



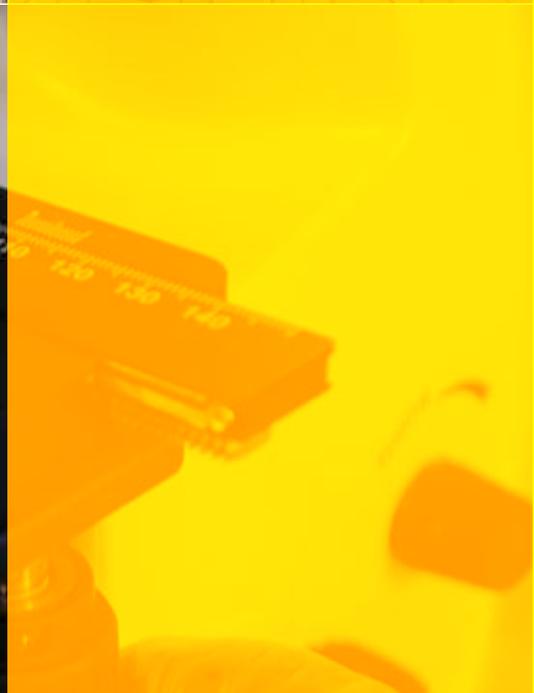
Central University of  
Technology, Free State

# GRATIA

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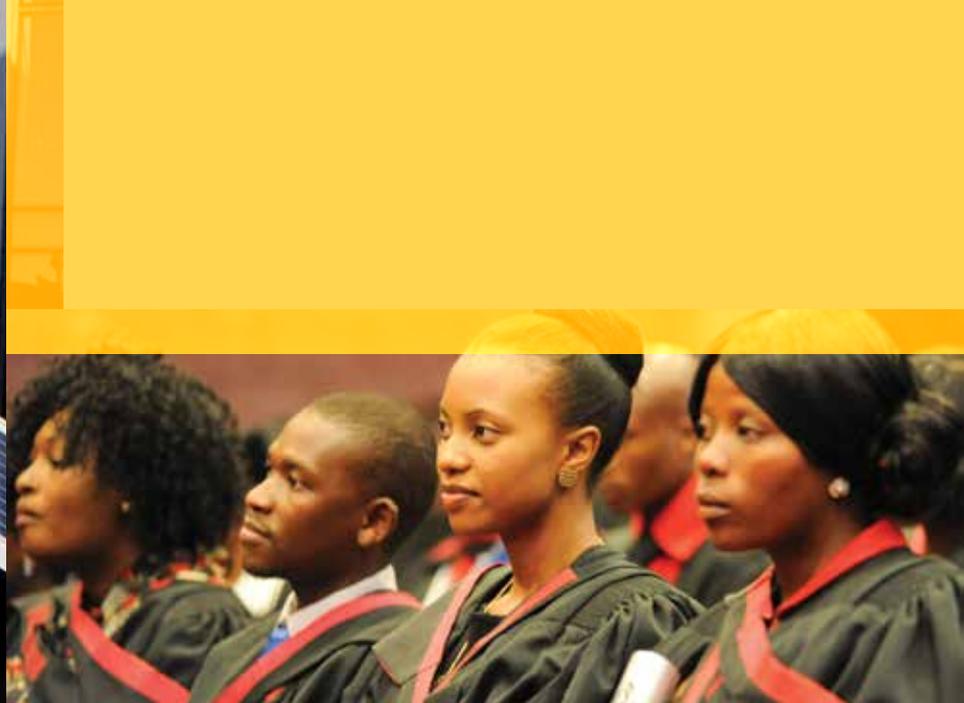


Cultivating *Crazy Ideas*  
That lead to *innovation!*



# GRATIA

*Liaison Journal | Central University of Technology, Free State (CUT)*



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Opinions expressed in this publication are not necessarily those of the writer or Central University of Technology, Free State.



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Professor Thandwa Mthembu

# MESSAGE

## from the desk of the Vice-Chancellor

■ When the State-of-the-University Address was delivered early this year, I made an undertaking on behalf of CUT community to recommit ourselves to inspire people to excel in discharging their responsibilities, executing our robust plans diligently and efficiently, sharpening our innovative products for the benefit of all and utilising our pennies wisely to provide first-rate education for our students.

The mid-term review period presents us an opportunity to take stock of progress we have made in driving these implementation tenets of Vision 2020.

As a university of technology, we are constantly driven to set the pace in the higher education sector as market leaders, not only in teaching and learning, and in research, but in technology transfer and innovation initiatives. If the latter should lead to improvements in the social, economic and environmental spheres – the triple bottom line – then the outcomes of all our efforts shall be felt by business/industry, government and the rest of society.

The purpose of this edition is to share our success stories that set CUT apart from other knowledge centres. The past few months have seen the approval and accreditation of new academic programmes in various fields which is testament to our Strategic Transformation of Educational Programmes and Structures (STEPS) process that we began in 2010. As I said before, this process has enabled us to begin to turn our comparative advantage into a potential competitive advantage in curricula, research, innovation and other educational processes.

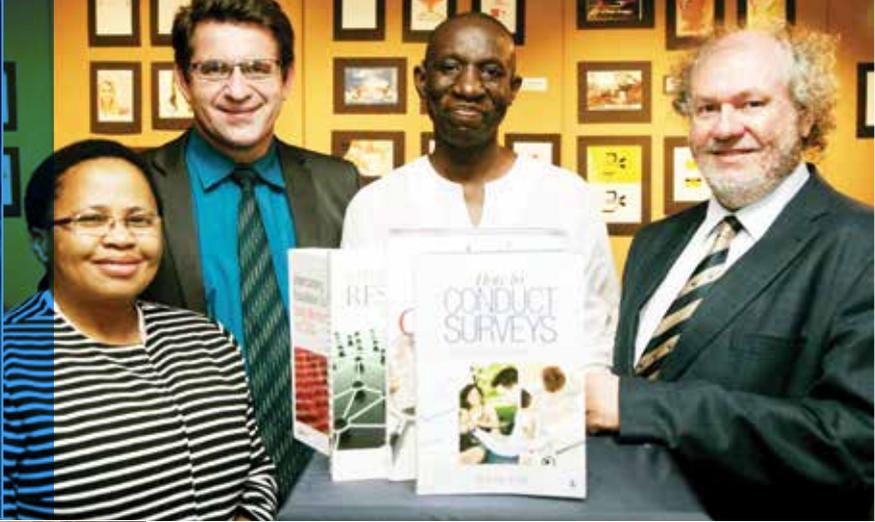
Some of these success stories are about new courses in energy renewable solutions which will develop students with the necessary skills to assess and maintain the renewable energy systems within the industry. The most notable outcome of our focus on renewable energy is the new Solar Flower project that has made CUT a household name within the South African media. We are indeed proud of our faculties for their “crazy” and innovative ideas that will re-shape programme offerings and the quality of learning and teaching within the higher education sector in this country.

It will be reckless of me not to reflect on the media breakfast which CUT hosted in order to present the outcome of De Bruin report. This is a coda. This is the final outcome of the anonymous letter saga and related off-shoots thereof which the Chairperson of Council, Dr Sylvan Seane closed when he presented the full account of this saga to the media on 11 June 2013. In addition to the Justice Johann Daffue Judgement, this report has vindicated management and Council in their denial that there had been any maladministration, mismanagement and broader wrong doing at CUT as had been alleged. The faceless, nameless and cowardly people generally cowered and could not present the facts and evidence to determine the validity of their allegations in the February 2011 anonymous letter and other subsequent allegations.

I must hasten to thank all the members of Council, staff and students who knew the truth, never wavered and stood put by it. This whole saga is an excellent example not only to the higher education sector but to the whole of our society in respect of the virtues of truth, integrity, unrelenting commitment to facts and evidence, courage and resolve, democratic practice and the rule of law. What this shows is that even though some may think South Africa is turning into a banana republic, there are systems and institutions of society that actually work.

As we now come to the end of this long and arduous journey, it has been proven that CUT is a well governed and managed university contrary to what “the prophets of doom” had alleged.

Moving forward, the key challenge is to enhance the positive developments that CUT had been experiencing even in the midst of the baseless allegations, the court case and the commission. Let us take advantage of this moment, and share more of our success stories with the rest of the world so that CUT can be known as the citadel and “isle of innovation” that it seeks to be. ■



# *Building the Foundation*

*"We believe that when you place all the elements of the innovation value chain around one table, a spontaneous happening of projects will take place to the betterment of the region".*

# A PARTNERSHIP WORKING TOWARDS WEALTH CREATION IN THE FREE STATE

■ A commitment to innovation and economic prosperity is at the heart of central South Africa.

Central University of Technology, Free State (CUT), together with the Department of Science and Technology (DST) and the University of the Free State (UFS), pledged their commitment to innovation and collaboration at the launch of the Regional Innovation Forum Free State (RIF), which took place at the CUT Bloemfontein Campus on 9 May 2013.

The process was kick-started with an inaugural steering committee meeting of the Free State Regional Innovation Forum held on 22 February 2013, at CUT, to establish the Regional Innovation Forum (RIF).

The initiative of Department of Sciences and Technology (DST) has been aimed at promoting innovation and economic growth across the various provinces of South Africa. The RIF aims to bring together stakeholders from various segments in the innovation value-chain, in order to create strong systems of innovation by facilitating collaboration and supporting project and business development.

Mr Imraan Patel, Deputy Director-General from the Department of Science and Technology said: "The benefit of innovation is that it has the potential to address issues of inequality, poverty and unemployment, by developing a unified vision and identifying areas of strength and capability within the region."

The Free State Province holds a strong position in the agriculture, mining and catering and hospitality sectors, which qualifies these sectors as initial focus areas for innovation through collaboration.

Prof. Henk de Jager, Deputy Vice-Chancellor: Academic at CUT said: "The mandate of the Regional Innovation Forum is 100% aligned with the CUT 2020 vision of becoming an engaged university that focuses on producing quality social and technological innovations in socio-economic developments, which is why we are extremely excited about this initiative. This launch must be seen as an



(From the left): Mr Chaka Matiso, Deputy Director of Monitoring and Evaluation from the Department of the Premier; Mr Imraan Patel, Deputy Director-General from the Department of Science and Technology; Prof. Henk de Jager, Deputy Vice-Chancellor: Academic at CUT; Prof. Corli Witthuhn, Deputy Vice-Chancellor of Research at the UFS; and Mr George Masoabi, Manager Economic Development and Planning from the Mangaung Municipality all pledged their commitment to collaboration and innovation at the launch.



The start of a great venture. At the inaugural meeting of the RIF, (front row): Mr Johann Strauss, Deputy Director: Sector and local Innovation at the Department of Science and Technology (DST); Mr Winston Baatjies, Deputy Director: Innovation, Planning and Instruments at the DST; Prof. Henk de Jager, Deputy Vice-Chancellor: Academic at CUT; and Mr Werner Nel, Innovation Office at the University of the Free State.

(Back row): Mr Ludrick Barnard, Director of Product Development Technology Station (PDTs) at CUT; Prof. Laetus Lategan, Dean: Research and Development at CUT; Prof. Jorrie Jordaan, Director: Technology and Innovation at CUT; Mr Gerrie Booysen, Director of Centre for Rapid Prototyping and Manufacturing (CRPM) at CUT; and Prof. Ryk Lues, Coordinator: Regional Innovation Forum (CUT).

important outlet to encourage new ideas and promote constructive engagements between government, universities, business community and civil society, on how to empower our communities and help build the economy of this region and South Africa as a whole. To make a sustainable improvement to local competitiveness and growth, a system that brings together local innovators to exploit the opportunities presented by innovation is required."

Prof. Corli Witthuhn, Deputy Vice-Chancellor of Research at UFS added: "We look forward to collaborating closely with all players in the region and are eager to see what this initiative is going to mean for the region and for the country as a whole." The forum will ultimately work towards wealth creation within the region, through the growth of the local economy.

Prof. Ryk Lues, from the Faculty of Health and Environmental Sciences, and the project leader of the RIF in the Free State said: "We believe that when you place all the elements of the innovation value chain around one table, a spontaneous happening of projects will take place to the betterment of the region".

The Free State Province will be amongst the first to implement this initiative and the DST has appropriated funds to CUT with the expectation that Higher Education, Government, and Formal and Informal Business participate in the process. ■



Fire means life! As a symbolic start to the project, representatives from CUT, DST and UFS lit torches, one for each of the partner organisations. Prof. Henk de Jager, Deputy Vice-Chancellor: Academic represented CUT; and Mr Imraan Patel, Deputy Director-General represented the DST, while Prof. Corli Witthuhn, Deputy Vice-Chancellor of Research represented UFS.

# CUT DEVELOPS SOLAR-POWERED CHARGING STATIONS FOR STUDENTS



*"The idea came to develop a device that harnesses energy from a renewable source."*

■ The Faculty of Engineering and Information Technology at CUT unveiled a prototype which allows students to charge their electronic devices on campus, via a solar-powered USB port.

"We have seen a marked increase in the daily use of electronic equipment by students," says Prof. Herman Vermaak, acting Dean of the Faculty of Engineering and Information Technology. "With this increase, the idea came to develop a device that harnesses energy from a renewable source and gives students an easy, accessible and free re-charging facility."

Now that the prototype has been developed, the next phase will be to place a number of these charging stations all over campuses - both Bloemfontein and Welkom - to help ensure that students can recharge whenever they need to and do not run out of battery power at a crucial time.

The Solar-Flower was unveiled on 22 May 2013 and was designed as well as developed by a CUT engineering team. The steel construction of the device was produced at the mechanical workshop located at the university's Bloemfontein campus.

According to Prof. Vermaak, the university's state-of-the-art facilities, coupled with excellent teamwork among faculty members who are experts in their respective fields, allow CUT to manage projects such as this one - from the inception stage all the way through to the delivery of a product prototype.

"It is important that as technology educators we remain at the forefront of technology, particularly in the field of renewable energy," said Prof. Vermaak. "This project is a perfect example of doing just that. Besides providing a practical solution to a growing problem on campus, it

CUT invited students and staff members to test the Solar-Flower. The next step is to place a number of these charging stations all over the campuses to help ensure that students can recharge whenever they need to and don't run out of battery power at a crucial time. This truly makes CUT, a cut above! The prototype, situated at the entrance of the new BHP Billiton Building extension.

also gives us an opportunity to introduce all students and staff members to the use of sustainable energy."

The Solar-Flower project represents one of the many ways CUT is committed the drive towards a greener future (more about Sustainable Development @ CUT online: <http://www.cut.ac.za/sustainable-development/>)

## Renewable Energy Programmes part of CUT curricula in 2014

The Department of Electrical, Electronic and Computer Engineering are introducing two new programmes in 2014 and 2015 respectively. The first is a higher Certificate in Renewable Energy Technologies and the second a Diploma in Sustainable Energy.

These programmes were designed to help develop more Renewable Energy Technicians and Energy Advisor/Auditors in South Africa. Upon entering the job market, the technicians will have the technical knowledge and skills to conceptualise, install and maintain renewable innovations in various urban and rural environments of South Africa, while the advisors and auditors - among other responsibilities - will be equipped to advise consumers on available renewable energy devices. ■

# CUT AT FOREFRONT OF BUSINESS ETHICS EDUCATION



CUT students turn their backs on unethical behaviour!

Accounting and auditing firms worldwide are placing a much stronger emphasis on the importance of business ethics within the industry. CUT is answering the call through course material and initiatives designed to ready their students for the “real world” by arming them with relevant, practical ethics education.

While entrepreneurial and professional skills are vital to good business, business ethics can make or break any affiliation.

To ensure that their students are able to make informed decisions when faced with ethical dilemmas once they join the workforce, CUT includes a compulsory Business Ethics module in the first semester of all B.Tech Programmes offered by the Departments of Accounting and Internal Auditing and Financial Information Systems.

The Business Ethics in Education Project is a first-of-its-kind in South Africa. This important and exciting module includes theoretical information on topics such as ethical decision-making, resolving ethical dilemmas, social responsibility and corporate governance.

But the real beauty of the course is its practical component; an incentive-driven project devised in collaboration with international audit firm PwC. The project allows final year students in business ethics the opportunity to integrate their theoretical knowledge with real-life ethical dilemmas, with awards given for the best project presentations.

The project is now in its second year, and CUT is still the only Technology University in the country to offer this level of practical learning as part of its curriculum.

To partake in the project and awards, students form groups of six to eight members and select any topic related to a business ethics issue to work with. They then conduct extensive research and present their findings to an interdisciplinary panel of judges consisting of staff members from CUT, PwC and the University of the Free State. The best presentations are rewarded at the annual Business Ethics Awards function, which this year took place on 15 May 2013 in the Japie van Lill Auditorium of the CUT.

“The main purpose of the project is to raise awareness among accounting students regarding various unethical aspects occurring in both the public and private sectors,” says project leader and business ethics lecturer, Ms Leandi Lubbe. “We are really proud of the success of this exciting project in partnership with PwC.”

Over and above the practical experience gained from the project, students also benefit from being forced to work in groups, think laterally, learn to scour the South African and international media and debate vigorously on their chosen topic. ■



Business Ethics Award, Best Presenter – CUT student, Patience Shata from the Departments of Accounting and Internal Auditing and Financial Information Systems was recognised for her presentation on ethics at the annual Business Ethics Awards function.

From left to right: Mr Werner Landman, Business Development Manager at PwC; Patience Shata; Ms Leandi Lubbe, Senior Lecturer in Financial Information Systems at CUT; and Ms Riche van Wyk, PwC.

# CUT WELCOMES CHE'S CRITICAL ROLE IN SHAPING QUALITY LEARNING AND TEACHING AT UNIVERSITIES

■ CUT hosted the Council on Higher Education (CHE) at Bloemfontein Campus together with delegates from the University of the Free State on 15 May 2013. The CHE, which is responsible for institutional audits of all higher education institutions, is certainly an invaluable resource for capacity building within higher education sector.

In its last report of 2011, Council laid a solid foundation on its Five-Year Quality Enhancement Project which will initiate ideas and debates on how to take higher education forward in this country. For the next two years, areas of focus will include enhancing university teachers, student support, the learning environment, course and programme enrolment management.

“We are very excited that the anticipated outcomes of the QEP include benchmarks, codes of good practice, tools and resources for improving undergraduate educational provision, which will lead to improved outputs in terms of the number and quality of graduates.” said Prof. Henk de Jager, Deputy Vice-Chancellor: Academic at CUT.

CHE's visit to the campus was critically important to CUT in that it provided an opportunity for the university to share views and ideas of how to take the project forward. This will not be the last meeting, as a number of consultations will take place to review from time to time progress.

“The Council on Higher Education (CHE) is a statutory body responsible for assuring and promoting quality in higher education in South Africa. From 2004 to 2011, in-depth audit reports were produced for all public universities. Rather than embark on another round of institutional audits immediately, the CHE has decided to run a Quality Enhancement Project (QEP) for the next five or six years. The aim of the QEP is to enhance student learning with



Prof. Mabokang Monnapula-Mapesela, CUT's Dean of Academic Development and Support has the floor during the work session that took place at CUT. In the back Prof. Henk de Jager, Deputy Vice-Chancellor: Academic, Dr Solomon Makola, Campus Manager at CUT's Welkom Campus, and Prof. Driekie Hay, Vice-Rector: Academic at UFS listens intently.

a view to increasing the number of graduates that have attributes that are personally, professionally and socially valuable. The CHE is in the process of interacting with various stakeholders to provide input before finalising the framework for the QEP. The Focus Group meeting held with senior management from CUT and UFS on 15 May was part of this process.” said Prof. Diane Grayson, Director: Institutional Audits at CHE.

CHE has committed to providing a space for institutions to share good practice models that support the ongoing dialogue on quality teaching and learning within the sector. The QEP project presents a new era of innovative teaching and learning for universities and CUT is inspired to take the four Ps of its Vision 2020 to the next level. ■



The group from left (front row) are Dr Pakiso Tondi, Deputy Registrar: Student Services at CUT; Ms Gertrude Bohloko, Deputy Registrar: Academic Administration at CUT; Prof. Driekie Hay, Vice-Rector: Academic at UFS; Ms Precious Sipuka, CHE Researcher; Dr Aria Merkesteyn, CHE Consultant; Prof. Diane Grayson, CHE Director of Institutional Audits; Dr Lis Lange, Senior Director: DIRAP (Directorate for Institutional Research and Academic Research and Academic Planning); Prof. Mabokang Monnapula-Mapesela, CUT's Dean of Academic Development and Support; Prof. Rudi Buys, Dean of Student Affairs; and Dr Solomon Makola, Campus Manager at CUT's Welkom Campus.

**Back row** (from left): Prof. Henk de Jager, Deputy Vice-Chancellor: Academic; Dr Ben van der Merwe, Director: Teaching & Learning; Dr Derek Swemmer, Registrar of UFS; Dr Marcus Ingram, Assistant Director: DIRAP; and Dr Daryl Balia, Director: Academic Planning at CUT.

# MOBILE TECHNOLOGIES BOOST THE INTERACTIVITY OF E-RESOURCES



Head of technical support at CUT, Ms Zethu Mazibuko; Prof. Henk de Jager, Deputy Vice-Chancellor: Academic; Mr Juliano Kabamba, CUT's University Librarian; and Prof. Laetus Lategan, Dean of Research and Innovation, during the launch of Library Week.

Monday 18 March marked the launch of Library Week at CUT - a celebration of the dedicated library staff members who provide important library services, including the training of our first-year and postgraduate students.

"Library Week has become an annual global event with the goal of raising the profile of libraries and recognising their importance in spreading knowledge, literacy, innovation, development and citizen empowerment, said Vice-Chancellor and Principal, Prof. Thandwa Mthembu during the launch. Like its international counterpart, South Africa's Library Week seeks to engender greater national appreciation of the vital roles libraries play in human development. I am pleased to highlight the fact that CUT hosted the launch of the Free State Province's Library Week on 15 March 2013."

CUT's celebrations of Library Week included the showcasing of web-based interactive solutions using the latest technology available, including smart phones, tablets and laptops. Mobile technology was also demonstrated in order to assist students with accessing e-resources using their mobile phones, thereby bringing e-resources beyond the library walls.

The launch was also an opportunity for the CUT community - including the executives, Deans and students - to express their support for the role our library plays in the life of an institution like CUT.

"This is the occasion to critically assess its state and its ability to equip young minds and researchers with requisite knowledge to thrive intellectually and pro-

fessionally. As Members of the constituencies of our library – students, faculty leaders, executives, library leaders and managers, professors and researchers – we are the ones who determine the state and the future of the library", said Prof. Mthembu.

Ms Nomonde Maqubela, Head of Client Services, Library and Information Services added: "Our library has been delivering information, technology and resources as part of our efforts toward life-long learning for our students, faculty staff and everyone on campus. Libraries have always played a role in education. In our case, CUT library is an important resource to educate and enrich users in many ways. Our library serves the university community by providing access to electronic resources, as well as post graduate research facilities for students who are pursuing degrees in BTech, MTech and Doctoral programmes. ■



CUT students interact with mobile technology platforms introduced to enrich their lifelong learning.

# NEW BEGINNING FOR DIGITAL COMMUNICATION PLATFORMS AT CUT



Prof. Mthembu congratulates the team who played a role in bringing the new site to life.

CUT unveiled the newly revamped, state-of-the-art public website on 19 April 2013. With its fresh look and functionality, the new [www.cut.ac.za](http://www.cut.ac.za) website is designed to highlight and profile the innovative work and research being conducted by the university.

The website was designed with a number of new dynamic features, including one-click access to faculty and department web pages, simplified, easy-to-navigate access to all programmes offered at CUT, and a step-by-step guide for applying to CUT, and hiring venues or CUT students. The contact information has also never been this easy to find, and potential students can check their application status by completing a simple online form.

The new site lays the basis for CUT as a higher education institution to provide credible information to all its partners and to instill public confidence in pursuit of its commitment to cooperative and corporate issues governing the higher education sector.

“Our launch of the new CUT website represents a major step towards doing the right thing at the right time, in line with our vision of becoming a dynamic institution buttressed by what we teach here – science, engineering and technology,” said Prof. Thandwa Mthembu.

“A website is not merely a signpost or an advertising billboard,” continued Prof. Mthembu. “It is at the heart

of demonstrating who we are, our core corporate values and what we offer the world. In this case, it is about excellent education and the principal means of attracting potential clients and talent and most crucially, it is a means of making strategic connections, which is fundamental to building a strong and innovative institution”.

A number of other features have been incorporated into the new website. Alumni can update their details online, and apply for re-issue of lost certificates with ease. A Frequently Asked Questions (FAQ) section has been included to assist with everyday questions, as well as an A-to-Z Index for the more advanced user. The website, along with various social media tools that have already been activated, will be used to disseminate information.

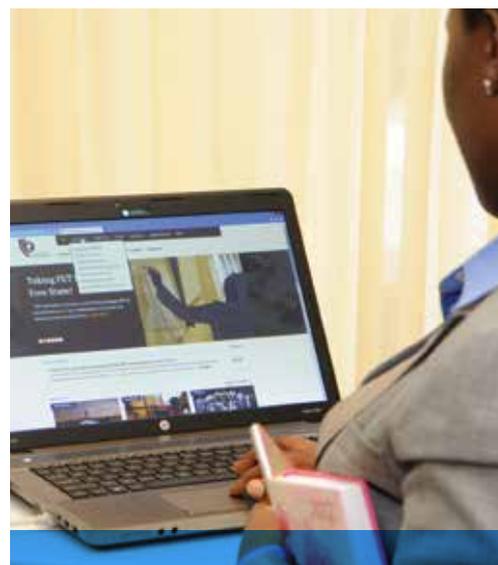
The university needed a functioning tool, which demonstrates its innovation and commitment to academic excellence. This new website offers users an interactive experience and a wealth of information to help streamline the information output from the university, to recruit prospective students and brand CUT as a university of choice.

For more information watch the video on our YouTube channel “CUT Web Launch April 2013” or go to [www.cut.ac.za](http://www.cut.ac.za).



Team members who formed part of the core group responsible for the re-development are, from left (front row): Dr Masinde Muthoni, Senior Lecturer in Information Technology; Ms Carin Verhoef, Strategy Execution Unit (SEU) Office Manager; Ms Tumi Keele, Manager: Student Recruitment and School Liaison; Prof. Mthembu; Ms Leandra Jordaan, Web and Print Editor (Project Leader); Ms Kholu Matete, SEU Senior Analyst; and Ms Caty van der Walt, Project Coordinator for Communications and Marketing.

Back row (from left): Mr Dan Maritz, Director: Communications and Marketing; Dr David Himbara, Acting Director: SEU; and Mr Rick Pengilly, Director: IT and Logistics.



Guests were given the opportunity to engage with the new website at the launch on 19 April 2013.

# SCIENCE, ENGINEERING, TECHNOLOGY - CUT IS AT THE TOP OF THE GAME!

*"The best outcome  
by a university of  
technology  
for years."*

■ In April of 2013, the Engineering Council of South Africa confirmed what we at CUT already knew - our Engineering and Information Technology programmes are first rate!

Engineering National Diplomas and Baccalaureus Technologiae degrees at Central University of Technology, Free State have achieved accreditation from the Engineering Council of South Africa (ECSA). ECSA, established in the 1940s, has a long and proud history in South Africa and is today one of the most respected accreditation bodies in South Africa.

The accreditation of CUT's engineering programmes is the culmination of the Strategic Transformation of Educational Programmes and Structures (STEPS) process at CUT, which was launched in 2010. (More information about STEPS online at: [http://www.cut.ac.za/step/.](http://www.cut.ac.za/step/))

This development is widely welcomed by the university leadership, staff and students alike. According to the Vice-Chancellor and Principal, Prof. Thandwa Mthembu, the accreditation is not surprising, given the hard work that everyone at the university has put in, in the last several years. "This process has enabled us to identify our strengths and weaknesses in curricula, research, innovation and other educational processes; thus permitting us to re-shape our education and training."

Prof. Henk de Jager, Deputy Vice Chancellor: Academic, was equally enthralled by the developments: "Knowing the engineering fraternity and the low success rate of programme accreditation by ECSA over the past few years, this is indeed an outstanding achievement for CUT and the best outcome by a university of technology for years."

CUT offers engineering programmes in the fields of Civil, Electrical, Electronic, Computer, Mechanical, and Mechantronic Engineering; and Built Environment, which includes building, construction management and quantity surveying. ■



# merSETA INVESTS R 10 MILLION IN ENGINEERING DEVELOPMENT PARTNERSHIP



■ CUT has made great strides in support of government's commitment to close the shortage of skills in engineering fields.

The merSETA delegation, led by CEO Dr Raymond Patel, visited CUT to finalise the R10 million project initiative of establishing a merSETA Chair in Engineering Development at CUT from 2014 to 2016.

"CUT was a perfect choice as a university of technology to take the chairpersonship of Engineering Development; especially in FET Sector and Technology Education Colleges in the Free State and Northern Cape Provinces," said Dr Patel. "We have a shared vision of what the field of engineering in education can become with the correct support and development."

merSETA is one of South Africa's 21 Sector Education and Training Authorities (SETAs) whose mandate is to promote skills development in various industry sectors, including metal and engineering, auto manufacturing, motor retail

and component manufacturing, tyre manufacturing, as well as the plastics industries.

"CUT regards this partnership as long term and important for us to be able to contribute significantly to the development of more engineers - especially our young people who should be equipped with hard skills for business and industry," said Prof Henk De Jager, Deputy Vice Chancellor: Academic.

Some of the technical training of FET lecturing staff will be done in collaboration with HAMK University of Applied Sciences, Finland. Another focus will be technical Secondary Schools in the Free State and Northern Cape Provinces, and finally the promotion of women in engineering with a particular focus on schools and current students.

The establishment of a research chair in engineering development also affirms the accreditation of CUT's engineering programmes. ■

Source(s) Engineering news article on 28 May 2013 <http://www.engineeringnews.co.za/article/engineers-still-most-difficult-position-to-fill-survey-2013-05-28>



From left: Mr Wayne Adams, COO of merSETA; Mr Christo Basson, Senior Manager ETQA and Partnerships, merSETA; Dr Raymond Patel; Ms Geraldine Winkler, Manager: Fundraising and Project Marketing; Prof. Thandwa Mthembu, and back row: Prof. Henk de Jager.



## PARTNERSHIP WITH INDUSTRY/ BUSINESS AND GOVERNMENT – HOW CUT PLANS TO BE “A CUT ABOVE THE REST”



The images were captured during the 2011 30 years celebrations, showcasing CUT’s talent in a Dance Competition.

■ At the end of 2012 and the first quarter of 2013, CUT undersigned three pivotal Memorandums of Understanding (MOUs). Through each of the newly cemented partnerships, CUT have committed to invest in the institutions graduates – as the future leaders of South Africa – destined to make a better life for all. Here follows a brief on each of the recently signed MOUs and what the partnerships entail:

### CUT and PACOFS set the stage for a great partnership

CUT and the Performing Arts Centre of the Free State better known as PACOFS signed a Memorandum of Understanding (MoU) on 7 May 2013.

At the signing, Acting CEO of PACOFS, Mr. Teboho Macholo, had this to say “This MoU that we have signed today is long overdue. Our collaboration with CUT has always been there. It needed to be nurtured. We at PACOFS have identified that we have a common goal in respect of our collaboration with CUT and we see our role as reaching out to artists in the province; nurturing their talents. CUT has resources and capacity to enable us to realize this commitment”.

This long standing non-formal partnership is now formalised and the two parties will henceforth cooperate by not only exchanging facilities, equipment and services, but also embarking on joint partnership development projects and marketing ventures.

Deputy Registrar: Student Services, Dr Pakiso Tondi said that CUT has such immense talents among our students and PACOFS is an important partner to enhance cultural and social programmes on campus and to help showcase these talents.

CUT decided to work closely with industry through the establishment of board committees for its programmes so that students acquire sets of skills and practical implementation experience to meet the demand of job sector and industry.

## FS Provincial Government and PSETA in conjunction with CUT launch an integrated learning programme

Department of the Premier, Public Service Sector Education and Training Authority (PSETA) and CUT have launched the induction of CUT students into the Work Integrated Learning programme (WIL) and signed a MOU to set up the partnership on 12 December 2012.

A few of the specific initiatives that will be pursued over the course of three years through this agreement include: skills transfer and student readiness for work; internships for CUT students and alumni, as well as bursaries for graduate students to conduct PSETA related research and Work Integrated Learning (WIL).

At the time of the MOU signing, 26 students from Faculties of Management Sciences and Engineering and Information Technology was placed within respective Departments of the Premier; Public Works and Sport, Arts, Culture and Recreation as the first intake of this pilot project. The project gives effect to the implementation of the national skills development strategy which is intended to expose students to experimental training opportunities in relation to knowledge and competence they can contribute to their development.

## CUT set the foundation for widespread access to higher education

The Free State Provincial Government, CUT, and Further Education and Training Colleges (FETC) in the Free State pledged their commitment to collaboration at MoU signing ceremony on 6 June 2013.

The MoU stipulates a working relationship between CUT and the FETC sector, which will provide and improve access to further education and training institutions, including universities in the province.



(Front from left): MEC Tate Makgoe, Department of Education in the Free State; Prof. Thandwa Mthembu.

(Back from left): Mr TS Letho, Director of Flavious Mareka FET College; Dr LM Fourie, Director of Goldfields; FET College, Dr SD Manese, Director of Maluti FET College and Mr JS Tladi, Chief Director: FET Colleges.

Until now, there has been a mismatch between the courses offered at FET colleges and the entry requirements into higher education institutions, which resulted in FET qualifications being disregarded when prospective students' applications were considered for admission.

"CUT will assist the FETC sector the development of bridging courses, the launch of new NQF level 5 curricula programmes and will contribute to the improvement of FETC staff training and education. These advancements and the development of articulation and credit transfer instruments, will make it easier for FETC students to gain admission into CUT", said Prof. Thandwa Mthembu, Vice-Chancellor and Principal of CUT.

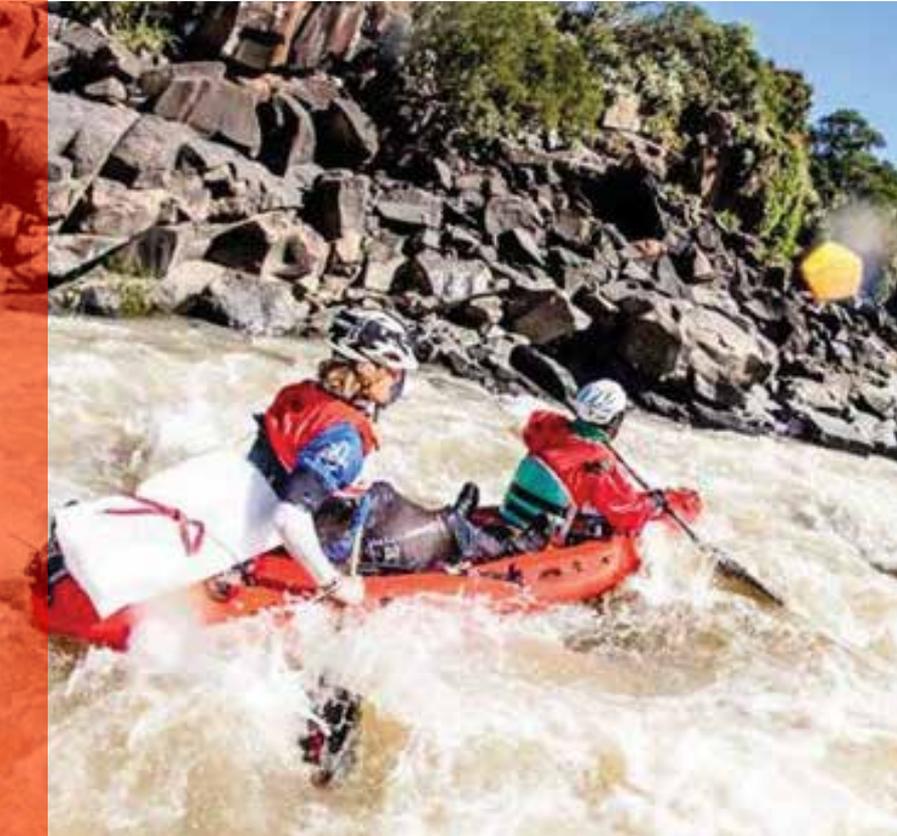
The signing of the MoU was the first step to the realisation of the Department of Higher Education and Training's efforts to revitalise the FETC sector in the Free State through systematic, coordinated and meaningful collaboration with universities.

"This partnership will assist victims of our system who did not have mathematics and science up to matric to bridge the gaps in their education and will develop the opportunity for these learners to enrol at higher education institutions", said Mr Tate Makgoe, MEC for Education.

"We believe that we have a critical role to play in the development of highly skilled graduates, specialising in STEM focussed careers, to ultimately create wealth for the country," said Prof. Thandwa Mthembu, Vice-Chancellor and Principal of CUT.

The MoU also aims to further promote specific learning areas, including science, technology, engineering, and mathematics (STEM). ■





*University  
Life*

# CUT DELIVERS ANOTHER RECORD NUMBER OF GRADUATES

*"CUT's Quest in the pursuit of knowledge and innovation delivers outstanding academic achievements at the March Graduations in 2013"*

■ Another record number of diplomas and degrees were awarded and conferred during the March 2013 graduations. Welkom Campus awarded a number of 559 - an astounding 73 graduates more than in 2012. Bloemfontein Campus awarded 2 286 degrees - 200 more than in 2012.

This amazing increase in the number of graduates for 2013 affirms CUT's focus on our vision and associated plans launched in 2010, with the objective of making our university a first-rate institution.

We are well-equipped to play a robust role in the socio-economic development of our region and the country by providing excellent education focused on science, technology, engineering and mathematics (STEM) are reaping the rewards.

Friday, 8 March 2013, saw the start of graduation ceremonies on Welkom Campus followed by Bloemfontein Campus on 11 to 15 March 2013. The faculties Engineering and Information Technology, Health and Environmental Sciences, Humanities and Management Sciences contributed to more than 2 800 qualified and employable graduates, who will contribute to the working force and alleviate South Africa and

Africa's skill shortages. CUT is one of the only universities in the country with more than 44% of the total student body enrolled in STEM areas that have critical shortages of qualified, skilled graduates in our labour market. Our ultimate target for STEM enrolment is 50% within the next few years.

The following are some highlights from the March Graduations.

## CUT's "Grow-your-own-timber" strategy pays off

As part of CUT's contribution to socio-economic development in the region, the university has developed a fellowship programme known as the Stars of Academe and Research (SoAR). This programme aims to adequately support and advance Masters and Doctoral students in their respective fields.

Ms Lisa-Mari Coughlan, a SOAR fellow, completed her MTech Tourism and Hospitality Management – cum laude. Her study was entitled 'Job satisfaction in selected five-star hotels in the Western Cape'.



Three of CUT's Faculty of Engineering and Information Technology graduates who was conferred with degrees/diploma in Information Technology. From left: Cele Lusanda, BTech, Nomabhongo Nomabhongo, National Diploma, and Mr Selepe Kamohelo, BTech.



Jonathan Rolo received the Vice-Chancellor's award for best academic performance at Diploma level at CUT. He completed his National Diploma in Human Resource Management. Congratulating him are Prof. Gillingwe Mayende, Deputy Vice-Chancellor: Resources and Operations; Prof. Henk de Jager, Deputy Vice-Chancellor: Academic; and Dr Solomon Makola, Director of CUT's Welkom Campus.

Coughlan's interest in the field started as a high school learner. "I wanted to be part of an industry which exudes glamour and style; an industry which hosts celebrities and leaders of nations; an industry which can create magic moments and life long memories for guests, explained Coughlan with pride. "I chose CUT because it has the best Hotel School in South Africa!"

She is not the first one in her family to achieve great results at CUT; her brother Mr. De Ville Weppenaar received the 2011 award for best postgraduate student.

SoAR's main aim is to ensure that CUT has a sufficient supply of excellent academics engaged in teaching and research for the sustainability and innovativeness of the university. On successful completion of their studies, CUT will be given first preference in appointing the SoAR fellows, provided that they meet the minimum requirements for specific posts. In this instance, Coughlan is a staff member at CUT, teaching Hospitality Financial Management to first year students, right through to final year students. Unlike many other scholarships, the SoAR scholarship holders can attend any public university of their choice in South Africa.

For more information about the SoAR programme, visit the Higher Education and Leadership Skills Academy (HELKA) page on [www.cut.ac.za](http://www.cut.ac.za).

## CUT closing the critical skills shortages gap

CUT proudly conferred two doctorates in Electrical and Mechanical Engineering, as well as close to 300 graduates in the engineering field earlier this week, thereby contributing and helping to work towards Government's aim of developing 30 000 engineers by 2014.

"South Africa has for many years placed the field of engineering on the critical skills shortages list," said Prof. Thandwa Mthembu, Vice-Chancellor and Principal of CUT. "We are very proud of our engineering students, who graduated this week and will be entering the workforce and contributing to the economy of South Africa."

"Both our doctoral candidates opted to study at CUT so that they could conduct their research using our world class infrastructure, which is exclusive to the Centre of Rapid Prototyping and Manufacturing (CRPM). Rated the best of its kind in the Southern Hemisphere, the Centre allows academics and scientists to conduct applied research in a more conducive environment, supporting and advancing innovations."

"We are proud to have achieved this important milestone that sets the tone for the university to become such an



Prof. Thandwa Mthembu congratulates Ms Lisa-Mari Coughlan, SoAR Fellow, during her graduation ceremony.

important resource not only in the region, but to South Africa, Africa and beyond," concluded Prof. Mthembu.

## CUT instrumental in furthering the studies of Anglo American employees

A century ago, Anglo American, one of the world's largest mining companies, founded the Maccaulei Learning Academy project (MLA). Since its inception, MLA became a Further Education and Training (FET) institution, which could by law offer formal programmes up to NQF level 5.

MLA found that a number of students were on senior management level and needed more advanced NQF levels to be presented. Six institutions of higher education, known for their high quality training, were approached and Central University of Technology, Free State (CUT) won the bid.

In January 2012 the first intake of 42 delegates followed by 47 delegates in June 2012 were made in the BTech Human Resources Management qualification. All the candidates were accepted after an assessment of Recognition of Prior Learning (RPL) was completed, to ensure they qualified for the NQF level 7 of the programme.

CUT proudly graduated 38 of the 2012 group in the BTech Human Resources Management qualification on 11 March 2013. "These graduates may continue their studies with CUT on the postgraduate level by enrolling for the MTech Human Resources Management programme," said Dr Tshedi Naong, Head of Department: Business Management. "The massive success of the 2012 group has led to 52 more delegates enrolled for the year 2013." ■



Anglo American employees who were part of the Maccaulei Learning Academy project (MLA) graduated at the March 2013 ceremony.

# CUT HONOURS SOUTH AFRICAN BUSINESS TYCOON AND FOUNDER OF BLACK LIKE ME



Vice-Chancellor and Principal, Professor Thandwa Mthembu conferred Dr Herman Mashaba, with an honorary doctorate in Business Administration on 12 March 2013.

Faculty of Management Sciences conferred an honorary doctorate in Business Administration on 12 March 2013. This honorary degree was awarded to Dr Herman Samtseu Philip Mashaba.

In 1980, while in his second year of a BAdmin degree at the University of the North, Herman Mashaba's life took an unexpected turn when the university was shut down due to political unrest. It was then that he was approached with promises of military training abroad, and when the university reopened its doors two months later, he decided not to return. Later that year he took a clerical job at the Spar supermarket in Pretoria, where he remained for seven months before moving on to a 23-month stint at Motani Industries. This turned out to be the last time he would have to work for a salary, because two months after purchasing his first car he resigned and launched his highly successful business career.

Speaking at the Graduation Ceremony, Dr Mashaba said, "I would like to thank CUT for the honour that is bestowed upon me this afternoon. This came as a total surprise and I feel humbled by CUT's recognition of my efforts. I had always wished to study further and obtain my doctoral degree in political science to become a political scientist of note. My dreams of acquiring a university degree were shattered in 1980 when I was doing my second year at the University of the North due to political disturbances of the time. Unfortunately I had to abandon my studies and decided to focus my energies on a business venture to get back my freedom".

From humble beginnings selling different products – including insurance, fire-detection systems and household goods – on a commission basis from the boot



Acting Registrar Prof. Alfred Ngowi, concluded the process of draping the candidate.

of his car for close to two years, he got his big break in 1983 when he found a job selling hair-care products on a commission basis for a Johannesburg-based company. He had finally found his niche, and within 19 months he had made up his mind to start manufacturing his own hair-care products. The rest, as they say, is history!

Today, Herman Mashaba is an internationally recognised businessman with investments in various sectors of the South African economy, including real estate, financial services, exhibitions and events, insurance brokerage, bulletproof materials, security, fuel distribution, cleaning services, facilities management, merchandising, and media planning and buying.

"CUT, as an institution of higher learning focused on social and technological innovation is honoured to add a giant in the business world to our Alumni".

Apart from this honorary doctorate he has received many awards over the past decade which includes an Honorary Award by UNISA for Outstanding Entrepreneur and Leader in the Business Environment in 2005, and SABC/Tribute Achievers Award in 2001. He also holds numerous directorships in the world of business.

"Education has been close to my heart; hence I have always invested heavily in helping people to achieve the best in what they do. As I receive this award, I need to make a special appeal to all South Africans particularly within academia, to work hard toward finding workable solutions before it is too late." Said Dr Mashaba. ■

Dr Herman Mashaba with his wife, Ms Connie Mashaba and Vice-Chancellor and Principal, Prof. Thandwa Mthembu.



## UOTS DISCUSS TRANSFERRING RESEARCH AND INNOVATION INTO COMMERCIAL VALUE



Front seated: Dr Peter Stegmann, Project Officer in the Research Office, Vaal University of Technology (VUT); and Dr Chris Nhlapo, Deputy Vice-Chancellor of Research, Technology Innovation & Partnerships at Cape Peninsula University of Technology (CPUT).

Back row: Mr Vuyisa Notshweleka, Director of Technology Stations in Chemicals, Mangosuthu University of Technology (MUT); Prof. Laetus Lategan, Dean of Research and Innovation at CUT; Ms Christelle Venter, Administrator, SATN Office; and Prof. Chris Jansen van Rensburg, Director, SATN Secretariat.

■ The South African Technology Network (SATN) established in 2006 to connect Universities of Technology (UoT) - creating a platform to discuss higher education issues, co-operative education, teaching, research training, technological innovation and technology transfer.

The second 2013 meeting of the SATN Research and Innovation Committee was hosted by CUT in Bloemfontein on 30 May 2013. The meeting had as focus three activities: Research Development, Research Innovation and Transfer as well as commercialisation activities.

The committee decided to become a think tank on behalf of the SATN Board with regard to research and related matters, and advice board accordingly. The committee will from now on commit to look at the development of national policy and how it impacts on what UoTs are doing and how SATN can respond to the policy. Finally, the committee took on the task of collaboration between UoTs, mindful of regional collaboration and healthy competition between the various organisations.

Interestingly, three projects were immediately identified to take forward; Water Research, Research Development as well as a brand new project in new energies. The three project leaders to drive these forward was identified by the SATN Research and Innovation Committee as Prof. Laetus Lategan, CUT's Dean of Research and Innovation who was assigned to look into the Research Development projects, Dr Chris Nhlapo who was assigned to take the Water Research project forward, and Mr Jan Jooste who was assigned the Energy project.

In the greater scheme of the National Skills Initiative there are areas in which UoTs can make meaningful impact without duplicating the work of other universities, and SATN will foster links and exchanges of information between UoTs and other relevant organizations.

For more information about SATN go to:  
<http://www.satn.co.za/> ■

# CUT THE INSTITUTION THAT REWARDS ACADEMIC EXCELLENCE IN REAL-TIME VALUE

## *Investing in Excellence*

■ The Vice-Chancellor's Prestige Scholarships and Bursaries for Student Excellence Awards were hosted on 22 May 2013 at the University's Bloemfontein Campus.

The Excellence Awards were launched in 2011 to support "Straight-A" students financially. The group of academic achievers is financially and academically supported through the scholarship programme, to continue their studies and support other students in their endeavours by being examples of what can be achieved with hard work and determination.

The remarkable achievement has been well worth the investment for CUT, and the institution expanded the categories in 2012 to include even more students who perform above average academically. Category 1 consists of students who obtained 100%, category 2 - 80% to 99% distinctions obtained on the enrolled subjects, and then finally category 3 - 70% to 79%.

The bursaries are awarded according to the category of achievement - with all-A students receiving the

most substantial bursary, which includes tuition fees, accommodation (or transportation costs), meals and books - a phenomenal and sizeable contribution to the students future, making it possible for the achievers to forgo hefty student loans.

"The amount of students who obtain the bursary grows yearly, said Prof. Thandwa Mthembu. "In 2013 we awarded 121 A-students with bursaries. We are committed to investing in excellence, and we show our commitment by supporting students who perform academically in the one way that really makes a difference to their lives and studies - financial support."

Support for excellence and delivering quality education forms part of CUT's vision and supports knowledge-production and human capital development to improve the lives of people in our province. ■



Prof. Thandwa Mthembu and Annelie Campher, who is completing her National Diploma in Clothing.



Prof. Thandwa Mthembu and Leaooa Harris Moloi, who will be finalising his National Diploma in Agricultural Management.



Dr Chaka Makhalemele, Administrator of the Faculty of Health and Environmental Sciences; Khuthazo Maphwangwa, National Diploma in Information Technology; Fianca Barnard, National Diploma in Clothing; Mr George Tsokolo Mashinini, RAN Senior Solution Manager as well as Guest Speaker during the awards; and Prof. Henk de Jager, Deputy Vice-Chancellor: Academic.

# 2013 VARSITY SHIELD CHAMPIONS



Everything was geared for the first FNB Varsity Shield rugby match at CUT in Bloemfontein. Supporters were ready to “Back their Boytjies” with mascots, T-shirts, songs and posters. Here are from left (back row): Mr CUT Mpho Motheogane; Ixi the donkey mascot; Mark Joseph, committee member; Prof. the Mascot; Stacey Schultz, chairperson of the committee; Miss CUT Atheha London, and front row Eben Roos, a supporter. Photo: George van Eck.

## CUT Ixias drop kick opposition teams for the win!

■ The FNB Varsity Cup presented by Steinhoff International is in its sixth year after a highly successful inaugural competition in 2008. The inter-university rugby competition sees eight of the country’s top universities go head-to-head to take home the title of Varsity Shield Champions!

The Back your Boytjies campaign t-shirt was in evidence all over campus, as CUT supported their team.



TOP: CUT Ixias front row players warming up for their first match against FNB UWC.  
LEFT: Rugby team in action! Damian de Allende gives it his all.

## CUT Ixias took to the rugby field with vigour at the start of the season

At the start of the season the Ixias, proud first rugby team of CUT, got their 2013 FNB Varsity Shield campaign off to a solid start, beating FNB University of Western Cape (UWC) by 25 -10.

“We had an outstanding start to the 2013 season,” said new head coach of the Ixias team Mr Skillie Bester.

“Although CUT is one of the smallest competitors, the institution’s rugby team does extremely well in the shield tournament each year,” he added.

FNB UWC, trained by former Springbok coach, Peter de Villiers, came to Bloemfontein only four days after thrashing FNB Tshwane University of Technology (TUT) in Pretoria with 42-4 win. But the tenacious CUT overshadowed the visitors with determined, rugged and effective 15-man rugby team.

## CUT Ixias bring the cup home as Varsity Shield Champions 2013!

FNB CUT’s Ixias rugby team ended the group match stages of the 2013 FNB Varsity Shield unbeaten –being the only unbeaten team in this division of the FNB Varsity Cup competition.

FNB CUT Ixias - our “Boys in Blue” - qualified for their third consecutive final in the Varsity Shield.

The final match, which took place on 1 April 2013 at CUT’s Rugby Stadium in Bloemfontein, was a nail biting affair with CUT taking advantage of every opportunity.

The Ixias managed to open the scoring in the seventh minute of the game through a Noël Marx penalty after a driving run from tighthead prop Danie van der Merwe. The visitors did a lot of defending in the early stages of the game and battled to maintain their discipline, which



CUT Ixias follow their captain, Inus Kritzinger, onto the field.

allowed Marx to punish them again in the 11th minute, although there was no conversion. The nerves were apparent as both sides were unable to capitalise on the opposition’s mistakes.

Captain Inus Kritzinger then scored the Ixias’ second try after a great backline move, when he went over from about a metre out to give CUT a 12-0 lead after 25 minutes. A great move down the short side with seven minutes left on the clock saw Alec Mhlango – one of CUT’s shining rugby stars - go over for the try which ultimately sealed the victory. The conversion was good and CUT opened up a sturdy ten-point lead at 29-19.

CUT Ixias - our Varsity Shield Champions - celebrate their well-deserved win.



The home Boytjies have proven this year that they do have the powered forwards and backs to bring home the bacon – right here where it belongs - in the Free State!

The tournament plays an important role in developing the country’s rugby, with 26% of the players signing contracts as professional players after their stint in the tournament. ■

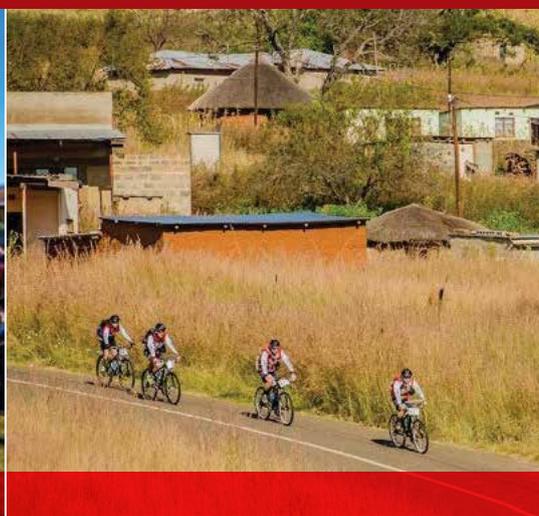
# CUT SPORTSMAN TAKES PART IN ADVENTURE RACING WORLD SERIES



Team Fox on Fire covered 280km on Mountain bikes.



Teams are ready to go at the start line.



Team Fox on Fire covered 280km on Mountain bikes.



The finish line! From the left: Mr Herman Fourie, Soldier, SANW, Mr Deon du Preez, FabLab Manager, CUT, Mr Japie Delpport, Physiotherapist, Delpport Fisioterapeute, and Mrs Ina du Preez, Accountant, Inland Refrigeration and Air Conditioning (IRA).

■ Six days and six nights, 32 teams, 280km mountain biking, 160km trekking, 100km kayaking in all weather conditions seem like an epic fantasy novel. In fact, one of CUT's own sports enthusiasts did just that.

Mr Deon du Preez, Manager of the Bloemfontein FabLab, hosted by CUT (more information here: <http://www.cut.ac.za/fablab/>) took part in the international World Series during May 2013. teams from South Africa and 15 international teams - Sweden, Ireland, Denmark, France, Finland, Switzerland, USA and Canada – competed for the chance to qualify and take part in the Adventure Racing World Championship which will take place December 2013 in Costa Rica.

"The race was extremely exhausting, but fun too." said Deon. "In such a continuous race your mind and body goes through

cycles of highs and lows, but you have to push through and continue" said he. "Our weather was also slightly unhinged!

It was very warm and then extremely cold which played havoc with our body temperatures – and then all you could do was paddle or row harder!" he laughed.

The four member team: Mr Herman Fourie, a soldier, Mr Japie Delpport, a physiotherapist, Mrs Ina du Preez, an Accountant, and Deon; crossed the finish line after 5 days and 7 hours in the 13th position of 31 teams, and Deon as the captain of Team Fox on Fire/Core Merino had to keep them going. "In total we travelled more than 500km during the Expedition Africa Adventure Race, and slept a total of 6 hours during that time." ■





Trekking through the Drakensberg mountain range.



Swimming in rivers, and lakes.



Mountain climbing



Abseiling was a regular occurrence during the race.



Kayaking in rough water and at night.

# SECOND LANGUAGE EDUCATION AT CUT RE-EXPLORED BY VISITING SCHOLAR FROM USA



Dr Ben van der Merwe, Director of the Centre for Teaching and Learning, Mr Kabelo Sebolai, ALP Coordinator, Ms Lindsay Huff, Prof. Mabokang Monnapula-Mapesela, Dean of Academic Development and Support at CUT, and Prof. Henk de Jager, Deputy Vice-Chancellor: Academic.

■ Second Language Education at CUT re-explored by visiting scholar from USA

Ms Lindsay Huff, an English Language Fellow (ELF) from the United States who is, through the Regional English Language Office (RELO) of the US embassy in South Africa, will be a visiting scholar at CUT's Academic Development and Support in 2013.

"I arrived on 4 February and will stay at CUT until 30 November 2013." said Lindsay who obtained her master's degree in TESOL (Teaching English to Speakers of Other Languages) from the New School in New York, USA. "My area of specialisation within this field, English as a Second Language - ESL - is language curriculum design and development."

Over the past 9 years Lindsay was busy teaching ESL as well as designing and developing ESL curricula at high schools and universities in Mexico and the United States. For the duration of her stay at CUT, Lindsay will be working with Kabelo Sebolai, one of CUT's recent Fulbright Scholarship fellows and the coordinator of the Academic Literacy Programme (ALP). Their focus will be to do a major overhaul of the language development course which is currently mandatory for first year students at the institution.

We look forward to the valuable contribution that Lindsay will make to the academic language growth of our students and hope that she will enjoy her stay at CUT. ■





## GLOBAL COMPANY SAYS YES! TO CUT STUDENTS

In the past, CUT held talks with business and industry to maximise partnership opportunities. The campus visit, which took place in February of 2013, was a remarkable outcome of these engagements. Bell - which has committed to further explore and collaborate with CUT in other areas of mutual interest - also holds a seat on the Engineering Advisory Committee of the institution, to advise on the programme curriculum and relevance in the current job market.

The company's interest in CUT's WIL & Skills Development Programme, as well as our academic programmes in the Department of Mechanical and Mechatronic Engineering, was prompted by means of a campus visit by Mr Dave Mentjies from Bell – by the exceptional performance of two of our CUT students who were placed with Bell Equipment.

“Part of the Strategic Transformation of Educational Programmes and Structures (STEPS) outcomes is our commitment to incorporating WIL and associated initiatives like service learning in every new programme introduced at CUT, which, along with the newly-established Vision 2020 Innovation Fund, will enhance entrepreneurial skills amongst our students,” stated Prof. Thandwa Mthembu during the State-of-the-University-Address on 2 February 2013.

The institution's stable campus environment, discipline and competencies of our students, further prompted Bell Equipment Company to agree to serve on CUT's Engineering Advisory Committee. ■

■ International company Bell Equipment (PTY) LTD and CUT endeavoured to find more work after two CUT students placed at the company for experiential training impressed with their exceptional performance.

CUT is a leader in many technology fields, with learning programmes in Science, Technology, Engineering and Mathematics (STEM) a broad field in which CUT has about 45% of its enrolments, much higher than many other South African universities.

A representative from Bell Equipment in Richards Bay, Mr. Kgomotso Mosimanyane, paid a courtesy visit to engage with CUT on the Work-Integrated Learning Programme and possible placement of our students.

Bell Equipment Company, a leading global manufacturer, distributor and exporter of material handling machines, seeks to invest in CUT students for Work-Integrated Learning (WIL) – another partnership success for the institution.



Mr Dave Mentjies, Technical Training Specialist: HR, at Bell Equipment; Mr Bennette Mokoma, WIL Coordinator at CUT; Mr Kgomotso Mosimanyane, Senior Technical expert in Mechanical Engineering at CUT; Ms Carole Hills, Bell Equipment Group Training and Human Resources Manager; Mr Zeyn Adam, Bell Equipment Quality Process Engineer; Mr. Gqibile Mabhungo, Development Manager at TLB; and Mr Andrew Staniland, Production Manager of Bell Equipment.

# ALUMNUS MAKES THE MOST OF HER TALENTS OPPORTUNITIES AND **CUT** DEGREE



Nineve smiled happily when the day the product packaging she developed was launched in Cape Town by her current employer.



Feedback received in the design category where the project brief was tissue packaging with powerful brand communication. "Her unique method of combining text, graphics and functional aspects to the pack design was exceptional."

## CUT Alumnus, Nineve van Zyl talks about how the one year diploma in Packaging Technology opened career doors for her.

■ The one year diploma in Packaging Technology has been implemented as part of the completion of the National Diploma in Graphic Design at CUT since 2012.

Each year, the Institute of Packaging, South Africa (IPSA) creates the opportunity for students in the fields of Graphic Design, Food Science and Packaging Technology to enter into their annual Student Gold Pack competition. This year IPSA received more than 1 000 Gold Pack entries from all over Africa, which

included South Africa, Ghana and Nigeria. The top 25 entries were invited to the IPSA Awards Luncheon on the 14th of October 2012, where these outstanding and innovative packaging entries were showcased.

CUT was proud to have had three (3) of our Graphic Design Students as part of the top 25 finalists. Nineve van Zyl won the award for Innovative use of Rigid Plastic, Michelle Campbell, was a finalist as a Packaging Technology Student, Machaha Taleng was a finalist as

a Graphic Design Student. “The IPSA competition was an amazing experience.” said Nineve. Not only did she win the award, her work was entered into the World Packaging Organization’s WorldStar Competition, where Nineve’s project achieved recognition status.

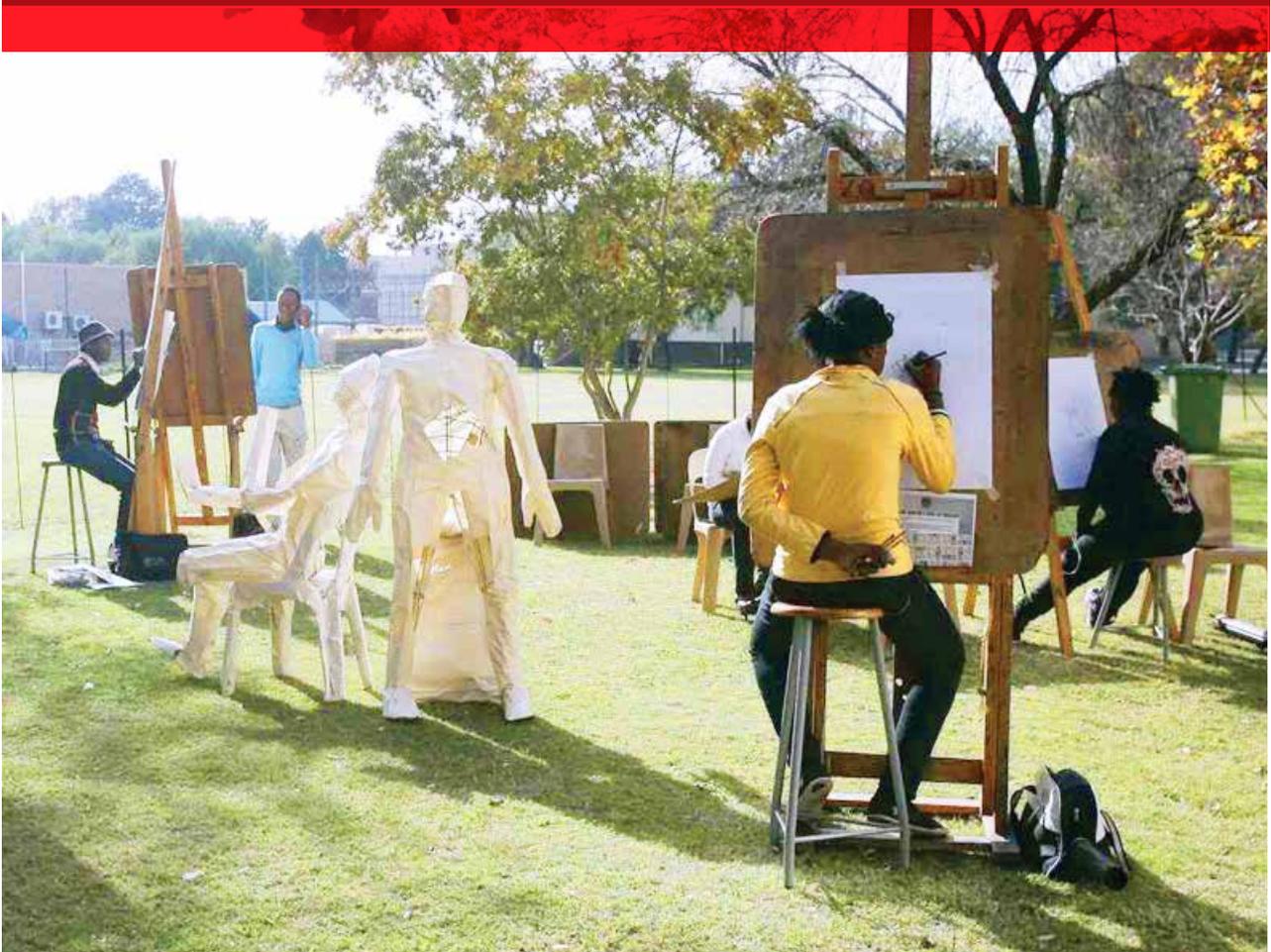
“After graduating at CUT”, Nineve applied for a position as Graphic Designer at a firm in Cape Town. “During the application process, my Graphic Design qualification got me a spot on the short list for the position, and it was the sought after qualification in Packaging Technology, that landed me the position.” said she.

She continued that since starting her new position she developed and proposed a packaging solution, on behalf of her employer to a firm in Germany for use in the South African market. “It has been approved for the use of marketing their products in Europe too.” This is not only a remarkable achievement for Nineve, but also for the Institute of Packaging (IPSA) and CUT as the institutions, that identified the need for the one year Diploma in Packaging Technology and has implemented this as part of CUT’s National Diploma programme. ■



Feedback received in the packaging technology category, where the brief was to propose a packaging concept that would encourage the use of sunscreen in South Africa.”Nineve’s innovative and consumer-friendly packaging concept blew the judges away. The sunscreen pack is in the form of a tube, with a silicon rubber application head that contains soft rubber bristles for hands-free application together with a refill option that is kind to the environment.”

CUT’s Design and Studio Art programmes have many artistic facets. Pictured below a group of students busy with an object drawing class on the lawns at Bloemfontein Campus.





*Research Excellence*  
- *Adding Value*

# A PARTNERSHIP WORKING TOWARDS WEALTH CREATION IN THE FREE STATE

■ A number of staff and students from CUT were involved with the newly published book titled: A Practical Guide to Guest House Management, which was launched on 15 May this year. The publication, headed up by CUT's Prof. Deseré Kolt, boasts an impressive array of theoretical knowledge and industry exposure.

The book's content is divided into seven themes: Your guest house and the law, basic management principles, basic financial management, marketing your guest house, accommodation and front office management, planning your breakfast menu and understanding intercultural differences. The themes are presented with many practical applications and examples, making the content accessible to any interested reader.

The team who worked tirelessly on the book recognises the significance of the tourism and hospitality industries for the growth of our regional and national socio-economic development. As such, the book is geared towards improving the offering of local Guest Houses, thereby increasing demand and creating further job opportunities.

"Guest houses attract both local and international tourists, with the aim of providing the visitors with a taste of local food and hospitality, said Prof. Deseré Kolt, editor of A Practical Guide to Guest House Management and Research Professor at CUT in Leisure Management. "This creates much-needed job opportunities and revenue for local regions. Successful business means job creation, economic growth and stability, and world class service for travellers."



Prof. Kolt is congratulated by another top notch CUT researcher, Prof. Yali Woyessa, who recently made media headlines with his research in Water Resources.



Prof. Deseré Kolt happily poses with copies of the publication.

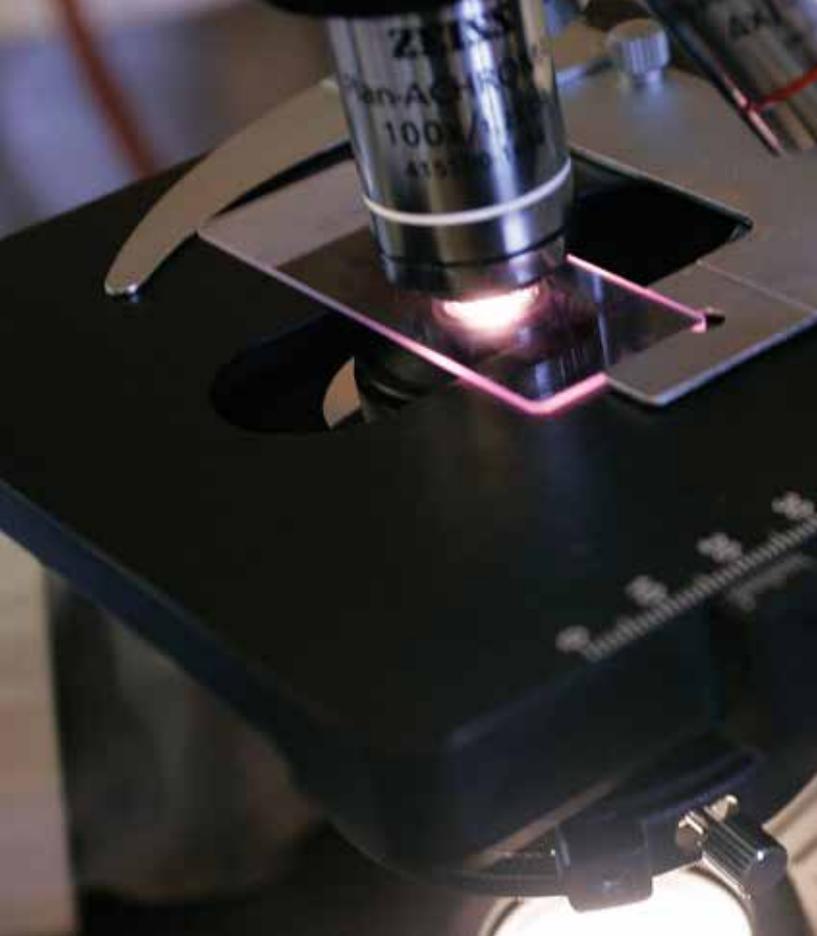
Prof. Albert Strydom, Dean of the Faculty of Management Sciences adds: "As the successful managing and running of a guest house has its own set of challenges, the intention of this book is to provide a practical guide to assist both guest house owners and managers in effectively managing their establishments."



Mr Xander Marnewick from Sun Media, who was in charge for the layout of the book; Prof. Kolt; and Prof. Henk de Jager, Deputy Vice-Chancellor: Academic, engage with a copy of the publication.

Research in the tourism and hospitality industry, also termed the leisure industry, was identified as one of the 14 strategic research areas of CUT, affirming the importance the institution places on this research area.

Find out more about the publication here:  
[www.africansunmedia.co.za](http://www.africansunmedia.co.za) ■



## ANOTHER TOP-NOTCH CUT RESEARCHER JOINS THE NRF RATED RESEARCHER RANKS

■ Associate Professor Karabo Shale from Faculty of Health and Environmental Sciences has been ranked by the National Research Foundation (NRF) as a C3 rated researcher.

NRF describes a C3 rating as an “established researcher with a sustained recent record of productivity in the field who is recognised by his or her peers as having produced a body of quality work, the core of which has coherence and attests to ongoing engagement with the field and demonstrated the ability to conceptualise problems and apply research methods to investigating them.”

Apart from the C3 rating, Prof. Shale has taken over the reigns as acting Head of Department for Life Sciences and also serves as an executive member of the Unit for Applied Food Safety Technology (UAFSB).

“Prof. Shale has engaged with all aspects of the research value chain such as postgraduate supervision, grants applications, publications and the development of research networks and partnerships. The importance of these activities supports the understanding that research is a complex activity straddling many aspects of the social fabric.” said Prof. Laetus Lategan, CUT’s Dean of Research and Innovation.

But the accolades do not stop there; Prof. Shale has also received a career award from Medical Research Council (MRC) for 2013/2014 among the four best candidates in the country.

“This indicates the amazing quality work done by UAFSB in Faculty of Health and Environmental Sciences. This award is meant to prepare researchers that will address health research priorities in the country”, Prof Lategan concluded. ■



Prof. Shale believes that “better is not good enough; the best is yet to come, for 2013 is the year of dreams” quoting T.B. Joshua.

# DNA, CHROMOSOMES, ORGANISMS, BIOTECHNOLOGY — CUT INAUGURATES GENETICIST!

*"I found that place, where as a scientist I could live, explore and do my work."*

■ "My entire life has been marred by a war - the war of the left and right brain hemispheres. But for most of my life it was the left brain that won the battle. I had to find a niche area where I could fit in with interest in strong, academic mathematical numbers but have the creativity side to it. I found that place, where as a scientist I could live, explore and do my work."

This is some of what Prof. Annabel Fossey shared during her inaugural address at CUT on 21 February 2013, which told of how she became fascinated by genetics, DNA, chromosomes and biotechnology, which later trapped her life into the world of research and evolution.

Having distinguished herself amongst her peers on the national and international landscape, Prof. Fossey has been graded as one of the highest-ranking professors at CUT; she is truly an accomplished and widely recognised academic.

During her lecture, she covered a wide spectrum of issues - chromosomes that tell the story of life, the classification of organisms, their surroundings, as well as the genetic world and plant breeding, which is currently used by scientists to create seedless fruits for commercial purposes.

Her research on the rapid diagnostic tools to distinguish various sets of chromosomes for certain trees is world class. Without harming the plant (previous method was cutting off roots), researchers have been able to increase production volume of trees used in South Africa's Forestry industry.

One of the significant projects that Prof. Fossey has led, was the fingerprinting technologies for birds.

"The significance thereof is to be able to identify individuals for various purposes. Individual identification is of great importance, particularly with the trade in illegal bird trafficking growing at an alarming rate." said Prof. Fossey.

Deputy Vice-Chancellor: Academic, Professor Henk De Jager, said that the inaugural address served as a continuation of CUT's practice of encouraging efforts of academics on how to make use of these address' to showcase decades of extensive work.

Acting Registrar, Prof. Alfred Ngowi concurs, saying that these professorial inaugural addresses are seen "as a pinnacle of the academic hierarchy and scholarship at CUT". ■



Prof. Annabel Fossey in her element discussing organisms, chromosomes, and the classification of all.



Prof. Alfred Ngowi, Acting Registrar; Prof. Linda de Jager, Dean: Faculty of Health and Environmental Sciences; Prof. Annabel Fossey; and Prof. Henk de Jager, Deputy Vice-Chancellor: Academic.



# CUT WATER RESOURCE EXPERTS OFFER SOLUTIONS TO SOUTH AFRICA'S DWINDLING WATER SUPPLY

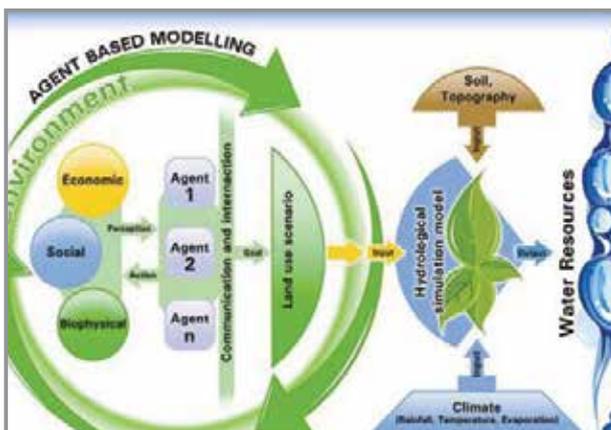


Prof. Yali Woyessa, who recently made media headlines with his research in Water Resources.

■ CUT's water resource expert from the Sustainable Water Resources and Environment Research Group in the Department of Civil Engineering, Professor Yali Woyessa and his team believe the answer to solving the country's dwindling water supply lies in the understanding of the Socio-Hydrological dynamics and extreme hydrological events, such as floods and drought, which have become more frequent in recent years.

Commenting on the research, Prof. Woyessa said: "In trying to understand the human-environment dynamics and their impact on water resources, a conceptual model that integrates the socio-economic and biophysical environment is being developed by the research group. Research in this area is still in its infancy, but some encouraging progress has already been made. The main aim of this modeling task is to understand human-environment dynamics and how this impacts on water resources, as well as being able to provide the local government departments with the necessary information for better decision-making.

Regarding the hydrological event, a software tool developed by CUT lecturer in Civil Engineering, Mr



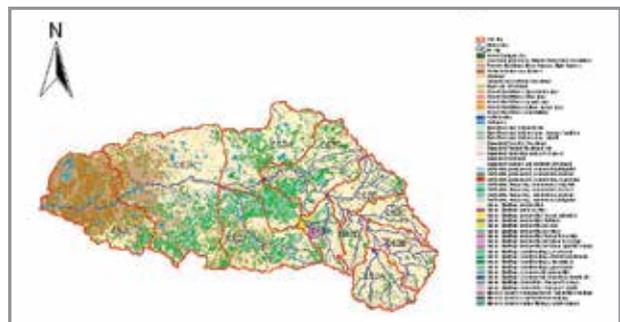
Conceptual Framework for the understanding of Socio-Hydrological Dynamics, which is currently in development.

Jaco Gericke, was found to be a very useful instrument for design flood estimation by the hydrological practitioners in consulting industries for designing hydraulic structures. Mr Gericke has been invited to several workshops at the Universities of Stellenbosch and Pretoria to demonstrate the use of this software. The graphical user interface has been labeled as user friendly and provides various options for methods to use in specific applications.

CUT hosted a workshop in 2011 in collaboration with Texas A&M University and Normal Borlaug Institute for International Agriculture, to establish a long-term mutual beneficial research partnership that has distinct pockets of research excellence and value-adding links.

On the question of what the future holds, Prof. Woyessa commented: "As part of the strategic focus of the research group to grow its capacity and its role in finding solutions to the ever-present water shortage issue, an Adjunct Processor has been appointed in the Department of Civil Engineering for a period of two years to assist in the enhancement of the outcomes and make a positive impact in the socio-economic development of the central region of South Africa".

Moreover he added that the establishment of a Centre for Water and Environment was at an advanced stage - in order to create a platform for the researchers in networking and interacting with relevant stakeholders and peer institutions. ■



Valuable insight into how best to optimise South Africa's water supply and use this in a more sustainable way can be acquired from the mappings of catchments. South Africa receives half the average global rainfall annually, and with global warming a major concern to the future of the country's water supply, industry leaders and academics are constantly being challenged to further their research and to develop adequate water conservation techniques.

# 3D PRINTING AT CUT MORE VERSATILE THAN EVER WITH NEW INNOVATIVE TECHNOLOGY



Dr Kobus van der Walt, senior researcher at CUT, Prof. Michele Truscott, and Mr Gerrie Booysen with the new state-of-the-art Objet Connex™ 350 3D printer.

## 3D printing Innovative Technology that will shape the future

■ 3D printing has been described as the tool that will be used in the new industrial revolution (which if predictions are correct, we are in the middle of). Additive Manufacturing makes it possible to print objects out of almost any material. The traditional versatile paper product has been replaced by titanium, sand, nylon, glass even chocolate – if you do some internet research.

However one critical aspect that the Centre for Rapid Prototyping and Manufacturing (CRPM) could not do up to this year was to print multiple materials simultaneously – a mixture of materials. This will for example be an object consisting of hard plastic and soft rubber which can now be printed as a single part. The printer will greatly contribute to the prototyping ability of CRPM and CUT's strong focus on science, engineering and technology.

The research team now has access to the state-of-the-art Objet Connex™ 350 3D printing machine. "An application made to the Research Infrastructure Support Program (RISP) at the National Research Foundation (NRF) for the new technology was successful." said Director at the

CRPM, Mr Gerrie Booysen. He continued that the team from the Medical Device Innovation Platform identified the shortcoming in the centre and applied for the additive machine, which was successful.

The total cost of the machine was R1.938 million. Two thirds of the cost was granted by RISP and one third by CUT.

Prof. Michelle Truscott, team leader of the Medical Device Innovation Platform is confident that the new machine will add to the centre's already impressive line-up of 3D printing technologies and will ensure that the institution remains in the forefront of research into 3D printing technology internationally.

# CUT plays pivotal role in innovative medical surgery

Innovation at CUT enabled a medical first in South Africa, when Ennica Mahkge, a young woman from Gauteng who was born without a nose and nasal passages received extensive jaw and facial surgery and a new nasal prosthesis at Mediclinic Kloof in Pretoria on Saturday, 22 June 2013.

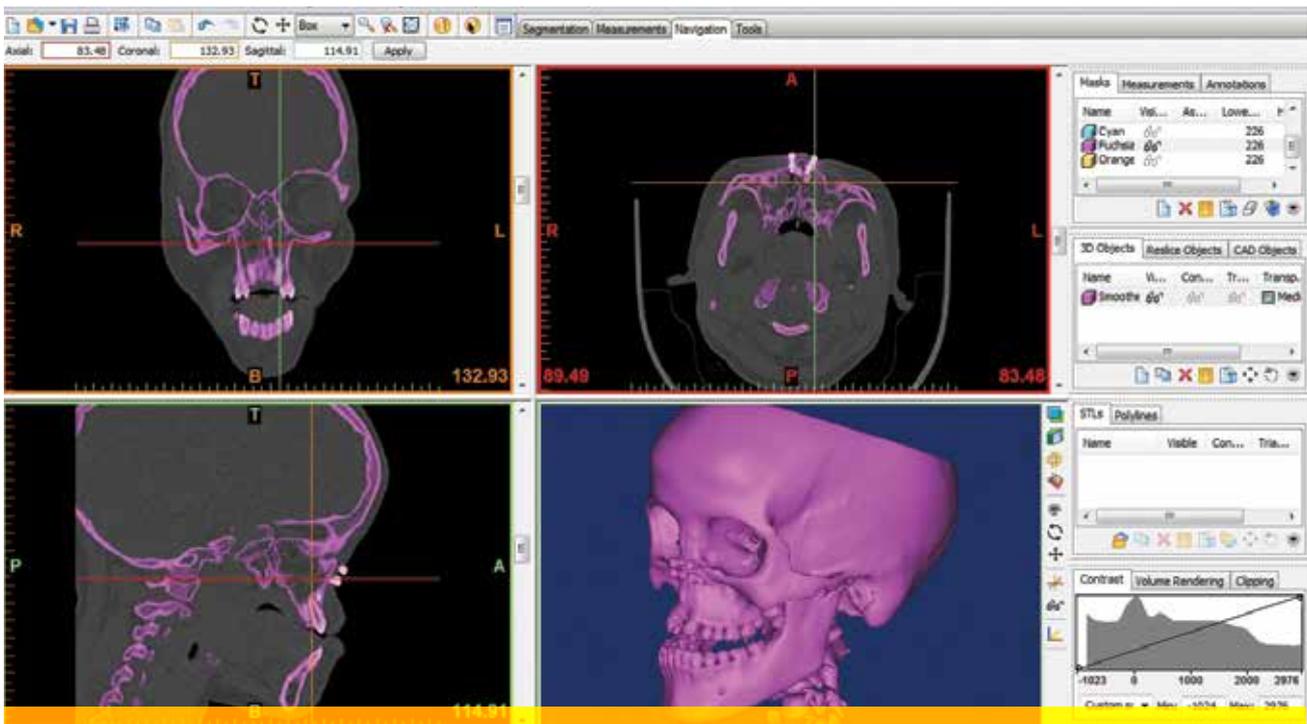
To allow Mahkge (19) to breathe, an opening in her windpipe was created at birth, which unfortunately increased her tendency to develop upper respiratory tract infections, and ultimately caused a chronic infection. This resulted in the need to do a nose replacement operation, where nasal passages were created by moving Mahkge’s jaw forward and down, in order to create space for the new nasal passages.

CUT together with a team of specialists from the University of Pretoria and Mediclinic Kloof has been working tirelessly for months to make this life changing surgery possible. The Centre for Rapid Prototyping and Manufacturing (CRPM) at CUT played a vital role in the reconstructive surgery by using Additive Manufacturing technology, better known as three dimensional printing to construct two models of Mahkge’s skull so that the team of doctors could carry out pre-operative planning and simulate the operation.

“These models were essential for the success of the operation, as the patient was born without a nasal passage. Without these models the operations would have been impossible”, said Dr van den Heever from the Department of Prosthodontics of the University of Pretoria (UP).

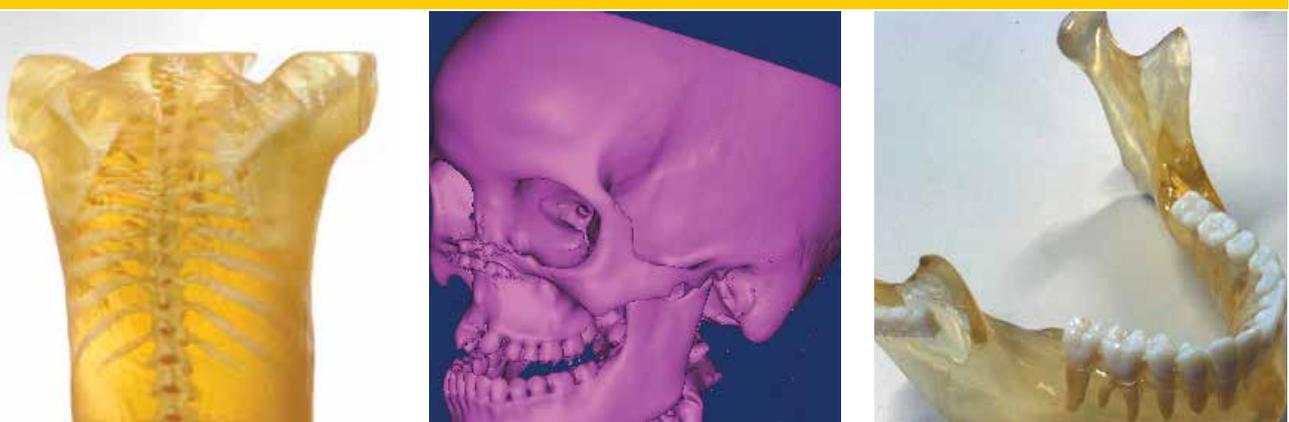
“With only about 50 documented cases in the world and the first in South Africa, there is no absolute protocol in place for the surgeons to draw from,” says Gerrie Booysen, the Director of the Centre for Rapid Prototyping and Manufacturing (CRPM) at CUT. “That is why the pre-operative models played such a vital role in empowering the doctors to plan and simulate the operation in the finest detail.”

The pre-operative model assisted the surgeons to determine where the upper jaw needs to be cut in order to place it in the correct position and to prepare the titanium plates that was used to reconstruct the upper jaw. This shortened the operating time considerably, which reduces the chances of complications due to a prolonged operation such as infections or excessive blood loss. ■



Various materials used in a single print, the transparent material is called VeroClear and the white material is VeroWhitePlus. Both materials simulate ABS Plastic, which is a plastic type that becomes pliable or moldable above a certain temperature.

Photo source: www.creat3D.com



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