UCT aspires to become a premier academic meeting point between South Africa, the rest of Africa and the world. Taking advantage of expanding global networks and our distinct vantage point in Africa, we are committed, through innovative research and scholarship, to grapple with the key issues of our natural and social worlds. We aim to produce graduates whose qualifications are internationally recognised and locally applicable, underpinned by values of engaged citizenship and social justice. UCT will promote diversity and transformation within our institution and beyond, including growing the next generation of academics.

FOUNDA TION STATEMENT UNDERPINNING THE MISSION STATEMENT

OUR RESEARCH-LED IDENTITY IS SHAPED BY A COMMITMENT TO:

- academic freedom as the prerequisite to fostering intellectual debate and free inquiry;
- ensuring that research informs all our activities including teaching, learning and service to the community;
- advancing and disseminating knowledge that addresses the key challenges facing society – South African, continental and global;
- protecting "curiosity driven research";
- nurturing and valuing creativity in the sciences and arts including the performing and creative arts;
- stimulating international linkages of researchers and research groupings.

WE STRIVE TO PROVIDE A SUPERIOR QUALITY EDUCATIONAL EXPERIENCE FOR UNDERGRADUATE AND POSTGRADUATE STUDENTS THROUGH:

- providing an intellectually and socially stimulating environment;
- inspired and dedicated teaching and learning;
- exposure to the excitement of creating new knowledge;
- stimulating the love of lifelong learning;
- the cultivation of competencies for global citizenship;
- supporting programmes that stimulate the social consciousness of students;
- offering access to courses outside the conventional curricula;
- attracting a culturally and internationally diverse community of scholars;
- guaranteeing internationally competitive qualifications;
- offering a rich array of social, cultural, sporting and leadership opportunities;
- providing an enabling physical and operational environment.

IN ADVANCING UCT AS AN AFROPOLITAN UNIVERSITY, WE WILL:

- expand our expertise on Africa and offer it to the world;
- extend our networks on the continent, along with our global connections and partnerships;
- promote student and staff exchanges and collaborative research and postgraduate programmes;
- engage critically with Africa’s intellectuals and world views in teaching and research;
- contribute to strengthening higher education on our continent.

WE STRIVE TO PROVIDE AN ENVIRONMENT FOR OUR DIVERSE STUDENT AND STAFF COMMUNITY THAT:

- promotes a more equitable and non-racial society;
- supports redress in regard to past injustices;
- is affirming and inclusive of all staff and students and promotes diversity in demographics, skills and backgrounds;
- offers individual development opportunities to all staff;
- is welcoming as a meeting space for scholars from Africa and around the world.
Detailed research profiles of all departments at the University of Cape Town are available online at http://www.research2010.uct.ac.za.
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The University of Cape Town (UCT) was again ranked number one in Africa in 2010 in three major international university rankings. These rankings are supported by a range of other indicators of excellence. For example, the level of impact of our research publications, the increasing number of postdoctoral fellows, the good graduation rate of master’s and doctoral students, the high level – despite the world-wide recession – of income generated through contracts and grants, and the excellent rating of individual researchers by the National Research Foundation.

We are determined that our global reputation as a research-led university, linked with the many unique opportunities that our geographical position presents, should – in combination with our partners in South Africa and the rest of Africa – act as a magnet for researchers from around the world. As a university community we are especially pleased that our goal of being an Afropolitan university is bearing such good fruits. Some notable examples are the H3-D Drug Discovery and Development Centre, which will focus on finding drugs that combat diseases prevalent on the continent; the interdisciplinary African Centre for Cities, which provides leadership and research in urban development and policy; and the African Climate and Development Initiative, described further below.

In order to fulfil our ambition of being an intellectual hub that connects South Africa, the rest of Africa and the world, it is important that UCT should provide an enabling research environment, which includes not only a robust academic and physical research infrastructure, but also a supportive and welcoming institutional approach.

This report discusses the detail of our many activities that are geared towards doing this. Of particular importance is the initiative to Grow the Next Generation of Academics highlighted on page 50. This is a new initiative that seeks to build on existing projects to develop research capacity at UCT and the rest of the continent. We are delighted to have assembled a consortium of funders and practitioners to build on existing mentorship projects.

Another initiative to foster research at UCT is the R20-million Vice-Chancellor’s Strategic Fund set up in 2009. We continue to disburse funds to noteworthy research initiatives that are aligned to the university’s strategic objectives. I would like to highlight in particular the pilot for the UCT Knowledge Co-Op, which got under way in 2010. This is a virtual facility set to build much-needed bridges between UCT and society to enable more effective partnerships in solving key social issues.

Some of our top inventors and researchers at UCT are using applied research to address the country’s and the continent’s most complex issues, including HIV and tuberculosis, land rights, women’s rights and poverty alleviation. Examples of these innovations are highlighted on pages 16 to 19 of this report. In other areas, UCT is leading many curiosity-driven ‘blue-sky’ projects that are influencing scientific thinking at the global level.

In the past few years we have selectively focused our research activities, seeking to harness resources across the university to address major social and global challenges. In 2007 we launched our five signature themes and late in 2009 we added a sixth—the African Climate and Development Initiative (ACDI). Through this initiative the university is focusing on climate variability and its impact on the continent. ACDI has stimulated debate and inspired the inception of cutting-edge research programmes. From understanding the effects of changing atmospheric CO2 to defining environmental governance for social justice, ACDI makes UCT a key player on the continent in tackling this global challenge. These developments are highlighted on pages 28 and 29 of this report.

The pages that follow catalogue the breadth of research work being conducted at UCT but they cannot communicate fully the energy and excitement that underpin these activities. In many ways, the world-class research carried out by UCT should rank as one of South Africa’s proudest achievements. Certainly it merits the ongoing investment of our many local and international donors (including government), collaborators and funding agencies who help to make our work possible. We are, as always, grateful to our investment partners. In the year ahead we will seek to build on the achievements of 2010 and we look forward to their continued support and partnership in doing so.

DR MAX PRICE
VICE-CHAIRMAN

Sizimisele ukuba udumo lwethu kwiwlabathi nje ngyuniversithi ehlamba phambili kuphandwa, idibhube namphezulu amathathu awowda ezivayo eyise kuyo kwiwlabathi. Kufanele ukuthi ukubalulekile, amadikulu ukuba nokuphuhlisa izibonelelo zephikasenziyo kwiyuniversithi. 

Kule minyaka imbalwa ehlukhona zinjekiso ezihlophelelo yeAfrika lapho, sithetha izikhethi ezinomdla zoko. Imiseko ezizokuphuhlisa izidolophini nomgaqo, African Centre for Cities echazwa e-Afrika lapho, i-interdisciplinary iphakhathi ezilungane ezishulumanco. Imiseko ezikubonisa, umgqondo umzantsi Afrika ukumvela naye ezikuphuhlisa izidolophini nomgaqo, ne-African Climate and Development Initiative, echazwa ekuphuhlisa ekuphuhlisa, aphakamisa, uyekezela ekuphuhlisa.

Kwiindlela ngeen dlela, kufanele ukubalulekile, uyekezela ukubonisa, umgqondo umzantsi Afrika ukumvela naye ezikuphuhlisa izidolophini nomgaqo, ne-African Climate and Development Initiative, echazwa ekuphuhlisa ekuphuhlisa, aphakamisa, uyekezela ekuphuhlisa.

Amaphepha alandelayo adwelisa ububanzo bempakathi wophandwa oqathwyile e-UCT kodwa bengakwazi ukuthengelula nani ngokukuselelo umdla nothandwa uzakho. Kwiindlela ngokuphuhlisa ukubalulekile, umzantsi Afrika ukumvela naye ezikuphuhlisa izidolophini nomgaqo, ne-African Climate and Development Initiative, echazwa ekuphuhlisa ekuphuhlisa, aphakamisa, uyekezela ekuphuhlisa.

Boodskap van die Visekanselier

In 2010 is die Universiteit van Kaapstad (UK) weer eens in drie voorraanstaande internasionale universiteitsranglyste as nommer een in Afrika geplaas. Hierdie ranglyste word deur ’n reeks ander aanwyners van uitnemendheid gesteun. Voorbeeld is die impakvlak van ons navorsingspublikasies, die toenemende aantal nadoktorale genote, die goeie graad-voltooiingskoers van studente vir magister- en doktorskragte, die hoë vlakke – ondanks die voltooiingskoers van studente vir magister- en nadoktorale genote, die goeie graad-ontersteuning, die toenemende vrae- en toekennings kontrakte en toekennings gegenereer is, en die uitstekende beoordeling van individuele navorsers deur die Nasionale Navorsingstiting.

Ons is vasgerade dat ons wereldwye reputasie as ’n navorsingsgerigte universiteit, in samehang met die vele unieke geleenthede wat ons geografiese ligging bied – en met ons vennote in Suid-Afrika en die res van Afrika – as ’n magneet vir navorsers van reg oor die wêreld sal dien. As ’n universiteitsgemeenskap is ons veral in ons skik dat ons strewe met ons vennote in Suid-Afrika en die res van Afrika – as ’n unieke geleenthede wat ons geografiese ligging bied – en navorsing doen oor stedelike ontwikkeling en beleid; en ander aanwysers van uitnemendheid gesteun. Ideeën soos die impakvlak van ander aanwysers van uitnemendheid gesteun. Voorbeeld hiervan is die impakvlak van die Universiteit se strategiese doelstellings is. Ek wil graag in die besonder die doelwit van navorsing vir die UCT Knowledge Co-Op uitleg wat in 2011 van wal gestuur is. Hierdie is ’n virtuele faciliteit wat daarop ingestel is om noodsaaklike brûe tussen die UK en die samelewing te bou ter wille van meer doeltreffende venootskappe om dringende maatskaplike kwessies op te los.

Vir die afgelope paar jaar het ons ons navor-singsaktiwiteit seletief gefokus in ’n poging om hulpbronne van reg oor die Universiteit daarop toe te spits om groot maatskaplike en globale uitdagings die hoof te bied. In 2007 het ons ons vyf hoofstrooms van val gestuur, en laat in 2009 het ons ‘n sesde bygevoeg – die African Climate and Development Initiative (ACDI). Deur hierdie initiatief fokus die Universiteit op klimaatverandering en die impak daarvan op die wêreld. Die ACDI het aanleiding tot beraadslaging gegee, en as inspirasie vir voorraanstaande navorsingsprograame gediens. Vanaf ’n begrip vir die uitwerking van veranderende atmosferiese CO2 tot die definering van omgewingsbeheer van maatskaplike geregtigheid, sorg die ACDI dat die UK ’n sleutelspeler op die wêreld is om hierdie wêreldwyd uitdaging die hoof te bied. Hierdie ontwikkelings word op bladsye 16 tot 19 van hierdie verslag uitgelig. Op ander gebiede bied die UK leiding vir vele basiese navorsingsprojekte waardeur wetenskaplike denke wereldwyd beïnvloed word.

Ten einde ons ontsluiting van egiptiese kennis te wees wat as skakel tussen Suid-Afrika en die wêreld sal dien, is dit belangrik dat die UK ’n bemagtigende navorsingsomgewing bied wat nie slegs ’n sterkte akademiese en fisiese infrastruktuur behels nie, maar ook ’n ondersteunende en verwelkomende instytusionele benadering verteenwoordig.

In hierdie verslag word die besonderhede bespreek van die vele akademiese waarmee ons besig is om hierdie doelstelling te verwesenlik. Van besondere belang is die initiatief, wat op bladsy 50 toegelig word, om die volgende geslag akademies kwee te kweek. Hierdie is ’n nuwe initiatief wat poog om bestaande projekte uit te brei en navorsingskapasiteit by die UK en op die res van die wêreld te ontwikkel. Ons is verheug dat ons ’n konsortium van beleggers en praktisiene byeen kan bring om op bestaande mentorskapprojekte voort te bou.

Nog ’n initiatief om navorsing by die UK te bevorder, is die Visekanselier se strategiese fondse van R20-miljoen wat in 2009 gevestig is. Ons het voortgegaan om fondse aan belangrike navorsingsinisiatiewe beskikbaar te stel wat in lyn met die Universiteit se strategiese doelstellings is. Ek wil graag in die besonder die doelwit van navorsing vir die UCT Knowledge Co-Op uitleg wat in 2011 van wal gestuur is. Hierdie is ’n virtuele faciliteit wat daarop ingestel is om noodsaaklike brûe tussen die UK en die samelewing te bou ter wille van meer doeltreffende venootskappe om dringende maatskaplike kwessies op te los.

Party van ons voorste uitvinders en navorsers by die UK maak van toegepaste navorsing gebruik om die land en die vasteland se mees komplekse kwessies die hoof te bied, met inbegrip van MIV en tuberkulose, grondregte, vroueregte, en armoede uiteindiging. Voorbeeld hiervan is die impak van grootskaalse uitdaging die hoof te bied. In 2007 het ons ons vyf hoofstrooms van val gestuur, en laat in 2009 het ons ‘n sesde bygevoeg – die African Climate and Development Initiative (ACDI). Deur hierdie initiatief fokus die Universiteit op klimaatverandering en die impak daarvan op die wêreld. Die ACDI het aanleiding tot beraadslaging gegee, en as inspirasie vir voorraanstaande navorsingsprojekte gediens. Vanaf ’n begrip vir die uitwerking van veranderende atmosferiese CO2 tot die definering van omgewingsbeheer van maatskaplike geregtigheid, sorg die ACDI dat die UK ’n sleutelspeler op die wêreld is om hierdie wêreldwyd uitdaging die hoof te bied. Hierdie ontwikkelings word op bladsye 16 tot 19 van hierdie verslag uitgelig. Op ander gebiede bied die UK leiding vir vele basiese navorsingsprojekte waardeur wetenskaplike denke wereldwyd beïnvloed word.

Ten einde ons ambisie te verwesenlik om ’n intellektuele kern te wees wat as skakel tussen Suid-Afrika en die wêreld sal dien, is dit belangrik dat die UK ’n bemagtigende navorsingsomgewing bied wat nie slegs ’n sterkte akademiese en fisiese navorsingsinfrastruktuur behels nie, maar ook ’n ondersteunende en verwelkomende instytusionele benadering verteenwoordig.

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In 2010, according to several significant external measures, UCT was considered a leader in the global knowledge community. The university was ranked 107 overall in the Times Higher Education Ranking, 163 in the QS Ranking and 219 in the Shanghai Jiao Tong Ranking. While each ranking has its own idiosyncrasies and only delivers part of the picture of an institution’s excellence, they do provide a solid benchmark for success that we can be proud of. In addition, the Department of Higher Education and Training’s latest report on research output shows that UCT now produces the highest number of accredited research outputs of any university in South Africa. UCT was awarded 1188.22 units – a 9% increase on the previous year. This is a tribute to the talent that we have assembled at the university and a recognition of the superb contribution of the researchers and academics who work here.

However, there is no room for complacency. The worst effect that our high position in the international rankings and good local performance could have would be to induce a belief that there is not much room for improvement in UCT’s research performance. Fortunately, there is consensus that UCT has not reached the limit of its potential and that there are more heights to scale.

To this end we held a major Research Indaba in May 2010 to take stock of UCT’s global research standing and understand how to benchmark ourselves against international standards, as well as to explore how to improve our research co-operation with universities outside of South Africa. In addition, building on work started in 2009, each faculty at UCT continued to develop detailed plans during 2010 to enhance the quality and impact of their research. These plans emphasise each faculty’s commitment to playing in a much higher league of global research. The Faculty of Health Sciences set the gold standard by commissioning an international panel of scientists to review its research performance.

Of course, good research can only be done by good researchers. Ensuring that UCT has a solid pipeline of emerging researchers is key to the future success of the institution. During 2010 we agreed the details of an ambitious project that aims to create the next generation of academics in Africa to feed this pipeline. The project was developed in collaboration with the Carnegie Corporation of New York, in co-operation with the University of the Witwatersrand, the University of Ghana (Legon) and Makerere University in Uganda. Forty-six selected PhDs and postdoctoral research fellows will be trained in economics, civil engineering, infectious disease and molecular medicine, and molecular and cell biology. Starting in 2011, this project will also enable UCT to play a meaningful role in reviving the African academy and to build our profile in that area.

In our 2009 research report, we highlighted twin goals of greater impact and greater engagement and expressed our ambition to become a model of a developing-world university. We remain committed to producing high-quality research that is socially responsive and meets international ethics standards.

In 2010 we took an important new step towards greater engagement with the establishment of the UCT Knowledge Co-Op. This is an exciting collaborative project between various departments at UCT and the City of Cape Town that aims to build a bridge between the university and society by enabling wider access to the university’s research, knowledge and expertise. Supported by the Vice-Chancellor’s Strategic Fund, and based on the ‘shop-front’ or ‘science-shop’ idea in other countries, the project breaks from traditional structures and provides a forum where NGOs and other civil society groupings can work with the university to solve problems. The two-year pilot was launched in February 2010.
During 2010, UCT also launched a pilot project to investigate the need for, and scope of, an Office of Research Integrity (ORI). To maintain our standing as a globally competitive research-led university, UCT must demonstrate and provide evidence of its commitment to providing enhanced support for ethics compliance in research.

In the last Higher Education Quality Committee audit of UCT, this was flagged as an important area for development. Ongoing efforts are under way to provide researchers with guidance to meet international guidelines for best practice of ethics in research.

I believe we are working harder and more smartly than ever before to build UCT’s research culture and output, which in turn will enable us to compete and contribute more effectively, both locally and internationally. It is evident from the pages that follow that research is flourishing at UCT in every faculty.

As we move forward we are grateful for the continued commitment and enthusiasm of the UCT research community and are proud to showcase their achievements here.

PROFESSOR DANIE VISSER
DEPUTY VICE-CHANCELLOR
Research Highlights

A SAMPLE OF RESEARCH ACHIEVEMENTS FROM THE PAST YEAR THAT ARE FEATURED THROUGHOUT THIS REPORT.

PAGE 16

Innovation at UCT is celebrated with the publication of Innovation at UCT 2010, showcasing achievements in a wide diversity of fields across faculties.

PAGE 21

The NRF President, Dr Albert van Jaarsveld, presented the Champion of Research Capacity Development at South African Higher Education Institutions Award to Professor Alison Lewis.

PAGE 23

Professor Jill Farrant (right) receives the DST Distinguished Woman Scientist award from the Minister of Science and Technology, Ms Naledi Pandor.

PAGE 26

There are now 338 NRF rated researchers at UCT, representing approximately 15% of the national total.

PAGE 27

Professor Kelly Chibale (left) and Dr Azeem Khan (right), two of three UCT scholars to walk away with top honors at the annual NSTF awards.

PAGE 28

The African Climate and Development Initiative, under the leadership of Acting Pro-Vice- Chancellor Professor John Parkington, gains momentum in 2010.
The 2010 UCT Book Award is made to Professor Kit Vaughan for his book on Nobel Laureate Allan MacLeod Cormack.

Associate Professor Fritha Langerman is the first recipient of the UCT Creative Works award, for her exhibition Subtle Thresholds.

Professor Chuma Himonga steps into the South African Research Chair in Customary Law funded by the DST and administered by the NRF.

Professor Claude Carignan joins UCT as its 28th South African Research Chair in Extragalactic Multi-wavelength Astronomy, jointly funded by the DST and the SKA, and administered by the NRF.

UCT is awarded $2.5 million from the Carnegie Corporation to grow the next generation of researchers, with a particular focus on women and black researchers.

Professor Dan Stein is the 2010 recipient of the UCT Alan Pifer Award for his contribution to welfare-related research.
Research needs time, money and enabling conditions in order to flourish and the Department of Research and Innovation at UCT plays a key role in making sure that UCT’s researchers have all three of these elements. From supporting young researchers who are just starting out, to authorising and negotiating high-end research contracts entered into with a wide variety of funders, the department carries a mandate to be an enabler, administrator and strategic guide for research at the institution. UCT’s research covers a wide spectrum of needs and experience and the department implements its mandate via three niche structures to cater to these divergent requirements: the Research Office, the Postgraduate Centre and Funding Office, and the Research Contracts and Intellectual Property Services Office. These three units work together to transfer skills, build research capacity, and strengthen collaborative networks in South Africa and Africa, among other things. What follows is a brief introduction to their roles.

**Research Office**

The work of the Research Office is underpinned by the university’s vision of maintaining and improving its international reputation as a research-led university. The office fulfills various roles in order to keep the wheels of research at UCT well oiled. Its work includes developing capacity and running research development programmes, accrediting and evaluating the university’s research groupings, tracking the university’s publication count, building proposals, forging new and strategic partnerships, expanding access to national and international grants, and facilitating UCT’s engagement with the global rankings.

Two of our flagship projects are the Emerging Researcher Programme (ERP), which was launched in 2003 to develop young researchers at the start of their careers, and the Programme for the Enhancement of Research Capacity (PERC), launched in the latter half of 2008 and designed to provide a career boost to mid-career academics. Through the work of a dedicated team of co-ordinators with established research credentials, these initiatives draw on the expertise of current and retired senior academics to transfer skills and build research capacity. With scores of new participants in the ERP and a full programme of activities in PERC, activity on both these initiatives accelerated in 2010.

Participation in the ERP has increased steadily since it was established. It offers two streams of support, one for the social sciences, law, humanities and commerce and another for the natural and health sciences and engineering. Sixty-eight academics joined the ERP in 2010, bringing the total number on our ‘books’ (in other words, all those who had received some form of support from the programme since its inception) to 432. This amounts to 42% of all permanent academics at UCT. The extent of this reach is reflected in figure 1. With a very positive demographic profile, the ERP has also played an important role in developing the academic and research profiles of black and women academics in particular.

In 2010, PERC’s activities covered three broad areas: mid-career support, financial and intellectual support for Africa-based research and the production of Africa-centred knowledge. To boost the programme’s effectiveness, a full-time co-ordinator was appointed in January 2010.

PERC’s mid-career support initiatives were set up in response to requests from researchers for ongoing structured support for their research after progressing through the ERP. In 2010 this support included a series of mid-career seminars and workshops that covered various topics, presented by visiting international staff. Throughout the year, PERC made considerable progress in strengthening collaborative networks with partners in the global south and particularly in Africa.
In a continued effort to enhance cross-faculty and interdisciplinary collaborations, PERC also set up a reading and writing group in 2010 that has produced several papers through the year. These papers will be collated into an edited volume that will strengthen UCT’s position as a preferred southern partner for research on globally important themes. In collaboration with the donor-funded Sawyer Seminar Series in 2009–2010, the Research Office also launched a database that catalogues and provides access to scholarship from the global south in 2010 which is not readily available by conventional search engines.

Two other programmes run by the Research Office offer additional peer support to UCT researchers: the Mellon Visiting and Retired Scholars Mentorship Project and the African Research Project on Knowledge Production.

The office is grateful to the AW Mellon Foundation for its continued support of the Mellon Visiting and Retired Scholars Mentorship Project, which provides structured mentorship to young UCT researchers by internationally recognised scholars. The project attracted high participation in 2010. Ten mentors were hosted by various UCT faculties and departments and mentored a number of emerging or mid-career staff. The project promises to bear excellent results over the next two years.

The African Research Project on Knowledge Production, which forms part of the work of PERC, entered its second year in 2010. Its goals are to encourage collaborative, cross-disciplinary research that interrogates and disrupts dominant, Eurocentric knowledge concepts. We are grateful for Carnegie’s continued support of the initiative, totalling R600,000 per annum. This is distributed in four annual grants of R150,000 and remains a welcome source of funding for team-based research proposals covering diverse topics with direct and immediate relevance to the South African and African context. In addition to the four new awards made in 2010, substantial progress was made on projects that received funding in 2009.

Apart from the work it does to support and enable researchers, the Research Office also provides strategic support for research administration and management. In 2009 the Research Office submitted a successful application to the National Institutes of Health (NIH) for an International Extramural Associates Research Development Award, which aims to provide training for grant managers in NIH policies and procedures and to build up existing administrative infrastructure in the Research Office. UCT has already seen evidence of the impact of this award during its first year, with an almost 100% increase in NIH applications during 2010. A senior member of the Research Office also spent three weeks at the NIH offices in Washington DC getting exposure to and training in NIH policies and procedures, which are now being disseminated throughout UCT.

Managing and supporting a range of funding programmes through the National Research Foundation (NRF) is also a key component of the office. More detail is available later in this report.

As international competition between universities is continually at the top of the UCT agenda, the Research Office took steps in 2010 to reinforce the framework for engagement with the international ranking systems, launched in 2008 by the University Research Committee (URC).

The Research Office also continued to manage UCT’s involvement with the Times Higher Education Survey Platform Group, aimed at developing a rounded picture of what a higher education institution does and how well it does it. These sometimes controversial rankings and the proliferation of league tables across the world demonstrate how knowledge is a key driver of economic growth and global competitiveness. With increased international visibility, UCT’s research effort needs to expand, strategically improving its international footprint.
While competitive rankings provide an insight into UCT’s performance on the global stage, it is also important to understand and measure how it is performing internally. UCT considers the periodic evaluation of its official research groupings essential in order to guarantee the quality of research and to achieve its aspiration of being research-led. The Research Office facilitates a rigorous five-yearly peer-review evaluation process of the URC-accredited research groupings. Groups are evaluated on a number of criteria including their global footprint, their social engagement and their benefit to society.

At the end of 2010, the number of URC-accredited research groupings stood at 68. This number includes nine MRC/UCT groupings, as well as five new research groupings which received URC-accreditation in the course of the year. (See page 36 for more information.)

The first round of reviews of UCT’s Signature Themes was also completed at the end of 2010 – a process also facilitated by the Research Office. As per the Signature Theme policy, these groupings were required to undergo international peer review after their first three years of existence. Hereafter, they will either transform into more conventional self-sustained entities or retain their signature theme status and seed-funding for another cycle.

Through interdisciplinary collaboration, performance benchmarking and evidence-based self-evaluation portfolios, UCT’s quality-assurance process will help to guarantee the quality of its research, reinforcing its standing as a research-led university.

In summary, the past year has been one of consolidation, in which progress was made on strategically important projects, and we have seen strong evidence of the success of these projects. We will continue to build on these successes as we move into the next year and beyond.

DR MARILET SIERAERT
DIRECTOR: RESEARCH OFFICE

THE POSTGRADUATE CENTRE AND FUNDING OFFICE

The Postgraduate Centre and Funding Office (PGC&FO) is a service provision area within the Department of Research and Innovation and is accountable to the university’s Postgraduate Studies Funding Committee, which in turn reports to the Board for Graduate Studies. The PGC&FO provides a broad-based support service to postgraduate students and postdoctoral research fellows (PDRFs), including the administration of financial support. Included in such support are funding programmes that provide students with opportunities to present their work at local and international conferences and to conduct research at international institutions.

In addition to funding, the office is responsible for ensuring that broader support structures and resource mechanisms that add quality to the lives and experience of these individuals are established for both postgraduate students and postdoctoral research fellows. These are constantly monitored, reviewed and adjusted where necessary. One such area of support is the UCT Postgraduate Centre and Seminar Room, which is managed by the Postgraduate Funding Office and situated adjacent to the offices. The centre is a functional space that provides access to 12 computers as well as workplaces with internet connection. A restful lounge area provides comfortable seating, and a range of journals, magazines and newspapers are on offer. The seminar room provides a facility for seminars, meetings, workshops and training courses.

The Postgraduate Centre also houses the Blue Desk Information Service, which was established in response to concerns raised by postgraduate students regarding the lack of a one-stop information service. Complementary to the Blue Desk Information Service, the PGC&FO also introduced the A–Z Guide to the Postgraduate Experience and the A–Z Guide for Postdoctoral Research Fellows at UCT. These two publications provide a comprehensive guide to enable students and PDRFs new to UCT to navigate the administration and facilities with ease. The guides will be updated annually and the UCT community has been invited to contribute any useful material for inclusion in future publications.

LINDA VRANAS
DIRECTOR: POSTGRADUATE CENTRE AND FUNDING OFFICE
uct’s mission states inter alia that uct “aspires to become the premier academic meeting point between south africa, the rest of africa and the world. taking advantage of expanding global networks and our distinct vantage point in africa, we are committed, through innovative research and scholarship, to grapple with the key issues of our natural and social worlds.” our staff and students are living this mission through their innovative research, which has led to the discovery of new drug compounds and crop varieties, and to advances in nanotechnology and medical devices. these researchers are agents and catalysts for new ideas, creating solutions that contribute to our country’s competitiveness and improve the quality of life of its people.

at the end of 2010 we acknowledged and celebrated our researchers’ contributions to innovation with the publication innovation at uct 2010. no-one reading that report can fail to be awed and energised by the work that is being done at uct, some of which is also showcased on the pages that follow.

two other publications were launched in 2010 at an innovation evening where past and present inventors were recognised. these publications are:

- the inventor’s handbook, which is given to inventors at the time of invention disclosure to provide them with detailed information on uct processes and patent office requirements relating to the filing of a provisional patent and the gate review requirements for the later stages of patenting.

- a uct laboratory notebook, which is compliant with international standards for both intellectual property management and good laboratory practice.

however, despite these successes there is still much to be done to foster innovation at uct. there is an increasing need to develop a focused strategy for innovation that dovetails with our research strategy. to this end, a working group was established in 2010 to investigate the state of innovation at uct. interviews with a cross-section of the uct research community provided considerable insight into the challenges the innovation community faces and an interim report was compiled as the first step towards addressing such challenges.

regular seminars and training sessions for staff and students were also introduced in 2010. the seminar series covered a range of issues from basic intellectual property to the role and responsibilities of a director of a company. video presentations based on recordings from past big idea conferences, which focus on entrepreneurship and running a business, have proved very popular with the student community in particular.

our researchers’ many achievements are also reflected in the numbers. we have seen an increase in the number of invention disclosures and patents and the number of licence agreements, as well as acknowledgeable income. as at the end of 2010, our pre-seed fund, established in 2008, had granted close to r1.5 million to several innovative academics and researchers and helped turn good ideas into viable innovation projects. at least four of these already have outcomes that can be commercialised, either through licensing or spin-out company formation.

uct researchers partner with industry, other higher education institutions, and national and international governmental/ intergovernmental entities in many different ways. these partnerships range from grants, service contracts, collaborative research agreements, material transfer agreements and clinical trial agreements to major research consortia, and often these initiatives involve multiple local and/or international partners. a record 1056 contracts at a value of r550 million (also a record) were entered into in 2010, of which 408 contracts to the value of r382.49 million (vs r334.7 million in 2009 and r340 million in 2008) were entered into with entities from 39 countries.

as we look ahead, a key focus will be to monitor the impact of some significant changes in the south african intellectual property (ip) and innovation landscape which were announced in 2010. these included the promulgation of the ip rights from publicly funded research and development act, the establishment of an interim national intellectual property management office and the official launch of the technology innovation agency.

our office will continue to be vigilant to ensure that our researchers are kept abreast of important developments and opportunities so that uct and its researchers can continue to make a significant contribution to south africa and the world with its innovative work.

piet barnard
director: research contracts and intellectual property services office
Innovation at UCT

Innovation is the cornerstone of all research. Great inventions and discoveries drive the world and UCT academics, students and graduates have been innovators in many disciplines over many years. From Chris Barnard’s pioneering heart transplant to Allan Cormack’s development of the CAT scanner and Aaron Klug’s contributions to crystallographic electron microscopy, UCT’s name is synonymous with some of the great innovations of our time.

UCT has had a Technology Transfer Office since 1999 and is increasingly putting measures in place to sustain and support innovators at the institution. In recent years, innovation and entrepreneurship have also been recognised by the government as strategic imperatives. The promulgation in 2010 of the Intellectual Property Rights from Publicly Financed R&D Act and the Technology Innovation Agency Act are shifting the innovation landscape in South Africa and UCT is responding by developing a more integrated innovation framework for the university. The bottom line, says Piet Barnard, Director: Research Contracts and Intellectual Property Services, is that UCT recognises that, for the university, the economy and the nation, the importance of innovation cannot be underestimated.

INNOVATION HIGHLIGHTS 2010

Innovation at UCT is visible in many disciplines and takes many forms. From awards and the development of new products to breakthroughs in research and development, UCT’s innovation enterprise is active and healthy. Some of the highlights are showcased below.

AWARDS

Early in 2010 UCT’s prolific inventors Professors Margit Härtling and David Britton received the Academic R&D Award at the IDTechEx Printed Electronics Europe Awards 2010. It was presented in recognition of their groundbreaking work in printed technology. They developed a process for printing electronic ink onto a substrate (the material on which an electrical circuit is built) where it works as a semi-conductor that can carry electrical charges.
HIV, food security and water scarcity are three key issues affecting the sustainable and continued development of South Africa and Africa. UCT researchers have developed new technologies and vaccines that represent giant leaps in combating these issues for the continent and the world.

AFRICA’S OWN HIV VACCINE

Under Professor Anna-Lise Williamson’s leadership, the Phase 1 trials of the first HIV vaccine developed at UCT have been completed. The initial immunogenicity results look promising. This means that South Africa is one of a few developing nations to have successfully created an HIV vaccine that has proceeded to human clinical trials. This is a significant milestone for HIV research and a first for Africa.

THE END OF MAIZE STREAK VIRUS

Supported by Pannar Ltd of South Africa, Professor Ed Rybicki and Dr Dionne Sheppard are developing second- and third-generation transgenic maize lines resistant to Maize Streak Virus. Several transformed plant lines have been successfully tested in glasshouse trials and will be soon be given trials in the field.

A TECHNOLOGY TO TREAT WASTE-WATER STREAMS FROM MINES

Arising out of his doctoral work on eutectic freeze crystallization, Dyllon Randall was awarded the prestigious Biennial Award from the Industrial Water Division of the Water Institute of South Africa/South African Industrial Water Association. The award recognises his outstanding contribution to industrial water technology. His work is also likely to contribute to the profits and positive environmental impact of the mining industry – a key player in the South African economy. The research focuses on the technology used to treat mine-water waste by taking waste water and cooling it down until ice and salt form at the same time. With a particular focus on the waste water generated by the coal-mining industry, the technology demonstrates a waste-water reduction of 97% and leads to the production of potable water.

NEW PRODUCTS BLAZE A TRAIL

UCT’s intellectual property carries enormous academic and commercial weight. UCT researchers have developed various products that have been shown to be commercially viable. Some were launched to the commercial market in 2010.

DSM South Africa (Pty) Ltd launched PeptoSport®, a new sports nutrition product based on a formulation developed
by Associate Professor Andrew Bosch, from the University of Cape Town/Medical Research Council Research Unit for Exercise Science and Sports Medicine. The product reduces the onset of muscle pain in the calves and quadriceps during periods of high training load. It is also intended to increase the endurance of sportsmen during training.

The result of a Sasol-UCT collaboration, the world’s first in situ magnetometer is ready to be launched to the market. The instrument has generated groundbreaking results for Sasol’s proprietary research and development programme in cobalt metal-based Fischer-Tropsch catalysis. The instrument also has wider applications. It is a generic tool for the characterisation of nanoparticles in diverse fields such as novel magnetic materials for water treatment, metal extraction, nanomagnets and recording devices. It has been well received internationally: along with the work of world leaders in in situ research it was selected to feature in a prestigious journal special edition.

STUDENT INVENTORS SHINE

UCT student inventors have also done the university proud. Two of three UCT entries to the 2010 National Innovation Competition were placed in the top ten finalists. Dr Sipho Mfolozi of UCT’s Division of Forensic Medicine was placed second for his invention of the “NecroChronometer” that helps forensic pathologists determine a body’s time of death. The second top-ten placement was DryBath™. Invented by Ludwick Marishane of the student company Headboy Industries, DryBath™ is a creative substitute for the conventional bath and addresses the problem of access to water for homeless people, refugees and hikers – or anyone living in a water-scarce environment.

PRE-SEED FUND PROJECTS

Some UCT projects have attracted interest from institutional and government funding sources. This reinforces the credibility of the research and development and the dedication of the researchers.

In a project led by Professor Keertan Dheda, a prototype TB test was successfully demonstrated and there are plans to further
Prototype development is nearing completion and a spin-off company, Antrum Biotech (Pty) Ltd, has successfully attracted funding from the Department of Trade and Industry’s SPII to pursue the next stage. More significant funding is also being raised to take the product to market.

Professor Mike Inggs and his team have developed a passive radar system. Discussions have started with a commercial partner keen to pursue the next phase of development. This low-cost radar will greatly improve the level of aircraft monitoring across the continent and will be ideal for implementation in South Africa and other African countries.

Established under the leadership of Kurt Campbell at the Michaelis School of Fine Art, the first Concept Fund project was completed. A font foundry developed three font sets, learning a great deal about the commercialisation of fonts along the way. One of these fonts has been licensed for use by an emerging UCT spin-off and another was submitted in the final round for use in a poster in Germany. There has been considerable interest in these Afrocentric fonts that draw on our heritage. Additional fonts will be developed in due course.
To compete on a global scale, universities need to benchmark their performance. UCT measures its performance both nationally and internationally by using internationally-recognised indicators. These include funding income, research contracts, and government grants. The reputation of our researchers, publication output and our national rankings on respected surveys are also all important indicators of the quality of the institution’s work.

RESEARCH FUNDING

Funding from external sources is critical to enabling UCT’s research endeavours. The university acquires its funding from numerous private and public sources. Funding agencies such as the National Research Foundation and the Medical Research Council are important sources of research funding, as are research contracts signed with external partners. In a pressurised global economy, the university must be vigilant about how this money is deployed, and diligent in monitoring the results achieved.

NATIONAL AGENCY FUNDING THROUGH RESEARCH GRANTS

The National Research Foundation and the Medical Research Council were the major agencies that provided national grant funding to UCT researchers and research groups.

National Research Foundation (NRF)
The NRF remains a first resort for funding for many researchers at UCT. At the end of 2010, UCT had a total of 399 NRF grant-holders across a variety of funding categories, holding 749 grants with a cumulative value of over R213 million. This total can be favourably compared to the previous year’s 394 grant-holders holding 807 grants with a cumulative value of over R189 million.

The main streams of NRF funding allocated to UCT include:
- Focus Area Programme Awards: at the end of 2010, UCT researchers held Focus Area grants with a cumulative value of R19,607,290. The last of these grants will come to an end on 31 December 2011 as the NRF is phasing out this programme.
- Incentive Funding for (NRF) Rated Researchers Programme: in total, 267 rated researchers received Incentive Funding grants in 2010, with a total value of R15,564,182. This compares favourably with the previous year’s 221 grant-holders whose cumulative holding was valued at R13,589,667, reflecting an increase of R1,974,515.
- Blue Skies Research Programme: at the end of 2010, UCT held seven Blue Skies grants in total. These had been awarded under the previous call, with a cumulative value of R2,359,359.
- Competitive Support for Rated Researchers Programme: at the end of 2010, UCT researchers held 30 grants in this programme with a cumulative value of R7,008,300.
- Technology and Human Resources for Industry Programme (TH RIP): TH RIP is a partnership programme that leverages industry funding by providing matching government funding for innovative research and development in South Africa. In 2010, UCT submitted 27 applications for funding, with a total value of R13,140,305.
- International Science Liaison (ISL): in 2010, UCT’s ISL grants were worth more than R26,433,340.

FUNDING FROM RESEARCH CONTRACTS

In 2010 the Research Contracts and Intellectual Property Services Office processed 1056 contracts to the value of R550 million. These contracts vary from short-term contracts of under R10,000 to multiyear contracts with multimillion-rand budgets and involve both local and foreign partners. The number of contracts approved in 2010 increased by 20% from 2009.

Contracts are signed with a variety of funders and organisations locally and abroad, as evidenced in Figure 3.
Her sterling work in training and mentoring a number of black and women students in industrial crystallisation research has won professor of chemical engineering, Alison Lewis, the NRF President’s Champion of Research Capacity Development at South African Higher Institutions award.

The honour is tribute to Lewis’s efforts to transform the research and community landscape. It also acknowledges her efforts to discover research talent from “designated groups”, and in helping these individuals become world-class researchers. Sixteen postgraduate students are registered under her guidance in the Crystallisation and Precipitation Research Unit.

In presenting the award, Dr Albert van Jaarsveld, President of the NRF, praised Lewis’s enthusiastic support over the past 10 years. “Not only is she passionate about transforming the face of science in South Africa, but she is highly regarded and enjoys considerable recognition from her peers for the high quality and impact of her research outputs. The NRF is delighted to honour Professor Alison Lewis with this well-deserved award.”

POSTGRADUATE FUNDING AND RESEARCH

POSTGRADUATE STUDENTS

Postgraduate students are supported from five major sources. The main source of support is through the Departmental Scholarships category. Such awards are sourced from funds raised by individual academics and/or departments.
value of R97,134,799 in 2009. (Note: Some students submit more than one application and most students are offered more than one award.)

The National Research Foundation provides a significant portion of overall student support at UCT. This is shown in Figure 4.

In line with the university’s strategic goals to internationalise and develop research at UCT, and because senior postgraduate students play an important role in the university’s overall research enterprise, opportunities that support international students, conference and international travel and exposure, as well as some that provide specific support for research, are offered. Some of these funding programmes are shown below.

- **UCT Scholarships for International and Refugee Students**

Each year a significant number of awards are made to continuing and new international and refugee students who register for honours, master’s and doctoral degrees at UCT. In 2010, 734 international and refugee students received 887 awards to a total of R36,935,051. The main source of funds came from departmental awards. 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. Table 2 below provides a summary of awards made in 2010.

- **UCT Conference Travel Grants**

In order to maximize the opportunities for students to present and even publish their work, the university has provided funds to assist with the costs of conference travel. In 2010 and using UCT-sourced funds, 56 postgraduate students and 21 postdoctoral research fellows were awarded a total of R566,800 and R234,200 respectively towards the cost of travelling to local and international conferences (see Table 3).

- **UCT Scholarships for International Travel**

Using funds from the income derived from investments, the university was able to support 22 master’s and doctoral students who successfully applied for UCT scholarships for international travel. These scholarships enabled students to spend up to 10 months at approved institutions abroad. These awards were made to a total value of R1,061,283.

The following institutions were visited by students during 2010: Technical University of Delft, Netherlands; International Institute of Information Technology, India; Goethe University, Frankfurt, Germany; University of Virginia, United States of America; Columbia University Medical Center, United States of America; University of Brussels, Belgium; Stirling University, Scotland; Oxford Brookes University, England; University of Edinburgh, Scotland; University of Glasgow, Scotland; University of Sydney, Australia; Georgia State University, United States of America; University of Birmingham, England; Virginia Commonwealth University, Richmond, United States of America; University Duisburg-Essen, Germany; University of Technology, Missouri, United

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<th>Source of Funds</th>
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<th>Other international students</th>
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**TABLE 2: SUMMARY OF AWARDS MADE TO INTERNATIONAL AND REFUGEE STUDENTS**
Three UCT researchers featured among the winners of the South African Women in Science Awards (WISA), presented annually by the Department of Science and Technology to recognise, and create incentives for, women scientists and researchers, and to create role models for young women and girls.

Professor Jill Farrant, the 2009 runner up, was named the Distinguished Woman Scientist in the Life Sciences, while Professor Karen Sliwa-Hahnle was second runner-up in the same category. Dr Floretta Boonzaier was first runner-up in the Distinguished Young Woman Researcher in the Social Sciences or Humanities category.

Farrant, of the Department of Molecular and Cellular Biology, was singled out for her work on drought-tolerant plants, her research and publication track record, and her national and international standing. Also mentioned was the Equity Development Programme she runs to source funding for black and women students.

Sliwa-Hahnle, professor of cardiovascular research at UCT and director of the Hatter Cardiovascular Research Institute, was honoured for her substantial contribution to the understanding of the causes and treatment of unexplained heart failure in pregnancy, and to the Heart of Soweto study that’s now being rolled out nationally.

Boonzaier’s citation talks of her work in the Department of Psychology on the “construction of subjectivities” in relation to violence in intimate heterosexual relationships, a topic Boonzaier has explored in her projects, including a study conducted with Stellenbosch University that looks at intimate heterosexual relationships in a low income, semi-rural community in the Western Cape.

Distinguished researchers: UCT’s winners of DST Women in Science Awards – Dr Floretta Boonzaier, Professor Jill Farrant, and Professor Karen Sliwa-Hahnle (photo on page 69).

| Science: Computer Science – Canada; Archaeology – Sweden, Senegal; Chemistry – South Africa, United States of America; Zoology – Canada, Japan, Brazil, Czech Republic; Statistical Science – Portugal; Molecular and Cell Biology – United States of America, United Kingdom, Spain. |
| Health Sciences: Medicine – Switzerland, South Africa; Medical Biochemistry – Australia; Immunology – United Kingdom; Surgery – Mexico; Nursing – China; Clinical Laboratory Sciences – United States of America, Italy, United Kingdom; Public Health – South Africa; Psychiatry and Mental Health – Switzerland; Medical Virology – Canada; Clinical Pharmacology – Germany. |
| Engineering & the Built Environment: Civil Engineering – Netherlands; Electrical Engineering – Botswana, Australia, China; Chemical Engineering – France, Czech Republic; Geomatics – United States of America; Mechanical Engineering – Singapore. |
| Humanities: English – Italy; Historical Studies – Australia; Psychology – Australia; French – South Africa; Sociology – Sweden; African Studies – Hungary; Education – Copenhagen; Drama – Germany. |
| Commerce: Information Systems – Australia, South Africa; Economics – Egypt, Portugal; Operations Management – Canada. |
| Law: Public Law – Greece. |

**TABLE 3: CONFERENCE TRAVEL DESTINATIONS**

| States of America; Centre for Global Health and Economic Development, Columbia University, United States of America; Harvard School of Public Health, United States of America; University of California, United States of America; University of Rennes, France; Griffith Law School, Australia; Toronto University, Canada. |
| Each year a limited number of high-value awards are made. In addition, the associateships include a monetary contribution to the successful candidate’s research costs. In 2010, 18 master’s and doctoral students received awards to a total of R810,000 for their work in the following areas of research: information systems, electrical engineering, civil engineering, chemical engineering, medicine, immunology, human biology, sociology, social anthropology, drama, public law, botany, molecular and cell biology, zoology and physics. |

**UCT Research Associateships**

Sourced from UCT funds, these highly prestigious awards are made annually to recognise excellence among master’s and doctoral student researchers and their supervisors.
In 2010 the Postgraduate Studies Funding Committee approved a new scholarship sourced from donations and from funds derived from the income of an investment. The package was designed to ensure that doctoral students receive full-cost support that removes the necessity for non-research related employment. The package consists of three parts:

- The scholarship of R50,000.
- Compulsory part-time employment that is research-related and in the student’s academic department.
- External awards to ensure that the total value of the package is not less than R120,000.

In 2010, 20 UCT PhD Package Project awards were made to a total of R1,000,000.

Postgraduate students at UCT are supported by generous grants from donors. Examples are shown below:

- **The Harry Crossley Foundation** has provided support to postgraduate students, research and to postdoctoral research fellows for many years. In 2010, one postdoctoral research fellowship and 20 research fellowships were provided to a total of over R1,353,000. In addition to the Fellowship Programme, the Foundation provides further support to postgraduate students in the form of need-based bursaries, for research in health sciences and for the supply and maintenance of equipment in the Postgraduate Centre.

- **The AW Mellon Cross-Faculty Scholarships** provided support totalling R2,100,000 to 10 master’s and doctoral students registered in specific areas of study in humanities, law and commerce. In addition to this amount, the students have access to travel and research allowances.

- **The D&E Potter Fellowship Programme** provides full-cost support 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. The D&E Potter Fellowship commenced in 2004 and to date 50 students have been supported. In 2010, 17 awards were made (including continuing students) to a total value of R1,825,000.

### POSTDOCTORAL RESEARCH

In 2010, 370 postdoctoral fellowships were awarded to 223 registered postdoctoral researchers, to a total value of R38,025,602. Support for postdoctoral research is sourced from the NRF, the MRC, the URC, income from departmental funds, donations and investments. The majority of support for postdoctoral researchers comes from departmental funds, which are sourced from corporations and industry, as well as from trusts and foundations. One such foundation is the **Claude Leon Foundation**, which contributed R2,873,132 in support of 19 postdoctoral researchers in 2010. Of this amount, more than R98,000 was allocated towards conference travel.

The postdoctoral experience and quality of life at UCT is assessed via surveys. The first survey was conducted in 2003, with a follow-up survey in 2009. The findings of the two surveys have resulted in review of the administration and improvement of overall service provision to the sector. Such improvements include publication in 2010 of the first comprehensive information booklet entitled *The A–Z Guidelines for Postdoctoral Research Fellows*. In addition to this, planning for a seminar series and general professional development is under way for implementation in 2011.

Following a countrywide investigation by Pricewaterhouse-Coopers, the South African Revenue Services approved a Class Ruling giving tax exemption to postdoctoral fellowships that are awarded under specific conditions.

Thirty-nine Postdoctoral Research Fellows (PDRFs) travelled to various destinations for conferences and research collaboration with other institutions. Funds to support such travel were sourced from the Claude Leon Foundation, the NRF and the University Research Committee Postdoctoral Fund.

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*Figure 5: Growth in Postdoctoral Research Fellows at UCT, 2002–2010*

*Note: Some PDRFs are registered at UCT but receive external support. 235 PDRFs are recorded as being registered, but only 223 of these received UCT-administered fellowships.*

*Figure 6: Value of Postdoctoral Fellowships, 2002–2010*
ORIGIN OF DUST STUDY BREAKS NEW GROUND

The Southern African Association of Geomorphologists (SAAG) has named the master’s thesis of UCT student Kathryn Vickery as the best of 2010. In her thesis, *Southern African Dust Sources as Identified by Multiple Space-Borne Sensors*, Vickery not only points out, for the first time, some of the largest points of origin of dust on the subcontinent, but also hints at some of the environmental and climatological roles that it can play.

Working off some 5000 images of various resolutions obtained from Meteosat and MODIS (Moderate-Resolution Imaging Spectroradiometer) satellites, Vickery looked at what aerosols are blowing off Southern Africa, their make-up, where they’re heading and how long it takes them to get there. She paid particular attention to salty aerosols coming off the Makgadikgadi Pan in Botswana, and the Etosha Pan in Namibia. Other than identifying the dust sources, she also explored their links with regional weather patterns.

Vickery, who did her master’s under the supervision of Dr Frank Eckardt in the Department of Environmental and Geographical Science, also recently won a prestigious Commonwealth Scholarship, which she’ll put to good use for her doctoral studies on the same subject at UCT and Sheffield University in the UK over the next few years.

Kathryn Vickery at the Makgadikgadi Pan, one of the largest sources of dust and other aerosols in Southern Africa.

### TABLE 4: POSTDOCTORAL RESEARCH FELLOWSHIPS REGISTERED PER FACULTY

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Number of registered PDRFs</th>
<th>Number of fellowships made</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commerce</td>
<td>8</td>
<td>13</td>
<td>R1,563,000</td>
</tr>
<tr>
<td>Engineering &amp; the Built Environment</td>
<td>13</td>
<td>24</td>
<td>R2,117,634</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>72</td>
<td>138</td>
<td>R13,647,415</td>
</tr>
<tr>
<td>Humanities</td>
<td>16</td>
<td>22</td>
<td>R2,225,785</td>
</tr>
<tr>
<td>Law</td>
<td>6</td>
<td>5</td>
<td>R800,000</td>
</tr>
<tr>
<td>Science</td>
<td>120</td>
<td>168</td>
<td>R17,671,768</td>
</tr>
<tr>
<td>Total</td>
<td>235</td>
<td>370</td>
<td>R38,025,602</td>
</tr>
</tbody>
</table>

### NRF EVALUATION AND RATING OF RESEARCHERS

The NRF rating remains one of the primary South African measures of research quality at tertiary level and the rating carries with it prestige and valuable leverage for international collaborations and funding. The NRF bases its evaluation and rating of individuals primarily on the quality and impact of recent research outputs, as judged by national and international peers. Ratings are awarded in five categories (described on right), each targeting researchers with an established track record (categories A, B and C) or those who show promise of becoming established within a few years (categories P, Y and L*).

*in the process of being phased out by the NRF.

### DESCRIPTION OF NRF RATING CATEGORIES

- **A**: World leaders renowned for the high quality and impact of their research.
- **B**: Researchers with considerable international stature.
- **C**: Established researchers who produce research of an international standard.
- **P**: Young researchers (normally younger than 35 years of age) who obtained their doctoral degrees not more than five years ago and who, on the basis of exceptional performance, are recognized internationally as having the potential to become future leaders in their field.
- **Y**: Young researchers (40 years or younger) who obtained their doctoral degrees not more than five years ago and who, on the basis of their performance, are recognized as showing promise of establishing themselves as researchers within a five-year period after evaluation.
- **L**: Academics (normally younger than 55 years) who have demonstrated potential or ability as researchers in the past, and who show promise of being able to establish or re-establish themselves as researchers within a five-year period after submission of evaluation documents.

### FIGURE 7: NRF-RATED RESEARCHERS AT UCT, 2006–2010

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In 2010, UCT submitted 27 new rating applications, compared with 47 in 2009. Forty-one applications were submitted for re-evaluation, up from 34 in 2009. All applications were successfully rated. Figure 7 on page 25 reflects a breakdown of the total number of NRF-rated researchers across the various categories at UCT.

**NRF-RATED RESEARCHERS AT UCT**

Newly rated researchers from the 2010 cycle are listed in bold text.

Abiodun, B
Abratt, RPA
Abratt, VR
Ackermann, RR
Adhikari, M
Alexander, MG
Alexeeva, N
Allie, MS
Altweg, R
Ansorge, U
Archibald, M
Armitage, NP
Badri, M
"Alexeeva, N"
"Alexander, MG"
"Adhikari, M"
"Altweg, R"
"Allie, MS"
"Ansorge, U"
"Archibald, M"
"Armitage, NP"
"Badri, M"
"Abratt, RPA"
"Abratt, VR"
"Ackermann, RR"
"Adhikari, M"
"Alexander, MG"
"Alexeeva, N"
"Allie, MS"
"Altweg, R"
"Ansorge, U"
"Archibald, M"
"Armitage, NP"
"Badri, M"
"Abratt, RPA"
"Abratt, VR"
"Ackermann, RR"
"Adhikari, M"
"Alexander, MG"
"Alexeeva, N"
"Allie, MS"
"Altweg, R"
"Ansorge, U"
"Archibald, M"
"Armitage, NP"
"Badri, M"
"Abratt, RPA"
"Abratt, VR"
"Ackermann, RR"
"Adhikari, M"
"Alexander, MG"
"Alexeeva, N"
"Allie, MS"
"Altweg, R"
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"Armitage, NP"
"Badri, M"
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"Abratt, RPA"
"Abratt, VR"
"Ackermann, RR"
"Adhikari, M"
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"Alexeeva, N"
"Allie, MS"
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"Ansorge, U"
"Archibald, M"
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"Abratt, RPA"
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"Allie, MS"
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"Archibald, M"
"Armitage, NP"
"Badri, M"
"Abratt, RPA"
"Abratt, VR"
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"Alexander, MG"
"Alexeeva, N"
"Allie, MS"
"Altweg, R"
"Ansorge, U"
"Archibald, M"
"Armitage, NP"
"Badri, M"
Three UCT scholars – of six nominated – walked away with honours at the 2010/11 annual National Science and Technology Forum-BHP Billiton Awards.

The three are Emeritus Professor Lionel Opie (left), who received the Individual Over a Lifetime Award; Professor Kelly Chibale (right), named the winner of the TW Kambule National Research Foundation award for a senior black male researcher over the past five to 10 years; and Dr Mohamed Azeem Khan (far right), who won the Kambule NRF award for a distinguished young black male researcher over the past two to five years.

Opie, emeritus professor of cardiology and founding director of UCT’s Hatter Institute for Cardiology Research, was hailed for his contribution to the improved understanding of the causes of heart attacks, and the more effective use of medication for heart disease.

Chibale, director of the recently launched Drug Discovery and Development Centre at UCT, was cited for his significant contributions to research capacity and skills development in several key areas critical to the discovery of modern pharmaceutical medicines.

And Khan, a senior lecturer in the Department of Electrical Engineering, was recognised for his contribution to the understanding of industrial energy efficiency and the design of small-wind generator and energy storage systems.

Other UCT finalists recognised at the event were Professor Jill Farrant of the Department of Molecular Cell Biology, Associate Professor Nonhlanhla Khumalo of the Division of Dermatology at Groote Schuur Hospital and Red Cross Children’s Hospital, and the Department of Chemical Engineering’s Professor Michael Claeyss, who led the UCT/SASOL Study Team on Cobalt Fischer-Tropsch.
Climate change threatens the livelihoods of millions across the planet and Africa is one of the more vulnerable regions.

In response, UCT has launched a major initiative to consolidate UCT’s response to the pressures and threats of climate change on the African continent. The African Climate and Development Initiative (ACDI) was launched late in 2009 at the behest of the Vice-Chancellor, Dr Max Price, to build knowledge and research capacity in climate change at UCT. Professor John Parkington was appointed as Acting Pro-Vice-Chancellor in 2010, and started off the initiative in a creative and proactive way. ACDI’s bottom line is to address Africa’s climate and development challenges from an African perspective.

According to Professor Mark New, who was appointed director of ACDI and UCT Pro-Vice-Chancellor for climate change from 2011, there is plenty to be concerned about. Africa is one of the regions most sensitive to climate change, not only because the climate is more variable in the tropics and subtropics, but also because there is less capacity on the continent to cope with the impacts of climate change. In addition, against the backdrop of accelerated economic development, it is increasingly urgent that the continent finds low-carbon solutions to economic growth or it risks exacerbating the threat of an unpredictable climate.

"While much of what needs to be done in Africa on the climate issue is political and economic, it is important that the research community works to provide government and business leaders with evidence based on high-quality research on which to base action on both mitigation and adaptation", says New.

New is confident that the opportunities in this arena are huge. UCT already has an impressive track record in the climate change arena, from applied research to active involvement at policy level with the global climate change negotiations. ACDI embraces and builds on these initiatives.

ACDI will immerse itself in three main functions: cutting-edge research, teaching at postgraduate level and social/public awareness.

**RESEARCH**

On the research front, ACDI will facilitate and co-ordinate strong multi-, cross- and trans-disciplinary research programmes that draw, initially, on the unique natural setting available in the southwestern Cape (the interplay between two oceans, local geology and flora juxtaposed with distressing socio-economic conditions) but which will extend and expand northwards into Africa.

The research is informed by the challenges of achieving development in the context of high levels of inequality and poverty. From this perspective ACDI is focusing its research on solutions ranging from the global to the local scale covering the scientific, engineering, legal, social and political aspects of climate change.

The subject matter of a social science component of ACDI is policy and climate action itself. Research and development will focus on initiatives that promote sustainable economies and lifestyles, which in turn promote developmental (pro-poor) objectives. Strong research in the pure and applied sciences and social sciences will underpin ACDI’s activities, thus informing innovative models for adaptation and mitigation, particularly for, although not limited to, the poorer communities in Africa.

Research under the ACDI banner was kick-started in 2009 with initial funding from the Carnegie Corporation. Two foundation projects selected in a competitive evaluation process were given the green light – one focusing on long-term vegetation change, driven by the Plant Conservation Unit, and the other on governance, driven by the Africa Climate Change Innovative Governance Hub.

In addition, the Vice-Chancellor’s Strategic Fund awarded a "collective" grant to six proposals researching issues related to climate change and development.

**TEACHING**

Central to the ACDI vision is the development of a strong taproot into primary disciplines, from undergraduate through to postgraduate levels of the curriculum. To this end, training in relevant disciplines occurs through research master’s and PhD degrees. At a more general educational level, a multidisciplinary coursework master’s programme in the general field of climate change and development will be implemented in 2011. This programme is tailored to the needs of those wanting general exposure to the issues of climate change and mitigation, and who have ambitions for a more vocational application.
SOCIAL ENGAGEMENT

Part of the education of citizens, including students in schools and universities, should be familiarity with, and an appreciation of, their natural heritage and its global significance. ACDI actively creates this awareness and raises general levels of engagement with issues of climate change and climate variability. Most importantly, the quality of its research enables debate and public awareness of contrasting arguments in a responsible way.

Three highly successful public seminars were held during 2010 drawing audiences from all walks of life. The debates stimulated through these seminars are important for raising awareness and facilitating intellectual discussion.

New said that these three activities would work together through the establishment of strong partnerships throughout Africa to develop African leaders of the future who have an intimate understanding of the physical and human needs of Africa, and who will contribute to addressing this all-important issue facing humankind.
UCT’s research spans the depth and breadth of academia from blue-sky, curiosity-driven scientific endeavours through to applied research that seeks to address some of Africa’s most pressing problems. UCT supports a research agenda without restriction because it believes that the consequences of today’s research on future discoveries and solutions cannot be predicted. At the same time, the university has identified several interdisciplinary research themes with particular relevance to the challenges facing the planet around which to mobilise and focus research activity.

All the themes have taproots into the curricula and serve as mechanisms to build critical mass in areas of need in order to increase the impact and relevance of UCT’s research. The themes undergo regular reviews to assess how well they are achieving their goals.

In addition of its existing Signature Themes and SARChI Research Chairs outlined below, UCT has recently created new focus around climate change with the establishment of the African Climate and Development Initiative (see feature on page 28). UCT also hosted two NRF/DST Centres of Excellence in 2010, as well as a DST Competence Centre.

**SOUTH AFRICAN RESEARCH CHAIRS INITIATIVE (SARChI)**

The South African Research Chairs Initiative is a brain-gain and research capacity development intervention which is funded by the DST and administered by the NRF. The programme was launched in 2006 to grow research capacity in South Africa.

UCT was awarded nine of the 21 Chairs allotted in 2006 and a further 17 of the 51 allotted in 2007 – notably more than any other university. An additional Chair in Development Policy Research was awarded to UCT in 2009, bringing the total number of SARChI Research Chairs at the university to 28 out of 82 awarded so far.

**NEW CHAIRS IN 2010**

As in 2009, opportunity to apply for new Chairs in 2010 was extremely limited. However, the NRF awarded UCT a new Strategic Chair in Nano-Science, which will be located in the DST/NRF Centre of Excellence in catalysis, c*change. In addition to being awarded the Chair, UCT also managed to successfully recruit a world-renowned researcher, Professor Claude Carignan, to take up the Square Kilometre Array Chair, awarded to the university at the end of 2009.

**EXISTING CHAIRS**

The existing Chairs (Chairholders listed on the next page) continue to operate as staff and student clusters that conduct research in specific areas. The SARChI structures are successful incubators of excellence and have increased the intake of postgraduate students across the university. All the Chairholders have established themselves and are making good progress towards delivering their objectives. The financial value of SARChI grants in 2010 was in excess of R82 million.

**UCT SIGNATURE THEMES FOR RESEARCH**

UCT’s Signature Theme policy provides a framework for interdepartmental and interfaculty research and contributes to cultural and operational transformation on various levels. The Signature Themes are grounded in existing areas of internationally recognised excellence and selected to drive research in a strategic manner while being aligned to institutional, regional and national priorities.

Signature Themes have come about in two ways. The first five were established at UCT in 2007 through a highly competitive process driven by the University Research Committee. These are the African Centre for Cities, Brain and Behaviour Initiative, Drug Discovery, Marine Research Institute and Minerals to Metals. More recently, the African Climate and Development Initiative was adopted as a new strategic focus area and as the sixth Signature Theme.

The first five Signature Themes were submitted to external review by the end of 2010. This milestone came within three years of inception as outlined in the original Signature Theme policy framework. At the end of 2010, another three-year cycle of URC seed funding was approved for each Signature Theme.

**AFRICAN CENTRE FOR CITIES**

During 2005 and 2006, an interdisciplinary network of academics emerged across the Faculties of Science, Humanities and Engineering & the Built Environment to explore the nature, role and importance of cities – particularly those in the developing world. The African Centre for Cities (ACC) is built on this network.

Since its establishment the ACC has earned a reputation as the pre-eminent applied urban research centre on the African continent. Research in the ACC is focused around African urbanism, urban culture and inclusion, food security, new regionalism, housing finance for the poor, relational urban governance, alternative planning, spatial inequality, and urban water management.
A partnership between Sasol and UCT’s Centre for Catalysis Research has led to the invention of a device called a magnetometer, that is fully computer-controlled and is the first of its kind in the world.

The magnetometer enables scientists to examine ferro-metallic catalysts in situ. The purpose of this area of research is to examine the physical changes that catalysts undergo during process situations, which have an effect on catalyst performance. The magnetometer exploits the magnetic properties of these catalysts to obtain the required information.

The research team, comprising Professors Michael Claeys and Eric van Steen of UCT, and Jan van de Loosdrecht and Kobus Visagie of Sasol Technology, has filed a joint international application to patent this product.

Through its postgraduate bursary programme, the ACC has been able to recruit outstanding postgraduate students. The students are located in different faculties and departments, enabling the ACC to bring researchers from other disciplines into the ACC fold. Over and above its core funding, the ACC has been able to attract significant large research grants for its work on Cape Town.

In 2010, the ACC continued to invest in promoting a new generation of urban scholars through its different initiatives and projects. Several papers presented were the work of PhD students and emerging scholars. In addition, a major exhibition on sustainability imperatives and innovations was launched in Cape Town. This exhibition is a creative means to open up public debates on the ACC’s research findings.
BRAIN AND BEHAVIOUR INITIATIVE

The Brain and Behaviour Initiative (BBI) promotes interrelated research in the cognitive and affective neurosciences across faculties and disciplines. Since its establishment, the BBI has been active in setting up a cross-university brain-imaging facility with a new magnetic resonance imaging machine, securing Mellon funding to bring in international expertise (Professors Rob Paul and Jack van Honk) to mentor junior staff, and gaining two SARChI Research Chairs.

As part of its efforts to create the local research capacity to support its interdisciplinary research projects, the BBI has also established an MMedSc course in neuroscience and an MPhil in neuropsychiatry. Information about neuroscience research is delivered through the BBI website and mailing list, and networking and knowledge-sharing is fostered through a monthly seminar series and annual symposium.

In its three-year review, the external reviewers were highly supportive of the BBI and its progress to date. They noted that the BBI is the only formal grouping of such diversity (geneticists, psychologists, psychiatrists, biochemists, biologists and physicists) working together at a national and continental level on abnormalities of the central nervous system.

Highlights in 2010 included the Medical Research Council funding a cross-university Brain Research and Innovation Network, which allowed members of the Signature Theme to focus on imaging research on methamphetamine abuse. This area is particularly relevant to South Africa, given the recent tick epidemic and its intersection with the HIV epidemic. Concurrently, BBI mentees won several competitive post-doctoral fellowships to help support this research area. Late in 2010, the BBI held a symposium on neurogenetics at which Professor Ezra Susser of Columbia University delivered the keynote address on “Causes of Schizophrenia”.

DRUG DISCOVERY

The Drug Discovery Signature Theme was established in response to the world’s growing burden of disease and the corresponding need for therapeutic drugs. The notion of developing a fully integrated and cohesive Drug Discovery consortium within UCT was ambitious but necessary one for the Theme to move to the next level. Historically, UCT has had a strong reputation in clinical research and in the underlying scientific disciplines. However, there has been a critical shortage of relevant skills to bridge this gap and translate knowledge into tangible outputs such as the discovery of potential new medicines. This requires an integrated approach to drug discovery combining various disciplines such as medicinal chemistry, biology, pharmacology as well as drug metabolism and pharmacokinetic studies. Together this would ensure training a new generation of scientists with the key skills needed for drug discovery through innovative and internationally competitive research. These considerations led to the establishment of the new UCT Drug Discovery and Development Centre (also known as H3-D), the first of its kind in Africa. The URC-commissioned external review also concluded that “advance of a UCT drug development programme will be best served by consolidating investment and technology in the new H3-D Centre”. This is considered to be an excellent outcome of the Signature Theme, which will continue to operate for another cycle as a research stream within the new centre, in order to be fully integrated into its broader research agenda.

In 2010, more than thirty publications by the consortium appeared in international journals. A multimillion-rand investment was made into the higher-end technology platforms pertaining to pharmokinetic activities. Further academic collaboration occurred across the sub-disciplines of synthetic and medicinal organic chemistry, biochemistry, and the structural and molecular biological components of drug-discovery.

MARINE RESEARCH INSTITUTE

The Marine Research Institute (Ma-Re) was launched in 2006 to promote multidisciplinary research on the marine environment. The Theme was reviewed at the end of 2009, and 2010 saw the beginnings of the implementation of the recommendations by the panel of reviewers.

In 2010, Ma-Re successfully negotiated collaborative agreements between several organisations, including the City of Cape Town and the French Institut de Recherche et Development (IRD). It has also been the driver for the formation of the Nansen-Tutu Centre for Marine Environmental Research, a partnership with Norwegian collaborators which was officially launched in 2010. Under the French IRD agreement there are now seven French scientists based at UCT for at least two years each, from 2009 to 2011. Also in 2010, a technical task group was formed to drive the development of operational oceanography in South Africa under the OceanSAfrica initiative to ensure coordination between the four pillars of the system.

Due to the multidisciplinary thrust of the Signature Theme, social science forms a strong new component of marine research at UCT. Several new EU contracts have generated research funds, as has a successful bid to the Vice-Chancellor’s Strategic Fund.

Three departments that collaborate under the Ma-Re umbrella developed a new undergraduate curriculum, which led to a single major in oceanography and marine biology which started in the Faculty of Science in 2010. This lays the groundwork for several honours degree options in 2011, including oceanography and marine biology. There is now also a seamless transition from the oceanography honours to the marine science master’s by coursework and dissertation. The applied marine studies master’s by coursework and dissertation has been resurrected with ten registered students per annum since 2007.

Ma-Re continues to contribute directly to the mission of the Vice-Chancellor’s African Climate and Development Initiative.
JOINT VENTURE TO GATHER DATA ON THREE OCEANS

UCT, the Nansen Environmental Centre in Norway and their partners have set up a joint venture in South Africa to gather information about the three oceans around Southern Africa, to better understand and deal with climate change across the continent.

To achieve this, the Nansen-Tutu Centre for Marine Environmental Research aims to develop and implement operational oceanography and methods of data integration into models in the South Atlantic Ocean, the Indian Ocean and the Southern Ocean. They will focus on ocean state, marine environmental and ecosystem modelling, research and capacity-building.

There is a worldwide need to understand, model and predict conditions in the ocean, just as meteorological services do for the weather, and the project team will develop a system to collect data routinely via satellite and direct observations in the ocean.

At the signing of the joint venture agreement were (from left, back) Tor Christian Hildan (Norwegian Ambassador), Dr Johnny Johannessen (Nansen Centre, Bergen), Professor Frank Shillington (Oceanography, UCT), Dr Neville Sweijd (African Centre for Climate and Earth System Studies, CSIR), Dr Hans Erstad (Institute for Marine Research, Norway), Professor John Field (Ma-Re Institute, UCT), and Dr Lasse Pettersson (Nansen Centre, Bergen). (Front) Professor Berit Rokne (Pro-rector, University of Bergen), Archbishop Emeritus Desmond Tutu and Professor George Philander (African Centre for Climate and Earth System Studies, UCT).

MINERALS TO METALS

The Minerals to Metals Signature Theme is supported by the award of a DST/NRF SARChI Research Chair in Minerals Beneficiation. The Theme draws together the skills of academic and research staff in four existing research groupings: the Centre for Minerals Research, the Centre for Bioprocessing Engineering Research, the Crystallization and Precipitation Unit, and the Environmental and Process Systems Engineering Group. The groupings carry out and promote multidisciplinary research in the area of minerals beneficiation.

The first cohort of the Signature Theme’s master’s and doctoral students graduated in 2009, with a further two master’s students graduating in December 2010. The Signature Theme contributed significantly to the drafting of the proposal to the Department of Science and Technology to establish the South African Minerals to Metals Research Institute (SAMMRI). The national virtual research institute was launched in November 2010. SAMMRI promotes long-term innovative research in minerals processing.

NATIONAL CENTRES OF EXCELLENCE AND COMPETENCE CENTRES

Centres of Excellence (CoEs) are physical or virtual centres of research that concentrate existing capacity and resources to enable researchers to collaborate across disciplines. They work on long-term projects that are locally relevant and internationally competitive to help enhance the pursuit of research excellence and capacity development and to build the numbers of black and women researchers in the country. The centres are awarded by the Department of Science and Technology through the National Research Foundation.
UCT hosts two of South Africa’s nine national Centres of Excellence: Birds as Keys to Biodiversity Conservation, located in the Percy FitzPatrick Institute, and c*change, located in the Centre for Catalysis Research in the Department of Chemical Engineering.

The CoEs hosted at UCT include members from universities around South Africa. They enjoy significant student involvement and serve as important research training sites for postgraduate students. In addition to c*change, the Department of Chemical Engineering has been hosting the Hydrogen Catalysis Competence Centre since 2007. Where the CoEs focus on basic science and research, the centres of competence concentrate more on applied science, technology development and technology transfer.

UCT also has particularly close ties with the Applied Centre for Climate and Earth Systems (ACCESS), hosted at the CSIR. Professor George Philander of the Department of Oceanography is the Research Director there. In addition, from 2011, UCT will become a co-host for the Centre for Biomedical TB Research (CBTBR), located at the University of Stellenbosch and the University of Witwatersrand. Professor Valerie Mizrahi, the newly appointed director of the Institute for Infectious Disease and Molecular Medicine, will continue to play an important role in CBTBR.

**DST/NRF CENTRE OF EXCELLENCE AT THE PERCY FITZPATRICK INSTITUTE OF AFRICAN ORNITHOLOGY: BIRDS AS KEYS TO BIODIVERSITY CONSERVATION**

The Centre of Excellence at the Percy FitzPatrick Institute undertakes scientific studies involving birds. The centre contributes to the theory and practice of maintaining biological diversity and the sustained use of biological resources.

In 2010, the centre continued to achieve its targeted number and quality of scientific publications. Eighty-eight peer-reviewed papers were published in Science Citation Index (SCI) rated journals in the past year. These included 22 in journals with an SCI impact factor rating of 3.5 or higher. Six contributions to semi-technical books and 57 semi-popular articles were also published. In 2010, the centre supported 11 postdoctoral fellows, 18 PhDs, 30 MSc, and two BSc honours students, of whom 30% were black and 46% were women. Eleven MSc Conservation Biology and two BSc honours students graduated during 2010.

Following the five-year external review of the CoE in 2009, a significant activity was the approval in mid-2010 to upgrade the CoE to fully-funded status. With this, and according to recommendations of the external review, during 2010 the CoE made strategic advancements to increase its terrestrial ornithology and conservation research. Eight peer-reviewed papers on characterising biodiversity were published, along with 29 on evolutionary ecology and 51 on maintaining biodiversity.

2010 was the 50th anniversary of the Percy FitzPatrick Institute of African Ornithology and the CoE hosted several events to enhance the profile and financial sustainability of both the institute and the CoE. The year started with a Vice-Chancellor’s Open Lecture by Professor Norman Myers.

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

The DST/NRF Centre of Excellence in Catalysis, c*change, is hosted by the Centre for Catalysis Research at the Department of Chemical Engineering. In 2010, the c*change team comprised 52 postgraduate students. Seventy-nine percent were South African students, with 60% and 63% of the South African student target being female and black, respectively. In addition, c*change also comprised eight postdoctoral researchers and 24 academics from 14 research groupings in nine participating South African higher education institutions. In total, 21 projects were funded during the course of 2010, of which ten were multi-institutional and/or interdisciplinary projects.

In 2010, the centre was awarded a SARChI Research Chair, which is expected to boost the centre’s scientific output. This Chair is located in the field of preparation and characterisation of nano-science and will enhance various activities throughout the centre. The holder of this Chair, who is likely to come from outside South Africa, still needs to be recruited.

Other highlights of 2010 include the centre’s strong involvement in the successful development of teaching material for the new school Grade 12 physical science syllabus. The new syllabus requires learners to study the chemical industry in South Africa, with particular emphasis on the manufacture of petrochemicals and synthetic fuels, chlor-alkali derivatives, fertilisers and batteries. As such, c*change initiated the compilation of a resource pack containing a teachers’ guide, learner worksheets, videos, animations and posters. Significant external industrial sponsorship was secured to allow for the printing of 6000 resource packs for distribution to schools country-wide.

c*change-related research outputs of the participating catalysis community in 2010 included 15 publications and 39 unpublished conference contributions. In addition, four provisional international patent applications were submitted. Ten local or international postgraduate student training initiatives were undertaken. These joint ventures will help to forge closer ties in collaborative projects. c*change held its sixth annual symposium in November 2010 in Bloemfontein.

**DST HYDROGEN CATALYSIS COMPETENCE CENTRE, HYSA/CATALYSIS**

The DST’s National Hydrogen and Fuel Cell Technologies flagship project – colloquially referred to as Hydrogen South Africa, or HySA – was derived from the National Hydrogen and
When UCT’s Percy FitzPatrick Institute of African Ornithology was launched in 1960, phrases such as ‘global warming’ and ‘mass extinctions’ were not part of the layman’s lexicon. A brief 50 years later, both phrases have become watch points for massive ecological changes, harbingers of poverty, disease and mass extinctions, all of which highlight the institute’s critical mitigating role in conservation research and capacity-building.

The only ornithological research institute in the southern hemisphere, the ‘Fitztitute’ is housed in the Department of Zoology. Its record of excellence in research, postgraduate studies and public awareness was endorsed in 2004 when it was named the DST/NRF Centre of Excellence in Birds as Keys to Biodiversity Conservation.

MILESTONE YEARS:

- 1989 – ornithology is identified as the most internationally competitive scientific discipline in South Africa.
- 1992 – the institute introduced a taught MSc course in conservation biology, which has graduated over 200 students from all over the world.
- 2006 – creation of the Pola Pasvolsky Chair in Conservation Biology. The incumbent is Professor Graeme Cumming.
- 2008 – research in conservation science at UCT is identified as the most internationally significant of any southern hemisphere university.

The Fitztitute’s research focuses on understanding and maintaining biodiversity, while undertaking scientific studies involving birds, and contributing to the theory and practice of maintaining biological diversity and the sustained use of biological resources. Because of their mobility and conspicuousness, birds have been successfully used as indicators of environmental change.

The highlight of the 50th Anniversary: Sir David Attenborough’s visit to the Percy FitzPatrick Institute, which included spending time with the Institute’s conservation biology MSc course students.
Fuel Cell Technologies Research, Development and Innovation Strategy. The national flagship project established three competence centres in 2007 to develop hydrogen and fuel cell catalysts and catalytic device technologies. The objective was to enhance national wealth creation by adding value to South Africa’s strategic reserves of platinum group metals. UCT and Mintek co-host the Hydrogen Catalysis Competence Centre (HySA/catalysis). The first project funding was received in 2009.

Fifteen-year deliverables include the development of sufficient hydrogen fuel cell and fuel processor technologies and intellectual property to establish commercial manufacturing activities within South Africa, whether attracted from abroad or grown from inside the country. Other enabling deliverables of HySA/catalysis are the establishment of research, development and innovation facilities for fuel cell and fuel processor technologies through an extended hub and spoke network. The network comprises national science councils, universities and private enterprise, and the development of a significant human capital base.

A key focus during 2010 was to increase the centre’s capacity. This culminated in the appointment of Dr Olaf Conrad as the Centre Programme Director from 1 January 2011. The HySA/catalysis technical programme focused primarily on two market-oriented key programmes, portable power and combined heat and power. In support of the above, UCT has refurbished 80m² in laboratory space to initiate the new HySA/catalysis fuel cell activities. This includes commissioning infrastructure equipment. Fuel processor activities have been incorporated in existing facilities and infrastructure.

The centre is continuing its previously initiated activities at affiliated institutions. The student cohort is growing to 13 master’s-level students, one doctoral student and two postdoctoral fellows. Several training initiatives, internal with affiliated organisations, and external with international collaborators, have taken place.

In order to raise its awareness profile, HySA was launched internationally at the 18th World Hydrogen Energy Conference in Essen, Germany, with a stand in the conference exhibition hall promoting the programme and the three competence centres.

**URC-ACCREDITED RESEARCH GROUPINGS**

A large number of research groupings operate across the university. Many of these are informal structures that hinge on the research interests of a particular individual or funding opportunity. These informal groupings come and go as the nature of their work evolves and they are not formally logged on the research information management system. However, several groupings are formally established structures that meet stringent quality assurance criteria and are accredited by the University Research Committee. These groupings undergo external peer-review in a five-year cycle, a process which includes their deans and the URC. Although the accredited groupings are self-sustained, operating on funds raised through external contracts and receiving no ring-fenced funding from the URC, they are promoted as UCT-groupings and benefit from the UCT brand.

At the end of 2010, there were 68 URC-accredited research groupings. This number includes nine MRC/UCT groupings as well as six new research groupings which received URC-accreditation in the course of the year: Accounting and Accountability in Africa Research Unit, Advancement of Business Competitiveness Unit (both located in the Faculty of Commerce), Nanosciences Innovation Centre, Drug Discovery and Development Research Centre, Nansen-Tutu Centre for Marine Environmental Research (all three located in the Faculty of Science), and Concrete Materials and Structural Integrity Research Unit (Faculty of Engineering & the Built Environment).

The following research groupings are formally recognised by UCT. Publications arising out of these groupings are referenced in the respective academic departments later in the report.

**ACCOUNTING AND ACCOUNTABILITY IN AFRICA RESEARCH UNIT (AAARU)**

The research agenda of the AAARU is directed towards pragmatic, interpretive accounting and accountability, with the aim of developing an understanding of, and insight into, an African perspective. The unit focuses on critical aspects of conducting business in Africa and key issues facing our society such as entrepreneurial leadership. This focus provides a welcome change from mainstream research which often assumes implicitly Western and Euro-centric thinking, or focuses on Asia.

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**ADVANCEMENT OF BUSINESS COMPETITIVENESS UNIT**

This recently established unit aims to be the primary source of knowledge and support for the advancement of competitiveness of organisations in South Africa and the rest of Africa in both the private and public sectors. This means that while the grouping will produce and publish peer-reviewed research, the primary agenda of such research output will be to support the advancement of business competitiveness. The research will focus on undertaking surveys to map the current business practices in the various sectors of the South African economy with the aim of benchmarking them against best practices. This initiative will be taken to the rest of Africa. Using cases studies, the grouping will also undertake in-depth investigations of the business practices peculiar to the value chains of the various sectors. Both the surveys and cases studies will generate insights into the potential weaknesses of the value chains which hinder competitiveness in both the private and public sectors.
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, social security and HIV/AIDS modelling. The main focus of the centre is on training and research in demography and modelling the demographic impact of HIV/AIDS in Southern Africa.

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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 into 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 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.

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AFRICAN CINEMA UNIT

The African Cinema Unit was established during 2008. It is an initiative within the Centre for Film and Media Studies which is committed to promoting the study of African cinemas, taking account of the richness and diversity of the film cultures that have emerged from the countries that make up this vast and complex continent. During 2010, Associate Professor Martin Botha took a sabbatical to finish a 113-year history of South African cinema. Taking an inclusive approach to South African film history, this volume represents an ambitious attempt to analyse and place in appropriate socio-political context the aesthetic highlights of South African cinema from 1896 to the present. This manuscript represents the first broadly based text which encompasses the history of South African cinema in its entirety.

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ALBERTINA AND WALTER SISULU INSTITUTE OF AGING 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 and 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 on 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.

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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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ASTROPHYSICS, COSMOLOGY AND GRAVITATIONAL CENTRE

The Astrophysics, Cosmology and Gravitation Centre (ACGC) is a research centre incorporating members of the UCT Department of Astronomy and the Cosmology and Gravity Group from the UCT Department of Mathematics and Applied Mathematics. The ACGC aims to create a research environment at UCT in which South African-led cutting-edge science projects will be discussed, developed and taken to fruition. Maximising the opportunities for interaction between theorists and multi-wavelength observers is essential for stimulating new approaches to research. The centre also aims to become an attractive location for postgraduate students and postdoctoral fellows, as well as international visitors.

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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 bioprocess engineering for over three decades. Following the formalisation 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 interlinked 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’s hosting the DST/NRF SARChI Research Chair in Bioprocess Engineering. The multidisciplinary team brings together expertise in reactor studies, process modelling, biokinetics, microbial ecology, microbial metabolism, biotransformation, micro- and molecular biology and biohydrometallurgy to develop detailed understanding of bioprocess systems. CeBER’s key foci include biominerals engineering for the extraction of metals as well as the prevention and remediation of metal-rich effluents, biotransformation for value addition, bioprocess optimisation through metabolic modelling, reactor modelling, mass transfer optimisation, product liberation and recovery, bioprocess integration, and the role of the bioprocess in sustainable processes.

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MRC/UCT CAPE HEART CENTRE

This combined research entity is the largest heart research group in South Africa and forms part of the Cape Heart Group that links research between UCT and the other universities in the region. The Hatter Institute – which is part of the MRC/UCT Cape Heart Centre – 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. In addition, their research includes new diagnostic assays for local problems in healthcare and lipid peroxidation.

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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.

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**AREAS OF RESEARCH FOCUS**

**CLAUSE LEON AWARDS FOR YOUNG RESEARCHERS**

Four up-and-coming lecturers received welcome boosts to their research kitty when they were presented with UCT’s Claude Leon Foundation Merit Awards for Young Lecturers.

Deputy Vice-Chancellor Professor Danie Visser congratulated the four recipients – Dr Hans Beushausen of the Department of Civil Engineering, Dr Chris Clarkson of the Department of Mathematics and Applied Mathematics, Dr Olabisi Falowo of the Department of Electrical Engineering, and Dr Rob Ingle of the Department of Molecular and Cell Biology – who each received R50 000.

When asked what they’ll be spending the money on, all four listed identical items: conference or other research-related travelling, the running costs of projects, plus precious support for their graduate students.

“The main problem we have is that molecular biology projects are very expensive to run,” said Ingle. “And we have three students who need to finish next year, so this will definitely go a long way towards that.”

(CLosewise from back) Dr Olabisi Falowo, Dr Hans Beushausen, Dr Rob Ingle and Dr Chris Clarkson, are the four winners of the Claude Leon Foundation Merit Awards for Young Lecturers.

**CENTRE FOR CATALYSIS RESEARCH**

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

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**RESEARCH INSTITUTE ON CHRISTIANITY AND SOCIETY IN AFRICA**

The Research Institute on Christianity and Society in Africa (RICS A) engages in high-quality research on religion in public health, globalisation, and public theology in Africa. Its primary activity has recently been through the African Religious Health Assets Programme (ARHAP), a multi-institutional, multi-site, interreligious, transdisciplinary collaborative research project coordinated at UCT. Initiated in 2003 with colleagues from Emory University, USA, it includes academics from two other centres in South Africa (Wits University and the University of KwaZulu-Natal), has a strong partnership with Methodist LeBonheur Healthcare (a seven-hospital system in Memphis, TN, USA), and works with several other collaborating partners in Africa, Europe and the USA. ARHAP focuses on the interface between religion and public health in Africa in mapping and assessing religious health assets, policy development and practice, and capacity building (especially master’s and doctoral research); it plans now to move into health systems research as well. It has built a global network of scholars and practitioners.

New work is under way on male interpersonal violence in three sites in South Africa and the USA in conjunction with the Medical Research Council and the UNISA-based Peace and Safety Lead Programme. During 2011 ARHAP will be relocated to the School of Public Health and Family Medicine in the Faculty of Health Sciences, and renamed the International Religious Health Assets Programme (IRHAP). RICSA, meanwhile, will be launching an innovative heritage project on Black Theology in South Africa with Drs Sibusiso Masando and Rico Settler. RICSA is also known for its published (UNISA Press, CD-ROM) multi-year, multi-volume project on the Social History of Christianity in South Africa.

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**INSTITUTE FOR COMPARATIVE RELIGION IN SOUTHERN AFRICA**

The Institute for Comparative Religion in Southern Africa (ICRSA) is dedicated to the post-colonial 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 religious education and cultural heritage. ICRSA houses the peer-reviewed, accredited Journal for the Study of Religion.

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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 DST/NRF SARChI Chair in Computational Mechanics, occupied by Professor BD Reddy, is located within CERECAM.

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CONCRETE MATERIALS AND STRUCTURAL INTEGRITY RESEARCH UNIT

The Concrete Materials and Structural Integrity Research Unit (CoMSIRU) at UCT has been developing technologies and procedures for the design and assessment of concrete structures for more than 20 years. The unit has had a marked focus on infrastructure performance and renewal, largely in response to industry needs. The key areas of interest are service life prediction, deterioration science, assessment technologies and repair/rehabilitation strategies for concrete structures. CoMSIRU provides consultancy and postgraduate teaching in the areas of concrete material technology, concrete durability, structural health monitoring and repair/rehabilitation.

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CENTRE FOR CONTEMPORARY ISLAM

The Centre for Contemporary Islam (CCI) was established in 1996 to co-ordinate research conducted at UCT on Islam and Muslim societies, and disseminates findings to a broader public. The main projects of the CCI include Islam and Public Life in Africa; Sufism, Gender and Islam; and the Timbuktu Manuscript Project. The CCI publishes the annual Journal for Islamic Studies. 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 OF CRIMINOLOGY

The Centre of Criminology (previously the Institute of Criminology), founded in 1977, aims to initiate, co-ordinate and develop research in the broad field of criminology, and to promote public interest in all aspects of criminology. The centre’s research programme focuses primarily on state policing, plural policing, crime prevention and environmental security. Teaching support to the criminology focus within the Department of Public Law and research support is provided by the centre’s multi-media electronic resource library.

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CRYSTALLISATION AND PRECIPITATION UNIT

Industrial crystallization research began in the Department of Chemical Engineering in 2000 and the Crystallization and Precipitation Unit was formally accredited by UCT in 2006. Although industrial applications of crystallization and precipitation have a long history, understanding of these processes is still very limited. In this context, the main aim of the unit is to advance existing fundamental knowledge in the fields of crystallization and precipitation, especially related to mineral processing and extractive metallurgy. 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 crystallization processes, aqueous chemistry modelling and computational fluid dynamics modelling. All 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 crystallization and precipitation processes, including treatment of effluent streams. Another interest of the research unit is the modelling and treatment of hypersaline brines. The unit is also involved in the development and presentation of various continuing professional education courses, which satisfy the demand for skills in this area from both an industrial and an academic standpoint.

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DESMOND TUTU HIV CENTRE

The activities of the Desmond Tutu HIV Centre (DTHC) are underpinned by research and evaluation. It aims to impact on 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.

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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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### 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, the DPRU aims to produce academically rigorous policy analysis. The DPRU’s mission is to undertake high-quality policy-relevant research, maintain and develop effective networks with government, civil society and the research community in Southern Africa, engage in training and teaching activities and participate directly in the process of formulating, implementing and evaluating policy.

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### DRUG DISCOVERY AND DEVELOPMENT (H3-D) CENTRE

The Drug Discovery and Development Centre (also known as H3-D) was founded in 2010. The centre aims to bridge the gap between basic and clinical studies, and to train a new generation of African scientists with key skills required for drug discovery and development — thereby integrating medicinal chemistry, biology, pharmacology as well as drug metabolism and pharmacokinetics (DMPK) studies as reflected in the processes of absorption, distribution, metabolism and excretion (ADME). H3-D also focuses on beneficiation of clinically used drugs, including generic medicines. Drug beneficiation, amongst other things, involves selection of the optimum form of a solid drug candidate for pharmaceutical development and (re)formulation.

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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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### 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 doctoral levels.

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### CENTRE FOR RESEARCH IN ENGINEERING EDUCATION

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

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### ENVIRONMENTAL EVALUATION UNIT

The Environmental Evaluation Unit (EEU) is an independent, self-funded research, consulting and training unit based at UCT. 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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**ENVIRONMENTAL POLICY RESEARCH UNIT**

The Environmental 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 Co-operation Agency.

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

The UCT/MRC Research Unit for Exercise Science and Sports Medicine is part of the Department of Human Biology, within the Faculty of Health Sciences. The primary functions of the unit are to research factors influencing physical performance and health, and to disseminate knowledge and skills through education. Specifically, 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.

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**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.

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**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 (ie 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 of discovering the critical biological pathways that can be targeted by drugs to prevent sudden cardiac death.

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**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. The core objectives of the HEU are: to conduct high-quality research in health economics, health policy and systems; to develop capacity in health economics, health policy and systems research in Africa through postgraduate training and related capacity development initiatives; and to translate research findings into policy and practice.

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Dyllon Randall’s doctoral work on eutectic freeze crystallisation has netted the prestigious Industrial Water Division of the Water Institute of South Africa/South African Industrial Water Association Biennial Award for his outstanding contribution to industrial water technology.

His research is also likely to contribute to making the mining industry, which is a key player in the South African economy, not just more profitable, but also more environmentally friendly. “The technology shows that we can reduce the amount of waste by up to 97%, and produce potable water (that can be used by nearby communities), pure calcium sulphate and pure sodium sulphate,” explains Randall, a researcher in the Crystallisation and Precipitation Unit.

A pilot plant is being designed, and although this may not be the cheapest treatment method at the moment, it is definitely a sustainable one. It solves the problem of waste water generation now, rather than leaving it for future generations to solve. It is planned to be up and running sometime next year.

Last year Randall won the prize for best student paper at the International Mine Water Conference.

**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.

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**MRC/UCT IMMUNOLOGY OF INFECTIOUS DISEASES 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 Diseases Research Unit focuses on the understanding of host protective immune responses and the development of effective vaccine strategies for eradication of diseases which are identified as priority areas by the World Health Organisation: tuberculosis, leishmaniasis, helminthiasis diseases (bilharziosis) and African trypanosomiasis (sleeping sickness). The unit’s mission is to be relevant as an excellent multidisciplinary and international team, embracing both basic and applied research, in order to improve capacity, teaching and training in the immunology of infectious diseases.

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**INSTITUTE OF INFECTIOUS DISEASE AND MOLECULAR MEDICINE**

The Institute of Infectious Disease and Molecular Medicine aims to be an African centre of excellence as a large-scale assembly of highly talented research leaders working in one place in a collegial federation, with many external collaborations and partnerships addressing the common theme of major infectious diseases such as HIV/AIDS, tuberculosis and malaria, as well as non-communicable diseases such as cancers and genetic disorders. It has a demonstrably strong scientific base that spans most of the major areas of modern biomolecular inquiry (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.

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Dyllon Randall has adapted technology to treat waste-water streams from mines.
CENTRE FOR INFECTIOUS DISEASE EPIDEMIOLOGY AND RESEARCH

The Centre for Infectious Disease Epidemiology and Research (CIDER) aims to be an African centre of excellence in infectious disease epidemiology and related research. The centre has a strong base that spans a number of disciplines and conducts public health research integrating laboratory, clinical, epidemiological, social science and health systems research into infectious diseases that have high priority in Southern Africa (in particular HIV and tuberculosis) in order to improve the prevention and management of these diseases. The centre maintains very strong links with health services at all levels in order to identify research priorities, and assists policy makers, programme managers and services managers with the implementation of the results of research. The centre aims to be a centre of excellence in the surveillance and monitoring of infectious diseases and infectious disease programmes and services, and in the conduct of robust observational research based on routine data sources. CIDER provides extensive postgraduate level teaching and supervision in epidemiology.

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INFORMATION AND COMMUNICATIONS TECHNOLOGY CENTRE FOR DEVELOPMENT

The Information and Communications Technology Centre for Development (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, which provides bursaries for African students working in this field, was launched in 2009 and will be based within the wider structure of the centre.

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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 Africa, and e-commerce for development studies and evaluation. Through CITANDA, the Department of Information Systems attracts a large cohort of PhD and master’s students from across Africa and beyond.

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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 and innovation, development, copyright and creative commons, nanotechnology and new technologies.

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UNIT FOR INTERCULTURAL AND DIVERSITY STUDIES FOR SOUTHERN AFRICA

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

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ISAAC AND JESSIE KAPLAN CENTRE FOR JEWISH STUDIES AND RESEARCH

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

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**NANOSCIENCES INNOVATION CENTRE**

The Nanosciences Innovation Centre, located in the Department of Physics and established in 2010, aims to form a bridge between the nanotechnology innovation chain (basic research and technological innovation), and human capacity development. The centre’s scientific focus was initially based on existing activities in nanoscale physics and nanostructured materials. These include the development of advanced nanomaterials characterisation techniques, as well as the development of two technology platforms: printed nanoparticulate silicon electronics; and metallic matrix nanocomposites. The centre’s primary function is to serve as an African hub for nanoscience research and postgraduate education, with an orientation towards renewable energy and sustainable development.

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**NANCEN-TUTU CENTRE FOR MARINE ENVIRONMENTAL RESEARCH**

The Nansen-Tutu Centre for Marine Environmental Research, under the patronage of Nobel Laureate Archbishop Emeritus Desmond Tutu, was set up in 2010 to assist in the worldwide need to develop the capacity to understand, model and predict the state of the ocean and its ecosystems, in a similar way that the meteorological services do for weather and climate. The founding partners of the Nansen-Tutu Centre in Norway and South Africa have the necessary complementary expertise and knowledge to address these challenges in the three oceans around Southern Africa. A central theme for the centre will be to undertake research into the science underpinning “operational oceanography”, particularly in numerical ocean modelling, as well as continuing to develop skilled African postgraduate marine scientists. The centre actively contributes to the OceanSAfrica initiative with partners from the Department of Environmental Affairs’ Ocean and Coasts Branch, the South African Weather Service, the CSIR and the South African Earth Observing Network.

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**MARINE RESEARCH INSTITUTE**

The Marine Research (Ma-Re) Institute, one of UCT’s Signature Themes, serves 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. It hosts the Marine Remote Sensing Unit and the Research Dive Unit. The Ma-Re Institute has two SARChI Research Chairs associated with it, and has been instrumental in getting the Africa Centre

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for Earth System Science (ACCESS) and the Nansen-Tutu Centre for Marine Environmental Research 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 bilateral research and teaching exchange agreements with Norwegian, French, British and other European Union, as well as 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.

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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.

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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 OCCUPATIONAL AND ENVIRONMENTAL HEALTH RESEARCH**

The Centre for Occupational and Environmental Health Research (COEHR) aims to be a principal centre of occupational and environmental health research, teaching and service, fostering networks with universities and other agencies, 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.

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RAY OF LIGHT FROM NEW IMAGING SPINOFF

UCT spin-off company CapeRay is about to launch a world first — a “dual-modality” technology that will combine both X-ray and ultrasound images to produce the most detailed and sharpest breast-cancer-detecting images yet.

The machine is the culmination of millions of rands in private and public investment and over a decade of work at UCT, where Kit Vaughan, Emeritus Professor at UCT and founder of CapeRay, set up the country’s first medical-imaging research unit in 2000.

According to Vaughan, X-ray mammography combined with ultrasound will push sensitivity up to around 95%, a marked improvement on standard mammography. CapeRay intends to launch its PantoScanner platform technology in the first half of 2012.

The PantoScanner, developed by CapeRay for breast cancer diagnosis, is a digital mammography system that integrates an X-ray scanner and a breast ultrasound machine.

MRC/UCT OESOPHAGEAL CANCER RESEARCH GROUP

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

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PERCY FITZPATRICK INSTITUTE OF AFRICAN ORNITHOLOGY

The Percy FitzPatrick Institute of African Ornithology (affectionately known as the Fitztitute) is housed within the Department of Zoology. 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 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.

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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. Established in 1993 the PCU has four main research programmes that focus on palaeoecology and historical ecology; land use and sustainable development; biodiversity conservation and management; and disturbance and restoration ecology.

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CENTRE FOR POPULAR MEMORY

The Centre for Popular Memory (CPM) is an African-focused oral history research, advocacy and archival centre allied to the Historical Studies Department. Research prioritises multilingual approaches to the impact of post-traumatic legacies in Africa and specialises in multi-levelled technology outputs through academic journals, exhibitions, film, including scholarly content for portable media platforms.

African Oral History Archive: The CPM has over 3000 oral history recordings in 12 languages, many with full transcripts and translations. These have been preserved, migrated and gathered over 25 years. The CPM concentrates on the analysis of such scholarly collections as critical knowledge systems within South African and international contexts. The African Memory Project: This aims to increase access to, and use of, oral and visual collections in South Africa and Africa, and collaborates with international leaders in fields of oral history and memory studies to analyse African-centred research materials. Bridging the Digital Divide: This award-winning project bridges generational and cultural divisions between apartheid survivors and their descendants, and the IT skills divide. This schools-based project is supported by the Department of Education and includes a UCT-accredited short course which trains educators in oral history and technology.

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**MRC/UCT RECEPTOR BIOLOGY RESEARCH GROUP**

The mission of the group is to study the structure and function of G protein-coupled receptors and to apply the research to understanding and treating diseases that have major effects on the social and economic welfare of South Africa. The group focuses on the gonadotropin-releasing hormone receptors and on the kisspeptin receptor, which are central regulators of the reproductive function, on the prostaglandin receptors and their role in cervical cancer and on the CCR5 chemokine receptor and its role in Human Immunodeficiency Virus (HIV) entry and infection.

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**CENTRE FOR RHETORIC STUDIES**

The centre was founded in 1995 and remains unique on the continent where it has pioneered the emergence of rhetoric studies (as mentioned in Blackwell’s International Encyclopedia of Communication). It concerns itself with multidisciplinary research in public rhetoric, deliberative democracy and argumentative culture. The centre engages in three main activities: hosting research fellows, organising academic conferences and registering postgraduate students (master’s and PhD). It publishes its findings through the African Yearbook of Rhetoric (Africa Rhetoric Publishing). The centre has a near 100% success rate in numerous competitively funded international research projects.

**Complete and detailed information is available on the web site.**

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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 include a chemistry/chemical engineering capability as well. 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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**SCIENTIFIC COMPUTING RESEARCH UNIT**

The Scientific Computing Research Unit (SCRU) was established in 2009 and has as its core mission the development and application of computer code for scientific problems specifically in chemistry, biophysics, physics and engineering. The unit has made major technical advances in biophysical computational modelling with the development of a generalised free energy code called FEARCF. In 2009 the unit was awarded a long-term development grant from the Nvidia Corporation to advance the SCRU program to port quantum code to graphical processing unit-based computer clusters. The research group has strong links with international groups particularly via its Scientific Computing International Lecture Series programme.

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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, evidence-based, policy-relevant, replicable social science research in South Africa 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. 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 globalisation, industrialisation, 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. The AIDS and Society Research Unit conducts research on the social impact of HIV/AIDS, including issues of parenting, disclosure, sexual behaviour and public welfare. Finally, the Policy Research Unit on International Services and Manufacturing Unit conducts research on globalisation, industrialisation, innovation and the dynamics of global value chains on developing country industrial sectors.

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**Web:** http://www.cssr.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 to 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, it 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.

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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 analysed by means of powder and single crystal X-ray diffraction, as well as thermal and spectroscopic techniques, and the results related to their physical properties. Our research efforts concentrate on the beneficiation of drugs through investigation of their polymorphs, solvates, co-crystals and cyclodextrin inclusion complexes, on the synthesis and characterisation of open framework transition metal structures and purely organic porous materials, and on the synthesis and characterisation of large supramolecular assemblies and the study of guest selectivity in organic host-guest systems.

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CENTRE FOR THEORETICAL AND MATHEMATICAL PHYSICS

The Centre for Theoretical and Mathematical Physics (CTMP) is an interdepartmental research unit devoted to the promotion of interdisciplinary research in these areas. CTMP is part of the National Institute of Theoretical Physics. CTMP has twelve local members from the 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 related research fields are admitted to CTMP for the duration of their studies. An international advisory board of seven internationally acclaimed scientists was appointed in 2006.

Director: Professor I Barashenkov
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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 JWA Cleymans
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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. The unit works closely with the national, Western Cape provincial, and City of Cape Town Departments of Health, as well as with other academic institutions and NGOs, in reproductive and women’s health. Key research areas include HIV and reproductive health, gender and HIV, health systems research (reproductive health), female cancers, contraception and termination of pregnancy.

Director: Associate Professor D Cooper and
Associate Director: Ms J Harries
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Growing the next generation of researchers

Research is driven by people and, without a good pipeline of curious, well-educated and ambitious young academics who have the time and the support to invest in their work, the quality of UCT’s research will dwindle over time.

For this reason, one of UCT’s strategic goals is to consolidate and expand its current efforts to nurture the next generation of academics. Focusing on this key objective will strengthen and promote UCT as a primary site for developing young scholars in, and for, Africa.

Through a platform of strategic project delivery, UCT is developing research and teaching skills among a group of postgraduate students and newly appointed young staff.

The university has already implemented various programmes to help promote this particular objective. These include the Emerging Researcher Programme (ERP); the Programme for the Enhancement of Research Capacity (PERC); Supervision Training and the Mellon Mentors’ programmes. These are co-ordinated in the Research Office. Another project, the University Science, Humanities and Engineering Partnerships in Africa (USHEPiA), is a staff development programme that provides co-supervision to academic staff from five other African universities. This is currently in its second cycle and is upheld nationally as a highly effective model for developing capacity on the continent. In the health sciences, the clinical research programme contributes towards building the next generation for that faculty in particular.

Associate Professor Justin O’Riain of the Baboon Research Unit received a R150,000 grant from the Programme for the Enhancement of Research Capacity (PERC) to undertake a project, Pioneering sustainable solutions to human-baboon conflict in the Cape Peninsula: local answers for a continental problem. Here he is with his team, gathered for a workshop. They include researchers from Kenya, the University of Venda, UK, USA and South Africa, as well as postgraduate students Tali Hoffman, Bentley Kaplan, Matthew Lewis, David van Beuningen and Esme Beamish. The workshop further included the Peninsula Baboon Conservation Authorities (SANParks and City of Cape Town) and the current service provider (Nature Conservation Corporation) to ensure that academic data are translated directly into improved management and conservation strategies for the local baboon population.
While the projects have a pragmatic and practical application, they are also designed to instil a passion for academia in the next generation of academics. This is a challenging agenda, especially when three key disciplines – economics, civil engineering and infectious diseases – find it difficult to attract students who can, and want to, resist the pull of the lucrative private sector to take up academic careers.

To address the challenge, UCT has implemented Growing the Next Generation of Academics, an initiative that will be delivered under a single virtual umbrella with a particular focus on women and black academics. This project is delivered in partnership with three other African institutions – the University of the Witwatersrand; the University of Makerere (Uganda) and the University of Ghana (Legon) – and is funded by the Carnegie Corporation.

The project aims to develop a group of trainee academics with the intention of providing a pool of high-quality candidates for academic positions at UCT and elsewhere in Africa (see Figure 8 below for demographics). The university will build the pools by creating tailor-made postgraduate training hubs in each selected academic area. The Carnegie Corporation grant will provide 38 doctoral bursaries and seven postdoctoral fellowships.

The training models in the three selected areas will aim to entice bursary recipients into academic careers by giving them a taste of academic life beyond graduate studies. In parallel, using funding sources outside the Carnegie Corporation, the university will put in place a range of strategies to retain some of these young academics.

The project begins in 2011. A total of $2.5 million has been awarded over two years. Through the rigorous recruitment process, UCT will identify candidates who meet the initiative’s demographic imperatives and who demonstrate the intention and ability to go into academic careers. Additional funds will be necessary to sustain and expand on this project.

FEEDBACK FROM ACADEMICS THROUGH ERP AND PERC

“I was elated to find out that my second round of ERP funding was successful! It really takes a lot of stress off me. And I can’t tell you how much it means that UCT is willing to back my PhD – the message I get is that UCT is saying ‘that’s great – we’ll help where we can.’ Thank you so much for your part in this. And thank you for always being positive and helpful! I really have learnt a lot under ERP.”

“I am indebted to your kind consideration in helping me. You have been thorough in your comments and I have followed your instructions. I think that I have now presented my research project in a much better way.”

“Thanks so much for your help over the years in getting me established as a researcher, despite my relatively late start in research and my interdisciplinary interests. Without the Thuthuka and Emerging Researchers funding to give me a bit of a boost, I would definitely not have felt ready to embark on these larger projects.”

“A team I put together applied for and was glad to receive a grant from the UCT Programme for Enhancement of Research Capacity. Our nascent research theme of sustainable habitat innovations was synergised by PERC’s emphasis on new Afro-centric epistemologies, multidisciplinarity, merging of academia and practice, and collaboration with another African university. PERC’s grant is enabling my team to engage with design epistemology through an applied participatory design project in an informal settlement in Khayelitsha. By thus being rooted in Africa, and with input from academic colleagues elsewhere in Africa, the PERC grant will facilitate my team to contribute an Afro-centric perspective to design epistemological discourse.”

“[The PERC co-ordinator’s] engagement with my book project has been an inspiration, providing a rigorous, critical, generous and caring context in which he has helped me consolidate the strands of my research into an increasingly coherent argument sustainable in, and appropriate to, a book-length project. This type of step is crucial for my own intellectual energy, direction and career, and also deeply challenging and personal. I have thus welcomed his engagement and critical ear, attuned to the debates at the heart of my project. I feel very lucky to part of the growing PERC programme.”

**Figure 8: Carnegie Recruitment Demographics**

- Male-Black: 35%
- Female-Black: 22%
- Male-Coloured: 6%
- Female-Coloured: 2%
- Male-White: 11%
- Female-White: 20%
- Male-Indian: 4%
Faculty of Health Sciences

DEPARTMENT OF ANAESTHESIA
SCHOOL OF CHILD AND ADOLESCENT HEALTH
DEPARTMENT OF CLINICAL LABORATORY SCIENCES
SCHOOL 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
Across the faculty and its disciplines, our academics continue to excel, with achievements ranging from research excellence awards and significant funding grants to peer recognition of global excellence and leadership as evidenced in prestigious publications, as well as the appointments of our colleagues to the governing boards of various international research bodies.
2010 proved to be another successful year for research in the Faculty of Health Sciences, with the most talked-about event of the year being the International Research Review that took place in November.

The decision to subject the faculty’s research endeavours to peer-review was the brainchild of Professor Gregory Hussey, Deputy Dean: Research. The panel was chaired by Dr Leon Fine, Professor of Biomedical Sciences and Medicine and Director of Graduate Research Education at the Cedars-Sinai Medical Centre, and included a distinguished panel of internationally recognised health scientists. The panel reviewed the faculty’s current research achievements and challenges, and its recommendations will be a critical contribution to the formulation of the faculty’s research strategy for the next 10 years.

Across the faculty and its disciplines, our academics continue to excel, with achievements ranging from research excellence awards and significant funding grants to peer recognition of global excellence and leadership as evidenced in prestigious publications, as well as the appointments of our colleagues to the governing boards of various international research bodies. One of the major thrusts initiated in 2010 was the stimulation of clinical research activities. Although this has always been an area of strong research emphasis within the faculty, the approach has not always been closely linked to clinical practice and the training of health care practitioners. In recent months, a concerted effort has been made to strengthen these and to draw clinical research into the mainstream research arena, and these efforts are already beginning to pay off.

In 2010 the faculty was home to more than 1300 postgraduate students, with 242 of these being PhD candidates. During two graduation ceremonies, the university awarded 112 master’s degrees and a laudable 32 PhDs. Disciplines of focus ranged from the basic and clinical sciences to public health and population sciences. In addition, the faculty boasted 117 postgraduate diplomas and 63 honours degrees, representing an important component of a taproot into more senior research degrees. Of importance is that the faculty also hosts a significant number of postdoctoral fellows, numbering 68 in 2010.

A notable achievement was the increase in the number of publications in accredited journals by our faculty from 348.89 in 2008 and 370.94 in 2009, to 383.42 units being published in 2010. This is approximately 70 percent more than the number of publications, as measured by units, achieved five years ago.

In the year under review, researchers in the faculty brought in almost R280 million in research contract funding, with the lion’s share coming from foreign organisations such as the US-based National Institutes of Health and the UK-based Wellcome Trust.

We also take great pride in the relationships that we enjoy with South African funders across the spectrum, from government agencies to the corporate sector, and we continue to appreciate the invaluable contribution that they make to our research enterprise.

The Health Economics Unit celebrated its 20th anniversary in 2010. This unit, which is widely recognised as the leading health economics academic institution in Africa, is also one of the most well-established and respected research units in this field in low- and middle-income countries. It continues to conduct research to inform national health financing policy developments, while also producing graduates who have been appointed to positions of influence in both academia and practice.

We were well represented at the 2010 Discovery Foundation Awards, with five individuals and two divisions having been awarded prizes, and the Institutional Award to Zithulele Hospital will facilitate the building of partnerships with the faculty to advance our commitment to the training and support of rural health practitioners.

I continue to be immensely proud of the people who make up the faculty of Health Sciences at the University of Cape Town, and thank them for their dedication and commitment.

PROFESSOR MARIAN JACOBS
DEAN OF THE FACULTY OF HEALTH SCIENCES
DOCTORAL GRADUATIONS

J. AKAZILI (PUBLIC HEALTH AND FAMILY MEDICINE)
Equity in health care financing in Ghana.
Supervised by Professor D. McIntyre

R.L. BENJAMIN (HUMAN BIOLOGY)
Non-maximum entropy polymer elasticity, viscoelasticity and the lattice Boltzmann method.
Supervised by Professor B.D. Reddy

A. BERE (CLINICAL LABORATORY SCIENCES)
Comparison of HIV-1 specific T cell immunity in the female genital tract and blood of HIV-infected women: impact of in vitro T cell expansion on HIV-specific T cell specificity, maturation status and functional complexity.
Supervised by Dr J. Passmore

A.M. BOULLE (PUBLIC HEALTH AND FAMILY MEDICINE)
The effectiveness and determinants of effectiveness of antiretroviral therapy for adults in the Western Cape Province of South Africa.
Supervised by Professor J. Myers and Professor G. Maartens

J.C. BRACHER (CLINICAL LABORATORY SCIENCES)
Expression and regulation of H/Myc downstream-regulated gene 1 in squamous cell carcinoma of the oesophagus.
Supervised by A/Professor D. Hendricks and Dr V. Leaner

T.M.H. BRONMBACHER (CLINICAL LABORATORY SCIENCES)
The role of interleukin-4 receptor alpha on smooth muscle cells during helminth infection.
Supervised by Professor F. Brombacher and A/Professor L. Kellaway

G.L. CARVILL (CLINICAL LABORATORY SCIENCES)
The role of epigenetic factors in the pathogenesis of familial X-linked mental retardation (XLMR).
Supervised by Dr R.T. Goliath

K. CHATTERJEE (CLINICAL LABORATORY SCIENCES)
A study of host genetic determinants of human papillomavirus (HPV) infection, cervical cancer and herpes simplex virus type-2 (HSV-2) infection.
Supervised by Professor A.-L. Williamson and Dr C. Bundara

J.M. DAMBIZA (CLINICAL LABORATORY SCIENCES)
Investigating transmembrane TNF and transmembrane p55TNFR mediated signalling in host immune function during Mycobacterium tuberculosis infection.
Supervised by A/Professor M. Jacobs

B.D. DOBSON (HUMAN BIOLOGY)
Analysis of the expression pattern and functional role of Nogo-A and its receptor during optic nerve regeneration in the lizard Gallotago galloti.
Supervised by Dr D. Lang

J. EVANS (CLINICAL LABORATORY SCIENCES)
Investigation of the genetic basis of antibiotic resistance in Mycobacterium tuberculosis.
Supervised by Dr H. Segel

R. GALVAAN (HEALTH AND REHABILITATION SCIENCES)
A critical ethnography of young adolescents’ occupational choices in a community in post-apartheid South Africa.
Supervised by Professor S.L. Amosun and A/Professor L. van Niekerk

H.P. GIDEON (CLINICAL LABORATORY SCIENCES)
Studies on in vitro reactivity to antigens of Mycobacterium tuberculosis.
Supervised by Professor R.J. Wilkinson and Dr K.A. Wilkinson

P.P. GUMB (CLINICAL LABORATORY SCIENCES)
HIV pathogenesis in the female genital tract during chronic HIV infection: the impact of inflammation, T cell memory differentiation status and homeostatic cytokines on mucosal T cell immunity.
Supervised by Dr J. Passmore

J.C. HOVING (CLINICAL LABORATORY SCIENCES)
Investigating the role of IL-4/IL-13 and their receptors in ulcerative colitis.
Supervised by Professor F. Brombacher

M.T. IRURZUN-LÓPEZ (PUBLIC HEALTH AND FAMILY MEDICINE)
Absorptive capacity to finance HIV/AIDS treatment in South Africa: where are the bottlenecks?
Supervised by Dr E. Sinanovic and Dr F. Booysen

T.A. KELLERMANN (MEDICINE)
A pharmacological investigation of South African ichens, desiccation-tolerant plants and the medicinal tree, Warburgia salutaris.
Supervised by A/Professor P. Smith

A. KERRIGAN (CLINICAL LABORATORY SCIENCES)
The functional characterisation of marine CLEC-2 and analysis of the expression of its ligand, podoplanin, on macrophages.
Supervised by Professor G.D. Brown

D. KESWELL (HUMAN BIOLOGY)
An assessment of molecular and cellular mechanisms involved in melanocyte migration in the skin.
Supervised by Professor S.H. Kidson and Dr L.M. Davids

L. LACERDA (MEDICINE)
Role of tumour necrosis factor alpha (TNF-α) in ischaemic and pharmacological paresthiondism.
Supervised by A/Professor S. Lucour

V.B. MAVUMENGWANA (CLINICAL LABORATORY SCIENCES)
Mycothial disulphide reductase as a drug target.
Supervised by A/Professor D. Steenkamp and A/Professor D.W. Gammie

P.E. MELARRI (MEDICINE)
The therapeutic effectiveness of some local Nigemian plants used in the treatment of malaria.
Supervised by A/Professor P. Smith and Dr B. Campbell

E. MUKWEHVO (HUMAN BIOLOGY)
Regulation of GLUT-4 expression in skeletal muscle cells: the roles of nuclear respiratory factor-1 and calmodulin dependent protein kinase.
Supervised by A/Professor E. Ojuka

D.J. PEPPER (MEDICINE)
Clinical deterioration during antimycobacterial treatment in a high HIV-1 prevalence setting.
Supervised by Professor R.J. Wilkinson and Dr G. Mantejes

G.S. PETROS (PUBLIC HEALTH AND FAMILY MEDICINE)
The role of older persons in the management of HIV and AIDS: an assessment of their contribution and support needs in three South African provinces.
Supervised by Professor M. Ferreira and Professor R. Ehrlich

R.F. PICKARD (SURGERY)
Atrial microanastomosis with size mismatch. A trial of two techniques.
Supervised by Professor D.A. Hudson

Y. SHEN (CLINICAL LABORATORY SCIENCES)
An investigation into the use of lumpy skin disease virus as a vaccine vector for a potential HIV-1 vaccine.
Supervised by Professor A.-L. Williamson, A/Professor E. Shephard and Dr N. Douglas

L.J. TOWNSEND (PSYCHIATRY AND MENTAL HEALTH)
Risky sexual behaviour among men: HIV surveillance and risk reduction among men who have multiple female sexual partners.
Supervised by Dr C. Mathews

F.K. TREURNICHT (CLINICAL LABORATORY SCIENCES)
Adaptive changes in HIV-1 subtype C proteins during early infection and their effect on disease progression.
Supervised by Professor C. Williamson
**PATENTS**

**FILED APPLICATIONS**


**DEPARTMENT OF ANAESTHESIA**

**CHAPTERS IN BOOKS**


**ARTICLES IN PEER-REVIEWED JOURNALS**


In recognition of his contribution to welfare-related research, Professor Dan Stein, head of UCT’s Department of Psychiatry and Mental Health, and director of both the Medical Research Council’s Unit on Anxiety and Stress Disorders and UCT’s Brain and Behaviour Initiative, was awarded the prestigious Alan Pifer Research Award. The annual award honours UCT researchers whose work has contributed to the advancement and welfare of South Africa’s disadvantaged people.

Stein’s award-winning research focuses on the psychobiology and management of anxiety disorders, including post-traumatic stress disorder and obsessive-compulsive disorder. His work ranges from basic neuroscience all the way through to epidemiological and cross-cultural research.

In addition, the world’s largest global psychopharmacology organisation, the Collegium Internationale Neuro-Psychopharmacologicum (CINP) has awarded its CINP Ethics in Psychopharmacology prize to Professor Stein for his work on the philosophy of psychiatry and psychopharmacology. Stein has published a range of articles on the subject, and his recently released book, Philosophy of Psychopharmacology, is arguably the first extended text to focus on the intersection between philosophy and psychopharmacology.

As the founding editor of Philosophy, Ethics, and Humanities in Medicine, one of the first open-access academic journals in the field, Stein helped encourage interest in this area from readers around the world.
Kit Vaughan, emeritus professor of biomedical engineering and director of UCT spin-off company CapeRay, has won the UCT Book Award for 2010 for Imagining the Elephant: a Biography of Allan MacLeod Cormack, his ode to the South African-born Nobel laureate.

Cormack, a ‘lowly’ UCT-trained physicist, was co-winner of the 1979 Nobel Prize in Physiology or Medicine for his computer-assisted tomography (CAT) scanner. His work also inspired a new generation of medical scientists, including Vaughan, who established a medical imaging research group at UCT in 2000, just two years after Cormack’s death, in the latter’s honour.

In the book, Vaughan writes about both Cormack the family man and how his discoveries changed the world. It was clearly a labour of love for Vaughan, who travelled to Boston, Scotland and England to flesh out his research.

The UCT Book Award carries with it a purse of R30,000, which Vaughan has donated to the Allan Cormack Book Fund, established by Cormack’s family to enable science students from disadvantaged backgrounds to purchase text books.
ARTICLES IN PEER-REVIEWED JOURNALS


ANJOU, M., SALES, K., CATALANO, R.d., KATZ, A.A. Medicine, 181: 1407–1417. [IIDMM]


Professor Wayne Derman's pioneering work and remarkable contribution to sport and sports medicine was recognised when he scooped a top accolade in the David Awards 2010. Derman, a professor of sports science and sports medicine at the Sports Institute of South Africa, was recognised for his considerable local and international impact. He has served as chief medical officer for the South African team to the Sydney 2000 Olympics and the Athens 2004 Olympics and, in 2008, as medical officer for the South African Paralympic team to Beijing.

"When I started in this career, it was a lesser-known discipline and specialty within the field of medicine," he explains. "I have enjoyed being one of the pioneers, and am passionate about my chosen career."


DeWals, B., Hoving, J., Horsnell, W. and Brombacher, F. 2010. Control of Schistosoma mansoni egg-induced inflammation by IL-4-responsive CD4+ CD25+Foxp3+ Treg cells and IL-10-dependent. European Journal of Immunology, 40(10): 2837–2847. [IIDMM] [IIDRU]


HUNIG, T., LUHDER, F., ELFLEIN, K., GOGISHVILI, T., FROHLICH, M., GULER, R., CUTLER, A. AND BROMBACHER, F. 2010. CD28 and IL-4: two heavylight chains controlling the balance between immunity and inflammation. Medical Microbiology and Immunology, 199(3): 239–246. [IIDM] [IIDRU]


TWO TAKE HEART FROM INTERNATIONAL HONOUR

UCT’s Professors Bongani Mayosi and Karen Sliwa have been named as international scholars to the Population Health Research Institute (PHRI) at McMaster University, Canada, paving the way for further research in the population studies of heart disease in South Africa.

Mayosi, head of the Department of Medicine, and Sliwa, director of the Hatter Cardiovascular Research Institute, are among the latest recipients of the PHRI award, made to “highly productive and successful researchers of international distinction, and long-standing collaborators of the PHRI”.

Mayosi has been collaborating with executive director Professor Salim Yusuf and his team of researchers at the PHRI, one of the world’s leading research institutes in cardiovascular disease, for five years.

Sliwa, meanwhile, looks forward to the access that UCT researchers will have to the particular skills of the population study centre in Canada, which will allow them to set up very large, high-quality research projects in low-resource areas.

Sliwa has been working with Yusuf, one of the world’s most distinguished researchers in population studies, for more than a decade. They collaborated on the renowned Interheart study, among others, one of the landmark studies on risk factors leading to myocardial infarction, or heart attack.

RESEARCH OUTPUT


UYTTENHOVE, C., BROMBACHER, F. AND VAN SNICK, J. 2010. TGF-β interactions with IL-1 family members trigger IL-1-independent IL-1β production by mouse CD4+ T cells. European Journal of Immunology, 40: 2230–2235. [IIDMM] [IIDRU]


UCT’s Associate Professor Malcolm Collins and Dr Mike Posthumus won the prize for the best poster presentation at the International Scientific Tendinopathy Symposium, held in Umeå, Sweden, which attracts the cream of the world’s researchers in the field.

The poster award also cements the reputation of the Medical Research Council/UCT Research Unit for Exercise Science and Sports Medicine, where Collins and Posthumus are based, as world leaders in the study of the genetic factors related to the condition. It’s a topic that the pair covered in all seven of their oral and poster presentations at the symposium, such as in their poster, *A potential link between Achilles tendinopathy risk and endurance running ability*. In that study, Posthumus, Collins and Professor Martin Schwellnus identified a genetic variant – previously shown to predispose some people to Achilles tendinopathy – that is also associated with performance.

Other than the poster award, the study also drew interest from other delegates at the Umeå symposium. “It’s always been suspected; and people wrote about the possibility that there is a genetic component to the condition,” says Collins. “But we’ve been the first, internationally, to actually identify the genetic elements that alter your risk for tendinopathy.”

Dr Mike Posthumus (left) and Associate Professor Malcolm Collins took a long, hard look at the genetic factors that predispose runners to a condition known as tendinopathy.


**O’CONNOR, J. AND GEIGER, M.**


**PARKER, R. AND JELLSMA, J.M.**


**PASCOE, M. AND SCHMIDT VON WUHLISCH, F.**


**PASCOE, M., MAPHALALA, Z., EBRAHIM, A., HIME, D., MOLEDLA, B., MOHAMED, N. AND SKINNER, M.**


**ROGERS, C.**


**ROGERS, C.**


**ROSENTHAL, W.A. AND KHALID, D.**


**TRAVIS, J. AND GEIGER, M.**


**WATSON, R. AND DUNCAN, M.**


**WATI, L., SENEKAL, M., STEYN, N., LOMBARD, C. AND NEL, J.**


**YATES, D., JELLSMA, J.M. AND PARKER, R.**


**DE VILLIERS, T., KHALID, D. AND MAYERs, P.**


**KAJEE ADAMS, F. AND KHALID, D.**


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DEPARTMENT OF HUMAN BIOLOGY

CHAPTERS IN BOOKS

ARTICLES IN PEER-REVIEWED JOURNALS


Dr Hanna-Andrea Rother’s work on the consequences of the use of street pesticides on children’s health and health policy has earned her UCT’s 2010 Distinguished Social Responsiveness Award. Rother is programme leader of Health Risk Management in the Centre for Occupational and Environmental Health Research in the School of Public Health and Family Medicine. The award is valued at R25,000 and is open to staff whose activities benefit not only UCT, but also an external community.

Rother’s pioneering work in this previously unresearched area of public health has already influenced state policy. Armed with her research, she challenged government and NGOs with possible solutions to the use of illegal and highly toxic pesticides among the urban poor in Cape Town’s peri-urban communities.

Her project was one of co-operation. A community NGO co-initiated the project and participated in the research design. A Child Pesticide Policy reference group (representing the community, child health practitioners, researchers and government) was established to discuss the research process, findings, problems and interventions.

Rother’s award will be used to further her social responsiveness initiative, and showcases the valuable contribution soft-funded academic staff make to UCT.
DEPARTMENT OF MEDICINE

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


Professor Tim Noakes, UCT’s Discovery Health Professor of Exercise and Sports Medicine, who established the Exercise Science and Sports Medicine (ESSM) research unit in the early 1980s, has recently racked up 10 000 citations, according to the citations-tracking database Web of Knowledge.

Noakes is an NRF A-rated researcher, who also has an h-index – a measure of the productivity and impact of the published work of a scientist or scholar – of 53. This means that, for now, 53 of his articles have each been cited at least 53 times. That best illustrates the message that Noakes is trying to pass on to students at ESSM. “It doesn’t matter how good an article is; if it doesn’t get cited, it’s not going to be very influential,” he says.


KENYON, C., BOULLE, A.M., BADRI, M. AND ASSELMAN, V. 2010. “I don’t use a condom (with my regular partner) because I know that I’m faithful, but with everyone else I do”: the cultural and socioeconomic determinants of sexual partner concurrency in young South Africans. SAHARA: Journal of Social Aspects of HIV/AIDS, 7(3): 35–43.


Associate Professor Keerten Dheda has been named the winner of the 2010 Union Scientific Award of the International Union against Tuberculosis and Lung Disease (IUATLD). This international award is made annually to a researcher under the age of 45 who has made an outstanding contribution to the field of tuberculosis and/or lung disease.

Dheda, director of the Lung Infection and Immunity Unit in the Department of Medicine, was singled out for his internationally cited and acclaimed research, which focuses mainly on poverty-related lung disease, including TB, HIV and pneumonia. The IUATLD lauded Dheda for his expertise in combating drug-resistant TB, and for his part in developing a programme that offers training and clinical services at the two designated hospitals in the Northern and Western Cape that deal with extensively drug-resistant tuberculosis.

But, Dheda points out, the IUATLD award is a dedication to a team of collaborators, and to the hard work done in Africa.

“It is inspiring that all members of this team have been recognised for their hard work,” he says. “It’s also great advocacy for TB and diseases of poverty – and significant that such an award comes to Africa, given that we are relatively under-resourced and poorly funded compared to many other researchers.”


HIV kidney ops grab world attention

UCT surgeon Dr Elmi Muller and her team received world attention following their historic transplants of kidneys from HIV-positive donors to HIV-positive recipients, which were featured in The New England Journal of Medicine.

Muller, based in the Department of Surgery and a full-time surgeon at Groote Schuur Hospital, is the clinical researcher who initiated and drove the project. For the transplants, she worked with Professor Marc Mendelson of the Division of Infectious Diseases, Professor Del Kahn of the Department of Surgery and Dr Zunaid Barday of the Division of Nephrology to ensure that all clinical aspects of this complicated procedure were covered.

The chief concern in the transplantation of a kidney from an HIV-positive donor to an HIV-positive recipient, explains Muller, is the potential risk of ‘superinfection’. Every care was taken, however, says Muller. All organs came from donors who had received no antiretroviral therapy, ie are ‘ART-naïve’, and had no history of opportunistic infections or cancer, or evidence of kidney disease on biopsy.

In all cases the transplant recipients enjoyed good renal function after the transplant, without the need for dialysis.


IAA – Albertina and Walter Sisulu Institute of Ageing in Africa. Also see page 37.

IIDMM – Institute of Infectious Disease and Molecular Medicine. Also see page 37.

IIDRU – Medical Research Council/UCT Immunology of Infectious Diseases Research Unit. Also see page 43.

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DEPARTMENT OF OBSTETRICS & GYNAECOLOGY

ARTICLES IN PEER-REVIEWED JOURNALS


IDMM – Institute of Infectious Disease and Molecular Medicine. Also see page 43.

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DEPARTMENT OF PSYCHIATRY & MENTAL HEALTH

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS

AE-NGIBISE, K., COOPER, S., ADIIBOKAH, E., AKPALU, B., LUND, C., DOKU, V. AND MHAPP RESEARCH PROGRAMME CONSORTIUM. 2010. ‘Whether you like it or not people with mental problems are going to go to them’: a qualitative exploration into the widespread use of traditional and faith healers in the provision of mental health care in Ghana. International Review of Psychiatry, 22(6): 558–567.


UCT’s Associate Professor Andrew Bosch has become one of a few to see the result of years of toil in a lab make it into a commercial product – a protein-based muscle-recovery product known as PeptoSport®.

The drink resulted from Bosch’s work with athletes at the UCT/Medical Research Council Research Unit for Exercise Science and Sports Medicine (ESSM), and a research interest in the role of carbohydrates and protein in sports performance. His labour has now been applied to PeptoSport®, a muscle-recovery drink manufactured by DSM Nutritional Products South Africa as part of its Pepto range. Following the good results achieved, DSM was keen to join forces with UCfT to produce and market the drink, and the two groups signed a licensing agreement.

He put his protein mixture through a litmus test when he and his team ran a study with the Springbok Rugby Sevens, who had volunteered their services and bodies to ESSM. Using muscle soreness and fatigue as a marker for recovery, Bosch was able to show that protein hydrolysates did improve post-training recovery, particularly in the quadriceps and calf muscles.

Following the good results achieved, DSM was keen to join forces with UCT to produce and market the drink, and the two groups signed a licensing agreement.

Associate Professor Andrew Bosch and PeptoSport®, a sports drink that he developed through his work at UCT.


SCHOOL OF PUBLIC HEALTH & FAMILY MEDICINE

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


Cardiologist Dr Neil Hendricks of the Division of Cardiology, has been appointed as UCT and Groote Schuur Hospital's first Life Healthcare Electrophysiology Fellow.

The fellowship paves the way for South African training of cardiologists in diagnosing electrophysiological conditions of the heart, and performing surgery on patients suffering from such diseases. Electrophysiology, the fastest growing area of cardiology worldwide, relates to rhythmic disorders of the heart, or arrhythmia, a group of conditions characterised by abnormal electrical activity in the heart.

Up to now, such programmes have only been offered overseas, an arrangement that only seduced cardiologists to remain abroad upon completion, and thus contributed to the country’s brain drain.

Under the tutelage of Professor Andrzej Okreglicki, who trained in the USA and the UK before returning to Cape Town to share his expertise, Hendricks will spend two years honing his skills in electrophysiology.

Life Healthcare has provided R1.2 million over two years for the fellowship, with the balance coming from the Faculties Board of Groote Schuur Hospital.

HeaRT SpeCIaLIST awaRDeD pReSTIgIOUS New FeLLOwSHip


KENYON, C., BOULLE, A.M., BADRI, M. AND ASSELMAN, V. 2010. “I don’t use a condom (with my regular partner) because I know that I’m faithful, but with everyone else I do”: the cultural and socioeconomic determinants of sexual partner concurrency in young South Africans. *SAHRA Journal of Social Aspects of HIV/AIDS*, 7(3): 35–43. [CIDER]


UCT's South African Tuberculosis Vaccine Initiative (SATVI) is once again the recipient of major tuberculosis (TB) research funding.

SATVI's co-director, Professor Willem Hanekom, was awarded a $5.3-million research grant by the Bill and Melinda Gates Foundation, specifically to learn why some persons exposed to the tuberculosis germ – Mycobacterium tuberculosis – develop TB, while others do not.

Worldwide nine million people develop TB annually, and 1.7 million die. Only 10% of people who are infected with the TB germ develop lung disease. If successful, the research project can make a significant contribution to the fight against TB.

“Our first aim is to learn what to measure in blood to indicate that an exposed person will develop TB disease,” says Hanekom. “This will allow targeted intervention with antibiotics.

“The knowledge gained from our research should also guide development of new vaccines, to prevent TB altogether.”

This three-year project will bring together some of the world’s best scientists from Seattle, Stanford and San Diego in the US, and The Netherlands. The study will be led by Hanekom. The research team will analyse stored blood samples already collected from 6363 adolescents. Nearly 50% of these adolescents were found to be infected with the TB germ at enrolment.

Some developed TB during two years of follow-up, but most remained healthy.

Stored blood will now be retrieved to look for differences in immune responses between those that developed TB and those who remained healthy. The researchers will use cutting edge technology for their search for these “correlates of risk of TB disease”.

**References**


DEPARTMENT OF RADIATION MEDICINE

ARTICLES IN PEER-REVIEWED JOURNALS


IIDMM — Institute of Infectious Disease and Molecular Medicine. Also see page 43.

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DEPARTMENT OF SURGERY

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


CERECAM — Centre for Research in Computational and Applied Mechanics. Also see page 40.

CRU — Cardiovascular Research Unit. Also see page 38.

IIDIMM — Institute of Infectious Disease and Molecular Medicine. Also see page 43.

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FACULTY OF HEALTH SCIENCES 105
Faculty of Science

DEPARTMENT OF ARCHAEOLOGY
DEPARTMENT OF ASTRONOMY
DEPARTMENT OF BOTANY
DEPARTMENT OF CHEMISTRY
DEPARTMENT OF COMPUTER SCIENCE
DEPARTMENT OF ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE
DEPARTMENT OF GEOLOGICAL SCIENCES
DEPARTMENT OF MATHEMATICS AND APPLIED MATHEMATICS
DEPARTMENT OF MOLECULAR AND CELL BIOLOGY
DEPARTMENT OF OCEANOGRAPHY
DEPARTMENT OF PHYSICS
DEPARTMENT OF STATISTICAL SCIENCES
DEPARTMENT OF ZOOLOGY
ELECTRON MICROSCOPE UNIT
The faculty continues to value high-quality, high-impact research, and numerous formal research groupings, units and centres, together with many individuals, contribute to our research activity.
The staff and postgraduate students in the Faculty of Science achieved considerable success in a number of areas during 2010. Our research was supported through R42–million research contract income awarded to staff in the faculty, which funded projects involving staff, 120 postdoctoral researchers and 700 master’s and PhD students. Fifty-five PhD and 120 master’s degrees were awarded in 2010. The faculty is proud of its 14 A-rated, 53 B-rated, 50 C-rated and two P-rated scientists. Seventy academic staff currently participate in the Emerging Researcher Programme and Dr Chris Clarkson and Dr Rob Ingle received Claude Leon awards for lecturers.

An important milestone in the faculty was the 50th anniversary of the Percy FitzPatrick Institute of African Ornithology. Numerous events were held during the course of the year to honour this achievement, with Professor Norman Meyers delivering the Vice-Chancellor’s Open Lecture.

A major new initiative was the establishment of the Nansen-Tutu Centre for Marine Environmental Research, a joint venture between the Nansen Environmental Centre of Norway and UCT, with Professor Frank Shillington as co-director.

Prestigious awards were received by a number of staff of the faculty. Professor Jill Farrant was named Distinguished Woman Scientist in the Life Sciences at the annual Department of Science and Technology Women in Science Awards. Emeritus Professor George Ellis received the De Beers Gold Medal from the South African Institute of Physics for his work in theoretical cosmology and Professor Mike Meadows was appointed secretary-general and treasurer of the International Geographical Union. Dr Gary Bronner of the Department of Zoology received the unusual honour of having a fossil named after him, Chrysochloris bronneri, for his contribution to understanding the biology of golden moles.

On the innovation front, Associate Professors Margit Härting and David Britton received the prestigious 2010 iDTechEx Printed Electronics Europe Award for their ground-breaking work in nanotechnology and printed circuits. An area in which the faculty is rapidly expanding its footprint is in patent filing, with Professor Ed Ryblicki being recognised in 2010 as the top UCT inventor with 44 patents granted.

The faculty continues to value high-quality, high-impact research, and numerous formal research groupings, units and centres, together with many individuals, contribute to our research activity.

PROFESSOR KATHY DRIVER
DEAN OF THE FACULTY OF SCIENCE
DOCTORAL GRADUATIONS

N. ADAMS (MOLECULAR AND CELL BIOLOGY)
Investigating the role of cyclic nucleotide gated channels in plant-pathogen interactions.
Supervised by Dr K. Denby

L.J. ATKINSON (ZOOLOGY)
Ecosystem effects of demersal trawl fisheries on benthic infauna, epifaunal and fish communities of the southern Benguela system.
Supervised by Emeritus Professor J.G. Field, A/Professor A. Jarre, Dr L.J. Shannon and Honorary Professor L. Hutchings

B.C. BACKEBERG (OCEANOGRAPHY)
Modelling the mesoscale variability in the greater Agulhas Current System using a Hybrid Coordinate Ocean Model.
Supervised by Professor C.J.C. Reason

M.G. BALARIN-PETERS (ZOOLOGY)
Comparative laboratory study of photo-acclimation in selected dinoflagellate and diatom species of the Benguela ecosystem.
Supervised by Professor J.G. Field, Dr G. Pitcher and Dr R. Barlow

C.B. BARNETT (CHEMISTRY)
Developing methods to construct ring pucker free energy hypersurfaces applied to the analysis of glycosidase enzyme catalytic mechanisms.
Supervised by A/Professor K.J. Naidoo

N. BEETON-KEMPE (MOLECULAR AND CELL BIOLOGY)
P450 Biochips: development of a protein microarray platform for investigating cytochrome P450 clinical drug metabolisms.
Supervised by Professor J.M. Blackburn

L.K. BLAMEY (ZOOLOGY)
Ecosystem effects of a rock-lobster ‘invasion’: comparative and modelling approaches.
Supervised by Professor G.M. Branch and Dr É. Plagányi-Álgás

N. BURLS (OCEANOGRAPHY)
The role of ocean dynamics within tropical Atlantic climate variability.
Supervised by Professor C.J.C. Reason and Dr P. Penven

S. CARTER (ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE)
Approaches to quantifying and reducing uncertainty in GCMS over southern Africa.
Supervised by Professor B.C. Hewitson

H. CHIRIRIWA (CHEMISTRY)
Synthesis and characterisation of palladium (II), platinum (II) and gold (I) complexes and their biological activity.
Supervised by Professor J.R. Mass and A/Professor D. Hendricks

M. DE PONTE MACHADO (ZOOLOGY)
Supervised by Professor L.G. Underhill, Professor P.G. Ryan, Dr R.J.M. Crawford and Dr R. Bowie

A. DE VOS (ZOOLOGY)
Being breakfast: anti-predator behaviour of Cape fur seals Arctocephalus pusillus pusillus in relation to exceptional predation by white sharks Carcharodon carcharias around Seal Island, False Bay, South Africa.
Supervised by Dr J. O’Riain

J.E. DECKER (GEOLOGICAL SCIENCES)
Landscape evolution and equilibrium in Southern Africa: Insights from cosmogenic noble gases in Karoo dolerites and geospatial analyses.
Supervised by Professor M.J. de Witt

E.C. ELSON (ASTRONOMY)
A multi-wavelength study of the dwarf galaxies NGC 2915 and NGC 1705: star formation, gas dynamics and dark matter.
Supervised by Professor R.C. Kraan-Korteweg and Professor E. de Blok

G. EVEREST (MOLECULAR AND CELL BIOLOGY)
Selective isolation and characterisation of indigenous actinobacteria, with particular emphasis on the Genus Amycolatopsis.
Supervised by Dr P. Meyers

M. GALIMBERTI (ARCHAEOLOGY)
Investigating the use of oxygen and carbon isotopes and sclerochronology on Turbo saxatilis and Donax sera for palaeoenvironment reconstruction at Pinnacle Point, South Africa.
Supervised by Professor J.C. Sealy

B.PG. GALVÃO (MOLECULAR AND CELL BIOLOGY)
Bacteroides fragilis interactions with the collagen type I component of the host extracellular matrix.
Supervised by A/Professor V.R. Abratt and Dr M.S. Ratcliffe

E.O. GBOBANIYI (ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE)
Transferability of regional climate models over different climatic domains.
Supervised by Professor B.C. Hewitson and Dr E. Chiririwa

G. GORO GONFA (PHYSICS)
Hall effect in printed nanoparticulate silicon networks.
Supervised by A/Professor D.T. Britton and A/Professor M. Hürting

J.R.A. GRAY (MATHEMATICS AND APPLIED MATHEMATICS)
Algebraic exponentiation and internal homology in general categories.
Supervised by Professor G. Janelidze

R. HUDDY (MOLECULAR AND CELL BIOLOGY)
Molecular Characterization of the Vibrio Midoe SY9 extracellular alkaline serine protease and its role in the previously observed probiotic effect on the growth of Halotilus Midoe.
Supervised by A/Professor V.E. Coyne

E.B. INYANGALA (MATHEMATICS AND APPLIED MATHEMATICS)
Categorical semi-direct products in varieties of groups with multiple operators.
Supervised by Professor G. Janelidze

J.A. KAZEMBE (MATHEMATICS AND APPLIED MATHEMATICS)
Modelling the influence of rainfall variability and different grazing systems on the spatiotemporal dynamics and productivity of semiarid rangelands.
Supervised by Dr D. Richardson

S.D. KHANYE (CHEMISTRY)
Synthesis and antimalarial evaluation of gold thiosemicarbazone complexes and polyamine-thiosemicarbazone dendrimers.
Supervised by Professor K. Chibale and Dr G.S. Smith

S.P. KIRKMAN (ZOOLOGY)
The Cape fur seal: monitoring and management in the Benguela current ecosystem.
Supervised by Professor L.G. Underhill, Professor M. Bester, Professor R.J.A. Crawford and Dr J.-P. Roux
J. KOTZE (MATHEMATICS AND APPLIED MATHEMATICS)
Forecasting and optimization in cosmology.
Supervised by Professor B.A. Bassett

B.R. KULLIN (MOLECULAR AND CELL BIOLOGY)
Sucrase and oxalate metabolism in the human gut by Bifidobacterium and Lactobacillus spp: physiological and diversity studies.
Supervised by A/Professor V.R. Abratt and A/Professor S.J. Reid

J.R. LANE (COMPUTER SCIENCE)
Layered surface visualization through animated particles.
Supervised by A/Professor J. Gain

J. LI (CHEMISTRY)
Supramolecular modification of selected antitubercular drugs.
Supervised by Professor M.R. Caira and Professor S.A. Bourne

C. MAKITU KIVUVU (MATHEMATICS AND APPLIED MATHEMATICS)
On Doitchinov’s quietness for arbitrary quasi-uniform spaces.
Supervised by Professor H.-P. Kunzi

R.S. MARTINS (ZOOLOGY)
Some factors influencing the transport of chokka squid (Loligo reynaudii d’Orbigny, 1839) paralarvae off the Eastern Cape, South Africa.
Supervised by Dr C. Moloney, Dr M.J. Roberts and Dr E.A.G. Vidal-Furg

R.P. MATTHEWS (CHEMISTRY)
Ion pairing in aqueous metal sulfates and platinum group metal ammonium solutions.
Supervised by A/Professor K.J. Naidoo

P. MENSAH (CHEMISTRY)
Physicochemical studies of a novel adjuvant and conjugate vaccines.
Supervised by A/Professor N. Ravenscroft

M.M. MOGOROSI (CHEMISTRY)
Synthesis and characterization of nickel, palladium and chromium complexes as olefin oligomerization catalysts.
Supervised by Professor J.R. Auss and Dr G.S. Smith

M. MSIMANGA (PHYSICS)
Development of a time of flight – energy spectrometer for applications in heavy ion-elastic recoil detection thin film analysis.
Supervised by A/Professor C.M. Conrie and Dr C.A. Pineda-Vargas

G. MUGUMBATE (CHEMISTRY)
Enhancing the fight against malaria: from genome to structure and activity of a G-protein coupled receptor from the mosquito, Anopheles gambiae.
Supervised by Professor G.E. Jackson

R.A. NAVARRO-CANAS (ZOOLOGY)
Energy budget and foraging behaviour of the Cape gannet, Morus capensis, during the breeding season.
Supervised by Professor L.G. Underhill and Dr R.J.M. Crawford

M. NELSON-FLOWER (ZOOLOGY)
Kinship and its consequences in the cooperatively breeding Southern Pied Babbler Turdoides bicolor.
Supervised by Professor P.A.R. Hockey

P.G. NGOMA (ZOOLOGY)
The welfare value of inland small-scale floodplain fisheries of the Zambezi river basin.
Supervised by Dr J.K. Turpie

M.C. PFAAF (ZOOLOGY)
Land ahoy! Linking nearshore oceanography with larval transport, settlement and recruitment of intertidal invertebrates.
Supervised by Professor G.M. Branch

C. PHIRI (ZOOLOGY)
Ecological aspects of the Macroinvertebrates associated with two submerged macrophytes in Lake Kariba.
Supervised by A/Professor J. Day and Professor M. Chimbari

S.N. PORTER (ZOOLOGY)
Biogeography and potential factors regulating shallow subtidal reef communities in the western Indian Ocean.
Supervised by Professor G.M. Branch and Dr K. Sink

A.H. PRINSLOO (MATHEMATICS AND APPLIED MATHEMATICS)
Applications of the Gauge Theory(Gravity) correspondence.
Supervised by Dr J. Murugan

A.T. RAJI (PHYSICS)
Formation and dynamics of defects in pure and ion implanted α-Titanium studied by quantum simulations.
Supervised by A/Professor D.T. Britton and A/Professor M. Härting

K.K.M. RAMAROA (STATISTICAL SCIENCES)
Contributions to linear regression diagnostics using the singular value decomposition: measures to identify outlying observations, influential observations and collinearity in multivariate data.
Supervised by Professor L.G. Underhill

I.F. RIAD (ASTRONOMY)
A deep near infra-red survey along the Norma Wall.
Supervised by Professor R.C. Kroen-Korteweg and A/Professor P.A. Woudt

M. RICHTER (PHYSICS)
A study in spherical accretion of self-gravitating fluids in a general relativistic framework.
Supervised by Professor R.D. Viollier, Professor A. Peshier and Dr G.B. Tupper

M.J. ROBERTS (OCEANOGRAPHY)
Recruitment variability of chokka squid (Loligo reynaudii) – the role of the cold ridge, currents and retention on the Agulhas Bank, South Africa.
Supervised by Professor F.A. Shillington

J. ROHLAND (MOLECULAR AND CELL BIOLOGY)
Investigating the actinomycete diversity inside the hindgut of an indigenous termite, Microhodotermes viator.
Supervised by Dr P.R. Meyers

K. SCHACHTSCHNEIDER (BOTANY)
Water sourcing by riparian trees along ephemeral riverbeds.
Supervised by Dr E.C. February and A/Professor J. Day

M.R. SCRIBA (PHYSICS)
Synthesis and characterisation of doped silicon nanoparticles by hot wire thermal catalytic and spark pyrolysis.
Supervised by A/Professor M. Härting and A/Professor D.T. Britton

M.J. SILBERBAUER (ZOOLOGY)
Methods for visualising complex water quality data.
Supervised by A/Professor J. Day

B. SMITH (ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE)
The late quaternary history of southern hemisphere Mediterranean climate regions in the Western Cape, South Africa and South Western Australia.
Supervised by Professor M.E. Meadows

J.M. VAN ROOYEN (MOLECULAR AND CELL BIOLOGY)
Crystal structure of the large type III glutamine synthetase from Bacteroides fragilis.
Supervised by Professor B.T. Sewell and A/Professor V. Abratt

M. VARUGHES (STATISTICAL SCIENCES)
Facilitating statistical inference for stochastic processes through the cumulant truncation procedure.
Supervised by Professor B.A. Bassett
**PATENTS**

**FILED APPLICATIONS**


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**J.A. VEITCH (OCEANOGRAPHY)**

Equilibrium dynamics of the Benguela system: a numerical modelling approach. Supervised by Professor F.A. Shillington and Dr P. Penven.

**N.J. VERHOOG (MOLECULAR AND CELL BIOLOGY)**

Investigation of differential NFκb-induced interleukin-6 gene regulation by synthetic progestins medroxyprogesterone acetate (MPA) and norethindrone acetate (NETA) in human endocervical epithelial cells and the role of the unliganded glucocorticoid receptor. Supervised by Professor J.P. Hapgood.

**P.K. WALLACE (CHEMISTRY)**

Characterising learning in a demonstrator community serving first-year chemistry students at a South African university. Supervised by A/Professor B. Davidowitz and Professor A. Rollnick.

**C.B. WINTERBOTTOM (COMPUTER SCIENCE)**

VRBridge: A constructivist approach to supporting interaction design and end-user authoring in virtual reality. Supervised by Professor E. Blake and Dr J. Gain.

**N.T. WOOD (MOLECULAR AND CELL BIOLOGY)**

Modelling the evolution of HIV-1 protein-coding sequences with particular focus on the early stages of infection. Supervised by Professor C. Seoighe.
DEPARTMENT OF ARCHAEOLOGY

AUTHORED BOOKS


EDITED BOOKS


The South African Institute of Physics has awarded NRF A-rated researcher and cosmologist Emeritus Professor George Ellis their De Beers Gold Medal, the institute’s highest award, for his work in theoretical cosmology.

One excerpt from Ellis’ citation reads: “A powerful interest in matters well beyond his research specialty is almost a defining characteristic of George Ellis. His fierce and outspoken opposition to apartheid went way beyond written criticism; he was frequently present to lend what support he could to the dispossessed when the bulldozers went in to destroy their shacks during the forced removals. His publications on social problems include discussions of homelessness, the nature of poverty, low-income housing policy, revisions of the school syllabus, science research policy and a proposal for a peace education curriculum. George is a consistent advocate of free and open discussion on all matters within the scientific community and in society generally.”

In addition to the gold medal, four student prizes for astrophysics were awarded to current and former National Astrophysics and Space Science Programme students (NASSP is hosted at UCT). They are Marissa Kotze, who shared the prize for the best oral presentation by a PhD student; Wendy Williams, who received the prize for the best oral presentation by an MSc student; Thuso Simon, who shared the prize for the best poster; and Zara Randriamanakoto, who won the encouragement prize.


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DEPARTMENT OF ASTRONOMY

AUTHORED JOURNALS


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


ACGC — Astrophysics, Cosmology and Gravity Centre. Also see page 38.

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DEPARTMENT OF BOTANY

(Including the Bolus Herbarium and the Plant Conservation Unit)

EDITED BOOKS


CHAPTERS IN BOOKS


Professors Margit Härting and David Britton of the Department of Physics were named winners of the Academic R&D Award at the IDTechEx Printed Electronics Europe Awards 2010 held in Dresden, Germany.

Worthy winners – beating competitors from some of the world’s most illustrious universities – Britton and Härting have been making breakthroughs in the ever-burgeoning field of printed technology that certainly deserve the recognition they received. The potential applications for printed electronic products are enormous. These range from use in solar cells (where engineers are keen to use thinner and cheaper materials) and animated billboard posters (imagine a paper-thin poster that lights up or runs videos), to packaging (that can guarantee freshness) and smart fabrics (such as shirts that monitor muscle fatigue during sports training).

And while they are pursuing very specific commercialisation options, they’re keen to share their knowledge with others in Africa. In partnership with the United States Agency for International Development, they’re hoping to collaborate with universities in Rwanda and the rest of Africa to begin work on those paper-thin solar panels, for example.

Vice-Chancellor, Dr Max Price, with Professors Margit Härting and David Britton, whose significant advances in the field of printed electronics, netted the IDTechEx Academic R&D Award.


Ma-Re Institute — Marine Research Institute.
DEPARTMENT OF CHEMISTRY

CHAPTERS IN BOOKS


ARTICLES IN PEER REVIEWED JOURNALS


RESEARCH OUTPUT

FACULTY OF SCIENCE 119


COME HIGH WATER, A PLAN IS NEEDED

NRF P-rated researcher Dr Gina Ziervogel is the principal investigator in a three-year initiative of UCT’s African Centre for Cities (ACC) that will explore options for a collaborative response to urban flooding and rising sea-level in the Western Cape, using Cape Town’s Philippi – a high flood-risk area that’s been hit hard by storms in recent winters – as a case study.

The study will involve examining flooding issues related to climate change, urban development, vacant land and housing.

The project is funded by Canada’s International Development Research Centre and the UK’s Department for International Development, and falls under its Climate Change Adaptation in Africa programme. Other partners at UCT are the African Security and Justice Programme in the Centre of Criminology, and the geomatics department and the Cape Urban Observatory that fall under the ACC, while external partners include the City of Cape Town, Shack-Dwellers International and the Stockholm Environment Institute.


CREE – Centre for Research in Engineering Education. Also see page 41.

CSCR – Centre for Supramolecular Chemistry Research. Also see page 49.

IIDDM – Institute of Infectious Disease and Molecular Medicine. Also see page 43.

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DEPARTMENT OF COMPUTER SCIENCE

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


ICT4D — Information and Communications Technology Centre for Development. Also see page 44.

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DEPARTMENT OF ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE

(Including the Environmental Evaluation Unit and the Disaster Mitigation for Sustainable Livelihood Project)

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


The Vice-Chancellor’s Climate Change Strategic Initiative has granted R1.8 million per annum for 2010 and 2011 to UCT’s Marine Research Institute (Ma-Re) for launching a new programme. This undertaking meets several key objectives, such as positioning UCT as the premier node in African academic networks, promoting social justice and global citizenship, and increasing postgraduate studies to develop the next generation of academics.

The Marine Research in the Benguela and Agulhas Systems for Supporting Interdisciplinary Climate-change Science (Ma-Re BASICS) programme was officially launched on 11 May 2010, thanks to a proposal titled Marine Multi-Scale Data & Models: The key to predicting climate variability in Africa and its biological and social consequences, which was one of two proposals accepted for funding. As a result, a number of BASICS postgraduates, from master’s students to postdoctoral fellows, stand to benefit from the grant.

The Ma-Re BASICS programme will develop a system of marine data collection and integration into models that will project biological and physical ocean conditions. A system of physical and biological indicators will be developed that will be of practical use in ocean forecasting and fisheries management, with the prospect of better social and economic planning for coastal communities.

Professor John Field, Dr Lynne Shannon and Professor Frank Shillington, from the Ma-Re Institute


Mo-Re Institute – Marine Research Institute. Also see pages 32 and 45.

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DEPARTMENT OF GEOLOGICAL SCIENCES

ARTICLES IN PEER-REVIEWED JOURNALS


**Departments of Mathematics and Applied Mathematics**

(Including the Cosmology and Gravity Group, the Laboratory of Foundational Aspects of Computer Science (FACS-Lab), the Marine Resource Assessment and Management Group (MARAM), Industrial Mathematics, and the Topology Research Group)

**Chapters in Books**


**Articles in Peer-Reviewed Journals**


FOSSIL FAME FOR UCT ZOOLOGIST

The UCT Department of Zoology’s Dr Gary Bronner has had a fossil named after him, in recognition of his major contribution to understanding the biology of Africa’s endemic and enigmatic golden moles.

The fossil, named *Chrysochloris bronneri*, was discovered at the West Coast Fossil Park in Langebaanweg by Professor Rob Asher of Cambridge University, who is an expert on the evolution of insectivoran, including the golden moles.

Bronner is a member of an international research team that includes Asher, as well as researchers Professors Nigel Bennett and Paulette Bloomer and Dr Sarita Maree, all from the University of Pretoria. They are deriving a robust phylogeny (evolutionary tree) for the poorly-studied African family Chrysochloridae, comprising 21 golden mole species.

Bronner explains that the characteristics that set the new fossil species apart from other golden moles are subtle, and it is clear that the fossil mole – dating back to the early Pliocene, at least 5.2 million years ago – is closely related to the living Cape golden mole *Chrysochloris asiatica*, which is common in the south-western Cape, including the Cape Peninsula, and the Northern Cape coastal plain.

Dr Gary Bronner with a Cape golden mole, a close living relative of the five-million-year-old fossil mole *Chrysochloris bronneri*, named in Bronner’s honour by a Cambridge University colleague.


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


CERECAM – Centre for Research in Computational and Applied Mathematics. Also see page 40. Ma-Re Institute – Marine Research Institute. Also see pages 32 and 45.

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DEPARTMENT OF MOLECULAR & CELL BIOLOGY

ARTICLES IN PEER-REVIEWED JOURNALS


In August 2010 international scholars, holding a wide range of views, met at the Beyond the Concordance Model workshop hosted by UCT’s Astrophysics, Cosmology and Gravity Centre co-director, Professor Peter Dunsby, and held at the Stellenbosch Institute for Advanced Studies.

The task of these participants, who are some of the brightest minds in cosmology, was to pitch alternatives to the concordance, or standard, model of cosmology. The Concordance model starts off with the Big Bang, but is now in flux as cosmologists and astronomers struggle with a universe that is made up primarily of two forms of matter that fit snugly into models and observations, but which no one has been able to explain or identify – dark energy and dark matter.

Dunsby deliberately brought together people who challenge and question some of the basic assumptions and tenets of the standard model. During the workshop more than 20 speakers offered some cutting-edge models – involving modified gravity, inhomogeneous cosmologies, backreaction and other alternatives – that could explain an expanding universe without dark energy, and that question some of the fundamentals that have been taken for granted for many years.

Although there was no expectation of consensus or a new model emerging from the workshop, it perhaps laid the groundwork for a viable alternative. Or at least got cosmologists thinking along new lines.

Cosmology students Anne Marie Nzioki, Hassan Bourhrous and Sean February were some of the students who rubbed shoulders with alternative thinkers in the field.


Bacteroides fragilis glutamine synthetase (GlnN) isolated using Purification and biochemical characterization of a nitrilase from the thermophilic bacterium, Geobacillus pallidus RAP6. Applied Microbiology and Biotechnology, 88: 143–153. [IIDMM]


IIDMM — Institute of Infectious Disease and Molecular Medicine. Also see page 43.

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DEPARTMENT OF OCEANOGRAPHY
(Including the Research Diving Unit)

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


Ma-Re Institute — Marine Research Institute. Also see pages 32 and 45. Nansen-Tuto Centre — Nansen-Tuto Centre for Marine Environmental Research. Also see page 45.

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DEPARTMENT OF PHYSICS

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


Every member of the rock hyrax – aka dassie or *Procavia capensis* – colony will use the exact same spot as a toilet, year after year, thus ensuring that these middens, made up of urine and faecal pellets, trapped stable isotopes (atoms) and pollen, are neatly and chronologically stratified. For paleoenvironmentalists, this provides a mine of valuable information gathered over tens of thousands of years, giving one of the most accurate and high-resolution records of changing climate and vegetation patterns.

This is exactly what Professor Mike Meadows and his students in the Department of Environmental and Geographical Science have been looking at for years. While they were limited to dassie colonies in the Western Cape, Northern Cape and Namibia, they can now go further afield thanks to the €1.4 million (around R13 million) in funding for a five-year study secured from the European Research Commission by one of Meadows’ former postdoctoral research fellows, Dr Brian Chase.

“The beauty of the hyrax middens is that they accumulate more or less continuously,” says Meadows. “And to have records at that temporal level of resolution, I think, is a major breakthrough.”

Professor Mike Meadows and doctoral researcher, Lynne Quick, explore the past as they dig into a dassie midden.

PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


ENCYCLOPAEDIA ENTRIES


ARTICLES IN PEER-REVIEWED JOURNALS


IIDMM – Institute of Infectious Disease and Molecular Medicine. Also see page 43.

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DEPARTMENT OF ZOOLOGY


UCT RADIO ASTRONOMY SCORES LARGE CHUNK OF MEERKAT OBSERVATION TIME

Four UCT Astrophysics, Cosmology and Gravity Research Centre (ACGC) Key Science projects are among ten successful bids for the 43000 hours of observing time allocated to radio astronomers on South Africa’s MeerKAT telescope, a coup that underscores UCT’s strength in radio astronomy.

The four UCT proposals were among 21 involving more than 500 radio astronomers around the globe received following the invitation from the MeerKAT project. The other winning proposals were from Australia, the UK, India, Germany, and The Netherlands. Projects were reviewed and rated on the basis of their scientific merit, and technical and operational feasibility.

Drs Sarah Blyth and Benne Holwerda, with a colleague from the USA, will lead the Deep HI Field project, an ultra-deep survey of neutral hydrogen gas in the early Universe. The Mongoose study by Professor Erwin de Blok, SARCHI Research Chair in Radio Astronomy, will focus on deep observations of 30 nearby galaxies (25 times deeper than previous observations). The Mighty project, by Dr Kurt van der Heyden and Matt Jarvis, will lead the international Gigahertz Tiered Extragalactic Explorations Survey. In their ThunderKAT project, Professor Patrick Woudt and Professor Rob Fender of the University of Southampton in the UK will lead the hunt for dynamic and explosive radio transients.

From left: Dr Benne Holwerda, Professor Erwin de Block, Dr Sarah Blyth, Professor Patrick Woudt and Dr Kurt van der Heyden.


JONES, M. AND RYAN, P.G. 2010. Evidence of mouse attacks on albatross chicks on sub-Antarctic Marion Island. Antarctic Science, 22(1): 39–42. [Ma-Re Institute] [PFIAO]


LUDYNA, K., GARTH, S. AND LUNA-JORQUERA, G. 2010. Distribution and foraging behaviour of the Puffinast Buoy (Sula variegata) off northern Chile. Journal of Ornithology, 151: 103–111. [ADU] [Ma-Re Institute]


Today, the Cape Fur seal is a common sight on South African coastlines. But five million years ago, seals populating the West Coast, then more closely related to some Antarctic seals, suffered disease and trauma, according to a new study.

In the fossil-rich area of Langebaanweg, about 110km from Cape Town, over 3000 seal skeletal remains have been recovered, providing unique insights into their lives. The study is the work of Dr Romala Govender and palaeo-biologist Professor Anusuya Chinsamy-Turan of UCT’s Department of Zoology, with Graham Avery of Iziko South Africa Museum. Their research has revealed that seal bones recovered from Langebaanweg show evidence of osteoarthritis, which seems to have affected several members of this population.

There is also evidence of osteomyelitis (infection of the bone and bone marrow) in the pelvic bones of a young seal, which may have resulted from an open wound allowing infection to spread to the bone. Such an injury could have occurred during the mating season – when males are known to be aggressive – or as the result of a predator attack. “It has been wonderful to be able to unravel the biology of these five-million-year-old seals,” says Govender. “This research has provided exceptional insight into the lives of seals that once lived on our West Coast.”

The skull of the Homiphoca capensis seal that lived at Langebaanweg five million years ago.


WANLESS, R., COOPER, J., SLABBERT, M.J. AND RYAN, P.G. 2010. Risk assessment of birds foraging terrestrially in relation to their southern-most breeding site, Gough Island, in comparison to other sites. Wildlife Research, 37: 524–530. [Ma-Re Institute] [PFIAO]


ADU – Animal Demography Unit. Also see page 37.
Ma-Re Institute – Marine Research Institute. Also see pages 32 and 45.
PFIAO – Percy FitzPatrick Institute of African Ornithology. Also see pages 34 and 47.

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Most modern mines are located on spots that were first mined in pre-colonial times, demonstrating that indigenous prospectors had knowledge of the geology and resources around them, according to Dr Shadreck Chirikure from the Department of Archaeology.

In his book, *Indigenous Mining and Metallurgy in Africa*, Chirikure said this was particularly the case in iron, copper, tin and gold mines.

He said although the socio-political and economic landscape has changed since the 19th century, and resulted in the demise of indigenous technologies, it is our duty in the present to study, document and preserve the African knowledge systems. “These indigenous knowledge systems such as mining and metallurgy help to define the identity of the continent and its heritage,” he noted.

Chirikure said he realised that people often think that almost all technologies began with industrialisation, which was introduced during colonialism. “Indigenous people had their own technologies such as mining and metalworking, and these at some point produced better products than those in contemporary Europe,” he claimed.

“For example, missionary David Livingstone was surprised by the high quality of iron produced by the Tonga of modern day Zambia and Zimbabwe in the 19th century.”

**ELECTRON MICROSCOPE UNIT**

**ARTICLES IN PEER-REVIEWED JOURNALS**


IIDMM — Institute of Infectious Disease and Molecular Medicine. Also see page 43.

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The increasing postgraduate registrations in the creative and performing arts, especially fine art and drama, are particularly notable.

In addition to book publications, colleagues remain active in research and creative activity in the form of journal articles, books and book chapters, conference papers, compositions, exhibitions and performances. In November, as part of the South African College of Music centenary celebrations the faculty premiered the 5:20 Opera series – five twenty-minute chamber operas, the scores and libretti of which were created by South Africans. This production was mounted in collaboration with Cape Town Opera and the Gordon Institute for the Performing and Creative Arts.

Major exhibitions of work by colleagues in the faculty were staged, notably *Subtle Thresholds: the representational taxonomies of disease* (Fritha Langerman), *Gavin Young: Cradle Snatcher* (Gavin Young), and *Lie of the land* (Michael Godby). In addition, a number of significant recordings were made by colleagues in the South African College of Music, including Franklin Larey’s *Johannes Brahms Opp. 10, 117, and 118*.

Dr Floretta Boonzaier of the Department of Psychology was runner up in the Department of Science and Technology’s Women in Science Awards in the category *Distinguished Young Woman Researcher in the Social Sciences or Humanities*.

The faculty continues to contribute to the total number of NRF-rated researchers at UCT (now standing at 54, six of whom are A-rated) and we have benefited generously from postgraduate student awards, postdoctoral research fellowships and ongoing support from the Emerging Researcher Programme. The number of master’s students and PhDs graduating from the faculty remains on an upward trajectory. In 2010, 1342 master’s and 239 doctoral students were registered in the faculty. Increasing postgraduate registrations in the creative and performing arts, especially fine art and drama, are particularly notable. Sixteen postdoctoral fellows are registered in the faculty. Important initiatives in the postgraduate area are a proposed master’s in neuropsychology, which will be the first programme of its kind in South Africa to train neuropsychologists, and a new master’s in primary education to give effect to the School of Education’s new focus on primary education. We have seen the consolidation and development of an online version of the MA in French focusing on teaching French as a foreign language.

Interdisciplinary research continues to be actively promoted across the faculty by our SARChI Research Chairs (Professors Carolyn Hamilton, Abdulkader Tayob, Lungisile Ntsbeza and Rajend Mesthrie), the Mellon-funded Sawyer seminar on *Knowledges, Ways of Knowing and the Post-Colonial University*, the Gordon Institute for Performing and Creative Arts, the Institute for the Humanities in Africa and the Centre for Social Science Research.

These initiatives have emerged as vibrant hubs in the faculty for interdisciplinary research by postgraduate students and postdoctoral fellows, where new models for postgraduate supervision are being developed.

PROFESSOR PAULA ENSOR
DEAN OF THE FACULTY OF HUMANITIES
DOCTORAL GRADUATIONS

O.I. AMOSUN (SOCIOLOGY)
Teachers’ preparedness for transformative professional practice in multicultural schools: an analysis of selected post-apartheid teachers’ self-reports.
Supervised by A/Professor M. Steyn

A.N. ASHWELL (EDUCATION)
Identity and belonging: urban nature and adolescent development in the City of Cape Town.
Supervised by Professor C. Soudien

K. BOIKHUTSO (POLITICAL STUDIES)
Ethnic identity in a homogenous nation state.
Supervised by Professor R. Matles

R. DELLE DONNE (RELIGIOUS STUDIES)
Vanishing primitives, shaking shamans and trance dancers: neo-shamanism and the appropriation of San religion.
Supervised by Professor D. Childester

P.D. DEXTER (RELIGIOUS STUDIES)
Towards a political economy of the sacred: a Marxist critique of the sacred dynamics of society.
Supervised by Professor D. Childester

F.E. ENGLAND (RELIGIOUS STUDIES)
Mark as drama: a prelogomenon to reading the Gospel of Mark as an Aristotelian tragedy.
Supervised by A/Professor C.A. Wamakate

G.J. GROENEWALD (HISTORICAL STUDIES)
Kisichip, entrepreneurship and social capital: alcohol pachters and the making of a free-burgher society in Cape Town, 1652–1795.
Supervised by Professor N.A. Warden

G.B. GUMBO (HISTORICAL STUDIES)
Economic and social change in the communities of the wetlands of Chobe and Ngamiland, with special reference to the period since 1960.
Supervised by A/Professor A. Mager

N. HARTMAN (SOCIOLOGY)
The primary health care approach and restructuring of the MBCHB curriculum: a case study at the University of Cape Town Faculty of Health Sciences.
Supervised by Dr J. Grossman

N.B. HOEL (RELIGIOUS STUDIES)
South African Muslim women’s experiences: sexuality and religious discourses.
Supervised by Dr S. Shaik

A.M. LOW (ENGLISH LANGUAGE AND LITERATURE)
Language maintenance and shift among the Rehoboth Basters of Namibia ca. 1868–2008.
Supervised by Professor R. Marstie

M.L. JACKSON (PSYCHOLOGY)
Separation–distress as an affective mechanism of obsessive-compulsive disorder.
Supervised by Professor M. Solms

K. JECHOUTEK (RELIGIOUS STUDIES)
Religious competition, Creole identities and economic development: foundations of competitive diversity in early Victorian Cape Town.
Supervised by Professor D. Childester

P.V. LANGA (EDUCATION)
Disciplines and engagement in African universities: a study of the distribution of scientific capital and academic networking in the social sciences.
Supervised by Professor J. Muller

A.M.Y. LOW (COLLEGE OF MUSIC)
The influence of Romanticism on the evolution of the ‘transcendental’ etudes of Franz Liszt.
Supervised by A/Professor H. Holmeyr

M.B. LUCKAY (EDUCATION)
Implementation of social constructivist learning environments in Grade 9 Natural Science in the Western Cape Province, South Africa.
Supervised by A/Professor R. Laugksch

L. MADZINA (EDUCATION)
Low socio-economic status and identity formation: a case of selected successful learners in a secondary school in Harare.
Supervised by Professor C. Soudien and A/Professor J. Bauern

M. MANYOYO (EDUCATION)
Modalities of teacher education mentorship and their implications for student teachers’ understanding of ‘best practice’.
Supervised by Professor P. Ensor

L. MADZINA (EDUCATION)
Low socio-economic status and identity formation: a case of selected successful learners in a secondary school in Harare.
Supervised by Professor C. Soudien and A/Professor J. Bauern

M. MANYOYO (EDUCATION)
Modalities of teacher education mentorship and their implications for student teachers’ understanding of ‘best practice’.
Supervised by Professor P. Ensor

J.G. MORRIS (DRAMA)
Own-made in the (post-) new South Africa: a study of theatre originating from selected townships in the vicinity of Cape Town.
Supervised by Dr H. Jacklin and A/Professor M. Fleischman

L. STOLTZ (COLLEGE OF MUSIC)
A study and a catalogue of French flute music written between 1945 and 2008.
Supervised by Emeritus Professor J.W. May

N.S. MSUSA (LANGUAGES AND LITERATURES)
Le thème de la satire: dans le théâtre Malawien.
Supervised by Professor J.-L. Cornillie and Dr A. Wynchank

E. MUNSAKA (PSYCHOLOGY)
Supervised by A/Professor P. Gobodo-Madikizela

N.F. MURRAY (CENTRE FOR AFRICAN STUDIES)
Architectural modernism and apartheid modernity in South Africa: a critical inquiry into the work of architect and urban designer Roelof Uyttenbogaardt.
Supervised by A/Professor N. Shephard

N. MUSEKIWA (POLITICAL STUDIES)
Supervised by Emeritus Professor R.A. Schrire

C. MUSHISHI (RELIGIOUS STUDIES)
Aspects of Budya traditional religion which promote human rights.
Supervised by Dr S. Matondo

P.S. NAVARIO (ECONOMICS)
Implementation of a novel model to enhance routine HIV care and treatment capacity in South Africa: outcomes, costs, and cost-effectiveness.
Supervised by Professor N. Nattrass

J. OLIVIER (RELIGIOUS STUDIES)
In search of common ground for interdisciplinary collaboration and communication: mapping the cultural politics of religion and HIV/AIDS in sub-Saharan Africa.
Supervised by Professor J.R. Cochrane

H.C. SCHMIDT (PSYCHOLOGY)
Determinants of estimated face composite quality.
Supervised by Professor C. Tredoux

R.Y. SEBONDE (ENGLISH LANGUAGE AND LITERATURE)
A sociolinguistic analysis of variation in a rural African community: Chasu in Same District, Tanzania.
Supervised by Professor R. Mleshi

V. SONI (RELIGIOUS STUDIES)
Supervised by Professor D. Childester

L. STOLTZ (COLLEGE OF MUSIC)
A study and a catalogue of French flute music written between 1945 and 2008.
Supervised by Emeritus Professor J.W. May
The classification of disease and the representation of speciation are the themes of the first exhibition to win the new UCT Creative Works Award.

Renowned artist and lecturer at the Michaelis School of Fine Art, Associate Professor Fritha Langerman, is the creator behind Subtle Thresholds.

"This project includes all of my research interests," says Langerman, whose visual research centres around taxonomies of knowledge, the representation of the biomedical body and curation.

Part of Langerman’s PhD research, Subtle Thresholds is a curated mixed-media work with objects from the collections of the South African Museum and the University of the Witwatersrand’s Adler Museum. The exhibition presents an exploded view of the biomedical world and works with conceptual and material layering. It includes “viral light boxes” constructed from pharmacological labware, laser-cut metal discs, both chromed and rusted, electron microscope images of animal faeces, autoclaves and sterilisers tethered to medical cabinets, and cabinets of animal specimens collapsed with medical instruments.

“Subtle Thresholds draws attention to debates surrounding biomedical visual and material culture, and presents a complex visual network of the inter-relationships between zoological, human and microbial worlds,” explains Langerman. “It also aims to expose some of the cultural and historical mythologies that have contributed to the location of disease as a state of otherness and separation.”

The work was funded by the Gordon Institute for Performing and Creative Arts, the National Arts Council and the NRF.

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**CREATIVE WORK**


Stolen Kisses: Choreographed by L. RAIZENBERG for the SAGM Lunch Hour Concert series. Baxter Concert Hall, Rosebank, Cape Town (March); the UCT School of Dance touring programme Dance Dreams and Music Men. George, Knysna, Mossel Bay (26 March – 6 April 2010).

You Strike a Woman You Strike a Rock: Choreographed by M. RANI for the Cape Town City Ballet production Poetry in Motion, Artscape Opera House. Cape Town. 6–9 May 2010.


The Door – Umnyango: Co-choreographed by M. RANI (with New York-based Eryn Rosenthal, a choreographer and dance contact improvisation scholar) to be performed in Time Square, New York City. July 2011.


Dance UCT 2010: Produced and co-directed by G. SAMUEL (co-director of The Rite of Spring) for the UCT School of Dance. Baxter Theatre, Rosebank, Cape Town. 2–7 November 2010.


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The work was funded by the Gordon Institute for Performing and Creative Arts, the National Arts Council and the NRF.
Les Sylphides and A Connoisseur’s Delight. Produced and directed by E. TRIEGAARDT for the CTCB. Masque Theatre, Muizenberg, Cape Town. 6 – 9 February 2010.

Ballet Bonanza: Produced and directed by E. TRIEGAARDT for the CTCB. Artscape Theatre, Cape Town (26 – 28 March); Guy Butler Theatre, Grahamstown (27 June); Bellville Civic Theatre, Bellville (23 July); Cultivaria Festival, Paul (25 September 2010).

Carmen-Produced and directed by E. TRIEGAARDT for the CTCB and SABT. Playhouse Theatre, Durban (9 – 26 November 2010). Le Corsaire Act 1 and African Landscapes: Produced and directed by E. TRIEGAARDT for the CTCB. Artscape Theatre, Cape Town. 21 – 29 October 2010.


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DEPARTMENT OF DRAMA

(包括 the Little Theatre)

ARTICLES IN PEER-REVIEWS JOURNALS


CREATIVE WORK

PRODUCTIONS


FLEISHMAN, M.J. 2010. Die Vreemdeling: Dramaturgy/Directing. Springbok Aardklop Festival, Potchefstroom (27 September – 2 October); Magnet Theatre, Cape Town (24 January – 13 February 2011); Otjip (16 – 17 April 2010); Leliefontein (20 April 2010); Garies (21 April 2010); Vredendal (23 April 2010); Citrusdal (25 April 2010); Lamberts Bay (28 April 2010); Clanwilliam, Cederberg Arts Festival (30 April – 2 May 2010).


WEARE, C.B. 2010. Raiders of the Lost Aardvark by Nicholas Ellanbogan. Directing. The Intimate Theatre National Arts Festival (27 June – 12 July 2010); The Number 1 Ladies Opera House, Gaborone, Botswana (1 – 4 September); Mabon Theatre, Mabon, Botswana (8 – 11 September 2010); Hilton Festival, KwaluZulu-Natal (16 – 19 September 2010); Arts Alive Festival, Johannesburg (21 – 25 September 2010); Golden Arrow Studio Baxter Theatre, Cape Town (12 October – 6 November 2010); Arts Alive Festival, Johannesburg (21 – 25 September 2010).


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Raw Life, New Hope: Decency, Housing and Everyday Life in a Post-Apartheid Community, by Associate Professor Fiona Ross of the Department of Social Anthropology, does not skimp on scholarly rigour. But it’s also the kind of book that Ross wants the lay reader and occasional book club to pick up between the Austens and travelogues.

So, in telling the fly-on-the-wall story, chronicled over 13 years, of the residents of local shantytown The Park, Ross has tried to capture the little details of life in the community that illustrate how people create meaning in their lives.

Tucked between the erudite explorations of stock anthropological themes – households, relationships, violence (a leitmotif in Ross’ work), language, storytelling, disease, the body – are a series of chapter breaks that capture the everyday: recipes, maps, and photos of ceremonies, celebrations, and – the source of hope – the move into new houses in 2001.


In her new book Associate Professor Fiona Ross explores a community’s quest for decency amid poverty.

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

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


The French government has honoured Dr Vanessa Everson of the French Section in the School of Languages and Literatures with the Chevalier des Palmes Académiques award.

Founded in 1808 by Napoleon Bonaparte, the Chevalier des Palmes Académiques (knight of academic palms) is an order of knighthood bestowed on those who make major contributions to French education and culture.

Everson’s research areas, such as teaching French as a foreign language, translation and modern language methodology, have transformed the teaching of French at UCT. After modernising the syllabus and retraining and mentoring the teachers, Everson designed courses on French and the media, and on the practice of translation, and redesigned the business French course. Everson also pioneered the honours and master’s qualifications in teaching French as a foreign language – the first of their kind in South Africa.

Speaking at the award function, Everson said her work stemmed from her belief in responding to the regional needs of students, and a need for the shared construction of knowledge and skills transfer.

Dr Vanessa Everson received the Chevalier des Palmes Académiques award from French consul Antoine Michon.

DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE
(Including Linguistics and the Centre for Creative Writing)

AUTHORED BOOKS


CHAPTERS IN BOOKS


ENCYCLOPAEDIA ENTRIES

ARTICLES IN PEER-REVIEWED JOURNALS


EDGECOMBE, R.S. 2010. Strange fowl and neighbouring ponds in Cymbeline 1.5. The Shakespeare Newsletter, 60(2): 75.


Located in the Faculties of Humanities and Law, the interdisciplinary Institute for the Humanities in Africa (HUMA), led by Professor Deborah Posel, was launched in October 2010. Funded by grants from the Andrew W Mellon Foundation, the Ford Foundation and Anglo-Gold Ashanti, HUMA takes a broad view of the humanities, encompassing the social sciences and law. It has three main objectives: to conduct and champion interdisciplinary research; to help produce South Africa’s next generation of scholars; and to run initiatives that will bridge the divide between the UCT academy and the broader public in Cape Town.

HUMA’s intellectual agenda is guided by two specific, though broad, themes. The first, On Being Human, encompasses questions about our humanity. The second is Circuits of Consumption, tackling the question of consumerism in contemporary society, here in South Africa and elsewhere.

“We want to do all these things mindful of our positioning in Africa, and of the relationships that being African creates. This fits in with UCT’s Afropolitan perspective,” explained Posel.

**CENTRE FOR FILM AND MEDIA STUDIES**
(Including the Centre for Rhetoric Studies)

**AUTHORED BOOKS**


**EDITED BOOKS**


**CHAPTERS IN BOOKS**


In The Anatomy of a South African Genocide: The extermination of the Cape San peoples (UCT Press), Associate Professor Mohamed Adhikari of the Department of Historical Studies casts a spotlight on the forgotten passing of the country’s original inhabitants, the Khoi San and others, under the European colonialism of the 18th and 19th centuries. The book traces the history of the genocide, as well as its modern aftermath.

During the 18th and 19th centuries, Dutch-speaking pastoralists who infiltrated the Cape interior dispossessed its aboriginal inhabitants and damaged the environment with their destructive farming and hunting practices. In response to indigenous resistance, colonists formed armed, mounted militia units known as commandoes with the express purpose of destroying San bands. Pervasive settler violence ensured the virtual extinction of the Cape San peoples. In 1998 David Kruiper, the leader of the Khoi San who today live in the Kalahari Desert, lamented “we have been made into nothing”. His comment applies to the fate of all the hunter-gatherer societies of the Cape Colony who were destroyed by the impact of European colonialism.

GROUP EXHIBITIONS (CURATED)


SOLO EXHIBITIONS


The University of Central Lancashire, UK, 15–29 April 2010.

THE ANATOMY OF A SOUTH AFRICAN GENOCIDE

In The Anatomy of a South African Genocide: The extermination of the Cape San peoples (UCT Press), Associate Professor Mohamed Adhikari of the Department of Historical Studies casts a spotlight on the forgotten passing of the country’s original inhabitants, the Khoi San and others, under the European colonialism of the 18th and 19th centuries. The book traces the history of the genocide, as well as its modern aftermath.

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GROUP EXHIBITIONS (CURATED)


SOLO EXHIBITIONS


CURATED EXHIBITIONS


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AUTHORED BOOKS


CHAPTERS IN BOOKS


ENCYCLOPAEDIA ENTRIES


ARTICLES IN PEER-REVIEWED JOURNALS


Renowned as the most significant archive of traditional Southern African musical instruments in the world, the Percival R Kirby Collection was re-launched at a celebratory function at UCT’s South African College of Music (SACM) in September 2010.

The re-opening of the collection to the public formed part of the SACM’s centenary celebrations, and is set to draw researchers and students to the school from around the world to study the one-of-a-kind archive.

Umhrubehe and uhadi bows, umtshingo flutes, Zambian drums chiselled out of tree trunks, a tortoise-shell guimbri lute from Morocco and a Hausa ‘talking drum’ are just some of the many instruments in the collection, comprising about 600 pieces – some dating to as far back as the late 1800s.

Speaking at the launch, Michael Nixon (head of Ethnomusicology and African Music at the SACM, and curator of the Kirby Collection) described the archive as a work in progress – fertile ground for research.

“We have now reached the point in the conservation and restoration process that allows us to use the instruments as they should be used. Because of the collection’s national heritage status, UCT has an obligation to maintain it and open it up to the public.”

The arduous restoration was made possible by a grant worth over R2 million from the National Lottery Distribution Trust Fund. Many of the instruments had suffered physical degradation, mainly due to the lack of facilities for keeping the assemblages in a proper, humidity-controlled environment.

Mrs Becky Steltzner, whose PhD is based on the Kirby Collection.


Kaplan Centre – Isaac and Jessie Kaplan Centre for Jewish Studies. Also see page 44.

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SCHOOL OF LANGUAGES AND LITERATURES

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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COLLEGE OF MUSIC

ARTICLES IN PEER-REVIEWED JOURNALS


CREATIVE WORKS

ARRANGEMENTS

CAMPBELL, M.I. 2010. Mayibuyefani Brass & Rhythm section, Cape Town Opera. 3 min.

HOFMEYR, H.P. 2010. Two chorales for 4-part mixed choir and/or organ. Requested by the SA Society of Church Organists for publication in a volume celebrating their thirtieth anniversary. 3 min.

STELTZNER, B.L. 2010. Aire de Ballet d’Ascanio (Saint-Saëns) for 1 flute, 2 oboes, 2 clarinets, 2 bassoons, 2 horns. 4 min.

TIFFIN, A. 2010. Whole Story (Graham Weir) for 5-part vocal ensemble. Commissioned by Not The Midnight Mass. 5 min.


VAN SCHALKWYK, A. 2010. Arrangement for 2 pianos of complete opera Hänsel und Gretel (Engelbert Humperdinck). Requested by Tshwane University of Technology, Opera School. 2 Pianos and full cast of singers. 120 min.

COMPOSITIONS

CAMPBELL, M.I. 2010. Freedom Day. For symphony orchestra. Commissioned by Cape Town Opera. 3 min.


CAMPBELL, M.I. 2010. Where Vultures Fly. For symphony orchestra. Commissioned by Cape Town Opera. 3 min.


HOFMEYR, H.P. 2010. Canto notturno for clarinet and piano. Commissioned by Hugo Lambchests Music Centre for Danielle Roscuw. 4 min.


HOFMEYR, H.P. 2010. Ek maak ‘n hek oop in my hart — 5 poems of Uys Krige for voice and piano. Commissioned by André Serfontein for the centenary of the birth of Uys Krige. 17 min.

HOFMEYR, H.P. 2010. Harie petryse ennie fisane (Boomer) for 6-part treble choir. Commissioned by Stellenbergh Girls Choir. 3 min.


HOFMEYR, H.P. 2010. The Four-Note Overture for orchestra. Requested by SA College of Music for their centenary celebrations. 6 min.


KLOTZOW, P.J.L. 2010. Six Etudes for marimba. Commissioned by an international consortium of marimba players. 30 min.
The changing face of landscape art and its various interpretations through history was the focus of a recent exhibition curated by Professor Michael Godby of UCT's Historical Studies Department.

The Lie of the Land: Representations of the South African landscape, comprised paintings, photographs, sculptures, maps and charts created over the centuries.

These illustrate how South African artists have approached the complex task of representing landscape, and how this reflects a wide range of issues, from the personal to the political.

“Landscape is both the oldest and the most popular type of art in this country,” says Godby. “It was used to commemorate the first European explorers, and it is still widely practised throughout the country.

“Throughout history, landscape art has taken many forms because different artists in different times have wanted to communicate different things about their natural environment.”

The exhibition was arranged in five sections, namely statements of awe, celebrations of methods of exploiting the landscape, commemorations of struggles over possession, expressions of poetic or patriotic feelings, and recent questions about the very means of representing landscape.

Lie of the Land: Landscape painting by Gladys Mgudlandlu.


HOFMEYR, H.P. (COMPOSER) WITH SJÖGREN, R. (CONDUCTOR) AND THE PRO ARTE SINGERS AND ORCHESTRA. 2010. The Healing Prayer (Elizabeth Ross-Petet) for chorus and string orchestra. First Presbyterian Church, Stamford, USA, 4 October. 15 min.


KLATZOW, P.J.L. 2010. Tintiniane. UCT Orchestral Concert, Baxter Concert Hall, Cape Town, 26 October.Composer. 20 min.


LILLEY, A.C.P. (PIANIST), WITH NERWICH, R., RUSTIN, W. AND GIBSON, K. 2010. Lisa Bauer Trio, Palm Court, Seychelles Palm Court, Seychelles, 9 April. 60 min.


ROSSI, M.J. (COMPOSER, PERFORMER) WITH BRUBECK, D., RIDLEY M. GIBBONS, W. 2010. Hungarian Opera House, Cluj-Napoca, Romania, 2 May. 120 min.

ROSSI, M.J. WITH THE GLORIA COOPER QUARTET 2010. Green Dolphin Jazz Club & Restaurant, 31 March—1 April. 2 x 120 min.

ROSSI, M.J., (SOLOIST, ENSEMBLE PLAYER), WITH BRUBECK, D., RIDLEY M. AND GIBBONS, W. 2010. Darius Brubeck Quartet. The Diesel Club, Cluj-Napoca, Romania, 2 May; Jazz Club, Bucharest, Romania, 3 May. 2 x 120 min.


Professor Rajend Mesthrie is the author of A Dictionary of South African Indian English.

Professor Rajend Mesthrie is the author of A Dictionary of South African Indian English, published by UCT Press in 2010, which marked the 150th anniversary of the first ship bringing Indian labourers to what was then Natal.

When asked what prompted him to write the book, Mesthrie explained, "The conviction that our current dictionaries of English in South Africa, excellent though they are, merely skim the surface of the riches that lie behind dialect, regional and ethnic usage in the country. As English spreads globally it's bound to diversify."

Mesthrie added that sociolinguists like himself see language as "played out in living, changing communities, rather than something fixed and stored... it is up to properly trained linguists to support and give credence to ordinary language used by ordinary people".

The book contains some religious terms like 'Diwâli', 'Eid', and 'Kãvady'; culinary terms like 'biryãni' (so spelled), 'bunny chow', 'rõti' (not 'rooti') and 'dhanya'. There are also new coinages like 'healthy' meaning 'fat', and 'future' meaning 'one's future husband or wife' (possibly an archaism from Victorian times). The book also contains a lot of slang: 'lake', adapted from the Afrikaans lekker, and 'põzi' for 'house' adapted from the Great War usage, meaning 'going back into position'.

ROSSI, M.J. (SOLOIST, ENSEMBLE PLAYER), WITH DARIUS BRUBECK DUO. 2010. Sibiu Jazz Festival, Sibiu, Romania, 11 May. 120 min.

ROSSI, M.J. (SOLOIST, ENSEMBLE PLAYER) WITH TOM SMITH QUARTET AND TOM SMITH TRIO. 2010. Jazz Club, Bucharest, Romania, 12 May. 120 min.


ROSSI, M.J. 2010. Artist in Residence. Ropponi & Cuzzani Strumenti Musicali, Quatra Sotto, Italy, 19–21 July. Lecturer, ensemble player and soloist. 60 min.


ROSSI, M.J. (COMPOSER, LEADER, SOLOIST), WITH GAETA, W., PESARIS, GABRIELE, P. AND DESIDERIO, R. 2010. Mike Rossi Italian Quartet Tour. Including compositions Arivvo in Abruzzo, Hello from Down Here, Yearning, Night Fright!, Contracts of Cape Town. Rocca San Giovanni, Italy, 16 August; San Giovanni, Italy, 17 August; Tagliacozzo, Italy, 18 August. 3 x 120 min.


ROSSI, M.J. (SOLOIST, ENSEMBLE PLAYER) WITH NAIDOO, M., GONSALVES, N. AND BAKER, B. 2010. Mike Rossi Quartet. UKZN, Durban, 1 September. 90 min.


ROSSI, M.J. (SOLOIST, ENSEMBLE PLAYER) WITH BEBELAAR, P. AND SUSSÉ, U. 2010. Night Fright! Yearning, Forty Club, German School, Dubai, UAE, 17 October; American University, Sharjah, UAE, 18 October. 150 min.


TIFFIN, A. (PIANIST, VOCALIST, ARRANGER; COMPOSER) WITH MATSUUNAGA, S. AND KAPTEIN, S. 2010. a.s.k. Trio with Bjorn Alterhaug Project, Speed Col Jazz Club, Norway, 30 June. 30 min.

TIFFIN, A. (PIANIST, VOCALIST, ARRANGER; COMPOSER) WITH MATSUUNAGA, S. AND KAPTEIN, S. 2010. a.s.k. Trio Asia Tour 2010. Jiyu Gakuen Concert Hall, Tokyo; Body And Soul Jazz Club, Tokyo; Jiyu Gakuen Concert Hall, Tokyo; Body And Soul Jazz Club, Tokyo; Jiyu Gakuen Concert Hall, Tokyo; Body And Soul Jazz Club, Tokyo; Jiyu Gakuen Concert Hall, Tokyo; Body And Soul Jazz Club, Tokyo; Jiyu Gakuen Concert Hall, Tokyo; Body And Soul Jazz Club, Tokyo; Jiyu Gakuen Concert Hall, Tokyo.

RECORDINGS


DU TOIT, G.F. (PIANIST) WITH HADARI, O. (CONDUCTOR) AND THE CAPE TOWN SYMPHONY ORCHESTRA. 2010. Piano Concerto No. 1 (Tchaikovsky) and; Rhapsody on a Theme by Paganini (Rachmaninoff). 6-009801-039060. 62 min.


LAREY, F. (PIANIST) 2010. Opp. 10, 117 and 118 (Brahms). 8450133273. 1.75 min.


ARTICLES IN PEER-REVIEWED JOURNALS


BEER, SOCIABILITY AND MASCULINITY IN SOUTH AFRICA

In Beer, Sociability and Masculinity in South Africa (UCT Press), Associate Professor Anne Mager of the Department of Historical Studies writes about the commercial, social and political history of drinking (beer) in South Africa. Beginning where stories of colonial liquor control and exploitation leave off, Mager looks at the current commerce of beer, its valorizing of male sociability and sports, and the corporate culture of South African Breweries (SAB), the world’s most successful brewing company.

Mager shows how the industry, dominated by a single brewer, was compelled to comply with legislation that divided customers along racial lines, but also promoted images of multi-racial social drinking in the final years of apartheid. Since the transition to majority rule, SAB has rapidly expanded into new markets – including the United States with the purchase of Miller Brewing Company. This lively book affords a unique view into global manufacturing, monopolies, politics and public culture, race relations, and cold beer.

DEPARTMENT OF POLITICAL STUDIES

CHAPTERS IN BOOKS


DEPARTMENT OF PSYCHOLOGY

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


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Postdoctoral research fellow Dr. Federico Settler is very deliberately breaking personal new ground with his project in UCT’s Institute for Comparative Religion in Southern Africa. He is conducting a two- to three-year postdoctoral study on the implementation of the country’s National Policy on Religion and Education, and aims to answer questions such as: how has it been implemented, and has it achieved its goals of reducing prejudice and increasing tolerance?

Religion education – as opposed to religious education – is a minefield of extremes. Some schools, for example, still oblige their learners to recite the Christian prayer, while others simply haven’t bothered to teach the subject at all. Both practices, says Settler, are in violation of the policy, which states that learners should be educated about diverse cultures and religions – and, accordingly, about diversity, tolerance and good citizenship – without privileging any particular religious tradition.

In a few years, Settler hopes to be able to tell if and how the introduction of this policy in South African schools has been able to contribute to a more critical and tolerant citizenry.


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AUTHORED BOOKS


EDITED BOOKS
CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


DEPARTMENT OF SOCIAL ANTHROPOLOGY

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


CREATIVE WRITING

NOVELS


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DEPARTMENT OF SOCIAL DEVELOPMENT

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


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CENTRE FOR SOCIAL SCIENCE RESEARCH

Please refer to http://www.research2010.uct.ac.za for the 2010 profile of the Centre for Social Science Research.

DEPARTMENT OF SOCIOLOGY

AUTHORED BOOKS


CHAPTERS IN BOOKS


PEAR-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


ARTICLES IN PEER-REVIEWED JOURNALS


PANDE, A. 2009. “It may be her eggs but it’s my blood”: surrogates and everyday forms of kinship in India. Qualitative Sociology, 32: 379–397.


CSSR – Centre for Social Science Research. Also see page 48. INCUDISA – Intercultural & Diversity Studies for Southern Africa Unit. Also see page 44.


Strategic planning at a high level has focused on internationalisation and looking at ways to strengthen and develop international collaboration, networks and visibility.
The faculty continues to work towards strengthening the research and innovation focus. Strategic planning at a high level has focused on internationalisation and looking at ways to strengthen and develop international collaboration, networks and visibility.

A key indicator to benchmark the reputation of our academic staff internationally is the rating system of the NRF and in 2010 the faculty had 35 NRF-rated staff. Of the academic staff, 63% have PhDs and 32% have a master’s qualification. In addition, 42% are registered with the Emerging Researcher Programme, which aims to develop staff as researchers and increase their measurable research output, in order to eventually obtain NRF rating.

There were 258 research contracts with a total value of R77.97 million and the total research income for the faculty was R136.7 million. 1009 postgraduate students registered in the faculty and 170 master’s students and 22 doctoral students graduated during the year.

In 2010 the faculty developed key plans to raise its level of research performance. These will be implemented in 2011 and include, amongst others, the appointment of two senior scholars (retirees) to assist in research output and mentoring, and the establishment of a postdoctoral fellowship bridging grant, and funds from the generation of additional publication subsidy will be used for strategic purposes, to increase research output.

FACULTY HIGHLIGHTS

The DST Hydrogen Catalysis Competence Centre at UCT, known as HySA/Catalysis, received its first project funding in 2009, and started work at UCT, Mintek and affiliated institutions. The centre has already established 18 projects, 12 of which are based at UCT.

The African Centre for Cities (ACC) continued its collaborative work with the Association of African Planning Schools – a network of 39 university-based urban planning schools in 15 countries across Africa – to update curricula and foster a new research ethos that is firmly anchored in the Afropolitan agenda of UCT. The ACC, together with the Energy Research Centre, was awarded the WWF low carbon zone scoping study on the feasibility of developing a low carbon zone in the Western Cape.

A partnership between Sasol and the Centre for Catalysis Research has yielded the invention of the magnetometer, a device which will add great value to research in a variety of fields, including nanotechnology. The development of the magnetometer presents a fine example of successful collaboration between industry and academic partners.

The Concrete Materials and Structural Integrity Research Unit, based in the Department of Civil Engineering, was given full accreditation as a university research unit.

The Department of Chemical Engineering acquired two new sophisticated analytical instruments – the QEMSCAN and the High Resolution Scanning Electron Microscope – which will allow researchers and students to enhance significantly their capacity to sustain the world-class research they are carrying out in industries such as mineral processing, chemical and petrochemical processing, bio-sciences, forensic sciences and viticulture.

Professor Ulrike Rivett from the Department of Civil Engineering and Mr Warren Smit from the African Centre for Cities each received an award from the
Programme for the Enhancement of Research Capacity as part of the university-wide commitment to initiate and foster programmes that develop researchers.

Professor Alison Lewis received the NRF President’s Champion of Transformation Capacity Development at South African Higher Education Institutions award for her outstanding work in actively training, fostering and mentoring a number of black and female students in industrial crystallisation research.

Dr Hans Beushausen from the Department of Civil Engineering and Dr Olabisi Falowo from the Department of Electrical Engineering each received a Claude Leon Foundation Merit award, which is awarded to assist the research work of young lecturers.

Megan Becker (Research Officer) and Angus Morrison (PhD student), both from the Centre for Minerals Research, each received a Young Author award at the XXV International Mineral Processing Congress.

Three postgraduate students received the prestigious Rhodes Scholarship and will be continuing their studies at Cambridge and Oxford.

Rachel Mugai, a doctoral student in the Department of Civil Engineering, received a six-month research grant from the German Academic Exchange Service to continue her PhD studies at the Technische Universität München.

PROFESSOR FRANCIS PETERSEN
DEAN OF THE FACULTY OF ENGINEERING & THE BUILT ENVIRONMENT
DOCTORAL GRADUATIONS

O.M. ADEYEYE (ELECTRICAL ENGINEERING)
A SIP-based hybrid architecture for converged services in the Web session mobility scenarios.
Supervised by Mr N. Ventura

B. BEKKER (ELECTRICAL ENGINEERING)
Decision aiding in off-grid electrification projects: the role of uncertainty acknowledgement and objectives alignment.
Supervised by Professor C.T. Gaunt

C. DONDO (CIVIL ENGINEERING)
Bayesian Network for spatio-temporal integrated catchment assessment.
Supervised by Professor U.K. Rivett, Dr L. Chevallier and Dr A. Polgieter

F. ENDREJAT (ELECTRICAL ENGINEERING)
Medium voltage petrochemical drives: soft start and adjustable speed systems.
Supervised by Professor P. Pillay

G. FLOWDAY (MECHANICAL ENGINEERING)
Two contrasting approaches to auto-ignition modelling for HCCI engines.
Supervised by Professor A. Yates

S.L. GEORGE (MECHANICAL ENGINEERING)
Composition and microstructure evolution in semi-solid cast Al-Zn alloys.
Supervised by Professor R. Knutsen

C. GOODWIN (CHEMICAL ENGINEERING)
The laccase from Micromonospora sp. 044 30 as a biocatalyst for synthesis of antioxidant compounds.
Supervised by Dr S.T.L. Harrison

I.W. GUEST (ELECTRICAL ENGINEERING)
Digital video moving object segmentation using tensor voting: a non-causal, accurate approach.
Supervised by Dr F. Nicolls and Professor G. de Jager

M.J. HUGHES (CHEMICAL ENGINEERING)
Optimisation of complex distillation column systems using rigorous models.
Supervised by Professor K.P. Möller

N. KHA TLELI (CONSTRUCTION ECONOMICS AND MANAGEMENT)
Utilizing principal agent and principal steward theories to assess the efficacy of public private partnerships in delivering black economic empowerment.
Supervised by A/Professor D. Root

L.A. MAGAGULA (ELECTRICAL ENGINEERING)
A network-based coordination design for seamless handover between heterogeneous wireless networks.
Supervised by Professor H.A. Chan and Dr E. Felawo

G.G. MALUMBELA (CIVIL ENGINEERING)
Measurable parameters for performance of corroded and repaired RC beams under load.
Supervised by Professor A.G. Alexander and A/Professor P. Mayo

L. MARTIN (CONSTRUCTION ECONOMICS AND MANAGEMENT)
Transfer mechanisms of knowledge and skills in co-operations between emerging and established contractors.
Supervised by A/Professor D. Root

T.P. MOKONE (CHEMICAL ENGINEERING)
Metal sulphide precipitation: effect of operational parameters on particle characteristics and process efficiency.
Supervised by Professor A.E. Lewis and Dr R.P. van Hille

N.N. NGEPAH (MECHANICAL ENGINEERING)
Energy, inequality and pre-poor growth in South Africa.
Supervised by Dr G. Prased and Professor M. Leibbrandt

J.J. NEWUWODT (CHEMICAL ENGINEERING)
Kinetic and mass transfer effects in 1-hexene hydrogenation CD.
Supervised by Professor K.P. Möller

R. OKOU (ELECTRICAL ENGINEERING)
High speed flywheel and test rig design for rural energy storage.
Supervised by Professor P. Pillay, Dr M.A. Khan and Dr P. Barendse

V.G. OZIANYI (ELECTRICAL ENGINEERING)
Network sharing through service outsourcing in inter-domain IMS frameworks.
Supervised by Mr N. Ventura

D.G. RANDALL (CHEMICAL ENGINEERING)
Development of a brine treatment protocol using eutectic freeze crystallization.
Supervised by Professor A.E. Lewis

M. VELEMPINI (ELECTRICAL ENGINEERING)
Improving the scalability of MAC protocols in wireless mesh networks.
Supervised by A/Professor M.E. Dlodlo

S.L. WINBERG (ELECTRICAL ENGINEERING)
An embedded system artefact organisation and adaptation knowledge management system for embedded system product prototyping.
Supervised by Professor M. Inggs and Professor S. Schach

PATENTS

FILED APPLICATIONS


UAPEX APPLICATIONS


van SchaiK, A.


GRANTED


Edited Books


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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DEPARTMENT OF CHEMICAL ENGINEERING

( Including the Centre for Bioprocess Engineering Research (CeBER), the Centre for Catalysis Research, c*change – DST-NRF Centre of Excellence in Catalysis, HySA/catalysis — National Hydrogen Catalysis Competence Centre, the Centre for Minerals Research, the Centre for Research in Engineering Education and the Crystallization and Precipitation Research Unit)

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


Researchers at the University of Cape Town are part of an international effort to tackle problems such as traffic congestion, air pollution and road safety in Africa. Leading South Africa’s contribution to the Transport and Environment-Science Technology (TEST) Network, Associate Professor Marianne Vanderschuren (right) of UCT’s Centre of Transport Studies is co-ordinating a national drive to strengthen scientific and technological support for the implementation of sustainable transport policies in the country.

The TEST Network is led by the Stockholm Environment Institute at the University of York in the UK, and the European branch of the Institute for Transportation and Development Policy, based in Germany. The network involves universities from six African countries, UN-Habitat, and the International Forum for Rural Transport and Development. Other African partners include Universidade Eduardo Mondlane in Mozambique, Ardhi University of Tanzania, Makerere University in Uganda, the University of Zimbabwe, and the University of Zambia.

The three-year capacity-building project will strengthen networking, share knowledge, and enhance research capacity on transport and environment science and technological issues. The main aim is to mount a determined effort to improve air quality, reduce death and injury on the roads, reduce greenhouse gases and widen opportunity and accessibility for everyone.


In 2007, Associate Professor Harald Winkler of UCT’s Energy Research Centre, as well as colleagues and partners, wrapped up a detailed technical report for the Department of Environmental Affairs – a report that painted a series of long-term carbon-emission mitigation scenarios for the country.


The scenarios, based on inputs from government, business and civil society, calculate what would happen if South Africa introduced steps to curb greenhouse-gas emissions, or chose to do nothing, taking several variables such as energy production, transport-energy demand, vehicle efficiency, demand for energy, industrial emissions, and the use of renewable energy sources, into account.

The book analyses model results for four strategic options for the country, and each strategic option is composed of more detailed mitigation actions.

“The options are not easy,” says Winkler, “a lot of them are challenging. I think: but they can be done.”


Given the increased national and international interest in nuclear power generation and talk of a ‘new build’ nuclear power station in South Africa in the near future, it was good news when PhD student Thorsten Becker won the Best Paper prize at the recent International Youth Nuclear Congress (IYNC).

The IYNC attracted over three hundred delegates from 32 countries. Becker’s paper was titled “Damage, crack growth and fracture characteristics of nuclear grade graphite using the double torsion technique”. His supervisor and co-author is Professor Bob Tait of the Department of Mechanical Engineering.

Becker spent a year at the University of Manchester, one of the leading universities in nuclear materials, with another co-author, Professor James Marrow, before returning to UCT to write up his PhD.

Tait says that for the first time research has provided a link between crack growth rate, damage development and fracture mechanics behaviour in nuclear graphite on one hand, and the stress fields and unique structural geometry that is experienced on the other. This understanding facilitates the prediction of service life and performance. Such an approach enhances structural integrity and safety, and makes long-term behaviour more predictable in such nuclear applications. The model has the potential to extend to other brittle particulate composites.

Thorsten Becker (front), photographed with his supervisor and co-author Professor Bob Tait.


UCT TEAM AIMS TO MAKE THE RIGHT TO CLEAN WATER A REALITY

UCT’s Spatial Data Management team is playing a key role in an innovative international project which promises to help ensure that water supplies in rural municipalities are regularly monitored to provide safe drinking water.

“We are trying to develop methods to support government in its endeavour to provide equal access to all,” said Associate Professor Ulrike Rivett (right). “It is a fundamental right, but there are constraints.” One of the constraints is the distance between water supplies and government-accredited testing laboratories. It was clear that an alternative method would have to be found, so when Rivett’s team was invited to be part of an international, multi-disciplinary consortium to develop a low cost test for microbiological contamination of water, they were pleased to take part.

The consortium, which is led by Professor Stephen Gundry at the University of Bristol, has developed Aquatest: a hand-held single-use device that will show levels of faecal contamination in water samples. It is based on the detection of E. Coli, the globally accepted indicator of poor water quality.

The UCT team is investigating the use of cellphones to report the water quality results to the appropriate government structures (e.g. municipal managers) to ensure that a record of the water quality of the relevant water source is kept.

“It is exciting to be part of developing a tool that can help overcome service delivery and infrastructure challenges,” she said. “It means that we can work towards providing equally good services to people in the most remote communities despite the often trying conditions and the limited resources.”


CERECAm – Centre for Research in Computational and Applied Mathematics. Also see page 40.
CoMSiRu – Concrete Materials and Structural Integrity Research Unit. Also see page 40.
CREC – Centre for Research in Engineering Education. Also see page 41.

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DEPARTMENT OF CONSTRUCTION ECONOMICS AND MANAGEMENT

ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


CREE – Centre for Research in Engineering Education. Also see page 41.

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The Faculty of Engineering & the Built Environment has pioneered a programme to promote research and knowledge creation that will make a real difference to South Africa's poor and vulnerable communities.

Speaking at the launch of the Initiative for Public Good programme, Professor Francis Petersen, Dean of EBE, asked “To what extent do we, as a university and as a faculty, contribute to improving the quality of life of the poor in this country?”

There are already several research projects under way within the faculty that go towards answering the challenge put by this question. One is a project led by Associate Professor Ulrike Rivett of the Department of Civil Engineering. Her team has developed a water-quality testing system that is being used in rural communities. They use a water-testing kit and a cellphone software package, developed by Rivett and her team, to enable community members to send information about water safety back to their municipal managers.

Another project, led by Professor Harro von Blottnitz, Department of Chemical Engineering, is looking at informal township catering and its associated health hazards. Von Blottnitz’s project is drawing on the resources and knowledge of several faculties and research groups to understand these health risks and develop viable alternatives for the township catering sector.

And at a student level the UCT chapter of Engineers Without Borders is putting their learning into practice with high-impact projects in Cape Town’s impoverished communities.

To extend its impact, the EBE Initiative will be partnering with the Development Bank of Southern Africa and other institutions to facilitate the implementation of research and innovation for development.

Pictured with Professor Francis Petersen (front row, fourth from left), are Deputy Deans Professor Vanessa Watson (left) and Associate Professor Neil Armitage (third from left), assistant dean Associate Professor Jenni Case (second from right) and student members of the EBE undergraduate and postgraduate student councils.

DEPARTMENT OF ELECTRICAL ENGINEERING

CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


**PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS**


The work of Professor Sue Harrison (right) and her team in the Centre for Bioprocess Engineering Research (CeBER) at the Department of Chemical Engineering over the past five years suggests that the potential of algae as an energy source is now being better understood. Their research is sponsored by the South African National Energy Institute and industrial partners, and has identified that algae are a multiple energy resource. Harrison says that through the biorefinery concept, algae have potential to provide not only valuable compounds such as antioxidants and speciality oils, but also an alternative source for protein, bio-diesel and electricity – which could be produced from methane released by anaerobic (without oxygen) digestion of the algae.

"The challenge now is to find ways to cultivate algae successfully at high productivity, maximising their use of CO₂ and the sun’s energy," she said.

Harrison uses bioprocess engineering approaches, developed through related projects in CeBER, that range from molecular analysis of the mixed algal populations through metabolic modelling to assist in maximising the products of interest, to proposing process flow sheets and interrogating their environmental benefit or impact.


Looking at greener ways to fly are (from left) UCT’s Professor Christiaan Redelinghuys and master’s students Nicholas Biznos and Drewan Sanders, with Dale King of Airbus.

Airbus, the world’s leading aircraft manufacturer, has partnered with UCT researchers to see if formation flying could be applied to human travel in the future.

In nature, large birds benefit from co-operative flying to save energy. This gives them increased range, explains Professor Christiaan Redelinghuys, head of the Department of Mechanical Engineering, which is undertaking the two-part study. When flying in formation, the leading bird’s wings generate trailing vortices of air, just as fixed-wing aircraft do.

The military have been biomimicking birds for years, and are old hands at formation flight. For obvious reasons (such as safety) passenger carriers have been less inclined to try out the idea. But now Airbus is keen to explore, on paper, the potential ‘green’ application of formation flying. “Grouping together aircraft flying similar routes, for example from Europe to Africa, could in theory provide a reduction in fuel burn and emissions,” says Dale King, senior manager for research and technology partnerships at Airbus.

Formation flying, if it ever comes off, is still some way down the line. In the meantime, studies have suggested that energy savings could be as high as 20%, notes Redelinghuys. “The potential benefits are enormous.”

Looking at greener ways to fly are (from left) UCT’s Professor Christiaan Redelinghuys and master’s students Nicholas Biznos and Drewan Sanders, with Dale King of Airbus.


NEW STATUS FOR ENERGY RESEARCH CENTRE

The Energy Research Centre (ERC) at UCT is one of South Africa’s leading institutes involved in energy research and has been selected as the African Regional Co-operative Agreement for Research, Development and Training related to Nuclear Science and Technology (AFRA) Regional Designated Centre in the field of energy planning. This follows a process that took over a year, and which included a visit to the ERC by an evaluation team.

As a Regional Designated Centre, the ERC will help the International Atomic Energy Agency (IAEA) provide training to African energy planners, and provide general energy planning support to the AFRA member states, which include most African countries. One of the major benefits is that this means that the IAEA will provide the budget to train African energy planners.


[CREE – Centre for Research in Engineering Education. Also see page 41.

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DEPARTMENT OF MECHANICAL ENGINEERING

(Continuing: Blast Impact and Survivability Research Unit (BISRU), Centre for Materials Engineering (CME), Centre for Research in Computational and Applied Mechanics (CERECAM), Energy Research Centre (ERC), and the SASOL Advanced Fuels Laboratory (SAFL))

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


The acquisition of two new sophisticated analytical instruments by the Centre for Minerals Research and the Centre for Catalysis Research in the Department of Chemical Engineering, will allow UCT researchers and students to significantly enhance their capacity to sustain the world-class research they are carrying out in different industries such as mineral processing, chemical and petrochemical processing, bio-sciences, forensic science and viticulture.

The Quantitative Evaluation of Materials by Scanning Electron Microscopy (QEMSCAN) instrument, which enables researchers to fully characterise mineral ores being treated in mineral processing concentrators, is the first of its kind in the Western Cape. Valued in excess of R6 million, the platform was donated by Anglo Platinum. The additional cost to purchase accessories and commission the instrument was sourced from grants from the University Equipment Committee (UCE) and the Centre for Minerals Research.

The high resolution Scanning Electron Microscope (SEM) was sponsored in part by Sasol Technology (R1.6 million) and the Wolfson Foundation (R2.9 million) with the remainder being funded by the UEC.

The QEMSCAN facility will be managed by Dr Megan Becker of the CMR who commented: “In order for minerals research at our local universities to remain relevant and contextual, quantitative mineralogical information is needed for integration into research projects. Students need the opportunity to learn how this information is obtained and how to interpret it. In addition, there is a desperate shortage of people trained on this instrument within South Africa.” One of the additional outcomes of this style of learning is that students gain skills that make them highly sought after and employable by industry.

The Electron Microscope Unit (EMU) which provides a central microscopy service to all departments at UCT as well as to other universities, research institutions and private companies, will house the SEM instrument in order for it to be available to researchers and students across the university. Professor Trevor Sewell who heads up EMU was instrumental in securing the funding from the Wolfson Foundation.

With Dr Megan Becker from the Centre for Minerals Research (front) is, from left, Professor Francis Petersen, Dean of Engineering & the Built Environment, Vice-Chancellor Dr Max Price, Deputy Vice-Chancellor Professor Danie Visser, Professor Cyril O’Connor from the Centre for Minerals Research and Associate Professors David Reid and Steve Richardson (far back), both of the Department of Geology.
The objective of the Centre for Comparative Law in Africa is to forge links between scholars in Africa, to service postgraduate students, to attract foremost African scholars in law to the university and to promote comparative research.
As part of a research-led university, the Faculty of Law supports the development of objectives and action steps to promote research-oriented scholarship and teaching, to introduce appropriate reward systems, and generally to enhance UCT’s global competitiveness. Over the past year, the Law Faculty’s research endeavours continued to grow in all of these respects.

The faculty comprises three departments: Commercial Law, Public Law and Private Law. These departments incorporate nine research entities under the auspices of the Centre for Legal and Applied Research and numerous individual researchers. Under our present governance structure, the Director of Research facilitates the smooth running of the research enterprise within the departments and the research units.

The Law Faculty hosts two SARChI Research Chairs, which includes the well-established Chair in Criminology (Professor Clifford Shearing) and the newly-created Chair in African Customary Law (Professor Chuma Himonga). The Chair in African Customary Law replaces the Chair in Customary Law, Indigenous Values and Dignity Jurisprudence, which was held by the university until the end of 2009. The faculty has 14 NRF-rated researchers, comprising two A-rated researchers, four B-rated researchers, six C-rated researchers and two Y-rated researchers.

Frequent visits and presentations by guest lecturers from around the globe contribute to the maintenance of the vibrant intellectual community at the Law Faculty. In 2010, prominent guest lecturers included Professor Frank Michelman (Harvard), Associate Professor Karen Bubna-Litic (University of Technology, Sydney), Dr Muthaka Kangu (member of the Constitutional Review Commission of Kenya), Rhodes Scholar Professor Kenneth K Mwenda (Senior Counsel in the Legal Vice-Presidency of the World Bank, Washington DC), Professor Helen Stacy (Stanford University), Chief Justice of South Africa The Hon Mr Justice Sandile Ngcobo, who gave the Claude Leon Lecture on Constitutional Governance, and Professor Asif Quereshi (Manchester University), who delivered the annual Ben Beinart Memorial lecture. Professor Hanri Mostert delivered her inaugural lecture, titled “Accountability and Dependability as Pillars of Property Law”, in September 2010.

The faculty received support from the Vice-Chancellor’s Strategic Fund for the creation of a Centre for Comparative Law in Africa. The objective of the centre is to forge links between scholars in Africa, to service postgraduate students, attract foremost African scholars in law to the university and to promote comparative research. The process of appointment of a Chair as academic head of the Centre and a Director as manager and fundraiser commenced in 2010, after a business plan was drafted and consultation was sought on the implementation of strategies outlined in the business plan.

The research units within the Law Faculty, operating under the auspices of the Centre for Legal and Applied Research, have had a productive year. One highlight was the Democratic Governance and Rights Unit’s hosting of Constitution Week (in February), which marked the 15th anniversary of the Constitutional Court. Further, the Law, Race and Gender Research Unit’s Rural Women’s Action Research Project, led by Ms Aninka Claassens and working with partners in the Legal Resources Centre and affected local communities, contributed to the successful constitutional challenge against the Communal Land Rights Act.

Another highlight is the Centre for Criminology’s work on physical and environmental security. Various members of the centre are active in these fields, and many projects were concluded during 2010. The project exploring the policing of the soccer World Cup of 2010 made a valuable contribution to research on the topic of international police co-operation and security governance. Within the environmental security programme, projects on poor-focused environmental economies, and the impact of climate change and related environmental risks on the sustainability of the insurance industry, have yielded good results this past year.

The Intellectual Property Unit successfully completed their Africa Project, which resulted in the published book Access to Knowledge in Africa. The Role of Copyright, which is based on the work of the African Copyright and Access to Knowledge research network.
The permanent academic staff in the three departments have once again, despite heavy teaching commitments, made the richest contribution to research in the faculty through the publication of a plethora of journal articles, chapters in books and books.

The Law Faculty in 2010 invested considerable time, effort and funds in creating an enabling environment for its researchers. Addressing a space shortage problem which affected the research units and the departments of Public Law and Commercial Law specifically, it optimised existing research space in the faculty to accommodate more workstations. Addressing these infrastructural needs of our researchers is an ongoing challenge and a priority.

Further details are provided in the departmental reports of the faculty over the past 12 months. Overall, we can look back with satisfaction on 2010 as a productive year.

PROFESSOR PAMELA SCHWIKKARD
DEAN OF THE FACULTY OF LAW


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Department of Private Law
(Including the Intellectual Property and Policy Research Unit)

Authored Books


Edited Books


Chapters in Books


A Chair of Comparative Law in Africa, situated in the similarly-named Centre for Comparative Law in Africa (CCLA), is soon to be established in the Faculty of Law.

The new Chair and centre will promote the comparative study of law on the African continent, build research and teaching capacity, and support the Faculty’s Afropolitan and internationalisation initiatives. The Faculty’s research director, Professor Hanri Mostert, who is driving this initiative, says the CCLA will devise “fresh, home-grown, and intellectually rigorous” responses to many social problems facing the continent today, including problems of democracy, governance, poverty, HIV/AIDS, land distribution, food security and other challenges.

“The centre will foster rigorous scholarly engagement, supporting the idea of the Africanisation of the law, and create a broader receptive base, both in Africa and abroad, for research emanating from the UCT Faculty of Law,” says Mostert.

“It will forge links between scholars in and beyond Africa, attracting the foremost scholars in comparative law to UCT. As such, it will serve as a gateway to the multidimensional and multijurisdictional terrain of law in Africa.

The centre will also contribute to the creation of better opportunities for African scholars as academic staff at UCT and allow the African worldview to influence the manner and content of our teaching.”

The initiative also represents an important response by the Law Faculty to popular, polemical debate about the Africanisation of the law and will create the infrastructure for engaging with this debate in rigorous and critical scholarship, which is a characteristic of the Faculty.

The centre will build on the existing collaborations and networks established by the faculty over many years. In the past two years, the faculty has vigorously pursued exchange agreements with other law schools worldwide, but particularly in Africa.


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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One of UCT’s top law scholars, Professor Chuma Himonga, has been awarded a DST/NRF Research Chair in Customary Law, part of the South African Research Chairs Initiative. A delighted Himonga, whose Chair replaces the one vacated by Professor Drucilla Cornell at the end of 2009, said her Chair would create greater prospects for the development of research in an area of law that regulates the lives of millions of South Africans.

“The challenges customary law faces and creates in relation to human rights and its application by the courts in changing social and legal contexts require serious investigation and scholarship. It is my hope that the award of this chair will create new inspiration for colleagues at this university and elsewhere to get to grips with this system of law through debate and collaborative research.”

Himonga said that although the Constitution also requires customary law, like any other law, to be aligned with the Bill of Rights, little is known of the field in its current form. This is due both to the dearth of research and the marginalisation of customary law in the colonial and apartheid legal systems.

DEPARTMENT OF PUBLIC LAW
(Including the Centre of Criminology, Institute of Marine and Environmental Law, Democratic Governance and Rights Unit, Law, Race and Gender Unit; and Refugee Rights Project)

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


The Law, Race and Gender Research Unit (LRG) participated in the conceptualisation, piloting and analysis of a survey of 3000 women, living in three rural areas within the former apartheid homelands, in order to investigate women’s land rights.

The survey, conducted by the Community Agency for Social Enquiry (CASE), has shown that there is a positive shift in the access of unmarried women to land in these areas. This finding counters popular claims that women can only hold customary land rights through their male relatives.

The CASE survey findings were presented at a two-day workshop convened by LRG, in partnership with the Institute for Poverty, Land and Agrarian Studies (PLAAS) at the University of the Western Cape. Leading scholars in law and anthropology, including Christian Lund of Roskilde University in Denmark, Harvard’s Pauline Peters, Bridget O’Laughlin of the Institute of Social Studies at the Hague, Henry Bernstein of SOAS and DST/NRF Research Chair Ben Cousins, offered expert insights at the workshop into how to interpret this type of social change. LRG’s ongoing research focuses on explaining this shift in a context where the democratic transition has impacted on rural power relations, where more women have families outside of marriage and where more men are unemployed.

Understanding these changes will inform and support processes through which women are not only claiming access to land rights, but also to equality, participation and democratic accountability in communal areas.


**Peers-Reviewed Published Conference Proceedings**


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We strive to be the vanguard of the creation of new market vibrancy on the continent, while serving as the primary portal for researchers from around the world who study the emerging African lion economies.
The Commerce Faculty made continued progress in its leading objective of becoming the primary locus in South Africa for new, practically focused knowledge on economic development, poverty and inequality reduction, and the growth and deepening of business opportunities in South Africa and in Africa at large. We strive to be the vanguard of the creation of new market vibrancy on the continent, while serving as the primary portal for researchers from around the world who study the emerging African lion economies. In 2010, the faculty’s research contract flow-through rose by over 25% on the previous year.

Our primary mechanism for growing our research impact, quality and visibility is to nurture organised research units in which senior, experienced scholars – well-connected with policy-makers in business, government and civil society – lead and develop the reach of younger researchers with an ever more diverse profile.

In 2010 the School of Economics and its six research units prepared to move into a new building purpose-built for research. The South African Labour and Development Research Unit became the African host of MIT’s world-renowned Jameel Poverty Action Lab, conducted the second wave of the National Income Dynamics Study, and acknowledged the receipt by Dr Cally Ardington of the Economic Society of South Africa’s award for best economics PhD in the country. The Director of the Development Policy Research Unit, Professor Haroon Bhorat, took up a Tier 1 SARCHI Research Chair from the NRF at the start of the year. It conducted research into the enforcement of minimum wage laws, collective bargaining and sectoral determination of wages, among other topics. The Environmental Policy Research Unit launched new studies of water conservation and use, fisheries management, electricity consumption in Cape Town, and parks planning. Policy Research in International Services and Manufacturing (PRISM) completed the research phase of its “Making the Most of Commodities Programme in Africa”. The AIDS and Society Research Unit continued to inform policy around the nation’s most visible health threat. DataFirst received a grant from the Vice-Chancellor’s Strategic Fund to expand its archive of public databases on Africa. A similar grant supports the establishment of a new entity, the Research Unit on Behavioural Economics and Neuroeconomics, which conducts internationally reported research on pathological gambling and other addictions in South Africa.

In the School of Management Studies, the Centre for Actuarial Research received grants to study demographic estimation and determinants of child welfare. The Institute of Applied Statistics was launched. Staff of the Organisational Psychology section presented work at eight conferences and received new development grants. A team of postgraduate students in finance won through to the finals of the CFA Investment Research Challenge in Hong Kong. The Unilever Institute for Marketing Research won a jury prize at the Cannes Film Festival for its documentary Forerunners, set in Cape townships.

The Department of Information Systems established a multimillion-Rand partnership with Samsung Electronics, the Cape IT incubator Bandwidth Barn and the Department of Computer Science to develop innovative mobile phone applications for African needs. The department hosted two international conferences, helped design and launch a new IS doctoral programme at Addis Ababa University, and broke all of its previous records for research outputs.

Researchers in the Department of Accounting won three national prizes for papers. The department graduated a record number of master’s students in financial management and taxation.

At the Graduate School of Business (GSB) a research coordinator was employed to support the research director and work with faculty and students in stimulating, coordinating and supporting research. Over and above
fortnightly research seminars, events included the launch of a writing circle, in which GSB-affiliated researchers can meet to provide peer reviews of colleagues’ work in progress. The school gained two new NRF ratings, and requested submissions for an international conference scheduled for November 2011, ‘The Business of Social and Environmental Innovation’. 2010 continued a trend initiated in 2009 of at least one article published in journals on the Financial Times list, the international gold standard for business schools.

On this strong platform, we look forward to reporting further major expansion in our range and impact of research over the course of 2011.

PROFESSOR DON ROSS
DEAN OF THE FACULTY OF COMMERCE
DOCTORAL GRADUATIONS

J. AGBOR (ECONOMICS)
Essays on the political economy of 20th century colonisation and decolonisation in Africa.
Supervised by Professor J. Fedderke and A/Professor N. Viegi

A.F. BOLLOU (INFORMATION SYSTEMS)
Supervised by Professor M. Hart and Professor D. Ngwenyama

P. DAYA (GRADUATE SCHOOL OF BUSINESS)
Supervised by Professor K. April

K. HODNETT (MANAGEMENT STUDIES)
Analysis of the cross-section of equity returns on the JSE securities exchange based on linear and nonlinear modelling techniques.
Supervised by Professor P. van Rensburg

H.-H. Hsieh (MANAGEMENT STUDIES)
Applications of global equity style indices in active and passive portfolio management.
Supervised by Professor P. van Rensburg

I. MAGGOLA (GRADUATE SCHOOL OF BUSINESS)
Supervised by Professor F. Horwitz

M. MARCUS (MANAGEMENT STUDIES)
The effect of South African dividend and capital gains taxes on cost of capital, firm value and capital structure.
Supervised by Dr F. Toerien

W.N.B. MLITWA (INFORMATION SYSTEMS)
Integration of e-Learning systems into academic programmes in South African universities.
Supervised by A/Professor J.-P. van Belle

E. MTONGA (ECONOMICS)
Regime change and exchange rate dynamics: the Rand.
Supervised by Professor M. Avory

T. MUGADZA (ECONOMICS)
Opportunity costs of trade-related capacity development in sub-Saharan Africa.
Supervised by Professor D. Ross and A/Professor L. Edwards

H. NGALAWA (ECONOMICS)
Essays on the monetary economics of low income countries.
Supervised by Professor J. Bagraim

M. OBIYIELUAKU (ECONOMICS)
Fiscal aspects for macroeconomic stability in Africa.
Supervised by Professor J. Bagraim

C. PETER (GRADUATE SCHOOL OF BUSINESS)
Bayesian participatory-based decision analysis: an evolutionary, adaptive formalism for integrated analysis of complex challenges to social-ecological systems sustainability.
Supervised by Professor K. April

O. PIMHIZAI (ECONOMICS)
Essays on the causes and consequences of market distortions.
Supervised by A/Professor M. Wittenberg

F. SHIRAZI (INFORMATION SYSTEMS)
Supervised by Professor I.T.J. Brown and Professor O. Ngwenyama

A.M. SIMPASA (ECONOMICS)
Performance of Zambian commercial banks in the post-liberalisation period: evidence on cost efficiency, competition and market power.
Supervised by Professor H. Abraham

W. VAN ZYL (ACCOUNTING)
Accounting for employee stock options.
Supervised by Professor E. Uliana

DEPARTMENT OF ACCOUNTING

AUTHORED BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS

Research on AIDS Orphans Attracts National and International Awards

Concern for orphans has led to a duo of awards for Dr Cally Ardington, a senior research officer in the Southern Africa Labour and Development Research Unit in the Faculty of Commerce.

Her doctorate on parental death and schooling in South Africa was judged the best PhD in the country, based on an evaluation by the Economics Society of South Africa (ESSA). Ardington’s postdoctoral research has also won acclaim and a five-year grant from the Global Research Initiative Programme for New Foreign Investigators of the United States National Institutes of Health.

Ardington’s doctoral research examined the impact of the great losses suffered by AIDS orphans and their potential to succeed in life and, building on this, she now broaden the scope of her research to the links between poor health in childhood and the legacy of poverty.

Commerce dean, Professor Don Ross said: “This is the second year in a row that the School of Economics has produced the best PhD in South Africa, according to ESSA. This speaks to the calibre of research undertaken in the Faculty of Commerce, and particularly to the supervision provided by Professor Murray Leibbrandt.”

Dr Cally Ardington with Professor Murray Leibbrandt.


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DEPARTMENT OF INFORMATION SYSTEMS

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


The UCT Graduate School of Business (GSB) has been placed 89th in the 2010 Financial Times (FT) of London Global MBA Top 100 survey, making it the only business school in Africa in the top 100 for the sixth consecutive year.

The GSB performed well in several of the FT categories, featuring in the top third of the rankings in diversity, 9th in international experience rank, 25th in international mobility rank, and 28th in career progress rank. It also remains one of the very best value-for-money MBAs in the world, being placed second in value-for-money rank.

In addition, Executive Education at the GSB has been placed 49th in the world for customised programmes on the Financial Times executive education custom ranking for 2010.

It is the first time the school has featured in the prestigious international ranking, and director of Executive Education at the UCT GSB, Elaine Rumboll, described the placement as “confirmation that our approach to adult learning is up there with the best-in-class”.

Areas where GSB Executive Education performed particularly well on the ranking included International Clients (27th), Programme Design (28th), Faculty Diversity (32nd) and Value for Money (34th). It achieved above expectation in the Future Use (12th) and Overseas Programmes (10th) categories.

And, equally impressive, the GSB was rated the Best Business School in Africa at the Eduniversal 3rd Global Convention of the Best Business Schools, held in Prague, Czech Republic.

The Best Business School in Africa honour follows the UCT GSB’s Eduniversal rankings in 2008 and 2009, in which it was voted the top business school on the African continent and awarded 5 Palmes, the organisation’s highest honour for international reputation. The GSB was once again awarded 5 Palmes at the event in Prague.


The close interface between economists at UCT and policymakers in South Africa refutes accusations that universities are ivory towers, said Vice-Chancellor Dr Max Price at the recent launch of the Abdul Latif Jameel Poverty Action Lab for Africa (J-PAL Africa).

J-PAL Africa is the fourth regional office of the international J-PAL research network, based at the Massachusetts Institute of Technology (MIT). The project aims to reduce global poverty by ensuring that government policy and programmes are based on scientific evidence.

The project’s other key partners are in Chile, France and India, each of which serves as a node for its home continent while also conducting comparative work globally. J-PAL Africa will be led by executive director, Kamilla Gumede, and hosted by Professor Murray Leibbrandt, director of the Southern African Labour and Development Research Unit in the Faculty of Commerce.

Partners against poverty: (from left) Vice-Chancellor Dr Max Price, Minister Trevor Manuel and executive director of J-PAL Africa, Kamilla Gumede.

SCHOOL OF ECONOMICS

AUTHORED BOOKS


EDITED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


Associate Professor Ralph Hamann, research director at UCT’s Graduate School of Business, was one of the authors of the winning case study – netting the top prize of R40,000 – in a competition held by the University of Stellenbosch Business School’s Unit for Corporate Governance in Africa.

Titled A Clash of Cultures (and Lawyers): A Case Study of Anglo Platinum and its Mogaikutwana Mine in Limpopo, South Africa, the study was co-authored with Leanne Farrell and Eric Mackres, master’s students from the Massachusetts Institute of Technology, who were visiting students at UCT’s African Centre for Cities. At the time of writing the study, Hamann was a senior researcher at UCT’s Environmental Evaluation Unit.

The competition was sponsored by London-based Hermes Equity Ownership Services, and called for much-needed case studies from Africa on corporate governance. It attracted about 100 proposals from various African countries. Eleven proposals were shortlisted, and ten full cases were developed. Each of these submissions received R10,000 from the competition as a contribution to their development.

The case studies were submitted to an international panel of judges comprising Stephen Davies of Yale University, Professor Ollie Williams of Notre-Dame University in the US, and Professor Jean-Louis Schaan from the Richard Ivey School of Business in Canada.

The winning case has received significant attention. It is listed on the website of the Business and Human Rights Resource Centre, a global NGO that tracks the environmental and social impact of companies worldwide.


CSSR – Centre for Social Science Research. Also see page 48.

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SCHOOL OF MANAGEMENT STUDIES

(Including the Centre for Actuarial Research (CARe))

AUTHORED BOOKS


CHAPTERS IN BOOKS


SA INVESTMENT COMPANIES NOT QUITE GREEN-SAVVY

Dr Stephanie Giamporcaro, a postdoctoral research fellow in the Environmental Policy Research Unit (EPRU), School of Economics, is investigating the implementation of environmentally responsible investment (ERI) approaches in South Africa. To this end, she’s looking at how innovative finance tools such as socially responsible investment funds, greens funds or carbon funds are being implemented, if at all.

So far the picture is not very promising. In a study published last year, the EPRU found that South African asset management companies are still very much way from providing their clients with the kinds of investment products that seriously take environmental issues into account.

One concern that companies have with ERI offerings is that they are potentially not as profitable as their non-ERI counterparts. Not so, says Giamporcaro. “Many of the studies done in Europe and the United States have shown that they perform the same,” she points out.

But there is a light at the end of the tunnel beyond regulation. On paper at least, most of the research respondents are keen to see an increase in ERI offerings in the industry, and believe that they will one day become commonplace in South Africa.


CARO – Centre for Actuarial Research. Also see page 37.

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GRADUATE SCHOOL OF BUSINESS

AUTHORED BOOKS


CHAPTERS IN BOOKS


ARTICLES IN PEER-REVIEWED JOURNALS


PEER-REVIEWED PUBLISHED CONFERENCE PROCEEDINGS


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Students from the Department of Information Systems have created innovative software as part of their research, developing a “green” building management system which reduces energy.

The team which consisted of Kate Dawe, Nick Kuilman, Richard Pilkington and David Scheepmaker developed a management system for the Bandwidth Barn, an incubator for entrepreneurs under the umbrella of the Cape IT initiative. Their innovation, a tenant management system, allows for the building administrators to provide a world-class service to their tenants and also cut down on the building’s carbon footprint.

The system further allows the tenants to liaise directly with the building administration about complaints and maintenance issues, book the communal boardrooms and automate the office rooms in order to cut down on electricity and provide electrical analysis.

Team leader Nick Kuilman said the group’s single-minded determination to help the environment kept them going, despite many obstacles.

“Our idea was to reduce the amount of electricity that buildings use, to help the energy crisis,” he said.

The team decided to revolutionise various systems within the building. For example, they transformed a paper-based booking system for the multiple boardrooms to an electronic one and linked this to e-mail invitations to enhance efficiency.

They also examined ways to assist the 60 tenants in the building to resolve issues more effectively. So, instead of various streams of communication to the building manager, they changed this to a single stream.

With regard to energy, they decided it made sense to reward tenants who were conscientious users of electricity and diligent at making savings. Rather than the current situation, where all tenants are charged on a pro-rata basis, they used Bluetooth technology to track a user’s activity which helped them to create graphical analyses to show how much electricity was used by each tenant.
Centre for Higher Education Development

ACADEMIC DEVELOPMENT PROGRAMME
CENTRE FOR EDUCATIONAL TECHNOLOGY
CENTRE FOR INFORMATION LITERACY
HIGHER AND ADULT EDUCATION STUDIES AND DEVELOPMENT UNIT
CENTRE FOR OPEN LEARNING
DEAN’S OFFICE
Fresh approaches, based on systematic knowledge of teaching and learning, are needed to ensure that the universities, including UCT, can maximise their contribution to the country.
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 and effectiveness of higher education – at UCT and nationally – 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 arises from institutional and national need as well as individual interest. Higher education has sole responsibility for producing the graduates that provide the core of the advanced knowledge and skills that are essential for South Africa’s social and economic development. This represents a major challenge which the sector is still far from adequately meeting. The government has identified skills shortages as a central obstacle to development, but despite some successful institutions and areas of excellence South African higher education remains a low-participation, high-attrition system still characterised by ‘race’ and class inequalities in access and success rates that severely impede progress. Fresh approaches, based on systematic knowledge of teaching and learning, are needed to ensure that the universities, including UCT, can maximise their contribution to the country.

CHED’s research mission is geared to addressing this need through investigating and developing educational theory and practice that are effective in our context. It aims to ensure that educational development work, at and beyond UCT, is based on rigorous and ethical research that serves such objectives as equity of access, realising the academic potential of students from all sections of the population, improving graduate output and outcomes, and generally strengthening the quality of teaching and learning in higher education. Much of the research focuses on teaching-and-learning approaches, curriculum design – often in relation to specific disciplines – and the conditions that promote learning. There is also a strong strand of research on and for higher education policy, sponsored by bodies such as the Department of Higher Education and Training, the Council on Higher Education, Higher Education South Africa, international charitable foundations, and the National Business Initiative.

South Africa’s challenges are substantial but not unique, and a key feature of CHED’s research is to draw on, extend and disseminate, the body of tertiary teaching-and-learning knowledge that has been rapidly growing internationally over the past three decades. To this end, many CHED academic staff are developing productive associations with individuals, institutions and scholarly bodies abroad, and CHED’s Centre for Educational Technology is leading the way with linkages elsewhere in Africa. CHED’s intellectual contribution to national education debates continues to be strong, as indicated in publications in accredited local and regional journals such as SA Journal of Higher Education, African Journal of Research in Mathematics, Science and Technology Education, Southern African Linguistics and Applied Language Studies, and SA Journal of Libraries and Information Science. However, international interest in South African higher education research is evidenced in the growing number of CHED publications in leading international journals such as Teaching in Higher Education, Studies in Higher Education, International Journal for the Study of Southern African Literature and Languages, International Journal of Community Research and Engagement and International Journal of Education and Development using ICT.

CHED’s research activity and output are increasing. Indicators of growth include a doubling of accredited journal articles from 2005 to 2010, and a five-fold increase in the value of research contracts between 2007 and 2010. CHED now has eight NRF-rated researchers, and, with nearly two-thirds of its permanent academic staff actively involved in the Emerging Researcher Programme, we believe that this number will increase steadily. There are intriguing new areas of inquiry emerging, including taking understanding of aspects of curriculum to a new level through analysing the knowledge characteristics of curricula and qualification types, with significant implications for key issues such as articulation between academic, professional and vocational learning, and access to postgraduate study.

With this trajectory and staff commitment, we are confident that CHED’s research identity and impact will continue to grow.

ASSOCIATE PROFESSOR NAN YELD
DEAN OF HIGHER EDUCATION DEVELOPMENT
UCT has joined the open content revolution, with its own Open Content Directory (http://opencontent.uct.ac.za/), which allows easy, free, online access to a selection of UCT teaching and learning resources. Funded by the Shuttleworth Foundation and developed as part of the Open Educational Resources Project in the Centre for Educational Technology (CET), the directory showcases UCT’s collection of open educational resources. The subsequent development of the broader OpenUCT initiative will increase the institution’s participation in the global open research, teaching and social responsiveness environment, making a range of UCT’s knowledge resources available to anyone with Internet access.

“Launching the Open Content Directory is a significant step towards making UCT’s African knowledge more accessible to the world,” says Vice-Chancellor Dr Max Price. “The open movement is already giving Africans easier access to knowledge from the world’s top universities.” In addition, CET’s Associate Professor Cheryl Hodgkinson-Williams said that making such materials available outside academic circles will help create a culture of lifelong learning in South Africa.

ACADEMIC DEVELOPMENT PROGRAMME

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CENTRE FOR INFORMATION LITERACY

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HIGHER AND ADULT EDUCATION STUDIES AND DEVELOPMENT UNIT

ARTICLES IN PEER-REVIEWED JOURNALS


In January 2010, Dr Lucia Thesen and Associate Professor Linda Cooper hosted a colloquium on “The postgraduate condition: writing, risk and the making of new knowledge”. The colloquium, hosted with funding from the Programme for the Enhancement of Research Capacity (PERC) and facilitated by Professor Brenda Cooper, brought together scholars to find common themes towards a publication about how risk plays out in postgraduate writing. Participants included Kate Cadman (University of South Australia), Mary Scott (Institute of Education, London), Suresh Canagarajah (Penn State), Moeain Arend, Clement Chihota, Moragh Paxton (all UCT) and Somikhazi Deyi (CPUT). More recently, Theresa Lillis of the Open University and PhD students Aditi Hunma (UCT) and Emmanuel Sibomana (Wits) have joined the project.

The project begins with a question: how do researchers project intended meanings through writing, so that others, whom they do not know, will hear them as they intend? This is a deeply political question. “Writing forces us to commit to this path, for now, and to leave other paths behind. It inscribes an identity that lasts long beyond the moment. Many student and novice researchers – particularly those writing from the geopolitical periphery – experience a sense of loss in the compromises arrived at in the completion of the thesis. It is in this written product that knowledge production finds material form, in the process of writing, modes of expression and experiences are revised and erased along the way.”

Thesen and Cooper’s project is concerned about accounting for the deletions and silences that are part of the process of research writing, and to understand the consequences of what is lost in postgraduate student writing. “Our interest in understanding what is ‘no longer there’ in the final product leads us to explore the notion of risk, and to look at it afresh and productively in relation to concepts such as voice.”
PHOTOGRAPHIC CREDITS

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