



Central University of
Technology, Free State

CUT Strides

Academic Excellence



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Welcome note from DVC



This publication aims to reflect briefly on some of the activities and achievements over the past few years within the Academic & Research Division. It focusses on achievements by staff, students and alumni, and partnerships with local and international stakeholders.

The Academic & Research Portfolio consists of 184 academic programmes offered in 22 academic departments across four faculties, at two campuses with a total student body of 14 182. The research and innovation entities consist of 2 research centres, 12 research units, a SARChI Chair, Merseta Chair in Engineering Development, Centre for Rapid Prototyping & Manufacturing, Product Development Technology Station and other research entities supported by Industry. Engagement entities include the CUT-Schools Advancement Academy (CUT-SAA), CUT-Institute for Continuous Education (CUT-ICE) in collaboration with CUT-Innovation Services (CUTIS), FabLab and other.

The above-mentioned activities are guided by the following strategies and plans which were developed and approved during the past three years to ensure that the academic project answers to Vision 2020:

- CUT Academic Plan: 2014-2020;
- CUT Teaching and Learning Plan: 2014-2020;
- CUT Research and Development Plan: 2014-2020;
- CUT Technology and Innovation Plan: 2014-2020;
- CUT Library and Information Systems Plan: 2015-2020;
- CUT Internationalisation Strategy: 2014-2020;

- CUT Department of Higher Education and Training (DHET) Enrolment Planning 2014/2015-2019/2020;
- CUT Community Engagement Plan: 2015-2020;
- CUT Sustainability Framework Implementation Plan;
- CUT E-learning Strategy 2015-2020; and
- CUT Strategy for Innovation & Entrepreneurship.

A strong effort has been made to ensure a vibrant academic project to teaching and learning activities at both undergraduate and postgraduate levels. The aim is to create an optimal academic environment for students and academic staff, enhance research, innovation and engagement and intensify collaboration with various partners and external stakeholders. Our staff members have made great strides in obtaining their doctorates, making CUT the leading University of Technology with the highest percentage of academic staff holding doctorate degrees. We are progressing towards reaching the 50% target by 2020.

I wish to express my sincere gratitude towards the Vice-Chancellor and Principal, CUT Council, members of Executive and Senior Management, students, staff and local and international partners for their outstanding contributions. The support to CUT and the contributions from all our external partners are acknowledged with profound sincerity.

In the years to come, our contribution to society will be further underpinned by our teaching and learning, as well as research and innovation excellence, and we will continue to position CUT as the leading University of Technology in South Africa and beyond.

Introduction

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. CUT has developed into a leading institution able to take its place on the national, as well as international higher education landscape



CUT, then still known as the Technikon Free State, opened its doors in 1981 to 285 students enrolled mainly in secretarial, art and design programmes. With the restructuring of higher education landscape post 1994, CUT embraced its new status as a university of technology and thus positioned itself to succeed as such. On 26 March 2004, the former Technikon Free State officially exchanged its "technikon" status for a tailor-made identity when its new name was published in the Government Gazette – a name that is a true reflection of what the university stands for: Central University of Technology, Free State.

The university offers a wide range of qualifications in its four faculties, namely Faculty of Engineering and Information Technology, Faculty of Health and Environmental Sciences, Faculty of Management Sciences, and Faculty of Humanities. It also commands respect with its relevant research.

From its inception, the institution has been aware of its social responsibility towards the broader community.

CUT is aware of the fact that not everyone has the privilege to study at the main campus on a full-time basis. Therefore, selected learning programmes are offered at CUT's Welkom Campus. An exciting development was CUT's incorporation of Welkom Campus of the former Vista University on 2 January 2004. Through the utilisation of modern technology, some learning

programmes can also be pursued electronically via the internet. In this way, CUT is living up to its status and reputation as a University of Technology.

In 2010, a new vision was adopted. The vision statement states, "By 2020, Central University of Technology, Free State shall be an engaged university that focuses on producing quality social and technological innovations for socio-economic development, primarily in the Central Region of South Africa".

In 2011, the institution celebrated its 30th year of technological innovation – soaring to 2020. The milestone is a reflection of the university's pursuit of quality education and academic excellence. Through the effort of educating, teaching and training students with the aid of world class technology, CUT also focuses on the values it holds dearly; namely customer services, excellence, innovation, integrity and diversity.

In line with our new vision and strategies, a new innovative, demand-driven and user orientated programmes were introduced and most of them were successfully implemented while others will be implemented in 2016.

Faculty: Engineering

Engineering students restored a 1927 tractor

A 1927 Farmall Regular tractor is up and running again after a group of students and Marno



Ferreira, the son of the tractor's owner, spent more than 300 hours to rebuild. The tractor was originally used to pull a hammer mill for milling wheat and maize on a farm near Bethlehem, and now belongs to Jannie Ferreira who owns the Ferreira museum outside Bloemfontein. The group of students started the restoration project after the former head of the Department of Mechanical and Mechatronics Engineering, Mr Dries Bothma, thought it would be a good experience for them. The tractor was entered in a tractor restoration competition where the students achieved third place at the Nampo Festival.

Cyber junkyard, the future of manufacturing



research group in the Department of Electrical, Electronic and Computer Engineering. They walked away with prizes valued at R 90 000-00 of equipment from Siemens and Lappkabel for the department, an iPad and exciting training opportunity at Festo worth R 12 000 for each member.

In October 2014 CUT future engineers did it again when they competed with all traditional Universities, Universities of Technology, and FET colleges. The purpose of the competition was to showcase their innovative skills and capabilities. The theme was 'Future of Manufacturing'. Students designed, developed, and constructed a BETTI (Best Educational Training Tool Innovation). BETTI is an intelligent maintenance or manufacturing assistant. It is an automated mobile toolbox with various functions, which is intended assist the user in maintenance or manufacturing systems. Students won third prize and walked away with R25 000 worth of Siemens products, developmental training worth R7 000 and a Polaroid Induction speaker for each participant.

In October 2012, a team of four students from CUT won the Siemens Cyber Junkyard Competition at the Misty Hills Country Hotel in Muldersdrift for developing cutting-edge innovative engineering designs. The team was part of the research group from Evolvable Manufacturing Systems (RCEMS)

Engineering students makes a clean sweep at SASOL Baja SAE

Ten Mechanical Engineering students were crowned worthy champions of the Sasol Baja SAE



(Society of Automotive Engineers) 2014 at a national competition following their outstanding conceptualisation of a real world-engineering project, which equipped them with the required skills for the industry. The objective of the competition was to expose South African tertiary students to planning, design, and manufacturing. The team won trophies as overall winners for the most exciting car and second place in the endurance race.

Renewable Energy Courses Introduced

The Department of Electrical, Electronic and Computer Engineering have introduced two new courses in 2014 and 2015; namely a Higher Certificate in Renewable Energy Technologies and Diploma in Sustainable Energy. These courses were designed to help develop more Renewable Energy Technicians and Energy Advisor/Auditors in South Africa. Upon entering the job market, the technicians are equipped with 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 – offer advice to consumers on available renewable energy devices.

CUT Develops Solar-powered Charging Stations for Students

The Faculty of Engineering & Information Technology unveiled a prototype, in 2013 to allow students to charge their electronic devices on campus, via a solar-powered USB port. The Solar-Flower was designed and developed by CUT engineering team, while the steel construction of the device was done at the mechanical workshop at the university's Bloemfontein Campus.



The university's state-of-the-art facilities, coupled with excellent teamwork, allow CUT to manage such projects. From inception stage all the way through to the delivery of a product prototype. The project represents one of many that CUT is committed to drive towards a greener future.

Charging stations has since been installed in both campuses to help ensure that students can recharge whenever they need to and don't run out of battery power at a crucial time.



CUT on top of the game in SET

CUT's Engineering Diplomas and BTech degrees have achieved accreditation from Engineering Council of South Africa, which is amongst the most respected accreditation bodies in South Africa. It is a statutory body that was established in terms of the Engineering Profession Act of 2000. The Council provides leadership through rigorous quality assurance processes and demanding standards that are widely accepted within higher education sector and professional bodies. The accreditation of CUT's engi-

neering programmes is the culmination of the Strategic Transformation of Educational Programmes and Structures (STEPS) process at CUT that began in 2010.

PDTS GIVES A HELPING HAND

Product Development Technology Station (PDTS), a technology innovation agency at CUT has done a fascinating innovation of extending driving pedals for Mr Mohalatsi Mabilietse. Mr Mohalatsi Mabilietse is a humbled disabled student, only 56 inches tall, who was born disabled. He loves outdoor, adventure, sports (rugby and soccer) and hanging out with his family and friends. He joined CUT as an IT student and currently in his second year. At 56 inches tall, it became difficult for him to drive a normal car, as he could not fully reach the pedals. He approached PDTS with the idea of extended

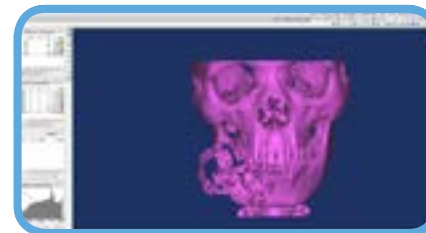


pedals and explained it to Kamohelo Mokoena, a mechanical engineering graduate from CUT, who advised him to draw-up a proposal and submit it to them. Today, Mr Mabilietse can drive himself around the streets of Bloemfontein, home and campus.

CUT plays pivotal role in innovative medical surgery

Centre for Rapid Prototyping and Manufacturing (CRPM) at CUT played a vital role in the reconstructive surgery for a young woman from Gauteng, Ennica Mankge, who was born without a nose and nasal passages. CUT together with

a team of specialists from the University of Pretoria and Mediclinic Kloof worked tirelessly for months to make this life changing surgery possible. Using Additive Manufacturing technology, better known as 3D printing, two models of Mankge's skull were constructed and the patient received extensive jaw and facial surgery and a new nasal prosthesis at Mediclinic Kloof in Pretoria on 22 June 2013.



The pre-operative models shortened the operating time considerably, and reduced the chances of complications such as infections or excessive blood loss caused by prolonged operations.

3D printing at CUT more versatile than ever with new innovative technology

The research team at the Centre of Rapid Prototyping and Manufacturing (CRPM) added the latest acquisition of the state-of-the-art Objet Connex™ 350 3D printing machine, which is described as versatile tool of the new industrial revolution.

In July 2014, doctors Van den Heever, Walleed Ikram (Head of Kimberly Hospital Dental Unit), Kobus Hoek (a maxillofacial surgeon), Phillip Johnson and Riaan Liebenberg installed titanium implants into the jaw of two patients who had severe facial disfigurements. These implants had been printed layer-by-layer using the Additive Manufacturing processes and the equipment at the CRPM to ensure that they were perfectly molded to the individual jawline. Two patients received the titanium implants. The first patient was a 31 year old man who suffered from tumour deformities on his lower jawbone. The second patient was a 20-year old who needed a replacement to a broken one. 3D printing has been described as the tool that will be used in the new industrial Additive Manufacturing that makes it possible to print objects out of almost any material. The traditional versatile paper product has been replaced by titanium, sand, nylon and glass even chocolate.



NRF SARCHI CHAIR LAUNCH

August 2015: CUT in partnership with the National Research Foundation (NRF) and Department of Science and Technology (DST) launched the NRF-SARCHI chair in Medical Product Development through Additive Manufacturing. The incredible five-year opportunity under the leadership of Prof. Ihar Yadroitsau was awarded in recognition of the outstanding work that CUT has done in transforming the lives of those with severe facial disfigurements due to cancerous tumours or injury. CUT is proud to have been chosen as the South African host

of the Research Chair in Medical Product Development through Additive Manufacturing (3D printing technology).

The Centre for Rapid Prototyping and Manufacturing (CRPM) is the cutting edge of 3D printing or additive-manufacturing (AM) technology for medical purposes. The Centre does groundbreaking work in the design, development and manufacturing of medical devices using 3D printing, and has assisted 13 patients to date.

At the unveiling ceremony on 14 August 2015 is Prof. Henk de Jager Deputy Vice-Chancellor Academic and Research; Prof. Igor Yadroitsau the research chair holder, Minister Naledi Pandor, and Prof. Thandwa Mthembu, Vice-Chancellor and Principal of CUT



Faculty: Health and Environmental Sciences

CUT Scientists discover new drug to help fight aquatic animal infections

Team of researchers from Unit for Drug Discovery led by Prof. Samson Sitheni Mashele and Dr Khajamohiddin Syed discovered a new drug in 2015 that has huge potential to help fight aquatic animal infections caused by aquatic parasites. For years, researchers across the world tried to understand these

microorganisms in order to control the disease and develop novel drugs against these pathogens. These microorganisms are widely known within the scientific world as oomycetes- fungus-like microorganisms, which continue to wreak havoc to aqua farming sector worldwide. They are considered the deadliest of pathogens, caus-



ing diminished production of aquatic food. CUT researchers are leading the way in finding solutions that will bring an end to this socio-economic challenge facing aquatic farming. The researchers analysed cytochrome P450 monooxygenase proteins in 13 pathogenic oomycete genomes which resulted in

the discovery of novel cytochrome P450 monooxygenase proteins that can be used as a drug target against these deadliest of pathogens.

The results of this study have been accepted for publication in the Nature Publication Group journal, "Scientific Reports", a prestigious multidisciplinary scientific international journal with an impact factor of 5.1.

Bachelor of Radiography in Diagnostics

The Radiography Department introduced the Bachelor Degree with the first intake of students in 2014. The first group of Bachelor of Radiography Degree students are currently in their second year. The 3rd year programme has been finalised and the 1st group is scheduled to graduate in March 2018.





Digital Radiography Laboratory

The Radiography Laboratory is installed with digital machines-Picture Archiving and Communications System (PACS) The machine is the first in a teaching and learning environment in South Africa. PACS is used to simulate clinical workflow and X-ray images are produced and stored digitally to allow easy access to institutional student Information Technology (IT). The Carestream Computed Radiography (CR) system is integrated with imaging, archiving and surveillance systems. The imaging

archive allows access to a variety of digital x-ray images displaying and an array of important anatomical and pathological structures for teaching purposes. The system also allows the creation of teaching files for students who will be able to engage with the digital images in various educational activities such as post processing manipulation and annotations. Video recordings will also be used for teaching and debriefing purposes during stimulation sessions.

CUT Young Farmer of the Year Awards

Six CUT graduates competed at the SA Young Farmer of the Year. The goal of the competition is to acknowledge the role played by the country's farmers and to motivate young farmers, aged between 18 and 35 to excel in their profession. CUT's Provincial Young Farmer winners are:



- 2005 Northwest Young Farmer of the Year: Mr. Jacques Swart (who is farming near Louwna);
- 2006 Free State Young Farmer of the Year: Mr. Willem Du Plessis (who is farming near Bultfontein);
- 2007 Free State Young Farmer of the Year: Mr. Ters Pretorius (who is farming near Heilbron);
- 2009 Free State Young Farmer of the Year: Mr. LPJ Fourie (who is farming near Philippolis);
- 2010 Free State Young Farmer of the Year: Mr. Jan Scheepers (who is farming near Fouriesburg);
- 2014 Northern Cape Young Farmer of the Year: Mr. Kolver Mulke (who is farming near Plooyburg).

Mr Jan Scheepers is currently farming on the Zandvallei farm in Fouriesburg area and was also awarded the title of SA Young Farmer of the Year 2010.

Faculty: Humanities

Faculty of Humanities consists of six departments, namely: Communication Sciences; Design and Studio Art; Mathematics, Science and Technology Education; Language and Social Sciences, Educational and Professional Studies and Post Graduate Studies Education. The Faculty offers a variety qualifications, ranging from Diplomas to Doctorate degrees.

CUT outshined its peers at the Jewelry Design Competition

Petrus Chauke is a 3rd year Jewellery Design student in the Department of Design and Art Studio. In his first year, he entered the Thuthuka Jewellery Development Programme, a competition that targets institutions that offer jewellery design courses and diplomas. His competitors came from traditional universities, Universities of Technology, Colleges, and Community Jewellery schools. According to Petrus, the competition was intimidating for him as a first year who never even knew he had the talent and creative abilities to give him all the recognition he was dying for! The theme for that year was African Bead. The New

Talent Category winner said he got his inspiration for his design and creation from a spider web that he mirrored and saw in a three dimension. He used the shape he saw on the mirror and created a winning bead! He was awarded R8000 Thuthuka bursary and 80g of silver metal. During his 2nd year, he entered for the Innovation category with the theme: Shoe Piece. His creation, he said, was inspired by a dragonfly, which can also be worn as a pendant. He won the first prize and received R1 500 in cash and 120g of silver metal (courtesy of Browns Jewellers), and a pair of converse All Star sneakers.



CUT curriculum takes shape

Prof. Frances van Schalkwyk, Director for the Department of Design and Studio Art, and Prof. Colette Veasey-Cullors from Maryland Institute College of Art (MICA), in Baltimore Maryland (USA), met in 2014 to discuss the development of a new curriculum for the Advanced and Postgraduate Diploma's and the Master's Degree in Design and Studio Art.

The new curriculum follows the recently implemented undergraduate qualification, a Diploma in Design and Studio Art, which is South Africa's first undergraduate interdisciplinary qualification; incorporating clothing, fashion, fine art, graphic design, photography as well as jewellery design and manufacturing. In addition to the curriculum development, Prof. Veasey-Cullors also administered classroom development workshops for students and staff mentorship. Ms Tary Cohn of Art Source South Africa also served as a consultant in the new curriculum development.



Faculty: Management Sciences

Department of Accounting and Auditing on top of their game

In 2012, the international audit firm PwC, in partnership with the Department of Accounting, hosted its first annual Business Ethics Awards function. CUT is the first University of Technology in South Africa to become involved in such a project. The three winning teams, as well as the overall best presenter, received awards sponsored by PwC.

On 15 May 2013, the Department of Internal Auditing and FIS hosted the Business Ethics Project Awards function in conjunction with PwC. The project is now in its third year, and CUT is still the only University of Technology in the country to offer this level of practical learning as part of its curriculum.

Department of Accounting and Auditing has various student chapters and student interest groups that enrich university life. The chapters focus on the development and strengthening of relationships between CUT, students and industry; contributing to the personal growth and career development of students; and the promotion of the interests of a specific accounting profession or agenda.

The current student chapters (groups) are:

- **ABASA CUT** student chapter. It is associated with the Advancement of Black Accountants in Southern African (ABASA) and as such promotes the transformation agenda of the industry.
- **CUTASO A** student chapter representing the Accounting and Auditing students at Welkom campus.
- **Internal Audit Student Chapter** This Student Chapter intends to advocate for Internal Auditing students to have relevant issues affecting them to be addressed and also to promote integrity, professionalism and dignity of the profession to students. In fulfilling its duties, it liaisons with the professional body The Institute of Internal Auditors SA;
- **ISACA** student group We strive to create awareness among Financial Information Systems students regarding the importance of being affiliated with a professional body, specifically the Information Systems and Control Association (ISACA).

The department received a trophy from the Advancement of Black Accountants in Southern Africa (ABASA) for the best supporting organization in 2014.



CUT HRM Programme Accredited

Department of Business Management celebrated the achievement of accreditation certification for the Programme Human Resources Management (HRM) by the South African Board for People Practice (SABPP). SABPP is the professional and statutory quality assurance body for all HRM learning programmes in South Africa.

Accreditation of these programmes is part of the Strategic Transformation of Education Programmes and Structures (STEPS) which is a massive and

concerted undertaking to have demand driven user-orientated programmes. Vision 2020 envisages CUT as a new-generation institution, contributing to the development of the region and beyond, through adopting an output and impact focus and building sustained partnerships with business, government and industry. CUT is one of only seven out of the 23 universities in South Africa to go through the process of acquiring accreditation.

Hospitality Management Launched a Practical Book

Hospitality Management department has launched a book-Hospitality Management (practical guide). The book aims to provide a practical perspective on the management and operational issues that the hospitality industry face on a daily basis. The practical nature of the book is valuable to all hospitality establishments including guest houses, lodges, B&B's, restaurants

bars and hotels. The contributors to the book have an impressive combination of industry experience and theoretical knowledge to convey a practical approach to hospitality management. The book is available at Sun Media for R220. The joint effort production was written and compiled by lecturers according to their field of expertise.

Wine Festival

CUT Hotel School hosted the first food and wine festival (dubbed Fiesta Del Vino) in 2012. The event has since become an annual event as it was granted to CUT Hotel School for the 3rd time in 2014. The two-day event takes place during October month each year and the main sponsors are Distell and Vin Doux who sponsors wine from 37 wine estates across the country. Approximately,

300 wine and food lovers (Advisory Committee members, stakeholders, donors and investors) per evening attend the wine and food tasting stalls. The purpose of the event is to expose the Hospitality Management, Tourism & Event Management students to practical application of functions and event operations. The event has tremendous marketing advantages for the institution.



Technology and Innovation

The Incubator

Six businesses are currently incubated at CUT Incubator in Bloemfontein with a further three start-ups in the virtual incubator preparing for formal incubation. Some of the incubated businesses have recently established themselves and are providing services to the city. Tamikk Fatuka Sterilizer was one of the incubated businesses that is now operational. The factory is manufacturing and distributing chemicals cleaning product. Another company is an Information Technology shop in Middestad Centre in Bloemfontein. The name of the company is Silver Flame Trading.



A wheelchair car nearing completion

FabLab

The FabLab is an important enabler for students in need of support and equipment for design and development of academic projects. The facility is used primarily by Engineering and Art students with significant involvement of architectural students from the University of Free State. In addition, a large numbers of school learners also make use of the facility for their practical projects of a technical nature.



SAB KickStart Ignite Programme

CUT is an official participant in the SAB KickStart Ignite programme. This is a six-months programme executed with the support of the FabLab. The programme is aimed at empowering seven selected participants, who each designs, develops and manufactures prototypes of new innovative products for the market. At the end of the programme each participant is presented with an opportunity to become owners of a registered start-up businesses to market the relevant products. Participants also attend a series of short business development courses. Through participation in this programme SA Breweries financially contribute a significant amount of funds towards the expenses incurred by the FabLab.

TIA Seed Fund

Technology and Innovation Office is responsible managing TIA Seed Fund programmes at CUT. This programme currently supports seven projects executed by CUT staff and students totalling to R2 576 000. These projects include the development of a wide range of devices such as a new fender for mountain bikes, high-tech solutions to medical problems such as polyester, and mechanical heart valves.



A collapsible play chair and table for toddlers which attracted external venture capital to put it into production.

Vision 2020 Innovation and Incubation Competition

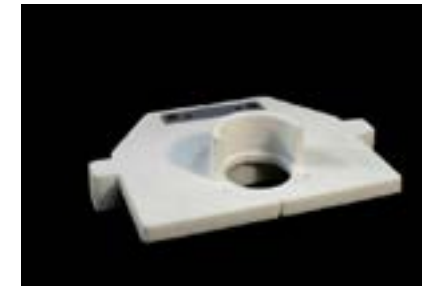


Vision 2020 Innovation and Incubation competition is an annual event held for students who executed innovative projects. Five prizes to a total of R63 000 were won during the 2015 cycle of the competition.

The prize-winners and some staff members involved in the IIP Competition. Front row from left to right: Ms KR Kgosiemang (2nd), Mr M van Rooyen (winner), Mr A Dintwe, Ms E Muller (5th) & Mr M Thapelo (3rd). Second row from left to right: Prof L Lategan, Prof G Jordaan, Prof H de Jager, Mr M Nkuna & Mr C van Beukering (4th).

Technology Transfer Office

The Technology and Innovation Office is an official Technology Transfer Office (TTO) of CUT. This function became imperative because of the implementation of IPR Act (Act 51/2008), a government initiative, which aims to increase the levels of innovation at statutory-financed research entities such as universities. The TTO manages the implementation of a particular act on behalf of CUT and has registered 12 new patents and designs since 2012. This includes one design registration in the European Union and one final patent in the USA. The National IP Management Office is the main funder of the projects that are carried out



A specialised drill guide for the mounting of cabinet hinges in its prototype stage and after final packaging.

CUT on the International Front

CUT responds to Internationalisation in a changing world

CUT hosted the 17th International Education Association of South Africa (IEASA) Conference in August 2013. The aim of the conference was to respond to the emerging questions regarding internationalisation in a changing world.

IEASA is a non-profit organization that was established to address the needs of universities in South Africa to respond to international educational trends. The knowledge sharing conference focused on best practices, challenges, opportunities, and the critical roles that has to be played in the successful implementation of internationalisation.



Prof. Henk de Jager, Deputy Vice-Chancellor: Academic at CUT; Prof. Alvaro Roma, Secretary General-elect of IAUP; Dr Laven Samuels, IEASA President; Prof. Rosa Meyer from Catholic University of Rio in Brazil; Dr Nico Jooste, IEASA Vice President; Mr Ramo Damodaran, Deputy Director: Outreach Division and Dr Jimmy Ellis, CUT Internationalisation Consultant.

International student association launch

CUT International office launched the International Student Association (ISA) in May 2015. The historical event is in support to its Vision 2020's Internationalization strategy that mandates the existence of ISA to ensure integration of international students on campus, increase their enrollment and successful integration to form part of the broader CUT community. CUT has more than 500 international and exchange students from the rest of Africa, Europe, USA.



International students: Felix Vetter, Hoang Trang Tran, Daniel Dalke, and Philipp Kleinnecht

Every year CUT sends students to and accepts students from international destinations such as Belgium, Germany, France, Rwanda and many more – through partnership agreements with universities all over the world.

CUT has an active collaboration agreement with Aalen University in a number of teaching, learning and research projects and student exchange. The agreement signed in 2005 provides opportunities for students and staff from these two universities to study abroad, teach and engage in research projects and be recognized on qualifications awarded by the institutions.

CUT researchers present abroad

CUT researchers and post-graduate students from the Unit for Applied Food Safety and Biotechnology (UAFSB) participated in the 24th International ICFMH FoodMicro conference that was held in Nantes, France, during September 2014. The conference was hosted by the French Society for Microbiology (SFM) and is considered an umbrella event for all Food Microbiology societies worldwide. More than 600 delegates from 58 countries attended the event and CUT was represented by postgraduate students Ms Kereng Corbett (MTech) and Mrs Shirleen Theisinger (DTech), both pursuing their degrees in Environmental Health. Ms Corbett was the only South African researcher chosen to deliver an oral presentation at the conference. She presented her research entitled "Yeast diversity in a typical fruit juice bottling plant" under the spoilage microorganisms section.



Post-graduate students affiliated with the Unit for Applied Food Safety and -Biotechnology (UAFSB) attended the 24th International ICFMH FoodMicro conference held in Nantes, France. Mrs Shirleen Theisinger (left) and Ms Kereng Corbett (right) with Prof. Cletus Kurtzman from the United States Department of Agriculture (USDA). Prof. Kurtzman is the founder of gene sequence-based barcoding system for yeast identification, one of the methods employed in their research.

Global company says YES to CUT students

2012: Dr Zorada Hattingh was approached by the University of Cambridge to form part of a project coordinated by the African Partnership for Chronic Disease Research. He and his team engaged in extensive research and collating data for a systematic review and meta-analysis of the associations among HIV, ART and cardio metabolic risk factors and diseases in sub-Saharan Africa.

2013: A representative from Bell Equipment Company (PTY) LTD in Richards Bay, Mr. Kgomo Mosimanyane paid a courtesy visit to engage with CUT on the Work-Integrated Learning Programme and possible placement of students. Bell Equipment Company a leading

global manufacturer, distributor and exporter of material handling machines that has invested in CUT students. In the past, CUT held talks with business and industry to maximize partnership opportunities.

The visit is a remarkable outcome of these engagements and Bell committed itself to further explore and collaborate with CUT in other areas of mutual interest. The company also has a representative in CUT's Engineering Advisory Committee to advise on the course content and their relevance.

WIL later placed two exceptionally performing Mechanical and Mechatronic Engineering students with Bell Equipment company. Siemens is also one of the partners.

Pictured is Mr Dave Mentjies, Technical Training Specialist HR at Bell Equipment; Mr Bennett Mokoma: WIL Coordinator at CUT; Mr Kgomo 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 Mabongo, Development Manager at TLB; and Mr Andrew Staniland, Production Manager of Bell Equipment.



CUT in Talks with Gediz University for possible collaboration

Prof Seyfullah Cevik, Rector of Gediz University in Turkey and his entourage visited CUT in 2014 to explore possible collaborative programmes in the fields of biomedical engineering and additive manufacturing- an area that CUT is emerging among few institutions in the country so far.

The delegates were impressed with CUT's academic programmes and the similarity of those at their University. Currently, Gediz University has a partnership with Free State Provincial Government and thirty-seven students from the province are already pursuing their studies at the University. Prof Henk de Jager, Deputy Vice Chancellor: Academic and Research said that there are a number of areas that could be explored since the two universities offer similar academic programmes.

Hanze Summer School in Netherlands



L-R: Liesl Vorster, Dr B. Van der Merwe (WIL co-ordinator), Prof. S. Mashele Dean of Faculty and Anneke Lamprecht.

Radiography students from the Hanzehogeschool at the University of Applied Sciences in Netherlands have been participating in Work-integrated Learning (WIL) facilitated by CUT at Radiology and Oncology departments of Universitas and National hospitals since 2005. In 2015, for the first time in the history

of the programme, two academically deserving third year students were granted an opportunity to visit the Netherlands for two weeks to engage with radiography students from various European institutions. The two students who are privileged to attend the summer school during August 2015 are Anneke Lamprecht and Liesl Vorster.

CUT students explore Belgium



curriculum that made them outstanding in all they did. Their programme ended in June and their performance is reflected in their academic results.

Refiloe Makibi said, "We were selected based on our academic performance. For me, South African Education is superior and CUT's curriculum is the best. In Belgium, we performed exceptionally well because here at home we do a lot of theory, assignments, tests and examinations whereas in Belgium, they do not write tests and for me everything that we did was a piece of cake. They do not attend school every day, there's free days where students do assignments and study and here we are taught to multitask, which is the best practice."

On 28 February 2015, three Communication Sciences students from Welkom Campus left for Belgium on a four-month academic exchange programme. At Thomas More University in Mechelen City, the students, Angel Mokhuwa-B Tech, Monyatsi Mokhunoane B Tech, and Refiloe Makibi 3rd year National Diploma were enrolled for Communication Management and all attended in the same class. The subjects offered were Media Analysis, English 4, International Project 2, Survival Dutch, Ethical Managerial Problem Solving, Asian business Topics and Intercultural Communications. All three of them echoed the same sentiments about CUT

Angel Mokhuwa elaborated on the trio's performance. "We were exceptional and the experience was breath taking. All we did was to study! We never missed a class and learnt the basics of Dutch. I would like to see CUT implementing oral exams because it ensures that students know their work and understand what they have learnt. I am proud of the quality of education we get here at CUT, at Thomas More, we were given less work, and we were scared that we will end up being lazy but overall, we are grateful for this

opportunity.”

Monyatsi Mokhunoane spoke about the culture and diversity he observed at Thomas More. “Thomas More is a University with a culture that is very diverse. Student there are from all over the world. This was an eye opener for me as I have learnt to be more accommodative to new experiences. Assessments

are mostly done in a form of presentations and oral exams. Students are not hostile around their lecturers. What was most interesting is that, they have a subject that is part of the curriculum where they fundraise for a certain project and are assessed on it. I am still happy to be part of CUT. Our curriculum is still the best!”

Inbound exchange students



Back row: Faith Tshula (CUT) -Ellis Neiryck (Thomas More University, Belgium) - Roos Arnhem van -Patricia Colle (Hanze University of Applied Sciences, The Netherlands) -Christian Fröhlich (Ulm University of Applied Sciences, Germany) -Victor Matseka (CUT) -Simon Ryswick (Hanze University of Applied Sciences, The Netherlands) -Iiris Mattila (Kajaani University of Applied Sciences, Finland)-Lucas Weyh (Harz University of Applied Sciences, Germany) -Ville Manninen(Kajaani University of Applied Sciences, Finland)

Front row: Tirsia Kruger (Hanze University of Applied Sciences, The Netherlands) -Stefanie Streit(Harz University of Applied Sciences, Germany) -Aino Leiviskä (Kajaani University of Applied Sciences, Finland) -Maarten Sikkens (Hanze University of Applied Sciences, The Netherlands) -Maurits Herwig (Hanze University of Applied Sciences, The Netherlands)-Kristel Overkempe(Hanze University of Applied Sciences, The Netherlands)- Fundiswa Sonqoe (CUT) -Seadimo Moikwatlhai (CUT)

Each year, CUT hosts students from its international partner institutions for a period of six to twelve months. Students are placed at different faculties for different academic programmes. The results reflect on their academic record as part of their academic growth.

To date, about 50 CUT students have been sent abroad on this programmes to the following partner Universities: Aalen University of Applied Sciences, Ulm University of Applied Science, Harz University of Applied Science, Hanze University of Applied Sciences and Thomas More. The duration of their programmes run from three weeks to a full semester

abroad.

So far, CUT has hosted more than 80 students in the following academic programmes- Business Administration and Business Management in the Faculty of Management Sciences, Built Management, Civil Engineering, Electrical Engineering, Information Technology in the Faculty of Engineering and Information Technology, Language Practice and Education in the Faculty of Humanities as well as in Research Centers such as CRPM and PDTS.

Our Partnerships

Merseta invests R6 million on Engineering Development at CUT

CUT's partnerships with industry were strengthened with the establishment of a merSETA Chair in Engineering Development for the FET sector and Technology Education for a period of three years, only the second chair of this nature in the country. 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. 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.



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.

CUT and Free State TVET College Sector

Free State Department of Education (FSDoE) through its visionary Chief Directorate for Technical and Vocational Training (TVET) grabbed the opportunity offered by CUT to capacitate its management team and officials. The team was registered for BTech: HR programme with CUT, the first of its kind to be offered via a blended mode.



Academic staff from Department of Business Management from CUT and officials from FSDoE who attended the workshop.

CUT partnered with a local farmer

CUT entered into a three-year renewable agreement with Mokhachane Community Property Association (CPA), a farming project located in Wesselsbron, Lejweleputswa district municipality. The Memorandum of Agreement signed between the two parties stipulates that Mokhachane CPA will open its doors to a number of CUT Agricultural Management students to conduct research and/or undergo practical training on the farm as part of their Work Integrated Learning Programme (WIL) and CUT will provide access to its experienced staff with expertise in the field to ensure successful implementation, smooth running and completion of these projects. The renewable agreement is scheduled to end in January 2017.



Caption: Mr SW Mokhachane, Director: Mokhachane CPA shaking hands with Prof D Umesiobi: HOD: Department of Agricultural Management at CUT, after the parties sealed the deal

CUT teams with Free State Department of Health



Deal sealed L-R: Dr David Mota; Head of Free State Department of Health, and Prof. Henk de Jager; Deputy Vice-Chancellor: Academic and Research (CUT).

CUT and Free State Department of Health signed a continued Memorandum of Understanding (MoU) in 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 and Free State Tourism Authority marries

Free State Tourism Authority established a five year strategic alliance with CUT. The agreement entered into by the two parties recommended that CUT as an academic institution with necessary skills and advanced research capacity, assists Free State Tourism Authority in conducting the necessary research with the objective of determining the developmental needs and marketing initiatives for tourism in Free State. CUT will further assist the Authority in strengthening the research practice within the industry in the central region. The research endeavour is headed by the Department of Tourism and Events management's research academics under the leadership of the Faculty Dean, Professor Albert Strydom.



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

CUT set the foundation for widespread access to higher education



June 2013: Free State Provincial Government, CUT and Technical and Vocational Education and Training colleges (TVET) pledged their commitment to collaboration at the memorandum of understanding (MoU) signing ceremony.

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

Previously, there has been a mismatch between the courses offered at TVET colleges and the entry requirements into higher education institutions, which resulted in TVET qualifications being disregarded when prospective students' applications were considered for admission. Signing of the MoU was the first step to the realisation of the Department of Higher Education and Training's efforts to revitalise the TVET sector in the Free State through systematic, coordinated and meaningful collaboration with universities. The MoU also aims to further promote specific learning areas, including Science, Technology, Engineering, and Mathematics (STEM).

FS institutions committing to meaningful collaboration that aims to create opportunities for TVET students to further their studies in higher education institutions- Front L-R: Honourable Tate Makgoe, MEC for Education; Prof. Thandwa Mthembu, Vice-Chancellor and Principal at CUT.

Back L-R Mr. TS Letho, Director: Flavious Mareka TVET college; DR LM Fourie, Director: Goldfields; TVET, DR SD Manese, Director: Maluti and Mr JS Tladi, Chief Director: TVET.

Our Academics

Academic awarded for best paper at conference

Mr Thabiso Godfrey Monyane, a Lecturer at Built Environment in the Faculty of Engineering and Information Technology won and received the 'Pentad Best Academic Paper Award' at the 7th Annual Quantity Surveying Conference that was held at CSIR in Pretoria on 22 and 23 September 2014. The title of his paper was: 'Exploration of Building Information Modelling (BIM) concept and its effect on Quantity Surveying Profession in South Africa: Case of FS Province.' "BIM is the new way of doing things in the field of Quantity Surveying in order to enhance the service delivery and improve the construction industry at large." According to Thabiso, winning the 'Pentad Best Academic Paper Award' means that together with his department, they will be engaged in continuous research that addresses the future of Quantity Surveying.



Dr Makola Scoops 2 Top awards



Dr Solomon Oupa Makola, Campus Director at CUT Welkom campus became one of the eight award recipients at the 20th congress of the Psychological Society of South Africa (PsySSA). Dr Mokola walked away with two top awards. The first award received was for good practice and his hard work and dedication paid off when he was applauded for the role and impact he made on practice and community engagements. In his effort to make psychological knowledge accessible to a wider South African audience, he went an extra mile and conducted psycho-educational work on radio and social media. The second award he received was presented by the Counselling Division of PsySSA for an outstanding Counselling Psychologist who has raised above his/her peers.

Dean wins the African Continental Titans Building the Nations Award



Prof. Albert Johannes Strydom, Dean: Faculty of Management Sciences took part in the Titans Building the Nations Award (Africa) and competed with the best in Africa on 28 July 2015. The annual Titans-Building Nations Awards competition is a recognition programme that pays tribute to the powerful men in Africa who play pivotal roles in the development and growth of their country, the African continent, and its communities. Prof Strydom won both the Country and Region (SA & SADC South) prize in the category of Education and Training: Academic. On 10 November 2015, he competed for the Continental Award with the rest of his peers from other regions in Africa and again, Prof. Strydom proved his capabilities and competence when he was announced as

the winner for the African Continental Titans Building the Nations Award. The prestigious event was held at Gallagher Estate in Johannesburg.

Dr Malebo Scoops A Fellowship Award



Dr Ntsoaki Malebo, a researcher in the Department of Life Science Applied Food and Biotechnology scooped a Research Career Advancement Fellowship Awards in 2014 for her outstanding research. The NRF awarded 61 of the fellowships to nine universities and some research laboratories and Dr Malebo 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; two Master's students as co-supervisor and full supervisor for the other. She has achieved all of this mainly at the level of her pre- and post-doctoral work.

Professor Lategan Receives The Journal Of Research Practice (JRP) Best Reviewer Award

In 2013, Prof. Lategan received the Journal of Research Practice (JRP) Best Reviewer Award for the most outstanding submission reviewers in recognition of superb quality of review readiness to take up new submissions, fast turn-around time, and overall persistent support. 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.

Prof. Lategan is the Dean: Research and Development at the University. He has published more than 150 books, monographs, articles, papers etc. on topics in higher education, philosophy, ethics and research development.

He is a rated researcher with the National Research Foundation in South Africa. Prof is also a co-editor of a research series on research development and editor of the Journal of New Generation Sciences (ISSN 16844998). He is the chairperson of SATN's Research, Transfer and Innovation Committee.



CUT lecture wins the best teacher award



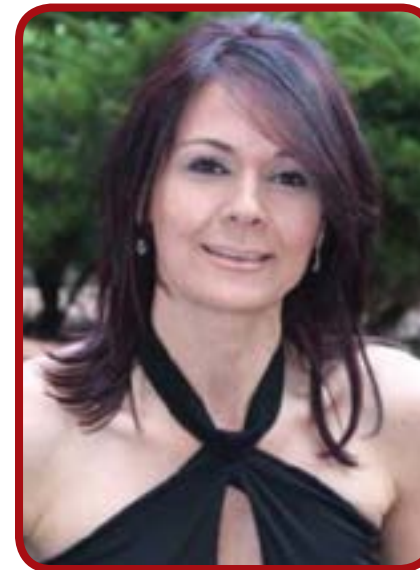
Ms Belinda van der Merwe, a lecturer in Radiography department, received the National Excellence Commendation Award in Teaching and Learning from Higher Education Learning and Teaching Association of Southern Africa (HELTASA).

Ms van der Merwe was selected by the National Excellence in Teaching and Learning Awards Selection Committee as the recipient of a commendation award. Nationally a total of 38 applications were received from which five excellence awards and nine commendation awards were made.

The selection committee commended her for the articulation of a consistent philosophy, showing up to date knowledge of teaching and learning with teaching and assessment methods systematically aligned to the philosophy, and her technological innovations were also noted with interest. Ms van der Merwe's teaching portfolio will be held up as an example of good teaching practices by HELTASA and CHE.

Outstanding professional leadership at CUT recognised by HESA

The voice of Higher Education Leadership in South Africa – Higher Education South Africa (HESA) – awarded 25 outstanding professionals in middle management positions with exceptional qualities in the university sector.



Dr René Haarhoff, Acting Director: School of Tourism, Hospitality & Sport was chosen as one of the fellows. Dr René Haarhoff is an outstanding example of excellence at CUT. As the Acting Director: School of Tourism, Hospitality & Sport her qualifications reflect her wide spectrum of interests: a BJuris law degree, a diploma in Fashion Designing, BTech: Tourism Management, MTech: Marketing and a DTech: Business Administration (Tourism). In her academic career, her focus is on the travel and tourism sector. She is an accredited Fares and ticketing trainer and she is also, one of a few accredited Galileo SA (Global Distribution System) trainers in South Africa. In 2010, she received an award for the best research at the Prestige Research Day by the Faculty of Management Sciences and in 2012 she received the Vice Chancellor's Award for Service Excellence: Community Engagement.

Further in 2012, Dr Rene Haarhoff partnered with five Ethiopian Universities in the Strongbow Project. The STRONGBOW project, Sustainable Tourism based On Natural resource management with Gender Balance towards Women, was a four-year capacity building project which started in January 2011 ended in December 2014. The project contributed towards realizing CUT's new strategic trajectory - Vision 2020, by advancing the institution through regional, national, and international partnerships, specifically focusing on the African continent.

Dr René Haarhoff trained staff members of three Ethiopian universities (Jimma, Hawassa and Arba Minch Universities) on Global Distribution Systems (GDS) such as Galileo, Sabre, Amadeus and Worldspan which was an identified skills enhancement topic by the Ethiopian participants themselves. The training focused on the use of a GDS in a travel environment and included the booking of air transportation, creating a passenger name record and successfully meeting client needs. For this training, a simulated virtual software programme was used which excited participants.

Dr. Lawrence Meda – Curriculum Developer

Dr. Lawrence Meda a curriculum developer at CUT has achieved a number of milestones which positively impact on Academic Development and Support. As a mentee in the Scholarship of Teaching and Learning (SoTL), research mentorship programme funded by the Department of Higher Education and Training (DHET) he attended two international conferences: i) International Journal of Arts and Sciences (IJAS) Conference, held at Nanyang University of Technology in Singapore on 13-16 January 2015, and ii) The Clute Institute Conference held at the Kensington Close Hotel in London on 8-10 June 2015. He scooped awards for outstanding research presentations in both conferences. Laurence already has two accredited journals, namely "The mist that they declared to be over is still around: Xenophobic experiences of refugee children living at a community centre in South Africa" published in Child Abuse Research: A South African Journal 2014, 15(2):72-82), and "Are we helping them to pass or setting them up for failure? Assessment related experiences of partially sighted students" accepted for publication in the International Journal of Sustainable Development (IJSd).



Professor 'Mabokang Monnapula-Mapesela - DEAN: ADS



Prof. Mabokang Monnapula-Mapesela has been the Dean of Academic Development and Support from 2009. She is responsible for support, training, and development of staff and students. Her passion and success in academics was spotted by the Business Women's Association in partnership with Nedbank, Telkom, and the Industrial Corporation (IDC) in 2012 when she was nominated as a Businesswoman of the year for Free State in the professional category, for her achievements and sterling work as an academic.

Prof Mabokang has been a member of the Umalusi Council for Quality Assurance for General and Further Education and Training from May 2013 to June 2014. She has since been re-appointed to serve in the Council for a second term June 2014 to June 2017.

Our Graduates



Above L-R: Drs Livingstone Aglosu Kofi Agbotame (Business Administration), Leana Esterhuizen (Environmental Health), Bongani Elias Sithole and Moganathan Chetty (Public Management).

Front row: Prof. Thandwa Mthembu, Vice-Chancellor and Principal.

Right: The awarding of an Honorary Doctorate (D Tech: Business Administration Honoris Causa) to Dr Gill Marcus



CUT has graduated 29 563 since 1990 (statistics as at March 2015)

In 2014, the university registered 14 352 students and graduated 3427 students at both Bloemfontein and Welkom Campuses. CUT has the highest graduation rate amongst all six Universities of Technology (UoTs) and the highest percentage of academic staff holding doctorate of all six UoTs.

Our Alumni

CUT launched the second Alumni Chapter on 19 September 2015 in Johannesburg. The launch came a month after the Free State launch in Bloemfontein. The purpose of the launch was not only for the chapters but also, to forge close ties with former

students located in different provinces, interact, share CUT vision and ideas on how best they can contribute to the advancement of the university. It also serves as a platform to share the latest developments of the university's vision 2020 and the realisation thereof.

Lebo takes CUT brand abroad



Ms Lebo Selloane with U.S. Ambassador Patrick H. Gaspard (left) and Catherine Hill-Hendson, Deputy Chief of Mission at the U.S. Embassy in Pretoria (right)

Lebo Selloane, a Radiography graduate from CUT was selected for the 2015 Mandela Washington Fellowship for Young African Leaders. The Mandela Washington Fellowship for Young African Leaders is the flagship program of President Obama's Young African Leaders Initiative (YALI). As a Mandela Washington Fellow, Ms Selloane spent 12 weeks studying Business and Entrepreneurship at the University of Notre Dame in U.S.A. and will also participate in a Professional Development Experience (PDE) as part of her fellowship at IBM.

Ms. Lebo Selloane is originally from Kutloanong in Odendaalsrus. She has years of experience in the Radiography profession, first as a diagnostic radiographer and then involved in sales and marketing of radiology equipment. Currently, Ms. Selloane is Managing Director of a company,



Visionary X-rays, established to offer onsite mobile x-ray services to business communities with employees prone to occupational lung diseases and also offers advanced radiology services to the rural areas in a mobile x-ray trailer. She holds a B.Tech (Diagnostic) degree from the CUT and is a final year MBA student at MANCOSA Graduate School of Business. Through her community engagement she co-founded a non-profit organisation, Dream Girls Foundation. As chairperson, she focuses on empowering young women through a range of educational and entrepreneurial programs. Upon completion of the Mandela Washington Fellowship, Ms Selloane plans to implement what she learnt to develop and scale her business to other African countries and continue to empower young women through her foundation.

CUT Alumnus launches a book-Native Footprints



On 5 August 2015, Fezile Sonkwane, B.Ed FET Languages graduate, SRC member, and a columnist for The Weekly newspaper launched a book that will change people's perceptions about the holistic view about South African politics. The book is refreshing to the body of political and social commentary.

Nico Baird flies high

Nico Baird became one of the first graduates in South Africa to complete his B Tech degree in Language Practice at CUT. He specialised in communicative media, including graphic design and video production. He focused on effective academic communication in both poster design and instructional video production. His professional career started as Director of Multimedia at the University of the Free State's, Faculty of Health Sciences. In the past ten years, he has become a regular on the education and technology conference circuit with innovative and pioneering talks.

Through the innovative work and his dedication to learning in a changing world, he was selected as one of South Africa's first Apple Distinguished Educators in 2007. He served in various committees and associations, including the National Association of Distance and Open Education South Africa (Nadeosa), South African Association of Health Educationists (SAAHE) and Golden Key International Honour Society. He also presented an array of posters and papers at national and international conferences. Nico reviewed and published articles for various presentations.

His knowledge of technology and e-learning methods made him a well-known industry expert in South Africa, with his tips featured in weekly columns and talk shows in newspaper and national radio stations. He is currently working at WITS University where he is the Lead Educational Developer of the eLearning Unit.



Bernard Matsoso becomes global



Mr Bernard Matsoso is a Teaching Practice Coordinator in the Faculty of Education at Cape Peninsula University of Technology, Cape Town. Before joining CPUT, he worked at UNISA, Pretoria campus where he was responsible for establishing partnerships with SADC universities and schools in the interest of foreign students in the College of Education. This proud CUT alumnus earned various qualifications in his career path, namely: HRM at CUT; B-Tech (HRD) TUT; (PGCE) UNISA; and (PGCE) University of Derby, UK. In 2005, he received Erasmus Mundus Scholarship and studied a Master's degree in Local Development. He is currently completing his Master's Programme in HRM with CPUT. His research topic is entitled: "Efficacy of training and development programmes for new administrative staff at a selected University, Western Cape."

Due to his diverse academic background in Economics, HR and Education, Mr Matsoso spent five years teaching in South Korea and Japan respectively, which are ranked high amongst the best education systems. Mr Matsoso's areas of interest are training and development, teaching practice and ICT in education research.

Community Engagement

Saturday School Technology Project

As part of CUT's Schools Advancement Academy, extra tuition is offered in Mathematics, Natural Sciences, Life Sciences and English on Saturdays to Grade 11 and 12 learners from various secondary schools in Bloemfontein, Botshabelo and Thaba 'Nchu. The school is in existence at CUT since 2005 after being terminated at the old Vista University, Bloemfontein. Mutual & Federal, MERSETA (Manufacturing Engineering and Retail Sector Training Authority) and Interstate Bus Lines are proud partners and sponsors of this project. In 2012, 190 Grade 12 learners and approximately 186 Grade 11 learners attended these Saturdays classes. The school commenced with a total of 125 grades 10, 11 and 12 learners in 2005.

The main objectives of the project are:

- To provide content, study skills and examination preparation support in Mathematics (Algebra and Geometry separately), Physical Sciences (Physics and Chemistry separately), Life Sciences and English;
- To improve learner grades in above mentioned subjects;
- To enhance learners' chances of enrolment to Science, Engineering and Technology related fields of study; and
- To enhance learners' chances for admission to more reputable institutions of Higher Education that otherwise would not have been possible.

The following has been achieved through the Saturday School project:

- Learners are better prepared with better grades for admission to Science, Engineering and Technology (SET) related courses at higher education institutions.
- Learners are exposed to Engineering-related

courses at CUT.

- A significant number of the learners who have participated in the Saturday School project are currently enrolled for SET-related courses at CUT and other higher education institutions in South Africa, and many are making a success of their studies. Twenty four learners of the class of 2011 have enrolled for engineering related courses at CUT.

- 100% pass rate in 2011 and in many years previously.

- One of our learners, Fana Morobe from Unicom, managed to obtain an average aggregate of 80% in the final exam and were amongst the top 100 achievers in the province and was honoured, with other achievers, at the Premier's Well Done Function held at CUT. A number of Saturday School Project learners were amongst the 100 top performers in the province previously.

- Some of the former learners enrolled for medicine, law, engineering, and science courses with other institutions all over the country.

Highlights of the project

- Six learners are currently studying medicine at the University of the Free State,

- two from the class of 2006 have completed their studies in Civil Engineering at the University of Kwazulu Natal,

- Four are now lecturer assistants in the Faculty of Engineering at CUT and studying towards their B.Tech Degrees.

- Six other students are doing their compulsory Work Integrated Learning at the CUT. It is evident that this project is not only achieving its goals by addressing the educational, social issues but also assisting and facilitating growth of the local economy. It is also contributing to the human capital economy of the country and its transformation.

CUT's intervention programmes

Mr Joe Jacob, Life Sciences lecturer in the Department of Education, and his team of tutors who are completing School-based Learning (SBL) realised the acute need of learners from 18 schools in Lejweleputswa and Mookgala districts for intervention in Maths and Science, and started offering classes for learners from Grade 10 to 12 in July 2013. The school received 1 421 applications for 2014, but could only manage to admit about 575 learners due to limited resources. The criterion used is learners with lower academic percentages/performances in Mathematics, Life Sciences, Physical Sciences, and Accounting. These learners are then assisted every Saturday for one and a half hour. For the growth plan, the team intends to extend their services and open a satellite centre in Kroonstad. Currently, the learners pay a minimal fee of R60; the amount is calculated based on the cost incurred each year.



Annual Science Quiz

Grey College Secondary School-Quiz Whizzes of 2015

Faculty of Engineering and Information Technology (FEIT) hosted 17 successful annual high school Quiz Whizz competitions in a quest to promote the importance of Science, Technology and Environment fields. The prestigious event has been hosted by the Faculty since 1999. High schools in the central region are afforded an opportunity to participate free of charge, and the three finalist schools (plus standby school) all receive FEIT-study bursaries for the academic year.



The Quiz, now in its 17th year, made history when schools from previously disadvantaged communities entered the competition for the first time in 2015, winding their way up to the top and becoming the first two schools from previously disadvantaged communities to qualify for the Quiz finals. Eight new schools from the central region participated for the first time this year. The schools went through various preliminary rounds until the final three. Trials are held at Bloemfontein, Welkom and Kimberley.

This year, Grey College triumphed in the final round against new players: Moemedi Secondary School in Bloemfontein and Motswela Secondary School in Kroonstad.

During the final round, Grey College secured the title and earned two FEIT study bursaries worth R 10 000-00 each.

Moemedi Secondary school in Bloemfontein (2 x R 7 500-00 bursaries) and Motswela Secondary school from Kroonstad (2 x R 5 000-00 bursaries). Other schools who participated in the qualifying round were H/S Sentraal, H/S Sand du Plessis, Ikaelelo Secondary (all Bloemfontein) and H/S Goudveld (Welkom).

Winter and Summer School

The idea of a Winter School at CUT originated in 1996/1997 from CUT students who wanted to assist Grade 12 learners with the preparations for their final examinations and enable them to gain access to Higher Education.

Winter School underwent various phases of Development and a few years later, the idea of a Summer School (Spring School in September) also started as an identified need for the final preparation of learners towards their final matric examinations. As the school grew bigger, CUT had to prepare itself to accommodate the greater demand in terms of logistics, class sizes and financial support. For the past three years more than a thousand learners participated in the annual Winter School and about 300 registered for Spring School. Partners in the Winter and Spring School projects include CUT, Standard Bank of South Africa, and the Free State Department of Education. Winter School takes place over 10 days.

It was privileged to receive generous sponsorships from Standard Bank South Africa's Corporate Social Investment Office for the past four years. The R700 000 grant in 2013 was



increased to R1 million for both 2014 and 2015, making it possible for learners from disadvantaged backgrounds to be part of the programme.

Learners are guided by well-qualified and experienced tutors, adding value to the Grade 12 results of the province of which the national top spot of 2013 was a highlight. Although the Winter School focuses on nine subjects (Mathematics, Physical Sciences, Life Sciences, Geography, Engineering Graphics and Design, Business Studies, Accounting and Economics and CAT (Computer Applications Technology), the project renders support to scarce subjects, nurturing the talent of prospective students who will enrol at CUT in the fields of Science Technology, Engineering and Mathematics (STEM).

CUT-PDTS ploughs back to the community

CUT-Product Development Technology Station (PDTS) conducted a two-day workshop to Cosmo City youth in Randburg, Johannesburg as a way of ploughing back to the community and skills transfer. The high school learners, aged between 14 and 19 years, who have shown interest in drawing and sketching, an expertise within the PDTS, attended the workshop. The youngsters are part of a youth programme called "Raising Giants" initiated by Ms Kgomo Khosa. Raising Giants is an organisation that mentors and grooms the youth to realise their hidden potential where they think none exists.

The two-day scope of the course covered: the basics of sketching for concept development including topics such as drawing styles, project planning, design balance, shading and texture, isometric drawing and perspective, shadows, contour lines and the application of these skills. Learners were also exposed to various innovation projects from CUT, which bring about socio-economic development in the Central Region. A holistic approach on product development and entrepreneurship was also discussed.

Educational game for basic economic training to local communities

In the wake of high unemployment, lack of entrepreneurial skills, and the current thinking within the institution, Faculty of Management Sciences in collaboration with Aalen University took it upon themselves to initiate and develop a series of educational game systems, dubbed planning games. The initiative aims to promote entrepreneurship, a skill that is in high demand across the globe.



Ms Mazakia Tihobelo (enactus trainer) actively engaging Thabong entrepreneurs in the planning game from left: Mr Madikane, Mr Mosikidi and Mr Thokolo

Township, Bloemfontein and Lejwaleputswa district in Thabong, Welkom where small business communities exists. The main intention of the game is to develop and sharpen their business skills, equip them with knowledge that will enable them to run their own businesses, keep records, make transactions, penetrate the market, record their products, and keep record of accomplishment of their capital and profits.

It is anticipated that the concept will inculcate entrepreneurial skills among the youth and the unemployed in the Free State and beyond for gainful employment, poverty alleviation and general improvement in the quality of life.

In 2014 and 2015, CUT Enactus group under the leadership of Dr Edem Agbobi, project champion, piloted the project to the small business community of Mafora

School educators receive teaching support materials to improve Math and Science

Educator Mentorship and Development Programme (EMDP) was conceptualised by CUT with the aim of enhancing the quality of teaching and learning at primary schools in the fields of Science, Technology, English and Mathematics (STEM). This initiative is a partnership between CUT, Telkom Foundation and Free State Department of Education (FSDoE). The EMDP has been fully endorsed with the support from FSDoE MEC as well as other officials in the Department.

State province as there are notable differences between the participating schools and those that do not receive this kind of support. These successes resulted in Telkom Foundation committing additional funding to the tune of R 4, 800,000.00 for the second phase of the project in 2014/15 with 4 more schools added to the project, namely Heide Primary School, Karabelo Primary School, Kgotsafalo Intermediate Farm School and Monyatsi Primary School.

The project was launched in March 2012 with the first phase implemented for a period of 2 years (2012/13) at three primary schools in Mangaung, namely Bainsvlei Combined School, Grassland Primary School and Kamohelo Primary School. Telkom Foundation invested an amount of R 4,500,000.00 for the first leg of the project.

Since its inception in 2012, the project has achieved numerous milestones that have resulted in it becoming an envy of many in the Free



Our Students



Dr Daryl Balia, Director: Academic Planning; Prof Alfred Ngowi, Dean: Engineering and Information Technology; Ms Zanele Matsane, bursary recipient and Prof Henk de Jager, DVC: Academic and Research

Zanele leads by example

Ms Zanele 'Sally Sue' Matsane won the prestigious Abe Bailey Travel Scholarship in November 2014. These awards are beneficial to academically achieving individuals who show qualities of leadership and service to others coupled with a good track record, not only academically, but also on a broader social context. Zanele is a young BTech Quantity Surveying female student from Faculty of Engineering and Information Technology who also made CUT proud when she entered the enterPRIZE job creation challenge competition with an innovative concept focusing on sustainable wealth and job creation and won the second prize in the Best Young Entrepreneur category.

CUT Engineering walks away with prestigious award for the 2nd year!

In 2012, MS Jenny Aucamp was awarded the prestigious Vice-Chancellor's Award for best Academic Performance at BTech level. In 2013, Ms Aucamp, a master's student in the Department of Information Technology received the Abe Bailey Travel Bursary Award for her outstanding academic performance and exceptional qualities.

The objective of the Travel Bursary is to broaden the views of young South Africans through travel and engagement. Each member did a presentation at the Goodenough College in London, where they were hosted for a month.



Congratulating Ms Jenny Aucamp is Dr Daryl Balia (left), Director of Academic Planning Unit; and Prof Herman Vermaak (right), Acting Dean of the Faculty of Engineering and Information Technology.

Enactus-CUT is a 'cut above the rest'!

Students volunteered 100 hours of their time to combat unemployment, scarce resources, lack of sanitation and malnutrition in Bloemfontein and Welkom regions.

ENACTUS-CUT entered two projects, namely: Lefa La Rona Project and Hare Kopaneng Project. ENACTUS national competition encourages students to transform lives and enable progress through entrepreneurial action for a better, more sustainable world. ENACTUS-CUT group competed with 27 institutions, won fifth overall place, and were placed second in the Local Economic Development category sponsored by Harmony Gold. Lefa La Rona project assisted a primary school in Chris Hani, Bloemfontein to combat their high water bill, high unemployment in the community and malnutrition among Grade R learners.

ENACTUS CUT's intervention at the school saw malnutrition dropping from 10% to 5% for Grade R learners. CUT's Faculty of Health and Environmental Sciences also trained four community members, who now play a pivotal role in maintaining the vegetable garden and irrigation.

The second project, Hare Kopaneng, addressed the needs for business setup and management skills in an area where there was no sanitation, registered businesses, infrastructure for business transactions and lack of business and financial management skills. Through Hare Kopaneng project, businesses in the area managed to track an increase in customers, reduced unemployment rate, saw an improvement in family income and interaction from municipality who provided dustbins and refuse bags, which improved health and environmental conditions the area.

In July 2014, twenty four ENACTUS-CUT students participated at National Competitions. Their 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. Two projects were presented: the first project was 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. 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 R15 000 fat cheque as a 1st prizel



Project Lefa La Rona - planting vegetables for school kids



Nhlanganiso Sibanda, and Maraka Lefera, BTech students in Human Resources Management.



The award winning ENACTUS CUT group.

CUT students win enterPRIZE competition

Ms Tshepang Mokhatla, a second year student in Tourism Management, Carly Willemse also in Tourism, and Ms Zanele 'Sally-sue' Matsane, a BTech Quantity Surveying student at the Department of Built Environment took steps to strides when they entered the enterPRIZE job creation challenge competition, 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 trio performed exceptionally well. Their entries proposals were based on job creation, growth potential, sustainability, market demand, innovation, and relevant skills. They got position 1 and 2 respectively. The duo, Tshepang and Carly won the first prize to the value of R150 000 in the tourism sector focus under the 'Most Innovative Business' category. The winners started a bicycle tour on top of Naval Hill, a novel and viable business idea for Bloemfontein as it will create and sustain jobs.

Ms Zanele, got the second place and walked away with a R100 000 cheque for the Best Young Entrepreneur category. Her project called 'Metsl 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 which will be sold to households in and around Bloemfontein area, primarily targeting the rural communities who do not have running water in their homes.



Pictured are the duo Tshepang and Willemse, who won the first prize

Ms Poojah Jawallapersand, a Masters Student from Prof Mashele's Unit for Drug Discovery Research (Proposed), Identified a Common Alternative Anti-fungal Drug Target



Ms Poojah Jawallapersand performed genome-wide data mining and 3D-structural studies and determined that Cytochrome P450 monooxygenase CYP53 can serve as a common anti-fungal drug target against pathogenic [animal (including human) and plant] ascomycete fungi. She identified the novel role of this P450 in wood degradation as well. The findings were accepted for publication in the Public Library of Science Journal (PLOS ONE). Currently, the journal has a wide circulation with an impact factor of 3.7. In view of the novelty and quality of the article, the journal agreed to waive 50% of the publication charges.

She also published an article in an internationally reputable journal just five months after starting her Masters research.

CUT students at the forefront of packaging design for the second year

Two Graphic Design students entered the Gold Pack Competition and were chosen as finalists in the Institute of Packaging South Africa (IPSA) Gold Pack competition.

In the Graphic Design Category, Erick Strydom, CUT Graphic Design student was the winner with the design for "Iconic Beverage Packaging". His outstanding packaging concept showcased four Steri-Stumpie (flavoured milk soft drink) containers grouped together by a packaging mechanism to represent the udder of a cow.

Nineve van Zyl received finalist-status in the Design Category for the project brief: "Tissue packaging with powerful brand communication". Her unique method of combining text, graphics and functional aspects surpassed expectation.



Pictured here is Nineve van Zyl (left) and Erick Strydom showcasing their awards

CUT's Best Engineering Students at National Top BTech Engineering Graduate Awards

In 2014, two BTech Civil Engineering Students attended the Institute for Professional Engineering Technologists (IPET) National Top BTech Engineering Graduate Awards to compete amongst the best engineering students in South African Universities of Technology including the Nelson Mandela Metropolitan University and University of Johannesburg.

The nominees, Ms Yandiswa Ntonga and Mr Francois Warnich performed above average with a mark of 73.5 and 81.63 respectively. Ms Ntonga was nominated the best female student at CUT and came second at 5.5% less score than the overall woman winner and Mr Warnich came too close to the overall winner from UJ who got an average of 88%.

On 13 November 2015, another two CUT's BTech Mechanical Engineering students, William Allan Kinnear and Mischa Lottering attended the same awards at Marx Park Sports grounds in Emmerentia, Johannesburg. William Allan Kinnear got 80% in Mechanical Engineering while Mischa Lottering received the best woman award with an average of 75%. This is an outstanding achievement for top achievers as not only are their performance seen at an institutional level but by peers and potential employers both locally and internationally.



Pictured above is Ms Yandiswa Ntonga (2014 best female student award) and below is William Allan Kinnear (2015 overall best student award) with Ian du Plessis, IPET President



Did you know?

Prof T van Niekerk was elected as President and Chairperson of ASSADPAM.

Mr Johan Steyn and Ms Leandi Steenkamp were awarded exclusive Fellow membership status with the Institute of Internal Auditors SA. Ms Leandi Steenkamp also received the prize for best paper in Auditing at the SAAA conference in Potchefstroom.

In 2011, Prof Crispin Chipunza published/co-published five articles in accredited journals. This extraordinary achievement benefited the general research community in the Faculty.

In 2013, CATHSSETA awarded twenty-two bursaries to the value of R1 474 000 to students in the Department of Tourism and Event Management (R67 00 per student).

In 2013, A sponsorship of R29 500 was received from the Association for the Advancement of Black Accountants (ABASA).

On Research and development, and Vision 2020: Using 2012 as a base year in comparison with 2014 actuals, the university has seen a 66% increase in Masters' Degrees awarded, an 80% increase in doctoral degrees awarded and an 80% increase in staff holding NRF ratings. In addition, the research outputs – only articles published in scientific journals and comparing 2011 to 2014 – saw an 82% increase. The proportion of permanently appointed academic staff holding doctorates increased to 32%, relatively high in the university technology sector. Approximately 50% of the research outputs were published in international scientific journals.

On August 2015 CUT was awarded a brand new award, which is awarded to institutions that show significant growth in research performance- the National Research Foundation (NRF) Excelleration Award 2015. The NRF Excelleration Award acknowledges South African research institutions for achieving the most improved research performance over recent years. The award was granted to CUT as acknowledgement for achieving the most improved research performance over the last 3-5 years.

Professors AB Ngowi, DP Ngidi, A Swart and Dr P Rambe attained the National Research Foundation (NRF) ratings from 2015 to 2020. In addition to their sustained research outputs, the first two professors are, respectively, Dean of Engineering and Information Technology and Dean of Humanities (which includes Education).

