Technology Innovation Agency (TIA) Act and the Intellectual Property Rights from Publicly Funded Research and Development Act (IPR Act). The objective of the TIA Act is to address the fragmentation of the national funding instruments, one of the major causes of the innovation chasm. The objective of the IPR Act is, inter alia, to provide for effective utilisation of intellectual property from publicly funded research and development. Both these Acts, but more specifically the IPR Act, will have an impact on the research activities and administration at UCT and the higher education institutions in general.

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 and accountable to Senate.

The Office is responsible for management and administration of postgraduate and postdoctoral awards, as well as for monitoring the postgraduate and postdoctoral sectors and for the development of policies and procedures for financial and other types of support. Funds are sourced from central university funds, donations and investments, as well as from the National Research Foundation and the Medical Research Council.

The Centre is intended to promote the interests of postgraduate students and postdoctoral research fellows in synergy with faculty and departmental facilities and services.

Specific attention is given to those involved in the University’s research enterprise. Policies and practices seek to assist the institution to improve the equity profiles, and the through-put and output of students in the postgraduate sector. Support structures and resource mechanisms that add quality to the lives and experience of these individuals have been established for both postgraduate students and postdoctoral research fellows, and are constantly being monitored, reviewed and extended. The Office endeavours to assist the University with targeted recruitment, and, through its policies and practices, encourages students to complete their degrees and to graduate in the minimum timeframe.

Linda Vranas
Director: Postgraduate Centre and Funding Office
SIGNATURE THEMES FOR RESEARCH

UCT’s Signature Themes provide an innovative framework for interdepartmental and interfaculty collaboration and contribute to transformation in terms of the curriculum and a multidisciplinary approach to research. Selected to focus resources and expertise in a strategic manner, the Themes are grounded in existing areas of internationally recognised excellence while being aligned to institutional, regional and national priorities. There are five Signature Themes at UCT, namely African Cities, Brain and Behaviour, Drug Discovery, Marine Research and Minerals to Metals.

AFRICAN CENTRE FOR CITIES

In mid-2007, Signature Theme status was given to the Cities in Africa initiative, a collaborative venture between three UCT Faculties (Science, Humanities and Engineering & the Built Environment). Its Director is Professor Edgar Pieterse, who also holds a Department of Science and Technology/National Research Foundation (DST/NRF) Research Chair in Urban Policy. During 2008 its name was changed to ‘African Centre for Cities’ to reflect the extension of its research focus beyond the continent.

Achieving well-governed and sustainable cities is becoming increasingly important to the future health of the planet. In South Africa, this is reflected in the increasingly urban emphasis in policy documents at both national and provincial level. There is a sense 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.

The African Centre for Cities 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.

Amongst its main achievements in 2008 were the establishment of the CityLab and Cape Urban Observatory projects (which serve to facilitate interdisciplinary engagement as well as fostering dialogue between scholars and public policy managers dealing with critical urban development challenges in Cape Town) and convening and activation of the African Association of Planning Schools, that draws together 26 urban planning schools in six African countries. It also convened an Africa-wide think tank on urbanisation challenges in Africa to prepare an African submission to the World Urban Forum convened in Nanjing, China, during 2008.

BRAIN AND BEHAVIOUR INITIATIVE

The Brain and Behaviour Initiative (BBI) enables cross-faculty, multidisciplinary, collaborative research in the cognitive and affective neurosciences and brings 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.
During 2008 the Drug Discovery Signature Theme has made significant progress towards identifying new and strengthening existent research projects. These are all linked to three technological platforms which form an essential basis for these projects, namely Synthesis of small molecules in drug development, Structural biology of proteins and protein-ligand complexes and Expression and purification of proteins. Professor Roger Hunter of the Department of Chemistry is the Director of the Signature Theme.

A joint venture between UCT, AngioDesign Inc and the Cape Biotech Trust has resulted in the incorporation of AD Therapeutics (Pty) Ltd. The core business of this venture is the structure-based design, development and commercialisation of next-generation drugs for validated disease targets. The ACE inhibitor work has formed the cornerstone of this new company. ACE is a drug-target for hypertension. This demonstrates the potential of the Signature Theme to develop spin-out companies.

Significant progress has been made by Signature Theme member Professor Kelly Chibale, who holds an NRF Research Chair in Drug Discovery, towards the establishment of a drug discovery centre at UCT focusing on integrating drug metabolism and pharmacokinetic studies into drug-discovery as it relates to hits to leads and lead optimisation medicinal chemistry. The Medicines for Malaria Venture, Cape Biotech Trust and key pharmaceutical companies such as Pfizer have already committed their support. The Centre will be hosted in the Department of Chemistry and will be the first facility of its type in Africa.

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**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 which 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.

After its launch in 2006, the BBI devoted most of 2007 to establishing a platform for successful neuroscience research. The focus in 2008 was on consolidating the research programme initiated in 2007. This included implementing the three research niche area grants which were awarded by the NRF in 2007, initiating new Cross-University Brain-Behaviour Initiative projects, and attracting new postdoctoral/clinical fellows and students.

During 2008 the BBI was successful in getting the MRI machine at the Cape Universities Brain Imaging Centre up and running, and obtaining preliminary brain imaging data in a broad range of areas of relevance to South Africa (e.g. psychological trauma, substance use disorders, neuroHIV). Another significant achievement was the submission of a patent in the area of gene expression and trauma.

**HOW UCT FOCUSES ITS RESEARCH**

Professor Dan Stein of the Department of Psychiatry and Mental Health is Director of the BBI and Associate Professor Ernesta Meintjes and Dr Marc Combrinck, both holders of DST/NRF Research Chairs, occupy the Chair in Brain Imaging and Chair in Clinical Neurosciences Research respectively.

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**MARINE RESEARCH INSTITUTE**

The Marine Research Institute (MA-RE) was launched in 2006, with its principal focus being research, which underpins its teaching, training, capacity development and consultancy activities. While 2007 was largely devoted to the setting-up of the MA-RE office at UCT, the Institute has made significant gains during 2008 in terms of its main aim, i.e. the promotion of multidisciplinary research related to the marine environment. This has been achieved through strengthening existing and establishing new research links at local, national and international level.
The MA-RE Institute is led by Professor John Field and two DST/NRF Research Chairs, Professor George Philander (Department of Oceanography) and Associate Professor Astrid Jarre (Department of Zoology) are hosted in the Institute.

During 2008 MA-RE co-ordinated the South African marine and atmospheric input into the India-Brazil-South Africa Scientific and Technology Agreement (IBSA-Ocean). This was done on an NRF contract. MA-RE also developed decision support systems to bridge the perspectives of fishers, scientists, managers and conservation groups in managing the South African pelagic fishing industry. These bring the long-neglected human dimension into fisheries management and include fuzzy logic and a more conventional expert system, which have been compared.

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 Minerals to Metals Signature Theme draws together the skills of academic and research staff in four existing research groupings at UCT in order to carry out and promote multidisciplinary research in the area of minerals beneficiation. The Director of the Theme is Professor Jean-Paul Franzidis and the Theme is supported by two DST/NRF Research Chairs, namely Professor Franzidis in Minerals Beneficiation, and Professor Sue Harrison in Bioprocess Engineering.

2008 saw the beginnings of real collaboration between the various participants in the Signature Theme. This has been achieved through joint student supervision, as well as regular meetings, workshops and seminars, many of which have taken place around planned visits of invited internationally renowned experts. A website (http://www.mineralstometals.uct.ac.za/) and brochure have also provided a point of focus for the group. In

PEPT BOOST FOR UCT
Positron emission particle tracking (PEPT) allows the characterisation and visualization of particulate flow within aggressive industrial environments, such as tumbling mills, flotation cells and powder mixers. The technique is based on the tracking, within the field of view of a modified PET camera, of a single tracer particle which has been labelled with a radionuclide that decays via beta-plus decay. A new laboratory “PEPT Cape Town” has been set up at iThemba LABS by researchers from UCT’s Physics Department. The establishment of PEPT Cape Town received a critical boost in 2008 when what is probably the world’s most sensitive PET scanner was donated to UCT by Imperial College London. Seed funding for PEPT Cape Town was provided by the NRF, the Centre for Minerals Research (UCT), the Metals to Minerals Signature Theme, Imperial College London, UCT Equipment Committee, and the Centre for Sustainable Resource Processing (Australia). In addition, Anglo Platinum and Xstrata are funding UCT-lead PEPT research at the Position Imaging Centre at the University of Birmingham, the only other operational PEPT facility in the world.
addition the PEPT (positron emission particle tracking) initiative has advanced at a rapid rate from the visit by Professor David Parker (the ‘father’ of PEPT) and initial tentative discussions with iThemba Labs in February 2008 to the acquisition of an ‘EXACT3D’ PET camera which will be transported to South Africa in 2009, and installed at a specially designed facility at iThemba Labs. This exciting project has received wide support from within the University and beyond (United Kingdom and Australia).

SOUTH AFRICAN RESEARCH CHAIRS INITIATIVE (SARChI)
SARChI is a brain-gain and research capacity-development intervention by the Department of Science and Technology that is being administered by the National Research Foundation. Since the inception of this intervention in 2006, UCT has secured 26 chairs of the 72 awarded nationally.

Operating as staff and student clusters that do research in specific areas, the SARChI structures are successful incubators of excellence and have increased the intake of postgraduate students. All the Chairs have established themselves and are proceeding to deliver on their objectives. The Chairs are Professor Jonathan Blackburn (Applied Proteomics and Chemical Biology), Professor Frank Brombacher (Immunology of Infectious Diseases in Africa), Professor Kelly Chibale (Drug Discovery), Dr Marc Combrinck (Clinical Neurosciences Research), Professor Drucilla Cornell (Customary Law, Indigenous Values, and Dignity Jurisprudence), Dr Erwin de Blok (Astrophysics and Space Science), A/Professor Keertan Dheda (Lung Infection and Immunity in Poverty Related Diseases), Professor Jean-Paul Franzidis (Minerals Beneficiation), Professor Carolyn Hamilton (Archive and Public Culture), Professor Susan Harrison (Bioprocess Engineering), Professor Bruce Hewitson (Climate Change), A/Professor David Jacobs (Animal Evolution and Systematics), A/Professor Astrid Jarre (Marine Ecology and Fisheries), Professor Murray Leibbrandt (Poverty and Inequality Research), Professor Di McIntyre (Health and Wealth in SA), A/Professor Ernesta Meintjes (Brain Imaging), Professor Rajend Mesthrie (Migration, Language and Social Change), A/Professor Kevin Naidoo (Scientific Computing), Professor Lungisile Ntsebeza (Land Reform and Democracy in South Africa: State and Civil Society Dynamics), Professor Iqbal Parker (Cancer Biology), Professor George Philander (Modelling of the coupled ocean-land-atmosphere phenomena related to climate), Professor Edgar Pieterse (Urban Policy), Professor Daya Reddy (Computational Mechanics), Professor Clifford Shearing (Security and Justice), Professor Abdulkader Tayob (Islam, African Publics and Religious Values) and Professor Anna-Lise Williamson (Vaccinology).

Due to shifting priorities and inconclusive negotiations at government level, the 2008 SARChI call was issued late in the year and aimed exclusively at Mathematics Education (co-funded by First Rand Foundation), Nanotechnology for Water, Indigenous Knowledge Systems and a small number of thematic areas in the Social Sciences that relate to the Science & Technology for Social Impact Sub-programme of the DST. In the latter category, UCT’s bid for a Chair in development economics was successful and an appropriate nominee has been put forward. The outcome is still pending.

In the interim, and in anticipation of renewed roll-out of the SARChI programme over the next 18 months, UCT continues to monitor and support the successful implementation of our existing Chairs’ SARChI objectives.

NATIONAL CENTRES OF EXCELLENCE AND COMPETENCE CENTRES
Since 2004 the University of Cape Town has hosted two national Centres of Excellence awarded by the DST through the NRF. These centres act as nodes for research and development in fields identified as strategically important to South Africa. The Centres hosted at UCT include researchers from universities around South Africa. They enjoy significant student involvement and serve as important research training sites for postgraduate students.

In 2007 the DST awarded R30 million over five years to the Department of Chemical Engineering to establish a Centre of Competence in Catalysis. This is one of three Centres of Competence which are part of the National Flagship in Hydrogen and Fuel Cells Technologies. Whereas the Centres of Excellence focus more on basic science and research, the Centres of Competence focus more on applied science, technology development and technology transfer. Centres of Competence are therefore strategically placed further down the technology development chain than the Centres of Excellence.
RESEARCH IMPACT

DST/NRF CENTRE OF EXCELLENCE IN CATALYSIS, C*CHANGE
The technical scope of the DST/NRF Centre of Excellence in Catalysis, c*change, focuses principally on issues of relevance to South Africa and the African continent and comprises four research programmes, namely synthesis gas conversion, paraffin activation, value addition to unique domestic olefinic feedstocks and the under-developed small volume chemicals sector. The Centre is hosted by the Centre for Catalysis Research at the Department of Chemical Engineering, and is led by Associate Professor Michael Claeys. The 2008 team comprised 49 postgraduate students, seven postdoctoral researchers, and 22 academics from 14 research groupings in nine participating South African higher education institutions. A total of 19 projects were funded during the course of 2008, of which ten were multi-institutional and/or interdisciplinary projects, thus demonstrating the strength of working relations between the participating institutions.

A total of 16 publications, five published conference proceedings and 42 unpublished conference contributions were produced in 2008. In addition, two provisional patent applications have been submitted. Several joint venture postgraduate student training initiatives were undertaken to forge closer ties in collaborative projects, and several postgraduate student study visits from abroad were supported during 2008.

A well-established event in the c*change calendar is the annual Symposium, this year held in Parys. Collaborators, as well as postgraduate students and postdoctoral fellows, gathered to report on technical outputs of the Scientific Programmes. c*change is supporting an initiative to provide teachers and learners with resource material on the chemical industries in South Africa as specified in the Further Education and Training (FET) Physical Science curriculum. Formal international networking opportunities and collaborations continue to be established, primarily with institutions in the United Kingdom and Germany.

COMMONWEALTH SCHOLARSHIP FOR RESEARCH INTO HIV VACCINES

Master’s graduate Sirika Pillay may see her work as ‘a very small part of a big puzzle’ but her HIV vaccine research has earned her a distinction, as well as a scholarship for her future PhD studies. She began her laboratory work in 2007 by optimising the production of two potential vaccines. One of the vaccines produced particularly impressive results, and is likely to be used in future vaccine studies at UCT.

As a result of her work, Pillay was awarded the Commonwealth Scholarship, which is awarded to candidates who are involved in research that will benefit their home country. She will use the comprehensive scholarship for her PhD studies at Imperial College in London. Pillay’s PhD will continue her research into HIV vaccines, but she intends to shift her focus from molecular biology to the immunology aspects of the work.
HOW UCT FOCUSES ITS RESEARCH

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 contribute 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 scientific publications, with 75 peer-reviewed papers published in Science Citation Index (SCI) rated journals in 2008, including 22 in journals with a SCI impact factor rating exceeding 3.5. Two books and 41 semi-popular articles were also published. The Centre supported nine doctoral fellows, and 17 PhD, 30 MSc, and two BSc Honours students during 2008.

Various awards were bestowed upon members of the Centre during 2008. Dr Samantha Petersen was recognised for the best PhD on the conservation of migratory species by the United Nations Environment Program’s Convention on Migratory Species (UNEP-CMS), against competitors from 18 countries. Dr Ross Wanless won the Dean’s Medal for the best PhD in the Science Faculty and was also placed third in the UNEP-CMS competition. Professor Phil Hockey was awarded the Stevenson-Hamilton Award of the Zoological Society of Southern Africa. This award is made to persons who have made outstanding contributions towards the image and awareness of Zoology, especially among the general public. The Centre played a key role in the accolade to UCT reported in Conservation Biology (Vol. 22, No. 2 [2008]: 232-234), on productivity in Conservation Research in the southern hemisphere. UCT emerged as the top-ranking institution in the southern hemisphere and equal with the fourth-rated institution (of 315) in North America (University of California at Santa Cruz). Professor Hockey led activities as Interim Director of the Centre until his appointment as Director in July 2008.

DST HYDROGEN CATALYSIS COMPETENCE CENTRE, HYSA/CATALYSIS
The DST’s National Hydrogen and Fuel Cells Technologies Flagship Project, colloquially referred to as Hydrogen South Africa, or HySA, was derived from the National Hydrogen and Fuel Cell Technologies Research, Development and Innovation Strategy which was approved by Cabinet in May 2007. The DST’s vision for this project is to create knowledge and human resource capacity that will develop high value commercial activities in hydrogen and fuel cell technologies utilising local resources and existing know-how.

Hydrogen South Africa is still very much in its early establishment phase but, nonetheless, this process has led to a structure comprising three Competence Centres nationally, viz. Centres in Hydrogen Catalysis (HySA/catalysis), Infrastructure (HySA/infrastructure) and Systems Integration and Validation (HySA/systems). These Competence Centres will be virtual or physical in form and adopt a ‘Hub and Spoke’ collaboration model to ensure a good mix of expertise towards meeting the set strategic objectives. The DST has appointed the Catalysis Groups of UCT and Mintek to jointly establish and manage HySA/catalysis.

STRATEGIC PARTNERSHIPS AT UCT
These following collaborative research initiatives and partner relationships are either driven from Executive level or result from Faculty-prioritisation in terms of areas for development and subsequent integration into the University-wide annual planning and budgeting exercise.

AFRICAN EARTH OBSERVATORY NETWORK
The African Earth Observatory Network (AEON) is a partnership focused on earth stewardship science. AEON fosters cutting-edge, internationally connected, science and
analysed learning using advanced tools and technologies in an environment that encourages cross-disciplinary research to explore and sustain our Earth, and society, particularly in Africa. A new Chief Operating Officer was appointed in 2008, Dr Moctar Doucouré. AEON has a number of Earth Stewardship Science fellowships for African nationals and/or permanent residents in African countries with funding from the John Ellerman Foundation, the Eranda Foundation, and Lonmin Plc. In 2008 the first fellowships were awarded, including a senior fellowship to Professor Felix Toteu.

AEON operates three state-of-the-art mass spectrometers used for chemical forensics in many geological and biological studies. The fourth instrument, a noble gas mass spectrometer that can age-date and characterise water and other materials, was delivered at the end of 2007. Two AEON scientific research officers were appointed to run two of the instruments – the only ones of their kind in Africa. A dozen articles were published in international peer-reviewed journals during 2008, bringing the total number of peer-reviewed publications by AEON researchers to 60. 12 graduate students and two postdoctoral researchers work as a core AEON-group at UCT. This group has solidified a robust integration between geology and biology – geobiology – with a prime focus on understanding paleoecodynamics and evolution of south-central Africa and Madagascar.

AEON formally twinned with the GeoForschungsZentrum (GFZ) in Potsdam, Germany’s national Helmholtz centre for geosciences research (earth and environment), a relationship endorsed during a visit in February 2008 to UCT by the German Federal Minister for Research and Education. GFZ has pledged to finance senior postdoctoral researchers to work at AEON for a five-year period and help with technical developments. It is anticipated that these posts will be taken up in 2009.

AEON manages Inkaba yeAfrica (IyeA), a South African-German earth systems programme that was initiated in 2004 (www.Inkaba.org). IyeA is acknowledged globally for its success in linking first and third-world research communities to train a new generation of multidisciplinary scientists. At the end of 2008, the South African government, through DST/NRF, approved R24 million for the first three-year period of IyeA’s five-year Phase II. A similar France-RSA collaborative programme was started in early 2008. This three-year, R15 million programme — !Khure Africa — is coordinated by AEON and the Institut
productivity that will attract South African and international researchers and secure a future for Africa’s promising new generation of scientists, from an integrated basic science, clinical and public health perspective.

CSIR-UCT COLLABORATION

With the signing of a new Memorandum of Understanding (MoU) in September 2008, the collaboration between UCT and the Council for Scientific and Industrial Research (CSIR) has been extended for another five years. At a joint CSIR/UCT workshop in May the following were identified as priority areas for collaborative research and were incorporated as such in the new MoU: Material science and manufacturing; Natural resources and the environment; Information and communications technology; Biosciences and health; and Defence, peace, safety and security.

Notable successes emanating from the partnership to date include the Centre for High Performance Computing Facility (CHPC), the Benguela Current Large Marine Ecosystem (BCLME) project and the African Centre for Climate and Earth Stewardship Science (ACCESS). The latter has been identified as a DST/NRF Centre of Excellence and will be hosted by the CSIR.

The CHPC launched nine Flagship and Consortium Projects in 2008 that encompass 11 universities and research organisations. The IBM BlueGene/P, donated by IBM to the African continent, was commissioned and inaugurated in October by the Deputy Minister of Science and Technology, Derek Hanekom. The CHPC Annual Conference held at the University of KwaZulu-Natal was highly successful with more than 200 local and international delegates attending.

In addition to the above-mentioned large projects, a large number of researchers at UCT and CSIR have been involved in smaller collaborative research projects in fields ranging from drug discovery, pharmacology, photonics and health to nano-science and technology, metals and metal processes, fibres and textiles, waste economics, environmental impact assessment, aeronautics, safety and security, digital intelligence and sensors.

Under the banner of the scholarship agreement, eight postgraduate students were awarded CSIR scholarships for 2007/2008 – either renewals or first-time recipients – in areas identified in the previous MoU for research and human capital development. This collaboration has furthermore resulted in more than 20 CSIR staff members registering for postgraduate studies at UCT.
The University’s benchmarking practice is informed by internationally accepted indicators such as the income generated through agency funding and research contracts, support provided to postgraduate students and postdoctoral researchers, the international standing of our researchers through participation in the NRF rating process, and the quality and impact of peer-reviewed research publications and creative output.

RESEARCH FUNDING
The main sources of research funding reported hereunder are awards made by the National Research Foundation and Medical Research Council and research contracts signed with external constituencies. This is an addition to UCT-funded grants made by the University Research Committee, which allocated approximately R30 million during 2008 across a range of funding categories.

NATIONAL AGENCY FUNDING
The National Research Foundation continues to be a major source of funding for UCT researchers. At the end of 2008, UCT had a total of 359 NRF grantholders across a variety of funding categories, holding 728 grants with a cumulative value in excess of R176 million. This can be compared to the previous year’s 352 grantholders holding 584 grants with a cumulative value of over R107 million.

At the end of 2008, UCT researchers held grants under the Focus Area Programme with a cumulative value of R40,181,591, reflecting an increase of R7,896,049 from the previous year. The last of these grants come to an end on 31 December 2011, due to the phasing out of this Programme by the NRF. Researchers with a valid NRF rating are eligible to apply under the Incentive Funding for (NRF) Rated Researchers Programme, with the award directly proportional to the applicant’s NRF rating. At the end of 2008, 80 rated researchers at UCT were recipients of Incentive Funding grants totaling a value of R6,113,070, whilst almost a third of all rated researchers nationally received support through this programme.

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. Eight new awards were made to UCT under this programme in 2008 and our applicants continue to enjoy a high success rate. UCT currently has 45 participants in this Programme, holding grants with a cumulative value of R4,359,000.

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 that challenges industry to match government funding for innovative research and development in South Africa. During 2008, 35 projects valued at R18,291,283 were supported through the THRIP programme; this was matched by R29,422,352 in contributions from industry.

UCT researchers continue to take advantage of the funding opportunities provided by the NRF’s International Science Liaison (ISL) 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 multi-year funding opportunities, researchers have also been able to access funding through once-off ISL awards via the NRF’s various bilateral agreements. In 2008, UCT’s ISL grants had a value in excess of R23,294,958.
In addition to funding received from the NRF, UCT received R13,363,320 in funding from the Medical Research Council in 2008 for individual projects, as well as for ten research units, groups and centres. This amount is in addition to the individual research contracts signed between the two institutions. The Medical Research Council aims to improve the nation’s health and quality of life through promoting and conducting relevant and responsive health research.

**FUNDING FROM RESEARCH CONTRACTS**

In 2008, the Research Contracts and Intellectual Property Services Office processed 976 contracts to the value of R546.75 million, an increase of 16% over 2007. These contracts vary from short-term contracts of under R10,000 to multi-year contracts with multimillion rand budgets and involve a variety of local and foreign clients. 607 contracts to the value of R206.75 million were concluded with South African entities during 2008. This included contracts with local and national governmental entities (R55.31 million), South African Science Councils and National Research Centres (R17.8 million), South African non-profit entities (R41.55 million), and local industry (R92.11 million).

At an international level, 369 contracts to the value of R340 million were entered into with entities from 22 countries in 2008. The major source of foreign funding is the USA (R169.26 million), followed by the United Kingdom (R112.98 million). The National Institutes of Health (USA) was again the most prominent funder of research and contracts to the value of R58.78 million, which were, directly or indirectly (through collaboration with USA universities), entered into in 2008. Other major sponsors from the USA were Aeras Global TB Vaccine Foundation (R58.53 million), Family Health International (R12.23 million) and Medtronic Inc. (R8 million). The major United Kingdom contributor was the Wellcome Trust, with whom contracts to the value of R55.58 million was signed. A contract to the value of R36.15 million was entered into with the European Union’s European & Developing Countries Clinical Trials Partnership (EDCTP) programme.

**POSTGRADUATE FUNDING AND RESEARCH**

Funding for postgraduate study and research is derived from several different sources. In 2008, 3,317 awards to a total value of R82,974,067 were offered to 4,910 honours, master’s and doctoral students who were registered for full-time study. The main categories of award are highlighted below.

- **The NRF continues to be a major funder of postgraduate students at UCT.** In 2008, 748 bursaries and scholarships were offered to postgraduate students at UCT, to a total value of R26,307,750. By comparison, in 2007, 740 bursaries and scholarships were awarded to a total value of R21,634,380.

- **The Medical Research Council** provides support for master’s and doctoral students who are studying in areas of the Health Sciences. In 2008, 21 awards to a total value of R725,000 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 2008, 117 UCT Research Scholarships were awarded to a total value of R447,000. 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 and their supervisors. In addition, the Associateships include a monetary contribution to the successful candidate’s research costs. In 2008, 18 master’s and doctoral students received awards to a total of R750,000 for their work in the following areas of research: Economics, Information Science, Electrical Engineering, Medical Biochemistry, Immunology, Biomedical Engineering, Classical Studies, Education, Fine Art, Public Law, Molecular and Cell Biology, Zoology, Mathematics and Applied Mathematics.

- **Conference Travel:** Master’s and doctoral students and postdoctoral researchers are encouraged to attend conferences to present their work. In 2008, 71 postgraduate students and 11 postdoctoral
researchers were awarded grants towards the cost of travelling to local and international conferences, totalling R634,350 and R84,000 respectively.

- **Scholarships for International Travel.** In addition to the above, 17 master’s and doctoral students successfully applied for UCT Scholarships for international travel, which enabled them to spend periods from two to ten months at approved institutions abroad. These awards were made to a total value of R600,000.

- **The UCT Equity Development Programme** was established to support increased participation rates by students from designated groups. The Programme currently consists of seven separate fellowships sourced from donated funds, and provided high-value support to around 58 master’s and doctoral students from designated groups, to a total of R4,607,000. In addition to this, the University made 100 awards in 2008 to a total of R1,704,255 in the form of the UCT Equity Fellowships.

- **The UCT/CSIR Scholarship Programme.** The University of Cape Town and the CSIR entered into a collaborative partnership in 2003. Included in various initiatives under this partnership is the UCT/CSIR Scholarship Programme. In 2008, 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. Five students received first-time awards to a total value of R400,000.

- **The Commonwealth Scholarships Programme.** In 2008 five students received offers from the Commonwealth Scholarships Programme to register for master’s and doctoral degrees at various institutions in the UK to study in areas of Sociology, Economics, Biomedical Engineering, Astrophysics/Cosmology and Molecular and Cell Biology.

- **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.

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### WATER QUALITY IN ZIMBABWE’S LAKE CIVERO

Water is an increasing challenge in Africa, not only the quantity, but the quality, says DPhil graduand Lindah Mhlanga, whose doctoral thesis examines water quality in Zimbabwe’s Lake Civero. A vital water resource for Harare, the lake is one of the world’s most eutrophic reservoirs, characterised by excessive plant and algal growth.

For the past 12 years, the University of Zimbabwe has employed Mhlanga at the University Lake Kariba Research Station, where her research has focused on aquatic ecology. Her thesis was conducted through UCT’s Freshwater Research Unit and examines a system under extreme pressure, both as a water source and means of waste removal, two opposing functions. Mhlanga’s work showed that the character and intensity of cyanobacterial blooms in Lake Chivero can be managed by controlling the concentrations of nitrate, relative to phosphorous.
The seminar programmes afford students the opportunity to present their work outside 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, which 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 2008, nine awards were made (including continuing students) to a total value of R850,000.

• The Thabo Mbeki Leadership in Africa (LiA) 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 2008, six students were supported by the Thabo Mbeki LiA Scholarship Programme to a total value of R445,320.

• 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 UCT for full-time study in Gender Studies, Economics, Politics, Philosophy, Health Sciences, Governance and related disciplines. In 2008, the Fellowship programme supported ten master’s and doctoral students to a total value of R391,000.

• The Harry Crossley Research Fellowships which 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 honours, master’s and doctoral degrees. In 2008, 17 students (including continuing students) received Harry Crossley Research Fellowships to a total value of R1,176,000. 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.

BENCHMARKING OF UCT’S RESEARCH
The UCT/Woolworths Fellowship Programme supports master’s and doctoral students whose research is in the areas of environment and probiotics. In 2008, two students received awards to a total value of R150,000.

The A W Mellon PhD in Humanities Fellowship Programme. One of the original Equity Development Programmes, the A W Mellon Fellowships have supported more than 200 students since 1990. In 2008, 40 doctoral students in the Humanities Faculty were supported to a total of R3,500,000. The awards were valued between R30,000 and R110,000. The Fellowship Programme requires that each student plan and present one seminar per degree.

The A W Mellon Scholarship Programme. The second programme supported by the A W Mellon Foundation commenced in 2008, and provided support to master’s and doctoral students registered in specific areas of study in Humanities, Law and Commerce. Ten awards were made to doctoral students and 13 awards to master’s students, to a total value of R1,345,000.

University Support for Postgraduate Students. In 2008, the University provided R8,261,888 for support of honours, master’s and doctoral students. 672 awards were made across a variety of scholarships and fellowships, including the UCT Scholarships for International and Refugee students. Income from two invested funds and a generous donation from the Sigrid Rausing Trust (the Eric Abraham Scholarships) augmented UCT funds to provide support to refugee and international students. In 2008, 95 international students and 21 refugee students were supported to a total of R1,762,000 and R995,000 respectively.

The UCT Postgraduate Centre. The UCT Postgraduate Centre is a University heritage site and provides an attractive space for master’s and doctoral students, as well as postdoctoral research fellows at UCT to meet, use the Internet stations provided, read the many journals, magazines and newspapers and hold seminars. The adjacent TB Davie Seminar Room accommodates a significant number of seminars and workshops arranged by students and academics in the University.

FELLOWSHIP AWARDS FOR DOCTORAL RESEARCHERS

Doctoral researchers Grace Mugumbate of the Department of Chemistry (Faculty of Science) and Nosisa Matsiliza of the MRC/UCT Receptor Biology Research Group (Faculty of Health Sciences) won two of three Women Scientist Fellowship awards presented at the 2008 Department of Science and Technology Women in Science Awards.

Mugumbate’s research into the hormone receptors that initiate production of energy in mosquitoes during flight is a step in the development of an insecticide that targets malaria-carrying mosquitoes, but is safe to humans and the environment. Matsiliza, in turn, is studying the signalling pathways involved in growth inhibition induced by the gonadotropin-releasing hormone receptor.

The awards were created by the Department of Science and Technology, in association with L’Oreal and the National Commission for UNESCO, to profile the achievements of leading women scientists in South Africa.
Table 1: Number of honours, master’s and doctoral students registered and awards made in 2008 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>815</td>
<td>168</td>
</tr>
<tr>
<td>Engineering &amp; the Built Environment</td>
<td>866</td>
<td>571</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>939</td>
<td>562</td>
</tr>
<tr>
<td>Humanities</td>
<td>1182</td>
<td>884</td>
</tr>
<tr>
<td>Law</td>
<td>228</td>
<td>99</td>
</tr>
<tr>
<td>Science</td>
<td>880</td>
<td>1043</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,910</strong></td>
<td><strong>3317</strong></td>
</tr>
</tbody>
</table>

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: National Research Foundation</td>
<td>746</td>
<td>R26,307,500</td>
</tr>
<tr>
<td>Medical Research Council</td>
<td>21</td>
<td>R725,000</td>
</tr>
<tr>
<td>University Central Funds</td>
<td>672</td>
<td>R8,905,760</td>
</tr>
<tr>
<td>Income from donated funds</td>
<td>464</td>
<td>R12,901,920</td>
</tr>
<tr>
<td>Income from University investments</td>
<td>522</td>
<td>R3,465,255</td>
</tr>
<tr>
<td>Income from departmental funds</td>
<td>892</td>
<td>R30,668,632</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,317</strong></td>
<td><strong>R82,974,067</strong></td>
</tr>
</tbody>
</table>

Table 3: Number of students registered and awards made per degree level

<table>
<thead>
<tr>
<th>DEGREE LEVEL</th>
<th>NUMBER OF STUDENTS REGISTERED</th>
<th>NUMBER OF AWARDS MADE</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honours</td>
<td>1055</td>
<td>756</td>
<td>R9,404,287</td>
</tr>
<tr>
<td>Master’s</td>
<td>2872</td>
<td>1521</td>
<td>R35,754,309</td>
</tr>
<tr>
<td>Doctoral</td>
<td>983</td>
<td>1040</td>
<td>R37,815,471</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4910</strong></td>
<td><strong>3317</strong></td>
<td><strong>R82,974,067</strong></td>
</tr>
</tbody>
</table>

**POSTDOCTORAL FELLOWSHIPS**

The University is continually seeking support to host postdoctoral researchers. In 2008, 247 postdoctoral fellowships were awarded to 179 postdoctoral researchers, to a total value of R20,614,813. Support for postdoctoral research is sourced from the NRF, the MRC, the URC, and 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 R2,508,950 in support of 22 postdoctoral researchers in 2008.

Table 4: Postdoctoral fellowships by faculty

<table>
<thead>
<tr>
<th>FACULTY</th>
<th>NUMBER OF REGISTERED POST-DOCTORAL RESEARCHERS</th>
<th>NUMBER OF AWARDS MADE</th>
<th>VALUE OF AWARDS MADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commerce</td>
<td>1</td>
<td>3</td>
<td>R228,000</td>
</tr>
<tr>
<td>Engineering &amp; the Built Environment</td>
<td>20</td>
<td>24</td>
<td>R2,576,033</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>51</td>
<td>76</td>
<td>R6,294,667</td>
</tr>
<tr>
<td>Humanities</td>
<td>10</td>
<td>14</td>
<td>R1,075,022</td>
</tr>
<tr>
<td>Law</td>
<td>2</td>
<td>3</td>
<td>R270,000</td>
</tr>
<tr>
<td>Science</td>
<td>95</td>
<td>127</td>
<td>R10,171,091</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>179</strong></td>
<td><strong>247</strong></td>
<td><strong>R20,614,813</strong></td>
</tr>
</tbody>
</table>
NRF EVALUATION AND RATING OF RESEARCHERS

The evaluation and rating of individuals is based primarily on the quality of research outputs in the recent past, as judged by national and international peers. Ratings are awarded in six categories, as described in the adjacent column. In February 2008, UCT submitted 17 applications for new ratings, and 43 applications for re-evaluation to the NRF (re-evaluation is conducted every six years). Four new A-ratings were awarded to UCT during this cycle, bringing the total in this category to 33, out of 77 A-rated researchers nationally. This includes a second A-rating to a woman – and first from the natural sciences – Professor Jill Farrant (Molecular and Cell Biology). Other A-ratings were awarded to Professors Eric Bateman (UCT Lung Institute/Medicine), Rajend Mesthrie (Linguistics) and Mark Solms (Psychology).

In addition, seven applicants received their A-ratings on re-evaluation: Professors William Bond (Botany), George Branch (Zoology), Jean Cleymans (Physics), George Ellis (Mathematics and Applied Mathematics), Michael Kew (Medicine), Kit Vaughan (Human Biology) and Brian Warner (Astronomy).

<table>
<thead>
<tr>
<th>SOURCE OF FUNDS</th>
<th>NUMBER OF AWARDS MADE</th>
<th>VALUE OF AWARDS MADE</th>
</tr>
</thead>
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<tr>
<td>Research Councils:</td>
<td></td>
<td></td>
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<tr>
<td>National Research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foundation</td>
<td>79</td>
<td>R6,129,500</td>
</tr>
<tr>
<td>Medical Research Council</td>
<td>7</td>
<td>R600,000</td>
</tr>
<tr>
<td>University funds</td>
<td>15</td>
<td>R1,278,000</td>
</tr>
<tr>
<td>Donated funds</td>
<td>34</td>
<td>R3,557,472</td>
</tr>
<tr>
<td>Departmental funds</td>
<td>111</td>
<td>R9,044,841</td>
</tr>
<tr>
<td>Investments</td>
<td>1</td>
<td>R5,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>247</strong></td>
<td><strong>R20,614,813</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RATING CATEGORIES</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>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>
<tr>
<td>2008</td>
<td>33</td>
<td>94</td>
<td>134</td>
<td>5</td>
<td>26</td>
<td>1</td>
<td>293</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>DESCRIPTIONS OF NRF RATING CATEGORIES</th>
<th>A -</th>
<th>B -</th>
<th>C -</th>
<th>P -</th>
<th>Y -</th>
<th>L -</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>World leaders renowned for the high quality and impact of their research.</td>
<td>Researchers with considerable international stature.</td>
<td>Established researchers who produce research of an international standard.</td>
<td>Young researchers (normally younger than 35 years of age) who obtained their doctoral degrees not more than five years ago and who, on the basis of exceptional performance, are recognised internationally as having the potential to become future leaders in their field.</td>
<td>Younger researchers (normally younger than 35 years of age) who obtained their doctoral degrees not more than five years ago and who, on the basis of their performance, are recognised as showing promise of establishing themselves as researchers within a five-year period after evaluation.</td>
<td>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 five-year period after submission of evaluation documents.</td>
</tr>
</tbody>
</table>
NRF-rated researchers at UCT during 2008

Newly rated researchers from the 2008 cycle are listed in bold text

Abratt, RPA
Abratt, VR
Ackermann, RR
Adhikari, M
Alexander, MG
Alexseea, N
Allie, MS
Altwegg, R
Ansoe, IJ
Armitage, NP
Aueswald, L
Barashenkov, IV

**Barnes, K**
Barr, GDI

**Bassett, B**

**Bateman, E**
Beighton, PH
Bennett, TW
Bhorat, HI
Bickford-Smith, JV
Blackburn, JM
Blake, EH
Bolton, JJ
Bond, WJ
Bosch, AN
Bourne, SA
Bowen, PA
Branch, GM
Brandt, WF
Brattka, V
Breen, CJ
Britton, DT
Brombacher, FH
Bronner, GN
Brown, ITJ
Brown, GD
Brundrit, J
Bruyns, PV
Buffler, A
Burchell, J
Burgers, W
Burman, SB
Burton, SG
Butler, AM
Butterworth, DS
Caira, MR
Cameron, RG
Case, J
Chan, A
Chibale, K

Chidester, DS
Chinsamy-Turan, A
Claeys, MC

**Clarkson, C**
Cleymans, JWA
Cochrane, Jr
Collins, M
Combrinck, MI
Compton, JS
Comrie, CM
Cooper, BL
Corder, HM
Cornell, D
Cornille, JL
Coyne, VE
Cramer, MD
Cranshaw, O
Crowe, TM
Cumming, G
Dalvie, MA

**De Blok, E**
De Gruchy, JW
De Jager, K
De Jager, G
De Villiers, M
De Wit, MJ
Deglon, DA
Denny, LA
Dheda, K

**Distiller, N**
Domínguez, CA
Douglas, TS
Driver, KA
Dunby, PKS

**Ebobisse, F**
Eckardt, FD
Edwards, LJ
Egan, TJ
Ekama, GA
Ellis, GFR
Ensor, P
Farrant, JM
Fearick, RW
February, EC
Fedderke, JW
Firer, C
Flanagan, CA
Fraser, DM
Gade, G
Gain, J

Gammon, DW
Gay, D
Gillson, L
Gilton, L
Glazewski, JI
Gobodo-Madikizela, P
Goedecke, JH
Govan, V
Greenberg, LJHL
Griffiths, CL
Guo, R
Haerting, M
Haines, LM
Hapgood, J
Harley, EH
Harris, MC
Harris, C
Harrison, STL
Hart, M
Heddderson, TAJ
Hellaby, CW
Herman, R
Hewitson, BC
Hockey, PAR
Hoffman, MT
Horwitz, FM
Hunter, R
Hutton, AT
Illing, N
Inggs, SC
Jackson, GE
Jacobs, M
Jacobs, DS
Janelidze, G
Jeebhay, M
Jelsma, J
Joubert, AR
Kalla, AA
Kalula, ER
Kaminer, D
Kaplan, D
Kew, MC
Kidson, S
Klatzow, PJL
 Klump, HH
Knutsen, RD
Koelble, TA
Kraan-Korteweg, RC

**Krige, JEJ**
Kritzinger, PS
Kunzi, H-P A
Lambert, EV
Lambert, MJ
Lang, CI
Lang, DM

**Langdon, G**
Langerman, FS
Laugksch, RC
Le Roex, AP
Lecour, S
Leibbrandt, M
Lewis, AE
London, L
Lopata, AL
Louw, J
Low, I
Lutjeharms, JRE
Maartens, G
Mall, AS
Marais, AD

**Marais, P**
Marco, H
Marsden, G
Martin, DP
Mates, RB
Mayosi, BN
Mclntosh, DB
Mclntyre, D
Meadows, ME
Meinjes, EM
Meissner, P
Mesthrie, R
Meyers, PR
Midgley, JJ
Moller, KP
Moloney, CL
Morris, AG
Moss, JR
Mostert, H
Moyo, P
Muasya, M
Muller, JP
Myers, TG
Naidoo, KJ
Nassimbeni, MC
Nassimbeni, LR
Nasson, WR
Noakes, TD
Novitzky, N
Nurick, GN
First a-rated woman scientist at UCT

Professor Jill Farrant, a plant physiologist, is UCT’s first A-rated woman scientist. Her work on resurrection plants, which appear to die in drought but recover dramatically within 24 to 48 hours after rain, even after a year in the dry state, reveals that these plants have complex ‘protection’ mechanisms, involving the activation of genes that produce protectant chemicals. These ‘switch on’ as the plants sense their tissues being affected by the dry environment. Of the world’s 300 angiosperm species that show desiccation tolerance, 90% occur only in southern Africa. Working from the subcellular to the whole plant level, Prof Farrant characterises the genes, proteins and metabolites that are made in response to drying and attempts to understand how these protect the plant tissues in extreme conditions. She is also investigating why (and how) some plants can switch on their desiccation-tolerant genes and others can’t. ‘Plants can’t escape predators or extreme conditions. To survive, they’ve developed remarkable survival mechanisms that scientists are only just beginning to glimpse and understand.’ For example, many produce natural sunscreens for their leaves, or chemical turn-offs (bad tastes and smells) to protect them from herbivores.
INDEX

DEPARTMENT OF ACCOUNTING
SCHOOL OF ECONOMICS
GRADUATE SCHOOL OF BUSINESS
DEPARTMENT OF INFORMATION SYSTEMS
SCHOOL OF MANAGEMENT STUDIES
Continuing with the Commerce Faculty tradition of producing research that directly addresses, in practical ways, the socio-economic issues in both South Africa and the rest of the region, we are proud to report, among other exciting and timely projects, the launch of the National Income Dynamics Study by the South African Labour Development Research Unit (SALDRU). This study, which is funded by the Presidency, includes over 7,300 households in a survey that will produce relevant data to assist researchers in addressing the important question of which income cohorts are progressing or lagging in contemporary South Africa, and why.

Furthermore, the Faculty recently signed a contract with the Organisation for Economic Co-operation and Development to provide technical assistance, support and training for the installation and maintenance of an online survey data catalogue system for the National Statistics Offices of Ethiopia, Gambia, Ghana, Liberia, Mozambique, and Nigeria. This initiative, which is managed by DataFirst Unit, is expected to move to the technological frontier, and national survey data archival and retrieval systems of these countries.

Locally (within the South African economic policy environment) the Development Policy Research Unit (DPRU) remains engaged in its key focus areas of labour markets, poverty and inequality. Besides its in-depth research on employment promotion, the DPRU is currently working with Statistics South Africa to reconsider the appropriateness of the weighting and composition of the commodities in the Consumer Price Index (CPI). The widespread implications of the CPI are well appreciated and its centrality in people’s perception of their notional real income makes it a driver of wage negotiations, cost of credit, and hence overall social welfare.

Building on its pioneering research into the consumption profile of South Africa’s growing black middle class – ‘Black Diamonds’ – the UCT Unilever Institute of Strategic Marketing focused on the role of black women in the economic transformation of South Africa and the impact of their economic empowerment on traditional gender roles in Black Diamond households. The Institute’s most recent study, Prime Time, finds that older Black Diamonds are relatively more resilient to real business cycles than their younger income cohorts. Older Black Diamonds are those income cohorts over 40 years old. When linked to the standard life-cycle hypothesis and the saving-investment debate, this study and others in the Faculty portfolio demonstrate our success in delivering on the commitment to pursue research strategy that is both internationally competitive and regionally relevant.

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.

**Director:** Professor R.E. Dorrington  
**E-mail:** Rob.Dorrington@uct.ac.za  
**Web:** www.commerce.uct.ac.za/care/

CENTRE FOR INFORMATION TECHNOLOGY AND NATIONAL DEVELOPMENT IN AFRICA (CITANDA)
CITANDA is located within the Department of Information Systems. It aims to bring together researchers, projects, funders, and programmes focused on the use of Information and Communication Technology (ICT) in the service of national development. CITANDA’s current research focus areas include information systems and practices in development contexts, ICT for development projects and evaluation of such projects, ICT for development field studies in southern Africa, and e-commerce for development studies and evaluation.

**Director:** Professor D. Roode  
**E-mail:** Jdr@inbekon.com  
**Web:** www.commerce.uct.ac.za/citanda

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.

**Director:** Professor H. Bhorat  
**E-mail:** Haroon.Bhorat@uct.ac.za  
**Web:** www.dpru.uct.ac.za

ENVIRONMENTAL ECONOMICS POLICY RESEARCH UNIT
The Environmental Economics and Policy Research Unit (EPRU) was established in 2007 and forms part of the Environment for Development initiative (EfD). EPRU strives to produce and disseminate policy-relevant research of a high academic quality on current environmental economic issues in South Africa. The main objective of the unit is to function as a resource where high-quality information and economic opinion on environmental issues can be sought. It aims to enhance environmental policy-making in South Africa through rigorous research and extension in order to attain sustainable development and poverty reduction. The EfD initiative operates in China, Central America, Ethiopia, Kenya, South Africa and Tanzania focusing on environmental economics research, policy advice and teaching. Funding support is provided by the Swedish International Development Cooperation Agency.

**Director:** Dr M. Visser  
**E-mail:** Martine.Visser@uct.ac.za  
**Web:** www.epru.uct.ac.za

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). From 1992 to 1994 SALDRU co-ordinated South Africa’s first non-racial national living standards sample survey and, in the post-apartheid period, has continued to gather data and conduct research directed at informing and assessing anti-poverty policy. SALDRU’s largest contemporary project is the running of South Africa’s first national longitudinal survey of well-being, the National Income Dynamics Study, on behalf of the Presidency. Every year SALDRU offers extensive training in the analysis of survey data to a broad array of South Africa’s academics, graduate students and researchers from NGOs and government.

**Director:** Professor M. Leibbrandt  
**E-mail:** Murray.Leibbrandt@uct.ac.za  
**Web:** www.saldru.uct.ac.za
DOCTORAL GRADUATIONS

S. GOODMAN (SCHOOL OF MANAGEMENT STUDIES)
An evaluation of a social context training programme for South African magistrates
Supervised by Professor J. Louw-Potgieter

L.F. JOHNSON (SCHOOL OF MANAGEMENT STUDIES)
The interaction between HIV and other sexually transmitted infections in South Africa: a model-based evaluation
Supervised by Professor R.E. Dorrington and Professor D. Bradshaw

C. KULARATNE (SCHOOL OF ECONOMICS)
Institutional and macroeconomics policy dynamics in transition economies
Supervised by Professor J. Fedderke and A/Professor N. Viegi

B. MAUGHAN-BROWN (SCHOOL OF ECONOMICS)
A multidimensional quantitative evaluation of HIV/AIDS-related stigma in Cape Town, South Africa
Supervised by Professor N. Nattrass

N. SAMOUILHAN (SCHOOL OF ECONOMICS)
Risks and returns in the globalised South African equity market
Supervised by Dr C. van Walbeek

K. WOTELA (SCHOOL OF MANAGEMENT STUDIES)
Deriving traditional reproductive regimes to explain subnational fertility differentials in Zambia
Supervised by Dr T. Moultrie

T.L. ZUZE (SCHOOL OF ECONOMICS)
Equity and effectiveness in East African primary schools
Supervised by Professor M. Leibbrandt and Professor V. Lee

RESEARCH OUTPUT

DEPARTMENT OF ACCOUNTING

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


Peer-reviewed published conference proceedings


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Research Output
AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


DataFirst, a small, dedicated unit in the Faculty of Commerce, signed a contract with the Organisation for Economic Co-operation and Development (OECD) to provide technical assistance, support and training in the installation and maintenance of an online survey data catalogue system for the National Statistics Offices of Liberia, Ethiopia, The Gambia, Nigeria, Mozambique and Ghana. This, it is hoped, will revolutionise the way national survey data is stored and retrieved in these countries.

The new web-based cataloguing tool, called the National Data Archive, was developed by the International Household Survey Network, a World Bank and OECD funded initiative, and will bring data management in Africa up to speed with global norms. DataFirst will provide support to ensure survey data from these countries are preserved and, importantly, made accessible to decision-makers and researchers.

The research impact of the initiative is significant. It aims to revolutionise the way in which national survey data is stored and accessed in several African countries, helping to improve data management and access in the region. The DataFirst initiative is expected to have a lasting impact on the way data is handled in these countries, making it easier and more efficient for researchers and policymakers to access and use this valuable information.

### References


STATISTICS PAPER WINS
UCT’S FIRST HERBERT SICHEL MEDAL

Associate Professor Iain MacDonald of the Department of Actuarial Science has become the first UCT academic to win the coveted Herbert Sichel Medal, named after the late Professor Herbert Sichel. The medal is awarded annually to a member (or members) of the South African Statistical Association (SASA) whose paper appeared during the previous calendar year and was judged best by a panel of judges appointed by the Association. Papers are ranked according to four criteria: Impact, Innovation, Relevance and Quality of Writing.

The 2008 winning publication was "Modeling Time Series of Animal Behavior by means of a Latent-State Model with Feedback" (Biometrics, 64(3): 807-15), which was co-authored by Professors Walter Zucchini of the University of Göttingen, David Raubenheimer of the University of Auckland and Iain MacDonald. Professors Zucchini and MacDonald, being members of SASA, each received a medal. Professor MacDonald’s research interests span applied probability, new time series models, especially for discrete-valued observations, and hidden Markov models and their extensions, as well as stochastic volatility models in finance.
ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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In 2006, the South African Presidency embarked on an intensive multi-million rand effort to track - and understand - the shifting face of poverty by closely following more than 28,000 people, young and old, rich and poor, over a period of years. Known as the National Income Dynamics Study (NIDS), this is the first national household panel study in South Africa. UCT won the tender for the first and second waves of the study, which falls under the umbrella of the Southern African Labour and Development Research Unit (SALDRU) in the School of Economics.

In 2008, about 300 fieldworkers launched the survey by administering a detailed set of questionnaires in about 7,500 households from 400 areas across the country, as part of the first wave of NIDS. A key feature of the panel study is its ability to follow people as they move out of these original households, whether they’re migrant workers, young married couples or students. The survey will also reveal important information about issues like internal migration, birth and death, savings, health, education and spending patterns. Such understanding is central to the project of social upliftment in South Africa. Data from this study will be archived by DataFirst, and will be freely available from mid 2009 and in the years ahead.

The SALDRU team are (from left, standing) Professor Murray Leibbrandt, Vuyokazi Klaas, Nobubele Mata, Tim Brophy, Sheila Muizenheimer, Kaloni Klaasen, Dorcas Anguria, Vimal Ranchhad, Arden Pins, and Michelle Chinhema, and seated (from left) Mastoera Sadan (from The Presidency), Dr Ingrid Willard, and Louise de Villiers.

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ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


RESEARCH OUTPUT


RESEARCH OUTPUT

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

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


INDEX

ACADEMIC DEVELOPMENT PROGRAMME
CENTRE FOR EDUCATIONAL TECHNOLOGY
CENTRE FOR INFORMATION LITERACY
CENTRE FOR OPEN LEARNING
HIGHER AND ADULT EDUCATION
AND DEVELOPMENT STUDIES UNIT
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).

An overview of CHED’s research output points to a body of scholarship which is responsive to pressing national and institutional needs in higher education. Examples include research into the interface between schooling and higher education and issues of access, selection and placement; improving the quality of teaching and learning in discipline-specific contexts such as Mathematics, Chemistry, Physics and Information Systems; the role of tertiary educators in a changing higher education landscape; and the challenges and possibilities of Information and Communication Technology for teaching and learning. CHED contributes to national debate on these issues, among many, through a strong presence in South African journals (e.g. South African Journal of Higher Education, Southern Africa Linguistics and Applied Language Studies, South African Computer Journal, South African Journal of Libraries and Information Science). CHED’s contribution extends internationally as CHED staff are now consistently publishing in the leading journals in higher education (e.g. Teaching in Higher Education, Higher Education, British Education Research Journal) as well as leading journals in specialist areas (e.g. Journal of Applied Linguistics, American Journal of Physics, British Journal of Educational Technology). This illustrative sample of journals in which CHED staff publish also points to the multidisciplinary nature of CHED’s collective research output.

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

ARTICLES IN PEER-REVIEWED JOURNALS


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RESEARCH OUTPUT

CENTRE FOR EDUCATIONAL TECHNOLOGY

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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INFORMATION LITERACY UNLOCKS GROWTH

The Centre for Information Literacy hosted the sixth in a global series of 11 UNESCO Information Literacy Workshops in October 2008. Staff members Professors Karin de Jager, Peter Underwood and Mary Nassimbeni joined colleague Professor Albert Boekhorst of the University of Amsterdam to deliver the three-day workshop.

UNESCO strongly advocates the building of knowledge societies where the power of information and communication helps people access the knowledge they need to improve their daily lives and achieve their full potential. In this context, information literacy has become key as a means to empower people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals.

The Centre for Information Literacy was invited to host the workshop for sub-Saharan Africa. Among other host institutions are Bibliotheca Alexandrina, Punjabi University, Wuhan University, University of Beijing, and Universiti Teknologi Mara in Kuala Lumpur. The purpose of the UCT workshop was to assist librarians design their own training programmes based on an appropriate conceptualisation of information literacy for their environment, incorporating sound principles of curriculum design, assessment, monitoring and evaluation.
CENTRE FOR INFORMATION LITERACY

ARTICLES IN PEER-REVIEWED JOURNALS


POEM PUBLISHED IN JOURNALS


CREATIVE WORK

MUSICAL PERFORMANCE

FISKE, I.J. (WRITING AS DE KOK). The poem Women and Children First, set to music by composer Chris Gable; the piece was performed by the choir One Voice Mixed Chorus and the Minnesota Philharmonic on December 5 and 6, 2008 in Hopkins, Minnesota.

CENTRE FOR OPEN LEARNING

AUTHORED BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


RESEARCH OUTPUT

ARTICLES IN PEER-REVIEWED JOURNALS


POEM PUBLISHED IN JOURNALS


POEM PUBLISHED IN ANTHOLOGIES


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HIGHER AND ADULT EDUCATION STUDIES AND DEVELOPMENT UNIT

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BODY MAPS/MAPPE DEL CORPO

Associate Professor Ingrid Fiske (Centre for Extramural Studies), who writes her poetry as Ingrid de Kok, launched a selection of poetry, translated into Italian by University of Rome scholar Professor Paola Splendore.

The English title, Body Maps, was taken from the name of one of her poems. The anthology Mappe del Corpo, includes poems from De Kok’s last four collections. Her poetry books Familiar Ground, Transfer, and Terrestrial Things were published in South Africa, and her work has been also been translated into Japanese, French and Dutch.
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DEPARTMENT OF PHYSICS
DEPARTMENT OF STATISTICAL SCIENCES
DEPARTMENT OF ZOOLOGY
SCIENCE
Our focus is on the quality, impact and international competitiveness of our research activities. With 75% of our academic staff holding an NRF rating, and half of our rated researchers being in the A (13) or B (47) rating categories, our Science Faculty is well positioned to play a key role in contributing to national and global research scholarship in science. At the end of 2008, Professors William Bond, George Branch, Jean Cleymans, George Ellis and Brian Warner renewed their NRF A ratings while Professor Jill Farrant from the Department of Molecular and Cell Biology joined the ranks of our A-rated scientists. Congratulations to all our newly-rated scientists and those who have renewed their ratings.

The Faculty of Science was awarded seven Chairs by the South African Research Chairs Initiative (SARChI) during 2007. These SARChI awards provide us with a wonderful capacity-building opportunity and we are seeing growth in the numbers of our postdoctoral fellows, a cohort of young researchers who are innovative in their approach to solving research problems.

Our Postgraduate Publication Incentive scheme was introduced in 2006 to encourage postgraduate students who are completing their higher degrees to remain at UCT for a few months after submission of their dissertation to write articles for publication in peer-reviewed journals. Funding is provided for a short period of time. The intention was to strengthen the research ethos in departments and ensure that most of the publishable work done during the course of a Master’s or Doctoral degree was not left in an incomplete format due to the need of students to earn some income during the period, typically, between their submission and correction stage. The scheme is proving to be extremely successful with 25 publication ‘units’ accruing from postgraduate student publications in 2007.

Our academic colleagues were awarded several honours and prizes during 2008. Professor Doug Butterworth was awarded the Order of Mapungubwe: Silver by the President of South Africa for his excellent contribution to the betterment of the environment and sustainability of fisheries; Professor Johann Lutjeharms received a National Science and Technology Forum award for his individual research contribution over a lifetime; Dr Peter Bruyns won the UCT Book Award for his 600-page, two-volume monograph on Stapeliads and Ms Andrea Plos received the Derek Krige Award for her Outstanding Technical Contribution to Marine Sciences. Professors Judith Sealy and Igor Barashenkov were elected Fellows of the University of Cape Town while Dr Lindsey Gillson, Dr David Braun and Dr Chris Clarkson received Research Fellow Awards. Our postgraduate students earned national and international acclaim for the quality of their work. Samantha Peterson and Ross Wanless were the winner and third place laureate respectively in the UNEP/CMS Thesis Award on Migratory Species Conservation. Pippin Anderson and Diane Southey received prizes for Best Paper Presentation and Best Student Presentation respectively at the Interface Conference of the Fynbos and Arid-Zone Ecology Fora. Dorit Hockman was awarded the South African Association for the Advancement of Science Medal for the most outstanding Master’s thesis. Grace Mugumbate received a Women in Science Fellowship from the Department of Science and Technology. Sibonelo Nyongo won the Ozan Sungurlu Memorial Award for the Best International Student poster at the American Association of Petroleum Geologist International Conference. Simon Power won the Hannes van Staden Prize for the Best Oral Paper by a Young Scientist at the S A Association of Botany conference. Lynne Quick was awarded the best student paper prize at the Third Southern Deserts (International Geological Correlation Programme) conference.

Looking forward, our scientists will play a role in research on multidisciplinary contemporary topics including climate change, the sustainability of plant and animal species and habitats under changing climatic conditions, earth stewardship science, Information and Communication Technology for Development, the Karoo Array Telescope, the development of effective vaccines to combat malaria and HIV, experiments on the Large Hadron Collider at CERN, and many other exciting individual and group projects with fellow researchers here and around the world.

Professor Kathy Driver
Dean of Science
ANIMAL DEMOGRAPHY UNIT
The mission of the Animal 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.

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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 solved 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.

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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). CTPA is part of the National Institute of Theoretical Physics. CTPA has ten 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.

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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.

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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.

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INFORMATION & COMMUNICATIONS TECHNOLOGY CENTRE FOR DEVELOPMENT (ICT4D)
ICT4D was established in 2008 to capitalise on UCT’s unique position in the ICT domain, namely producing world-class ICT research but being based in a developing economy. Incorporating researchers from across the University, the Centre looks to create ICT solutions that can be applied in a developing world context. Being the only such centre in a developing country, we have been able to attract researchers and students from across the globe. The Hasso Plattner Institute Research School in ICT4D is scheduled for launching in 2009 and will be based within the wider structure of the Centre.

Director: Associate Professor G. Marsden
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MARINE RESEARCH INSTITUTE
The Marine Research (MA-RE) Institute is one of UCT’s Signature Themes, serving as an umbrella body to stimulate and coordinate marine research across all faculties and departments involved in research into the salty waters around southern Africa. It also serves as a window between the outside world and UCT for marine research and marine contracts. The MA-RE Institute has two SARChI chairs associated with it, and has been instrumental in getting the Africa Centre for Earth System Science (ACCESS) off the ground. It co-ordinates a Master’s degree in Applied Marine Studies (by course work and dissertation), runs a weekly seminar series, and has initiated bi-lateral research and teaching exchange agreements with Norwegian, French, British, European Union, and American institutions. It has also played an important role in promoting marine research in the South African Global Change Grand Challenge and in the marine component of the India-Brazil-South Africa (IBSA-Ocean) trilateral agreement on science and technology. MA-RE is active in outreach to the
public through interactive sessions at schools, the Two Oceans Aquarium and Science Centres. MA-RE also participates in the national Science Festival (Scifest), and in developing curriculum-relevant educational resources concerning the role of the oceans in climate change.

**Director:** Professor J.G. Field  
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**PERCY FITZPATRICK INSTITUTE OF AFRICAN ORNITHOLOGY**  
The Percy FitzPatrick Institute of African Ornithology (affectionately known as the Fitztitute) is housed within the Zoology Department. The Fitztitute has an international reputation for high-quality 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 one of the original six (now seven) National 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 postgraduate students and the pursuit of primary research, from evolutionary ecology to conservation biology.

**Director:** Professor P. Hockey  
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**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  
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**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  
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**DOCTORAL GRADUATIONS**

**R.M. ADAMS (DEPARTMENT OF PHYSICS)**  
Flux corrected transport applied to hydrodynamics for heavy ion collisions  
**Supervised by** Professor J. Cleymans and Dr A. Muronga

**P.M. ANDERSON (DEPARTMENT OF BOTANY)**  
The impacts of grazing along an environmental gradient in the Kamiesberg, South Africa  
**Supervised by** Professor T. Hoffman

**J. AYOREKIRE (DEPARTMENT OF ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE)**  
Planning for sustainable tourism development in the Lake Victoria shore region of Uganda: a physical environment planning approach  
**Supervised by** Professor M.E. Meadows

**C. BLACKMAN (DEPARTMENT OF ASTRONOMY)**  
The hunt for Quasi-periodicities with Wavelet and Camera  
**Supervised by** Professor B. Warner

**M. CARSTENS (DEPARTMENT OF MOLECULAR AND CELL BIOLOGY)**  
Understanding the mechanisms of cir1 disease resistance in Arabidopsis thaliana  
**Supervised by** Dr K.J. Denby and Professor N. Illing

**J. CODRON (DEPARTMENT OF ARCHAEOLOGY)**  
Annals of ivory: perspectives in African elephant Loxodonta africana (Blumberg 1797) feeding ecology from a multi-decadal record  
**Supervised by** Professor J. Sealy and A/Professor J. Lee-Thorp

**F. CONRAD (DEPARTMENT OF BOTANY)**  
Molecular systematics, biogeography and dating of the tribe Haemantheae (Amaryllidaceae) and phylogeography of Clivia  
**Supervised by** Professor T.A. Hederson

**K.A. DE VILLIERS (DEPARTMENT OF CHEMISTRY)**  
Structural characterisation of ferric haem in solution: insights into the mechanism of formation of malaria pigment and its inhibition by aryl methanol antimalarial drugs  
**Supervised by** Professor T. Egan

**R.K. GESSNER (DEPARTMENT OF CHEMISTRY)**  
Synthesis and structure-activity relationship studies of novel anti-infectives for cross screening in tuberculosis and malaria disease models  
**Supervised by** Professor K. Chibale

**C. GILDENHUYYS (DEPARTMENT OF MOLECULAR AND CELL BIOLOGY)**  
Investigation of the role of the extracellular Beta-agarase, produced by the bacterial epiphyte Pseudoalteromonas sp. LS2i, in the virulence response towards the agarophyte Gracilaria gracilis  
**Supervised by** A/Professor V.E. Coyne and Dr K.J. Denby
K. HAGEMANN (DEPARTMENT OF ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE)
Mesoscale wind atlas of South Africa
Supervised by Professor B. Hewitson

K. HANSINGO (DEPARTMENT OF OCEANOGRAPHY)
An investigation into the impacts of the Benguela Niño on rainfall over southern Africa
Supervised by Professor C.J.C. Reason

P.A. JOHNSTON (DEPARTMENT OF ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE)
The uptake and utility of seasonal forecasting products for commercial maize farmers in South Africa
Supervised by Professor B. Hewitson

S.J. LAMBERTH (DEPARTMENT OF ZOOLOGY)
Approaches to assessing the status of nearshore and estuarine fish and fisheries and their responses to environmental change
Supervised by Professor G.M. Branch

J.A. LEACH (DEPARTMENT OF MATHEMATICS AND APPLIED MATHEMATICS)
Alternative theories of gravity and its application to cosmology
Supervised by Professor P.K.S. Dunsby

C.J. LENNARD (DEPARTMENT OF ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE)
Identification and simulation of extreme precipitation using a computationally inexpensive methodology
Supervised by Professor B. Hewitson

N.C. MACKELLAR (DEPARTMENT OF ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE)
Simulating the effects of land-surface change on southern Africa’s climate
Supervised by Professor B. Hewitson

C.A. MAGWIRA (DEPARTMENT OF MOLECULAR AND CELL BIOLOGY)
Molecular diversity of faecal Lactobacillus species in stone-free black and white population groups and their possible role in kidney stone disease
Supervised by A/Professor V. Abratt and A/Professor S.J. Reid

A.J. MANHIQUE (DEPARTMENT OF OCEANOGRAPHY)
The South Indian Convergence Zone and relationship with rainfall variability in Mozambique
Supervised by C.J.C. Reason

P. MANYANGA (DEPARTMENT OF BOTANY)
Evolution of Life history strategies in Lophaziaceae
Supervised by Professor T.A. Hedderson

A.T. MAREDZA (DEPARTMENT OF MOLECULAR AND CELL BIOLOGY)
Isolation of the aldose reductase gene (XvAld1) from the resurrection plant Xerophyta viscosa, and characterisation of the gene product and transgenic plants expressing the gene
Supervised by Professor J.A. Thomson and Professor J.M. Farrant

N. MARTINS-FERREIRA (DEPARTMENT OF MATHEMATICS AND APPLIED MATHEMATICS)
Low-dimensional internal categorical structures in weakly Mal’cev sesqui-categories
Supervised by Professor G. Janelidze

L. MHLANGA (DEPARTMENT OF ZOOLOGY)
Environmental variables and the development of phytoplankton assemblages in hyper-eutrophic African reservoir
Supervised by Professor J. Day

E. MINANI (DEPARTMENT OF PHYSICS)
Microstructure, stress and defect evolution under illumination in hydrogenated amorphous silicon (a-Si:H)
Supervised by A/Professor D.T. Britton and A/Professor M. Haertingt

G. MUCHATIBAYA (DEPARTMENT OF MATHEMATICS AND APPLIED MATHEMATICS)
Mathematical modelling of unsteady contact melting
Supervised by Professor T.G. Myers

P. MUKHEIBIR (DEPARTMENT OF ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE)
Water, climate change and small towns
Supervised by Professor S. Parnell and Professor B. Hewitson

J. MULEMA (DEPARTMENT OF MOLECULAR AND CELL BIOLOGY)
Molecular characterization of the arabidopsis thaliana: botrytis cinerea interaction
Supervised by Dr K. Denby and A/Professor V. Coyne

S.E. NEIRA ALARCON (DEPARTMENT OF ZOOLOGY)
Assessing the effects of internal (trophic structure) and external (fishing and environment) forcing factors on fisheries off Central Chile: basis for an ecosystem approach to management
Supervised by Dr C. Moloney, Professor V. Christensen and Dr P. Cury

V.P. NEMBAWARE (DEPARTMENT OF MOLECULAR AND CELL BIOLOGY)
Genome-wide survey and analysis of allele-specific splicing in human and mouse
Supervised by Professor C. Seoighe

T.L. NOWELL (DEPARTMENT OF BOTANY)
The spatial and temporal dynamics of diversification in Tylecodon, Cotyledon and Andromischus (Crassulaceae) in Southern Africa
Supervised by Dr T. Verboom and Professor J.J. Midgley
B.O. Osano (Department of Mathematics and Applied Mathematics)
Beyond the standard model of cosmology: a perturbative approach
Supervised by Professor P.K.S. Dunsby

B.E. Owor (Department of Molecular and Cell Biology)
Maize streak virus (MSV) diversity in Uganda and the assessment of gene silencing as a tool for development of resistance to MSV
Supervised by Professor J.A. Thomson and Dr D. Shepherd

D.C. Patel (Department of Computer Science)
Photo searching on small screen devices
Supervised by A/Professor G Marsden

S. Petersen (Department of Zoology)
Understanding and mitigating vulnerable bycatch in southern African longline and trawl fisheries
Supervised by A/Professor P.G. Ryan, Dr L. Compagno, Professor PG. Underwood and Dr R. Nel

M.W. Phorah (Department of Astronomy)
The effects of radiation and convection on stellar oscillations
Supervised by Dr T. Medupe

N. Stellenboom (Department of Chemistry)
Synthesis and inclusion studies of stable allicin mimics as novel antimicrobial agents
Supervised by Professor R. Hunter and Professor M.R. Caira

I.D. Tembo (Department of Mathematics and Applied Mathematics)
Aspects of spectral theory for algebras of measurable operators
Supervised by Dr J. Conradie

A.M. Ukpong (Department of Physics)
Modelling of defect states in covalent amorphous solids
Supervised by A/Professor D.T. Britton and A/Professor M. Haertingt

Z. Valley-Omar (Department of Molecular and Cell Biology)
RNA transmission and expression from inert HIV candidate vaccine virus-like-particles
Supervised by Professor E. Rybicki, Dr A. Meyers and Professor E. Shephard

E. Van der Walt (Department of Molecular and Cell Biology)
Experimental investigations of mastrevirus molecular biology and evolution
Supervised by Professor E. Rybicki and Dr D. Martin

W.M. Van Wyngaardt (Department of Chemistry)
A new liquid scintillation counting technique to resolve mixtures of two pure beta-emitting radionuclides
Supervised by A/Professor G. Jackson and Dr S. Simpson

S.A. Walford (Department of Molecular and Cell Biology)
Activation of seed-specific genes in leaves and roots of the desiccation tolerant plant, Xerophyta humilis
Supervised by Professor N. Illing

M.N. Walton (Department of Computer Science)
Semiotic machines: software in discourse
Supervised by Professor G. Marsden and Dr L. Fordred

M. Weigt (Department of Mathematics and Applied Mathematics)
Jordan homomorphisms and derivations on algebras of measurable operators
Supervised by Dr J. Conradie

V.K. Zishiri (Department of Chemistry)
Synthesis, antimalarial evaluation and structure-activity relationship in a series of dibenzylmethylamine (dibemethin) derivatives of 4-amino-7-chloroquinoline
Supervised by Professor T. Egan and Professor R. Hunter
PROVISIONAL PATENTS


GRANTED PATENTS


DEPARTMENT OF ARCHAEOLOGY

AUTHORED BOOKS


CHAPTERS IN BOOKS


ENCYCLOPEDIA ENTRIES


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DEPARTMENT OF ASTRONOMY
EDITED BOOKS


CHAPTERS IN BOOKS


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RESEARCH IMPACT

MATHEMATICIAN’S BOTANICAL GEM WINS BOOK PRIZE

Dr Peter Bruyns’ 25 years of research, travelling to remote parts of the globe in search of a group of fleshy-stemmed succulents known as Stapeliads, has earned him the UCT Book Award. A mathematician specialising in the theory of permutation groups, Dr Bruyns is an unlikely author for a monograph on plants. His two-volume Stapeliads of Southern Africa and Madagascar is the first complete account of the group since American botanists Alain C White and Boyd L Sloane’s three-volume The Stapelieae was published in 1937.

Stapeliads are succulents with striking, pentagonal-shaped flowers belonging to the family Apocynaceae, quite plentiful in the drier parts of Africa but generally considered very difficult to identify. Dr Bruyns’ work - all 600 pages of it - deals with all 182 of the region’s Stapeliads in great detail, including his own illustrations, line drawings showing the small details of the complex flowers, as well as photographs and distribution maps.

This work has brought together information from many sources, the results of exploration and research over the past 60 years on southern African Stapeliads, i.e. those found in Botswana, South Africa, Namibia, Zimbabwe, Mozambique and Madagascar.


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Dr Anwar Jardine of the Department of Chemistry has received a grant from the Bill & Melinda Gates Foundation worth US $100,000 for his project which aims to develop treatment for multi-drug-resistant strains of tuberculosis (TB). Awarded by the Foundation’s Grand Challenges Explorations, the grant was one of 105 awards made, and one of only three to African recipients.

Only in its first stages, Jardine’s research has targeted a relatively newly discovered pathway critical to the survival of TB-causing bacteria, and protocols have been set up to test the hypothesis that blocking this pathway will kill the latent form of the bacteria. ‘Much like humans, bacteria create molecules to protect themselves from attack,’ explains Jardine. ‘By blocking this molecule’s assembly pathway and subsequent use, the TB-causing bacteria’s defence is weakened and they become more vulnerable to existing TB medication.’ As well as understanding how this molecule is used by the bacteria to protect themselves, Jardine’s research is aimed at contributing toward finding new potential drugs that will minimise the chance of resistance, which is a common problem with current therapeutic regiments.


LE ROEX, T., NASSIMBENI, L.R. AND TODA, F. 2008. Separation of (S)-[1-3-Methyl-2-pyrrolidinone as an Inclusion Complex with (R)-[+]-4,4',6,6'-Tetrachloro-2,2'-bis[hydroxy-diphenylmethyl]-1,1'-biphenyl host and its X-ray structural study. Journal of Chemical Crystallography, 38: 77-79.


SIVARAMAKRISHNA, A., CLAYTON, H.S., MAHKUBELA, B.C.E. AND MOSS, J.R. 2008. Platinum based mixed-metal clusters (PtM_n(CO)_yL_z; M = Ru or Os; n + m = 2 to 10 and L_y = other ligands)-synthesis, structure, reactivity and applications. Coordination Chemistry Reviews, 252: 1460-1485.


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ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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SUSTAINABLE DEVELOPMENT IN AFRICA

Dr Ralph Hamann of the Environmental Evaluation Unit at UCT has spearheaded the launch of The Business of Sustainable Development in Africa: Human rights, partnerships, alternative business models, a book that seeks to enhance the contribution of business to sustainable development in sub-Saharan Africa.

The book, co-edited with S. Woolman and C. Sprague, argues that the business community has an important role to play by better understanding the roles of sustainable development and its implications when making decisions.


ARTICLES IN PEER-REVIEWED JOURNALS


Small towns in the western parts of South Africa will be particularly vulnerable to the drier conditions expected in the wake of climate change, says Dr Pierre Mukheibir.

His DPhil thesis examined the interrelationship between water, climate change and small towns by asking three questions: Can climate change be integrated into existing planning frameworks? Can small towns build resilient strategies against projected climate change impacts? And, is adaptation to climate change an economic issue? Dr Mukheibir used Bredasdorp as a case study as it is typical of small towns in South Africa’s semi-arid regions.

His thesis introduced a framework, Water Resources Adaptation Planning (WRAP), designed to take municipal and water planners through a process of identifying the hotspots in terms of both climate and social vulnerability, to develop a range of options to cope with the impact of climate change on their water resources. Dr Mukheibir suggests that small towns should develop their water adaptation responses by including an assessment of existing climate variability responses. By screening these against quantitative and qualitative criteria, planners can identify robust strategies for ensuring sustainable water supplies.
ARTICLES IN PEER-REVIEWED JOURNALS


ARTICLES IN PEER-REVIEWED JOURNALS


NRF GRANT FOR MODIFIED GRAVITY RESEARCH

Professor Peter Dunsby and several members of UCT’s Cosmology and Gravity Group (Department of Mathematics and Applied Mathematics) received two grants amounting to R1 million from the National Research Foundation for the second three-year phase of a project to solve the dark energy conundrum.

The project results from a bilateral agreement between South Africa and Italy. Professor Dunsby has been collaborating with Professors Salvatore Capozziello and Claudio Rubano of Naples University and a number of postdoctoral researchers to throw new light on dark energy. Dark energy is one of the big questions perplexing cosmologists.

Dark energy is a hypothetical form of energy that fills space and acts in a way that increases the rate of expansion of the universe. Cosmologists use the existence of dark energy to explain recent observations that the universe appears to be expanding at an accelerating rate. Professor Dunsby and his collaborators want to explain the elusive dark energy problem and cosmic acceleration by modifying Einstein’s theory of relativity on cosmological scales rather than invoking a Cosmological Constant or exotic scalar fields.


Articles in Peer-Reviewed Journals


Best Emerging Young Scientist Award for work on Maize streak virus

Dr Dionne Shepherd of the Department of Molecular and Cell Biology netted the Best Emerging Young Scientist Award at the Department of Science and Technology’s 2008 Women in Science Awards. Dr Shepherd was recognised for her work on strategies for the development of genetically-engineered maize resistant to the maize streak virus (MSV). In her PhD research, Dr Shepherd showed for the first time that MSV resistance was possible through genetic engineering, and developed a model system to test potential resistance.


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DEPARTMENT OF OCEANOGRAPHY (INCLUDING THE RESEARCH DIVING UNIT)

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


LIFETIME AWARD FOR DEDICATED RESEARCH ON OCEANS

Professor Johann Lutjeharms of the Department of Oceanography was awarded the 2008 Individual Over a Lifetime Award at the 10th National Science and Technology Forum awards ceremony. The award recognises his dedicated and innovative research on oceans and how they affect our weather and climate. The effect of changes in the physical environment, including climate change and environmental degradation on the well-being of the South African people, is being increasingly recognised, and he has provided decision makers with knowledge to inform their activities. He was one of the pioneers of the use of satellite remote sensing techniques in combination with in situ observations.


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ARTICLES IN PEER-REVIEWED JOURNALS


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DEPARTMENT OF STATISTICAL SCIENCES

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


DEPARTMENT OF ZOOLOGY
(INCLUDING THE PERCY FITZPATRICK INSTITUTE
AND DST/NRF CENTRE OF EXCELLENCE IN BIRDS AS
KEYS TO BIODIVERSITY CONSERVATION)

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


MARINE ECOSYSTEM UNDER THREAT

Dynamite fishing is having a severe impact on the coral reefs along the Tanzanian coast. Combined with the effects of overfishing, this is placing the entire marine ecosystem, which supports a population of threatened coelacanths, under extreme pressure. Conservation biology Master’s student Tessa Hempson from UCT’s Percy FitzPatrick Institute of African Ornithology joined a team of researchers from the African Coelacanth Ecosystem Programme to study the extent of the damage to the reefs in the Tanga region along the northern Tanzanian coast. Based on the long hours Hempson spent underwater carrying out fish counts and reef surveys, she describes the level of destruction as ‘dire’.

‘Dynamite fishing not only indiscriminately kills all fish and invertebrates within range of the blast, but also destroys the reef structure itself, often reducing it to rubble,’ she says. As the reef, which feeds the fishing population, can take up to fifty years to recover, or not recover at all, this destructive and dangerous practice affects not only the ecosystem, but also the subsistence fishing community in the area.

‘It is neither legal nor condoned by the fishing community,’ explains Hempson. ‘Patrols scout the area, but funds for boat costs are limited and there are reports of intimidation and bribery.’ Hempson’s research provides some of the first empirical evidence of the impact of dynamite fishing on coral reefs, and the data she collected has already helped to support lobbies calling for government action against the practice in Tanzania.


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DEPARTMENT OF COMMERCIAL LAW
DEPARTMENT OF PRIVATE LAW
DEPARTMENT OF PUBLIC LAW
The Faculty’s three departments and their associated research units maintained their record of diverse research in 2008. The diversity is found not only in the subject matter but in the nature of the research, doctrinal research being complemented by applied research. Our research is also published in a variety of ways. For legal academics, books are one of the most prestigious ways in which to publish research findings. Highlights in this area in 2008 were *Unjustified Enrichment* by D. Visser, *Civil Jurisdiction Rules of the EU and their impact on Third States* by T. Kruger, *Justice and Reconciliation in Post-Apartheid South Africa* by F. du Bois & A. du Bois-Pedain and *Possibilities of Convergence* by PJ Schwikkard. Drucilla Cornell received the Franz Fanon Award for her book *Moral Images of Freedom*. Staff have also contributed a wide range of chapters to books, the number exceeding sixty. A number of Faculty members have also edited collections of essays and journals. Given the strong emphasis placed on books in legal academic life, it is also pleasing to see the increase in the number of journal articles published.

2008 saw the second award of a Faculty research prize for the best article written by a member of the non-professorial staff, the winner being Karin Lehmann (*In defence of the Constitutional Court; litigating socio-economic rights and the myth of the minimum core*), with Anne Pope (*Encroachment or accession? The importance of the extent of encroachment in light of South African constitutional principles*) being the runner up.

The Faculty has maintained its tradition of being engaged in socially responsive research. A number of staff members have been involved in the work of the South African Law Reform Commission and many of the research units regularly generate reports for use by both government and NGO sectors, their work being applied both nationally and internationally.

Over the last five years the Faculty has developed several interventions and incentives to promote research, and we were very fortunate to have Professor Jonathan Burchell to step in as Acting Director of Research in 2008 when Professor Danie Visser took up the position of Acting Deputy Vice-Chancellor. Given the relatively high staff/student ratio in the Faculty of Law, the role of Director of Research has been crucial in promoting research in the Faculty. The co-ordination and oversight of research efforts reside in CLEAR (Centre for Legal and Applied Research), administered by Sue Wright, to whom a debt of thanks is owed.

Members of the Faculty take the leading editorial role in two nationally significant law journals, the South African Law Journal and the South African Journal of Criminal Justice, and are solely responsible for the well-regarded Acta Juridica, now into its sixth decade of uninterrupted publication.

All of these activities combine to ensure that the reputation of the Faculty as a leading participant in legal research nationally, as well as a significant player globally, is justified.

Professor Hugh Corder
Dean of Law
**CENTRE OF CRIMINOLOGY**

The Centre of Criminology (previously the Institute of Criminology), founded in 1977, is a research unit which aims to initiate, coordinate 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 plays a leading role in development and labour law teaching and research. It is involved with 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.

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**INTELLECTUAL PROPERTY AND POLICY RESEARCH UNIT**

The Intellectual Property (IP) and Policy Research Unit assists in developing IP Law and Policy in southern Africa and aims to contribute to the manner in which this topic is treated in the emerging and developing countries throughout the world. The Unit is in a position to become an influential leader within southern Africa for research and scholarship in intellectual property law and policy. It seeks to explore many issues facing the changing world of IP and relate these to the needs of society, IP holders and consumers. The Unit is leading research projects in areas such as IP Rights & Innovation, Development, Copyright and Creative Commons, Nanotechnology and New Technologies.

**Director:** Professor J. Kinderlerer  
**E-mail:** Julian.Kinderlerer@uct.ac.za

**RESEARCH GROUPINGS**

**DOCTORAL GRADUATIONS**

**B.J. CROOME (DEPARTMENT OF COMMERCIAL LAW)**

Taxpayers’ Rights in South Africa: An analysis and evaluation of the extent to which the powers of the South African Revenue Service comply with the constitutional rights to property, privacy, administrative justice, access to information and access to courts

**Supervised by** Professor R.D. Jooste and Professor H.M. Corder

**R. FEETHILY (DEPARTMENT OF COMMERCIAL LAW)**

The development of commercial mediation in South Africa in view of the experience in Europe, North America and Australia

**Supervised by** Professor M. Larkin and Professor R. Christie

**R. LE ROUX (DEPARTMENT OF COMMERCIAL LAW)**

The regulation of work: whither the contract of employment? An analysis of the suitability of the contract of employment to regulate the different forms of labour market participation by individual workers

**Supervised by** Professor E.R. Kalula and Professor A. Rycroft

**V. ROCHESTER (DEPARTMENT OF COMMERCIAL LAW)**

Nautical fault: a historical and multi-jurisdictional study of the exemption for errors relating to navigation and management of the vessel in modern carriage law

**Supervised by** Professor J. Hare
AUTHORED BOOKS


EDITED BOOKS


RESEARCH OUTPUT


ARTICLES IN PEER-REVIEWED JOURNALS


**DEPARTMENT OF PRIVATE LAW**

**(INCLUDING THE CENTRE FOR SOCIO-LEGAL RESEARCH AND THE INTELLECTUAL PROPERTY LAW & POLICY RESEARCH UNIT)**

**AUTHORED BOOKS**


**CHAPTERS IN BOOKS**


ARTICLES IN PEER-REVIEWED JOURNALS


In March 2008 Professor Jwani Mwaikusa, who is the Head of the Department of Constitutional and Administrative Law at the University of Dar Es Salaam, visited UCT’s Department of Public Law to discuss a collaborative research initiative on Accountability and Constitutional Implementation on the African Continent. Professor Mwaikusa’s visit to Cape Town was part of the newly established partnership between UCT and the Universities of Dar Es Salaam, Tanzania and Warwick, United Kingdom, and kicked off the South-South element of a DelPHE funded partnership initiated by UCT’s Professor Christina Murray and Lia Nijzink.

The Department of Public Law is the lead partner in a South-North partnership established in 2007. The overall aim of this partnership is to build on existing expertise at the partner institutions, while generating comparative knowledge that is relevant to the policy goal of developing and deepening democratic governance and accountable government on the African continent. The Partnership is funded by the Development Partnerships in Higher Education – DelPHE Programme, of the British Council and the Department For International Development, UK. Later in the year, Associate Professor Danwood Chirwa and Lia Nijzink (Department of Public Law) visited the University of Dar Es Salaam as part of this partnership. The visit served to strengthen ties with both the Law Faculty and the Politics Department at the University of Dar Es Salaam, thus enhancing the multidisciplinary character of the collaboration.


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DEPARTMENT OF PUBLIC LAW
(INCLUDING THE CENTRE OF CRIMINOLOGY; INSTITUTE OF MARINE AND ENVIRONMENTAL LAW; LAW, RACE AND GENDER UNIT; DEMOCRATIC GOVERNANCE AND RIGHTS UNIT; AND REFUGEE RIGHTS PROJECT)

AUTHORED BOOKS


EDITED BOOKS


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ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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AFRICAN GENDER INSTITUTE
CENTRE FOR AFRICAN STUDIES
CENTRE FOR CONFLICT RESOLUTION
SCHOOL OF DANCE
DEPARTMENT OF DRAMA
SCHOOL OF EDUCATION
DEPARTMENT OF ENGLISH
LANGUAGE AND LITERATURE
CENTRE FOR FILM AND MEDIA STUDIES
MICHAELIS SCHOOL OF FINE ART
DEPARTMENT OF HISTORICAL STUDIES
ISAAC AND JESSIE KAPLAN CENTRE FOR JEWISH STUDIES

SCHOOL OF LANGUAGES AND LITERATURES
COLLEGE OF MUSIC
DEPARTMENT OF PHILOSOPHY
DEPARTMENT OF POLITICAL STUDIES
DEPARTMENT OF PSYCHOLOGY
DEPARTMENT OF RELIGIOUS STUDIES
DEPARTMENT OF SOCIAL ANTHROPOLOGY
DEPARTMENT OF SOCIAL DEVELOPMENT
CENTRE FOR SOCIAL SCIENCE RESEARCH
DEPARTMENT OF SOCIOLOGY
UCT LIBRARIES
The past year has been an exciting and productive one for the Faculty. We have seen a continued steady increase in subsidy-earning journal output units, which have now almost doubled since 2003. The Faculty boasts the largest number of honours, master’s and doctoral students (1182) within the University, although the number of postdoctoral fellows is lower than we would like and this has been targeted as an area for expansion. There are now 42 NRF rated researchers in the Faculty, with Professors Raj Mesthrie (Linguistics) and Mark Solms joining the ranks of A-rated scholars. Professor Solms is the only A-rated scholar in Psychology in South Africa and is a major contributor to UCT’s Brain and Behaviour Initiative.

In last year’s report we announced the award of four DST/NRF Research Chairs to Professors Carolyn Hamilton (Archive and Public Culture), Raj Mesthrie (Migration, Language and Social Change), Lungisile Ntsebeza (Land Reform and Democracy in South Africa) and Abdulkader Tayob (Islam, African Publics and Change), Lungisile Ntsebeza (Land Reform and Democracy in Africa Research Unit and the Social Surveys Unit. A number of book launches, including Porcupine (Jane Bennett), A new generation of African Writers: Migration, Material Culture and Language (Brenda Cooper), Stealing Empire (Adam Haut), Savage Systems: Religion and Colonialism (David Chidester), Shakespeare, Love and Service (David Schalkwyk), Understanding Naturalism (Jack Ritchie), Robert Brandon (Jeremy Wanderer) and At the Heart of Healing: Groote Schuur Hospital 1938-2008 (Howard Phillips and Anne Digby).

Significant grants from the Bill and Melinda Gates Foundation, Tearfund and UNAIDS for the African Religious Health Assets Programme (ARHAP) for the study of different aspects of religious health provision in sub-Saharan Africa, led by Jim Cochrane and Barbara Schmid.

A major contribution by members of the Centre for Social Science Research to the XVI International AIDS Conference in Mexico City in August 2008, reflecting ongoing cutting-edge research by the AIDS and Society Research Unit, the Democracy in Africa Research Unit and the Social Surveys Unit.

Hosting of the 5th Annual South African Dance conference in July 2008, entitled Confluences 5: High culture, mass culture, urban culture – whose dance?

The Italian Ministry of Foreign Affairs translation prize to Wilhelm Snyman for his translation of Carlo Michelstaedter’s Unconquerable spirit: George Stow’s History of the San (Ohio University Press) by Pippa Skotnes, at the same time as she curated a major exhibition of his work, George Stow and the Rock Art of the San, at the Iziko Museum in Cape Town.

Major public commissions of work for Fritha Langerman and for Gavin Young, and major exhibitions by Jay Pather (Spier Contemporary) and Virginia MacKenny.

The composition of eight choral works by Hendrik Hofmeyr which have been performed in Europe and the UK to significant acclaim.

The production of Afracartography, written by Mwenya Kabwe and directed by Jay Pather, at the World Festival of Drama Schools in Barcelona.

A brief review cannot do justice to the quantity, quality and diversity of research and creative output in the Faculty, but the following highlights are presented to give some flavour of this:

- The launch of Unconquerable spirit: George Stow’s History of the San (Ohio University Press) by Pippa Skotnes, at the same time as she curated a major exhibition of his work, George Stow and the Rock Art of the San, at the Iziko Museum in Cape Town.

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Last year, as part of the annual ad hominem promotion process, eight junior faculty members were successfully promoted from lecturer to senior lecturer. This is a record for the faculty in recent times and is significant for a number of reasons. All eight are members of designated groups, and the majority achieved their PhDs after being appointed to UCT. This celebrates the talent and expertise of the individuals themselves, but also speaks to the excellent research infrastructure (including the ERP programme, support for conference travel, generous sabbatical entitlement and support for research via the block grant system) at University and at Faculty level.

Professor Paula Ensor
Dean of Humanities
AFRICAN CINEMA UNIT
The African Cinema Unit was established during 2008. It is an initiative within the Centre for Film and Media Studies to promote the study of African cinemas. Research activities include historical, theoretical and critical work on African cinemas. The Unit also consists of film screenings and discussions in partnership with M-Net’s African Film Library and the annual Cape Winelands Film Festival. It further provides a space for scholars looking for primary materials on African cinemas in collaboration with the African Studies Library.

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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 POPULAR MEMORY
The Centre for Popular Memory is based in the Department of Historical Studies and is a Humanities Faculty priority project which focuses on: Oral history research projects including life histories of displaced peoples under apartheid and trans-national African refugees; Training in oral and visual history methodologies; Archiving of 3000 hours of multilingual audiovisual collections, with an online portal of all our electronic holdings; and Dissemination of peoples’ stories to scholarly and public audiences. Our lead community project is ‘Bridging the Digital Divide in Schools’. This involves teaching grade 9 and 10 learners to conduct oral history interviews and to create web pages using materials gathered. These and other research materials are accessible on our website.

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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 multidisciplinary 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) - currently, Bi School of Management, Oslo (Norway), the Faculty of Law and Philosophy at the University of Cluj-Napoca (Romania), the Institute for Interdisciplinary Studies at the University of Warsaw (Poland).

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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 participated in international research projects in religion, education and cultural heritage. ICRSA houses the peer-reviewed, accredited journal, Journal for the Study of Religion.

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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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LUCCY 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. LLAREC is now part of the Centre for Curating the Archive, which includes major photographic collections and a visual history archive, and projects that curate them.

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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, public theology, and public health in Africa. Its primary current activity is through the African Religious Health Assets Programme (ARHAP), a multi-institutional, multi-site, 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, with an anticipated expansion in India. Focusing on the interface between religion and public health in Africa, ARHAP has engaged in mapping and assessing religious health assets (RHAs), policy development and practice, capacity building (especially master’s and doctoral research), publications, a resource centre, and in helping build a global 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 on HIV and AIDS in the Eastern Cape, and country studies in Zambia, Mali and Uganda for the Bill and Melinda Gates Foundation, and in Kenya, Malawi and the DRC for Tearfund/UNAIDS, have been completed. New work is being undertaken on male interpersonal violence in three cities (South Africa and the USA) in conjunction with the Medical Research Council linked, UNISA-based Crime, Violence and Injury Lead Programme. RICSA has also completed a multi-year 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 2009.

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A.F. ASIIMWE (DEPARTMENT OF SOCIOLOGY)  
Gender dynamics in home ownership in Kampala, Uganda  
Supervised by Professor O. Crankshaw

M. AULEER OWDALLY (SCHOOL OF EDUCATION)  
Building bridges to primary education in Mauritius: Emergent literacy experiences in a foreign language context: A case study of preschool children  
Supervised by Professor D.N. Young and Dr L. Abel

D. AWERBUCK (SCHOOL OF LANGUAGES AND LITERATURES)  
The spirit and the letter: trauma, warblogs and the public sphere  
Supervised by Professor C.N. van der Merwe

R. BALCHIN (DEPARTMENT OF PSYCHOLOGY)  
The genesis and development of the Groot Schuur Neurocognitive Screening Battery: A Neurocognitive Screening tool for the South African context  
Supervised by Professor M. Solms

S.A. BOLOGNA (DEPARTMENT OF SOCIAL ANTHROPOLOGY)  
Nature and power: a critique of ‘people-based conservation’ at South Africa’s Madikwe Game Reserve  
Supervised by Professor A. Spiegel and Professor D. Brokensha

N. DAVIDS (DEPARTMENT OF DRAMA)  
Inherited memories: performing the archive  
Supervised by Dr Z. Erasmus and Ms Y. Banning

L.C. ENGELBRECHT (COLLEGE OF MUSIC)  
The operatic piano reduction as an art form: a critical evaluation  
Supervised by Professor F. Larey

S.M. GESCHIER (DEPARTMENT OF HISTORICAL STUDIES)  
The empathy imperative, primary narratives in South African history teaching  
Supervised by Dr S. Field and Professor C. Soudien

H.M. GOUSE (DEPARTMENT OF PSYCHOLOGY)  
Neuropsychological, functional and behavioural outcome and predictors of outcome in a sample of traumatic brain injury litigants  
Supervised by Professor M. Solms and Dr K. Thomas

S. HANSEN (CENTRE FOR FILM AND MEDIA STUDIES)  
From chef to superstar: Food media from World War II to the World Wide Web  
Supervised by Professor J. Higgins

J.C. HARDMAN (SCHOOL OF EDUCATION)  
New technology, new pedagogy? An activity theory analysis of pedagogical activity with computers  
Supervised by Professor P. Ensor

E.J. HURST (DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE)  
Style, structure and function in Cape Town Tsotsitaal  
Supervised by Professor R. Mesthrie

W.J. ISAACS-MARTIN (DEPARTMENT OF RELIGIOUS STUDIES)  
A violent origin: a girardian analysis of the scapegoating of Ali Ibn Abu-Talib in Shi’ite tradition  
Supervised by Professor D.S. Chidester

D. KAIJA (SCHOOL OF ECONOMICS)  
Employment and income diversification in rural Uganda: evidence from the 1999/2000 national housing survey  
Supervised by Professor N. Nattrass and Professor M. Leibbrandt

B. KANGUMU (DEPARTMENT OF HISTORICAL STUDIES)  
Contestations over Caprivi identities: from pre-colonial times to the present  
Supervised by Professor C.C. Saunders

C. KARUNGI MAFUMBO (DEPARTMENT OF POLITICAL STUDIES)  
Interventionist Foreign Policy: Uganda’s Security Challenges - A Study  
Supervised by Professor A. Seegers

S. KOMARAVALLI (DEPARTMENT OF RELIGIOUS STUDIES)  
Paul’s rhetorical use of complex metaphors in 1 Corinthians 3-4  
Supervised by Professor C.A. Wanamaker

J.M. MCMILLAN (DEPARTMENT OF SOCIOLOGY)  
What happens when the university meets the community? An analysis of service learning as ‘boundary work’ in higher education  
Supervised by Professor J. Graaff

V. NAIDOO (DEPARTMENT OF POLITICAL STUDIES)  
An examination of administrative ‘capacity’ to implement development programmes in South Africa  
Supervised by Professor R. Cameron

V. NDLOVU (DEPARTMENT OF SOCIOLOGY)  
Reproductive decisions among couples with HIV/AIDS in Zimbabwe. A descriptive qualitative study of a sample from Bulawayo  
Supervised by Professor K. Jubber

J.C.G. PEREIRA (DEPARTMENT OF POLITICAL STUDIES)  
Partisan identification in Africa: an exploratory study in Mozambique  
Supervised by Professor R. Mattes and Professor J. Seekings

B.M. RINK (DEPARTMENT OF ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE)  
Village people: Quartering de Waterkant in discourse and bricks  
Supervised by Dr S. Oldfield
A.E. SEBA-COLLETT (SCHOOL OF LANGUAGES AND LITERATURES)
The genesis of poetic prose in the works of Louis-Ferdinand Celine through the transgressive and maieutic agency of the figure of the double
Supervised by Professor J.L. Cornille

B.M.H. SHARPLES (SCHOOL OF LANGUAGES AND LITERATURES)
‘Cultures sans frontieres’ - Culture and resistance: authenticity and freedom. Cesarle Tchicaya, Achebe, Saloa, N’Dour, Makeba and the South African ‘cultural worker’ - The voice of the oppressed and the excluded; the authentic Black voice
Supervised by Professor A. Wynchank

H.D. VAN HEERDEN (SCHOOL OF LANGUAGES AND LITERATURES)
Function and meaning of metamorphosis in the ‘lais’ of Marie de France
Supervised by Professor C.E. Chandler and Dr E. Sienaert

M. VRANCKEN (SCHOOL OF LANGUAGES AND LITERATURES)
L’ideologie d’ousmane sembene: de L’oeuvre ecrite a L’oeuvre filmee
Supervised by Professor A. Wynchank and Professor J.-L. Cornille

L.G. WHITE (DEPARTMENT OF POLITICAL STUDIES)
Assessing Investment rationale: the case of Anglo American Corporation in Latin America
Supervised by Professor R.A. Schrire

AFRICAN GENDER INSTITUTE
AUTHORED BOOKS

CHAPTERS IN BOOKS

ARTICLES IN PEER-REVIEWED JOURNALS


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CENTRE FOR CONFLICT RESOLUTION

EDITED BOOKS


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Piano accompaniment by D. FOURIE for The Dying Swan: High School, Rondebosch, Cape Town (13 December 2008).


CREATIVE WORKS


PianoForte: Piano accompaniment by D. FOURIE for a presentation of 2nd year choreographies by UCT School of Dance students. UCT School of Dance Concert Venue, Cape Town (10 June 2008); Baxter Hall Alumni Reunion. Rosebank, Cape Town (June 2008); Hambly-Wise Fundraising Concert. Rondebosch Boys High School, Rondebosch, Cape Town (13 December 2008).


Anima: Co-performed by I. FREGE in a programme of original choreographies by third, fourthyear and Honours UCT dance students. UCT School of Studio Concert Venue, Cape Town. 26 August 2008.

Romeo and Juliet: The role of Friar Laurence performed by E. GREYLING for the CTCB. Artscape Opera House, Cape Town. 17-26 October 2008.


Dance UCT 2008: Words in Motion: Produced by G. SAMUEL and directed by L. RAIZENBERG in a programme choreographed and performed by members of various Cape Town dance companies for an extra-collaborative season hosted by UCT School of Dance. Baxter Theatre, Rosebank, Cape Town. 26 August 2008.

Serve Distilled: Produced and directed by L. RAIZENBERG with original choreographies by third, fourth year and Honours UCT dance students. UCT School of Dance Concert Venue, Cape Town. 26 August 2008.

Don Giovanni: Choreographed by L. RAIZENBERG for a collaborative production of the complete opera presented by the SA College of Music Opera School and Cape Town Opera. Baxter Theatre, Rosebank, Cape Town. 31 August - 6 September 2008.


Stay With Me: Choreographed by M. RANI for the Cape Youth Dance Company. Southside Zoo Venue, Edinburgh Arts Festival, Scotland. 7 June 2008.

Porgy and Bess: The complete opera choreographed by M. RANI for the Cape Town Opera Company. Deutsche Oper, Berlin, Germany. 1 July 2008.


Fo(u)r Omama: Choreographed by G. SAMUEL for the UCT School of Dance presentation at a Women's Day event hosted by the UCT Faculty of Health Sciences. Barnard Fuller Building, UCT Faculty of Health Sciences Campus, Observatory, Cape Town. August 2008.

Storyseeker: Shadow puppet play directed and co-scripted by G. SAMUEL for the Cherry Company. KwaSuka Theatre, Durban (19-29 June 2008); Howard College Theatre, University of KwaZulu-Natal, (12 October 2008); Internationale Puppentheateretag, Mistelbach, Austria (23 and 26 October 2008); International Danube School, Vienna (24 October 2008).


Summer Spectacular: Produced and directed by E. TRIEGGAARDT for CTCB and Dance For All Youth Company. Artscape Theatre, Cape Town. 27 February – 1 March 2008.


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(INCLUDING THE LITTLE THEATRE)

ARTICLES IN PEER-REVIEWED JOURNALS


CREATIVE WORKS

EXHIBITIONS


PERFORMANCES


PRODUCTIONS


KABWE, M. 2008. “Afrocartography: Traces of places and all things in between.” Writer, Performer. World Festival of Theatre Schools, Barcelona, Spain (1-30 September); HSRC Symposium on Knowledge and Transformation; Spier Estate, Stellenbosch (November).


RESEARCH IMPACT

CLANWILLIAM PROJECT NETS SECOND PIFER AWARD

The Living Landscapes Project in the Clanwilliam area has won its second Alan Pifer Research Award, made annually to one or more scholars whose work contributes to the welfare and advancement of disadvantaged South Africans. The annual award went to Associate Professor Mark Fleishman of the Department of Drama and Professor Pippa Skotnes of the Michaelis School of Fine Art for their interdisciplinary Living Landscapes project, bringing local history, drama, art and the richness of the Bleek Lloyd archive to the local Clanwilliam community. The project’s value also lies in the fact that it aims to return the heritage of Clanwilliam and surrounds, an historically and archaeologically rich area, to the community, to be cherished and sustained for future generations.

In 1999 Professor John Parkington of the Department of Archaeology won the Pifer Award for his contribution to the Living Landscapes enterprise. The Living Landscapes venture started in the mid-1990s, offering art workshops to fewer than 100 pupils annually. As the workshops expanded, hundreds of children arrived each year, with an average of 500 children now completing the week-long workshop each year.


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AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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(INCLUDING LINGUISTICS AND THE CENTRE FOR
CREATIVE WRITING)

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


NRF A RATING FOR SOCIOLINGUIST

Farm schooling and ‘Indian’ education under apartheid marked the early years of Professor Raj Mesthrie’s academic career, but fortunately didn’t limit his rise. Mesthrie was awarded an A rating by the NRF for his work which deals with linguistic subsets: subfields of language contact, variation and change, focusing on South Africa and the social history of some of its communities.

He has worked on several varieties of English, especially the ‘Indian English’ and ‘Black English’ of South Africa, on the pidgin Fanakalo, comparing it to early second-language versions of Xhosa and Zulu, and on the variety of Tamil that had developed in the sugar cane plantations of KwaZulu-Natal among the descendants of indentured workers.


CREATIVE WRITING

SHORT STORIES PUBLISHED IN A COLLECTION


SHORT STORY PUBLISHED IN A JOURNAL


POEMS PUBLISHED IN JOURNALS


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RESEARCH IMPACT

CENTRE FOR FILM AND MEDIA STUDIES (INCLUDING THE CENTRE FOR RHETORIC STUDIES)

AUTHORED BOOKS


CHAPTERS IN BOOKS


HARRY OPPENHEIMER FELLOWSHIP AWARD FOR DISTINGUISHED PROFESSOR OF RHETORIC

Distinguished Professor Philippe-Joseph Salazar, Director of the Centre of Rhetoric Studies, was named the 2008 recipient of the prestigious Harry Oppenheimer Fellowship Award. The award, initiated by the Oppenheimer Memorial Trust in 2001, ‘focuses unambiguously on excellence and is granted to candidates of the highest calibre to enable them to undertake a programme of cutting edge, internationally significant work’. It is considered as the premier research award in South Africa.

Professor Salazar’s work in rhetoric studies is particularly relevant to South Africa’s developing democracy. The award will enable him to begin research, while in residence at George Washington University, on a book primarily focused on American founding president George Washington – as a template for understanding what he terms ‘presidential ethics’. He believes that a rhetorical enquiry into presidential ethics has local relevance, in the same way that his forthcoming book Hyperpolitics (Paris, October 2009) was conceived as a gesture of scholarly engagement with the French presidential régime.


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTISTS’ BOOKS AND CATALOGUES


ARTICLES IN PEER-REVIEWED JOURNALS


UNCONQUERABLE SPIRIT: GEORGE STOW’S HISTORY PAINTINGS OF THE SAN BY PIPPA SKOTNES

One of UCT’s most significant collections is the Bleek and Lloyd collection of interviews with 19th century Xam and !Kung men, convicts, ex-patriots and displaced children. The collection has attracted world attention and is a United Nations site of the memory of the world.

Associated with this archive is much other material, including a collection of copies of rock art by George Stow bought by Lucy Lloyd after his death in 1882. Stow was a polymath and prolific writer. He travelled in excess of two thousand miles on foot to create a record of the creative work of the San whom he believed to be the only true aboriginal people of South Africa. Stow’s copies of rock art are celebrated in this new book by Pippa Skotnes, who has also curated an exhibition at Iziko South African Museum. Skotnes arranged for the restoration of Stow’s extraordinary collection of copies of San rock paintings and presents them not just as copies, but rather as Stow’s interpretations of the ideas that most moved the San people and, in part, as a product of the turbulent frontier wars and the end of the San way of life that Stow was witness to. This project, a Mellon Foundation funded project of the UCT Centre for Curating the Archive, is a tribute to Stow and to the San people who, as Stow put it, both displayed an unconquerable spirit.

CREATIVE WORKS

PUBLIC COMMISSIONS


EXHIBITIONS


CURATED EXHIBITIONS


WEINBERG, P. 2008. (Curator) Then and Now an anthology of eight South African photographers curated by Paul Weinberg. Durban Art Gallery, KwaZulu-Natal. 01/02/2008 to 30/04/2008; Duke University, Durham, North Carolina, USA. 01/03/2008 to 31/03/2008; Ghent Festival, Belgium. 01/07/2008 to 31/07/2008 and Good Hope Gallery, Castle, Cape Town. 01/10/2008 to 31/10/2008.


GROUP EXHIBITIONS (CURATED)


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UCT scholar Dr Shamil Jeppie (pictured above) has co-edited a valuable new book with Professor Souleymane Bachir Diagne of Northwestern University in the US, entitled The Meanings of Timbuktu, a collection of 24 essays that unveils West Africa’s illustrious tradition of scholarship.

As myth and legend suggest, Timbuktu is in the middle of nowhere. But this Malian city was once a cultural hub, a thriving centre for trade and learning. And the written record of this era has found its way into the book. Over 300,000 manuscripts, some dating back to the 13th century, and covering everything from law to medicine, astronomy to literature, are scattered in libraries around Timbuktu.

African scholarship before the advent of European colonialism is lesser known than the continent’s archaeology or oral history, say the authors. It is not part of school or university curricula. This belies the vast corpus of material available for study, extending from West and East Africa, even to Cape Town in the corner of the continent. Dr Jeppie and his colleague from Historical Studies, Shaid Mathee, have been studying the scripts, part of UCT’s Ford Foundation funded Timbuktu-UCT Manuscripts Project, or Tombouctou. It is this material that forms the backbone of the volume.


ARTICLES IN PEER-REVIEWED JOURNALS


NASSON, W.R. 2008. The was, the is and the might have-been: political leadership in post-apartheid South Africa. Journal of African History, 49: 467-474.


SCHOOL OF LANGUAGES AND LITERATURES

AUTHORED BOOKS


EDITED BOOKS


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SOUTH AFRICAN COLLEGE OF MUSIC

AUTHORED BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


CREATIVE WORKS

ARRANGEMENTS

CAMPBELL, M.I. 2008. _A Cry, a Smile, a Dance_ (Judith Sephuma). Soloist, Symphony Orch & Jazz Rhythm Section. Commissioned by Richard Cock. 4 min.

CAMPBELL, M.I. 2008. _A Place for You_ (Judith Sephuma). Soloist, Symphony Orch & Jazz Rhythm Section. Commissioned by Richard Cock. 4 min.


COMPOSITIONS


KLATZOW, P.J.L. 2008. Sonata for Solo viola. 8 min.

KLATZOW, P.J.L. AND CHORUS OF ST GEORGES CATHEDRAL, C. 2008. Ceremonial music for Easter at St Georges Cathedral, Cape Town. Commissioned by the Cathedral, forces 2 trumpets, organ, and choir. 30 min.


WATT, M. 2008. Die Aankondiging. Commissioned by / requested by / dedicated to The Boulevard Harmonists, North-West University. SATB. 5 min.

WATT, M. 2008. Rhapsody. Commissioned by / requested by / dedicated to The UCT Symphony Orchestra. 2,2,2,2 2,2,2,1, timpani, strings. 11 min. 30 sec.

PERFORMANCES


DU TOIT, G.F. AND CAPE PHILHARMONIC ORCHESTRA, C.P.O. 2008. Performance with Cape Town Philharmonic Orchestra. Works performed; Symphony no. 2 by Leonard Bernstein (The Age of Anxiety) and Rhapsody in Blue by George Gershwin. City Hall, Cape Town. 15 May. Soloist. 60 min.


HOFMEYR, H.P. 2008. Desert Sun. Kamer Choir (Latvia), Maris Sirmais (conductor). (a) World Sun Songs, Great Hall of the Latvian University, Riga; (b) World Choir Symposium, Copenhagen (a) 3, 4 July; (b) 23 July. Composer. 4 min.


LIEBL, L.B., EASTERN CAPE PHILHARMONIC ORCHESTRA, NMMU CHOIR AND YENDE, P. 2008. Windy City Songs of Peter Van Dyck. Feather Market Centre, Port Elizabeth. 26 October. baritone soloist. 40 min.


ROSSI, M.J. 2008. Jazz Clinic by Dr Mike Rossi. Long Island University, Brooklyn, New York. 6 November. soloist and presenter. 2 hrs.


RECORDINGS


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DEPARTMENT OF PHILOSOPHY

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


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DEPARTMENT OF POLITICAL STUDIES

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


Department of Psychology

Authored Books


Edited Books


Chapters in Books


ARTICLES IN PEER-REVIEWED JOURNALS


Professor Mark Solms, current Chair of Neuropsychology at UCT and Groote Schuur Hospital, has received the Arnold Pfeffer Prize for his contribution to neuropsychology. Previous award winners are Antonio Damasio, Jaak Panksepp and Nobel Prize winner Eric Kandel. Professor Solms has made his major contribution in the area of sleep and dream research and he is best known for his discovery of the forebrain mechanisms of dreaming, as well as for his pioneering integration of psychoanalytic theories and methods with those of modern neuroscience. Professor Solms’ contributions to research were further acknowledged in 2008 through the awarding of an A rating by the National Research Foundation.


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CHAPTERS IN BOOKS


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The Department of Social Anthropology was the recipient of a major international award: a Sawyer Seminar grant of US$150,000 from the Andrew W. Mellon Foundation. The award, for the Knowledge Diversity and Power: Science, the Indigenous Movement, and the Post-Colonial University seminar series, was made to Dr Lesley Green, Associate Professor Fiona Ross and Dr Susan Levine (pictured above) after an international competition involving over 40 universities.

The grant will enable the department to host several visiting academics during the year, and will cover fellowships for one postdoctoral and two doctoral students. The project will initiate ongoing scholarly dialogue on knowledge diversity and power across disciplines and regions, with a view to supporting debates at UCT on the intellectual tools required to explore the value of diverse knowledge practices and concepts.


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CENTRE FOR SOCIAL SCIENCE RESEARCH


DEPARTMENT OF SOCIOLOGY

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UCT LIBRARIES

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INDEX

DEPARTMENT OF ANAESTHESIA
SCHOOL OF CHILD & ADOLESCENT HEALTH
DEPARTMENT OF CLINICAL LABORATORY SCIENCES
DEPARTMENT OF HEALTH AND REHABILITATION SCIENCES
DEPARTMENT OF HUMAN BIOLOGY
DEPARTMENT OF MEDICINE
DEPARTMENT OF OBSTetrics AND GYNAECOLOGY
PRIMARY HEALTH CARE DIRECTORATE
DEPARTMENT OF PSYCHIATRY AND MENTAL HEALTH
SCHOOL OF PUBLIC HEALTH AND FAMILY MEDICINE
DEPARTMENT OF RADIATION MEDICINE
DEPARTMENT OF SURGERY
Among the many the research highlights in 2008 were the publications by staff and students. Some of these were featured in the Publication of the Month in the faculty’s newsletter. This monthly feature enabled us to recognize outstanding scholarship, including books by Professor William Pick (The Slave has Overcome), Dr Nonhlanhla Khumalo (Genes for Teens) and Professor Dan Stein (Philosophy of Psychopharmacology); journal articles by master’s student Ben Irving (which was awarded the prize for the most outstanding paper in Pediatric Radiology), Professor Lyn Denny (on human papillomavirus in Obstetrics and Gynecology), and PhD student Denis Chopera (on genetic mutations in the HIV virus, specially highlighted by the editors of PloS Pathogens); a paper on education by Professor Vanessa Burch (on academically at-risk medical students in Advances in Health Sciences Education); and a catalogue by Fritha Langerman of the Michaelis School of Fine Art entitled The Knowledge Chambers in which she engages with the vast compendia of ideas that explain our health sciences world.

Dr Virna Leaner, whose research addresses the molecular biology underlying the development of cervical cancer, was the winner of the TW Kambule Award by the National Science and Technology Forum in the category Distinguished Young Black Researcher. President Kgalema Motlanthe bestowed the Order of Mapungubwe (Silver Category) on Professor Tim Noakes for his contributions to the field of sport and the science of physical exercise. Emeritus Professor Wieland Gevers, who was one of the driving forces behind the establishment of the Institute of Infectious Disease and Molecular Medicine, was similarly recognized for his contributions to higher education and medical science.

Other highlights of the year included the prestigious award of a UCT Fellowship to Professor Vivienne Russell, whose research focuses on the neuroscience of attention deficit hyperactivity disorder; two UCT Fellows’ Awards, which ‘reward younger staff for exceptional achievement’, to Associate Professor Keertan Dheda (lung infection and immunity) and Dr Anthony Figaji (intraoperative monitoring of patients with traumatic brain injury); the launch of the Centre for Proteomic and Genomic Research (CPGR) by the Minister of Science and Technology, Mr. Mosibudi Mangena; and the initiation of clinical testing in the USA and South Africa of two candidate HIV vaccines developed by Professor Anna-Lise Williamson and her team.

The Faculty has continued its strong support of the NRF rating system, increasing the number of rated researchers to 64, the largest among the Health Science Faculties in the country. This includes 7 with an A rating, 17 with a B rating and 29 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 10 with a Y rating. Professor Eric Bateman secured an A rating for the first time while Professors Michael Kew and Kit Vaughan successfully renewed their A ratings. 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. In 2008, 424 projects were funded and the income of R273 million represented more than 40% 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.

Professor Marian Jacobs
Dean of Health Sciences
RESEARCH GROUPINGS

ADOLESCENT HEALTH RESEARCH UNIT
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 Unit builds on existing research and collaborations to co-ordinate, promote and facilitate research on all aspects of adolescent health. The specific aims of the Unit 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.Flisher@uct.ac.za

ALBERTINA AND WALTER SISULU 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, Geriatric Neuropsychology, Geriatric Neurosciences, Geriatric Psychiatry and a Gerontology programme. The Institute strives to be an academic and research centre of excellence which addresses critical issues of ageing in Africa, and serves as a catalyst for local, national and regional expertise and a focal point for the development of research services and training. Its mission is achieved through interdisciplinary and cross-national partnerships and research collaboration, human resource development, and policy information in the national context and in the African continent. Areas in which research projects are currently conducted at the Institute include physical, cognitive and social functioning, and quality of life; vascular risk factors and stroke; falls in older persons and quality of care; and dementia and risk factors for cognitive disorders.
Acting Director: Dr S. Kalula
E-mail: Sebastiano.Kalula@uct.ac.za
Web: www.instituteofageing.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: www.uct.ac.za/depts/cts

DESMOND TUTU HIV CENTRE (DTHC)
All the Desmond Tutu HIV Centre’s activities are underpinned by research and evaluation. It aims to impact policy and practice both nationally and internationally through relevant research, peer-reviewed publications, and feedback to government, civil society, and the community at large. DTHC is driven by a passion for humanity and a vision of South Africa without AIDS. Over the years, it has become a source of advice for medical practitioners, support for people seeking testing or treatment, and leadership in preventative education. With an experienced and dedicated team of over 165 doctors, nurses, researchers, and community-trained field workers, the Desmond Tutu HIV Centre offers a holistic approach to the HIV epidemic.
Director: Dr R. Wood
E-mail: Robin.Wood@hiv-research.org.za

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 cross disciplines in support of its efforts to address the alarmingly high levels of violence against women in this country.
Director: Dr L. Artz
E-mail: Lillian.Artz@uct.ac.za
Web: www.ghjru.uct.ac.za

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
E-mail: Lionel.Opie@uct.ac.za and Bogani.Mayosi@uct.ac.za
Web: www.ghjru.uct.ac.za/Departments/HatterIntro.html
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
E-mail: Susan.Cleary@uct.ac.za
Web: www.heu.uct.ac.za

INSTITUTE OF INFECTIONOUS 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
E-mail: Gregory.Hussey@uct.ac.za
Web: www.idmm.uct.ac.za

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 Medtronics 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
E-mail: Peter.Zilla@uct.ac.za
Web: www.web.uct.ac.za/depts/chc/

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. A greater effort is being put into engaging with high throughput technologies and for the mapping of genes for common chronic disorders.

Director: Professor R. Ramesar
E-mail: Raj.Ramesar@uct.ac.za

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 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.

Director: Professor F. Brombacher
E-mail: fbrombac@mweb.co.za
Web: www.icgeb.org/Cytokines-disease.html

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 Professor P. Meissner
E-mail: Peter.Meissner@uct.ac.za
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, neuromuscular disorders, cardiovascular disease, and alcohol abuse. The unit has a multidisciplinary focus, attracting talented physicists, sports scientists, engineers, computer scientists and medical doctors.

Director: Professor C.L. Vaughan
E-mail: Kit.Vaughan@uct.ac.za
Web: www.minu.uct.ac.za

MRC/UCT OESOPHAGEAL CANCER RESEARCH GROUP
The MRC/UCT Oesophageal Cancer Research Group is an interdisciplinary and inter-institutional 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.

**Director:** Professor M. I. Parker  
**E-mail:** lqbal.parker@uct.ac.za  
**Web:** web.uct.ac.za/depts/iidmm/okatz/research.htm

**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 A. A. Katz, Dr A. Flanagan and Professor R. P. Millar  
**E-mail:** Arieh.Katz@uct.ac.za  
**Web:** web.uct.ac.za/depts/iidmm/okatz/research.htm

**UCT/MRC RESEARCH UNIT FOR EXERCISE SCIENCE AND SPORTS MEDICINE**

The UCT/MRC Research Unit for Exercise Science and Sports Medicine exists to research factors influencing physical performance and health, and to disseminate knowledge and skills through education. The research aim is to develop a novel understanding of integrated human function during exercise and to use this knowledge to promote health and well-being; to treat and prevent specific chronic diseases; to treat and prevent injuries and medical conditions associated with sport and exercise; and to optimise exercise performance.

**Director:** Professor Timothy D. Noakes  
**E-mail:** Timothy.Noakes@uct.ac.za  
**Web:** web.uct.ac.za/depts/essm/

**UCT LEUKAEMIA UNIT**

The UCT Leukaemia Unit 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.

**Director:** Professor N. Novitzky  
**E-mail:** Nicolas.Novitzky@uct.ac.za

**UCT OCCUPATIONAL AND ENVIRONMENTAL HEALTH RESEARCH UNIT (OEHRU)**

The OEHRU aims to be a principal centre of occupational and environmental health research, teaching and training, occupational medical clinical services, policy advisory, technical consultancy services, advocacy and a source of supportive outreach activities in South Africa, in the Southern and Eastern regions of Africa, Africa more generally, and internationally. It conducts multidisciplinary research, teaching and service provision integrating laboratory, clinical, epidemiological and policy skills in relation to occupational health problems that have high priority in southern Africa in order to facilitate identification and improved characterisation of these and other problems and to better understand the determinants of these problems and their solutions. It explores and develops means of maintaining the health of individuals and the environment, especially the work environment, and of preventing the development of health problems in those exposed to injurious environments at work or more generally. Public policy research is conducted into issues ranging from toxic or injurious exposures through to health surveillance, and the functioning of relevant health services including promotive, preventive, curative and rehabilitative/compensation aspects. Inter-institutional research, teaching and service (including outreach) collaboration and capacity development are centre priorities along with fostering local and global networks for occupational and environmental health promotion through collaboration with the United Nations and other agencies. The Unit strives to implement the results of research in its teaching, training, policy, service provision and outreach activities.

**Director:** Professor J. Myers  
**E-mail:** Jonny.Myers@uct.ac.za  
**Web:** www.oehru.uct.ac.za

**WOMEN’S HEALTH RESEARCH UNIT**

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 areas 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.

**Director:** Prof D. Cooper and Associate Director: J. Harries  
**E-mail:** D. Cooper@uct.ac.za and Jane.Harries@uct.ac.za  
**Web:** www.whru.uct.ac.za
Y. Albertus (Department of Human Biology)
Critical analysis of techniques for normalising electromyographic data: from laboratory to clinical research
Supervised by A/Professor M. Lambert and A/Professor W. Derman

K. Aginsky (Department of Human Biology)
Clinical and imaging features of the Lumbar spine in elite schoolboy cricketers: the effect of a pre-season lumbar stabilisation intervention
Supervised by A/Professor W. Derman and Dr J. Gray

M. Barkhuizen (Department of Clinical Laboratory Sciences)
Determination of the role of cytokines using gene deficient mice in African Trypanosomiasis infection
Supervised by Professor F. Brombacher

J. Borrezen (Department of Human Biology)
Quantifying training load and its relationship to heart rate recovery
Supervised by A/Professor M. Lambert

N. Chirwa (Department of Surgery)
The isolation, purification, tissue localization and identification of a glycoprotein found in the crude mucus gel of patients with carcinoma of the stomach
Supervised by Professor A. Mall

M.C. Coetsee (Department of Clinical Laboratory Sciences)
Ligand-induced selective signalling at the gonadotrophin releasing hormone receptor
Supervised by Professor A. Katz

R. Elbahim (Department of Clinical Laboratory Sciences)
Biogenesis of lysosomes in Macrophages: intracellular pathway of lysosomal membrane protein to lysosomes
Supervised by Professor L. Thilo

A.T. Folefo (Department of Clinical Laboratory Sciences)
Functional consequences of South African mutations of the HIV-1 co-receptor CCR5
Supervised by Professor A. Katz and Dr C. Flanagan

L. Havemann (Department of Human Biology)
Nutritional strategies for endurance and ultra-endurance cycling
Supervised by Dr J. Goedecke

C. Huysamen (Department of Clinical Laboratory Sciences)
Characterisation of a novel C-type lectin-like receptor, CLEC9A
Supervised by Professor G. Brown

C. Jennings (Department of Human Biology)
The impact of body fat and its distribution on cardiovascular disease risk in black South African women
Supervised by Dr J. Goedecke and A/Professor M. Collins

F. Kirstein (Department of Clinical Laboratory Sciences)
Investigation of immune responses in different mouse models of allergic asthma
Supervised by Professor F. Brombacher and Dr A. Lopata

C.A. Lategan (Department of Medicine)
Isolation and characterization of antimalarial compounds from Siphonechilus aethiopicus and Aloe ferox and bioavailability of a novel furanoterpenoid
Supervised by Professor P. Smith and Dr W. Campbell

D.P. Li (Department of Clinical Laboratory Sciences)
Genetic polymorphisms in the drug metabolizing genes and their roles in the development of oesophageal cancer
Supervised by Professor I. Parker and Dr C. Dandara

A.L. Malaza (Department of Clinical Laboratory Sciences)
Evolution of viral populations in individuals infected with single and multiple HIV subtypes: A study of HIV-1 dual infection in a high risk cohort of female bar workers from Tanzania
Supervised by A/Professor C. Williamson

M.J. Marakalala (Department of Clinical Laboratory Sciences)
Inhibition of a mycothiol biosynthetic enzyme and a detoxification enzyme as antitubercular drug targets
Supervised by A/Professor D. Steenkamp

R. Marillier (Department of Clinical Laboratory Sciences)
The role of IL-4 and IL13 responsiveness during Schistosoma mansoni-induced intestinal inflammation
Supervised by Professor F. Brombacher

D. Michaeles-Classen (School of Public Health and Family Medicine)
Paediatric Antiretroviral HIV treatment: measurement and correlates of adherence in a resource-poor setting
Supervised by Professor L. London and A/Professor B. Eley

A. Mohammed (School of Public Health and Family Medicine)
The efficacy of intermittent directly observed isoniazid in preventing tuberculosis in HIV-infected adults with advanced disease
Supervised by Professor G. Maartens and Professor R. Ehrlich

J.E. Nacheega (Department of Medicine)
Antiretroviral therapy adherence and effectiveness in a private-sector disease management program in southern Africa
Supervised by Professor G. Maartens

M.P. Nicol (Department of Clinical Laboratory Sciences)
Studies of childhood tuberculosis
Supervised by Professor R. Wilkinson
Z. NJOUMEJ (SCHOOL OF PUBLIC HEALTH AND FAMILY MEDICINE)
Enabling and regulating private-sector provision of malaria services in three districts of western Cameroon
Supervised by Professor D. McIntyre

D. NOVITZKY (DEPARTMENT OF SURGERY)
Pathophysiological effects of brain death on potential donor organs, and the introduction of a new method of donor management
Supervised by Professor J. Brink and Professor D. Cooper

F.A. OKALEBO (DEPARTMENT OF MEDICINE)
The antimalarial and pharmacokinetic properties of synthetic derivatives of the natural product curcumin
Supervised by Professor P. Smith and Professor K. Chibale

I.G. OKPECHI (DEPARTMENT OF MEDICINE)
Metabolic syndrome, the leptin gene and kidney disease in non-diabetic black South Africans
Supervised by Professor B. Rayner, Professor P. Meissner, Professor R. Ramesar and Dr M.D. Pascoe

W. PARKER (DEPARTMENT OF MEDICINE)
Lifestyle modification education in chronic diseases of lifestyle: insight into counselling provided by health professionals at primary health care facilities in the Western Cape, South Africa
Supervised by Professor N.S. Levitt

G. SHABOODIEN (DEPARTMENT OF MEDICINE)
The pathogenesis of HIV-associated cardiomyopathy: a histological, virological, and genetic study
Supervised by Professor B. Mayosi

M.P. SEKHOACHA (DEPARTMENT OF MEDICINE)
Investigation of antimalarial activity of South African medicinal plants and chemical identification of antiplasmodially active compounds
Supervised by Professor P. Smith

E. SMITH (DEPARTMENT OF CLINICAL LABORATORY SCIENCES)
Spatial and temporal regulation of IL4Ra expression
Supervised by Professor F. Brombacher

J. SMITH (DEPARTMENT OF HUMAN BIOLOGY)
Exercise-induced protection against insulin resistance and Type II diabetes: the role of calcium/calmodulin dependent protein kinase in glucose transporter-4 expression
Supervised by Dr E. Ojuka

C.W.N. SPEARMAN (DEPARTMENT OF MEDICINE)
The effect of two novel C-type lectins, Ba100 and Ba25, isolated from the venom of the puff adder, Bitis arietans on T-Lymphocyte proliferative responses
Supervised by Professor E. Shephard

S. TALIEP (DEPARTMENT OF HUMAN BIOLOGY)
An investigation into the kinematic, cortical electrical and visual search strategies of skilled and less-skilled cricket batsmen in response to projected video footage of a medium-fast bowler
Supervised by Dr L. John and A/Professor M. Lambert

H. TENG (DEPARTMENT OF CLINICAL LABORATORY SCIENCES)
Identification of signaling pathways regulating TBX2 gene expression and its target genes
Supervised by Dr S. Prince

L.M.H. VIVIAN (DEPARTMENT OF PSYCHIATRY AND MENTAL HEALTH)
Psychiatric disorder in Xhosa-speaking men following male circumcision
Supervised by Professor B. Robertson

J. WATERMEYER (DEPARTMENT OF CLINICAL LABORATORY SCIENCES)
Structural determinants of domain-selectivity of novel inhibitors of human testis angiotensin-converting enzyme
Supervised by Professor E.D. Sturrock and Professor B.T. Sewell

L. WEGNER (DEPARTMENT OF PSYCHIATRY AND MENTAL HEALTH)
Leisure boredom and risk behaviour in adolescence
Supervised by Professor A. Flisher

J. WIESNER (DEPARTMENT OF MEDICINE)
Isolation and characterisation of antiplasmodial compounds from xerophyta species and the bioavailability, metabolic and efficacy evaluation of 9-O-acetylhydnocarpin in a mouse model
Supervised by A/Professor P. Smith and Dr W. Campbell
PROVISIONAL PATENTS


GRANTED PATENTS


Dr Nick Kairinos, a UCT PhD student in plastic surgery and a registrar at Groote Schuur Hospital, won the Stratmed Prize for Best Research Paper of the South African Society for Surgery of the Hand, and the Best Scientific Research Paper and Best Invention Award from the Association of Plastic and Reconstructive Surgeons of Southern Africa in October 2008. His current research has resulted in the concept of a new type of vacuum dressing which regulates its own suction pressure so that wound pressures are always optimal for healing. As a successful inventor, Kairinos has filed two patent applications through UCT’s Office of Research Contracts and Intellectual Property Services.
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)

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


RESEARCH
IMPACT

OBSESSIVE-COMPULSIVE DISORDER GROWING AMONG CHILDREN

Obsessive-compulsive disorder (OCD) is a common psychiatric problem. ‘It’s considered one of the most disabling of all medical disorders’, says psychology master’s student Lara Hoppe, whose new study on OCD among children shows that it is growing within this group in South Africa. Hoppe’s research looks at the phenomenology of OCD and how the symptoms affect children and adolescents on a daily basis. Although there is a paucity of literature in this area, evidence suggests that impairment caused by OCD is significant in a number of domains, and that OCD-related functional impairment in childhood or adolescence may differ across cultures.

It is hoped that her study will inform the future diagnosis and treatment of South African children and adolescents with OCD. Thus far her findings indicate that parents believe that their children’s OCD-related problems affect them mainly at school. But the children say their OCD ‘outfall’ extends into both the school and social domains. The study also shows that parents and children differ when it comes to rating the most significant individual functional problems. The findings differ from those of North American and European studies, providing the rationale for further research into the effect of culture on childhood OCD-related functional impairment. This work will have important implications for the diagnosis and treatment of children with OCD in South Africa.


Please refer to the research reports of the following departments for additional publications by staff affiliated to the School of Child and Adolescent Health:

- Anaesthesia, for publications by Paediatric Anaesthesia (page 165)
- Psychiatry and Mental Health, for publications by Child and Adolescent Psychiatry (page 202)
- Radiation Medicine, for publications by Paediatric Radiology (page 213)
- Surgery, for publications by Paediatric Surgery (page 214)

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DEPARTMENT OF CLINICAL LABORATORY SCIENCES

(INCLUDING THE FOLLOWING DIVISIONS/INSTITUTES: ANATOMICAL PATHOLOGY, CHEMICAL PATHOLOGY, FORENSIC MEDICINE AND TOXICOLOGY, HAEMATOLOGY AND UCT LEUKAEMIA UNIT, HUMAN GENETICS, IMMUNOLOGY, MEDICAL BIOCHEMISTRY, MEDICAL MICROBIOLOGY AND MEDICAL VIROLOGY.)

EDITED BOOKS


CHAPTERS IN BOOKS


ENCYCLOPAEDIA ENTRIES

Dr Virna Leaner of the Department of Clinical Laboratory Sciences was the recipient of the Distinguished Young Black Researcher award at the 10th National Science and Technology Forum awards ceremony. Dr Leaner’s research addresses the molecular biology underlying the development of cancer, particularly cervical cancer, one of the major diseases affecting South African women. The main objective of her work is to characterise markers of cervical cancer and the role of transcriptional regulation in the development of the disease. The awards were presented by the Minister of Science and Technology, Mr. Mosibudi Mangena.


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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Pulmonologist Dr Richard van Zyl-Smit’s oral presentation on new techniques for the rapid diagnosis of tuberculosis has won first prize at the annual South African Medical Research Council Research Day. Based in the Lung Infection and Immunity Unit in the Department of Medicine and the UCT Lung Institute, Dr Van Zyl-Smit’s main research examines the effect of tobacco smoking on the body’s defence against TB.


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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Four UCT stalwarts were among the 29 recipients who received National Orders from President Kgalema Motlanthe in October. The Order of Mapungubwe (Silver Category) was bestowed on Professor Doug Butterworth of the Department of Mathematics and Applied Mathematics, former senior Deputy Vice-Chancellor Professor Wieland Gevers, Professor Tim Noakes of the MRC/UCT Research Unit for Exercise Science and Sports Medicine (ESSM) (pictured above), and Professor Pragasen Pillay of the Department of Electrical Engineering.

The Order of Mapungubwe is awarded to South African citizens for excellence and exceptional achievement. National Orders are the highest awards that a country may bestow, through its president, on its citizens and eminent foreign nationals.

Professor Noakes was honoured for his excellent contribution to the field of sport and the science of physical exercise. The Discovery Health professor of exercise and sports science, Noakes established ESSM in the early 1980s. It is now an acclaimed research unit of the Medical Research Council. Professor Gevers, the former director of the Institute of Infectious Disease and Molecular Medicine (IIDMM), was recognised for his excellent contribution to the field of higher education and medicine. (Also see page 237)


ARTICLES IN PEER-REVIEWED JOURNALS


Human Brain Mapping, 29: 574 - 580.


Clinical Journal of Sport Medicine, 18(5): 403-409.


SOETERS, H.S., HOWELLS, F. AND RUSSELL, V.A. 2008. Methylphenidate does not increase ethanol consumption in a rat model for attention-deficit hyperactivity disorder-the spontaneously hypertensive rat. 
Metabolic Brain Disease, 23(3): 303-314.

SPOTTISWOODE, B., RUSSELL, J.B.W., MOOSA, S.E., MEINTJES, E.M., EPSTEIN, F. AND MAYOSI, B.M. 2008. Abnormal diastolic and systolic septal motion following pericardectomy demonstrated by cine DENSE MRI. 

SPOTTISWOODE, B., ZHONG, X., LORENZ, C., MAYOSI, B.M., MEINTJES, E.M. AND EPSTEIN, F. 2008. 3D myocardial tissue tracking with slice followed cine DENSE MRI. 


Sports Medicine, 38(10): 795-805.

Journal of Biomechanics, 41: 1302-1309.


AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


Professor Eric Bateman’s significant contribution to asthma management has earned him an A2-rating from the National Research Foundation. Professor of Respiratory Medicine at UCT and chairperson of the Global Initiative for Asthma (GINA), Professor Bateman has played a leading role in changing the objectives of asthma treatment which were not clearly defined, and definitions that were not patient-friendly. This was done while he was chairing GINA’s Science Committee and serving as an executive committee member of the Global Alliance Against Chronic Respiratory Diseases, a World Health Organisation alliance.

He has published ground-breaking papers encouraging the concept of asthma control and has demonstrated that this could be achieved in most patients. This resulted in major revisions of both national and global guidelines.

Professor Bateman is the founder of the UCT Lung Institute and head of the Division of Pulmonology in the Department of Medicine.


RESEARCH OUTPUT


RESEARCH OUTPUT


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DEPARTMENT OF PSYCHIATRY AND MENTAL HEALTH

AUTHORED BOOKS

CHAPTERS IN BOOKS

ARTICLES IN PEER-REVIEWED JOURNALS


Psychiatric Medications Examined through a Philosophical Lens

With rapid developments in the field of cosmetic psychopharmacology, Professor Dan Stein’s new book, Philosophy of Pharmacology: Smart Pills, Happy Pills and Pep Pills, published by Cambridge University Press, poses interesting philosophical questions about the implications of developments in neuroscience for our understanding of human beings.

Mental disorders are a leading cause of disability worldwide, and are relatively underdiagnosed and undertreated. At the same time, there have been significant advances in psychopharmacology, and critical questions have been raised about the medicalisation of normal distress. Stein’s new work sets out a conceptual framework, pulling in theory and data from modern neuroscience, for examining these issues.


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SCHOOL OF PUBLIC HEALTH AND FAMILY MEDICINE

EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


The fight against HIV and TB received a boost in 2008 when the Wellcome Trust granted a consortium of researchers, led by Associate Professor Robert Wilkinson, £3 million (R45 million) to establish a Centre for Clinical Infectious Disease Research at UCT. The grant was part of a £20-million investment by the Trust in research and training in Africa, aimed at ensuring that researchers are equipped to tackle the most pressing problems in their respective regions. The UCT centre will focus on HIV and TB, which are among the main causes of death in Sub-Saharan Africa. Approximately 25 entry positions in research will be established to develop the skills of scientists working in southern Africa so that they can compete better for their own funding. In addition, the capacity to conduct clinical and laboratory research will be enhanced.


LONDON, L., ORNER, P.J. AND MYER, L. 2008. ‘Even if you’re positive, you still have rights because you are a person’: Human rights and the reproductive choice of HIV-positive persons. Developing World Bioethics, 8(1): 11-22.


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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

ARTICLES IN PEER-REVIEWED JOURNALS


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)

CHAPTERS IN BOOKS


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SCHOOL OF ARCHITECTURE, PLANNING AND GEOMATICS
DEPARTMENT OF CHEMICAL ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
DEPARTMENT OF CONSTRUCTION ECONOMICS AND MANAGEMENT
DEPARTMENT OF ELECTRICAL ENGINEERING
DEPARTMENT OF MECHANICAL ENGINEERING
During the year under review, the Faculty of Engineering & the Built Environment (EBE) has contributed significantly to research, development and innovation in the public, private and larger society domains. Private-sector income has grown steadily over the past few years with similar growth seen in the Faculty’s research and innovation contracts in the public and community-based activities, with a total research income of R119.3 million. EBE is strongly committed to its vision of becoming the faculty of choice for students and staff nationally and internationally, and the creation of an enabling environment to perform research of the highest quality and impact is a critical component of the Faculty’s research approach.

In 2008 our postgraduate student numbers increased to 899. 17 students attained PhDs, including five each from the Departments of Chemical Engineering and Electrical Engineering.

The Faculty continues to interact with the Department of Science and Technology and has further strengthened the relationship in 2008 through the Hydrogen Economy and Advanced Metal Initiatives. Staff across the Faculty are working with the CSIR on a number of projects, guided through the CSIR-UCT Memorandum of Understanding.

Our research work and collaboration in Africa and internationally is expanding. The Energy Research Centre continues to provide insight into energy problems pertinent to Africa. The African Centre for Cities focuses on sustainable human settlements while the African Future Urban Transport Centre of Excellence for studies in public and non-motorised transport is working with the University of Dar es Salaam and the University of Nairobi to find transport solutions for the continent’s big cities. Dr Ulrike Rivett and her Spatial Management team joined a major international collaboration to speed up both the identification of unsafe water and getting word out to authorities and at-risk communities.

Staff in the Faculty were recognised for their research work – Dr Genevieve Langdon received an NRF rating for her research work in the performance of structures and materials subjected to blast loading. The Order of Mapungubwe, from the Office of the Presidency, was awarded to Professor Prags Pillay for his excellent contribution in the field of energy conservation. Professor Alphose Zingoni and Professor Gerald Nurick were elected Fellows of the South African Academy of Engineering. This brings the total number of Fellows in the Faculty to nine.

The Bioprocess Engineering Unit, under the leadership of Professor Sue Harrison, received formal recognition from the University for the Unit’s outstanding work and was upgraded to a Centre. Bioprocess engineering research is recognised as a key component in the DST strategy to develop a bioeconomy in South Africa.

A key component of the overall strategy of the Faculty is to develop and expand the research and innovation focus. Fundamental to the focus is the alignment with government’s priorities, expansion of private-sector and industry alliances, a more proactive engagement with Africa through our research and innovation, and the development and support of our researchers. In order to ensure that our research and innovation output continuously improves in terms of quality and impact, the Faculty will benchmark itself internationally, bridging the gaps where possible, but also further the aims of social innovation. In this regard, the Faculty will establish a Foundation of Public Good so as to ensure that the public can also directly benefit from the research and innovation output of the Faculty.

Professor Francis Petersen
Dean of Engineering & the Built Environment
AFRICAN CENTRE FOR CITIES
Achieving well-governed and sustainable cities is becoming increasingly important to the future health of the planet. The African Centre for Cities aims to partner closely with African universities and policy-making centres in order to provide an alternative perspective on dealing with critical urban issues. It provides an intellectual base and home for interdisciplinary, urban-related research at UCT, from which relations can be established with selected international think tanks, scholars, social movements and funders.

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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 BIOPROCESS ENGINEERING RESEARCH
The Department of Chemical Engineering has been known for its interest in bioproces engineering for over three decades. Following the formalising of this through the establishment of a UCT research unit in 2001, the activity was upgraded to the Centre for Bioprocess Engineering Research (CeBER) in 2008 in recognition of the range of researchers active in this area, the contribution to research across several inter-linked foci, and its role in the development of human capacity in this field. CeBER aims to underpin the growth and exploitation of the biological sciences in South Africa through a national centre of expertise in bioprocess engineering in which the 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 is maintained. This is underpinned by CeBER hosting the DST/NRF SARChI Research Chair in bioprocess engineering. The multidisciplinary team brings together expertise in reactor studies, process modelling, biokinetics, microbial metabolism, etc.

Miss Traci Reddy, a PhD student at the Department of Chemical Engineering was nominated by her supervisor, Professor Alison Lewis, for the award. Traci was selected from a pool of three finalists and took home the award for the category of THRIP - Best black female student researcher. Her research comprised of investigating the feasibility of using a novel technology, Eutectic Freeze Crystallisation, for the further treatment and disposal of multi-component hypersaline brines. Traci showed the successful recovery of pure Na2SO4.10H2O crystals with a yield of >90% from an industrial multi-component brine.

THRP TECHNOLOGY AWARD FOR PHD STUDENT
biont transformation, 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, bio-transformation for value addition, bioprocess optimisation through metabolic modelling, reactor modelling, mass transfer optimisation, product liberation and recovery and bioprocess integration.

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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 heterogenous 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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**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 comminution, classification and froth flotation, arguably the most important unit operations in mineral beneficiation. The primary objective of the Centre is to investigate the above research areas at both an industrial (applied) level and at a laboratory (fundamental) level so as to develop predictive models for describing the performance of industrial units and circuits. In addition, the Centre sees as a priority the provision of high level human resources to the South African mining and mineral processing industry through the production of high quality postgraduates for the industry. The Centre enjoys excellent international collaborations with all 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 Education 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) has its roots in the 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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SASOL ADVANCED FUELS LABORATORY
The Sasol Advanced Fuels Laboratory (SAFL) was set up in 2002 to actualise Sasol’s future-oriented fuels research relating to combustion and emissions from automotive and aviation engines. A parallel goal was the development of human-resource capacity to meet Sasol’s and South Africa’s future technology needs. SAFL activities for the past year are reflected in five MSc graduations and seven conference/journal publications. In addition, the appointment of a senior chemistry research leader has expanded the discipline base at the SAFL from being predominantly mechanical engineering to also include a chemistry/chemical engineering capability. Capital investment at the SAFL has been substantially augmented with the recent acquisition of a sophisticated single-cylinder test engine that is representative of next-generation automotive technology. A high-pressure shock tube with a novel initiating sleeve-valve system has also been designed and built to enable fundamental auto-ignition studies to be conducted in the sub-millisecond regime. This will provide essential data in support of the current synthetic fuels research activity.

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RECORD POSTGRADUATE COMPLETION TIME FOR ELECTRICAL ENGINEERING STUDENT
Electrical Engineering graduate Marc Brooker is not one to waste time. After completing his BSc (Engineering) in 2005, he went straight to work as a postgraduate, and completed his PhD all within the space of a mere two and a half years.

Brooker’s work is the upshot of funding he received from the South African National Defence Force to research computer simulation of signals from an arbitrary network of radar systems. His thesis, The Design and Implementation of a Simulator for Multistatic Radar, covered the design of software for simulating radar systems at a signal level. His specific focus was on multistatic radar systems, and the timing issues that limit the performance of these systems in many cases.

The powerful and flexible simulation software described in his thesis has been released as open-source software, which has been used at several centres of radar research. Brooker is currently interested in cloud and cluster computing, and works at the Cape Town offices of Amazon.com, the leaders in this field. His supervisor was Professor Mike Inggs of the Department of Electrical Engineering.
B. AMIGUN (DEPARTMENT OF CHEMICAL ENGINEERING)
Processing cost analysis of the African biofuels industry with special reference to capital cost estimation techniques
Supervised by A/Professor H. von Blottnitz and A/Professor D. Fraser

C.J. ANDERSON (DEPARTMENT OF CHEMICAL ENGINEERING)
Flotation in a novel oscillatory baffled column
Supervised by A/Professor D. Deglon and Mr. M. Harris

O.E. FALOWO (DEPARTMENT OF ELECTRICAL ENGINEERING)
Efficient joint call admission control and bandwidth management schemes for QoS provisioning in heterogeneous wireless networks
Supervised by Professor H.A. Chan

G.S. HEINRICH (DEPARTMENT OF CHEMICAL ENGINEERING)
A comprehensive approach to electricity investment planning for multiple objectives and uncertainty
Supervised by Professor E.W.J. van Steen

M. HOVE (DEPARTMENT OF CHEMICAL ENGINEERING)
The kinetics and mechanisms of oxidation and precipitation of iron: the High Density Sludge (HDS) process
Supervised by A/Professor A.E. Lewis and Dr R. van Hille

A.J. ISAFIADE (DEPARTMENT OF CHEMICAL ENGINEERING)
Interval based MINLP superstructure synthesis of heat and mass exchanges network
Supervised by A/Professor D. Fraser

K. KAJIMO-SHAKANTU (DEPARTMENT OF CONSTRUCTION ECONOMICS AND MANAGEMENT)
An investigation into the responses of construction industry to preferential procurement in South Africa: a grounded theory approach
Supervised by A/Professor D. Root

Y. LI (DEPARTMENT OF ELECTRICAL ENGINEERING)
Applying human-like intelligence to future generation network to improve communication efficiency
Supervised by Professor H.A. Chan

M.J. MANYAGE (DEPARTMENT OF ELECTRICAL ENGINEERING)
The application of improved core loss formulations to machine design
Supervised by Professor P. Pillay

A.T. MCBRIDE (DEPARTMENT OF CIVIL ENGINEERING)
Formulation, analysis and solution algorithms for a model of gradient plasticity within discontinuous Galerkin framework
Supervised by Professor B.D. Reddy

R.M. NAIDOO (DEPARTMENT OF ELECTRICAL ENGINEERING)
A nonlinear adaptive filter for improved operation and protection of power systems
Supervised by Professor P. Pillay

F. NTULI (DEPARTMENT OF CHEMICAL ENGINEERING)
Nickel powder precipitation by high pressure hydrogen reduction
Supervised by A/Professor A.E. Lewis

T.V. OJUMU (DEPARTMENT OF CHEMICAL ENGINEERING)
The effects of solution conditions on the kinetics of microbial ferrous-iron oxidation kinetics by Leptospirillum ferriphilum in continuous culture
Supervised by Dr J. Petersen and Emeritus Professor G.S. Hansford

O.O. OYEKOLA (DEPARTMENT OF CHEMICAL ENGINEERING)
An investigation into the relationship between process kinetics and microbial population dynamics in a factate-fed sulphidogenic CSTR as a function of residence time and sulphate loading
Supervised by Professor S.T.L. Harrison and Dr R. van Hille

J. POINAPEN (DEPARTMENT OF CIVIL ENGINEERING)
Biological sulphate reduction using primary sewage sludge as energy source in an upflow anaerobic sludge bed reactor
Supervised by A/Professor M. Wentzel and Professor A. Zingoni

J. SWART (DEPARTMENT OF CHEMICAL ENGINEERING)
A theoretical view on deactivation of cobalt-based fischer-tropsch catalysts
Supervised by Professor E.W.J. van Steen and A/Professor M. Claeyns

A. VAN DER WESTHUIZEN (DEPARTMENT OF MECHANICAL ENGINEERING)
The strain rate dependent properties and modeling of bovine cortical bone in compression
Supervised by Professor G.N. Nurick

P. VAN ZYL (DEPARTMENT OF CIVIL ENGINEERING)
Anaerobic digestion of fischer-tropsch reaction water - submerged membrane anaerobic reactor design, performance evaluation & modelling
Supervised by Professor G.A. Ekama

I.N. WACHIRA (DEPARTMENT OF CONSTRUCTION ECONOMICS AND MANAGEMENT)
An investigation into the training of labour in the informal construction sector in Kenya.
Supervised by Dr D. Root and Professor P.A. Bowen

D. WAITING (DEPARTMENT OF ELECTRICAL ENGINEERING)
On privacy and the prevention of unsolicited sessions in the IP multimedia subsystem
Supervised by Mr. N. Ventura
PROVISIONAL PATENTS


GRANTED PATENTS


SCHOOL OF ARCHITECTURE, PLANNING & GEOMATICS

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


**CONFRONTING THE CRISIS OF URBAN DEVELOPMENT**

The Director of the African Centre for Cities, Professor Edgar Pieterse, launched his new book, City Futures: Confronting the crisis of urban development, in 2008 which coincided with an important global marker. It was estimated that in 2008 more than 50% of the world’s 6.68 billion people were living in cities and towns. While the Southern Hemisphere accounts for most of this urban growth - with its attendant problems such as slums, poverty, unemployment and lack of governance - its citizens remain cut off from the economic, social and political advantages of urbanisation. ‘We sit with the irony that the concentration of the world’s urban challenges is prevalent in the global South, but probably 95% of the research and knowledge on the issues is generated in the North,’ Pieterse said at the launch. ‘I’m hoping the book will demonstrate that we tell this story in more compelling ways. In the practice of living with these challenges, we probably have more innovative ideas about what needs to be done and how to go about it.’

PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


ARTISTIC WORKS

LOW, I. 2008. South African Institute of Architects President’s Award for Qe - the power of rock art at Iziko, SA Museum, Cape Town. Commissioned by the South African Institute of Architects.


EXHIBITIONS

DEPARTMENT OF CHEMICAL ENGINEERING

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


YOUNG AUTHOR AWARD

Dr Aubrey Mainza, a senior lecturer in the Department of Chemical Engineering, has won the prestigious Young Author Award at the 24th International Minerals Processing Congress held in Beijing, China. Dr Mainza was one of ten recipients of the accolade for his paper, A Study on Efficiency of Mineral Department in the Three-Product Cyclone, which he presented to more than 950 delegates. The event was nicknamed the Olympics of mineral processing, following the Olympic Games in the city earlier this year, and takes place every two years.


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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DEPARTMENT OF CIVIL ENGINEERING

CHAPTERS IN BOOKS


The African Future Urban Transport Centre of Excellence for Studies in Public and Non-motorised Transport (ACET), launched in 2008 and funded by the Volvo Research & Educational Foundations, will harness research from three leading African universities to find public and non-motorised transport solutions for the continent’s big cities. It will also act as a hub of research and capacity building.

Its work will fall on UCT’s Centre of Transport Studies in the Faculty of Engineering & the Built Environment, the University of Dar es Salaam’s Department of Transportation and Geotechnical Engineering and the University of Nairobi’s Institute for Development Studies. Cape Town, Dar es Salaam and Nairobi, all cities with around three million people, will be used as case studies. They have common problems associated with the regulation and improvement of informal or unscheduled paratransit modes of public transport: minibus taxis in South Africa: the dala-dalas in Tanzania and matatus in Kenya.
ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


RESEARCH IMPACT

Back row from left: Dr Jim Wright, University of Southampton; Mr. Jorge Perez-Luna, Bill & Melinda Gates Foundation; Mr. Alastair Wensley, Department of Water Affairs; Ms Shannon Cali, PATH; Mr. Grant MacIntosh, Emanti Management; Front row from left: A/Prof. Ulrike Rivett, Civil Engineering, UCT; Prof. Stephen Gundry, University of Bristol; Dr Christie Cabral, University of Bristol; Ms Melissa Loudon, Civil Engineering, UCT

MONITORING WATER QUALITY

UCT researchers have joined a major international collaboration to speed up both the identification of unsafe water, and getting word out to authorities and at-risk communities. One of the major challenges in developing countries is monitoring the quality of the water to prevent water-borne diseases – which cause some 1.8 million deaths annually, according to the World Health Organisation (WHO) – and to alert people to trouble spots. Now Dr Ulrike Rivett and her team in the Department of Civil Engineering are part of a research consortium, led by the University of Bristol, which is building a diagnostic tool, Aquatest. This will be the world’s first low-cost, easy-to-use diagnostic tool giving a clear, reliable indication of water quality.

The University of Bristol received a $13-million grant from the Bill & Melinda Gates Foundation to develop Aquatest. Dr Rivett and her team will bring a bit of indigenous knowledge gleaned from Cell-Life, a ground-breaking enterprise that used cellphones programmed to record and monitor the treatment of AIDS patients. The UCT team will be responsible for building the information-management system behind Aquatest using this technology. Through effective data collection and centralisation it will be possible to create a vital overview of the status quo of water quality in rural areas.


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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ARTICLES IN PEER-REVIEWED JOURNALS


RESEARCH IMPACT

NATIONAL AWARD FOR CONTRIBUTION TO ENERGY CONSERVATION

Professor Pragasen Pillay of the Department of Electrical Engineering was lauded for his excellent achievement in and contribution to the field of energy conservation through a national award of the Order of Mapungubwe (Silver Category), bestowed upon him by former President Kgalema Motlanthe. Professor Pillay is a specialist in renewable energy technology. His research interests include the design and control of electrical machines, electric motor drive systems, traction and hybrid electrical vehicles, and renewable energy - including conservation and sustainability issues in power and energy engineering.


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


RESEARCH OUTPUT


Blast Impact and Survivability Research Unit

Articles in Peer-Reviewed Journals


Peer-Reviewed Published Conference Proceedings


Centre for Materials Engineering

Articles in Peer-Reviewed Journals


CUTTING BACK ON GREENHOUSE GAS EMISSIONS

Associate Professor Harald Winkler and colleagues in UCT’s Energy Research Centre (ERC) have wrapped up a major greenhouse-gases-mitigation project that shows what the costs would be should South Africa work on getting its emissions of greenhouse gases to peak and decline. In the two-year project, managed by the ERC for the Department of Environmental Affairs and Tourism, a scenario-building team painted a number of possible pictures for South Africa should it cut back (or not) on its greenhouse-gas emissions over the next decades. The aim was to produce a set of long-term mitigation scenarios (LTMS) that would provide a sound scientific analysis from which Cabinet could draw up a long-term climate policy.

At the international level, LTMS provided some ‘homework’ to inform negotiating positions.

South Africa is one of the highest emitters per capita and per GDP in the world. One of the key findings of the ERC project is that, without constraint, South Africa is likely to see a fourfold increase in emissions by 2050. Other findings suggest that some mitigation options are immediately implementable, however, such as more aggressive energy efficiency, and changes to electricity generation. But in the long run, the country must think about its industrial policy, and consider shifts to less emissions-intensive sectors.
ENERGY RESEARCH CENTRE

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EIGHTH WONDER OF THE WORLD GOING DIGITAL

Led by Professor Heinz Ruther, the Zamani Project has collected and processed remarkable amounts of data of the rock-cut churches at Lalibela in Ethiopia, which will be used for conservation, planning, site monitoring and education. The Zamani Project team used a laser scanner set up at some 1,200 different locations to collect more than 6.6 billion surface points – with xyz coordinates taken every 20 to 50 millimeters both inside and outside the structures. These spatial data points were then meshed with GIS data and photographs taken at various angles to create a digital model of Lalibela of unprecedented accuracy.

Lalibela is one of more than two dozen African sites that have gone digital over the past three years as part of an innovative monument documentation programme.

“Our goal at Lalibela was two fold – first, to establish baseline data on the condition of each structure, and secondly, to aid in planning the placement for the stanchions for the temporary protective shelters so as to minimize any physical impact on the site” said Professor Ruther. The rock-cut churches at Lalibela have been acknowledged as the eighth wonder of the world.