Central University of Technology Free State

GRATIA

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10 YEARS

AS A UNIVERSITY OF TECHNOLOGY

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About this Issue

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Message from the
Vice-Chancellor and Principal

It is good to be back after having been on sabbatical leave for four months. The purpose of my sabbatical leave was to conduct research on how universities use innovation and entrepreneurship in their cities and regions. As you are aware, CUT's Vision 2020 statement expresses our intention to produce social and technological innovations. However, innovations alone do not lead to socio-economic development. In effect, it is entrepreneurship that helps to take those innovations to the next level – to transform them into products and services that are useful to society. Entrepreneurship is thus the key driver for economic growth, employment and the general improvement of the quality of life of our people. It is in the spirit of entrepreneurship that I embarked on this sabbatical to gather knowledge on how we can reposition ourselves to be better suited for the world of tomorrow.

During my sabbatical, I visited 10 universities in Ireland, Finland, Germany, Mexico, Spain, the Netherlands, and the United States of America – most of these universities have similar characteristics to CUT in terms of size, shape and location. The volume and depth of practical information and knowledge gathered during these visits is extensive and fascinating; details of which will be included in the report I will submit to Council. The report will hopefully be followed shortly by a journal article or even a book on innovation and entrepreneurship education. It will also include recommendations on how I see CUT developing an innovative and entrepreneurial spirit, and products therefrom, for the benefit of our society – just as Vision 2020 implores us to do!

I am proud to announce that after many years of instability at executive management level, we now have the luxury of a full, new and innovative executive management team that will take us to greater heights, ready to claim our position within the higher education sector. This is why I was able to go on sabbatical leave.

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

The Centre for Rapid Prototyping and Manufacturing (CRPM) continues with its ground-breaking work on the design, development and manufacturing of medical devices, and has assisted 12 patients to date. In the process, CUT benefitted significantly through national and international media exposure, especially after two successful operations performed in Kimberley. These operations made CUT a household name when millions of South Africans were glued to their televisions during a prime-time slot to witness this wonderful story. The team showed the world how this technology can restore the dignity of ordinary people who had lost a part of their face due to cancer. This is the first medical device of its kind in the country, and CRPM makes us stand proud at the forefront of innovation in this field!

In our quest to deliver excellent services to our students and to maintain the integrity of CUT

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qualifications, ten new additional programmes have been submitted to DHET for approval in 2014. These new programmes are a direct outcome of our Strategic Transformation of Educational Programmes and Structures (STEPS) process, which was completed in 2013. Further, CUT continues to work closely with the Department of Higher Education and Training (DHET) and the Council on Higher Education (CHE) to enhance the quality of its academic programmes. The aim of this project is to improve the quality of teaching and learning and increase student success. A full report on the CHE Quality Enhancement Project was completed and approved by Senate on 25 August 2014.

Apart from these stunning innovations, as our country transitioned from the previous regime of Apartheid to the democratic and prosperous society, our institution also went through a change of its own – from being a Technikon to the University of Technology it is today. As a university, we believe we have a story to tell. We therefore saw it befitting that we embark on a project that will tell our story best – the CUT History Book Project. With the help of Prof. Chris van Rensburg, our former Deputy Vice-Chancellor: Academic, who served CUT diligently from 1983 (two years after its inception) until his retirement in 2006 , we are on course to complete this project in 2015.

Moreover, CUT Sport proves to be a force to be reckoned with! The CUT Ixias rugby team won the 2014 Varsity Shield Championship. As a result, the team was promoted to play in the FNB Varsity Cup Competition that will commence in January/February 2015. CUT Soccer Team continues to perform well in the Vodacom League, as the team currently holds the 6th position on the log of 18 teams. CUT Cricket 2nd team won the 1st division tournament and was promoted to the Free Sate Super League for the 2014/15 season.

As we journey towards the year 2020, we remain focused on what we set out to achieve when our Vision 2020 was approved in 2010. We intend to continually attract and retain the best talent, and showcase cutting-edge creativity and innovation. Let us not fail, and let us always be a "CUT above the rest"!

Prof. Thandwa Mthembu
Vice-Chancellor and Principal

CUT celebrates two decades of development in engineering

Faculty of Engineering and Information Technology of the Central University of Technology, Free State (CUT) celebrated 20 years of South African democracy and 10 years as a University of Technology by reviewing how engineering at CUT has contributed to the advancement of technology. In so doing, presentations made at a special celebrating event on 12 September 2014, offered an opportunity for students to showcase the cutting-edge technology that has evolved over the past two decades.

Message from the Dean

Dean of Faculty: Prof. Alfred Ngowi

The year 2014 is very special to CUT in two ways: it marks the 20th anniversary of South Africa's achievement of liberation of black South Africans and democracy; and it is the tenth anniversary of the transformation of the erstwhile Technikon Free State into Central University of Technology.

There is a visible change in the dynamics of education, teaching and learning, as well as the advancement in technology that continues to grow at a rapid pace. In the past, Technikons were designed to produce technologists and technicians and they did a splendid job, but 10 years later the method of teaching has evolved immensely, in as much that there are no longer Technikons, but universities of technology. At universities, teaching is underpinned by research. The focus has evolved and so should the culture. Science and Technology are ultimately playing a major role in the way we do things and are making a huge impact on nature and society.

We at FEIT offer our students an educational experience marrying intellectual rigor and cross-disciplinary breadth in an intimate, student-centered environment. Research is an integral part of this experience. Through innovative curricula, a teamwork approach, and leadership-building experiences, CUT students gain vital communication and critical-thinking skills. They also benefit from the diverse cultural and intellectual climate of CUT campus.

At FEIT, you will find a community of learners dedicated to addressing some of the nation's most complex engineering challenges-from climate change to economic instability. To ensure that all activities at FEIT are properly aligned, the faculty developed a strategy map based on four themes: Teaching and Learning; Research and Innovation; Engagement; and Leadership in the use of Technology.

The strategy map has enabled the faculty to employ system thinking which clearly shows causes and effects of every activity undertaken. It was in the quest of ensuring that teaching and learning of our students is aligned with the staff research and innovation effort that the faculty allowed the students to show how engineering has transformed the South African society post-

Civil Engineering Team

democratic dispensation.

20-10 Presentation

An interesting contrast emanated from the teams of different departments within the Faculty when they presented on the theme 'engineering for Development for the pre-and-post 1994'. Five group representatives from the Departments of Built Environment, Civil Engineering, Electrical, Electronic and Computer Engineering, Information Technology, as well as Mechanical and Mechatronic Engineering took the audience through the 20 years of technological evolution. The presentations offered an opportunity for students to demonstrate the generation of technology and its evolution in education within a non-racial country.

Department of Built Environment

The Built Environment Department has seen the celebration of the Faculty of Engineering under the theme "Engineering for Development: Pre-and Post-1994" as a great opportunity to highlight some achievements and challenges from the built environment perspective in South Africa.

The debate team, consisting of six Built Environment students, compiled a presentation entitled 'Construction doomsday: Should we be preparing for the end?'

The dawn of democracy in South Africa in 1994 created an exceptional opportunity for new regulations and procedures in the built environment to be implemented. As a result, today built environment related legislation and regulations in South Africa could be rated amongst the most progressive and comprehensive in the world. Guided by this legislative framework the built environment was able to contribute meaningfully over the past two decades to societal values and infrastructure development.

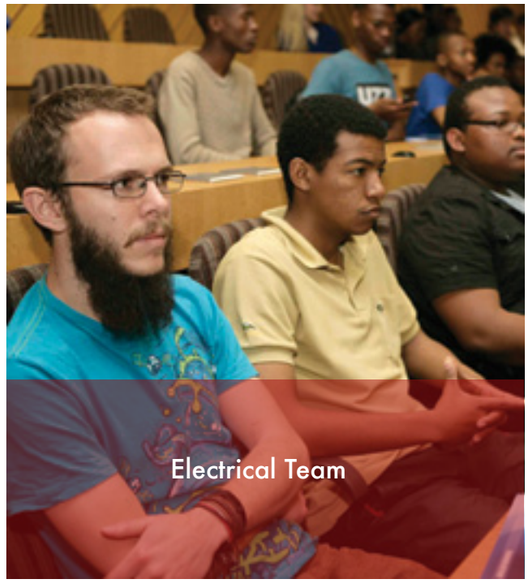
However, challenges in the following three spheres remain: The economy, environment and society at large. In their presentation, the team from the Department of Built Environment drew attention to the specific contributions and changes that have occurred in both Construction Management and Quantity Surveying professions in South Africa in terms of professional practice, education, training, research and development.

Moreover, the need to tackle climate change poses a unique challenge also bringing related issues such as the green economy, environmentally sustainable development and green growth to the fore. All of these aspects were vividly amplified by students with innovative examples and illustrations. It has been brought home that the built environment stands on the threshold of an unprecedented exciting new era.

Department of Civil Engineering

The 20 Years of Democracy Celebration seminar, presented by the student group from the Department of Civil Engineering, highlighted the importance of Civil Engineering discipline in infrastructural and human development. The students were able to articulate how its department utilizes technological tools and scientific theories to create innovative solutions.

The presentations covered important areas of


Electrical Team

civil engineering disciplines and their impact on improving the lives of people through sustainable roads, urban sustainability, reliable transportation, sustainable water resources, and effective environmental management. The gist of this is captured in the following research areas:

Sustainable roads refer to the broad subject of sustainable transportation engineering in terms of social, environmental and climate impacts, as well as the ability, in global context, to supply source energy indefinitely. Components for roads sustainability include the types of vehicles to be used, sources of energy and infrastructure to accommodate transport by road as the main transport infrastructure element, with special emphasis on road materials and pavement management.

Under sustainable urban and transportation modes, the focus is on sustainable cities under the banner of Cities as Forces for Good in the environment (CFG). The question is how the infrastructure of cities can be re-engineered to become catalysts for socio-economic development, without compromising the environment. Besides, there is a strong focus on smart mobility within the cites in order to reduce vehicular trips and achieve road safety, mitigation of congestion and accessibility to public places.

The issue of **sustainable water resources** was highlighted with regard to water scarcity and environmental issues related to population expansion, economic growth and climate change.

Department of Electrical, Electronic and Computer Engineering

Going out from the premises that technology has progressed in the past 20 years of democracy further than in the previous four decades, the Electrical Engineering Department illustrated the progress made in terms of mobile communication, robotics, unmanned vehicles, automation and renewable energy systems and technologies. During the past two decades the Department has progressed from Z80 processors to quad core processors, from telephone to ultra-modern smart phones, and from wind pumps to 2 megawatt wind turbines and 400 megawatt solar farms.

Graduates are now working with top of the range applications such as digital television satellite and digital media systems, progressing from binary systems to placing communication systems on Antarctica.

Present day students serve in fact project as managers handling multi-million rand research projects. They are involved in the designs of solar farms, upgrading national electricity distribution networks, the design of automated assembly, manufacturing systems and research into reconfigurable systems.

The focus is currently on producing graduate students as highly skilled individuals with ideas of their own. In the next 20 years, the goal will be to produce even more innovative thinkers, duly equipped with the necessary expertise to function as pioneering researchers and decision makers.
Consequently the Department of Electrical Engineering is always bust to re-adjust, re-strategize and re-align the teaching environment to ensure that they produce students that are well-equipped to provide form and structure to the technology of tomorrow - thinking beyond as it were.

Department of Information Technology

The Information Technology (IT) students started their presentation by setting the background of democracy in South Africa as experienced 20 years ago by people not having the freedom to pursue their dreams and aspirations.
Fast forwarding to the present,they classified themselves as "Students of Freedom" whereby they highlighted the current opportunities to grow, not only as individuals, but also to having the freedom to make a difference in their societies.
To emphasize their claim of "Students of Freedom," they referenced inspirational quotes from great leaders over the last century. This was summarized in the quote by Mahatma Gandhi: "Be the change that you want to see in the world".
Being the go-getters with a lot of passion, they made a video in which they approached IT students and asked them what studying IT means to each of them.
Their presentation reflected how IT has simplified the day to day operations with regards to teaching and learning as well as the way people interact with each other. Moreover, it was pointed out how various IT platforms are creating jobs and entrepreneurial opportunities.
On the negative side, students quoted Albert Einstein: "I fear the day that technology will surpass our human interaction," thereby concluding that Facebook, Twitter, BBM, and WhatsApp should not become the standard for present day communication.
In closing, the presentation conveyed a montage of the presenters themselves indicating their role in fostering interactive communication between student communities at CUT.

Department of Mechanical and Mechatronic Engineering

20 years ago, the Department of Mechanical & Mechatronic Engineering comprised of only seven staff members and some 230 students. Today, the department has matured to double the amount of lecturers and six full-time researchers, serving more than 500 students per annum.

Since 1994 research in the field of laser sintering, rapid prototyping and additive manufacturing has grown from a few polymer (or "plastic") prototypes to highly advanced technologies such as customized titanium implants for patients through application of 3D printing equipment.
The Mechanical students highlighted the following technological giant strides in South Africa:
• Against the background of industrialization triggered by the discovery of gold in 1886, the mechanical sector today is one of the largest contributors to the national economy, driven mainly by engineering technologies.
• Water and plumbing technologies are utilized to progressively improve sanitation and thereby improving the quality of life.
• The burgeoning mining sector in SA that is by far the largest contributor to the creation of jobs and prosperity in the country.
• Agricultural technologies that are addressing problems related to the food chain, affordability of foodstuffs and nutritional standards.
Sounding a warning with regards to limited water resources and the adverse effects of climate change, the students stated the following: "Engineering and technological advances should be used responsibly in order to ensure the future for our children."
The Mechanical students concluded that education and training holds the key to successful management of local environment, national heritage and the planet.

In conclusion:

The celebration has proved again that CUT is a leader in many technology fields ranging from learning programmes in Science, Technology, Engineering, and Mathematics (STEM), a broad field in which CUT has about 45% of enrolments, a percentage much higher than many other South African universities. Further more, CUT's research and innovation leadership in many areas, more specifically in rapid prototyping and manufacturing is world class! The latter has been honoured by both the Medical Research Council (MRC) as part of its National Medical Device Platform and the National Research Foundation (NRF).
Through its social and technological innovations CUT aims to contribute towards the social-economic development in the region as well as in the rest of South Africa and globally.

CUT's annual Innovation in Education Summit

CUT hosted the second annual Innovation in Education summit from 7th to 9th October 2014. The main objective of the annual gathering is to bring together educators, researchers, students, organisations, entrepreneurs, and professionals to discuss and explore related issues that are currently at the forefront of technology in teaching and learning.

The partners in the summit include Royal Haskoning DHV (Pty) Ltd, Institute for Innovation in Education (IIE), Learning Academy Worldwide, Beijing Royal School, Communications Management Support (Pty) Ltd and CUT who teemed to share new ideas and innovative approaches to meet the constantly changing phases in education, social and commercial arenas that are rapidly growing and challenging.

The platform allows partners to have a broader glance into new trends and how they can, through shared experiences, align themselves and shape up to fit into the space. The adjustments as they mentioned, enable them to nurture highly skilled and knowledgeable citizenries to support creative educators dedicated to the design of immersive learning experiences.

IIE gatherings are also designed to help new, emerging, and established projects to move forward with renewed plans, resources, and innovative ideas to create goals and working plans for the short-term periods of up to 6-12 months. At the same time, each gathering is designed to maximise opportunities for feedback and exchange among project teams as well as to strengthen relationships for individuals within the global network of professionals who are committed to ongoing discourse, improvement and change in education.

Amongst the delegates who shared their ideas and experiences as part of reviews on some of the development project is Mrs Odette Swift from Deaf Education, who revealed a stern picture about the difficulties faced by the deaf learners in accessing education. "In South Africa, sign language is not a prerequisite in job placements for teachers and that is a challenge in teaching and learning because our learners in deaf schools experience difficulties as teachers without this skill find it difficult to engage effectively with them in the classroom." Further, in her presentation, Mrs Swift highlighted the importance and urgency for South African Sign Language (SASL) to adapt to new trends in technology, as they are effective and successful teaching and learning methods in deaf education. "Mobile learning and audio-visuals are the 21st century methods for teaching subjects like literacy and numeracy in deaf schools as deaf learners rely mainly on technology. These preferred methods, can be used to share best practices amongst schools, especially those in remote areas where teachers have to attend workshops to catch-up with new trends, they can be shared with parents, also used as teacher development tools and to enhance remote interpreting for post-school teaching," she said.

Another presenter, Mr Nape Maepa shared his viewpoints on the growing need for agile creative approaches to educational and social challenges facing South Africa, with intense focus on youth. "Our PhD graduates work hard conducting researches in an attempt to find solutions to our social and educational issues but their work end up gathering dust in shelves because they do not share it with the relevant target audience. We need their researches to address some of these challenges," he said. Mr Maepa also emphasised that South African youth need to learn the culture of starting a project and finishing it effectively, and subsequently prepare for the next one. "I would like to see young people coming to institutions such as CUT to obtain qualifications that will ascertain that they shall get things done!"

Other brief lightning presentations at the three-day summit includes:

- UFS Mentorship Program
- The development of Mobile Educational Games
- Spirulina – Science and students in problem solving synthesis
- Mobile Phones and E-learning
- Sanbi – Biodiversity from Grade1
- Mobile Learning and Community Engagement
- Mobile Learning in the Middle Kingdom – Beijing Royal School
- M- Ubuntu- Youth Workforce Development
- Talking Stories- Interactive Solutions for Mobile Devices

Planning Games extended to local communities

Paticipants interacting during game plan.

On 27 October, Faculty of Management Sciences took steps to strides in ensuring that CUT becomes the driver and leader in promoting entrepreneurship, a skill that is in high demand across the globe. Assisted by the Mentors and Enactus, Dr Edem Agbobli and his team, Mr Sapokie Ramorena and Mrs Rosaline Sebolao from the faculty, took it upon themselves to plough back to the community in a form of a skills enhancement workshop.

To achieve this, the faculty in conjunction with Aalen University developed an educational game system, dubbed Planning Games, which will have several levels based on corresponding concepts of value and principles of economics. The development and deployment involves various stakeholders within the institution, industry, community, and education. The Hillside community became the ideal pilot as the majority of the community members are unemployed and semi-literate.

The project champion and team member for Planning Game Development, Dr Edem Agbobli, highlighted that the project is a pilot and it is intended to teach prospective business people how to keep their records and transactions, how to penetrate the market and record their products, as well as how to keep a track record of their capital and profits. “The purpose of extending the concept to the local communities is to develop their business skills and equip them with the knowledge in economics and entrepreneurship and this will in turn increase and improve business survival and growth that will lead to job creation and socio-economic development of the region and the country. Training schedules consists of levels that will grow and develop participants to skilled, competent, and independent business people. As they reach level 6, they will know all the principles in the business sector and all those skills will sustain and grow them further. Should the project be successful, it will have a ripple effect,” he said.

Bahedile Ntoagae is a businesswoman for Finale Trading & Project Business in Hillside. Her business was on the verge of collapse when she first heard about this opportunity while volunteering at her child’s crèche in Rorisang day care. “I am happy about what CUT is doing for our community. I was about to give up all hope because I could not see where I was going or what I was doing until the game plan workshop started. This is my first session in the introductory stage but already, I am enlightened and can see where I went wrong in my business. I was not recording my earnings, not to mention how much I invested when I started. I was literally living from hand to mouth, something that was killing my efforts. CUT came at the right time; I am thankful for that! I can’t wait to learn more.”

The workshop is structured as follows:

Level 1: The goal of the planning game is to introduce the players to the fundamentals of economics. The basic board contains places for a materials storage (procurement), production, product storage (sales) and money (cash, accounting). The external environment includes the market for raw materials and the product market. In level 1, the trainees do some elementary bookkeeping. The complexity of the cost structure increases from material costs, to variable production costs and fixed costs.

Level 2: A game for accounting will be based on level 1, and will use the concepts of haptic games to introduce the basic concepts of accounting, bookkeeping, and controlling but also address the various ways of sourcing money to start the business (bank loans, shareholders, fundraising).

Level 3: In this level, the market is introduced. Pricing and the various influences on the price will be addressed using the mechanisms from level 1. Other marketing issues like product properties and added value, market research, promotion and communication, distribution and cooperation will be learnt throughout the game.

Level 4: This level introduces participants to management skills.

Level 5: Strategy and Sustainability level cover all-important aspects from technical and financial calculations to marketing and human resources. The games involve concepts of sustainable development and strategic planning.

Level 6: Business plan stage will equip participants with the ability to independently run their own businesses. This level integrates the former levels and uses their results (e.g. on marketing, finance, skills and planning) to create a business plan. A business plan structure will be provided and upon completion of the level, players will be able to develop their own.

Hillside beneficiaries

Game Planning

17th annual research seminar

Faculty of Engineering and information Technology hosted its 17th annual research seminar with over 160 delegates from CUT, Eskom, Centlec, Royal Haskoning DHV, Archi-M Studio Architects, Quintiles, Quantum Built, Iliso Consulting, VUT, ECSA, and Department of Education in attendance.

The annual event has been in existence for the last sixteen years and has proved to be valuable as a means to showcase industry-related research that is being done in the faculty by staff members and post graduate students. The seminar aims to expose participants (engineers, researchers and scientists) both at institutions and industry, to all aspects of engineering and information technology, increase awareness of research importance, provide an opportunity for peer-reviewing of such research, improve industry involvement, create new industry connections and share ideas on the latest developments in engineering and information technology.

In his topic of the day: Exploiting African Water resources, the key note speaker and a Director at Iliso Consulting, Prof. Martin van Veelen mentioned that today's societal challenges need multiple disciplines and political stability. "Some of the challenges facing the world population today include climate change, environmental pollution, and energy crises, which underlines the need to develop multi-disciplinary approaches in solving existing problems."

Other topics covered by delegates from CUT, Eskom, and VUT include Additive Manufacturing, Vision Systems, Fly Fish, River Catchments, Energy, and Floods. At the end of the seminar, four speakers of the overall presenters presented well and were awarded by a team of adjudicators. The prizes were for the following categories:

1 • **Best presenter of the day:** Jacko Gericke from the department of Civil Engineering; prize presented by Dr Martin van Veelen.

2 • **Best presenter:** Mandri van der Mescht; prize presented by Dr Ben Kotze. The best Junior presenter of the seminar: Mr Koriche, a visiting researcher from Ethiopia (not pictured).

3 • **Best senior presenter of the day:** Prof. Michele Truscott; prize presented by the Faculty Research Manager, Dr Mohamed Mostafa.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New imaging technology for radiographers

Department of Clinical Sciences in the Faculty of Health and Environmental Sciences held a two-day annual seminar for Radiographers, Radiologists, and Technical Engineers on 15 and 16 August 2014.

The purpose of the event is to ensure that stakeholders and hospital staff where CUT students are placed for their Work-Integrated Learning (WIL), get an opportunity to obtain continuous development, exposure to the latest trends, technology and networking.

This year, a special session showed radiographers the history and the links between x-ray imaging, ultrasound and nuclear medicine. Not only was the new technology links shared with the audience but families involved in creating the medical equipment were at the seminar!

A new imaging technology called capsule endoscopy was also explored. The capsule is the size and shape of a pill and contains a tiny camera. After a patient swallows the capsule, it takes pictures inside the gastrointestinal tract. The presenters also shared with the audience, information regarding the competition commission, protection of private information, how to determine bone age, and the best practice for shoulder pathology.

Apart from the medical topics discussed, the theme that was explored and exploited was "What is the verdict?". The intention of the theme was to raise awareness of professional behaviour in the workplace, labour law, and the overall occupation relationship between employer and employee.

Pictured is a group of delegates who attended the two day engagement.

Cyber junkyard, the future of manufacturing

CUT engineering team entered the cyber junkyard national competition, an annual electrical design competition presented by Siemens.

This year's competition took place from 27-28 October 2014 at the Birchwood Hotel & Conference Centre, Johannesburg. All traditional Universities, Universities of Technology, and FET colleges were invited to participate and showcase their innovation capabilities.
The focus was the 'Future of Manufacturing'. Previously, Cyber Junkyard participants had to recreate and improve a prototype innovation supplied, but this time around, students could engineer a solution to any industry problem they chose. Central University of Technology, Free State (CUT) 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 will help the user in the maintenance or manufacturing systems. The creation consists of a touch screen HD display, with step-by-step instruction (video tutorials). Companies can upload video tutorials onto BETTI's system and tutorials can vary from equipment repair to workshops data update.

BETTI consists of a motorised base that can follow a technician around with image processing tracking. The technician could also be able to drive it with a wireless remote control. The in-person tracking mode, can avoid obstacles. With the camera driven tool identification station on top, the robot can identify tools or parts and articulate what it is and how to use it (in her own soothing voice). This can also be used for quality control. The 220v AC inverter point that was added has a plug with AC power and comes in handy for technicians to plug in their appliances even when there is no wall socket. BETTI also has a solar charging station that can power up factory lights if it is not charging the on board batteries.
CUT was amongst the top eight selected projects. Other contestants include:
• College of Cape Town with a coffee bean toaster;
• Durban University of Technology (DUT) with a automated cocktail machine;
• Nelson Mandela Metropolitan University with precision and intelligent farming technology;
• Nortlink College entered a biogas micro office heating system;
• North-West University submitted a cup cake decorating machine;
• Tshwane University of Technology with a gravity warehousing system; and
• Wits University with an electrical microgrid.

BETTI - an automated mobile toolbox with various functions that assits the user in maintenance or manufacturing systems

CUT took third place in this national competition and Siemens products worth R25 000, as well as training worth R7 000 and a Polaroid Induction speaker for each participant. The second place went to DUT and College of Cape Town was the overall winner of the day.

Below:
Team members, Luke Rogers, Charles Hitchcock, Dr. Nicolaas Luwes, Senior Lecturer at CUT (team supervisor), Viwe Mqaqa, Refiloe Malefane, and Viann Bresler entered the Cyber Junkyard national competition and took third position.

Presenters-Prof. Peter Dunsby, Dr Nina du Toit,Dr M Mostafa, a Civil Engineering Senior Lecturer, CUT and Mr Denzil Chetty, a tenure academic at Unisa.

Technology Integration in Teaching and Learning

Widening Access and Facilitating Student Learning
In the last few years, many important changes have occurred in the education systems, which require teachers to upgrade and refine their technological skills in the transaction of learning. The focus has now shifted from a mastery of content to preparing students to become citizens for life. Some of these changes are due to the evolution of government policies related to the use of information technology (IT) in schools while others are due to unavoidable developments caused by the influence of technology in our daily lives.
On 26th Sep 2014, Faculty of Engineering Information Technology held a workshop on 'Integration of Technology in Teaching and Learning' where they invited the 'gurus' of the subject matter to share some knowledge and skills on how the faculty can do better in widening access and facilitating student learning successfully.
The guest presenters shared their knowledge and expertise on Technology integration in a daily classroom practice. Prof. Peter Dunsby, from the University of Cape Town (UCT), explored the feasibility of using i-pad in teaching and research. He shared his knowledge on Latex, mobile library apps and electronic signature implementation. He further explored the usage of a white board and some electronic marking tools before ending up with a journey on creating i-books.
"Technology integration in teaching and learning has become an essential tool in meeting the needs of students in an active engagement. It facilitates collaborative problem solving, visual engagement, instant feedback, flexibility, accessibility, as well as support in the curricular goals. It also engages the students in a meaningful learning," he said.
Mr Denzil Chetty, a tenured academic at UNISA also shared his experience with Ubiquitous learning that is highly used at Shanghai University, China. Ubiquitous computing is a concept in software engineering and computer science where computing is made to appear everywhere.
Mr Denzil was awarded the Shanghai Open University African Visiting Fellowship early in the year, and got an opportunity to explore how the University advances their use of Ubiquitous technology to develop a learning society within a learning city. He also tapped into Quality Enhancement Project (QEP), a project that has been implemented in all universities of South Africa with the aim of improving student success in Higher Education Institutions (HEIs). One of the goals of QEP is to develop a higher education system that is continuously improving and able to collaborate, share good practices, and solve shared problems. Focus area 3 of the project, aims to enhance the learning environment (including teaching and learning spaces, ICT infrastructure and access, technology-enabled tools and resources, and library facilities). "Everyone is exposed to the technology world and starting it in the classroom will create a foundation for teaching skills and knowledge required to match their global counterparts. Technology is fun and interactive and assists in visualising, tracks progress, shares knowledge and the information is accurate and quick. Teaching and learning is constantly evolving and technology seem to be the bigger player in the game as schools and universities learn new interesting and fun modes of teaching in the technology era, making teaching and learning fun with equipments that are all time favourites to the new generation," he concluded.

Dr Nina du Toit, from Cape Peninsula University of Technology (CPUT), took the audience through her 30 years of experience, working with learners with disabilities and the different disability modes and types used. She discussed different case studies of different disability types. Moreover, she discussed the available facilities by the disability units at CPUT including some innovative solutions for expensive IT systems.

MEC for Education, Mr Tate Makgoe during his address at Welkom campus.

MEC Addresses CUT's Teacher Education Students

Free State MEC for Education, Mr Tate Makgoe recently visited CUT to address 3rd and 4th year Teacher Education students (including PGCE) who in future will be absorbed into the teaching profession by the Department of Education (DoE). His visit to CUT provided a dialogue platform for the students to realise what is expected of them by the department upon completion of their studies and conversely for the department to be acquainted of their employment frustrations in relation to the profession.

In his address, the MEC challenged students to ensure that every school in the townships becomes as good as any other school in the country once they are deployed. He said so while announcing his confidence of knowing that they will take the teaching profession to greater heights. "We are equal to the change, hence you must go out there and change the culture of teaching and learning in those schools by significantly contributing towards improving their performance rate," he said.

A Curriculum presentation in line with the National Development Plan's objectives in addressing Education challenges was also unloaded in the view of exposing students to key curriculum subjects such as Science, Maths, and Technology, which are in ominous need of development. According to a study conducted by TIMMS, an international body that measures the trends in Mathematics and Science, Maths performance in South Africa achieved a mean score of 352 based on the analyses of June results. This explains that the level of performance in Maths is not satisfactory.

Prof.Joyce Mackinnon on her visit to CUT

Professor Joyce MacKinnon, Associate Dean for School of Health and Rehabilitation Sciences at Indiana University, Indianapolis, USA, made her 9th annual visit to the Faculty of Health and Environmental Sciences from 13 to 17 October 2014.

During her week's visit, Prof. MacKinnon met with the Dean of Faculty, Prof. Samson Mashele and the Director for International office, Mr A Johnson, with the prospects of exploring the global knowledge affiliation and also shared her views on students' success and their readiness in relation to internationalisation.

To broaden the research scope with CUT, Prof. MacKinnon collaborated with Prof. Hesta Friedrich-Nel, Head of Department for Clinical Sciences and together, they have produced a manuscript that was submitted for publication in the Higher Education Research and Development (HERD) journal.

Earlier this year, another manuscript was submitted and accepted for publication to the Innovations in Education and Teaching International journal. The article will be published online before the end of the year, and a hard copy version will be available in 2015. The third planned project was to prepare and complete a chapter in a book on Research Education, and was also successful at the end of her visit.

Above
Back row: L-R Prof. Samson Mashele (Acting Dean Faculty of Health and Environmental Sciences), Mr Roan Slabbert (ECP co-ordinator), Prof. Hesta Friedrich-Nel (HOD Clinical Sciences), Prof. Ryk Lues (Research manager), Dr Hester Roberts-Scott (Lecturer Environmental Health), Prof. Annabel Fossey (HOD Life Sciences) and Dr Lambert Makhalemele (Faculty Administrator).
Front row: L – R Prof. Joyce MacKinnon (visiting professor), Dr Dedre Olivier (HOD Health Sciences), Prof. Dennis Umesiobi (HOD Agriculture) and Ms E Smith (Lecturer Life Sciences)

Below
Prof. Hesta Friedrich-Nel (HOD Clinical Sciences), Prof. Joyce MacKinnon (visiting professor) and Prof. Samson Mashele, Acting Dean faculty of Health and Environmental Sciences.

CUT Faculty workshop: ‘how to create and sustain a research culture’

Faculty of Engineering and Information Technology at Central University of Technology, Free State (CUT) hosted a research workshop entitled ‘Creating and Sustaining Conducive Research Environment’ on 20 August 2014.

Keynote speaker, Prof. Adam Habib, Vice-Chancellor of the University of the Witwatersrand (Wits), addressed research in higher education arena.

In his presentation, Prof. Habib mentioned the three principles that define an institution and how they (institutions) can be successful in research. “Institutions need to balance their geographic positions, take into account the national context, act locally while thinking globally and they also need to think as a system and not compete with one another.” He emphasised that South African universities need to compete as a system with other systems rather than competing with one another at the expense of developing a synergy in the national system of higher education.

Prof. Habib spoke about the formula to build a research culture in an institution. The three building blocks he mentioned were: recruiting good top academics, providing adequate funds for them to carry-out their research and creating an enabling environment for them to survive against all odds.

He highlighted three enabling factors:

1. An effective budgeting system with the aim to create a sustainable academic pipeline which ensures entry of new generation academics that will continue the work of retiring academics.
2. Active collaboration with national and international funding institutions.
3. Creating an attractive and effective campus environment both internally and extrenally

From L-R: Dr Willie du Preez: Senior Researcher – Department of Mechanical & Mechatronic Engineering, Dr Mohamed Mostafa: Research Manager (FEIT) and Senior Lecturer: Civil Engineering
Prof Alfred Ngowi: Dean: Faculty of Engineering and Information Technology, Prof Adam Habib: Vice-Chancellor: University of Witswatersrand,
Dr Dillip Das: Departmental Research Chair and Senior Lecturer: Civil Engineering
Prof James Swart: Research Professor: Department of Electrical, Electronic and Computer Engineering

Prof. Adam Habib, Vice-Chancellor of the University of Witwatersrand

Prof. Habib is an academic, activist, administrator, and a renowned political media commentator and columnist with more than 30 years of academic leadership. He was instrumental in transforming the University of Johannesburg into a well-known research institution, and currently has a target of transforming Wits into a leading university in Africa.

A rigorous workshop continued with presentations by various faculty members who drive the research agenda.

Artists meet to shape CUT curriculum

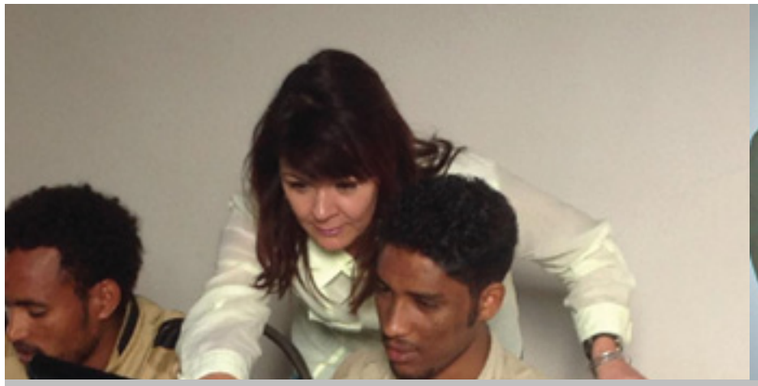
Prof. Frances van Schalkwyk, Director for the Department of Design and Studio Art, and Professor for Photography at Maryland Institute College of Art (MICA), in Baltimore Maryland (USA), Prof. Colette Veasey-Cullors visited CUT in July and August to discuss the prospects of re-shaping the curriculum in the Faculty and aligning it to the global standards. During her stay, she consulted on the development of a new curriculum for the Advanced and Postgraduate Diploma’s and the Master’s Degrees.

The new structure will follow 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, as well as, staff mentorship. Ms Tary Cohn of Art Source South Africa also served as a consultant with the new curriculum development.

Below:
Professors van Schalkwyk and Veasey-Cullors show off their art work.

Dr René Haarhoff walks the talk in Ethiopia

In September, Dr René Haarhoff, Head of Department for Tourism and Event Management, visited Ethiopia for the STRONGBOW project. The STRONGBOW project, Sustainable Tourism based on natural resource management with gender balance towards women, is a four-year capacity-building project, which started in January 2011 and will an end in December 2014. The project contributes 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, Head of Department for Tourism and Event Management, visited Ethiopia for the STRONGBOW project. She is seen with some of the Ethiopians during training.

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. 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 had participants excited and eager to use.

"Over the last four years I have become very fond of Ethiopian university participants. I have never seen such eagerness to learn, a sense of appreciation and commitment. Although travelling to the remote areas of Ethiopia like Addis Ababa, are challenging, when I return from there, I am always humbled and thankful."

The Horn of Africa Regional Environment Centre (HoA-REC) takes responsibility to enhance the ability of Higher Education Institutions (HEIs) to enable them to provide gender sensitive quality education and training in Natural Resources Management, Tourism and Ecotourism. The project is co-managed by HoA-REC on behalf of the five Ethiopian universities, Vrije Universiteit Amsterdam and the Central University of Technology, South Africa. Dr René Haarhoff, Head of Department: Tourism & Event Management is the South African project leader and visits Ethiopia up to eight times per annum.

In the beginning of October, Dr Haarhoff visited Ethiopia again for further Skills Enhancement training based on the revised curriculum for Nature Resource Management, Tourism and Eco Tourism Management to all the Ethiopian partner universities.

Design Industry experts discuss latest technology models

CUT in collaboration with Regional Innovation Forum of the Free State (RIFFS) recently hosted a design seminar to discuss the role, prospects, and challenges of establishing design schools in universities. The design school concept was initiated by executive management with the intent of realizing CUT's innovation and engagement agenda through advancement of the region's manufacturing and economic portfolios.

Mr Bart Verveckken CPUT, Mr David Laas, Mr Ludrick Barnard CUT, Ms Miralde Kotze CUT, Mr Martin Bolton UJ, Mr Angus Campbell UJ, Ms Janet Van Graan CPUT, Prof. Ryk Lues CUT, Ms Amanda Breytenbach UJ, FADA.

An expert panel comprising of speakers from various design sectors across the country, including higher education and industry presented papers and shared opinions and knowledge on the latest trends of technology models in design education and research, curriculum development and possible partnerships. Topics of discussion included the viability and scope of an industrial design qualification as well as the advancement of current CUT rapid prototyping capacity through incorporating additional industrial design resources. The articulation of industrial and social design with other regional strategies such as the establishment of a Science and Innovation Park, research and innovation agendas, technology transfer entities and incubators were also mentioned.

In his opening remarks, Prof Henk de Jager, DVC: Academic and Research, highlighted innovation and creativity as the main characteristics that needs to be realised from people with potential "What I have learned is that all of us are creative and have the potential, but the trick lies in unleashing that potential, " he said as he unpacked the purpose of the day.

When sharing some of his industry engagements, Mr Marc Ruwiel, Chief designer at Industrial Design Solutions (IDESO), also known for manufacturing big brands such as Addis, said a good designer should know everything about how to manufacture anything for anyone. "Students need to learn how to think, learn usable skills, gain experience, and be confident in their own abilities. However, the likelihood of such relies on the question of whether an institution like CUT is an institution that only teaches or the one where students are given an opportunity to teach themselves and provided with the necessary resources."

Ms Amanda Breytenbach, Vice Dean: Faculty of Art, Design, and Achitecture at University of Johannesburg, with her colleague, Mr Martin Bolton, Lecturer for Industrial Design Rapid Prototyping Centre gave an insight presentation on some on the projects run from their Rapid Prototyping Centre that is similar to CUT's. The presentation included the types of machinery used such as small Tabletop CNC Machines, large CNC Machine, and Stratysis BST FDM 3D Printers. According to the duo, the machines are loaded with the latest technology that enables them to carryout tasks such as laser cutting & engraving, PU foam cutting, vacuum forming, 3D scanning, as well as casting and moulding.

Upon sharing information all participants agreed that a design of any form not only give designers the much needed confidence but also provide them (in particular students who are looking for avenues) with a platform to explore greater things while paving the way to entrepreneurship ventures. Guest were afforded an opportunity to walk-through CUT's rapid prototyping and manufacturing facilities.

CUT researchers offers an African perspective on the international front

Dr Ntsoaki Malebo

for Policy in Environmental Health). The conference looked at how delegates could make use of the theme to deal effectively with air pollution in the environment and its impact on health. It also provided an outlet for the discussion of problems unique to the study of health and environment.

The role of ISEE is to bring together academics from all over the world to monitor the epidemiological trends and come up with solutions. The highlight of the conference was the establishment of the African chapter, which signifies the collaboration between African and other international scientists. Furthermore, it will also provide access to training facilities in the top-of-the-range laboratories for students and their mentors. Funding will also be availed to staff and student exchange programmes under the chapter. Dr Malebo said that the newly established forum intends to emulate this model by establishing an ISEE affiliate in Sub-Saharan region. "Through this initiative we hope to promote the objectives of ISEE in an attempt to provide a variety of forums for discussions and collaborations. We will mobilise our peers in order to forge a mutual relationship, participation and networking through workshops and seminars for our academic growth in this field," she concluded.

The chapter addresses the recently adopted CUT Internationalisation strategy which intends to expose the university's innovations globally so that the world will look up to CUT for solutions.

University of Washington welcomed over 1100 attendees at the 26th Annual International Society for Environmental Epidemiology (ISEE) conference in Seattle, Washington from 24 to 28 August. Two of CUT's academic staff and researchers, Ms Jane Nkhebenyane and Dr Ntsoaki Malebo from the Faculty of Health and Environmental Sciences formed part of the participants.

Ms Jane Nkhebenyane, a lecturer at the Department of Life Sciences, received a travel award from the conference organisers. The ISEE invited these academics to attend this international conference as a statement of support for their contribution in epidemiology research. They both shared their research activities with experts in the field across the globe. Their research focus was on air quality and its impact on food safety in health care environment.

The theme for this year's conference was: From Local to Global (Advancing Science

Below:
Conference delegates at the International Society for Environmental Epidemiology (ISEE) conference 2014 in Seattle, Washington. CUT's Ms Jane Nkhebenyane (back far left) and Dr Ntsoaki Malebo (front middle black jacket).

Academic awarded for best paper at conference

Mr Thabiso Godfrey Monyane, a Lecturer at Built Environment in the Faculty of Engineering and Information Technology made CUT and his faculty proud when he 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.

Asked what inspired him to choose the topic, Thabiso said that the theme caught his attention and interest and he started reading a lot about it. "It is the buzz word in the global construction industry, so we have to keep abreast with what our colleagues abroad are doing."

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 Industry and cascade the information down to their students. 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." He further stated that construction in the Public and Private sectors will benefit massively if they start delivering projects using BIM.

When asked about his opinion on the current state of Quantity Surveying in South Africa, Godfrey said that it differs from province to province. "Unfortunately in the Free State, the Public sector does not fully utilise the profession but am very excited to win this awards as this means getting recognition from the highest professional body in the country! I would also like to acknowledge my mentor and HOD Dr Emuze, Dr Aiyetan, Dr Alex Opoku, a visiting Dr from UK and my supervisor Dr Ramabodu from UFS for their positive contribution, we did it!"

Victorious and excited after receiving the award is Thabiso Godfrey Monyane (Centre), flanked by his BTech students: Javia van der Westhuizen (left) and Oumaki Masiu who accompanied him to the conference.

Applied Food Safety and Biotechnology post-graduate students participate in an International Conference.

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. This conference was hosted by the French Society for Microbiology (SFM) and is considered the umbrella event for all Food Microbiology societies worldwide.
More than 600 delegates from 58 countries attended the event and CUT was represented by post-graduate 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. Also in attendance were UAFSB researchers Dr Olga de Smidt and Prof. Ryk Lues from Faculty of Health and Environmental Sciences at CUT.

The conference engaged numerous topics including single cell microbiology, dynamics and functions of microbial consortia, spoilage microorganisms and epidemiology of foodborne pathogens along the food chain. The important role that molecular based techniques currently play in the field and the exciting rate at which these methods are evolving were also debated. Presenters from France, Germany and Canada discussed bacterial phenotyping (Omni and Biolog), Matrix-assisted laser desorption/ionization time of flight (MALDI-TOF) Mass spectrometry, Next Generation Sequencing (NGS), quantitative and digital PCR and application of these techniques in the food industry, as well as related research arenas. Many of the mentioned techniques are used in on-going UAFSB projects, showing the Unit's dedication towards keeping their research applied and current.

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.

CPRM shares their success with the world at Materialise Conference

Dr. Cules van den Heever, an Extraordinary Professor at CUT from the University of Pretoria, Mr Gerrie Booysen, Director for CRPM and Mr Johan Els, also from CPRM, attended the Materialise World Conference 2014 as invited speakers to present on the work they have done. The trio presented on Reconstruction of facial defects using Additive Manufacturing Techniques.

The aim of the conference is to enhance worldwide corporation between the industry, hospitals, and academia. The two-day conference took place at Leuven, Belgium on 20 and 21 October and presenters and researchers got exposure to exciting stories about how medical image-based engineering can improve patient outcomes, in dedicated tracks focusing on 3D Printing in hospitals, patient-specific device design, evidence-based biomedical R&D and computational modelling.

Presenters also toured the Andreas Vesalius exhibition in the Leuven M Museum, where they were shown the revolutionary work of the renowned anatomists.

L-R: Mr Gerrie Booysen, Director for CRPM, Dr Cules van den Heever, an Extroadinary Professor at CUT from the University of Pretoria, and Mr Johan Els, at the Materialise World Conference 2014

Presenters of the day included:

• Dr. Scott Hollister (University of Michigan, USA): Treatment of life-threatening tracheobronchomalacia in children using 3D designed and printed patient-specific bioresorbable splints
• Prof. Bernardo Innocenti (ULB, Belgium): Close to real modelling of the native knee joint and after implant replacement
• Dr. Ankur Chandra (University of Rochester, USA): Patient-specific modelling of abdominal aortic aneurysms for the study of rupture risk, device testing and surgical planning
• Mrs. Nina Bake (Episurf Medical, Sweden): Making the implant as unique as the patient: Episealer as an individually customized resurfacing implant system intended for treatment of localized cartilage defects

Another country that was present is Hong Kong-China.

Dr Makola Scoops 2 Top awards

Dr Solomon Oupa Makola, Campus Director at CUT's Welkom campus, became one of the eight award recipients at the 20th congress of the Psychological Society of South Africa (PsySSA), attended by over 800 delegates in Durban recently. Dr Mokola walked away with two top awards.

The Psychological Society of South Africa (PsySSA) is the professional body representing psychology professionals in South Africa. Founded in 1994, the congress, celebrated its 20th anniversary that coincided with South Africa's 20 years of democracy.

Dr Makola's first award was received for good practice. His hard work and dedication paid off when he was applauded for the role and impact he made on practice and community engagement. 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.

PsySSA also presented its annual national awards to individuals and groups who have demonstrated an unwavering commitment to excellence in various fields of psychological work. Other recipients includes, Prof. Sumaya Laher, for Teaching Excellence; Professors Anthony Pillar, Basil Pillay, and JB Schoeman, for Mentoring and Development; Prof. Kobus Maree, for Science; Dr Ann Watts, for Lifetime Achievement; and Prof. Anthony Pillay, for Public Service.

Dr Makola also chaired a conference slot on community psychology, and presented a research paper titled: 'Sense of Meaning and Study Persistence and Perseverance in an Institution of Higher Learning in South Africa'.

2 AWARDS

CUT celebrates spring graduations

Each year, CUT confers degrees to students who have finally seen the light at the end of the varsity tunnel by meeting the exit level requirements of their respective study path, and ultimately marking a milestone in academia. On Friday 05 September 2014, certificates, diplomas and degrees to a total of 838 candidates were awarded by the DVC: Academic and Research, Prof. Henk de Jager.

The one-day spring graduation ceremony took place at CUT's Bloemfontein campus where amongst others, 22 MTech and four DTech degrees were conferred. On the day, CUT was also honoured by the presence of the MEC for Education, Mr Tate Makgoe who availed time in his busy schedule to join the academia and witness the sterling work done by CUT, in producing scores of industry-ready workforce whose purpose is to generate positive outputs that will shape the industry, thus making South Africa, and the entire continent a better place.

"You have come to the end of the first phase of your career path, go out there, and share your acquired knowledge with the rest of the world! There will be challenges to face but as a CUT graduate, we are sure that you are ready to conquer them," said Prof. Neil Garrod, Acting Vice-Chancellor for the institution.

Prof. Deseré Kokt and Relebohile Ramarumo, who received her MTech in Tourism and Hospitality Management. The title of her study "The impact of organisational culture on job stress and burnout in graded hospitality establishments in the Free State Province."

Dr Nompumelelo Mzizi, Prof. David Ngidi, Dean: Faculty of Humanities, Dr Motshidisi Lekhu and Dr Maditsane "Dicks" Nkonoane who all received their Philosophiae Doctor: Educationis.

Dr Sandile Fuku, who received his Doctor Technologiae in Biomedical Technology; Prof. Sam Mashele, Dean: Faculty of Health and Environmental Sciences, and Dr IT Maduna, co-promoter of the study entitled "An investigation of the phytochemistry and biological activity of Asparagus laricinus."

At the Doctorandi Dinner honouring the four doctorates for their contribution to knowledge. Back row L-R: MEC for Education in the Free State, Mr Tate Makgoe, Dr Dicks Nkonoane, Deputy Campus Manager (Welkom) and honoured doctorate, and Prof. Henk de Jager, Deputy Vice-Chancellor: Academic and Research at CUT.

Front row: Dr Motshidisi Lekhu, Dr Sandile Fuku and Dr Nompumelelo Mzizi.

Gasa connects NDP to Science, Innovation and Technology

CUT hosted an annual prestige lecture as part of its efforts to stimulate intellectual engagements, foster a culture of debates and discussions on prevalent issues and challenges facing societies, strengthening partnerships and re-positioning itself in the country. The 2014 lecture was unique as it coincided with 10 years anniversary as a University of Technology (UoT), Women's month and 20 years of Democracy. Hosting Dr Zanele Bridgette Gasa who is remarkable, young intellect, a leader and influential business woman was a highlight of the day.

In her introductory speech, she congratulated CUT for the role it played in coming with solutions to the challenges facing the country. "We are delighted as a commission by the great strides that CUT has achieved in deeper research and development with the intent of making new and better discoveries that can lead to the development of new products. We watch in great interest as Universities and Universities of Technologies cease to be just academic institutions where people can go course schooling to universities that become the hub of knowledge, deeper research and better solutions to the societal challenges and medical mysteries."

Prof. Henk de Jager, Deputy Vice-Chancellor: Academic and Research, commended Dr Gasa for sharing the current thinking on the national development agenda for South Africa. "This lecture is by no means a routine exercise for us at CUT. Instead, it provides an opportunity to help us to constantly re-examine the role of higher education sector against prevalent issues and challenges facing our society at large, and to seek solutions and ideas that will carry us into the future," he said.

Dr Gasa is an Architectural practitioner, affiliated with many well-known professional associations, which include Project Management South Africa (PMSA) and the Institute of Directors (IOD). She was appointed by the President of South Africa: Mr Jacob Zuma, to serve as the youngest National Planning Commissioner. Dr Bridgette Gasa is the 2008 recipient of the Department of Science and Technology Award for a Leading Woman Scientist in Industry, the company of which she is founder and Managing Director. She completed her PhD in Construction Management with the Nelson Mandela Metropolitan University.

When she unpacked the National Development Plan (NDP), Dr Gasa mentioned that Government is interested in injecting funds into Science, Innovation and Technology (SIT). She also tapped into the OECD review where she highlighted the findings that are regarded as role players in hindering the growth and development of the country.

According to her, one of the Government wishes is to see an increase of PhD graduates, especially from UoT. This, she said, is imperative in terms of improving the scope of skills and knowledge transfer amongst South Africans thus addressing the aspirations of the NDP. "Only 34% of the academic staff possesses PhD. We need to see an increase in PhD holders being academic staff from 34% to over 70% by 2030. We also say it is possible to increase the number of graduate from 167 000 to 425 000 in 2030 with the majority of those coming from SIT fields," she alluded.

Dr Gasa also said that research capacity should be strengthened with Masters and PhD increase from 14% to 25%, with more than hundred doctoral graduates per million per year which will have doubled the number of graduates and postgraduate scientist by 2030. "The future of this country depends entirely on this," she concluded.

Professor Henk de Jager, Deputy Vice-Chancellor: Academic and Research; Dr Nothemba Mrwetyana, Registrar; Prof. Neil Garrod, Acting Vice-Chancellor and Principal of CUT; and Dr Bridgette Gasa.

‘Entrepreneurship happens in free market economies’

L-R: Prof. Thandwa Mthembu, Vice-Chancellor and Pricipal at CUT, Mr Dikgang Mentoro: NAFCOC President, Free State, Dr Herman Mashaba, business mogul, Mr Mogokare Sereke, HOD DETEA.

“Something I hope South Africa will accept and embrace is the fact that true entrepreneurship happens in free market economies. These true entrepreneurs are the potential engines to propel and steer our economy to arrest the three major challenges of high unemployment, poverty, and inequality.” These were the remarks made by Dr Herman Mashaba, a CUT alumnus, when he delivered his inaugural Herman Mashaba Lecture.

The lecture is an initiative by the Faculty of Management Sciences to bring giants in the business world closer to CUT and to assist the university to re-shape its curriculum in line with the current thinking in business. “As an institution of higher learning focusing on social and technological innovation, CUT is honoured to be associated with Dr Mashaba who is a living example of what the university wants to achieve with its graduates,” said Prof. Albert Strydom, Dean: Faculty of Management Sciences.

In presenting his argument on the topic he is passionate about, Dr Herman stood firm on the ground stating that entrepreneurs should be given a chance and a room to breathe so that they can be able to grow the economy of South Africa and curb unemployment that is currently standing at 8,3 million. “Entrepreneurs are innovators and they cannot function in a restricted and highly regulated environment. In order to function properly, they need a free market economy,” he said.

He further mentioned that the best circumstances for entrepreneurship to flourish is to have a free and well-structured environment with less political interference where individuals can function fully and freely, enjoy maximum personal choice without limitations and respect the right of others to enjoy the same rights. To achieve that, he said, the country needs to have well-trained and dedicated police force, efficient and well-functioning law courts to dispense justice and adjudicate on disputes and full protection of their property from aggression by others. “Both big and small companies must be free to enter and compete in either, local or foreign markets.”

On the issues of education, Dr Mashaba reflected on the limitations in South African education system stating that there is an urgent need for change as it does not give the youth much needed options to choose from. “For our youth to be ready as future entrepreneurs they must have access to good education with a wide choice of options; have active citizens such as parents getting involved and holding government officials accountable for not executing that function properly. In a free market economy, a choice in education allows the natural talents of young people to be developed to their full potential.”

Dr Mashaba is an internationally recognised businessman with investments in various sectors of 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. He started from humble beginnings and worked from day to day using the boot as an office. He got his big break 1983 selling hair-care products on a commission basis for a Johannesburg-based company and 19 months later, he started manufacturing his own products and never looked back.

Business mogul, Dr Herman Mashaba (Centre) is flanked by Prof. Thandwa Mthembu, Vice-Chancellor and principal at CUT (left) and Prof. Albert Strydom, Dean: Faculty of Management Sciences

Prestige Research Seminar with Prof. Noakes

Faculty of Health and Environmental Sciences hosted a prestige research day where researchers from the faculty and University of Free State presented their papers alongside Professor Tim Noakes, a South African professor of Exercise and Sports Science at the University of Cape Town.

Tim Noakes is a Professor in the Discovery Health Chair of Exercise and Sports Science at the University of Cape Town, a Director of UCT/MRC Research unit for Exercise Science and Sports Medicine and co-founder of the Sports Science Institute of South Africa (SSISA). A renowned author of many publications, Prof. Noakes has published more than 500 scientific publications and has been cited more than 14 000 times in the scientific literature. In 2008, he was elected an honorary fellow of the Faculty of Sports and Exercise Medicine in UK, which made him the first foreigner to be recognised. In 2012, he received the Lifetime Achievement Award from the National Research Foundation for his contribution to sports science research. At the age of 65, he still partakes in races of up to 21km and in his active lifetime, he has run more than 70 marathons and ultra-marathons including seven 90km comrade marathons.

During his presentation to a full to capacity hall, Prof. Noakes caught his audiences' attention when he introduced his topic of the day "The greatest diet debate: Is the low fat diet the single worst medical error of the past 100 years?" He recommended the high fat diet to a high carb diet that is highly regarded in the health nutrition sectors.

In his argument, he said that the cause for obesity and diabetes is due to provision of additive, highly processes foods that induce over eating in susceptible individuals. "Insulin produced by carbs prompts fat cells to accumulate fat. It is highly toxic to our bodies. We cannot develop a healthy nation if our children are exposed to high carbohydrate diets from an increasingly young age. The optimum development of the brain at all ages requires diets that are high in protein, especially fat, and low in refined carbohydrates as processed foods destroys the gut flora," he cited.

He also made reference to the primitive years where he said, hunting and cooking allowed humans to extract nutrients from animals and vegetable sources. "The increased energy derived from these sources allowed the growth in human brain. The acquired calories, protein and fat were derived from fish, fowl and game animals."

When he explained the disadvantages of carbohydrates diet and the history behind it, Prof Noakes said that the human population has entirely replaced their nutritional traditional diet that have been in the food chain for over 3 million years with the undesired foods that are less than 100 years old. He referred to the foods that were recommended after the second agricultural revolution in 1972. "Americans eat more carbohydrates and they are fat, South Africans are obese because starch is the basis of all their meals! Japan has the least obese population because they still value and follow a traditional diet. You cannot be healthy if you cannot cook, good health-care starts with real food"

In conclusion, Prof. Noakes said that lack of physical activity does not make one obese stating that obesity is a brain disease. "You cannot regulate energy intake to equal energy expenditure. Controlling one's "Bliss Point" is the key!" His advice to the audience was that if they consider weight loss, they must cut on sugar, processed foods, and have less carbs. "25g of carbs is a recommended intake, one banana and an apple is enough carbs for the day, yes, they do not have calories but are rich in carbs." The recommended read: The Real Meal Revolution -the low carb recipe book where he is a co-author.

Below: Mr Roan Slabbert, Lecturer and ECP Coordinator in the Department of Clinical Sciences (coordinator of the Prestige Research Day), Prof. Sam Mashele, Acting Dean: Faculty of Health and Environmental Sciences, Prof. Tim Noakes, Prof. Neil Garrod, Deputy Vice-Chancellor: Resources and Operations, and Prof. Ryk Lues, Professor in Environmental Health and Research Manager for the Faculty of Health and Environmental Sciences.

CUT Engineering students restore 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 head of the Department of Mechanical and Mechatronics Engineering, Mr Dries Bothma, thought it would be a good experience for the students. The tractor was entered in a tractor restoration competition where the students achieved third place at the Nampo festival held earlier this year.

The first two places was awarded to twin brothers from Klerksdorp. "What makes the students' achievement exceptional is that they manufactured 70 parts for the tractor from scratch in the CUT's Product Development and Technology Station (PDTS) which also sponsored the material and work-hours for the restoration of the tractor" said Bothma.

CUT FM:

FACE TO FACE WITH
KEAMOGETSWE 'DJ LAILA' NNYANE

CUT recently acquired a radio station licence. The station will be launched and fully operational in 2015. The frequency will reach areas around mangaung and will be focused on youth. The station will help develop the skills of students who are already in the field of communications and also expose and assist them in shaping their career as well as building their confidence in preparation for the outside world. Listeners can expect fun and entertainment from disk jockeys of different slots with different topics daily. The slots will include educational programmes and relevant institutional information, debates, motivational, current and spiritual news.

DJ Laila Nnyane, the Radio Station Manager

Keamogetwe 'DJ Laila'Nnyane is the Radio Station Manager for CUT FM and will be working with a team of 45 volunteering students who have shown interest in the work she does. Keamogetswe was born and bred in Free State and has been with prominent radio stations before joining CUT in 2013. The 105.8MHz is made of the following slots:

Ms Janine van Vuuren, compiling news for the 12 o' clock news bulletin on the Triple SSS show from 12 - 3 pm, with QT Rose, the host of the Bow Out- every Saturday and Sunday morning 3 -6 am, and Mr Patrick Sizane the stations Administrator

Above: At the studio during BHP Expresso Mon to Fri 9 am to 12 noon is news reader Mr Lamla Atoni and Ms Lutho Meke

Monday to Thursday: 6:00 - 9:00 A Cut of Breakfast with Laila Nnyane; 9:00 - 12:00 The BHP Expresso with Lutho; 12:00 - 15:00 The Triple S Show with Lfoza; 15:00 - 18:00 Lapeng Rush with Tumelo & Lebo; 18:00 - 19:00 CUT Parliament with Mongezi; 19:00 - 21:00 Die Fakulteit with Mish and Chappie; 21:00 - 00:00 Amphified Dedications with Loyiso; 00:00 - 03:00 Campus Shutdown with Dimakatso; 03:00 - 06:00 The Science of Study with Sindiswa.

Friday: 6:00 - 9:00 A Cut of Breakfast with Laila Nnyane; 9:00 - 12:00 The BHP Expresso with Lutho; 12:00 to 15:00 The Triple S Show with Lfoza; 15:00 to 18:00 Lapeng Rush with Tumelo & Lebo; 18:00 - 21:00 The Drop Down with Joshy-G and DJ Smiddie; 21:00 - 00:00 Party Capital with Inno and Bokang.

Saturday: 00:00 – 03:00 Monate o tswela Pele with B_Soul; 03:00 - 06:00 The Central Connection; 06:00 - 10:00 Tsoha le Rona with Saffo and Da News; 10:00 - 14:00 CUT TOP 40 Chart show with Neville; 14:00 - 16:00 Off The Field with Mark and Matthews; 16:00 – 19:00 The Weekend Breeze with Mello and Kuli; 19:00 – 21:00 Dancehall Flavour with Maki; 21:00 - 00:00 The Party Capital with Inno and Bokang.

Frequency: 105.8 MHz

Sunday: 00:00 – 03:00 Monate o tswela Pele with B_Soul; 03:00 - 06:00 The Central Connection; 06:00 - 10:00 Tsoha le Rona with Saffo and Da News; 10:00 - 12:00 Die Sondag op staan with Mish; 12:00 - 14:00 Motivational Spirit with Portia and Lebo; South African Top 30 Chart show 14:00 - 17:00 with Neville; 17:00 - 19:00 House of Deep with Gee; 19:00 - 21:00 House of Kwaito with DJ Y2K; 21:00 - 00:00 The Weekend Wrap Up Hip Hop Show with Muzee and Mac Bow.

CUT engineering makes a clean sweep at SASOL Baja SAE

CUT 8: Winner car & B.Tech students' creation driven by Eric Newby

10 Engineering students from CUT recently entered and won the Sasol Baja SAE (Society of Automotive Engineers) 2014 competition, a two-day national competition and partnership between Sasol, Gerotek, technical competition specialists ESTEQ and engine suppliers, Briggs and Stratton, that takes place in October each year. This year, the competition was held in Gerotek, Pretoria.

Sasol Baja Society of Automotive Engineers (SAE) 2014 named 10 CUT students as 2014 winners for their outstanding conceptualisation of a real world engineering project, which equipped them with the required skills for the industry.

The SAE Baja competition originates from University of South Carolina in the United States since 1976, under the supervision of Dr. J.F. Stevens. In 1996, Mr Barry Grobbelaar and Francois Naude from the Department of Mechanical and Aeronautical Engineering at the University of Pretoria (Tuks) initiated the SASOL SAE Baja local competition that is still running to date. The objective of the competition is to expose South African tertiary students to planning, design, and manufacture of engineering projects, which will equip them with the required skills necessary for the real world of engineering.

The aim of the competition is to use given specifications in the design and build of a working prototype, four-wheeled, single-seat off-road recreational vehicle, called a baja. The vehicle had to meet the following minimum requirements: safety, easy to transport and service, fun to drive, be able to handle rough terrains and aesthetically pleasing.
In this year's competition, CUTs team dominated the participants, beating top teams like Tshwane University of Technology (TUT) and Tuks with a comfortable lead. 2014 was the 14th year of participation for CUT and the institution entered two bajas on race day. The first baja CUT8 was the product of hard work and innovation by BTech students (fourth-year), and CUT10 was built by first-years with mentorship from senior students.
Both bajas passed the technical inspection and design evaluation test, scoring them points that was later added to their total score. During the endurance race, Car10 – that took six months to build and driven by Chris Visser – completed 28 laps in the four-hour race, (a major improvement from 2013's performance) to finish in an overall sixth position.

When asked about the challenges faced and future plans, William Kinnear who is both a student (BTech) and an assistant lecturer, said that the teams did their best to get to the required standard with tight time and budgetary limits, two bajas were build. "Unfortunately, Car10 did not complete the endurance race due to a broken gearbox but for CUT8 to beat TUT and Tuks was a huge moment for us. Next year we plan to come up with a better strategy of winning the endurance race."

1st Year's creation driven by Chris Visser

The BTech CUT8 took only two months to build and won the top speed and handling performance tests, with close second places in the hill climb and acceleration performance tests and a 3rd place in the sled pull test. It also outshined the rest of other creations at the design evaluation. During the endurance race, the baja driver of CUT8, Eric Newby, experienced a few nervous moments when the driver ahead of him was stuck in a mud pit, but Eric managed to maneuver around his opponent and finished second with 51 laps, 4 laps behind TUT1.

Although TUT's vehicle crossed the finishing line first, it was CUT8 that took the glory because they managed to score the best overall points during the two-day inspection that included, braking tests, performance events, a design evaluation, the endurance race, hill climb, acceleration performance tests, and weight pulling. CUT led the pack with the overall score of 788.041 points making them champions. Nelson Mandela Metropolitan University took the first runner-up title with a total of 733.57 points while Tuks 2 settled for the second runner-up title at 712.201 final score. "This is the first time in CUT's history that we walked away overall winners," William said.

Sasol Baja cars in the making

OVERALL WINNERS

CUT and Telkom Foundation take ICT to schools

"The world we live in is changing at a faster pace and the changes about today and tomorrow depend on the criterion application and distribution of knowledge. Information and Communication Technology (ICT) in teaching and learning are paramount in taking the society to a technological world. We, at Telkom, are committed in sustainable education," these were the words of Mr Nathi Kunene, Acting Head for Telkom Foundation during handover ceremony at Tierpoort (Motheo District) when MEC for Education Mr Tate Makgoe, Prof. Henk de Jager, Acting Vice-Chancellor and Principal, and Mr Nathi Kunene handed over equipment, including laptops, mobile libraries and mobile science libraries to four Mangaung schools. CUT is responsible for providing the in-house facilities for the educator workshops and training, information technology training and administrative support.

The handover function was part of Educator Mentorship and Development Programme (EMDP), an initiative that aims to support government in delivering quality education in Maths and Science at foundation and intermediate levels. MEC Makgoe said that these schools must ensure that learners master Mathematics and English. "Our current education system requires pathfinders and brave initiators to drive education to the sky-high levels," he said.

Since 2011, the foundation has collaborated with CUT in the Free State to develop and implement the EMDP programme. Seven schools are currently involved, with retired teachers offering mentoring to educators. Telkom Foundation has invested approximately R5 million in the EMDP (R4 445 800 augmented by another R394 578.09) to support this programme for 2014 and 2015.

While the project is targeted for primary school with the aim of developing, empowering, and mentoring educators in Science, Technology; English and Maths, (STEM) in the region, it is also intended to stimulate the interest of learners in subjects and careers within the fields of Information, Communication, and Technology (ICT).

"We are thankful to Telkom Foundation for allowing schools to take a step further into the world of technology as part of teaching and learning in schools. Because of this initiative, these schools were introduced to the world of information technology as part of their curriculum never seen in the history of education in our province. I wish to encourage our principals to ensure that their teachers and even learners reach out to neighbouring schools and share with them the skills, knowledge, expertise and successes attained through this intervention," Prof. de Jager concluded.

Mr Nathi Kunene, Acting Head: Telkom Foundation, Mrs Sylvia Mosola, Acting Principal at Kgotsofalo Intermediate Farm School , MEC for Education, Mr Tate Makgoe, Mr Buti khelemthini, SGB for Kgotsofalo school and Prof. Henk de Jager, DVC-Academics and Research

"Tralies" Whizz-kids again

2014 winners of CUT-FEIT Quiz: Sentraal High School. From left: Paul Schall, Albert Human, Brandon Daffue, and Mr Carel Korff, Quiz organizer as well as Lecturer at the Faculty of Engineering and Information Technology

Faculty of Engineering and Information Technology at CUT hosted the final High School Quiz Whizz, on 14 August 2014, as a way of promoting the importance of Science, Technology, and Environment. The Quiz is in its 16th year and the theme was "Challenging Technology in 2014."

Sentraal High School (Tralies) whizzed their competition and become champions yet again! The Whizz-kids competed against Jim Fouché (old rival) and Grey College Secondary schools (last year's winner). This is a great achievement for the school as it embraced the title for the fourth time since 1999, thereby earning the school two bursaries to the value of R 10 000 each.

Jim Fouché and Grey College Secondary were first and second runners-up winning their schools bursaries to the value of R 15 000 and R 10 000 respectively.

The Hoër Landbouskool Jacobsdal also attended the final round as observers after ending fourth during the qualifying round of the Quiz. Their achievement was noteworthy as it was its first year of participation in the competition.

At the event, various researchers from the Faculty also presented their exciting research, showcasing valuable innovative work done at CUT. Salute to all High Schools that participated!

CUT seals a deal with local farmer

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 recently entered into a three-year renewable agreement with Mokhachane Community Property Association (CPA), a farming project located in Wesselsbron, the quaint maize farming town dominated by fields of corn and sweet corn and an area that lend credibility to the Free State's reputation as the "bread basket" of South Africa. Wesselsbron is in Lejweleputswa district municipality.

The Memorandum of Agreement signed between the two parties means that Mokhachane CPA will open its doors to a number of CUT Agricultural Management students to conduct research and/or undergo practical training on their farm as part of their Work Integrated Learning Programme (WIL). "The agreement entered into today is in response to the industry needs, and hopefully it will create job opportunities for the students upon conclusion of their training," said Mr SW MoKhachane, Director of Mokhachane CPA.

In bringing the balance, CUT will provide access to its experienced staff with expertise in the field who will ensure successful implementation, smooth running and completion of these projects. "Most of us are aware of the desperate state in which our Agriculture industry is in. Therefore initiatives such as this will bring change not only to the lives of our students, but to the society at large," said Prof D Umesiobi: HOD for Department of Agricultural Management at CUT.

The renewable agreement is scheduled to end in January 2017.

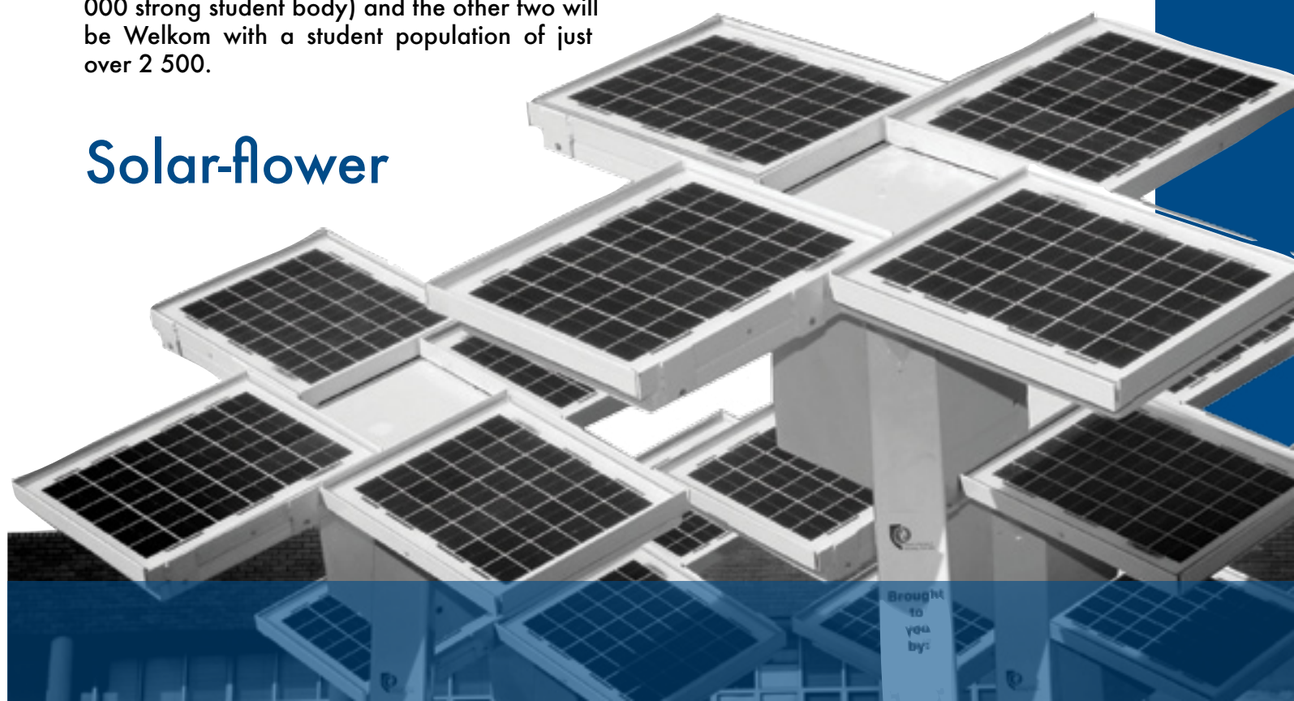
CUT innovation leads the way towards a greener future

Every hour the sun beams onto Earth more than enough energy to satisfy global energy needs for an entire year. Solar energy is the technology used to harness the sun's energy and make it useable. This renewable energy is becoming increasingly popular as the world takes notice of the burgeoning carbon emission problems that come with burning fossil fuels.

In support of CUT and its quest to go green, the department of Electrical, Electronic and Computer Engineering assisted the institution in the massive sustainability drive. The idea originated from an increased daily usage of technological devices by CUT students for their studies.

The Solar-flower prototype project was designed and developed by the Electrical Department and launched in May 2013. A little more than a year has passed and the project took a giant leap forward. Eight of the ten brand new solar flowers will be strategically placed at Bloemfontein campus (to serve the almost 11 000 strong student body) and the other two will be Welkom with a student population of just over 2 500.

Solar-flower



These are cell phone/tablet charging stations for CUT's students. The charging station works from solar energy, which is free thanks to the burning ball of fire in the sky! The station is designed to charge all cell phone makes and models. Each station can charge up to four devices at a time.

Facts

- Solar energy does not cause pollution – it is 100% green
- Solar energy is free
- Solar energy is infinite (as long as the sun shines, the energy can be harnessed)
- It is the main source of energy for all life forms
- Saves CUT electricity!

CUT Alumna aspires to create a giant farming enterprise in SADC Region

Ms Mponeng Lentoro, farmer and business woman

Mponeng Lentoro was born in Beaufort West and grew up in the dusty streets of Rocklands township in Mangaung, Bloemfontein. Like any other young girl, her dream was to get educated, secure a good paying job and live happily ever after with her family but fate directed her elsewhere.

It was during her studies at CUT that she became interested in entrepreneurship and with the growing edge and a drive to become one, the desire, and vision became stronger and clearer and a successful farmer and businesswoman was born! "I made a decision after my graduation that I am not going to be an employee but an employer! My dream was to create jobs for rural people in the agricultural sector, which has a history of injustice." She said.

At the time of her decision, Ms Mponeng had no formal background on agricultural science but her upbringing in the farms, gave her the foundation to build on. She graduated her National Diploma in Environmental Health at the University of Swaziland in 1998, a BTech-Environmental Health at CUT in 2003, and further enrolled for various short courses in agriculture with Grain SA and University of Pretoria and graduated in 2009. To equip herself with knowledge and skills, she did a lot of consultation and research on farming and agriculture.

Post School, she was involved in different companies (hospitality, traffic management, training, and Mining Qualification Authority) during which she acquired a diploma in auctioneering which saw her being the first black woman in Free State to do auctioneering.

In 2007, the eagerness and passion for farming grew beyond limits and she approached the Department of Rural Development and Land Reform (DRDLR) the following year.

When did you start with the real farming?

In 2008, through South Africa's often-criticized land reform programme, Department of Rural Development and Land Reform purchased 1064 hectares (ha) of land on my behalf. The farm (Vergezocht farm) in Beinsvlei, is 35 km west of Bloemfontein. The farm is fully equipped with excellent infrastructure that allows me to have more than one enterprise; hence, I am involved in livestock farming, fresh produce, and processing plant for animal feed. The farm is now called Lentoro Farming.

What have been your proud moments since you started farming?

Just a year into the white male dominated sector, I harvested 743 tons of sunflowers, 284 tons of yellow maize, 275 tons of white maize and won the female farmer competition. I received an award as the top producer for national markets by the Department of Agriculture. In same year, I got another recognition certificate from Grain SA for being the Commercial Grain Farmer amongst developing farmers.
In August 2014, I got first place in the Women in Water Awards, provincial 2014 competition Education & Awareness Category. I also won the award for Top Female Entrepreneur Commercial at district, provincial and national Levels. Lentoro Farming is currently supplying meat wholesalers with mutton, beef, pork, and chicken, Senwes with maize, sunflower, and wheat and fresh produce supply is for food chain stores.

What is your strategy in maintaining consistency?

I believe in quality service. I am professional in the work I do and I do it with pride. To me, reputation is a key to success. I am reliable and dependable and pay attention to detail because I know that it is the little things that matters most. I also strive for continuous improvement. To do that, I never sit back and wait for things to happen, life is a never-ending adventure so I keep my eyes and ears open to anything that is happening around the world, be it the climate change or a market niche for my products.

Are you involved in any community projects?

Oh, yes, absolutely! I am a community-focused person. I strongly believe in ploughing back. Farming community is very rural and mainly poverty-stricken. I enjoy bringing in change, and leaving a legacy. Who knows? Maybe that will also benefit my next generation. That is generally Ubuntu. I have also created jobs to ten permanent staff from the community. I also make sure that I transfer my skills and knowledge to my workers and instil ownership, accountability, and responsibility in them.

Are you in any leadership roles?

Yes, I serve as a committee member in different farmers' association such as South African National Farmers Union (SANAFU), NAFCOC, Women in Agriculture and Rural Development (WARD). As a Provincial committee member for SANAFU, my role is to bring farmers together and form cooperatives and commodity groups for commodities such as livestock production, poultry, fresh produce, game and ostrich production, milk, oil seeds, grain, fodder, animal feed, fishery and crocodile, bee breeding, florist, herbs, special oils, wool, mohair and forestry, including agro- processing of those commodities. These commodity groups are therefore trained and assisted to produce quality and excellent standard, meet the market demand, and be good competitors. Agro-processing is very important, because that is where 'farmers' wealth' lies.

I also serve in National Reference Group (NAREG) formed by the Minister of DRDLR to represent the nine provinces starting from constituencies, formulating the policies for Land redistribution and restitution.
I also develop cooperate bank, which will later assist emerging farmers with capital as it is difficult to get funding from commercial banks. Most of the developing farmers do not have collateral, which is one of the requirements by all financial institutions, and most of them are either not credit worthy or black- listed.

What is your advice to all those who aspire to be like you?

Faith in God and genuine love for farming are crucial in this industry. Farming is not a smooth sail. You need to be fully committed, dedicated and be prepared for the real hard work. Farming requires skill, knowledge, commitment, patience, and capital, as it is expensive to produce quality product.
Where do you see yourself in the near future?
I am an entrepreneur at heart and sturdily believe that wealth accumulates from land. To be able to have a positive ripple effect in my community, I have to support and develop emerging farmers, alleviate poverty through job creation, become the creator of markets and take a leading role in the food value added chain. My wish is to have an Abattoir coupled with processing plants for meat, vegetables, and fruit. These processing plants will assist in creating substantial jobs for the Bainsvlei community and ultimately enable them to add value. My other plan is to develop my employees to be independent, make them shareholders so that they can have a sense of ownership, and be able to work as a team to protect the assets we have.
My passion is to see more females in this sector and through Land Reform initiative under women and youth desk, groups of women and girl child underwent training to grow lavender in Free State and Northern Cape, of which we will be processing at a later stage. Therefore, I take this as a starting point to a better future.

Do you have any plans of ploughing back to CUT as a successful alumna?

I am actively involved with CUT currently where postgraduate agricultural students are doing their experiential learning at Lentoro Farming in Vergezocht.

Proud moments: 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 sets an example

Ms Zanele 'Sally Sue' Matsane is set to travel to United Kingdom for three weeks in November after winning a prestigious Abe Bailey Travel Scholarship. The objective of the Abe Bailey Travel Scholarship is to broaden the views of young South Africans, to expose them to the globalized world and to equip them with exceptional leadership qualities. Annually, these awards are given to academically achieving individuals who show qualities of leadership and service to others and have a good track record, not only on campus, but also in a wider social context.

Zanele, a young BTech Quantity Surveying woman student from Faculty of Engineering and Information Technology at CUT, is by no means an exception. Earlier this year, she entered the enterPRIZE job creation challenge competition with an innovative concept focusing on sustainable wealth and job creation for other and won the second place in the Best Young Entrepreneur category with a substantial cheque of R100 000. Her start up business is known as Metse Ke Bophelo – Water is life, let us preserves it for you, a business that specializes in storage containers in the form of recycled industrial drums. According to Zanele, the drums will be sold to the rural communities in and around Bloemfontein area that do not have running water in their households.

She has always shown leadership qualities and met all the requirements set by the ABE bailey Trust. In addition to her latest achievements, she was a chairperson for the first-year committee at Mannheim Ladies residence in 2011 and the best academic achiever in 2010, a class representative committee for first year students, N Dip Building and currently a class representative for B Tech students studying towards Quantity Surveying Construction Management.

An all-expenses paid three-week educational tour to the United Kingdom is scheduled for the period 26 November - 20 December 2014.

TEQSA Australia Shares New Teaching Trends with CUT

The commissioner of Tertiary Education Quality and Standards Agency (TEQSA) from Australia, Mr Ian Hawke, recently conducted a workshop to CUT academics and supporting staff on the new trends in enhancing the quality of Teaching and Learning- an Australian Perspective. Mr Hawke visited various Universities of Technology within the South African Technology Network (SATN). His visit to CUT was an insightful changing experience.

TEQSA is an independent statutory authority that regulates and assures the quality of Australia's Higher Education sector and also registers and assesses the performance of Higher Education providers in Australia against the Higher Education Standards Framework.

According to Mr Hawke, the Australian Higher Education system is made up of over 1.2 million students and universities can enrol as many students as they wish and still receive full public subsidy that the government commits to provide for. However, he said, such is done on condition that universities assure stronger chances of students success. "Contrary to that, South African Higher Education system is regulated quotas of student enrolments at universities. This practice has thus impelled universities to compete fiercely with one another for domestic students. To ensure strong performance in this regard, all Higher Education providers must be registered by TEQSA for a seven-year period and have their courses accredited," he said.

Tapping on to HE Provider Course Accreditation Standards, Mr Hawke said that the accreditation of courses is issued on the basis that the course design is appropriate and meets the qualification standards, course resourcing and admission criteria is appropriate, teaching and learning is of high quality, assessment is effective, and student learning outcomes are met.

"Having people of Mr Hawke's calibre to present educational programmes of this nature is important to us. The more we have talks around issues of Higher Education and quality assurance in teaching and learning, the better chances of growth in our education system because quality assurance plays a pivotal role in all CUT teaching and learning programmes," said Prof. Mabokang Monnapula-Mapesela, Dean: Academic Development and Support.

CUT academic and support staff who exchanged their knowledge and ideas with Ian Hawke during his presentation on the dynamics of Australian Higher Education Sector

HR students get exposure to industry operations

The Department of Business Management recently hosted a Guest Lecturer presentation for students who are studying Human Resource Management (HRm). Mr Roye Els a Senior Commissioner and Ms. Beauty Moeti, a CUT HR alumna who now serves as a Commissioner at the CCMA, visited CUT to conduct a guest lecture on the Law of Evidence in Labour Law and the Conciliation and Arbitration processes.

The CCMA as the independent dispute resolution body of the state is responsible to give execution to the purposes of the Labour Relations Act but primarily to ensure social justice and labour peace. Since HR Students study the CCMA processes in Industrial Relations, the content of the guest lecture was therefore directly relevant to the subject matter.

To give insight to his presentation on some of the objectives of the Labour Relations Act, Mr Els painted practical scenarios making reference to case law such as the "Avril Elizabeth Home for Mentally Handicapped case, as well as the Sidumo v Rustenburg Platinum mine case, amongst others. Case law forms a very important part of the application of principles in the daily practice of the employee relations practitioner.

Dealing with the subject matter from the point of view as a practising Commissioner at the CCMA students were afforded an opportunity to experience the requirements that the CCMA places on the submission by an employee and employer representative in cases. Whereas the daily approach in a class would be focussed on a discussion of the theoretical and legal principles, students were given another approach in that Mr Els and Ms Moeti highlighted the requirements of CCMA Commissioners places on the parties to allow them to prove their case and to get the Commissioner to rule in their favour.

From the overall reaction of the students after the presentation it was a very positive and enlightening experience for them to interact with the CCMA Commissioners. Ms Moeti, CUT graduate also allowed current students to experience at first-hand, the value of studying Human Resource Management.

Mr Roye Els- Senior Commissioner at CCMA addressing HR students

Pictured is the Chinese delegation, Government representatives and CUT management during the strategic visit

Chinese delegates show interest in CUT

CUT Additive Manufacturing (3D printing technology) has been under the spotlight in the last few months since the miraculous work that was done by Dr Cules van den Heever, an Extraordinary Professor at CUT from the University of Pretoria, and CUT's Centre for Rapid Prototyping and Manufacturing (CRPM).

On 20 August, the Chinese investors, Mr Cao HongBing, CEO for Shangai Medical Equipment Company Limited (EST)), Mr Qiang LizHong, Deputy CEO for ChangZhou Yenling Electronic Company (CYEE) and their delegation visited the Free State Province and CUT to explore prospects of investment and partnership opportunities in medical development product technologies. The team has shown interested in a strategic partnership with CUT to drive product and skills development.

During their short visit, the delegation also toured CUT's Centre for Rapid Prototyping and Manufacturing as their key interest is to invest in technology and innovation especially in Medical Devices. Both CYEE and EST are also interested in setting up Production Plants in Mangaung Metro.

The delegation was accompanied by Mr Seleke, HOD for the Department of Economic Development, Mr Ikhraam Osman, CEO for Free State Development Corporation, and various provincial representatives.

Amazing maize meal innovations a success!

First and second-year Hospitality Management students at CUT got an opportunity to show off their skills and innovation capabilities when they entered a maize meal competition on 30 August 2014.

The training Chefs worked in pairs and were expected to come up with two recipes; one had to include Power Wheat Flower as the product ingredient, and another recipe had to be inspired by an innovative idea comprising of maize meal as the main ingredient.

Nine teams participated in the competition and the young cooks came with tons of ideas on how to have fun with maize meal. Amazing recipes came to the fore and Lebogang Senatle and Godfrey Makatsa with a very tasty Chicken Lasagne ala maize meal as well as a Mozzarella and Chirozo maize meal croquettes were the overall winners of the day. The Entrepreneurial prize went to Rea Moholo and Pulane Maruping for their maize meatballs.

The Regional Innovation Forum, Free State was one of the sponsors for the event. A decision was made that all participants who brought ideas to the fore be awarded with an amount of R500 for their efforts!

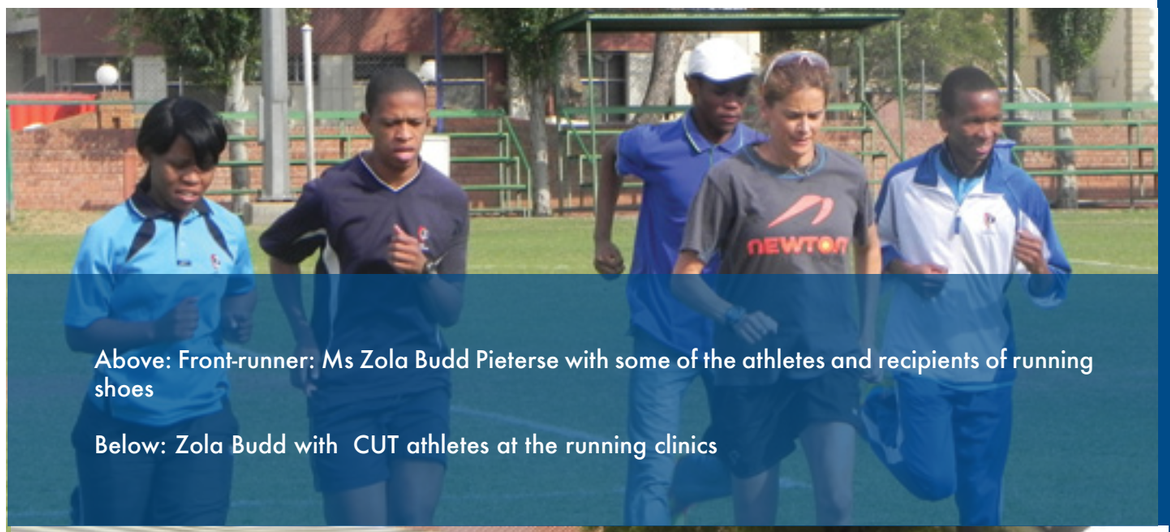
Picture 1: Overall Winners: Lebogang Senatle and Godfrey Makatsa.
Picture 2: 9 teams who participated in the competition.
Picture 3: Entrepreneurial product winners: (Middle) Rea Moholo and Pulane Maruping flanked by Chef Janice Solomons, CUT (left); post-doctoral research fellow at the Unit of Applied Food Safety, Dr Hanita Swanepoel (right); and the OKV representatives: (far left) Mr Jaco Das, Manager of Tweespruit Maize Mill (OVK); and (far right) Mr Jaco Lonte, Manager Clocolan Wheat Mill (OVK).

CUT Alumna ploughs back

Ms Zola Budd Pieterse, a renowned former South African Athlete, and World Record Holder, a CUT alumna, who was a top athlete with national colours, for the former Technikon Free State, visited the institution on Tuesday, 23 September 2014 as part of her ploughing back program. Following a brief in-house presentation on the day, Zola took the athletes to the soccer field to conduct running clinics. During the drills, she demonstrated and shared some few tips on the dynamics behind warm-up exercises that sets the body muscles on the right tone before one embarks on a marathon.

Her visit to CUT was in response to a letter from one of the athlete, Tshwanelo Sekabate, a National Diploma: Office Management student, who wrote to her asking if she could make time to visit them and share her expertise, and as an exemplified CUT Alumna, she did not hesitate to heed the call. “I accepted the invite in high spirit because I knew accepting it would give me the opportunity to plough back to the community as well as to boost their athletic spirit, provide running clinics which could assist them to improve their running techniques and to donate running shoes,” she said

As part of her day’s programme, Zola donated 15 pairs of Newton running shoes to athletes as a courtesy of her USA Newton Running Development Program, which she is currently administering in South Africa.



Above: Front-runner: Ms Zola Budd Pieterse with some of the athletes and recipients of running shoes

Below: Zola Budd with CUT athletes at the running clinics

Student leaders honoured

The annual Vice Chancellor's Student Leadership Awards ceremony took place on 17 October 2014 where student leader organisations: Student Representative Council (SRC), Student Associations, House Committee members, as well as Residence Mentors received honorary certificates and trophies as a gesture of recognition and acknowledgment for their excellent student leadership and selflessness in their tenure. House Committee and Residence mentors were particularly honoured for using their academic acumen to support residence students who had academic difficulties. The event was graced by members of the management committee, including the Vice Chancellor and Principal, Prof. Thandwa Mthembu.

Seipati Molupe- SRC Secretary General/ Sabbatical Welkom Campus

Jabulani Nyamane, SRC Deputy President - Bloemfontein Campus

Mixo Hlungwani, Enactus President receiving an award from Dr Tsoabisi Paks, Tondi-Deputy Registra-Student Services

Mohale Makoae-Chairperson-Brilliance extra classes with Dr Tondi

Dr Mohamed Mostafa, Civil Engineering senior lecturer, received the Early Career Research Award from Prof. Henk de Jager.

Ms Noluntu Mpekoa, Information Technology lecturer received an award category. The award was presented by Prof. Henk de Jager, DVC: Academic & Research.

CUT rewards excellence

CUT recently rolled out the red carpet to eight high performing academics and their families at the annual Vice Chancellor's awards in recognition of their hard work, dedication, selflessness, commitment, and excellence demonstrated in their respective academic capacity.

The recipients were presented in four categories, namely, Early Career Teaching and Learning, Curriculum Development, Research and Innovation, as well as Community Engagement.

Ms Noluntu Mpekoa, Information Technology Lecturer, became the first recipient of the day, for the category: Early Career Teaching Award. The evidently ecstatic lecturer said that she has a passion for her work and always tries her best to rub it in to her students. "When I go to class, I always want to bring a positive atmosphere to my students and have patiently and passionately instilled the troubleshooting skills in them through my teachings to prepare them for any challenge they might face in the industry."

When addressing the recipients, Prof. Henk de Jager, Deputy Vice-Chancellor, Academics, and Research extended his appreciation to the spouses and families for the undying support they have given to the recipients that led to their excellence in what they do. "CUT is proud of your dedication to bring credit to the institution. Your achievements are evidently in line with our commitment to produce high quality graduates."

Upon receiving the award, Dr Mohamed Mostafa, Civil Engineering Senior Lecturer, extended his gratitude for being recognised for the efforts he put in the research project he has been working on for the past three years. The research focused on non-conventional materials that are used to build roads. For this purpose, he received the Early Career Research Award for his remarkable research output.

Other recipients were:

1. Ms Lisa-Mari Coughlan, Junior Lecturer, Hotel School - Early Career Teaching Award,
2. Mr Wynand Viljoen, Lecturer, Teacher Education- Advanced Career Teaching Award,
3. Dr Fedelis Emuze, Head of Department, Built Environment - The international association of University Presidents (IAUP) Excellence Award for Curriculum Innovation,
4. Prof. Dennis Dzansi, Head of Department, Business Support Studies - Established Career Research Award,
5. Mr Gerrie Booysen, Director, Centre for Rapid Prototyping and Manufacturing (CRPM) - Innovation Award,
6. Mr Parks Makhoahle, Lecturer, Biomedical Technology - Community Engagement Award.

All recipients received a merit certificate; CUT branded gold medal, and R30 000 cheque for their research projects.

2nd annual Sustainable Development Debate held

Sustainable development is development that meets the needs of the present without compromising the ability of the future generations to meet their own.

Faculty of Management Sciences held its second annual Sustainable Development Debate on 16 October 2014 under the theme: Go Green: Promotion of Sustainable Development. The main objective of the debate is to educate and instill the knowledge of sustainable development from generation to generation to reduce the carbon print.

Sustainable Development is one of the strategic priorities for CUT. The debate provided a platform where students presented on different sub-themes and exchanged ideas with the wide audience. The presenters debated on effective waste management, creative recycling open doors for income generation, the impact of human beings on the environment: the need for sustainable development; and water management.

The first prize went to Hospitality Management team on the chosen topic: The impact of human beings on the environment: The need for sustainable development.

The second prize was swept by Department of Business Management team with their presentation on water management.

The third prize was taken by Department of Government Management.

CUT and Central Media introduce learners to headlines, bylines and datelines

Department of Communication Sciences embarked on its annual Community Journalism workshop to learners from Bloemfontein schools who have shown interest in following a career in Journalism. The event took place at Central Media's Offices on 15 October 2014.

Community Journalism Project is a joint venture between CUT's Department of Communication Sciences and Central Media, a multi-media company specialising in print, electronic, radio and digital platforms.

14 learners from Sentraal , Fichardtpark and Jim Fouché High Schools participated in an interactive workshop where third-year Journalism students shared their knowledge and expertise particularly in community journalism. An overview of exciting aspects in the field and practical hands-on tips on how to become a good journalist were also shared.

Caption: Ms Sandra Coetzee, Group-commissioning editor of the Central Media Group and Dr Mardi Delport, Lecturer: Communication Sciences at CUT, with the students and learners.

"Inspired learning" for second year Tourism Management students

According to the Wanger Group, a research firm, "travel makes learning come alive, and spark an interest where none existed before".

As part of their curriculum, second year Tourism Management students recently went on an educational tour to the 'Mother City" Cape Town. Named one of the beautiful cities in the world by Forbes.com alongside Vancouver, Paris, and Venice this makes Cape Town an ideal choice for an educational tour. The tour took place in September, which is the Tourism month. The main thrust of the tour is three-fold; to integrate theory on tourist attractions and destinations with firsthand experience, to inspire and engage the students and to aggravate intellectual curiosity. This is very much in line with the CUT's vision 2020 of being an engaged university that focuses on producing quality social innovations.

The five day itinerary compiled by Astra travel which is one of the travel companies that accommodate tourism students for Work Integrated Learning covered major highlights of Cape Town, including the renowned table mountain, Sea Point, Camps Bay, Cape Point , Chapman's Peak, Simons Town, Fish Hoek, V & A Waterfront, Two Oceans Aquarium, parliament and Signal Hill. The highlight of the tour was the visit to the iconic Robben Island. The tour was more than just educational, as students also had fun.

Students could not hide their excitement, and credited the tour as an eye opener. Students also had to complete an evaluation in the form of an assignment about the tourist attractions visited and the importance thereof for South African tourism.

Industry Day prepares Language Practice students for labour market

The Department of Communication Sciences hosted their annual Industry Day on 16 October 2014. The aim of the event is to give students a glimpse of what the industry has to offer. Industry experts in the field were invited to present and advise students on what to expect post school.

Students had an opportunity to interact with the experts and enquire about their field of interest whilst also using the opportunity to network and build up future contacts.

Below: Dr Mardi Delport, organiser of the Industry Day and lecturer in Communication Sciences at the CUT, Ms Nombulelo Mkumatela, lecturer in Communication Sciences, Welkom Campus, Mr Nick Efstathiou, General Manager, OFM, Mr Motale Sebego, SABC Provincial Head for current affairs in the Free State, Prof. Henk de Jager, Deputy Vice-Chancellor: Academic,Dr Mathene Mahanke, Deputy Director: Language Services , Department of Sports, Arts, Culture and Recreation, Ms Maricelle Botha, Editor of Courant, Prof. David Ngidi, Dean for Faculty of Humanities, and Dr Brenton Fredericks, Head of Department: Communication Sciences, CUT.

CUT choir continues to blossom against all odds

CUT choir attended two competitions this year, the Gauteng Chorale Music Association (GACMA) where they obtained first position on both the Western and African song, and became the overall winners in the silver section. They also performed in the National Choir Festival (NCF) and obtained second place in both the Western and African songs as well as an overall second place in the standard category. All 63 members will be participating again at Lengau Choral Music Association (LECMA) on 29 November 2014 at the Civic theatre in Bloemfontein and the day after at the AMF, (a Music Federation of Lesotho in Maseru, Lesotho.

The choir continues to blossom in all competitions even though they are operating from a limited budget of R100 000.00 with most of their competitions held outside Bloemfontein. The Governance and Student Life unit donated the funds.

CUT CHOIR

"is a cut above the rest"