



Central University of  
Technology, Free State

# GRATIA

Central University of Technology, Free State (CUT) • June 2014



**SYMBOL OF SUCCESS**



Open Day 2014 | page 51

## About this Issue

Editorial Team  
 Mpho Makanyane  
 Dan Maritz  
 Laurika van Straaten

Publisher  
 Communications and Marketing  
 Central University of Technology, Free State (CUT)

Private Bag X20539  
 Bloemfontein, 9300  
 Tel: +27(0)51 507 3053  
 Tel: +27(0)51 507 3820  
 Email: mmakanyane@cut.ac.za

Design  
 Z2A Village  
 Tel: 086 1 921 921  
 Web: www.z2a.co.za

Opinions expressed in this publication are not necessarily those of the writer of Central University of Technology, Free State (CUT)

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**"2014 is a momentous year in many respects: it is the year in which South Africa is celebrating 20 years of democracy.**



2014 is a momentous year in many respects: it is the year in which South Africa is celebrating 20 years of democracy. Our country has undergone a massive transformation from the previous regime of apartheid to the democratic and prosperous society we see today. As the country has transitioned from an oppressive order to a democratic one, so has our institution also undergone various changes, the most momentous of which has been its transition from a Technikon to a University of Technology. Thus in 2014 we are also celebrating 10 years as a University of Technology.

As an institution ready to make its mark as a University of Technology fit for its purpose, we continue to make considerable progress as we pursue the implementation of our Vision 2020. The year 2014 also marks the second phase (2014-17) of the university taking strides in the development of its academic core. Therefore, it is opportune that we reflect on our achievements thus far.

The first of these achievements was the broad-based curriculum transformation process, which we call STEPS (Strategic Transformation of Educational Programmes and Structures), in which we reviewed our curricula to make them more demand-driven and user-oriented. The year 2014 has witnessed the first fruits of our intensive labour in the four new programmes that have been introduced in our curriculum. With the STEPS project and many other curriculum development initiatives, the relevance, excellence and quality of our academic programmes have improved appreciably.

The university has also initiated a number of projects: the CUT Innovation Services (CUTis) is dedicated mainly to commercialisation of our intellectual property and the diversification of our income stream through the introduction of short courses and developing partnerships with industry, government and local communities. The Sustainability Project leads our efforts towards education for sustainable development and environmentally friendly use of

our perishable resources; the Higher Education Leadership Skills Academy (HELSKA) promotes the development and advancement of staff through postgraduate education and specialised training; the Schools Advancement Academy (SAA) coordinates all our school focused development projects; and the Free State IT Hub seeks to turn the Free State into an IT hub in software development. Furthermore, our people have been very instrumental in coming up with 'crazy ideas' to contribute towards the advancement of Vision 2020. As people enter the university premises at the Bloemfontein campus, they are now greeted by a towering figure by the name of Leonard Thuto, the bright red sculpture that is an innovation by the aesthetics cluster of our A-Team.

Our efforts have intensified and are making a difference not only in the Central Region, but also beyond the borders of South Africa. In this regard, the establishment of the CUT International Office is a signal of the university's commitment in developing strong international strategic partnerships that will help us achieve the goals of Vision 2020.

Other plans that will see fruition in the second half of 2014 include the implementation of the Campus Master Plan whereby the university will be developing new infrastructure for the academic project and for student accommodation. This will go a long way in relieving the pressure the university has experienced in both its campuses to find accommodation for its students. In this regard, we are grateful to the Department of Higher Education and Training (DHET)

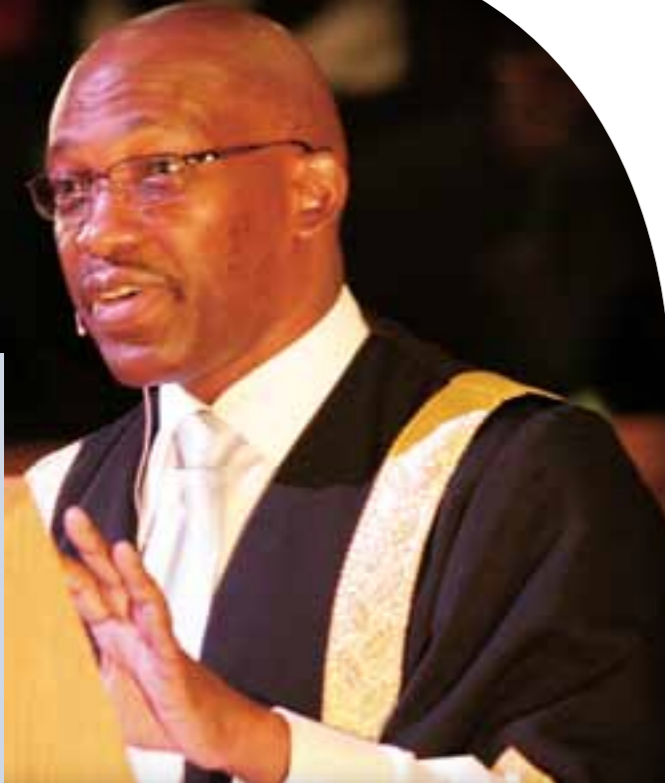
## Message from the Vice-Chancellor and Principal

for making funds available for this plan.

As we progress towards 2020, we continually reflect on our performance in terms of the key priorities of the University and targets that we have set to ensure implementation of our goals. As was highlighted in the State-of-the-University Address earlier in the year, we are moving apace beyond taking STEPS to bold STRIDES in the realisation of our vision. To deliver on our commitment to provide first rate quality education, we will continue to intensify our efforts to attract and retain the best talent, and showcase cutting edge creativity and innovation.

**Prof. TZ Mthembu**  
Vice-Chancellor and Principal

**The year 2014 also marks the second phase (2014-17) of the university taking strides in the development of its academic core.**



# VICE CHANCELLOR OFFICIALLY OPENS THE UNIVERSITY

## IN THE NEW ACADEMIC YEAR

The Vice Chancellor (VC) and Principal of the University of Technology, Free State (CUT), Professor Thandwa Mthembu officially opened and welcomed the new and existing students to the 2014 academic year. The opening ceremonies took place at both campuses of the University, namely, in Welkom and in Bloemfontein campuses where he also delivered his State-of-the-University Address, a presentation that captures the achievements of the University as well as the key challenges that it faces.

The VC highlighted that the culture of teaching and learning has evolved from 'usual teaching' to 'less usual teaching,' which means, being more open to new ideas or contemporary challenges arising from the social context in which one teaches and the possibility that student learning might be improved in the process.

"We now know that what students believe influences how they learn, what they choose to learn and why. The scholarship of teaching and learning has helped us to ensure that our teachers remain better prepared to meet the imperative (not a choice) of the challenges of educating students for personal, professional and civic life in the twenty-first century."

### Vision 2020 and the strategic thrusts

2014 marks a significance era for the University as it CUTs through the 10 years of its existence as the University of Technology. Established in 2004 through the amalgamation of the former Technikon Free State and Welkom Campus of Vista University, CUT was born. The change in designation to a University of Technology (UoT) meant re-positioning itself to fit its purpose. The re-positioning called for CUT to review its policies, plans, constitutions and manuals. These include the Institutional Operational Plan, SRC constitution, Language Policy, and a new medium-term vision statement called Vision 2020.

Vision 2020 has been in its fourth year of implementation in 2013 and also marks the end of its first phase. The strategy is meant to ensure that CUT is fit to be a University of Technology (UoT) as has been depicted.

Phase 1 of the Vision laid the solid foundation that is articulated by the four pillars of the vision; namely, plan, people, product and pennies. It has seen the birth of an A-Team consisting of a group of more than 50 staff members and students, who constantly contribute their "crazy ideas" towards its advancement.

A number of important milestones have been achieved; amongst others, the Strategic Transformation of Educational Programmes and Systems (STEPS) process. STEPS commenced in 2010 and have been the key in transforming CUT curriculum to ensure that it meets the requirements of the 21st century. Through STEPS, curriculum content and teaching and learning modalities were reviewed and remarkable achievements have been made regarding the academic programmes.

In 2013, the Department of Higher Education and Training (DHET) approved nine new academic programmes. Of the nine new programmes, four programmes were accredited by the Council for Higher Education and registered by the South African Qualifications Authority, and will be offered in 2014:

- Higher Certificate in Renewable Energy Technologies;
- Advanced Diploma in Agriculture Extension;
- Diploma in Studio Art;
- Bachelor in Radiography.



Left: CUT students and parents at Official Opening, 8 February 2014

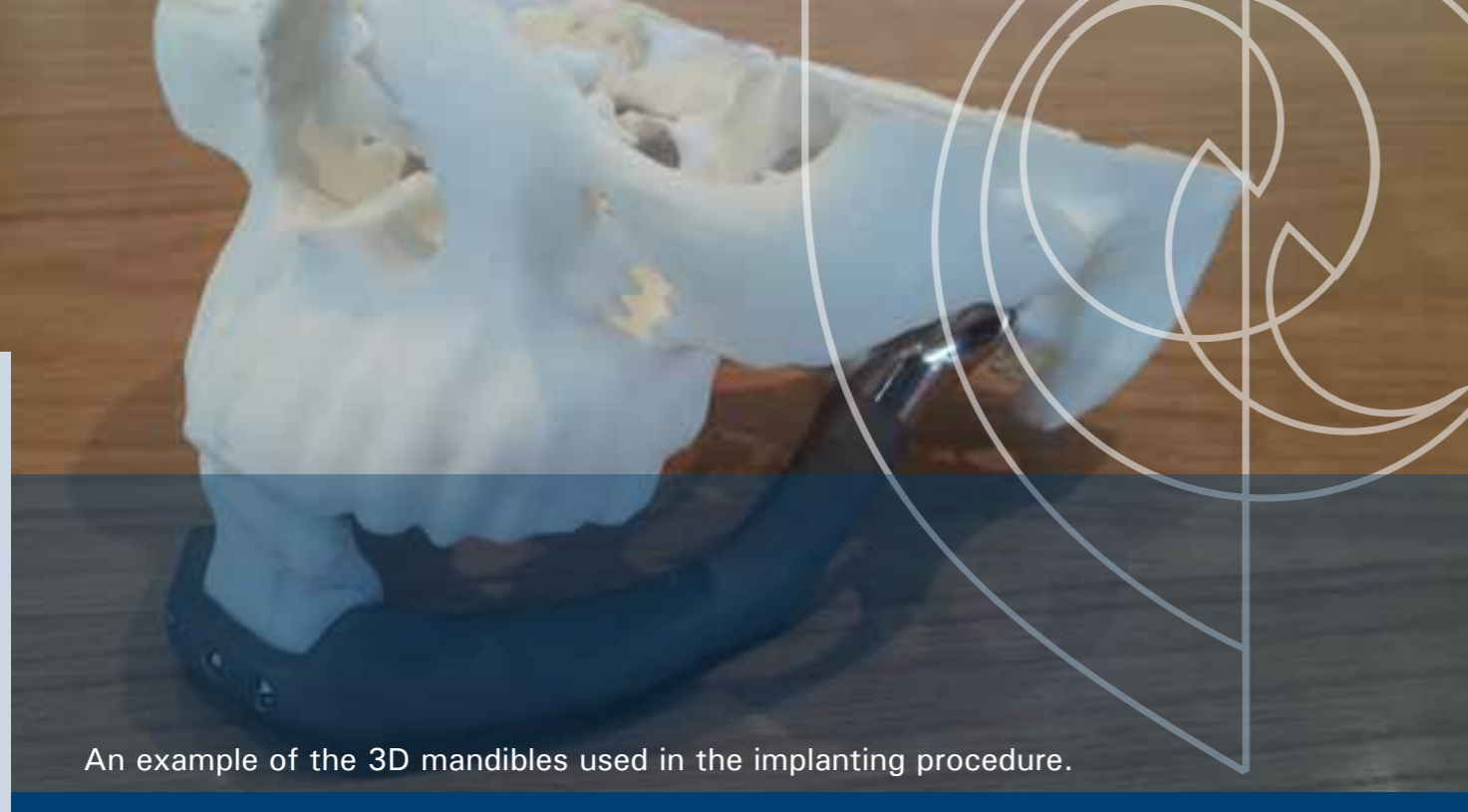
Right: Professor Thandwa Mthembu addressing parents and students on the day



## Highlights for 2013

- The accreditation of academic programmes-The South African Council of the Project and Construction Management Profession accredited the NDip Building and the BTech CM in August as well as the NDip Building and the BTech Quantity Surveying programmes by the South African Council of the Quantity Surveying Profession on 30 and 31 July 2013.
- Successful hosting of the 17th Annual International Education Association of South Africa Conference where Internationalisation Strategy and international partnership colloquium were launched.
- The launch of the Regional Innovation Forum Free State (RIFFS) in May, a tripartite alliance made of the Department of Science and Technology, the University of the Free State and Central University of Technology, Free State. The forum aims to bring together stakeholders from various segments in the innovation value-chain.
- Unveiling of the Solar Flower – a solar charging device that was designed by students from the Faculty of Engineering and Information Technology. The news of the Solar Flower made waves throughout the country.
- The Product Development Technology Station (PDTs), funded by the Technology Innovation Agency (TIA), assisted hundreds of SMMEs in becoming globally competitive, by providing them with the technological support they need to design and manufacture innovative new products, for example, a water trough, that is designed to store water, a braille graph, which has been designed for the blind and an ear scan
- The HELSKA project, as a strategic initiative, was given a mandate to develop a dynamic, innovative and committed generation of emerging academic and management leaders within the university as well as in industry, the business sector and communities, with a special focus on the Central Region. A total of 4 PhD, 12 Masters, 2 Diplomas and 2 Certificates students have been enrolled in the programme and four of them have been absorbed into the employ of CUT.

- In a bid to achieve the Vision 2020 goal of socio-economic development, CUT has designed a Leaders-in-Education-and- Development programme (LEAD) for student leaders which operates under the auspices of its Higher Education and Leadership Skills Academy (HELSKA).
- The launch of Schools Advancement Academy (CUT-SAA) - assists learners in the region to improve basic skills in Science, Engineering and Technology, and enhances educator skills to provide quality education to learners.
- The Educator Mentorship and Development Programme (EMDP) for primary schools, funded by the Telkom Foundation to the tune of R4 445 800 for 2014 and 2015, as well as to expand EMDP to three other schools. Results from the participating schools confirm the success of the Programme. The pass rate improved from 30%.to 50% average in 2012 and to 75% average in 2013.
- The Saturday school, winter and spring schools project hosted by the Faculty of Engineering and Information Technology produced good results contributing towards improving the performance of high school learners through SAA.
- In sporting activities, the teams performed well. CUT Rugby Team (Ixias) won the Shield section at the USSA Tournament held in April, the Soccer Team won Castle League and were promoted to Vodacom League status and the Golf Team won USSA Golf Tournament at Koro Creek. On the extra-curricular activities, CUT Choir obtained first position in Lengau Choral Association Competition held in Bethlehem in August, CUT Dance Society obtained first, second, third and fifth positions in Level one Ballroom Dance, 1st position in Level Two and Three Ballroom Dance and 1st and 2nd position in the all ladies section for the Open Queen's Birthday Dance Sports Competition in June.



An example of the 3D mandibles used in the implanting procedure.

## Medical Innovation in 3D Printing changed lives

CUT is proudly taking a lead in innovations that will change the face of medical science in South Africa.

Additive Manufacturing (3D printing technology) has the potential to change lives, and the Central University of Technology, Free State (CUT) is driving that change for the betterment of ordinary people.

On 23 July, Dr Cules van den Heever, an Extraordinary Professor at CUT from the University of Pretoria, and CUT's Centre for Rapid Prototyping and Manufacturing (CRPM) collaborated once again to change the lives of two patients whose mandible implants were moulded with the use of 3D printing at CUT's Bloemfontein campus.

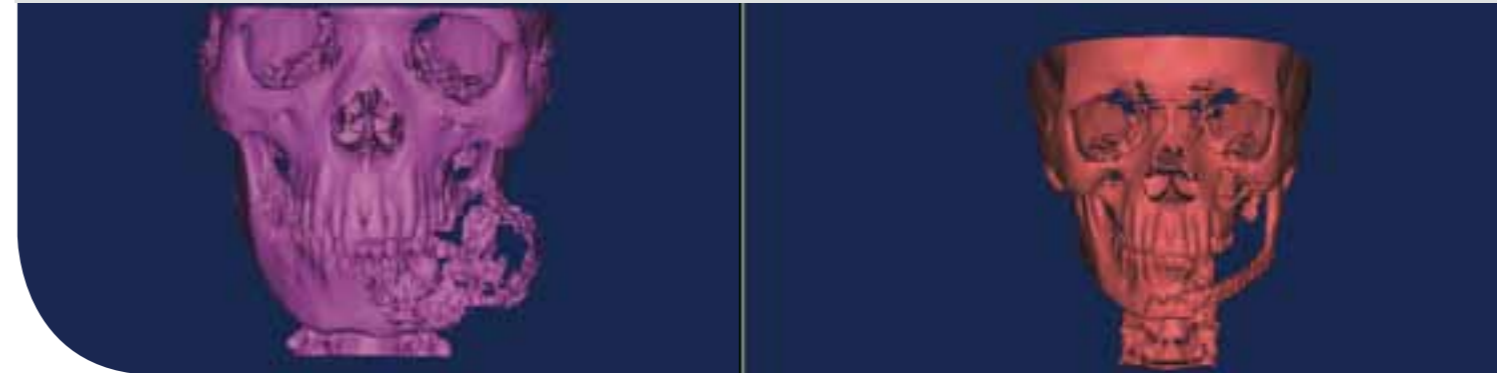
During the procedure, Dr Walleed Ikram, Head of Kimberley Hospital Dental Unit, Dr Kobus Hoek, a maxillofacial surgeon, and doctors Philip Johnsson and Riaan Liebenberg, both dentists at the Hospital, played a role in assisting Dr Cules.

The operations made CUT a household name when millions of South Africans were glued to their televisions during a prime-time slot to witness the success story. The team showed the world how this technology can restore the dignity of ordinary people who received titanium implants after losing significant portions of their jaw line due to cancer and other related diseases, which left them with severe facial disfigurement.

"Dr van den Heever is a very well-respected and well-known expert. He has worked in this industry for many years and we are incredibly pleased to have him. I would like to applaud colleagues from the Centre for Rapid Prototyping and Manufacturing (CRPM), the Product Development Technology Station (PDTs), and the Faculty of Engineering and IT, including Dr van den Heever, an Extraordinary Professor at CUT, for their hard work and the meaningful contribution they had made towards the successful completion of the two surgical operations. This is the first of its kind in the country, and they make us stand proud at the forefront of innovation in this field!"

Additive Manufacturing (3D printing technology) has the potential to change lives, and the Central University of Technology, Free State is driving that change for the betterment of ordinary people.

3D modelling of the patient and the implant, as well as the actual printed model and implant. The implant is fitted to the exact replica model of the patient before the operation allowing the doctors to see precisely what to expect when they operate. This pre-fit cuts down on the time the patient spends in the operating theatre (a costly endeavour), which in turn reduces the recovery time of the patient after the operation.



This is groundbreaking work in 3D printing in the medical field," said Prof. Henk de Jager, Acting Vice-Chancellor and Principal of CUT.

CRPM was established in 1997 as a centre for commercial work and research. CUT has been a national leader and a specialist in Additive Manufacturing (AM) and has made a huge and significant contribution to AM in South Africa. 3D printing was also used for preoperational planning. CRPM and Product Development Technology Station (PDTs) partnership provides a one-stop solution for product and industrial designers to manufacture prototypes for form and function tests as well as final prototypes prior to tooling. "In driving development, our goal is to create a safe environment for medical practitioners to share their ideas, and form a consortium between them and CUT's product development centre. This could have enormous potential benefit for both the medical profession and the AM environment", said Mr Gerrie Booyesen, Director of CRPM.

The centre has an impressive array of state-of-the-art machinery and equipment, including the Objet Connex 350 3D printing machine that allows users to print using more than one material simultaneously. With the large investment and support from the National Research Foundation (NRF), the centre is able to provide both staff and students with exceptional tools to maintain their lead at the forefront of research into 3D printing technology.

The centre also used this technology successfully in developing the first South African aircraft engine for Adept Air motive, and is set to make a substantial difference in the competitiveness of these casting industries.

CUT would like to acknowledge Southern Implants, University of Stellenbosch (CAF) and the CSIR for their generous contribution towards making the operations a success. The institution is also grateful towards Department of Health in the Northern Cape for their assistance and facilities.

# CUT Launches Quality Enhancement Project

The long awaited Central University of Technology, Free State – Quality Enhancement Project (CUT-QEP) was launched on 4 March 2014. The launch took place five days after the Council on Higher Education's (CHE) launch.

The project has been implemented in all universities of South Africa with the aim of improving student success at Higher Education Institutions (HEIs) and in the higher education sector as a whole.

## The goals of the QEP are:

- to improve the quality of undergraduate educational provision.
- to improve the number of quality graduates, and
- to develop a higher education system that is continuously improving and able to collaborate, share good practices and solve shared problems.



Staff members from the Academic Planning Unit, CUT-QEP Committee members and Task Team. The team includes academics, non-academic, support staff as well as Student representatives

## The four focus areas of the QEP are:

- Focus area 1: Enhancing academics as teachers (including professional development, reward and recognition, workload, conditions of service, and performance appraisal).
- Focus area 2: Enhancing student support and development (including career and curriculum advising, life and academic skills development, counselling, student performance monitoring, and referral).
- Focus area 3: Enhancing the learning environment (including teaching and learning spaces, ICT infrastructure and access, technology-enabled tools and resources, and library facilities); and
- Focus area 4: Enhancing course and programme enrolment management (including admissions, selection, placement, re-admission refusal, pass rates in gateway courses, throughput rates, and management information systems).

**“QEP is a very important project for CUT. All staff members and students have to play a role to ensure its success. For this reason, task teams comprising of academic staff, support services and students have been constituted to facilitate this project. At CUT, we believe that QUALITY is long lasting impression and we are committed to take every possible step towards achieving that objective,” Prof. Henk said.**



**“Creating a responsive quality enhancement culture leading to student success”- QEP task team at the follow-up workshop to track progress following its official launch in March 2014.**

**“is a cut above the rest”**

## SATN committee convenes at CUT



Left: Research, Innovation and Technology Transfer Committee members:  
 Standing: L-R: Mrs Christelle Venter- SATN Secretariat, Prof. LOK Lategan- Dean: Research & Innovation (CUT), Prof. Sibusiso Moyo- Director: Research and Postgraduate Support (DUT), Mr Hamilton Mphidi- Manager: Innovation Support and Technology Transfer and Mr AC Vuyisa Notshweleka-Director; Technology Station (MUT).  
 Seated: L-R Dr Tembeka Mpako-Ntusi; Director: Research (CPUT) and Dr Anette Mienie; Director: Research (MUT).  
 Right: Some of the published research modules that Prof. LOK Lategan has contributed to.

The South African Technology Network's (SATN) Research, Innovation, and Technology Transfer Committee held a face-to-face discussion at CUT to share information and ideas regarding issues such as promotion of universities of Technology (UoTs), research agendas conducted at all UoTs and dissemination of the best practices and performance strategies which form part of the support within the network. The committee advocates for the research, innovation and technology transfer activities amongst the UoTs and act as the advisory body to the SATN board.

South Africa embraced a unitary higher education system that has been widely accepted and forms the basis of strength within its diversity system. Established in 2006 by five UoTs, i.e. Cape Peninsula University of Technology, Central University of Technology, Durban University of Technology, Tshwane University of Technology, and Vaal University of Technology, SATN provides a forum of discussion on higher education issues concerning UoTs of which Polytechnic of Namibia is also a member.

Its establishment includes amongst others, to promote the development of national education and training policies in accordance with the nature and character of the universities of technology, represent the universities of technology at international level, promote mobility and employability of universities of technology students as well as promoting academic quality and relevant researches.

### Some of the issues tabled during the discussion were:

- Types of research conducted by UoTs;
- Joint project applications (generic research proposal);
- Bio economy strategies;
- Celebration of 10 years as UoTs; and
- Summer school programme on postgraduate supervision

Mangosuthu University of Technology (MUT) will be hosting the seventh annual international SATN conference to be held from 14-16 October 2014

## CUT hosts SETA Work Integrated Learning colloquium

It is every student's dream in Higher Education Institution (HEI) to graduate and be equipped with enough skills for the job market. However, most of the HEIs' instructional programmes and the industry require prior practical knowledge and skills from students upon completion of their studies.

It is from this basis that the Centre for Work Integrated Learning and Skills Development at the CUT a two-day Work Integrated Learning (WIL) colloquium in collaboration with the national Sector Education and Training Authorities (SETAs) from June 12-13, 2014. The colloquium aimed at providing a platform for the exchange of information related to the processes and systems entailed in fostering WIL relationships between CUT and the SETAs.

SETAs were established in 2000 by the then Minister of Labour; Membathi Mdladlana to provide services such as skills development, education and training, as well as apprenticeships to millions of South Africans who need sufficient basic skills to get employment in any sector of the economy. They (SETAs) also provide internships, learnerships, and unit based skills programmes to scores of South African graduates.

"In this manner, we intend to create a platform from which we would like to attract more work integrated opportunities through enhancement of the quality of our education and provision of better training and education opportunities to our students," said Prof Henk de Jager, DVC: Academic and Research. He emphasised on the importance of Universities of Technologies to develop strong partnerships with the Employers in order to promote the expansion of work-place training opportunities, especially in the areas where qualifications or professional registration depends on practical work-place experience. The

forged partnership will benefit CUT from the inclusion of SETAs, thus assisting in brokering University-Employer collaboration, as well as providing advice and resources that will facilitate WIL.

Work Integrated Learning is the central priority education programme at CUT hence a senate decision was made in 2012 that all Academic Instructional Programmes at CUT should have a WIL component of at least 30 credits. SETAs in attendance included:

- Manufacturing, Engineering and Related Services Sector Education and Training Authority (MerSETA);
- Education, Training and Development Practices Sector Education and Training Authority (ETDP SETA);
- Chemical Industries Education and Training Authority (Chieta SETA);
- Mining and Minerals Sector Education and Training Authority (MqaSETA);
- Local Government Sector Education and Training Authority (LGSETA);
- Banking Sector Education and Training Authority (BankSETA);
- Transport Education and Training Authority (TetaSETA);
- Services Sector Education and Training Authority (ServiceSETA), and
- Wholesale and Retail Sector Education and Training Authority (W&RSETA).

All the SETAs are responsible for both the private and public sectors within which they operate in their due capacity.



CUT's Centre for Work Integrated Learning colloquium organizers together with delegates from various national SETAs.

## Professor from Aalborg University visit CUT

The Deans of Faculties, Directors, and other Executive staff members at Central University of Technology, Free State (CUT) attended a workshop on Problem Based Learning (PBL) methodology presented by Professor Mona Dahms from 17-20 June 2014. Prof Dahms is a visiting Professor from Aalborg University in Denmark who has vast experience, skills, and knowledge harnessed through her engagement with



Prof. Alfred Ngowi, Dean: Faculty of Engineering and Information Technology, Prof. Mabokang Monnapula-Mapesela, Dean: Academic Development and Support, Prof. Albert Strydom, Dean: Faculty of Management Sciences, Prof. Mona Dahms, visiting Professor from Aalborg University in Denmark and Prof. David Ngidi, Dean: Faculty of Humanities.

the youth, especially in adult education within the field of Technical Education and Training at Aalborg University.

The workshop was held in view of the steps and strides undertaken by CUT to become an entrepreneurial university. According Prof Dahms, a number of important transformation factors are to be considered in stirring from institutional and educational change to Entrepreneurial Education (EE) and/or PBL. "It is very crucial to have a change strategy; taking into consideration the different drivers of change such as the industry demands for new skills, low employability of graduates, curriculum development, lack of motivation in students, as well as high drop-out rates."

These factors can be channelled through understanding the sense of urgency behind CUT's decision to become an entrepreneurial university. One way of attending to this is by producing broad-based modules that are able to create self-employment in line with the adopted process of

Strategic Transformation of Education Programmes and Structures (STEPS). She states it is very important for other staff members to see that management supports change, but "such change requires motivation, decision making, widespread planning, implementation, as well as evaluation and continuous improvement."

Prof Dahms' presentation was structured around her recent research area, which focuses on intercultural aspects of teaching and learning in Problem-Based Learning environments, under the auspices of the United Nations Education, Scientific, and Cultural Organisation (UNESCO). Her first visit to South Africa was in 1975 and this was her fourth visit to CUT.



The Ambassador from Cuba-His Excellency, Carlos Fernandez de Cossio

The Ambassador of Cuba, His Excellency, Carlos Fernandez de Cossio, receiving a token of appreciation from Prof. Thandwa Mthembu, Vice-Chancellor and Principal of CUT.

## 20 YEARS OF CUBAN/SA DIPLOMATIC RELATIONS

Central University of Technology, Free State (CUT) and Free State Provincial Government co-hosted a public lecture on the diplomatic relations between Cuba and South Africa dating back to 1994.

His Excellency, Cuban Ambassador, Carlos Fernandez de Cossio presented the lecture; covering areas of the strong political ties between the two nations, US hostility towards Cuba and the international call of solidarity. He said that Cuba and South Africa enjoy strong political relations, as they share the goodwill of their respective peoples.

"In Cuba we are immensely thankful for the South African Government, all South Africans and their organisations for the solidarity that has been expressed. It is our hope for that solidarity to continue and to be strengthened. Every step that we can advance to take advantage of these bonds will translate into benefits for the people of Africa and for the international cooperation as a whole. In celebrating 20 years of our diplomatic relations, we believe our two nations is a living symbol of friendship between people and nations," he concluded.

In his address to the audience Premier Ace Magashule said that about 181 students are studying medicine in Cuba.

He attributed the fruits of this active partnership to the contribution made by Cuban people so that South Africans enjoy freedom and justice. "Together with Cuban people we can make a better contribution towards the world order and transform the world into an oasis of justice and freedom." said Premier Magashule.

Prof. Thandwa Mthembu, Vice-Chancellor and Principal said that the lecture was, indeed, very educative, insightful and inspiring.

"The idea behind our public lecture series is to have space and opportunity to reflect and debate some important issues of our university, our country and the world. This time around, it was about gaining a deeper understanding of the historical links between South Africa and Cuba; the socio-economic conditions of Cuba and its relations with the U.S. Not many of us will be steeped in such matters," he concluded.





Prof. Henk de Jager, DVC-Academic and Research (2nd from left) with Aalen University Academics from left: Prof. Holzbaaur, extraordinary professor at CUT, Prof. Heinz-Peter Burkle, DVC Academics at Aalen and Mr Pascal Cromm, Head of International Relations office.

# PROF HENK STRENGTHENS ALLIES WITH AALEN UNIVERSITY

Prof. Henk de Jager, Deputy Vice-Chancellor: Academic and Research, recently visited Aalen University, Germany, to establish new research ventures, strengthen and explore new collaboration opportunities. The two universities have had relations for the past 15 years.

During his visit at Aalen, Prof. Henk met with the Deans and Heads of school for discussions and presentations and visited several labs in Chemistry and Engineering where more intensive research collaboration could be established.

The second research focus was on International Management and Entrepreneurship where Prof. Holzbaaur, extraordinary professor at CUT, Monika

Bühr and Prof. de Jager discussed issues of education and research for sustainable development as well as problem and project based learning. Also on the cards for potential area of research cooperation were business computing and its links to business science, "big data", computer science and safety.

Another focus of the visit was the exchange programme opportunities for students and staff researchers with Pascal Cromm, head of International Relations Office, and Prof. Heinz-Peter Bürkle, DVC Academics at Aalen University. In the set meeting, an agreement was made that Professors and students from Aalen will visit CUT in July.

## LEONARD-THUTO: A SYMBOL OF SUCCESS

The Aesthetics Cluster of the A-Team has made substantial progress towards the creation of a world-class campus environment. The cluster currently implemented an Artefacts Project on the Bloemfontein campus with sculptures by renowned South African sculptor, Uwe Pfaff.

The Public Art concept came in to being in 2013 and was initiated to represent the past, present and future. The project is aimed at enhancing the campus culture, promoting personal ownership of the campus, institutional pride, introducing colour to campus life and provide visible signs of campus beautification. The standing figures chosen for the project in the first phase are recognisable and accessible images that CUT students will be able relate to. The sculptures are universal in their form and represent the cycle of students who have passed through the doors of CUT to receive their qualifications.

### Phase 1: Site 1-The Crossing (Lapeng Student Centre)

The sculptural work about the crossing symbolises the journey of students from first year to graduations. The 9 figures of men and women on each side have an important significance towards the student life on campus. The figures entering the grass from Lapeng Student Centre/Student Academic Support Centre/Gym Hall Lawn side represent the students who have just entered the university to pursue their academic journey. The colours red, yellow and blue used represents the primary colours on the CUT logo.

The figures that are diving into the grass falling on their heads and burrowing into the ground symbolises the bumpy road that the students encounters through their journey. These sculptures are strategically placed alongside the student support centre as a reminder that educational journey is not a smooth ride and one needs assistance from time to time to minimise challenges faced.

### Phase 1: site 2 (The Boet Troskie Hall)

Towards the completion of a career, the Boet Troskie hall becomes a focal point as it is the building where the graduation ceremony takes place. The hall represents the end of the many years of dedicated learning and hardships encountered and the ultimate goal for the students.

On the Boet Troskie site, the sculptures reflect figures entering or diving into the ground, falling on their heads and then exiting triumphantly on the other side. They symbolise student maturity during their stay at the University. The figures which are coming out of the grass represent students who have graduated and are leaving tertiary education and entering the world at large.

The sculptures will be a focal point for those graduation ceremonies, allowing students to take pictures along the figures on graduation day to reflect on their journey in the university.

### Phase 2: The Mascot (Leonard)

"I want to be free" sculpture is 3.5 metres high and will stand as mascot with a scroll at the entrance of the University's main campus. It symbolises the visual spirit of the University and will also create an attraction for the broader Bloemfontein community. According to the artist, the idea behind the mascot has been inspired by Leonardo da Vinci's Vitruvian Man- "he of the perfect proportions with 4 arms and 4 legs - and reversed engineered him back to a man with 2 legs and two arms. Not only is he now free to move but has also liberated his soul."

[Leonard "I want to be free"]



Phase 1: Site 1



Phase 1: Site 2



Phase 2: The Mascot

# American Council in Education at CUT

On 5 May, a group of seven delegates from American Council on Education (ACE) Fellows paid a courtesy visit to CUT as part of their countrywide tour as ACE Fellows and the future Higher Education Leaders. The main purpose of their tour in institutions around the world is to gain experience on matters pertaining to higher education management and administration. During their visit, they met with several departments namely; Engineering, Sustainability, Human Resources and the Centre for Rapid Prototyping and Manufacturing (CPRM) for possible future collaboration.



L-R: Dr Julia Myers Ross-Special Assistant to the Provost for Inter-Institutional Research Initiatives, Professor and Director -Prof Jeff Ramsdell: Appalachian Energy Center at Appalachian State University, Prof. Vermaak-CUT Engineering, Dr Cynthia McGowan-Interim Provost and Vice President for Academic Affairs, Dr Charles W. Richardson, Jr.- Marketing Professor at Clark Atlanta University, Mr Joel L. Frater, Ed.D- Assistant Provost for Diversity at the College at Brockport, State University of New York, and Dr Makarand (Mark) Hastak- Professor and Head of the Division of Construction Engineering and Management as well as Professor of Civil Engineering at Purdue University.

## DAAD VISITS CUT

The DAAD (Deutscher Akademischer Austausch Dienst-German Academic Exchange Service) is one of the world's largest funding organisation and the most respected intermediary organisations in the field of international academic cooperation. The organisation supports the international exchange of students and scholars and its activities go far beyond simply awarding grants and scholarships.

The DAAD representatives visited CUT to provide them with valued information and advice in supporting the international exchange of students as well as establishing common research interests with rising academics and institutions in Germany.

The DAAD's programmes have the strategic goal of supporting outstanding and talented young students and academics in South Africa as well as encouraging them to travel to Germany for study and research visits. Its aim is to qualify young researchers and professionals with a spirit of tolerance and openness at the best institutions around the world while promoting the internationality and appeal of Germany's institutions of higher education. With the aid of the German language, literature and culture, students can gain a better perspective of the German identity and the research world. These skills are however not a necessity for attaining a scholarship. The DAAD sees the potential of developing countries in establishing effective universities and common research interests with rising academics and institutions.



L-R: Dr M Mostafa -Research Manager & FRC Chair (Faculty of Engineering and Information Technology - CUT), Ms Kerynn Dahl - Communication Officer (DAAD), Prof. LOK Lategan - Dean: Research and Innovation (CUT), Ms P Wittke, Director (DAAD), Dr M Mhlolo - Research Manager & FRC Chair (Faculty of Humanities - CUT) and Ms Refiloe Masiba - Academic Exchange/Study Abroad Coordinator, International Office (CUT).

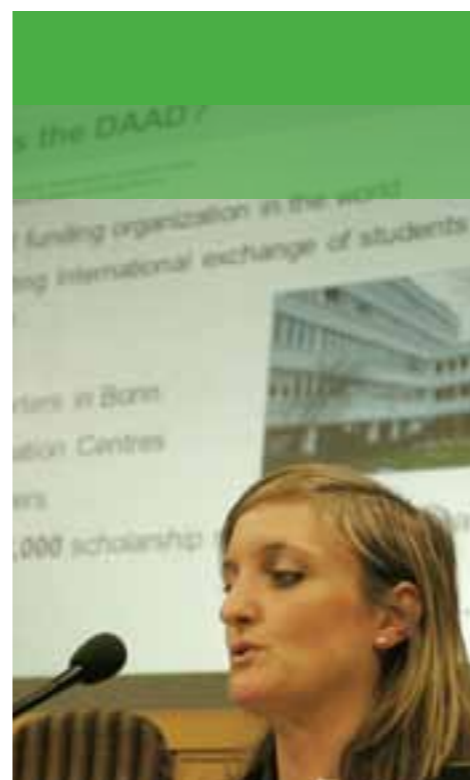
There are 15 international regional branch offices which exist to provide information and advice on study and research opportunities, as well as available grants, tailored to students and academics within their region.

The organisation itself does not offer programs of study or courses, but awards competitive, merit-based grants for use toward study and/or research in Germany at any of the accredited German institutions of higher education. It also offers a wide range of funding opportunities for individuals and institutions in higher education.

In 2011, it funded more than 70,000 German and international scholars worldwide and more than 112,660 in 2013. The funding offers range from a year abroad for undergraduates to doctoral programmes, from internships to visiting lectureships, and fro

### The DAAD's five strategic goals:

- 1 • to encourage outstanding young students and academics from abroad to come to Germany for study and research visits and, if possible, to maintain contact with them as partners lifelong;
- 2 • to qualify young German researchers and professionals at the very best institutions around the world in a spirit of tolerance and openness;
- 3 • to promote the internationality and appeal of Germany's institutions of higher education;
- 4 • to support German language, literature and cultural studies at foreign universities;
- 5 • to assist developing countries in the southern hemisphere and reforming countries in the former Eastern Bloc in the establishment of effective higher education systems.



# FRENCH AMBASSADOR TOURS CUT

On 23 April 2014 the French Ambassador, Her Excellency, Ms Elisabeth Barbier in the company of Dr Pierre Lemonde, Science and Technology Attaché, in the French Embassy visited the Central University of Technology, Free State.

The intent of the visit was to strengthen the ties with CUT as well as discuss the scientific and academic cooperation between the two countries, which have become increasingly important in the bi-national cooperation initiatives.

According to Mr Arthur Johnson, the current status of international relations suggests that there are potentially many more partnerships emanating out of the Ambassadorial Offices that could be accessed by CUT, hence, the French delegation sought to raise the awareness at CUT about the embassies' cooperation programs and encourage CUT's participation in their scholarship programmes. The Embassy also mentioned their willingness to co-fund mobility programmes between French and South African Higher Education Institutions.

The French delegates had a brief campus tour where they visited the Centre for Rapid Prototyping and Manufacturing (CRPM) and Communication Sciences. At the Communication Sciences department, the



Prof. Henk de Jager, DVC Academic and Research, French delegates: Dr Lamonde and Her Excellency Ambassador, Ms Elisabeth Barbier, Prof. Thandwa Mthembu, Vice-Chancellor and Principal for CUT, Mr Thembile Kulati, Executive Director SEU and Mr Arthur Johnson, Director, International Office.



The French Delegates visited the Rapid Prototyping and Manufacturing Department and Mr Greamme gave them a mini tour.

delegates met with Head of the Department, Dr Brenton Fredericks, and the French lecturer, Ms Marie Girard to discuss the university's current capacity to teach French as a subject and the future possibility of increasing language offerings in Hospitality and Tourism Departments. According to Ms Marie Girard, the university has a four year programme offered to the language practice students and a one year elective course for the tourism students. It was also mentioned that in 2013, the French Embassy supported three CUT students on a scholarship to Reunion Island.

The visit was of great benefit to CUT as it allows it to increase partnership with the French institutions and further increase the current research capacity for both departments as well as enabling the CRPM to do cutting edge researches.

Asked about the way forward, Arthur said that there will be periodical contacts by the French officials regarding notices and briefing reports on funding and scholarship possibilities under the bi-national arrangements. "Initial steps have now been taken to forge a relationship between the French Higher Education Institutions and the CUT.



Prof. Thandwa Mthembu handing a token of appreciation to Her Excellency Ambassador, Ms Elisabeth Barbier.

## CUT welcomes Hanze University Students



Pictured with a group of exchange students is (sitting middle) Mr Arthur Johnson, the Director of International Office, Ms Belinda van der Merwe, and Radiography Lecturer in the faculty. Back row: (left) Ms Refilwe Masiba, the Academic Exchange Programme coordinator.

The Faculty of Health and Environmental Sciences Department of Clinical Sciences Radiology welcomed a new group of students from Hanze University in The Netherlands who will be completing their Work Intergrated Learning (WIP) at the Universitas hospital in Bloemfontein. The group is scheduled to spend 20 weeks at CUT, and will be exposed to different hospital environment pathologies and protocols. The visit is intended to strengthen the relations and partnership between Hanze and CUT.



Dr Clifford Barnes, CEO of NCUFET; Mr Montwedi Seane, CEO of CUT Innovation Services (CSET Trust); Mr Jimmy Poolo, CEO of IJ Energy and Technologies undersigned the MoU respectively.

## CUT SEALS RELATIONS WITH NCUFET

Central University of Technology, Free State (CUT) has entered into a multi-million rand skills development agreement with Northern Cape Urban FET College and I J Energy and Technologies (PTY.) LTD.

The Memorandum of Understanding (MoU) and Service Level Agreement (SLA) signed between the parties serves as a basis for structured cooperation between them, including strengthening the College's delivery capacity and the maximisation of its commercial capacity where CUT and I J Energy and Technologies (PTY.) LTD. will jointly be delivering the training service that is required by the NCUFET, according to their field of expertise.

The training services include a skills programme and literacy support services for 500 Northern Cape youth. 200 former college students will be developed and trained in a short course on Solar PV Installation. To be considered for the short course, the learners have to pass a minimum of NQF level 2 qualifications in Electrical Engineering. Upon completing the short

course and meeting all the academic requirements prescribed by CUT, the learners will receive a certificate. The short course is expected to be completed by June 2014.

The institution will also deliver a Construction Skills Programme worth 32 credits, which, upon completion, learners will be equipped with the knowledge of health and safety in the work place; first aid; plant equipment use and maintenance; how to record maintenance on the construction site; how to measure, estimate and calculate physical quantities; and to explore, identify, describe and use materials in Civil Engineering construction, as well as how to batch and mix concrete by volume.

The literacy support service is aimed at assisting the learners to improve reading competence to enable them to comprehend and master the course content in the skills programme.



CUT students from Northern Cape who will benefit from the newly established partnership at the Solar Energy Flower charging station on the Bloemfontein Campus.

From the left: Mr Jimmy Poolo, CEO of IJ Energy and Technologies; Prof. Dennis Dzansi, Head of the Department Business Support Studies at CUT; Ms Gerald Winkler, Manager of Fundraising and Project Marketing; Mr Montwedi Seane, CEO of CUT Innovation Services (CSET Trust); Dr Clifford Barnes, CEO of NCUFET; Pastor Attie van Nell, Project Adviser, MA & R Consulting and Mr Andrew Michael.



# MerSETA INVESTS R6 MILLION ON ENGINEERING DEVELOPMENT AT CUT

Prof. Thandwa Mthembu, Vice Chancellor and Principal at the Central University of Technology, Free State (CUT), and Mr Wayne Adams, Chief Operations Officer of the Manufacturing, Engineering and Related Services Sector Education and Training Authority (MerSETA), signed a Memorandum of Understanding (MoU) at CUT on 27 February 2014.

MerSETA is one of South Africa's 21 Sector Education and Training Authorities (SETAs) established to promote skills development in terms of the Skills Development Act of 1998 (as amended). The 21 SETAs broadly reflect different sectors of the South African economy. MerSETA encompasses manufacturing, engineering and related services.

R6 million has been invested in the project for the purpose of establishing the MerSETA Chair in Engineering Development at CUT from 2014 to 2016.

"MerSETA is comfortable that the Central University of Technology, Free State has the capacity, the capital and human resources as well as the skills to ensure that this investment yields sterling results for both parties. It should therefore be clear to all here today that the investment of R6 million in the next three years is well invested in this partnership. We at MerSETA are therefore proud and enthusiastic in signing this agreement, and look forward to working with the university as well as other partners and beneficiaries in ensuring its success", Mr Wayne Adams said.

This historic occasion is seen as an important course of action for developing a strategic partnership between the two parties, as well as an alignment to the National Strategy of Government and Department of Higher Education and Training's (DHET) commitment to bridge the current skills gap in engineering fields.

This is the outcome of talks that were held at CUT to discuss the important role that the university could play within the Further Education Training College (FETC) Sector and technology education colleges in the Central Region (Free State and Northern Cape Provinces). Both institutions believe the project supports government's commitment to close the current skills shortage in the engineering sector.

In his statement of the agreement, Prof. Mthembu said, "I have three stories to tell: the good, the bad, and the best story. The bad story is that over 3, 4 million youth between the ages of 15 and 24 are unemployed or out of school; the good story is, in 2009, the DHET brought the SETAs, universities and FET colleges together so that they can collaborate more and more. The best story is that the Minister of DHET, Mr Blade Nzimande, launched the White Paper (Post-school Education and Training Policy) just six weeks ago to address the bad story, and six weeks later, CUT and MerSETA are implementing the programme".

The two parties are to work in consultation with one another on conceptualisation, development and support for the DHET Post-school Education and Training Policy, including:

- Providing and advancing access of youth to further training and higher education institutions in the Central Region through the articulation of offerings and FET college programmes into CUT.
- Advancing Science, Technology, Engineering and Mathematics (STEM) in FET colleges in the two provinces.
- The continuous professional development of FET lecturers and technical school teachers in STEM.
- Advancing STEM among female students in FET colleges in the two provinces.
- Supporting the national agenda of increasing the pool of graduates in scarce STEM subjects, and broadening the access of female students in STEM fields.

Team members who will play a critical role in the success of the partnership. Front row from left: Prof. Alfred Ngowi, Dean of the Faculty of Engineering and Information Technology, Dr Pinky Mrwetyana, Registrar of CUT, Mr Wayne Adams, COO of MerSETA, Prof. Thandwa Mthembu, Vice-Chancellor and Principal of CUT; Prof. Herman Vermaak, Head of the Department Electrical, Electronic and Computer Engineering and the Engineering Development Chair at CUT; and Mr Twedi Seane, CEO of the CUT Innovation Services (CSET Trust).

Back (left): Mr Christo Basson, Senior Manager ETQA and Partnerships, and Mr Bob Tladi, Chief Director: FET Colleges.



# FREE STATE SCIENCE AND INNOVATION PARK WORKSHOP HELD

In 2009, The Department of Science and Technology (DST) and University of Free State (UFS) initiated a project to assess the feasibility of a Science and Innovation Park as well as prepare a business plan for the envisaged park in Bloemfontein. Central University of Technology, Free State, (CUT) formed an integral part of the process, amongst others, via the Regional Innovation Forum of the Free State (RIFFS) for which it acts as a custodian. The commitment to innovation and collaboration was later launched in May 2013.

Following the initiation and tracking progress, on 11 February 2014, RIFFS hosted a workshop at CUT to discuss the feasibility report and further developmental strategies.

Free State Province holds a dominating position in the sectors of agriculture, mining, catering and hospitality which qualifies it as an initial focus areas for innovation through collaboration. The main aim of the initiative is to promote innovation and economic growth across various provinces in South Africa while the RIFFS aims to bring together stakeholders from all segments in the innovation value-chain in order to create a strong system by facilitating collaboration and support of the project and business development.

According to Professor Ryk Lues, RIFFS coordinator at CUT, a Science and Innovation Park is an area with suitable facilities and a collection of professional people dedicated to scientific research on a business footing operated by institutions of higher learning, with the purpose of enhancing collaboration between academia, industry and government. "The aim of the park is to facilitate the establishment, incubation and commercialization of innovative ideas from all sectors in the province including education, business and government and ultimately improve the socio-economic wellbeing and competitiveness of cities and regions. This will further create new business and add value to companies enabling them to create new knowledge based jobs and regional wealth. Prof. Lues cited Silicon Valley in the United States as a good example for such.

When asked about the potential location of the park, Prof Lues mentioned that the quality of a place should include all features of the physical environment and qualities of life that makes a location a desirable, competitive and economically vibrant place to live. "Given the stakeholders and the virtual nature of the Free State Science and Innovation Park, it

may constitute either the establishment of facilities such as buildings or a virtual collection of innovation stakeholders. The name "Fuama Village": (which means to incubate or nurture) have been proposed for the Science and Innovation Park. The planned CUT Innovation Centre and UFS Business Incubator are the ideal anchor tenants of a possible common space to allow development and growth of the project in a long run and be in close proximity to the largest stakeholders, especially the main service providers and innovation feeders. The possible location of the park should be based on understanding the critical success factors of establishing a business incubator."

Who are the beneficiaries? "The aim of the initiative is not only to benefit/promote UFS or CUT but is seen as a benefit towards the city of Bloemfontein, local Agriculture, Trade and Industry, the Free State Province and the community at large."

In conclusion, he added that the outcome of the event indicated a definite need for such a park, and that, future strategies will focus on the allocation of resources for further implementation of the initiative.

Amongst the attendees who presented at the workshop were: Mr Gerard Verhoef (consultant appointed by UFS), Prof Christo Viljoen (a retired Vice-Rector from Stellenbosch University and International Science Park expert), and Prof Ryk Lues (RIFFS coordinator, CUT), Mr Jonathan Smith (UFS Innovation Office) and Prof Laetus Lategan (Dean: Research and Innovation at CUT).



Above: Prof. Ryk Lues, RIFFS coordinator, CUT  
Below: Prof. Laetus Lategan, Dean: Research and Innovation, CUT



## DR MALEBO SCOOPS A FELLOWSHIP AWARD

Dr Ntsoaki Malebo (PhD), a researcher in the Department of Life Science Applied Food and – Biotechnology, made the CUT family proud when it was announced by National Research Foundation (NRF) and the Department of Science and Technology (DST) that she is amongst the outstanding researchers who have been awarded with the Research Career Advancement Fellowship Awards for 2014.

The NRF awarded 61 of the fellowships to nine universities and some research laboratories and Dr Malebo of CUT was among the only two Universities of Technology to qualify for this prestige award.

She has nine Institutes for Scientific Information (ISI) journal publications, three of which has been published between 2012 and 2013 which is a milestone on its own. She also has twenty (20) other research papers and posters; 2 Master's students as co-supervisor for one and full supervisor for the other. She had achieved all of this mainly at the level of her pre- and post-doctoral work.

As part of showing her emerging international influence, she was recently awarded a grant as part of the South Africa-Angola Bilateral Agreement on Research which will allow her to work in partnership with one of Angola's major universities. Her research is clearly going international!

The "curiosity killed a cat" saying can somehow be debated as it did not kill Dr Malebo but made her an expert in her career. Dr Malebo really proved that she was destined for excellence in research as she said she was too curious as a youngster.

Dr Malebo joined CUT in November 2010 as postdoctoral research fellow under the supervision of Prof Karabo Shale in the Unit for Applied for Food Science and –Biotechnology in the Department of Life Science. While growing up, her curiosity about nature grew stronger and interest blossomed in biology related things. "I initially wanted to be a medical doctor but things didn't work out. I did my undergraduate and postgraduate studies in microbiology at the University of the Free State, one of my lecturer's Prof Lodewyk Kock (who later became my masters and PhD supervisor) was very passionate about research and that is where my real love for research started".

In an interview with her, she said this...



**M: Most people hate research, what do you have to say about that?**

Dr: I believe people should choose to do research in a field that they love and enjoy. Where in the world would you get a job where you can study things that you love and get paid for it? Research gives you a chance to interact with various people and a chance to travel as you present your work internationally. That sounds like a perfect job to me.

**M: How do you feel about your achievement/s?**

Dr: I'm over the moon; I can't describe how I feel at the moment. It's humbling when external people see potential in you and say here is an award we trust you with it. It is really an honour.

**M: What was the title of your research?**

Dr: I'm investigating antimicrobial properties of bioactive oils extracted from indigenous plants. In the project we are trying to find alternative treatment for food spoilage and microbial pathogens. The use of indigenous plants for various ailments is well documented and we want to use this knowledge and incorporate it into food safety.

**M: How was the competition and pressure between balancing your work and your research?**

Dr: It was a challenge for me as a wife and mother but I'm grateful for the support I got at home. I managed to get time for my work. I had to work very hard to make sure that I have a good proposal as I knew that competition for this fellowship was tight.

**M: Is there any benefit to your department and to CUT? What does this award mean to you, your department and CUT?**

Dr: The award means that the selection panel that had to decide who should get the fellowships recognise the research that we (me and the department) do at CUT as research that will meet the objectives of the fellowship. The objectives amongst others are to strengthen my track record as a young researcher for research leadership and to develop a cohort of potential candidates for the South African Chairs Initiative. Through the award I will get a research grant that will enable me to take my research endeavours further.

**M: Is there any monetary value attached to this achievement?? Whether towards you or your department of the university**

Dr: Yes there is monetary value to the award; I will get funding that will go towards my salary and funding for research activities in the laboratory and for travelling.

**M: Where to from here?**

Dr: The sky is the limit, in five years' time I want my title to change from Dr to Prof and I want to be a NRF

rated researcher.

**M: What is your advice to fellow researchers?**

Dr: Do what you love, choose a nurturing environment, get yourself support structures, plan and manage your time well.

**M: Is there anyone you would like to acknowledge?**

Dr: God who's been my source of strength and courage, my mother who brought me up as a single parent, my husband and family for their support when I have to work. I would also like to thank my supervisors from both UFS and CUT, who laid a great foundation for the work that I do now and lastly, colleagues who have supported me when the going got tough.

## PROFESSOR LATEGAN RECIEVES THE JOURNAL OF RESEARCH PRACTICE (JRP) BEST REVIEWER AWARD

Prof. Lategan has received the Journal of Research Practice (JRP) Best Reviewer Award for the year 2013. The JRP Best Reviewer Award is announced every year, naming their most outstanding submission reviewers, in recognition of their superb quality of review readiness to take up new submissions, fast turn-around time, and their overall persistent support to establish JRP as a leading Trans- disciplinary journal.

In addition, as the recipient of this award, he was further invited to join the editorial team as a Distinguished Reviewer which is a key part of the editorial team. Currently only two renowned international academics are in this category.

This is an exceptional achievement and indication of Professor Lategan's professionalism and expertise. Congratulations to him – he is leading by example, and has made CUT proud!



# REGIONAL INNOVATION FORUM HOSTS A SEMINAR

The Regional Innovation Forum, Free Sate (RIFFS) hosted a successful one-day seminar with businesses, government, higher learning institutions and other stakeholders to review the progress made since its launch in 2013.

The Regional Innovation Forum, Free Sate (RIFFS) hosted a successful one-day seminar with businesses, government, higher learning institutions, and other stakeholders to review the progress made since its launch in 2013.

Innovation, entrepreneurship, and socio-economic development in the region were discussed. The seminar also focused on the 2012 OECD report on the Contribution of Higher Education in Regional and City Development by Ms Jaana Puukka, as well as on the role of entrepreneurial education and skills development in the region.

The audience agreed that, in order for the outcomes of the seminar to be successful, there has to be some form of collaboration in executing policies and working together as a team to solve problems.

Ms Miemsie de Jager from the University of the Free State mentioned that the university has the Garage Concept, a new business hub on the Bloemfontein campus where young entrepreneurs with exceptional ideas come together to set up and run their business concepts. "Some of their ventures include delivery service for people who receive chronic medication from hospitals and clinics; farm-fun adventures that offer outdoor and farm experiences to school children; and final year Dietician students who

run and manage event catering services from their department and provide frozen foods, cakes, and treats."

Ms Molebogeng Mavimbela from the Khula Foundation mentioned that there are too many small projects; duplication; a waste of resources and a silo mentality to programme implementation that hinder progress on growth and development in regions that ultimately lead to a loss of human capital to big cities.

"Our children are never encouraged to take risks, but channelled to follow a safer route of getting a degree, which poses a challenge because when they grow up, they will not be comfortable in trying anything out of their comfort zone. My proposal to the universities as the hub for knowledge is to lead and focus on Local Economic Development (LED), innovations, research excellence, strategic policies, and programme development. Be the knowledge point of contact, lead on incubation, promote an entrepreneurship curriculum, and be the lead on brokering stakeholder engagement," she said.

Ms Jaanna Puuka advised the universities to introduce entrepreneurship and innovation courses in their curriculum, so that students are well prepared from



Left: Mr Gerhard Verhoef, UFS, officially handing over the final report for Science Innovation Park to Mr Johann Strauss from the Department of Science and Technology

Right: Some of the guest speakers at the seminar: L-R: Prof. Ryk Lues, RIFFS coordinator, CUT, Ms Molebogeng Mavimbela, Khula Foundation, Mr Stoffel Meyer, IDC, Prof. Thandwa Mthembu, Vice-Chancellor and Principal at CUT, Mr Johann Strauss, Department of Science and Technology, Ms Jaana Puukka, Innovation Engage (France) Mr Albi van Rensburg, Free State Provincial Government and Mr George Masuabi, Mangaung Metropolitan Municipality

the early stages of their studies to create wealth for themselves and for their communities. She also said that universities should change their attitude and the way they operate if they are to play an effective role in helping cities and regions to promote human capital development and redefine their concept of innovation. Mr Johann Strauss from the Department of Science and Technology said that economic development is about enhancing capability and opportunity to learn at all levels. "Universities and other research entities should be allowed to play a greater role of knowledge exchangers (brokers and gatekeepers) within the regional innovation system (Ecosystem) due to their global and local connections. The impact of social capital (cohesion) on society's ability to innovate should not be underestimated."

Participants in the seminar included: Mr Stoffel Meyer; resource support structures for the Regional Innovation of the Industrial Development Corporation (IDC); Mr Albi Van Rensburg of the Free State Provincial Government, who shared the Vision 2030 Provincial Growth and Development Strategy; Johan Strauss from the Department of Science and Technology; Mr George Masuabi from Mangaung Metropolitan Municipality, responsible for strategic innovation projects; Ms Molebogeng Mavimbela of the Khula Foundation; Ms Miemsie de Jager from the University of the Free State; Ms Celestine Brummage from CUT; Ms Chichi Maimane from CUT; and Ms Jaana Puukka, the author of the 2012 OECD report and an international expert in innovation and higher education.

# 12th ANNUAL SAARMSTE RESEARCH SCHOOL HELD



Group Photo: Mathematicians and Scientist at the 12th Annual SAARMSTE Research school held at Maselspoort, Bloemfontein. The participants came from SADC regions, Sweden and Britain.

Central University of Technology, Free State (CUT) Welkom campus, Dr Benedict Khoboli hosted the 12th Annual Southern African Association of Research in Mathematics Science and Technology Education (SAARMSTE) Research School from 23-26 June 2014 in Maselspoort, Bloemfontein.

When the first workshop was held in 1992 with 60 mathematicians and scientists, the picture was not as clear but today, the organisation has affiliates from all over SADC regions and International.

The four-day workshop consists of a pool of mathematicians and scientists from higher education institutes in the SADC regions that offer PhD programs, registered doctoral students, post-doctoral and supervisors in the field. Knowledge sharing and skills transfer is done through presentations, workshops, poster sessions, consultation related to their individual research projects and reviewing of articles that they intended submitting to the African Journal of Research in Mathematics, Sciences, and Technology Education (AJRMSTE). This year, candidates from Sweden and UK joined the group for the first time!

The primary aim of the SAARMSTE Research School is to build a critical mass of researchers and educators thus producing people with the knowledge and skills that will enable Southern Africa to engage proactively in a competitive global economy.

### Other objectives are:

- To develop a sense of community amongst those who were doing research in science and mathematics education,
- To provide a forum for those who wanted to enter into research in science and mathematics education,
- To promote science and maths education research in the regions, and
- To provide resources for people interested

in entering the field or developing further expertise in the field, and

- To liaise with similar organisations in other parts of the world.

### Some of the participants who were interviewed had this to say:

**Dr Patrick Barmby (UK)** said that attending the SAARMSTE was fantastic and he enjoyed his stay. "I'm happy to see so many people committed to research and engaged with learning. We do not have anything like this in the UK and I would like to take the lessons learnt to my home country."

**Prof. Pernilla Nilsson (Sweden)** "The support group participation is pleasing and I really enjoy the support and promotion of science. I am a supervisor and it is my first time attending but I am definitely taking this kind of setup to Sweden."

**Dr Audrey Msimanga** "This is a place of growth. I am a PhD student graduate and it is my 5th year of attending. It is a wonderful experience for me to transform from a student to a facilitator. Today, I am proud to say that I have three PhD students!

**Dr Sharon Mc Auliffe** "It is my first time attending as a facilitator; here you have to read a lot, learn and be able to give back. I have master's students and would like to get them involved."

**Dr Mike Mhlolo** "We know what we don't know! This is my 5th year as a facilitator. Maths is cumulative, if you miss the basic concepts, you will be lost. For one to excel, one needs a strong foundation."



# Researchers Brings Knowledge Home

Dr Mike Mhlolo, Research Manager for the Faculty of Humanities and Prof James Swart from the Faculty of Engineering recently represented CUT in the DAAD (Deutscher Akademischer Austausch Dienst-German Academic Exchange Service) DIES Dialogue on Innovative Higher Education Strategies programme that was held in Cape Town.

DAAD-DIES (Dialogue on Innovative Higher Education Strategies) is a programme that supports higher education institutions in developing countries to develop strategies, which improve the university management as well as the quality and relevance of study programmes. The DIES Programme is jointly conducted by the German Academic Exchange Service (DAAD) and the German Rectors' Conference (HRK).

The aim of the DIES Proposal Writing Course is to train researchers and young PhD holders in developing a promising research proposal for national or international research funding (every participant will have the opportunity to tailor their application to the funding institution of their choice).

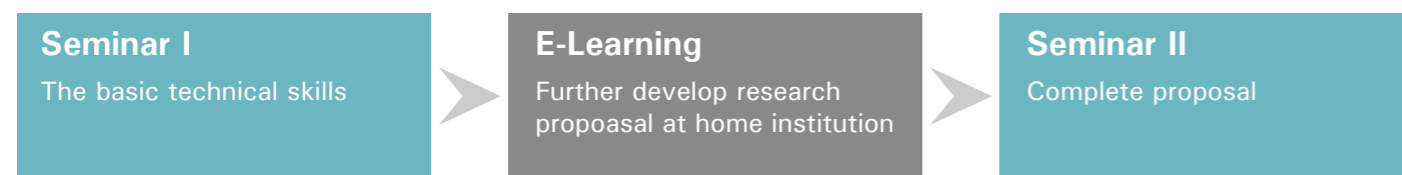
According to Dr Mhlolo, there were 120 applicants for the programme but only 33 were successful and he and Prof James Swart were amongst the successful candidates with participants from Zambia, Botswana, Malawi, Zimbabwe, Namibia, Lesotho, UCT, CUT, HSRC, UNISA and Limpopo. For them to be amongst the 33 qualified participants, they had to apply with a Research Proposal showcasing their innovative ideas. Dr Mhlolo shared some lessons learnt during the duration of their stay.



Dr Mike Mhlolo at the DAAD-DIES proposal writing course that was held in Cape Town. Of the 120 applicants, Dr Mhlolo was one of the 33 candidates who qualified to attend.

## The structure of the DIES Proposal Writing Course

Using a blended learning approach, the DIES Proposal Writing Courses are structured in three sections: two on-site seminar sections (seminar 1 & seminar2) and a trainer guided intermediate e-learning section.



During seminar I, held for seven days-1st to 7th June, participants were trained on basic technical skills that are needed to design, write and budget a potentially successful research funding proposal (e.g. to transform an abstract research idea into a proposal) on the basis of lectures, group work and exercises.

The second stage, E-learning phase, candidates are expected to put aside a minimum of three hours e-learning per week. The primary objective of the e-learning is to enable the participants to submit a 10-page draft of their research funding proposal. During the e-learning section the participants will work on their research funding proposal (including creation of a working plan and a budget plan) at their home institution (CUT) and further develop it under the guidance and online counselling of the trainer team. Eleven online chapters for self-study will be offered. Each chapter includes about 2 hours of interactive multimedia learning material and exercises. The content is specifically designed to help turn theoretical knowledge into practical skills that will help develop a successful research proposal. Additionally, personalised online support will be offered to all participants. These will include virtual classroom for meetings and discussion with course mates and trainers which will culminate in the development of a 10 page draft of a research funding proposal that is due for submission by end of August 2014.

For the second seminar (Seminar 11), that will be taking place from November 17th to 21st, the research funding proposal drafts will be presented, discussed, evaluated and fine-tuned in a participative review process. The objective of the seminar is to engage in a collaborative feedback process between trainers and participants and ultimately develop a final draft. At the end of seminar 2, the research funding proposals should be ready for submission to research funding organisations.

In his conclusion, Dr Mhlolo said that a lot of learning is still to come in the programme but highlighted that he came to realise why they managed to 'cut above

the rest' and be amongst the cream of the crop. He is also confident that the course will capacitate him to write proposals for funding. According to him, the opportunity came at the right time in his research career. He further stated that he will make sure that the skills gained will also rub off to his colleagues in the faculty and the University at large.

"Initially I was curious to know what criterion was used to select only 33 from a total of 120 applications. During the seminar I then discovered that our trainers had more than 20 years of experience of working on various research projects. It then became clearer when I listened to various proposals being read-out that course participants had been selected mainly according to the quality of their exposé; "Why is your project relevant?" In articulating the relevance of your research idea, we therefore learnt that one needs to imagine being fortunate to meet a potential funder in an escalator.

Since this is a chance elevator ride together with a potential funder, in approximately one minute, the fund seeker needs to bait and hook the potential funder so that he/she can fund the idea. Given that you might never see this potential funder again your research idea should be brief, aimed at a reader who has no time to read any details. In the context of this seminar, this was referred to as the Unique Selling Proposition (USP). This is a term that is commonly used in business circles and in essence it seeks an answer to the question; 'Does your innovation offer a unique feature compared to competitors?' If so, get to the point and say it in a convincing manner. So throughout the course there was a lot of hype around this concept or metaphor of an "Elevator Pitch". An elevator pitch is therefore an overview of your research idea that you can explain to a potential funder in the length of a chance elevator ride (just a minute)." Dr Mike agreed that the idea is not an easy ride but strongly believes that with constant practice, one should be able to master it!

"I'm humbled by the undying support that I received from my colleagues and a special thanks goes to Prof. Lategan for his continuous support."

**"I'm humbled by the undying support that I received from my colleagues and a special thanks goes to Prof. Lategan for his continuous support."**

# Graduations

"Its official we are graduates!" Newly qualified CUT graduates celebrate their moment of achievement. Years of hard work and dedication have yielded magnificent results. A grand 2890 graduates were awarded degrees, certificates and diplomas in the 2014 autumn ceremonies. 10 doctorates, and 17 Masters degrees was conferred in the fields of Agriculture, Public Management, Information Technology, Civil and Electrical Engineering, Business Administration, Clinical Technology, Environmental Health, and Education to name but a few.

Central University of Technology, Free State (CUT) is the foremost higher education institution in the heartland of South Africa, dedicated to quality education and training in science, engineering and technology. Over the past 33 years, CUT has developed into a leading institution, able to take its place in the national as well as international higher education landscape. In 2003, six universities of technologies (UoTs) adopted a conceptual framework that determined their existence as new-generation knowledge institutions. This year (2014), CUT celebrates ten years as a UoT.

CUT celebrated the autumn season graduations with 2 890 graduates where certificates, diplomas and degrees totalling to 577 in Welkom and 2 313 in Bloemfontein were awarded in the six-day graduation ceremony. Statistics show that in March 2013, Welkom awarded 559 while Bloemfontein awarded 2 286, a slight increase at both campuses, with Welkom awarding 18 and Bloemfontein 23 more qualifications than in the previous year. Fourteen master's degrees with four Cum Laude were also awarded in the fields of Agriculture, Public Management, Information Technology, Civil Engineering, and Electrical Engineering.



Some of the Cum Laude students from the Faculty of Management Sciences: Left picture: Kayla Davies who received her National Diploma in Hospitality Management (cum laude) with her proud father and a CUT staff member, Mr Philip Davies share the moments. Right picture: Prof. Albert Strydom, Dean of the Faculty of Management Sciences congratulates Lauren Hurdall for completing her BTech in Hospitality Management – cum laude.

In his address during the ceremony, the Vice-Chancellor and Principal, Prof. Thandwa Mthembu, congratulated all graduates for their hard work, commitment, and dedication.

"When you go out of here, you must remember that, as a South African graduate, you are faced with challenges of economic growth and unemployment. 3.8 million Youth are not at school, unemployed and not in training. That youth is relying on people like you to make a difference in their lives. South Africa is in dire need of innovators and entrepreneurs. You are the right candidate and well equipped with such, so, go out there and make a legacy for yourself! Go out there and create employment for that youth! Go out there and make sure that you add value in growing the country's economy!"

## More Doctorates for CUT in 2014



Doctorandis: L-R: Ernst de Jager Vermaak, Jacob Letlhoye Segalo, Korku Edem Agbogli, Florence Mantwa Mphatsoe, Prof. Thandwa Mthembu, Vice-Chancellor and Principal at CUT, Johannes Benjamin Kotze, Prof. Henk de Jager, Deputy Vice-Chancellor at CUT and Mokoakoa Edward Kgati.

A doctorate degree is the highest academic qualification and a revered qualification to achieve. CUT conferred ten doctorates during the 2014 autumn graduation ceremonies. The degrees were in the fields of Education, Business Administration, Electrical Engineering, Clinical Technology, and Environmental Health. Three of these were awarded at the Welkom campus.

On 11 March 2014, CUT had the privilege of honoring the Governor of the South African Reserve Bank, Gill Marcus. The doctorate,

Doctor Technologiae: Business Administration (Honoris Causa), was awarded in recognition of her exceptional record in business-related achievements, as well as her contribution to a demanding and challenging business sector.

During the doctorandi dinner, the governor had this to say "I am humbled by the honour you and your institution have bestowed on me. I humbly accept it on behalf of South Africans who are contributing to build a non-racial, democratic, and prosperous South Africa. While you are awarding this honour to me, I feel that this tribute is also in recognition of the efforts of many others; not just in the struggle against apartheid, but also in the on-going endeavours since 1994 to make South Africa a better place for all to live in."

Gill Marcus was born in 1949 and grew up in Johannesburg where she attended Barnato Park High School for Girls. Ms Marcus went on to study for a Bachelor of Commerce degree at the University of Witwatersrand and then decided to study Industrial Psychology, a degree that she completed while living in London.

After the 1994 elections, she was elected to the National Assembly and quickly established a reputation for her efficiency in her position as chairperson of the Standing Committee on Finance. On 1 July 1999, she was appointed as Deputy Governor of the South African Reserve Bank - the first woman to hold this position. Since 2009, she occupies the position of Governor of the South African Reserve Bank - also the first woman to hold this position. She also held a Professorship in Policy, Leadership, and Gender Studies at the Gordon Institute of Business Studies (GIBS) in 2005 before going into business - initially as Chairperson of Western Areas mining company and later as Non-Executive Director of Gold Fields. In 2007, she also became Chairperson of the ABSA group. She has also served as the Chairperson of the Financial Services Board, as well as Chairperson of the Standing Committee for Revision of Banks Act.

Her inspiration lies in the fact that she succeeded in the very demanding and challenging business sector through an attitude to serve rather than being served. She represents a living symbol of CUT'S Vision 2020



Handover of the Doctoral Certificate in Business Administration (Honoris Causa) by Professor Thandwa Mthembu, Vice-Chancellor and Principal of CUT to Dr Gill Marcus, Governor of the South African Reserve Bank

She represents a living symbol of CUT'S Vision 2020



Doctor Technologiae: BUSINESS ADMINISTRATION  
 AGBOBLI, Edem Korku, MBA (PU for CHE)  
 Topic: "The Influence of entrepreneurial and market orientations on small scale agricultural enterprises in the Vryburg region."  
 Promoter: Prof. DY Dzansi, PhD (UP)

The researcher is of the opinion that small-scale agricultural businesses are in the best position to fulfil the poverty, unemployment, and inequality reduction role in rural communities, but that they first need to grow and prosper. In his study, entitled "The influence of entrepreneurial and market orientations on small-scale agricultural enterprises in the Vryburg region", it is argued that "for small-scale agricultural businesses to grow and prosper, they need to adopt a strategic approach that involves entrepreneurial orientation and market orientation driven by innovativeness." The results show that it is possible for small-scale agricultural businesses to adopt these strategic orientations. The results also show that such orientations lead to superior performance among small-scale agricultural businesses.

Doctor Technologiae: Business Administration  
 ARKO-ACHEMFUOR, Akwasi, MBA (PU for CHE)  
 Topic: "Interaction between ethnicity and entrepreneurship in South Africa: Case study of Naledi Municipality."  
 Promoter: Prof. DY Dzansi, PhD (UP)  
 Co-promoter: Dr AA Szubarga, PhD (UMCS)

Dr Akwasi Arko-Achemfuor believes that the current unemployment challenge facing most African countries, including South Africa, can best be dealt with through the promotion of entrepreneurship among all communities. Following that, his study entitled "Interaction between ethnicity and entrepreneurship in South Africa: Case study of Naledi Municipality" was conducted to comprehend a way in which to promote entrepreneurship among the various ethnic communities of South Africa. The outcome of the research shows that ethnicity influences the entrepreneurial behaviour and performance of the four main ethnic groups (Tswanas, Coloureds, Indians and Afrikaners) in the Naledi Local Municipality in the North West Province of South Africa. The research has shed light on the entrepreneurial behaviour of Batswana, Coloureds, Indians and Afrikaners in South Africa. The guidelines provided in this thesis pave the way for the development of appropriate entrepreneurship promotion and/or training strategies for each of these ethnic communities. The study also contributes to the body of knowledge as far as ethnic entrepreneurship research is concerned.



Doctor Technologiae: Clinical Technology  
 CLARK, Chevon Lee, MTech (CUT)  
 Topic: "Quality of life of chronic dialysis patients."  
 Promoter: Dr I Katz, PhD (Wits)  
 Co-promoter: Prof. WMJ van den Heever-Kriek, PhD (UFS)

Her doctoral study focused on the quality of life (QOL) of chronic dialysis patients. Dialysis in a developing country is dictated by socio-economic conditions and available funding, thus very few patients are offered dialysis. Quality of life is especially important when limiting access to a limited resource. In addition, dialysis is associated with increased morbidity, mortality and decreased QOL. The value of assessing QOL in managing chronic illnesses is gaining traction in medicine. A comparative descriptive study was carried out on two hundred dialysis patients. An evaluation of their quality of life and factors such as demographics, duration on dialysis, medical history, clinical indicators and the patients' understanding thereof, was performed



Doctor Technologiae: Environmental Health  
 RAPHELA, Selepeng France, MSc (UL)  
 Topic: "Occupational exposure to electromagnetic fields in the heavy engineering CO2-welding industry in the Mangaung metropolitan municipality."  
 Promoter: Dr C Weyers, DTech (CUT)  
 Co-promoter: Prof. K Shale, DTech (CUT)

His doctoral study focused on the health challenges faced by workers in the welding industry, in a field of study that has not been followed for quite some time in South Africa, namely electromagnetic fields (EMFs), which relates to radiation matters. Occupational exposure levels to extremely low-frequency (ELF) EMFs among a group of welders, fitters and office workers in a South African welding industry were determined. Extremely low-frequency magnetic fields were classified in category 2B by the International Agency for Research on Cancer (IARC), and may have a possible carcinogenic effect. In his study, the candidate developed a health and safety model aimed at reducing exposure to electromagnetic fields in the welding industry. Control measures for limiting exposure to EMFs were developed. The findings of the study have been published in an accredited scientific journal, and were presented at national conferences.



Doctor Technologiae: Engineering: Electrical  
 KOTZE, Benjamin Johannes, MTech (CUT)  
 Topic: "Navigation for automatic-guided vehicles using omnidirectional optical sensing"  
 Promoter: Prof. GD Jordaan, DTech (CUT)  
 Co-promoter: Prof. HJ Vermaak, PhD (Twente)

His doctoral project entailed the development of a system that enables an automatic-guided vehicle (AGV) to navigate autonomously with obstacle avoidance in a known environment, without operator or programming intervention. In this research, sensors typically used to sense the environment were replaced by the use of a single, omnidirectional camera system producing a picture stream. An inexpensive, low resolution camera and a MATLAB® software development platform were utilised. An area of interest is extracted from pictures received and, by utilising image processing; the vehicle is navigated along a set path. Reconfigurability is incorporated into the navigation process by means of physical directional signs placed next to the route, resulting in the possible simultaneous control of a number of AGVs, each on its own designated colour-signed path. This procedure is also executed without any programming alteration or intervention. The candidate developed a platform to continuously develop automatic-guided vehicle systems that lend themselves for the speedy evaluation and implementation of image processing options on such vehicles.

VERMAAK, Ernst de Jager, MMedSc (UFS)  
 Topic: "The influence of nutritional supplementation on the lung function and immune status of HIV-infected individuals in Mangaung."  
 Promoter: Prof. E van den Heever-Kriek, PhD (UFS)  
 Co-promoter: Dr Z Hattingh, PhD (UFS)  
 Co-promoter: Dr MW Brussouw, PhD (UFS)

The aim of his doctoral study was to determine if dietary supplementation with specific minerals, vitamins and herbs over a period of one year affected the haematological status, immune status, viral load and pulmonary function of HIV-infected individuals living in the Mangaung Metropolitan in South Africa. The results of the present investigation show that the eating pattern of this group of individuals reflects high energy (KJ) and macronutrient intakes, coinciding with the sub-optimal intake of Vitamin D and Iodine. A statistical significant decrease in the CD4/CD8 ratio (p=0.0048) is observed, and is independently linked with T-cell activation and long-term viral suppression. The lung function results confirmed an increase in the larger upper airways, with a determination of the smaller airways. A significant measurable decrease in the viral load of HIV-infected individuals was obtained by means of subjecting individuals to a nutritional fortification supplement strategy for a period of six months and more. In conclusion, this study supports the importance of a healthy diet and selected nutritional supplementation to improve the well-being of HIV-infected individuals.





**PHIL OSOPHIAE DOCTOR: EDUCATIONIS KGATI, Edward Mokoakoa, MEd (CUT Free State)**  
 Topic: "Developing an integrated human resource development plan for office-based educators in the Free State province"  
 Promoter: Prof. GJ Schlebusch Phd (Vista)

His PhD study: "Developing an integrated human resource development plan for office-based educators in the Free State Province" addressed the relevant issues of Human Resource Development and Performance Management of office-based educators. He employed a qualitative research approach to gather data from various levels of office-based educators in three education districts in the Free State. The study culminated in the development of an integrated human resource development plan for office-based educators to be employed by local, provincial and national departments of education



## CUT graduates Anglo American staff



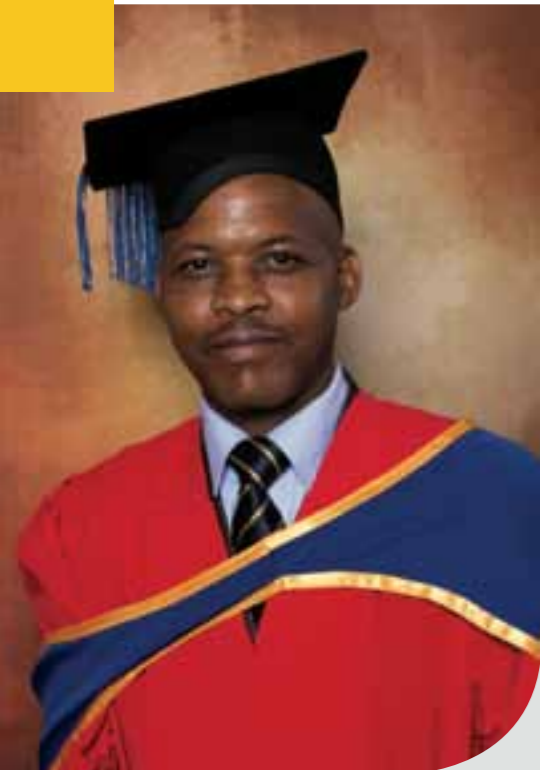
**MPHATSOE, Mantwa Florence, MEd (Vista University)**  
 "The role of deputy principals in managing conflict among secondary school teachers in the Lejweleputswa District, in the Free State Province"  
 Promoter: Dr MJ Motseke Phd (Educational Psychology) (Vista)

Her study titled, "The role of the deputy principals in managing conflict among secondary school teachers in the Lejweleputswa district in the Free State Province", explored conflict among teachers. She identified the causes of conflict among teachers, as well as the mechanisms employed by deputy principals to deal with conflict among teachers. The study found that the major causes of conflict among teachers in the secondary schools were shortages of resources, poor communication and performing the duties of absent teachers. Dialogue and compromise were the conflict-handling mechanisms commonly employed by the deputy principals in dealing with conflict. Recommendations were made based on the findings. A model for handling teacher conflict was also developed.



**SEGALO, Letlhoye Jacob, MEd (Vista University)**  
 "The role of school-governing bodies, with special reference to the provision of quality education"  
 Promoter: Dr CJ Teleki PhD (UP)  
 Co-supervisor: Dr AM Rambuda PhD (UP)

In his thesis "The role of school governing bodies with special reference to provision of quality education" the candidate investigated the incompetency and inefficiency of township school-governing bodies in carrying out the mandate of the South African Schools Act, as set out in the preamble to this Act. His arguments are premised on Section 20(1)(a) of this Act. However, the candidate considered other relevant sections in the Constitution and Legislation. His point of departure was Section 28(2) of the Constitution and Section 9 of the Children's Act. Case law and common law were also used to support his assertion that township schools are inefficiently and ineffectively governed. He comprehensively explains how incompetency and inefficiency of most township school-governing bodies deny learners access to quality education. Through quantitative and qualitative research designs, using a number of appropriate and innovative data-collection tools and data-analysis techniques, the candidate constructed a body of knowledge and a legal model for the provision of quality education by school-governing bodies. All these contribute significantly to a deeper and better understanding of how school-governing bodies could implement the mandate of providing quality education, as required by law.



Maccauvlei graduates shared their joyous day with colleagues and fellow students. The group has the option to pursue a postgraduate MTech degree. With them on the photo is (from centre to the right) Prof. Henk de Jager, Deputy Vice-Chancellor: Academic and Research; Prof. Albert Strydom, Dean of the Faculty of Management Sciences; and Prof. Tshedi Naong, Head of the Department of Business Management. (From the centre to left) Mr Jan Hollenbach of Maccauvlei Learning Academy.

Anglo American, one of the world's largest mining companies, founded the Maccauvlei Learning Academy project (MLA), a registered and accredited training provider in the Sedibeng District Municipality in Vereeniging. MLA became a Further Education and Training (FET) institution that, by law, could offer formal programmes up to NQF level 5. The learning academy found that a number of students were on senior management level and needed the academy to present more advanced NQF levels. Six institutions of higher education that were known for high-quality training were approached, and the Central University of Technology, Free State (CUT) became the 'University of Choice'.

MLA and CUT have been in partnership since 2012 and to date, CUT has managed to enrol 132 BTech: Human Resource Management delegates of which 120 have since graduated with 15 being cum laude. For admission, the group had to undergo the recognition of prior learning (RPL) assessment to ensure that they qualified for the NQF level 7.

The 2014 intake consists of a group of 55 from 65 applicants who have commenced their studies in March. The two parties have also sealed their relations by signing a three-year MoU of commitment. The previous project leader, Tian van Niekerk, has since retired leaving Prof. MN Naong with the reigns as the new project leader.

# CUT ALUMNA REPRESENTS WELL

Letshego Modutwane is a 24-year-old young woman who was born and bred in Bloemfontein and based in Johannesburg. She is a Diagnostic Radiographer who specialized to become a Medical Radiation Therapist. Letshego acquired her ground knowledge from the Central University of Technology, Free State (CUT) when she studied Diagnostic Radiography from 2006 to 2008. She did her community in service training at Qwa Qwa the following year (2009) and worked as a senior Radiographer at Pelonomi hospital in 2010. In 2011, she came back to the university to further her studies and specialised in Oncology (the study of tumours, especially cancerous ones) for two years.

Today, Letshego is proud of herself for the hard work she endured and is now reaping the fruits. "Having more than one qualification gave me the freedom to work wherever I wanted and do what my heart desired."

Currently, Letshego does locum in Radiology and prefers the flexibility as it gives her more time to pursue other dreams and projects. "When I chose to specialise in Oncology, it was purely for personal reasons and it is those reasons that are combined with my experience in oncology that gave birth to my campaign 'Cancer Cancelled'. This campaign is very close to my heart and its sole mandate is to educate communities about the types of cancer in general, not as a once off on cancer month but throughout the year every day! 'Cancer Cancelled' aims to educate with a twist."

As she further explains, 'Cancer Cancelled' coordinates the feature called Pink-Lips-Talk-Monday, whereby, every Monday they posts out a cancer fact in a way of trying to bring people to a deeper level of knowledge and understanding. Ladies are encouraged to wear a pink lipstick, which is just a way of making it fun and giving it a signature trend.

With her knowledge gained through education and experience, she has also published a Daily planner for women in 2014, which is a supporting product for the Monday feature, and it has been available at selected CNA stores countrywide from November 2013.

## Who inspired your diary?

Cancer Cancelled inspired the diary. I am always looking for new, fun, and unique ways to raise cancer awareness and that is how the diary came about. A diary is something a person carries with every day, having cancer information inside for one to see daily is powerful.

## Why is your focus on cancer and not on HIV or TB?

The government and the private sector have done justice in raising awareness and educating people about HIV & TB but unfortunately, the same cannot be said about cancer. There are over

200 types of cancers yet the focus is only on one, and still, they do not know enough about it. In addition, there are HIV related cancers and I strongly feel that if the two have a relationship and they did justice in educating people about HIV, the same should go with cancer.

Letshego also pointed out that she lost her father to lung cancer when she was in her first year of studies. "My father was a teetotaler and a non-smoker so that left me with a dozen questions, questions that the internet could not answer. At that point, I decided that I want to specialise in Oncology and get the answers that I was desperately looking for. In my first year of specialising, my grandfather was also diagnosed with cancer and he lost the battle in my final year. I was truly hurt because at the time, I was at a deeper level of knowledge. It felt like a blessing and a curse at the same time! Cancer to me is a ruthless enemy. It robs people of their loved ones and like the saying 'keep your friends close and your enemies even closer,' We need to keep cancer closer, and the only way of doing that is to learn more about it and educate more."

## Are we as a nation winning the battle?

No, we are far from winning it! With the relationship between HIV and cancer, (HIV related) cancers affect younger generation. In the black race, a very large percentage presents with late stage cancers and when in that stage, there is only so much that health professionals can do for the patient but I still say that enough education can turn the situation around. There is still hope.

## How is the public's response to your publication?

The response was great! CNA has asked me to produce and supply them with the diaries again for 2015 so I am currently working on a new concept for Daily planners 2015.

## Any sponsors?

I have not yet collaborated with anyone on the campaign. Sponsorships were not a priority for me when I started. I have however realized the need for financial muscle and have started drafting proposals. I am also hoping to make enough noise that sponsors come looking for me. Until then, I have to keep moving forward because if I wait, someone's cancer is moving from stage one to stage four.

Letshego mentioned that she is very proud to be a CUT alumna, and is proudly waving the CUT flag high. "I am a living testimony of my university! I am a CUT above the rest! Everything that I am today is because of the CUT health faculty. All my lecturers contributed to where I am today. CUT is by far one of the best tertiary institutions in the entire country. It changes lives and helps to make young people's dreams come true. When I walked into the CUT, I was poor, but when I left, I could afford life. You are doing an incredible job. Keep it up!"

## Where to from here?

My plan is to invest in my Radiography career and have my own x-ray practice one day and hire loyal staff who can run it on my behalf and don't need me to be there 24/7 while I try to make my mark in the media world.



In the picture: Enactus-CUT team with Prof. Henk de Jager, DVC Academic & Research, celebrating their achievements at the Sandton Convention Centre.

## Enactus-CUT continues to 'cut above the rest'!

Twenty four Enactus-CUT team participated in the Enactus National Competitions which took place on the 10th-11th July 2014 at Sandton Convention Centre, Johannesburg. The teams' efforts, dedication, and enthusiasm managed to secure them a position amongst the 8 finalists that have been successful to proceed to the 3rd phase of the challenge.

Enactus-CUT is an international non-profit organization that brings together students, academics and business leaders who are committed to using the power of entrepreneurial action to improve the quality of life and standard of living for people in need. Guided by academic advisors and business experts, Enactus student leaders apply business concepts to develop and implement community outreach projects. The experience not only transforms lives, it helps students develop the kind of talent and perspective that are essential to leadership in an ever-more complicated and challenging world. It also establishes student programs on campuses around the world.

For their challenge, the team presented two projects. The first project is a Local Economic Development Project (LED) sponsored by Harmony, which aims to assist small businesses in Thabong Industrial area in Welkom to have a formal structure for conducting their businesses. The second project focused on the problems of needy university students, homeless children and how tapping on talents in community can alleviate some challenges faced by these groups of people.

The team was awarded 3rd place in the Absa Capacity Building through Effective Empowerment and Nedbank Tripple Bottom Line Sustainability respectively. In the Harmony Local Economic Development Special

Competitions, the team out-shined all 26 universities that participated and came home with a trophy and R15000 fat cheque as a 1st prize!

Accompanying the team was the faculty advisor, Prof C. Chipunza, co-faculty Advisor, Ms C. Zwede, Student Development Officers, Mrs B. Minny, Mrs. L. Diphangwe (Bloemfontein campus) and Mrs M. Hensen-Teise (Welkom Campus), SRC President and the Sabbatical Officer. The Deputy Vice- Chancellor, Academic and Research, Prof Henk de Jager and the Director: Strategic Execution Unit, Mr T. Kulati also graced the event.

Enactus-CUT has extend its sincere gratitude to Pendulum Visual Communication for their sponsorship and input in the team's 15 minutes outstanding electronic presentation that included pictures, slides, animation, and sound tracks. Other sponsors includes, Harmony Gold Mine, Department of economic development, tourism and environmental Affairs, Free State, OK Grocer Unilever Mangaung Metropolitan Municipality Strategic Execution Unit Office of the DVC: Academic and Research, Faculty of Management Sciences, Academic Development Support, Wellness Centre and Matjhabeng Municipality in Welkom.

Enactus-CUT also extend its sincere gratitude to Pendulum Visual Communication for their sponsorship and input in the team's 15 minutes outstanding electronic presentation that included pictures, slides, animation, and sound tracks.

Other important sponsors include: Harmony Gold Mine, Department of Economic Development, Tourism and Environmental Affairs, Free State, OK Grocer, Unilever, Mangaung Municipality Strategic Execution Unit, Office of the DVC: Academic and Research, Faculty of Management Sciences, Academic Development Support, Wellness Centre and Matjhabeng Municipality.





Seated from L-R: Dean of Management Sciences-Prof. Albert Strydom, Tourism CEO representative, Deputy Vice-Chancellor: Academics-Prof. Henk de Jager and General Manager, Marketing: Tourism Authority-Mr. Khotso Thole during the signing.

## Strategic research alliance between CUT and Free State Tourism Authority formed

Free State is a province filled with historical wealth and beauty, from wars and gold rushes to beautiful landscapes that vary from towering sandstone Mountains to open plains. It is a melting pot of cultures and offers an authentic South African tourism experience.

Tourism is one of the industries that contribute to the economic growth of the province and the country at large. The success of such is based on amongst other aspects, transparent administration and systematic performance research. In order to attain the latter, the

Free State Tourism Authority has recently established a 5 year strategic alliance with the Central University of Technology, Free State (CUT).

The Authority as the responsible party for the marketing of tourism in the Province, is interested in conducting research in order to determine developmental needs and marketing initiatives for tourism in the Free State

The agreement entered into by the two parties was sealed during the signing of a Memorandum of Understanding (MoU) that took place at CUT. In the statement of agreement, it was recommended that CUT as an academic institution with necessary skills and advanced research capacity, assist the Free State Tourism Authority in conducting the necessary research with the objective of determining the developmental needs and marketing initiatives for tourism in the Free State. CUT will further assist the Authority in strengthening the research practice within the industry in the central region.

The research endeavour will be headed by the Department of Tourism and Events management's research academics under the leadership of the Faculty Dean, Professor AJ Strydom.

FS Tourism and CUT MoU: Ms Seipati Lebusa, Board member of Tourism Authority with Prof. Henk de Jager, Deputy Vice-Chancellor: Academics exchanging the signed document



## enterPRIZE: CUT ON A MISSION TO BREW ENTREPRENEURS



Left: Ms Zanele 'Sally-sue' Matsane



Right: Ms Tshepang Mokhatla & Ms. Carly Willemse

"When you go out of here, you must remember that, as a South African graduate, you are faced with challenges of economic growth and unemployment. 3.8 million Youth are not at school, unemployed and not in training. That youth is relying on people like you to make a difference in their lives. South Africa is in dire need of innovators and entrepreneurs. You are the right candidate and well equipped with such, so, go out there and make a legacy for yourself! Go out there and create employment for that youth! Go out there and make sure that you add value in growing the country's economy!"

These were the words of Prof Mthembu, Vice-Chancellor and Principal, during the 2014 autumn graduations when he addressed the graduates. Clearly, his words did not fall on deaf ears.

Ms Tshepang Mokhatla, a second year student in Tourism Management, Carly Willemse also in Tourism, and Ms Zanele 'Sally-sue' Matsane, a student at the Department of Built Environment took steps to strides when they entered the enterPRIZE job creation challenge competition. The Free State Job EnterPrize Challenge is an entrepreneurship initiative headed by the International Labour Organization with the goal of assisting existing and emerging entrepreneurs with the necessary resource to create employment in the Free State. The competition is a partnership between the International Labour Organisation (ILO), DETEA, Seda and Flemish International Cooperation Agency (FICA) with generous sponsorships from the private sector, universities, and business associations.

The initiative is in its second year of existence with a much higher number of entries as compared to 2013 when it started with only fourteen categories to enter. In 2014, 769 entries for 25 categories were received from five districts around the Free State Province and 71 Free State entrepreneurs received various prizes to the value of R7.5 million. In addition to the prizes, entrepreneurs will also receive technical support.

Our own Ms Tshepang, Carly, and Zanele performed

excellently well to be amongst the narrowed 121 participants. Their entries proposals were based on job creation, growth potential, sustainability, market demand, innovation, and relevant skills. The participants also received training on how to present themselves and their business plans to the independent judges from twelve judging panels.

CUT's flag flew higher above the rest when its own students scooped position 1 and 2 respectively. Both Tshepang and Carly scooped the first position winning an amount of R150 000 in the tourism sector focus under the Most Innovative Business category. The winners said that they will be starting a bicycle tour on top of Naval Hill, a novel and viable business idea for Bloemfontein as it will create and sustain jobs! The duo said their money will be solely used for funding their new business.

Ms Zanele, who was mentored by her lecturer, Mrs Erica Greyling, got the second place with a fat cheque of R100 000 for the Best Young Entrepreneur category. "My start up business, known as Metse Ke Bophelo – Water is life, let us preserves it for you, is a business that specializes in storage containers in the form of recycled industrial drums. These drums will be sold to households in and around Bloemfontein area. The target market is primarily the rural communities who do not have running water in their homes."

Ms Winnie Sereeco, National Project Coordinator, Free State SME Development Program, said that the main goal of the enterPRIZE competition is to create decent jobs through small and medium enterprise development. "This competition was launched last year at CUT campus for emerging, new and established enterprises based in the Free State province. This is in line with Free State Provincial Government's SME Development Initiative to meeting its priorities towards job creation."

Winners hailed from Bethlehem, Bloemfontein, Botshabelo, Ficksburg, Harrismith, Kroonstad, Parys, Philopolis, QwaQwa, Sasolburg, Thaba'Nchu, Welkom and Wepener.



Putting a stamp that seals the deal are Dr David Mota; Head of the Free State Department of Health, and Prof. Henk de Jager; Deputy Vice-Chancellor: Academic and Research (CUT).

## CUT and Free State Department of Health renew their vows

Central University of Technology, Free State (CUT), and Free State Department of Health signed a continued Memorandum of Understanding (MoU) on Wednesday, June 4 2014. In terms of Work Integrated Learning (WIL) and Internship training, the renewal of the long-standing strategic relationship between the two entities stipulates that they will grant each other access for students to the following:

- **Technical services inclusive of facilities, planning and maintenance, as well as equipment maintenance and procurement;**
- **District, regional and tertiary hospitals, community health services, laboratories and units all over the Free State Province;**
- **Environmental and occupational health services;**
- **Health promotion and education;**
- **Communication services inclusive of the production of health material, marketing, graphic design and photography, as well as**
- **Management services such as human resources, accounting, auditing, office management, and government management.**

Access to internship training and WIL for students includes undergraduate, postgraduate, elective, vocational and temporary training purposes, plus continuing professional development and research across all established fields of studies at CUT.



## CUT PLEDGES TO IMPROVE LEARNER'S PERFORMANCE

Learners in class listening attentively.

Central University of Technology, Free State's (CUT) Acting Vice-Chancellor and Principal, Professor Garrod officially opened the CUT Winter School 2014 to more than 1200 learners from all walks of the Free State Province. The school dates back to 1996, and has grown from strength to strength over the years, bearing fruits that saw a drastic improvement in the Free State matric results. Partners in the winter and spring school projects are CUT, Standard Bank of South Africa, and the Department of Education in the Free State.

During his address to the learners, Prof Garrod encouraged learners to take full advantage of what CUT winter school has to offer and remain focused throughout the duration of the school. "We at CUT pledge to continue improving learners' performance and support learners' education in the province. I am thankful of your parents and guardians who have supported you until this far, prepare to make them proud, think big and think beyond the two weeks that you'll be here; think 2015," he concluded.

The Winter School, runs for 10 days and has been privileged to receive generous sponsorships for the past four years from Standard Bank South Africa's Corporate Social Investment Office. The R700 000 grant in 2013 has been increased to R1 million in 2014 making it possible for the learners from disadvantaged backgrounds to be part of the programme.

The MEC for Free State Department of Education, Mr Tate Makgoe said that the class of 2014 should lead by example and exceed the high standards that the class of 2013 has set for them. "To be in matric is a special thing as some people did not get the chance to be there. You must walk tall and finish

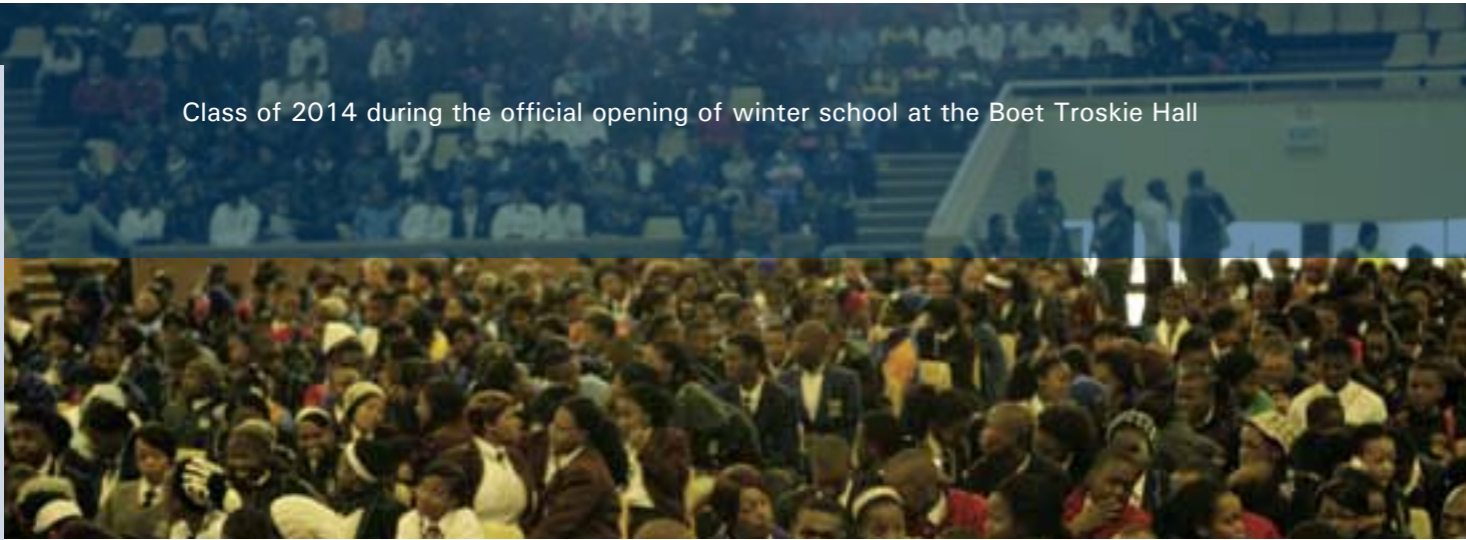
with distinctions. The class of 2013 was the best and I know you can do better than them. It is not all about money or resources but determination. I have faith in the CUT-winter school programme. Previously, my own daughter was part of the pack and had challenges with the Life Sciences subject and bringing her here, was the best decision I've ever made because she finally got a better understanding of the subject, passed and is now in UCT studying towards Chemical Engineering! We need more researchers, innovators and entrepreneurs in this Province," the MEC said.

Although the winter school focuses on eight subjects: Mathematics, Physical Sciences, Life Sciences, Geography, Engineering Graphics and Design, Business Studies, Accounting and Economics, the project render support to scarce subjects, nurturing the talent of prospective students who might enroll at CUT in the STEM fields (Science, Technology, Engineering and Mathematics). The pack is led by eighteen highly qualified tutors who are more than committed to adding value to the grade 12's in the Province moving it from 87% of matric results in 2013, to a new target of 90% and retaining the top spot in the country.

According to the MEC, Free State was the first province to achieve a pass rate of 87% and has been the best in Physical Science. In 2009, the province achieved 40% in mathematics and in 2013; it came second best at 71% with the winner slightly beating them by 1%. "This year, I want the class of 2014 to defend our title and reach our set target of 90%!" He further highlighted that the best South African learner for Mathematics and Science came from Teto High School in Welkom.

Standard Bank South Africa Provincial Head: Mr Nicolaisen, a former learner and student of Grey College and UFS said that education is the most powerful weapon. "We at Standard Bank understand where we need to make investments. We are living in a world of continuous learning and a world that is forever changing. Success doesn't come cheap, it takes time and comes with challenges; it needs discipline, hard work and dedication."

Class of 2014 during the official opening of winter school at the Boet Troskie Hall



The event was graced by the MEC for Free State Department of Education (FSDoE), Mr. Pule Tate Makgoe, Standard Bank South Africa Provincial Head, Mr Nicolaisen, Acting Vice-Chancellor and Principal for CUT, Prof. Garrod, HOD for FSDoE, Mr Stanley Malope, Director for CUT-Schools Advancement Academy, Mr de Villiers and Chief Director; FET Colleges and AET, Mr Bob Tladi and Ms Motsoeneng.



Mr Gerhard Geldenhuys- Director and Partner PwC-Guest Lecture.

## YOUR BARGAIN IS SOMEONE ELSE'S LOSS

Bribery and corruption has been the fastest-growing economic crime category in South Africa since 2011. The country's organisations suffer significantly from procurement fraud; human resources bribery and financial fraud. The PricewaterhouseCoopers (PwC) Global Economic Crime Survey is conducted every two years, and continues to be the world's leading research programme into economic crime. A total of 5 128 senior businessmen and women from 93 countries participated in the survey during the 4th quarter of 2013.

The Faculty of Management Sciences, in collaboration with PricewaterhouseCoopers (PwC), hosted a public lecture on the Global Economic Crime Survey. Economic crime has been declared the most gruesome crime of the day. The purpose of the lecture was to create awareness among South African business leaders regarding the continuous change in economic crime and the reasons why they need to ensure that robust preventative and detective controls are effectively implemented to curb this crime.

The guest lecturer, Gerhard Geldenhuys, a director and partner at PwC, is a renowned expert in his field; he is heading the Central Region of South Africa Advisory Practice; and is also responsible for providing internal, forensic and performance audit

services in the Free State, Northern Cape and North West provinces. He has extensive experience in governance, risk management and compliance in both private and public sectors. He also serves on the Internal Audit Education and Partnership Advisory Board of the University of Pretoria.

In his presentation, Mr Geldenhuys shared the shocking 2014 survey on economic crime statistics, which he said remains a serious challenge affecting South African organisations. To date, the survey results show that economic crime is still a cause of concern among business leaders, government officials and private individuals in South Africa. 69% of South African respondents indicated that they have been subjected to some form of economic crime in the 24 months preceding the survey, compared to 37% of global respondents.

Africa has the highest economic crime rate at 39%; followed by the Middle East at 35%; Asia Pacific at 30%; Latin America at 25%; and North America at 14%. The study also revealed that, in most cases, the perpetrators are internal parties; in management positions; have university degrees; are male; have ten or more years of service; are between the ages of 31-40 years; are mostly trusted by the employer; and have more power and authority.

Globally, the industries that are more at risk are:

Catching up during the group discussions



Globally, the industries that are more at risk are:  
Engineering and construction (50%);  
Government/state-owned entities (35%); and  
Energy; utilities and mining (42%).

## CONTROLLING THE CHANGING FACE OF ECONOMIC CRIME

Mr Geldenhuys also highlighted the importance of detecting fraud in managing risk. He had this to say: "Risk management programmes have become more effective fraud-detection methods, but a significant portion of South African organisations do not carry out risk assessment for one reason or another. South African companies are losing too much to crime, and suffer significantly from procurement fraud; human resources bribery; and financial statement fraud. If you do not become part of the solution, you are stuck with the problem, because most of the time, fraud is detected by accident."

He also mentioned that companies need to be proactive and alert, and that they should have fraud-risk methods in place in order to be ahead of perpetrators. "You have to review your methods timeously; conduct periodic risk assessments; identify risks; and come up with preventative measures and ultimately solutions."

The debate raised by the audience was that having fraud-risk management systems in place also poses a challenge, as the same people who have the utmost authority over fraud management systems can easily manipulate the system; thus, credibility is still questionable. "Compliance is everyone's responsibility, but if the organisation wants to set the right tone, it should start at the top," he concluded.



Left - Right:  
Mr Werner Landman-Business Development Manager-PwC-  
Prof. Tshedi Naong - Mr Gerhard Geldenhuys-Director and Partner PwC and Prof. Albert Strydom-Dean of Faculty-Management Science

Africa has the highest economic crime rate at 39%

## ANNUAL BUSINESS ETHICS AWARDS HELD

Accounting and Auditing students learn more about Industry's Ethical conduct

The Department of Accounting and Auditing at Central University of Technology (CUT) held its annual Business Ethics awards event for BTech Accounting students as part of their Business Ethics module on 14 May 2014.

The main purpose of the project is to raise awareness and at the same time educate students about various unethical aspects occurring in both the public and private sectors that they might come across in their life of practice. The accounting and auditing professions worldwide are placing a renewed emphasis on the importance of business ethics. As one of CUT's leading industry partners in the accounting and auditing profession, PwC assists the Department of Accounting and Auditing on an ongoing basis in the drive towards quality and excellence in this field.

Each year, teams comprising of six BTech students are engaged in projects where they choose and research about a topic of their choice that meticulously seeks to scrutinise unethical conducts in the business market. Teams then compete against each other, presenting their findings to a panel of judges who not only are experts in the industry, but also ethics professionals in their field of practice.

Apart from the event being a project for raising awareness, it also serves as a networking opportunity for staff members and students, to identify possible work integrated learning and employment placements.

The successful event was spearheaded in partnership with PwC by Mrs Leandi Steenkamp; Senior Lecturer, and Mr Adriaan Taylor; Head of Department: Accounting and Auditing. As one of CUT's leading industry partners in the Accounting and Auditing profession, PwC assists the department on an ongoing basis in the drive towards quality and excellence in the Accounting and Auditing field.

The winners of the competition received gifts and merit certificates of participation from CUT as well as prize monies (courtesy of PwC) as follows:

- 3rd position: R660.00 per team member
- 2nd position: R800.00 per team member
- 1st position: R2000.00 per team member
- Best presenter: R1200.00



1st-prize winners from left to right:  
Ms MA Makauta, Ms KGA Mabusa, Ms TL Khori, Mr E Gazouzie, Ms JP Mokalake and Ms NC Mophete, with staff from CUT and PwC.



2nd-prize winners from left to right:  
Ms PB Dickdick, Mr I Modise, Mr NEO Ramonyadioe and Ms KP Molosioa, with staff from CUT and PwC.



3rd-prize winners from left to right:  
Ms PV Mabeli, Ms PA Qhali, Ms TL Nkhuoa, Ms S Nobuzana, Ms MR Molise and Ms VP Mateise, with staff from CUT and PwC.

# CUT TAKES OPEN-DAY TO ANOTHER LEVEL

Open Day is an annual event in the universities calendar whereby learners from various high schools, teachers and parents across the country get an opportunity to visit and explore their children's universities of choice, learn about the programmes offered, speak face to face with lecturers and current students, participate in activities of the day and have lots of fun. Open Day provides an insight into what the university life is like, it informs and inspires learners, shapes their future and helps in giving them the 'Will' power.

CUT hosted a successful Open Day on 26 April with the biggest turn out ever in the history of the event. A total of 28 Schools from Bloemfontein, Kimberley, Kroonstad, Welkom, Virginia, Ondendaalsrus, Botshabelo, Thaba-Nchu, Priska and individual learners from schools in Durban teemed to both campuses to be part of the day and to experience the real look and feel of CUT and what they will be exposed to as new year students in 2015. Except for the purpose of recruitment on the day, the university also opened its doors to the general public. The traditional event is regarded to by many as the largest brand activation activity. On the day, the faculty representatives, lecturers, deans of faculties and advisors from the future students' services, provide information on programmes offered, offer advice to and answer queries on admissions, fees and scholarships that prospectus booklets don't answer. The university on the other hand, gets a chance to

**[ 2014 had a huge turnout of 3138 learners as compared to 2886 in 2013 and 1467 in 2012. ]**



Sharp! Sharp! First day at the winter School. Learner excited to be part of the programme.

'brag' and recruit at the same time! The day which is also a defining moment for the brightest minds, serves as a motivation for learners to study harder and succeed in their final year of high school. Participating schools were invited through direct marketing, constant engagements as well as the media at large. 2014 had a huge turnout of 3138 learners as compared to 2886 in 2013 and 1467 in 2012.

As part of the campus tour, learners and parents were able to view faculty video clips, had a mini lecture and face to face contact with the lecturers. Student Services also played a role in showing the learners what the university has to offer beyond lecture times. For schools, the open day is also part of Life Orientation studies. They got the first-hand experience and information prior to deciding on the best career and study options availed to them to make informed career choices.



Left: Department of Built Environment with learners from Tsoseleto and Dr Viljoen high school

Right: Learners engage face to face with lecturers

“The popular myth in South Africa is that the African natives were devoid of mathematical knowledge until the advent of Europeans. Nothing could be further from the truth!”

## THE BASOTHO ORIGIN OF MATHEMATICS



L-R- Prof. Ngidi, Dean of Faculty Humanities, Mr Zulumathabo Zulu- the guest speaker and author of Sesotho Dictionary of Mathematics , Dr Wendy Setlaletoa, HOD-Maths, Science and Technology and Mr Lukanda Kalobo, Lecturer.

“The popular myth in South Africa is that the African natives were devoid of mathematical knowledge until the advent of Europeans. Nothing could be further from the truth!” These were the words of Mr Zulumathabo Zulu, a guest speaker in his opening remarks at the public lecture that was hosted by the Faculty of Humanities at CUT on 12 June 2014.

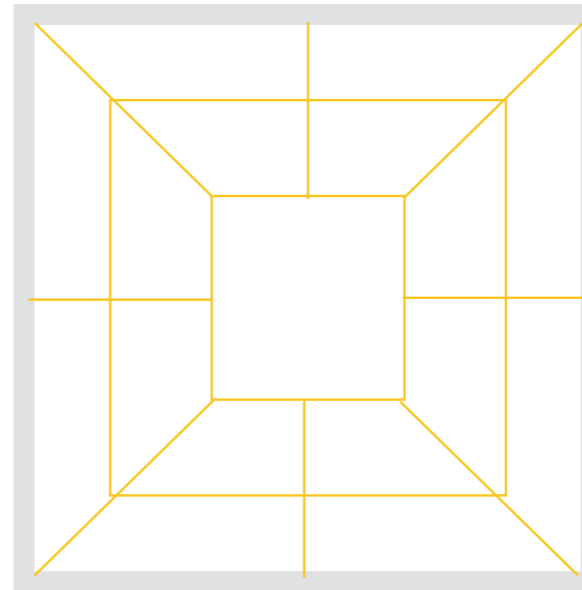
An author of the Sesotho Dictionary for Mathematics, Zulumathabo Zulu was born in Soweto, but grew up in the village of Matamong in Free State where he acquired his indigenous knowledge system in a traditional African society. He immigrated to Canada in 1989 where he graduated as a software engineer and plied his trade in companies like Montage IT Services, Xwave, Adscape Media of Google Inc. and Nortel Networks.

In his lecture, Mr Zulu argued that Africans had known

Mathematics long before the advent of colonisation. Important to his assertions was the cosmic knowledge of Basotho which was unique skills of mathematics that they used for looking into the stars to trace their genesis and gather intelligence and guidance they needed; especially for their harvesting period.

He further cited that the Basotho have always placed their emphasis on application of number. They used their numbers in ceremonies as part of the sacred numbers, in their architecture as well as in therapeutics.

“Basotho were able to count, estimate, measure, philosophise, solve, and model things.” He said that referring to the indigenous games that they used to play including Morabaraba and Diketo, which he said, had many powerful mathematical concepts. “As you play Morabaraba, you interact with the concepts and for one to know and understand the game; one has to have the mathematical prowess.”



### Morabaraba sparse matrix

Two players play the game. Each player needs 12 tokens izinkomo or cows. These could be stones, marbles of the same or similar colour and there will be one blank space to allow movement in the play. He also mentioned lewa as an algorithm that is used to set schemes and patterns. Other advanced mathematical concepts include binary logic, heuristics, permutations, and legutla, which is a direct translation of a recursive system.

Another ancient game he mentioned was Diketo, which he said was an effective tool to teach mathematics and enabled kids to experience numbers. The game is played by using small stones in a hemispheric pit on the ground and requires a player to have counting skills. This was used to motivate children to learn counting. Here, the concepts of increment, decrement, accumulator,

eye-hand coordination, manual dexterity, estimation, volume and time are inherent. He further said that the game was and can be used to model natural phenomena such as counting, causation and flight simulation.

To further draw the attention of his amused but curious audience, the enthusiastic Zulu revealed the Basotho artefact of Moseme as a mathematical function. Zulu mentioned that moseme was used for ages among Basotho as a quadrature that served a variety of functions such as being a mat and a measuring tool for building structure. He also made reference to the Greek mathematician, Pythagoras, who was credited for introducing the concept of quadrature in his homeland after spending 23 years in North Africa as a student in the Egyptian temples.

Mr Zulu is the inventor of Thekwini, software engineered for therapeutics at the School of Computer Science under the mentorship of Dr. Jansen Sedgwick of Carleton University. His other innovations include cryptography, digital forensics, and mood diagnostics.

“It is unfortunate that the official curriculum has marginalised traditional knowledge as if it had nothing to contribute to the advancement of modern science. Education should not be like a parachute that lands and never incorporate traditional knowledge. The curriculum must reflect a locally grounded knowledge while embracing a global perspective,” Zulumathabo concluded.

“It is unfortunate that the official curriculum has marginalised traditional knowledge as if it had nothing to contribute to the advancement of modern science. Education should not be like a parachute that lands and never incorporate traditional knowledge. The curriculum must reflect a locally grounded knowledge while embracing a global perspective,” Zulumathabo concluded.

# CUT and Eskom partner in project management training

CUT and ESKOM HOLDINGS LTD launched and entered into a Memorandum of Understanding (MoU) agreement ending 12 March 2016.

## CUT HOST 1st ANNUAL BRAM FISCHER LECTURE

The Central University of Technology, Free State (CUT) supported the initiative of Mangaung's 1st Annual Bram Fischer Memorial Lecture that was held on 23 April 2014, the day on which Bram Fischer was born in 1908.

The main objective of the memorial lecture was to appreciate, celebrate and honour the life of the Free State legend, Bram Fischer. He was a staunch Afrikaner and a devout believer in the rule of law. He was described by speakers of the day as a dedicated freedom fighter, an activist and a lawyer who was brave enough to abandon and reject his own Afrikaner heritage to fight and strive for social cohesion and justice in South Africa.

According to Minister Naledi Pandor, Bram Fischer struggled with the conflicts and contradictions of Apartheid South Africa, which drove him to become an imperialist. "He was a courageous man who challenged his own people because he believed what they did was morally wrong. As an Afrikaner whose conscience forced him to reject his own heritage and be ostracised by his own people, he

showed a level of courage and sacrifice that was in a class by itself. He was condemned as a traitor by most Afrikaners, but highly admired in black communities," she said.

The lecture was well-attended by leaders from all spheres of government. Amongst the dignitaries who attended the event were Ms Naledi Pandor, the Honourable Minister of Home Affairs;

Mr Ace Magashule, Free State Premier; Cllr Thabo Manyoni, Executive Mayor of Mangaung Metropolitan Municipality; Prof. Thandwa Mthembu, Vice-Chancellor and Principal of CUT; Mr Tate Makgoe, Member of the Executive Council (MEC) for Education; representatives from the Free State Legislature; Dr Choice Makhetha, Vice-Rector of the University of the Free State (UFS); members of the public and youth representatives from UFS; and Ms Olga Seate and Mr David Makhoali from CUT.

Bram Fischer was sentenced to life imprisonment, but became seriously ill with cancer and was released to his brother's home in Bloemfontein, where he succumbed to the illness and died in May 1975.



Premier of the Free State, Ace Magashule, MEC Tate Makgoe joins in the song.

Prof. Mthembu, Minister Naledi Pandor & Cllr Manyoni.



Eskom BTech and MTech students during the project management launch getting to know each other. With them are their line managers (from ESKOM) and future lecturers.

CUT and ESKOM HOLDINGS LTD launched and entered into a Memorandum of Understanding (MoU) agreement ending 12 March 2016.

The project management launch and the MoU signed were for CUT to render academic services on postgraduate level to ESKOM employees in the fields of BTech Project Management and MTech Business Administration.

A group of 23 BTech and 13 MTech students has enrolled for the duration of two and three years respectively.

Mr Twedi Seane, CUT Innovation Services (CUTis) CEO, said that the two parties have had long-term relations but confirmed that this kind of commitment from ESKOM was the first of its kind. "We have been in a long term relationship with Eskom and have fully engaged with their academy for learning. Before our Electrical Engineering, diplomats get absorbed into the ESKOM fraternity and our Engineering faculty has been collaborating with ESKOM on the development of alternative energy course. We are very ecstatic and grateful to be associated with companies such as ESKOM and looking forward to provide our services even beyond ESKOM and extend it to other entities with the intention of improving the quality of lives in communities," he concluded.

# Hockey

The women team played well in the C- Section and were placed 2nd out of six teams. Of the five games played, they won four and played a draw against DUT. The male team also did well and were placed 4th out of the six teams.



Left: Mr Skillie Bester, Ixias Coach; Alec Mahlangu, Ixias star player; Prof. Henk de Jager, Deputy Vice-Chancellor: Academic and Research accepts the signed players jersey on behalf of CUT.

Right: Mr Helgard Muller, Deputy Manager: Operational Sport and no stranger to the world of rugby in South Africa; Kholo Ramashala, Ixias Captain; Dr Paks Tondi, Deputy Registrar: Student Services; Charles Hitchcock; and Coach Bester.

# Rugby



Bolofo-Mokoena holding onto the ball



Len-Noord tough on the ground

## CUT IXIAS REMAINS A 'CUT' ABOVE THE REST

The FNB Steinhoff 2014 Varsity Shield competition journey has been a long, challenging and exciting one throughout the season. Game after game, Central University of Technology, Free State team, the FNB CUT (Ixias) thrived, conquered, and remained unbeaten three times since 2011 and their consistency brought them to their final destination. The team has moved up to Varsity Cup League, a promotion that is well deserved! The 'boytjies' celebrated their Varsity Shield Cup victory in style on Thursday August 20, 2014. The well-deserved celebration was hosted at One on Park Restaurant in honour of the outstanding performance they have displayed. Not only has their victory contributed to sports development at CUT, but has also nurtured their individual talent so much that some of the current players have recently signed new contracts with some of the national teams.

Rugby at CUT also became a breeding ground for legends such as Os du Randt, Daan Human, Gerrie Brits, AJ Venter, André Venter, Pieter and Helgard Muller as well as Jan van Wyk, who also launched their professional careers whilst still studying at CUT (then known as Technikon Free State).

Rugby was launched through humble beginnings in 1981 and to date; its endearing success is attributed to the management body, coach, trainers, and parents for their undying support in making sure that the team succeeds against all odds.

# Choir



CUT Choir retained the crown in the Gauteng Choral Music Association Competition held on 25 May 2014 in Tshwane-Mamelodi.

CUT has been competing in the competition since 2006, and won first place in 2013 and 2014.

The 65 members will compete on home ground in the Old Mutual National Choir Festival, Free State Province to be hosted at the Boet Troskie Hall on 23 August 2014. This is the most prestigious choir competition.

# Athletics

## CUT ATHLETES TAKES PART IN FREE STATE CROSS COUNTRY

Xolani Loni, a BTech Information Technology student and a professional athlete took part in the Free State Cross Country, an event that is held to determine and select qualifying athletes to represent the province at the ASA cross-country championship.

To qualify for the cross-country, athletes have to take part in a maximum of six leagues that equals to 60% of the qualifying races and their individual performances for them to stand a chance.

Xolani participated in ASA cross country 10 km in 2013, he was the USSA student champ and also obtained 5th position in the 1500m Free State champs race. He also ran the 21.1 km race and finished at position 14 with a time of 1:08:23

The 2014 Bloemfontein cross- country race will be held at the University of Free State cross- country site in September. Another CUT athlete who will be participating in the 4 km Free State cross-country is Portia Ramolahloane, a National Diploma Marketing student.



Above: Xolani Loni

## CUT ATHLETES AT USSA TRACK AND FIELD CHAMPIONSHIP

Tshwane University of Technology (TUT) hosted the University Sport South Africa (USSA) Track and Field Championships 2014 on 25 and 26 April 2014.

USSA is the official unified national umbrella sports structure for the regulation, organisation and coordination of student sport activities at regional, provincial, and national levels in the tertiary education sector of South Africa.

Participation in sport and other recreational activities has become an important unifying factor in the education sector. Promoting sport means instilling good values, and encouraging friendship; fair play and cooperation among students who will one day occupy responsible key positions in the world of work.

Universities' sport activities are considered an ideal vehicle for promoting mutual understanding amongst people with different cultures and histories. Students learn to respect each other through the common international language of sport.

Eight CUT athletes (seven men and a woman) represented the institution at the 2014 USSA Track and Field Championships. The participants were:

Name & surname	Event	Position	Time
1. Eric Ramotshabi	21.1km	22	01:13:58
2. Julius Maloka	21.1km	29	01:18:55
3. Vitalis Ntaole	21.1km	20	01:13:34
4. Kamohelo Moahlodi	21.1km	23	01:14:55
5. Thabang Masihleho	21.1km	10	01:06:37
6. Thembinkosi Mciya	1500m S/M	10	00:05:02
7. Bongani Yawa	1500m S/M	09	00:04:49
8. Martha Mabaso	800m S/W	09	00:02:42

CUT Welkom campus team, consisting of Eric Ramotshabi; Thabang Masihleho; Kamohelo Moahlodi and Vitalis Ntaole, managed to win the bronze medal in the 21.1km race. Thabang Masihleho was also awarded a certificate of participation in the 19th World University Cross-country Championships in Entebbe, Uganda.

“is a cut above the rest”



**SYMBOL OF SUCCESS**



**10**  
**YEARS**  
AS A UNIVERSITY  
OF TECHNOLOGY