THE RESEARCH REPORT 2010
Division of Research Development and Administration
University of Limpopo
A genuine culture of learning is beginning to flower at our university.
Professor Mahlo Mokgalong,
Vice-Chancellor and Principal of the University of Limpopo
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Message
FROM THE VICE-CHANCELLOR

PROFESSOR MAHLO MOKGALONG

IT HAS FREQUENTLY been asserted that research is the pivot upon which higher education revolves. Certainly, it is one of the trio of activities that makes up the core of our business as a university. But the other two elements – teaching/learning and community outreach – would be very much the poorer if we neglected research. This is why it is pleasing to be able to say, however much such neglect might have been a feature of our apartheid past, that it no longer features in our current strategy or in our plans for the future.

Indeed, 2010 saw a surge in the university's material support of research, and in the growing interest shown by our academics in undertaking research and research partnerships. I would remind readers of this important report of the mission and vision of the University of Limpopo, particularly in relation to its geographical position in a deeply rural part of South Africa. But how could one hope to be 'world-class' and 'globally competitive' when addressing the needs of rural (African) communities through innovative ideas without a lively research component, and an academic cohort capable of being enthused by such a vision?

It is in this context that I am happy to announce that our ideas for a Rural Development and Innovation Hub found its way to the top of the agenda during 2010. A director will be appointed early in 2011 – and I confidently expect a surge of inter-related research focussed on our vision than has been possible in the past. I expect as well some exciting collaborations between the fledgling Innovation Hub and the VLIR partnership.

In speaking of these developments, the importance of research, in regard both to the funding and the effectiveness of our efforts, comes into clearer focus. Historically, the University of Limpopo was not expected to nor did it engage in a great deal of research. This situation changed dramatically after 1994, when we were expected to take our rightful place within a unitary system of South African universities. As a consequence of this change in status, research has assumed increasing importance in our planning from year to year. This has been most recently evident in the substantial strengthening and restructuring of our Research Office. This renewed support for the research arm of our core business, coupled with increasing research efforts from all four faculties, resulted in some encouraging results during the year under review.

For example, the flow of funding from the National Research Foundation more than doubled from 2009 to 2010, and the number of research publications rose significantly compared to the previous year. Our improving research output, and the increases in the number of postgraduate degrees awarded indicate a growing awareness that a vigorous pursuit of higher learning is the surest way to personal and collective socio-economic development. In short, these indicators suggest to us that a genuine 'culture of learning' is beginning to flower at our university.
Message
FROM THE DIRECTOR OF RESEARCH

PROFESSOR RACHMOND HOWARD

RESEARCH AND INNOVATION – together with teaching/learning and community engagement – form the central triumvirate of the University of Limpopo’s core business. The year 2010 marked an important turn-around for research at the university: new managers and research administration staff were appointed; important new research policies were approved; and significant investments were made into research support and capacity building. All this pointed to the beginnings of a vibrant research culture, and a renewed institutional focus and energy directed to the importance of research in the affairs of, and particularly the outcomes from the university.

There are certainly some indications that the specific, targeted turn-around interventions are beginning to bear fruit. Compared with 2009, the Division of Research Development and Administration (DRDA) received 59 percent more research outputs for 2010 for processing to the Department of Higher Education and Training. While we cannot yet confirm the actual units, we are hopeful that the units will increase from 2009 figures.

Considering the number of new research initiatives undertaken in 2010, I am optimistic that the University of Limpopo is poised and never better placed, in the context of a developmental state, to move the research and innovation of the university into the 21st century and thus establish consistency with our motto ‘Finding Solutions for Africa’.

I would like to dwell briefly on the way in which we have reorganised and strengthened the Division of Research Development and Administration. We began by appointing a Deputy Director of Research to head up a permanent Research Office on the Medunsa campus. This was followed by four new positions that were created to give shape to our core intention of driving, supporting and promoting research and innovation at the university. The positions and their functions are:

- A senior administrative officer, Ronel Hattingh, who concentrates on university matters and the university’s relationship with the National Research Foundation (NRF), by far our largest single source of research funding on both campuses.
- A research co-ordinator, Ramakgolo Lekalakala, who manages and maintains our research information systems, research equipment databases, and deals with accredited subsidised research outputs.
- A university statistician, Victor Netshidzivhani, provides expert advice and training to university researchers on questionnaire design and coding, data capturing, and the interpretation of statistical results arising from the data.
- A research developer, Dr Jesika Singh, whose brief is to encourage, support and train researchers and postgraduate students to improve research skills in order to increase the number of high quality researchers and the university’s output of high-quality research.

I believe that the increased power of the Division of Research Development and Administration is already bearing fruit. As previously remarked, research activity and postgraduate studies are on the rise. Existing established researchers are showing a new interest in qualifying for NRF accreditation. New international research partnerships, most notably perhaps with Flemish universities under the VLIR-UOS programme that was launched in the year under review, are taking off and adding impetus to the new wave of research interest permeating the university.

The essential research message – that quality research and innovation are essential to economic survival on both a national and individual level – is getting through. As importantly, I believe, is the growing realisation that quality African research is as essential. It is a matter of pride, which both staff and students are beginning to see as their central challenge for the 21st century.
Research in the faculties

HEALTH SCIENCES

PROFESSOR ERROL HOLLAND

THE TOTAL ACADEMIC staff complement of this faculty is 382. Of these, 17 percent have a Doctoral qualification and a further 50 percent a Masters qualification. In addition, 50 percent of the academics/researchers in the faculty are women and 71 percent are black.

The basic 2010 research endeavour of this cohort is measured in publications in accredited journals per full-time staff member. This increased from 0.14 in 2009 to 0.37 across the year under review. It needs to be noted, however, that this improvement is mainly due to the output of individual researchers and particularly from the faculty’s research units. Nevertheless, 143 accredited articles appeared, and 349 academics attended conferences, the vast majority (347) making oral conference presentations or poster presentations. But very few of these contributions translate into publications. To counteract this tendency, the faculty has introduced specific rules for funding of conference attendance, which are being monitored, that a minimum of one publication must accrue from each conference attended. It is hoped that this measure will improve our publications output.

The high numbers of completed and currently active projects (133 and 292 projects respectively) should result in significant journal publication rates, which is something that needs to be driven from within the faculty.

The stated reasons for the faculty’s poor research output relate mainly to staff shortages and the consequent high demands placed on staff for service provision and teaching. There are other problems and challenges noted by active researchers, notably, the problems with a sub-optimal communications network, a need for the university to review the research incentives, and the fact that high-performing research groups do not receive formal university funding. This is perceived as a lack of recognition of their contributions to the research endeavour.

The problems and challenges experienced by Faculty of Health Sciences researchers include:

- High undergraduate teaching loads, including extensive clinical supervision
- Unreliable e-mail and internet services which hampers communication with international partners
- Those centres of research excellence within the faculty are not given recognition, or funding, for their efforts.

In spite of these difficulties, noteworthy research outcomes abound. Here are a few examples:

- School of Health Care Sciences: Department of Pharmacy staff continue to support the Pharmacovigilance Centre, which provides scientific monitoring for national anti-retroviral therapy programme. The centre has now developed software to produce automated pharmacovigilance reports.
- School of Health Sciences: involvement in the human genome sequencing research project have led researchers to the determination of genetic factors in prostate cancer risk in four indigenous African population groups.
- School of Pathology and Pre-clinical Sciences: the Medunsa Clinical Research Unit, initiated in 2005, moved into its own building that was officially opened in May, marking World HIV Vaccine Day.

Despite extraordinary individual efforts – for example, the best University of Limpopo researcher for 2010 comes from the Department of Public Health in the School of Health Care Sciences – research output remains the key challenge for the Faculty of Health Sciences.
Research in the faculties
HUMANITIES

DR MAKGWANA RAMPEDI

THE MISSION OF this faculty is to empower students to reach their full potential, to attract and develop and retain quality staff, and to deliver quality teaching, research and people-centred outreach programmes. It is envisaged that the next three years will see a concerted effort in improving the execution of the Faculty of Humanities mandate with regard to the tripartite pillars of teaching/learning, research and community outreach mentioned above.

As in the past, 2010 has had its share of challenges. On the staffing front, the year was characterised by both gains and losses, appointments and promotions. Between January and November there were two promotions, one to senior lecturer and the other to professorial level. In addition, three staff members took PhD degrees and six staffers completed their Masters degrees. But during the same period there were four resignations. Nevertheless, the number of staff defined as researchers (those who spend more than five percent of their working time on research) exceeded 80, which represented over 65 percent of the total academic staff employed in the faculty.

During the year under review, there were several completed and several on-going individual research projects in the faculty, some of which were externally funded. Publications in 2010 included 14 accredited articles, seven non-accredited articles, two chapters in books and six edited books. The accredited article tally translates into a figure of around 0.12 articles per full-time staff member. The number of accredited articles for 2010 is double that produced in 2009, and slightly higher than the 13 produced in 2008. It is hoped that this upward trend will continue. Indeed, the faculty is confident that the support provided from the Research Development Grant, in the form of several capacity-building workshops that were well attended, will bear fruit in the next three to four years.

There were several 2010 developments which should boost the faculty’s research rating. The first was the initial formation as a ‘virtual centre’ of the Indigenous Knowledge Centre of Excellence with plans to develop this centre into a fully-fledged node for the IKS hub, which is based at the Mafikeng campus of North-West University. The introduction of the new B.IKS degree has been deferred to 2012 due to internal processes. The second development worthy of mention is the progress being made with regard to the teaching of the Advanced Certificate in Education in the School of Management and Leadership. Launched in 2010, the plan is for a 2011 first year intake of 150 students. Substantial scope for research into the subject of school management, particularly in rural schools will doubtless be explored by many of these students and the staff who teach them.

In spite of the current low research output, the Faculty of Humanities has many major research focus areas that are ripe for exploitation. These include HIV/AIDS communication, literacy, constructivist learning environments, school violence, educational policy, mathematics and science in a classroom, assessment methods in education, democracy and education, migration trauma, gerontology, indigenous medicine heritage issues, oral history, and general social policy issues.

Research development and capacity-building among both staff and students remain a high priority for the Faculty of Humanities on the Turfloop campus.
A GENERAL OVERVIEW of the research activities in this faculty, particularly in terms of productivity and output, reveals the following trends:

• Overall low research activity reports and publications across the entire faculty for 2010, revealing a picture almost identical to 2009.
• A re-awakening to the need for a concerted effort in taking research to be an important component of the Faculty’s activities.
• A marked variation between departments (within the same school), as far as their attention to research activities is concerned.
• An obvious apathy on the part of certain departments, in the sense that over the whole 2010 academic year, not a single article has been published.
• The number of research-active and publishing staff members by far exceeds the number of non-research-active and non-publishing staff.
• The overwhelming majority of staff is categorised as ‘emerging researchers’.
• The ratio of established to emerging researchers is about 20:80 percentage across the faculty.
• Some senior staff members don’t show any interest in research, and thus fail to stimulate or instil a research culture in their younger colleagues.
• The research enthusiasm or otherwise of the head of the department tends to determine the level of research activity in that department.
• Departments with heavy teaching loads tend to end up shying away from doing research.
• Department members who tackle research projects in teams appear to be more successful than those that don’t do so.

Notwithstanding the above disturbing trends, those schools that have appreciated the importance of research activity will definitely improve their research output for 2011. It is hoped that their increasing success will serve as an incentive to the inactive schools. In this way, the faculty’s research activity profile will change for the better.

Postgraduate research supervision has greatly improved in certain schools. The Turfloop Graduate School of Leadership (TGSL) graduation rate for this year (2010) is the highest in the school’s history, an achievement attributable to the efforts of the school leadership in encouraging pipeline students to finalise their research reports. In addition, the university’s willingness to engage an external research facilitator is laudable and greatly appreciated. Most of the TGSL mini-dissertation research topics focused on issues of topical relevance in Limpopo Province, thus talking directly to the faculty’s mission.

A few of the major research focus areas in the Faculty of Management and Law are:

- Gender inequality and mainstreaming; entrepreneurship and small business management;
- Judicial independence; human rights; labour law and its ramifications; land reform, redistribution and restitution; social security; and sustainability accounting and management.

The Development Training and Facilitation Institute (DevFTI) is housed within the TGSL that dedicates its efforts to community engagement. It is currently busy with a Community/University Partnership Programme (CUPP), funded by the NRF. The Institute is also part of the VLIR Project, a partnership between the UL and Flemish universities in Belgium. Under the partnership, DevFTI is busy with a ten-year project focusing on competent communities and disease management, with specific focus on HIV/AIDS.
THE CORE VALUES espoused by this faculty are listed under four main headings: commitment, harmony and co-operation, integrity and accountability. The emphasis on commitment and accountability is revealing of the faculty’s determination to counteract the old malaise of ideas of inferiority and chronic lethargy which were among the deepest (and often unseen) impacts of apartheid.

Faculty management is clearly concerned that despite the financial injection received in 2010 in the form of a Faculty Research Grant, some departments failed to make use of their share of the funding because the required accredited article output was not achieved. The Faculty Research Grant funding could have been used for staff development and research capacity improvements. This course of action was simply not investigated. There are also departments where there is no research activity at all – an unacceptable state of affairs that faculty management will work hard towards changing and improving.

On the positive side, it is definitely worth recording that in the two schools most active in research – the School of Agricultural and Environmental Sciences and the School of Molecular and Life Sciences – there continues to be a deliberate effort to couple senior and junior academics in research projects and in the writing of research papers. This will go a long way in ensuring that junior academics are appropriately mentored and inducted into research procedures before they launch out on their own. In this way, a continuity of the research habit is ensured into the future.

During the year under review, the faculty produced 42 accredited articles, some of these appearing in reputable international journals. This accredited article tally translates into a figure of around 0.25 articles per full-time staff member.

There was a notable increase in the number of articles from the School of Molecular and Life Sciences. However, the most improved school in the faculty was that of Mathematical and Computer Sciences, which increased from nil articles in 2009 to four articles during the year under review. Part of this rise stems from visits of scholars from other countries to the school at various times during 2009 and 2010 – a fact that serves to support the view that collaborative research may be the way forward for those departments with capacity challenges.

At the other end of the scale, the continued graduation of doctoral students from the Faculty of Science and Agriculture is noteworthy, and the faculty hopes to increase resource allocation to this vitally important area of activity. There were, during the year under review, the following doctoral students studying in the faculty: nine in the School of Agriculture and Environmental Sciences; two in the School of Mathematical and Computer Sciences; nine in the School of Molecular and Life Sciences; and fourteen in the School of Physical and Mineral Sciences. This gives a total of 34 doctoral students across the faculty, while Masters students numbered 226 and Honours 293, giving a total of 558 post-graduate students out of a faculty student cohort of 3 508.
The main Research Report

THE RESEARCH ENVIRONMENT

Success in research needs well-trained, motivated people working in an environment that has the best possible facilities and equipment for research but also an environment that is conducive to research. In other words, these requirements, together with a vibrant research culture that is encouraging and supportive of researchers, constitute a successful research environment. The year under review saw a more strategic drive to enhance the research environment at the University of Limpopo. Significant in this regard are the following:

• The approval by the University Council of the policy ‘Support and Development, Incentives and Awards Programmes’ in November 2010.
• Capacitating the Division for Research Development and Administration (DRDA) with the appointment of key staff members.
• Running of several skills training workshops for researchers.
• Branding the DRDA and taking a more interactive, grass-roots approach in creating awareness of services offered by the Division.
• Making advances in key research performance indicator areas.

Research development and support

Developing and getting approval for the policy on research development and support marked an important advancement for the RDI of the University of Limpopo. For the first time the university has a set of clear, comprehensive, specific programmes for developing and supporting research, and recognising and awarding research productivity and excellence. The specific objectives of these programmes are to:

• Achieve a critical mass of active researchers by: (i) addressing the qualification and research skills of existing researchers; (ii) attracting outstanding researchers to the University; (iii) attracting a pool of talented young researchers and growing them as the next generation of leaders in research and scholarship; (iv) providing mechanisms to identify and nurture research ‘stars’ to become future research leaders.
• Establish appropriate support and incentives for active researchers to encourage increased productivity. Linking University research funding to research productivity provides for an easily administered, efficient, less bureaucratic means of distributing funds in a way to increase research output productivity.
• Diversify the researcher base by (i) attracting researchers from a diverse range of the population so as to address the deep race and gender imbalances which characterise the national research system; and (ii) ensuring that the needs of researchers from designated groups are met.
• Provide suitable research funding and support for new staff, early career staff and staff who are resuscitating their research after a fallow period.
• Provide funding and leveraging opportunities to acquire state-of-the-art research facilities and equipment.
• Provide for the continued research involvement of outstanding, active research retirees and establish mechanisms for the University to benefit from their accumulative experience and expertise. Outstanding researcher retirees are a resource that the University can draw upon to assist in nurturing and developing the next generation of future research leaders.
• Establish a conducive research environment and research ethos in which staff and students can flourish and become internationally recognised research leaders and scholars.
• Provide mechanisms to attract outstanding postgraduate students, and provide them with quality support and development opportunities. The University recognises the importance of developing a cadre of good research-oriented students, and seeks to enhance the attraction of good students through competitive bursaries, scholarships and grants, to develop and support them to become future research leaders by providing comprehensive research training opportunities and creating a conducive research environment that meets their needs.
• Encourage enhanced, quality, DHET accredited research outputs and knowledge dissemination to the broader society;
• Provide mechanisms to recognise and reward research excellence; and
Entrench a strong, vibrant research culture which is focused on knowledge production for the love of intellectual pursuit but also for practical use by society.

Major national challenges in Research, Development and Innovation (RDI) human resources in South Africa are the lack of sufficiently trained and qualified researchers at doctoral level, the aging profile of productive researchers, and the racially and gender skewed RDI human resources profile of South Africa. UL being cognisant of these challenges has introduced various specific funded programmes for staff and students to address these challenges, these include:

- Research Establishment Competitive Grant for Emerging Researchers.
- Seed funding to kick-start research of newly appointed staff.
- Staff Qualification Improvement (master’s and doctoral) Scholarship Programme for Emerging Researchers.
- Support for Development and Career Advancement of Young Researchers and Researcher Staff from designated Groups:
  - Post-Doctoral Fellowship Programme
  - Teaching and / or Administrative Relief
  - Fast-tracking the careers of young research ‘stars’
  - Research Training and mentorship Programmes for Research Staff
  - Support for designated groups:
    - Matching funding for designated groups
    - Women researcher support and development programme
    - Student Research Support and Development:
      - Undergraduate Research Assistance Programme
      - Master’s and Doctoral Prestigious Scholarships
      - Top-up Funding for Master’s and Doctoral student
      - Post-graduate support grant for research projects
      - Post-graduate Research Training Support Programme
      - In addition the DRDA provides a dedicated statistician to assist post-graduate students and staff with statistics related to their research.

In 2010 UL spent R72 000 to fund 6 staff members for international conferences:

- Mr HR Chauke (male) attended the American Physical Society Conference, Oregon in the USA.
- Dr W Luus-Powell (female) attended the 11th Europhysical Conference on Defects in Insulating Materials in Pecs, Hungary.
- Dr LJ Ngoepe (female) attended the 12th International Congress of Parasitology in Melbourne, Australia.
- Dr RR Maphanga (female) attended the 11th Europhysical Conference on Defects in Insulating Materials in Pecs, Hungary.
- Dr HE Onya (male) attended the 20th IUHPE Conference on Health Promotion in Geneva, Switzerland.
- Prof T Sodi (male) attended the Congress of the International Association for Cross Cultural Psychology.

In 2010, the following staff members applied and received support for internally funded departmental research projects:

- Prof D Engelbrecht from the Department of Biodiversity in Faculty of Science and Agriculture. The project title is ‘Study of the symbiotic siphonostomatoids (Copepoda) found on elasmobranchs off the South African Coast.’ [R142 959 for 3 years].
- Dr T Masebatlea from the Department of BMBT in the Faculty of Science and Agriculture. The project title is ‘The Role of Lithium in Monotherapy or combination therapy for treatment of oxidative stress-related diseases and commonly occurring cancers in South Africa.’ [R335 454 for 3 years].
The following staff members successfully applied for the appointment of Research Assistants:
- Dr W Luus-Powell (female), School of Molecular and Life Sciences, Faculty of Science and Agriculture.
- Prof L Makalela (male), School of Languages and Communication, Faculty of Humanities.
- Prof I Ncube (male), School of Molecular and Life Sciences, Faculty of Science and Agriculture.
- Dr SG Selabe (female), School of Pathology and Pre-Clinical Sciences, Faculty of Health Sciences.

Enhancing research skills, exposing researchers to funding opportunities and creating research awareness
Several research training and information sessions for researchers, research managers and administrators were organised by the Research Office. Dr J Singh and Mrs R Hattingh are especially acknowledged for their contributions in this regard:
- NRF Designated Authority training workshop took place from the 29-30 July 2010.
- The Vice-President of the NRF, Dr G Pillay, and his executives, visited the Institution on 4 August 2010 to speak to senior management, directors of school and researchers about NRF Programmes and to also get a first-hand situation assessment with regard to research challenges and needs.
- On the 10 August 2010, the NRF presented a workshop on the New Thuthuka Programme to University of Limpopo researchers.
- On the 20 September 2010, Biopad/Technology Innovation Agency (TIA) addressed University of Limpopo researchers on the restructuring of the innovation systems and funding opportunities.
- On the 14 October 2010, University of Limpopo staff involved in compiling the annual research survey (CESTII) underwent training at the Human Science Research Council (HSRC) in Pretoria.
- Staff members registered for their doctoral studies attend a training workshop from the 18-20 October 2010 sponsored by the Programme Support for Pro-poor Policy Development (PSPPD). Staff members from various universities, including 12 from the University of Limpopo, attended the training.
- On the 24-25 October 2010, a NRF Rating Workshop was hosted at the university for researchers who wanted to apply for NRF Rating. Sixteen staff members who were interested in applying for rating attended the workshop.
- On the 22-24 November 2010, a pre-doctoral workshop, sponsored by PSPPD, was hosted by the University of Limpopo for staff who were in the process of registering for their doctoral studies. The workshop’s primary goal was to assist staff to develop successful research proposals. Of the 50 staff members who were invited from various universities, 12 were from the University of Limpopo.
- On the 19 November 2010, the DRDA met with Dr Zolani Dyosi from the NRF THRIP Programme to discuss ways of increasing applications from UL researchers for THRIP funding.
- On the 29 November to 1 December 2010, the university hosted the NRF Thuthuka Funding Workshop. This was an NRF pilot geared to primarily provide hands-on training to staff to develop successful proposal applications. PSPPD sponsored the catering. Thirty three staff members attended the workshop.
- Mr Ramakgolo Lekalakala has been conducting several training sessions with researchers on RIMS.
- The Medunsa campus hosted their annual Theses and Dissertations Workshop for masters and doctoral students, and the Supervisors’ Workshop for staff.

The DRDA staff members made presentations on research at the following research workshops:
- Professor Rachmond Howard was invited on 26 March 2010 to the School of Law Research Improvement Strategic Workshop to make a presentation on the state of research at UL and ways to enhance research.
- Professor Rachmond Howard made a presentation at the Research Workshop Series hosted by TGSL on 29 November 2010 – Dec 3rd, 2010.
- On the 24 February 2010, Professor Rachmond Howard and Dr Jesika Singh made presentations at the Faculty of Humanities’ Supervision Workshop.
In addition, Professor Rachmond Howard assisted and co-ordinated two faculties’ application for two FirstRand/NRF Chairs in English Literacy and Maths Literacy.

**Capacitating the Research Office with the appointment of key staff members**

The appointment of Dr Prem Govender in late 2010 as the Deputy Director of Research on the Medunsa Campus, responsible for the Health Sciences of the University of Limpopo, has resulted in stability and improved management of the Research Office on the Medunsa Campus.

Dr Jesika Singh, formerly of the School of Education on the Turfloop campus, appointed in 2010 as the Research Developer, has provided a much-needed facelift to research development and support for staff and postgraduate students. Her qualifications and experience in education, involvement with building women researchers as part of the University of Limpopo Women Academic Student Association (ULWASA), enthusiasm and drive have been invaluable in innovating and driving the research development and support portfolio of the university.

On his first week of starting as the new Statistician, Mr Victor Netshidzivani was inundated with students and staff who needed his assistance. His dedication to his work is admirable. He has begun to develop a basic statistics training manual and is exploring the development of an on-line course using E-Learning.

Mr Ramakgolo Lekalakala, joined the Research Office in 2010 as the Research Co-ordinator: Research Information Management. He is primarily responsible for developing the university’s Research Information Management System in conjunction with ICT, providing training on this and coordinating the Research Outputs of the university.

Branding the DRDA and taking a more interactive, grass-roots approach in creating awareness of services offered by the DRDA

Dr Singh, Dr Govender, Mr Netshidzivani and Mr Lekalakala interacted directly with faculties to determine their needs and expectations around the various research activities of their jobs. This information was used to design informed programmes responding to the needs and expectation of researchers. Promotional posters of the DRDA were developed and distributed to various faculties, schools, departments and academic support units to create greater awareness about the services which DRDA offers.
Building women researchers
A study conducted for the 2010 HEQC Institutional Audit has shown that the University of Limpopo is doing extremely well in terms of research outputs by women researchers. There has been a steady increase in female authors: in 2006-2008 about 36 percent of authors were female, compared to 23 percent in 1998-1999. The share of article equivalents produced by female authors has also increased. In 2006-2008, it was about 25 percent, compared to 16 percent in 1998-1999. The 2006-2008 figures for the University of Limpopo is above the national average where approximately 22 percent of all article equivalents are currently being produced by women. Continued investments in ULWASA will ensure sustained increases in research outputs by UL women researchers.

A shining example of a woman academic whose excellence was recognised in 2010 is Dr Regina Maphanga of the Materials Modelling Centre in the School of Physical and Mineral Sciences. Her achievement had to do with electrolytic manganese dioxide, a substance of crucial importance to storage batteries and alternative sources of energy that will drive the world’s future. In 2010 she was honoured with a major award for her work in this field. She’s one of only a handful of black women in South Africa with a doctorate in Physics.

Maphanga was born in the late 1970s in Ngwanallela, a small village in the Gamatlala district some 70 kms west of the then Northern Transvaal town of Pietersburg (now Polokwane, capital of Limpopo province). As early as standard three, an observant teacher realised Maphanga’s potential. He arranged for her immediate promotion into standard five. The result was that she finished school earlier than most, only turning 17 during her first year at university. Although her rural high school had no laboratories and of course no computers, Maphanga excelled at mathematics and the sciences. Her first year BSc subjects included Physics, Chemistry, Botany, and mathematics. She dropped Botany for her second year, and ultimately majored in physics and maths. She finished her degree in 1998 – and she had done so well that she was invited to do her Honours degree through the Materials Modelling Centre, a state-of-the-art centre of excellence at Turfloop, directed by Professor Phuti Ngoepe, that specialises in the computer simulation of metals and alloys, not least of platinum and manganese, both of which are extensively mined in Limpopo. Astonishingly, though, Maphanga had never used a computer, either at high school or during her undergraduate degree. Now she was thrown in at the deep end – and once again she came up swimming stronger than most. She obtained distinctions for all the courses she tackled for her Honours. So she registered for a Masters. So proficient was she in the manganese computer modelling she had undertaken that Professor Ngoepe upgraded her research to PhD level. She graduated with a doctorate in physics in 2006, at age 26.

On the 4th of May this year, the rewards began to come her way. She found herself in the banqueting hall at Emperor’s Palace in Johannesburg. Dr Maphanga was feted: she was awarded the NRF-sponsored TW Kambule Award for ‘a distinguished young black female researcher over the past two to five years’. The award carried an amount of R100 000 that was ploughed straight back into the research effort of the Materials Modelling Centre.

The main Research Report
RESEARCH HIGHLIGHTS FOR 2010

Research Excellence Awards
The university hosted its Annual Research Excellence Awards on 8 November 2010. The guest speaker was the Deputy Minister of Science and Technology, Minister Derek Hanekom, and the following University of Limpopo academics received awards.

- Professor Supa Pengpid from the School of Public Health in the Faculty of Health Sciences was awarded overall best researcher in the category Established Researcher.
- Professor Solani Mathebula from the School of Health Care Sciences in the Faculty of Health Sciences was awarded overall best researcher in the category Established Researcher.

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A study conducted for the 2010 HEQC Institutional Audit has shown that the University of Limpopo is doing extremely well in terms of research outputs by women researchers. There has been a steady increase in female authors: in 2006-2008 about 36 percent of authors were female, compared to 23 percent in 1998-1999. The share of article equivalents produced by female authors has also increased. In 2006-2008, it was about 25 percent, compared to 16 percent in 1998-1999. The 2006-2008 figures for the University of Limpopo is above the national average where approximately 22 percent of all article equivalents are currently being produced by women. Continued investments in ULWASA will ensure sustained increases in research outputs by UL women researchers.

A shining example of a woman academic whose excellence was recognised in 2010 is Dr Regina Maphanga of the Materials Modelling Centre in the School of Physical and Mineral Sciences. Her achievement had to do with electrolytic manganese dioxide, a substance of crucial importance to storage batteries and alternative sources of energy that will drive the world’s future. In 2010 she was honoured with a major award for her work in this field. She’s one of only a handful of black women in South Africa with a doctorate in Physics.

Maphanga was born in the late 1970s in Ngwanallela, a small village in the Gamatlala district some 70 kms west of the then Northern Transvaal town of Pietersburg (now Polokwane, capital of Limpopo province). As early as standard three, an observant teacher realised Maphanga’s potential. He arranged for her immediate promotion into standard five. The result was that she finished school earlier than most, only turning 17 during her first year at university. Although her rural high school had no laboratories and of course no computers, Maphanga excelled at mathematics and the sciences. Her first year BSc subjects included Physics, Chemistry, Botany, and mathematics. She dropped Botany for her second year, and ultimately majored in physics and maths. She finished her degree in 1998 – and she had done so well that she was invited to do her Honours degree through the Materials Modelling Centre, a state-of-the-art centre of excellence at Turfloop, directed by Professor Phuti Ngoepe, that specialises in the computer simulation of metals and alloys, not least of platinum and manganese, both of which are extensively mined in Limpopo. Astonishingly, though, Maphanga had never used a computer, either at high school or during her undergraduate degree. Now she was thrown in at the deep end – and once again she came up swimming stronger than most. She obtained distinctions for all the courses she tackled for her Honours. So she registered for a Masters. So proficient was she in the manganese computer modelling she had undertaken that Professor Ngoepe upgraded her research to PhD level. She graduated with a doctorate in physics in 2006, at age 26.

On the 4th of May this year, the rewards began to come her way. She found herself in the banqueting hall at Emperor’s Palace in Johannesburg. Dr Maphanga was feted: she was awarded the NRF-sponsored TW Kambule Award for ‘a distinguished young black female researcher over the past two to five years’. The award carried an amount of R100 000 that was ploughed straight back into the research effort of the Materials Modelling Centre.

Research Excellence Awards
The university hosted its Annual Research Excellence Awards on 8 November 2010. The guest speaker was the Deputy Minister of Science and Technology, Minister Derek Hanekom, and the following University of Limpopo academics received awards.

- Professor Supa Pengpid from the School of Public Health in the Faculty of Health Sciences was awarded overall best researcher in the category Established Researcher.
- Professor Solani Mathebula from the School of Health Care Sciences in the Faculty of Health Sciences was awarded overall best researcher in the category Established Researcher.
Sciences was awarded overall best researcher in the category Upcoming Researcher. The award for the researcher who generated most research income in 2009 went to Professor Leselaine Mampuru from the School of Molecular and Life Sciences in the Faculty of Science and Agriculture.

It is noteworthy that two of the three awards have been won by researchers from the Faculty of Health Sciences. According to the Bibliometric Profile of Research commissioned in 2010 as part of the External Audit conducted on the University of Limpopo by the Higher Education Quality Committee, Health Sciences has been increasing its share of research activity at the university, which now amounts to 44 percent of the university’s total output, a prominence that is obviously the result of the merger with Medunsa. This dominance of the Health Sciences will doubtless act as an added motivator for the faculties based at Turfloop.

In addition to the research excellence awards a number of postgraduate students were honoured for the best poster and oral presentations in the Faculty of Science and Agriculture’s Postgraduate Research Day.

The following staff and students received awards at the Faculty of Health Sciences’ Research Day:

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Department</th>
<th>Award</th>
<th>Staff or student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr J Molepo</td>
<td>Microbiology</td>
<td>1st Prize, Independent Researcher - Poster</td>
<td>Staff</td>
</tr>
<tr>
<td>Dr JH Olivier</td>
<td>Operative Dentistry</td>
<td>2nd Prize, Independent Researcher - Poster</td>
<td>Staff</td>
</tr>
<tr>
<td>Mr MM Nyanga</td>
<td>Virology</td>
<td>1st Prize, Postgrad Research - Poster</td>
<td>Student</td>
</tr>
<tr>
<td>Mr HG Ngoveni</td>
<td>Virology</td>
<td>2nd Prize, Postgrad Research - Poster</td>
<td>Student</td>
</tr>
<tr>
<td>Ms A Karim</td>
<td>Physiology</td>
<td>3rd Prize, Postgrad Research - Poster</td>
<td>Student</td>
</tr>
<tr>
<td>Ms Makuma</td>
<td>Speech Language Pathology &amp; Audiology</td>
<td>1st Prize, Undergrad Research - Poster</td>
<td>Student</td>
</tr>
<tr>
<td>Ms van der Merwe</td>
<td>Anatomy</td>
<td>1st Prize, Independent Researcher - Oral</td>
<td>Staff</td>
</tr>
<tr>
<td>Ms de Villiers</td>
<td>Microbiology</td>
<td>2nd Prize, Independent Researcher - Oral</td>
<td>Staff</td>
</tr>
<tr>
<td>Dr M le Roux</td>
<td>Microbiology</td>
<td>1st Prize, Postgrad Research - Oral</td>
<td>Staff</td>
</tr>
<tr>
<td>Dr S Singh</td>
<td>Orthodontics</td>
<td>2nd Prize, Postgrad Research - Oral</td>
<td>Staff</td>
</tr>
<tr>
<td>Mrs SJS Pitout</td>
<td>Occupational Therapy</td>
<td>3rd Prize, Postgrad Research - Oral</td>
<td>Staff</td>
</tr>
<tr>
<td>Ms N Kubjana</td>
<td>Medical Sciences</td>
<td>1st Prize, Undergrad Research - Oral</td>
<td>Student</td>
</tr>
</tbody>
</table>
The main Research Report

OVERVIEW OF RESEARCH AND PERFORMANCE IN KEY RESEARCH INDICATOR AREAS

Major Research Areas
The University boasts a number of research centres / units staffed by researchers of international stature. It is not possible to provide an exhaustive list but the following few examples serve to show-case our research centres / units, chairs and prominent research areas:

At the Medunsa Campus we have the:
- South African Vaccination and Immunisation Centre
- Diarrhoeal Pathogens Research Unit
- Pharmacovigilance Centre (It is one of only two centres in the world which focuses exclusively on policy research for HIV / AIDS treatment.)
- Medunsa Clinical Research Unit

At the Turfloop Campus we have the:
- Demographic Surveillance Site at Dikgale (this site is part of the International Network of field sites for continuous Demographic Evaluation of Populations and their Health (INDEPTH) (Limpopo Province))
- National Community Water and Sanitation Training Institute
- Language Research Development Centre
- Centre of Excellence for Indigenous Knowledge Systems
- Limpopo Agro-food processing Technology Station (LATS). It is one of 13 national DST sponsored centres.
- Centre for Rural Community Empowerment
- The Nguni Cattle Breeding Programme
- Indigenous chicken breeding and conservation research Programme
- The Aquaculture Research Unit
- Materials Modelling Centre (It houses the Chair for Computational Modelling of Materials)
- UNESCO Biotechnology Chair
- The GIS and Aerial Surveillance Unit
- Electron Microscope Unit
- Syferkuil Experimental Farm
- Telkom Centre for Speech Technology
- UL-SAB Microbrewer Brewery
- Natural Products Research Programme (both Campuses)
- The Programme for Institutional Co-operation (IUC), Vlaamse Interuniversitaire Raad (VLIR) and UL.

A multimillion rand, multidisciplinary research programme across the two campuses in collaboration with their counterparts in Belgium.
- The University of Limpopo is a node of the flagship Indigenous Knowledge System Centre.

Most of our research is consistent with the vision and mission of the university as far as addressing real problems and needs of development in South Africa are concerned. A second encouraging fact is that most major research is in the sciences, consistent with the shift of government policy towards science and technology. A concerted effort needs to be made to reshape the humanities and social sciences research agenda into more specific niche areas aligned with national interests.

Many national and international institutions of higher learning have adopted the wise approach – achieving international research excellence and leadership in few selected niche areas in which they have sufficient capacity. This approach is both cost saving and allows for the building of strong, sustainable, multidisciplinary team research. It is clear from the faculty reports and the observations made in the Institution’s Operating Plan that there are just too many small, fragmented research programmes. There is certainly a need for the University to restructure its various research projects and programmes into a few, strategically selected, niche areas in which we have critical mass.

In the following three pages we list the university’s research chairs and NRF-rated researchers – assets that bear directly upon our key research indicator areas.
The main Research Report
NRF-RATED RESEARCHER PROFILES

THE NATIONAL RESEARCH Foundation (NRF) maintains a rating system by which researchers can be defined and graded. To apply for and be granted an NRF rating carries considerable prestige – for the individual researcher and for the institution. Historically, the University of Limpopo like most historically disadvantaged institutions, was not expected to nor did it engage in a great deal of research. Hence the institution has very low numbers of staff with a doctoral qualification and few rated researchers. Currently the university has six rated researchers. Researchers on both campuses are now actively being encouraged through special workshops and meetings with officials from the NRF to apply. There are indications that the number of rated researchers will increase. In 2010, a further 11 applications were made.

The NRF has devised categories of ratings, the top three of which are briefly described hereunder:

- **Category A** is reserved for researchers who are unequivocally recognised by their peers as leading international scholars in their field.
- **Category B** signifies a researcher who enjoys considerable international recognition by their peers.
- **Category C** is for established researchers with a sustained recent record of productivity in their fields who are recognised as having produced a body of quality work and who have demonstrated the ability to conceptualise problems and apply research methods to investigate them. The category is divided into three sub-categories: C1 is the highest, C2 and C3 the lowest.

Here are the six NRF rated researchers working at the University of Limpopo.

**Professor Susan Dippenaar. NRF rating: C2**
Professor Dippenaar is a senior academic in the Department of Biodiversity in the Turfloop School of Molecular and Life Sciences. She graduated from the University of Pretoria with a BSc degree in Zoology and Botany. This was followed by a teaching diploma, as well as by Honours and Masters degrees in Zoology at the same university. Her PhD was awarded from the University of the North (now Limpopo), with the title of her thesis being ‘Copepod parasites of elasmobranches off South Africa’. Her main research interest lies in the general fields of taxonomy and systematics of organisms, especially symbiotic Siphonostomatoisa of Chondrichthyes, but also of other marine fishes.

**Professor Nhlanhla Maake. NRF rating: C3**
Professor Maake completed his undergraduate BA degree at the University of the North (now Limpopo). A long list of postgraduate qualifications followed, including: a BA Honours in comparative literature from Wits; another BA Honours in African languages from Unisa; an Mlitt degree in linguistics for teaching English from the University of Strathclyde in Scotland and another Mlitt in Victorian studies from the University of Keele in England. He also has a Certificate of Proficiency in English from Cambridge. Back in South Africa, he completed a Dlitt et Phil in the theory of literature from UNISA, and a Certificate in Higher Education Management from Wits. His areas of research interest include creative writing, the theory of literature, African languages literature, language policy, drama and theatre studies, diversity management and change management.
**Professor Phatu Mashela. NRF rating: C3**

Professor Mashela is currently the incumbent of the Land Bank Chair of Agriculture in the university’s Faculty of Science and Agriculture. He holds a BSc Agric degree in agronomy and horticulture, with an Honours degree in horticulture, from the University of Fort Hare. He then graduated with an MSc in entomology and nematology, and a PhD in nematology and horticulture from the University of Florida in Gainsville, USA. He also holds an MBA degree from the University of Limpopo. He is internationally recognised in Cucumis technologies, where he uses phytonematode resistance, fermented crude extracts from indigenous plants and EMROSA effective microbes in suppressing plant-parasitic nematodes and the general improvement of soil health.

**Professor Jones Ng’ambi. NRF rating: C3**

Professor Ng’ambi, currently head of the Department of Agricultural Economics and Animal Production on the Turfloop campus, completed his undergraduate degree at the University of Zambia. Thereafter he studied in the United Kingdom, completing his MSc at the University of Aberdeen and his doctorate, in which he specialised in animal nutrition and ruminant nutrition, from the University of London. Current research projects at the University of Limpopo include: the determination of nutrient requirements for optimal productivity in indigenous animals; the improvement of the use of tanniniferous tree species by ruminant animals; and the improvement of fibre digestion in both ruminant and non-ruminant animals. He is also involved in the Limpopo IDC Nguni Development Trust Project.

**Professor Phuti Ngoepe. NRF rating: C1**

Professor Ngoepe is head of the Materials Modelling Centre situated in the School of Physical and Mineral Sciences on the Turfloop campus. He is the incumbent of the South Chair for Computational Modelling of Materials, which is a level ‘Tier 1’ Chair, and a world authority on the use of High Performance Computer Modelling to forecast the properties and potential of energy storage alloys which are central to the development of electric vehicles, solar energy storage and electricity backups. His work on mineral surfaces modelling is providing valuable information for aerospace applications, electronic memory devices and efficient metallurgy processing. Professor Ngoepe was awarded the NRF President’s Award for the Transformation of the Science Cohort and bestowed the prestigious Order of Mapungubwe Silver (OMS) Award by the President of the Republic of South Africa, for excellent contributions in the Natural Sciences in 2008.

**Professor David Norris. NRF rating: C3**

Professor Norris is the director of the School of Agriculture and Environmental Sciences on the Turfloop campus. He began his academic career at the University of Botswana, where he completed a BSc degree in physics and biology. He then studied in the United Kingdom, completing his MSc degree in animal science at Reading University; and his doctorate in quantitative genetics and breeding at Michigan State University in America. His main research focus areas include: genetic evaluation of livestock; phenotypic and genetic characterisation of indigenous livestock; estimation of non-addictive genetic effects for traits of economic importance in livestock; and heterosis and combining abilities in crossbreeding.
The main Research Report

THE RESEARCH CHAIRS

The South Africa Chair for Computational Modelling of Materials
This Chair, in the Materials Modelling Centre, Department of Physics, Faculty of Science and Agriculture, is a tier 1 Chair with Professor Phuti Ngoepe as Chair-holder. The Chair has been involved in the development of large-scale simulation methodologies for high performance computing and participated in national and international networks and consortia which develop relevant software. The Chair works with industries, such as Anglo Platinum, Optimal Energy, and parastatals such as Eskom, the Science Councils, the Centre for High Performance Computing and Mintek, as well as several important international collaborations. The primary research focus of the Chair is on the use of High Performance Computer modeling to forecast the properties and potential of energy storage alloys which are central to the development of electric vehicles, solar energy storage and electricity utility backups; and on mineral surfaces modeling which has applications for aerospace, electronic memory devices and efficient metallurgy processing.

The Land Bank Chair of Agriculture
The Land Bank Chair is in the Faculty of Science and Agriculture within the School of Agriculture and Environmental Sciences (SAES), which comprises four departments: Agricultural Economics, Agricultural Extension, Animal Production, and Soil Sciences and Plant Production. Professor Phatu Mashela is the holder of the Chair.

The overall objectives of the Chair are to: (i) contribute to the development of resource-poor farmers in Limpopo Province, (ii) improve food production and security of small-scale communities in this sector through the development of low-input and environment-friendly strategies for the management of crop/animal pests, and (iii) provide a platform for the dissemination of these sustainable management strategies for resource-poor farmers through supporting postgraduate students involved in the research that support the vision of the Chair.

The UNESCO Chair for Biotechnology
The Chair is in the Faculty of Science and Agriculture in the Biotechnology Unit. Professor Ignacious Ncube is the incumbent. Biotechnology Unit is a centralised service provider that supports the molecular (both DNA and protein technologies) needs of biotechnology research at the University of Limpopo. The main biotechnology competencies at the university are: Screening and isolation of micro-organisms from various sources, fermentation technology (bench-top and mini-brewing), enzyme technology (feed enzymes, lignocellulolytic enzymes for biofuels and the pulp and paper industry, lipases), immunotechnology, lectinology (protein-carbohydrate interactions), Molecular techniques (RT-PCR, AFLPs, RFLPs), mammalian cell culture, proteomics, bio-prospecting for anticancer and antimicrobial compounds. The major research thrusts therefore concentrate on feed enzymes, biofuels, the application of proteins in bioprocess development, anticancer and antimicrobial compounds, and the improvement of legume crops.

The Nedbank Chair in Accountancy
This Chair is situated in the Faculty of Management and Law, in the School of Accountancy. Indeed, it was the establishment of the Chair that contributed to the upgrading of the erstwhile Department of Accounting and Auditing to the fully-fledged School of Accountancy. The Chair holder is Professor Cosmas Ambe, who is also the director of the new School. The research thrust linked to the Chair is sustainability accounting and management in Africa. However, a more immediate goal of the Chair was to assist in the necessary increase of Black accountants and auditors in South Africa. Of the 29 000 chartered accountants in the country, only around five percent are black, a reality that not only explains the serious racial imbalances in financial management but also the high vacancy levels in government finance and auditing departments.
The university as part of a consortium consisting of the University of Fort Hare and the University of Venda received funding from the International Centre for development-oriented Research in Agriculture (ICRA) through NUFFIC. The aim of the funding is to strengthen the capacity of the three universities to deliver skilled graduates by integrated experiential learning and collective innovation into university curricula, student training and associated action research initiatives with rural communities, with particular attention to skills and gender constraints.

The UL-CSIR MoU which was signed in 2009 continues to be beneficial to both partners. The CSIR has supported collaborative projects with the University of Limpopo with a total investment of R875 000 of which R275 000 was provided between July 2009 and December 2010.

The Department of Public Health in the School of Health Care Sciences has established research collaboration with the University of Eastern Finland, in Kuopio, Finland. Through the Department of Epidemiology, there is an existing partnership on the HIV/AIDS programme. Last year, small grants were disbursed to institutions for curriculum integration and institutional HIV policy development as well as the distribution of videos and other materials needed for advocacy, information, education and communication.

**Strengthening research and innovation in the Province**

- Professor Rachmond Howard, Director of Research was appointed on the Premier’s Advisory Council and is the Chairperson for the Technical Working Group on ICT and the Knowledge Economy Sector.
- Professor Howard, as the chairperson of the Limpopo Research Forum, was instrumental in assisting the Provincial government to draft a range of research policies and procedures.
- Professor Howard was instrumental in assisting the Provincial government to draft and canvas support for the Limpopo Research Observatory. The MoU and MoA for this initiative will be finalised in 2011. Professor Phuti Ngoepe and Professor Rachmond Howard have been nominated on the Limpopo Integrated Innovation Systems (LIIS) Working Committee to assist the Provincial government in the development and roll-out of an integrated innovation strategy for the Province.
The main Research Report

HUMAN RESOURCES FOR RESEARCH

THE INFORMATION BELOW focuses only on staff categorised as academic. University of Limpopo had 872 staff under this category, 478 males and 394 females, in 2010. The distribution of staff per campus is shown on the right:

The distribution of staff per gender is shown on the right:

Race categories are used for reporting purposes only to measure compliance with equity and shown on the right are the distributions of UL staff per race categories.

The national average for staff with a doctoral degree at institutions of higher learning is about 30 percent and the University of Limpopo stands at 21 percent.
On the right is a distribution of staff per appointment type. Seventy-five percent (654) of the staff is permanent full-time (FT) employed and of these 25 percent (ACD J/P Full-Time) are joint appointees.

The bulk of the staff 57.2 percent (499) is in the Faculty of Health Sciences, followed by 20 percent (174) in the Faculty of Science and Agriculture. The humanities and social sciences account for 199 (22.9 percent) of the staff.

Division of Research Development and Administration staff turn-over was as follows:

- Mr Ramakgolo Lekalakala was appointed in May as the Research Co-ordinator: Research Information Management (RIMS)
- Dr Jesika Singh was appointed in August as the Research Developer
- Dr Prem Govender was appointed in October as the Deputy Director Research (Medunsa Campus)
- Mr Victor Netshidzivani was appointed in November as the Statistician for research.

Improvement in Research Facilities

- The Medunsa Clinical Research Unit (MeCRU) was officially opened on the 21st May 2010 by the Minister of Health. The Unit is registered to conduct phase three clinical trials for vaccine development.
- The University of Limpopo, through the efforts of Dr C Baker and Prof J Mphahlele, received a R5.56-million boost for state-of-the-art electron microscope equipment from the NRF RISP programme.
- DST has identified the University of Limpopo as one of three rural based universities to host a Regional Risk and Vulnerability Assessment Centre.
- The establishment of a Technology Transfer Office was approved by Senate on the 12 November 2010.
- The University of Limpopo is in the process of finalising agreements on the establishment of the Limpopo Research Observatory with the Limpopo Provincial Government and the University of Venda.
The main Research Report  
FINANCES FOR RESEARCH

It is clear from the detailed reports of the faculties that there is a need for better budgeting processes at faculty and school levels, which reflect research income and expenditure separate from other budget items. Faculties are challenged in providing complete research financial data, especially for assessing expenditure on research staff human resource qualification improvement and development, research assistants (post-doctoral researchers and others), research postgraduate student research development and support and specific expenditure on research facilities, equipment and other research activities. Overall financial systems for research finances still pose challenges thus making it difficult for research planning and monitoring investment impact. The table below shows the total research funding and sources of the funding. There is certainly a significant increase in research funding from 2009. The significant increases came primarily from three sources: the Research Development Grant (RDG) from DHET, NRF (297 percent increase) and MRC (1714 percent increase).

Total sources of research funding in Rands (both campuses)

<table>
<thead>
<tr>
<th>Year</th>
<th>University Research Funds1</th>
<th>National Research Councils and Funding Agencies2</th>
<th>Foreign Donors2</th>
<th>Industry2</th>
<th>Others2</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>814,156</td>
<td>6,812,800</td>
<td>25,000</td>
<td>324,333</td>
<td>635,826</td>
<td>125,544</td>
</tr>
<tr>
<td></td>
<td>2009</td>
<td>2010</td>
<td>20,223,805</td>
<td>5,082,962</td>
<td>341,167</td>
<td>19,434,607</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>34,836,333</td>
<td>22,554,400</td>
<td>2,596,932</td>
<td>135,000</td>
<td>85,405,206</td>
</tr>
</tbody>
</table>

This refers to the amount of the institution’s budget committed to research each year (Research Office operational budget plus RDG plus additional funding from the central Budget). This refers to the actual amount received for research from these agencies and donors for each year.

There are still challenges in recording buildings (e.g. laboratories), vehicles, other facilities and equipment separately as research facilities and equipment.

**Systems improvement for research administration and monitoring**

UL was among the first historical disadvantaged institutions to implement the national Research Information Management System (RIMS) in 2009/2010. The DRDA continued to roll-out the national Research Information Management System (RIMS). Three modules are currently running and academic staff training continued on these modules. One of these modules, SPIN, offers over 33 000 on-line research funding opportunities for which staff can apply. The DRDA is working on a research equipment inventory database. 4000 Turnitin plagiarism licences for staff and postgraduate students were acquired. It will assist greatly in dealing with plagiarism at UL. ICT is assisting with the roll-out of the programme to staff and postgraduate students.

The following new policies, procedures and guidelines have been developed by the DRDA and approved at the highest levels:

- ‘Proposal / Protocol Review and Submission Process for Research Master’s (full) and Doctoral Degrees’ guidelines were approved by Senate on the 12 March 2010.
- ‘Research Day and Research Excellence Awards’ guidelines were approved by Senate on the 12 March 2010.
- ‘Code of Conduct for Research’ Policy was approved by Council on the 26 March 2010.
- A comprehensive policy on ‘Research Development, Support and Incentives and Awards’ was approved by Council in November 2010.
The main Research Report

RESEARCH OUTPUTS

Publication and conferences

Despite the many challenges, researchers continued to be active in attending and hosting conferences and producing publications (publications as captured from the Deans’ reports) as shown in the table below.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Total SOP</th>
<th>Total non-SOP</th>
<th>Total conferences attended / hosted</th>
<th>Total Conferences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hosted</td>
<td>Attended</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Sciences</td>
<td>143*</td>
<td>-</td>
<td>349</td>
<td>261</td>
</tr>
<tr>
<td>Humanities</td>
<td>4</td>
<td>12</td>
<td>1</td>
<td>33</td>
</tr>
<tr>
<td>Management &amp; Law</td>
<td>10</td>
<td>6</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Science &amp; Agriculture</td>
<td>42</td>
<td>30</td>
<td>102</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>199</td>
<td>48</td>
<td>3</td>
<td>505</td>
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<td></td>
<td>375</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>107</td>
</tr>
</tbody>
</table>


A total of 199 subsidised publications and 48 non-subsidised publications are recorded in the Deans’ reports. But the subsidised publication is still to be audited and confirmed by DHET. A total of 482 oral and poster presentations were made at conferences. There is a high number of conference attendance without researchers making any presentations, while such attendance may be beneficial as a development platform for emerging researchers and postgraduate students, however, conferences for established researchers should be approved on the basis that established researchers present conference papers and posters which have high potential to be converted into subsidised publications. This is to offset the large financial burden which the University carries for conferences.

The DHET subsidised research outputs is recorded one year in arrears, meaning that the 2010 official figures will only be released at the end of 2011. A total of 73.77 units exclusively from journal articles were awarded in 2009. The Faculty of Health Sciences produced 50.3 percent of the total units, followed by the Faculty of Sciences and Agriculture (25.7 percent).
Research development, support and capacity building for staff

Post-doctorals and other research assistants. A total of 35 post-doctoral researchers were supported by the university, 31 of these were in the Faculty of Health Sciences. A total of 76 postgraduate students were appointed as research assistants, with 57 in the Faculty of Health Sciences and 24 in the faculty of Science and Agriculture. The university afforded 33 (30 in the Faculty of Management and Law) undergraduate students research development opportunities.

Emerging researcher qualification improvement and development. A total of eleven emerging staff researchers improved their qualifications and emerging staff researchers attended a total of 54 conferences and research related workshops.

Postgraduate student status and throughput

The University continues to attract a large number of postgraduate students. 1306 (56.5 percent) of these students were registered for honours, postgraduate diplomas and certificates, 927 (40.1 percent) for masters and 77 (3.4 percent) for doctoral studies. 58.7 percent of postgraduates registered were in the humanities and social sciences.