



# ALUMNI UPDATE

## Message from the Dean

July 2017

We are now into the second week of exams, as evidenced by EBE students arriving with layers of blankets and jackets, in preparation for spending a few hours in the Sports Centre Halls. This is partly because the exams are almost a month later than usual due to the late start of our academic year.

I am aware that many alumni are very concerned about the situation on campus. One of the cornerstones of UCT's approach has been to be proactive in addressing the various issues that have been raised. We are moving ahead with a number of different initiatives, and there have been a number of interesting engagements and discussions on free fee education, decolonise curriculum and the culture on campus.

The Faculty is in the process of developing a new faculty strategic plan for 2017 to 2020. We have agreed that the core of our strategy is to forge a new and inclusive EBE, one in which students and staff feel that they have ownership and to which they belong. We will continue to have a zero-tolerance approach to any form of unfair discrimination and harassment. Staff and

students in each department have developed a plan for the year which will ensure that we remain proactive in our engagements.

Many of you may remember the Glass House on the third level of Menzies Building. (This was where the infamous EBE student council "smokers" used to be held). This area, together with the foyer area and the balcony above, are all being renovated. We are developing a more modern Student Hub which will create an improved environment and much-needed learning spaces for students.

In April, I met up with some alumni in New York, and I was delighted to get support for our Growing the Future Generation of Academics campaign. In August, I will be in Canada where I will be a key note speaker at the Conference of Metallurgists in Vancouver. I look forward to meeting with alumni during my visit.

There are some exciting new CPD courses happening in the second half of the year. The Faculty has partnered with GetSmarter and is offering an [online course](#) on Property Development and



Investment, which has been extremely successful so far. We expected 30 registrations and ended up with 120. We will be developing other online courses, so watch this space.

Our alumni officer, Mandisa Ralane's, five-year contract has come to an end and she will be leaving us at the end of June. We are very thankful for the role she has played in connecting us with our alumni and wish her all the best for the future.

Should you wish to get in touch with the Faculty – please contact [Mary Hilton](#).

**Professor Alison Lewis**

*Dean: Faculty of Engineering & the Built Environment.*

## Continuing Professional Development

The CPD unit at the University of Cape Town is accredited to run courses that will be acknowledged for obtaining CPD credits. Visit the [CPD website](#) for more information or call Sandra Jemaar on 021 650 5793.

## Engineering honour for O'Connor

Emeritus Professor Cyril O'Connor of the Centre for Minerals Research, Department of Chemical Engineering, has been elected a Foreign Member of the US National Academy of Engineering (NAE).

The election recognises O'Connor's "distinguished contributions" to engineering, particularly to the sustainable recovery of minerals from complex ores and for the global advancement of mineral processing technology. The NAE Class of 2017 will be inducted at the academy's annual meeting in Washington in October.

O'Connor said that he was both honoured and humbled by the election.

"I am also greatly indebted to many colleagues at UCT who have contributed in many different ways to this recognition. I wish to share this honour with them since this election also recognises the outstanding research carried out over many years in the Centre for Minerals Research."



**Professor Pilate Moyo has been appointed as the new Head of the Department of Civil Engineering for a five-year period commencing 1 January 2018. Professor Neil Armitage's term will end on 31 December 2017.**

## 2017 Young Global Leader

Billy Mawasha, a 1999 UCT electrical engineering graduate, was selected as a 2017 Young Global Leader of the World Economic Forum. The Forum of Young Global Leaders is a community of over 800 enterprising, socially-minded men and women selected under the age of 40, who operate as a force for good to overcome barriers that elsewhere stand in the way of progress. The community is made up of leaders from all walks of life, from every region of the world, and from every stakeholder group in society.

Since graduating, Billy's working experience has included working for the De Beers Group, AngloGold Ashanti and Anglo American (Kumba Iron Ore) where he is presently the Executive



Head for Operations and Integration.

Billy is passionate about education and the development of others. In 2016, he was named in the South African Financial Mail Little Black Book as one of the country's top black leaders who want to lead South Africa to greater things. He is a member of the Wits

Mining School Industry Advisory council and sits on the Sol Plaatje University Finance and Investment Committee. He serves on the Board of Symphonia for SA, a national NPO who have a bold and audacious vision to ensure quality education for all children in South Africa.

Billy said, "Being selected as a YGL has been a humbling honour and privilege. I am grateful for the opportunity to work with the World Economic Forum, other YGLs and role players to continue to make an impact in the world. What I hope to achieve the most is collaboration on projects that make an impact."

## Living his dream

During his years at university Kgowane Kkokolo always felt like there was something great that he needed to accomplish.

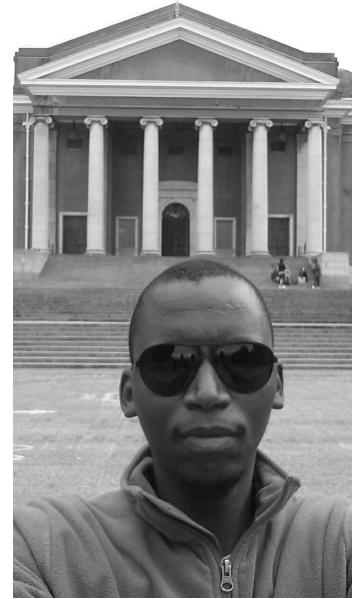
Kgowane graduated in 2011 with a BSc in Chemical Engineering from UCT and joined Nestle. One morning he woke up with an idea of being able to remotely control his car by using his computer and his cell phone. At that moment, he decided to build Nuron Tech. He had a burning desire to bring his dream alive and he is still working on it.

Founded in 2014, Nuron Tech (Pty) Ltd specialised in simple automation to provide custom made technology solutions for its clients. "We are proud to have one of the leading FMCG firms in the world, Nestle, on our side," said Kgowane. "Nestle gave us the platform to trial and test the forklift safety system." The system was designed to halt the forklift whenever it comes into contact with structures.

The aim was to reduce structural damages caused by forklifts by ensuring the forklift does not move after impact so that an investigation can be carried out. The system is currently being improved to ensure forklift stops before impact. Kgowane added that the demand from their clients to include similar services grew and today they are proud to say with the help of their dedicated team they provide web/mobile applications solutions, simple automation solutions, delivery solutions for small to medium businesses, and cleaning materials.

### Using technology to solve problems in our communities

"Nuron Tech has begun a tremendous journey of using technology to solve problems in our communities. The idea here is not to only focus on big corporates but to come up with



concepts and technologies that can help every man on the street to be able to contribute towards building a better economy for our country," says Kgowane.

In 2017, Kgowane has started a local online marketplace, designed for small to medium enterprises. You can visit the [website](#) for more information.

## World first in waste-water treatment

**The first full-scale working unit for eutectic freeze crystallisation treatment of waste water will soon be operational at the Tweefontein colliery in Mpumalanga.**

From a distance it does not look that complicated. The unit, purchased by Glencore, built and designed by Prentec, and based on research done by staff and students at UCT's Faculty of Engineering & the Built Environment, is composed primarily of steel scaffolding and several three-storey metal tanks. While it may look unassuming, this is the culmination of many years of research and experimentation. When the unit starts operating, it will

transform briny waste water into clean water and valuable salts.

### What is eutectic freeze crystallisation?

The story begins in 2000 when the Department of Chemical Engineering at UCT first started research into industrial crystallisation. In 2006 Professor Alison Lewis became one of the founding members of the Crystallisation and Precipitation Research Unit (CPU).

"A briny solution is cooled to its eutectic temperature, which causes the water in the mixture to crystallise as ice, which floats, and the salts to crystallise out as solids, which sink," says Lewis.



*Prof Alison Lewis and Jemitias Chivavava with postgraduate students Genevieve Harding, Senzo Mgabhi, Benita Aspeling and Cledwyn Mangunda.*

She explains that two major problems facing South Africa are the declining availability of sufficient quantities of water and the deterioration of the quality of the available water. (cont.Pg4)

“With the increasing use of water recycling, the result has been an increased generation of inorganic brines and concentrates. ... With EFC, pure water and pure individual salts can be recovered, thereby making a significant leap towards achieving zero effluent discharge.”

### From theory to reality

Two years later, in 2008, chemical engineer Peter Gunther was part of an Anglo American team working with Coaltech to find new ways to treat the large amount of waste water produced as a byproduct of coal mining.

“The most prevalent method then, as now, is the use of evaporation ponds. These require a huge amount of land and each one costs upwards of R100 million to construct. The life span for such ponds is only about five years and the risk of leaks into the surrounding soil is a danger.”

When Gunther heard about the UCT research into EFC he recognised the potential applications immediately, in particular for the mining sector. The Water Research Commission had provided R500 000 to fund further research and work at UCT was intensifying – with promising results.

Gunther set about turning these scientific advances into reality. Several years later, now working as managing director for water treatment company Prentec, Gunther played a leading role in the construction of the eMalahleni Water Reclamation Plant – the first mine water desalination plant in South Africa to transform 30 ML of mine water into drinking water every day. The project was recognised by the United Nations Framework Convention on Climate Change (UNFCCC) in 2011 as one of the Lighthouse Projects in their Momentum for Change awards at COP17.

Following on from the success of the eMalahleni project, Gunther set his sights on constructing a full-scale EFC plant as soon as possible.

### Why does EFC matter?

The value of the EFC process is fourfold.

Firstly, it results in zero waste since all components of the process are recycled.

Secondly, it avoids the extensive land use and possible environmental dangers of evaporation ponds. Thirdly, the process itself is not as energy intensive as other methods, such as heat evaporation.

“The heat of fusion of ice is six times less than the heat of evaporation of water. The energy required to separate the water as ice is significantly less than that required to separate it by evaporation, although obviously the energy for freezing will be more expensive than that for heating,” says Lewis.

Fourthly, the applications for such technology are vast and encompass a wide range of human activity from agriculture to mining. In South Africa EFC technology could be useful in the mining industry and for treating paper, pulp and textile wastes. There is also the possibility of it being used to treat the brines that are produced when drinking water is provided through the desalination of seawater.

Adrian Viljoen, technical advisor at Prentec, says that the company also sees applications far beyond the treatment of brines.

“Many crystallisation applications typically undertaken with evaporative crystallisation will in future be carried out using freeze crystallisation. This is because of its low capital cost, energy efficiency and ease of operation. Examples would be for sodium sulphate recovery in minerals processing, metallurgy and papermaking. Heat sensitive crystallisation could also be used in the pharmaceutical business, and in salt production.”

### The role of students

Before work could begin on a full-scale EFC plant, every stage of the process had to be developed and evaluated. It was at this juncture that the work of UCT chemical engineering students came to the fore. Over the past decade almost 40% of the CPU postgraduate cohort have explored aspects of EFC in their theses.

Today Jemitas Chivavava is the chief scientific officer for the Crystallisation and Precipitation Research group but his interest in EFC started years ago when he chose to make EFC the subject of his

MSc studies. He says that the postgraduates conduct research aimed at developing and ironing out kinks in the EFC process and present their work to various audiences at local, regional and international forums.

“Also, our chemical engineering undergraduates are afforded an opportunity to conduct experimental work on our laboratory scale EFC facilities and some attend the crystallisation and precipitation course where they learn about the underlying fundamentals.”

At present the team behind the research plays the role of expert advisers, rather than seeking to apply any intellectual property rights to their discoveries.

“We have approached this from a knowledge and human capacity development perspective with a view to producing personnel who are well versed with this technology,” he explains.

### A zero waste future

When the EFC plant starts operating at Tweefontein it will be the tangible result of model partnership between an academic institution and the private sector. Not only will the EFC plant produce valuable salts as a byproduct of waste-water treatment but it will also produce 500 000 litres of potable water each day. At the current suggested consumption rates in Cape Town, this amounts to the water allowance for 5 000 people.

“At Prentec we believe that in time EFC will become a mainstream process recovering valuable materials through the deconstruction of waste products,” says Gunther.

“I believe that cutting edge technologies like EFC have a great future,” says Lewis.

“We need these kinds of innovative processes that offer multiple benefits, including eliminating waste ponds, the ability to treat hypersaline brines, the advantages of water recovery, salt recovery and potential revenue generation. One of the biggest drawbacks of desalination as a solution for Cape Town’s water crisis is what to do with the hypersaline brines that will be produced. EFC offers a potential solution.”

## Professor George Ekama

The winners of the NSTF-South32 awards were announced at a gala event on 29 June. The awards are made in various categories for outstanding contributions to science, engineering and technology. It is an honour to be nominated and an outstanding achievement to reach the finals so congratulations to Professor George Ekama, Professor Harro von Blottnitz and Professor Genevieve Langdon who were finalists.

On the evening, Prof Ekama was the winner of the NSTF-GreenMatter Award. He had been nominated in three categories - Contribution over a Lifetime (15 years or more), Water Research Commission Awards, and NSTF-GreenMatter Award.

He received the award for the work he had done in developing plant-wide wastewater treatment models that are widely used as municipal and industrial water and resource recovery facility design and operation tools. His research has helped fight eutrophication (the excessive growth of algae in rivers and dams) by transforming biological nitrogen and removing phosphorus in sewage treatment plants. He developed a reliable technology based on bioprocess engineering principles. This has been adopted into the International Water Association Activated Sludge Models No 1 and 2. These models have extended to a plant-wide changing of wastewater treatment, from an 'end-of-pipe' problem to a water and resource recovery system. The models are widely used globally as municipal and industrial wastewater design and operation tools. He is presently



searching for alternative green approaches to urban waterborne sanitation for a water- and resource-scarce urban future.

In May, Prof Ekama received the Palermo University Prize at the International Water Association's Frontier International Conference on Wastewater Treatment which was held in Palermo, Italy.

The award is in recognition of a long-standing collaboration that Prof Ekama has with Palermo University. It started in 2003 when Valentina Parco, a PhD student at the University of Palermo worked with Ekama in the UCT wastewater lab. She worked for three years and did much of the experimental work (together with some Master's students) for a Water Research Commission funded project. She did exceptionally well, graduated from University of Palermo in 2007 and published several journal papers.

The collaboration currently includes a large greenhouse gas N<sub>2</sub>O emissions from biological nutrient removal activated sludge systems research project. These experiments were run in Palermo, and Ekama assisted them and their postgraduate students to evaluate the pilot plant data. This work is now beginning to appear in journals.

While Prof Ekama was the one ultimately receiving the award, he said, "The importance of team work and the support of multiple organisations make this work a reality."

Prof Ekama will be giving a seminar on his work on Friday 20 October at 14h00 in the Chemical Engineering seminar room. The event is hosted by the Centre for Bioprocess Engineering Research and the Future Water Institute.

## LeadSA Hero

Lead SA is a personal call to every person to make a difference. The LeadSA heroes are people who are making our country a better place. A final-year civil engineering student, Athenkosi Nzala was chosen as a LeadSA hero for the month of June.

Athenkosi is a remarkable young man who is passionate about uplifting young people and giving them the guidance and mentorship they need to help them succeed in life. He joined UCT in 2012, and over the years he has committed himself to his studies and has done well academically.

From his second year, he has been a mentor to first-year students in the residences and the civil engineering department. In 2014, he was a member of the EBE student council. He has been an orientation leader, 100 UP schools mentor, an active



member of Engineers without Borders, Green Campus Initiative, and Ultimate Frisbee UCT. He was part of the interim 2017 UCT SRC student council.

As if this was not enough, he has recently founded a career development and mentorship organisation called Afrika-Can. This provides a creative tutoring and mentorship programmes to fuel the passion for academic and social success through encouraging and

inspiring high school learners to learn and think about how they learn.

He is also a member of Inspire Foundation Group Africa where he is head of personal development ensuring the mentorship and academic development of students from Grade 10 to 12 at Bisho High School. He is a volunteer for Call-2-Care that builds and maintains vegetable garden beds for disadvantaged schools.

Khulekani Keswa, a fellow student, said, "Athenkosi Nzala is an inspiration to many people who have met him and myself. He has worked tirelessly to make the society he in lives better and has engaged in various projects and leadership positions aimed at uplifting the community. He has made an outstanding contribution to society and has a strong commitment to civic engagement."

## Queen's young leader award

Aditi Lachman, a master's civil engineering student, has received a Queen's Young Leader Award. She is one of three people from South Africa who received the award. The award recognises and celebrates exceptional people aged 18 to 29 from across the Commonwealth, who are taking the lead in their communities and using their skills to transform lives. Aditi is the managing director of WomEng (Women in Engineering), a social enterprise working to close the skills and gender gap in engineering by ensuring girls and women have the necessary skills, support and access to networks.

Having started off as a mentor for the organisation, she now leads its operations in South Africa and Kenya. WomEng has reached more than 10,000 girls and women via its GirlEng and Fellowship programmes, which support high school girls and university engineering students. In 2016, in celebration of the organisation's 10th anniversary, Aditi and her team launched the #1MillionGirlsInSTEM campaign. They now aim to reach a million girls through STEM (Science, Technology,



Engineering and Mathematics) education and awareness initiatives in at least ten different countries over the next ten years.

## EBE Entrepreneurs making a difference

EBE students are coming up with creative and innovative ideas to make a difference in people's lives through social entrepreneurship. "I encourage our alumni to support these young entrepreneurs. They represent the energy and innovation that we would like to foster and celebrate in our faculty," said Professor Alison Lewis, dean of the Faculty of Engineering & the Built Environment.



Ntsako Mgiba, a final year mechatronics student is the CEO at Jonga, a tech start-up and social enterprise that provides a low-cost security system to lower-income families. Ntsako, together with Kabir Prema, a third-year electro-mechanical student, and Ntandoyenkosi Shezi, a final-year business science student, were part of the 2015 20 week Upstarts programme for aspiring social entrepreneurs at UCT. Mgiba said, "I have always been aware of my surroundings and pick on things that could be improved. This is why I decided to go into engineering. I want to equip myself with the necessary tools to identify and solve problems. I love being an entrepreneur and I plan on cultivating the entrepreneurial spirit in me."

After not being able to find a healthy snack on campus, Nyasha Mawungwe, a third-year chemical engineering student, created his own healthy snack called Why Nut. He started in January 2017, and by May, four food outlets on campus are stocking his product. Mawungwe pulled in his fellow engineering student and close friend, Maxwell Kahuma to help him with the logo and packaging. His love for chemistry and maths led to him choosing to study chemical engineering. "I also want to be involved in the renewable energy sector, and looking at all the engineering degrees, I thought chemical engineering would equip me the most to advance the use of sustainable energy in southern Africa," he explains.



Mihlali Dilima (final-year chemical engineering student), Thandeka Chehore and Cassandra da Cruz (third-year civil

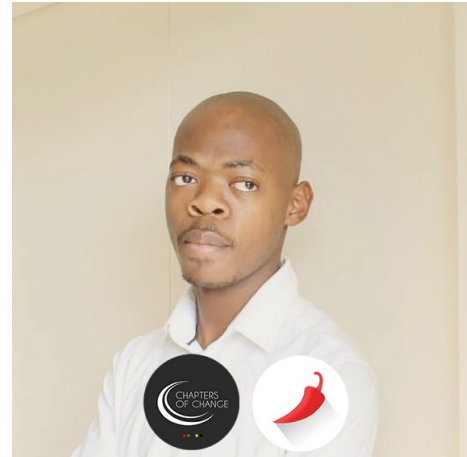
engineering students) met each other at the 2016 UCT Upstart, the university's annual social innovation challenge, which seeks to kickstart a new generation of entrepreneurs. Their idea started with da Cruz selling pregnancy tests on campus. She said there was still a stigma around young women buying pregnancy tests, which she wanted to avoid by providing a service where she personally delivered them. When she met Dilima and Chehore, they decided to expand the scope of da Cruz's initial idea and include tampons and sanitary pads. By not marking up their goods, they are able to sell them at two-thirds of the price found at stores. They have bought and refurbished two old gumball machines which are now ATM—automatic tampon machines and are in the ladies' toilets on upper campus.

## EBE Entrepreneurs making a difference



Team StartSmart – comprising Dominic Schorr, Ntsako Mgiba, Nikhil Mohanlal, Do Yeou Ku, Jaydon Farao (all electrical engineering students) and Jasanth Moodley (a mechanical engineering student) – scooped the R12 000 prize and took the title of 2017 Flux champions, an entrepreneurship business game where teams of students are given real-world problems that they need to address and for which they need to present a solution.

The students had to prepare a profitable business idea, using technology, that would change the way education works in South Africa. StartSmart's idea was a free mobile platform that helps students grow throughout their academic careers by providing relevant academic resources as well as daily quizzes and educational games. The platform will also develop non-academic skills by offering career guidance and resources during job and university applications.



University text books are a great expense and many students find that they can no longer afford them. With this in mind, Wisani Shilumani, a final-year mechanical engineering student, founded Chapters of Change, an organisation that aims to provide free textbooks to students who cannot afford them. He is also the co-founder and director of Jalapeno Digital, a digital marketing agency that focuses on web and app development. His passion for technology was sparked at an early age playing computer emulated arcade games. He says it revealed worlds of immeasurable possibilities to him. "Our engineering minds are like unswung pendula. We have useful knowledge in our minds that can be used to better the lives of people." He added that that running the organisation has made him realise the importance of working with people and asking for help. "If you want to go fast, go alone; if you want to go far, go together. The future of our continent lies in working together."

## #LearnActImpact

Coursera is an education focussed technology company that offers online courses from around the world. The company was founded in 2012 by two Stanford professors. Princeton, Stanford, University of Michigan and the University of Pennsylvania were amongst the first universities to offer content on the platform.

This year Coursera has launched a campaign featuring Education for Social

Impact content that connects learners with high-quality, social conscious learning experiences that equip them with the skills they need to be drivers of social change.

An Energy Research Centre online course, [Climate Change Mitigation in Developing Countries](#), and a GSB course *Becoming a Changemaker: Introduction to Social Innovation* were selected as two courses from UCT to be offered as

part of the Social Impact campaign.

UCT offers a number of Massive Open Online Courses (MOOCs). These are free online courses with no entry requirements and are not for university credit. You can choose to purchase a certificate, and in some cases financial aid is available. You find a course and find out more on the [UCT MOOCs project](#) website.



## Nurturing young academics

Dr Malebogo Ngoepe joined the Department of Mechanical Engineering as a lecturer in August 2015. She graduated from UCT with a BSc in Mechanical Engineering in 2009, and in 2014, went on to complete her PhD in biofluid mechanics at the University of Oxford.

In 2016, Dr Ngoepe was one of five candidates who were selected from a pool of 248 candidates across the African continent to receive the 2016 Iso Lomso Fellowship for early-career African researchers.

Iso Lomso, meaning “the Eye of Tomorrow” in isiXhosa, is a new Stellenbosch Institute for Advanced Study (STIAS) fellowship and early-career support programme that will boost the careers of some of the brightest minds in African academia. The programme was inspired by the Pro Futura Scientia programme developed by the Swedish Collegium for Advanced Study and is currently funded through an STIAS grant from the Swedish Riksbankens Jubileumsfond.

In addition to spending up to three



periods of residency at the STIAS Wallenberg Research Centre in Stellenbosch between 2017 and 2019 to pursue their research projects, Iso Lomso fellows may also receive funding to attend international conferences, convene workshops, and visit sister institutes for advanced study in North America, Europe or elsewhere. The candidates represent a broad range of disciplines including public health, philosophy, English literature and engineering.

Dr Ngoepe’s project will seek to develop a thrombosis model which can be applied in both cerebral aneurysms and abdominal aortic

aneurysms. She intends to partner with collaborators at the KTH Royal Institute of Technology in Sweden.

With these awards, STIAS aims to fill the gap that often exists for African academics between completion of a PhD and becoming an established scholar. While in residence, Iso Lomso fellows will find themselves in the company of leading researchers from around the world and from different disciplines. Informal research guidance and networking with other fellows form an integral part of life at STIAS.

Director Hendrik Geyer reiterated this, saying “STIAS recognises that for many younger academics the pressures of teaching, administration and contracted work mean they receive little encouragement and incentive to develop their research strengths. In line with the vision of Iso Lomso, STIAS’s goal is to provide sustained research support to these young academics, thereby contributing to a future generation of scholars and scientists.”

## Visiting engineer programme



Motlatsi Mabaso, a 2007 chemical engineering graduate, was the second alumnus to be part of the Chemical

Engineering Department’s Visiting Engineer Programme which brings in experienced engineers to provide technical input (in their areas of expertise) to undergraduate courses; and to speak to students about their experiences in the workplace.

As a Safety and Risk Consultant, Motlatsi gave lectures to students on topics directly linked to their current project-work: pressure relief and venting, fault-tree and bow-tie analysis, and Risk Assessment and Management, respectively.

After his high-intensity engagement with the students in the lecture theatres,

Motlatsi also gave a lunchtime seminar entitled “Your Chemical Engineering career – it’s a long journey – enjoy the scenery”. In exploring his own journey, he highlighted the importance of looking for learning experiences in every situation, developing relationships in the professional space, and taking into account the social aspects of your work (paying particular attention to the social impacts) when making business-decisions.

His message to the students was to make the most of opportunities, network and develop relationships, and in your work, create a better space for everyone.

## EBE students fighting fires

Over the 2016/2017 hot and dry summer season an amazing group of seven EBE students were kept very busy fighting wildfires as members of the Volunteer Wildfire Services (VWS). Cape Town experienced devastating fires, and it was reported that on one day alone, there were 106 different fires that firefighters were fighting. The dry, windy conditions in the Cape and made their job extremely difficult.

Chris Knutsen has just finished his second season as an active member of VWS and said he was inspired by the brave men and women who put their lives on the line to save not only people's homes but also the beautiful landscape. Chris has spent over 100 hours on the fire line. "Being on the fire line can only be described as an incredible and breath-taking experience," he said. "Although it can be tough fighting fire in the blazing sun or working on harsh terrain, at the end of the day it is so rewarding knowing that you have played a part in putting the fire out."

VWS has approximately 220 members at four stations (Newlands, Jonkershoek, South Peninsula and the newly developing Grabouw Station). It is fully run and managed by the volunteers. They have assisted the Table Mountain National Park, CapeNature, Overberg District Municipality and Winelands District Municipality with some of the wildest fires Cape Town and the Western Cape have experienced.

Ryan Hudson, a fourth-year mechanical engineering student, joined VWS in 2016. He said, "I am a keen hiker, very fond of the mountains, and thus have a vested interest in helping keep the Cape Biome to a health fire cycle." The training season is outside the fire season from April/May to November.



**Back row (left to right)** Jason Arnold (4th year Electrical Mechanical- Active member since 2015), Nathanael Boule (4th Mechanical Engineering- Active member since 2016), Anja Mühr (3rd Year Electrical and Computer Engineering -Active member since 2015), David Le Roux – (Graduated Civil Engineering 2016 Active member since 2013)

**Bottom row (left to right)** Christopher Knutsen (4th year Mechanical Engineering - Active member since 2015), Ryan Hudson (4th year Mechanical Engineering -Active member since 2016), Alex Brock (3rd year Chemical Engineering -Active member since 2014)

Ryan has responded to ten fires during this season.

Hudson says that fighting fires is intense. "You are usually constantly in a state of exhaustion, drenched in your own sweat if not soaked from helicopter water drops, unable to breathe properly from the choking smoke that surrounds you, trying to replenish your bodily fluids under a baking hot sun on top of a mountain, facing searing heat from both the flames in front of you and the ground under your feet. There's also a human instinct that resists you walking toward huge flames. However, it is certainly a thrilling experience."

Anja Mühr, third year electrical and computer engineering student said, "The biggest fire I ever went to had flames that were at least double my

height, and my crew of seven people were the only ones on the ground on top of this cliff fighting this blaze. We did have helicopter support, but it's still very intimidating. There's so much smoke everywhere, so breathing isn't much fun, and you get extremely hot, both from the flames, the midday summer sun and from the protective gear we have to wear. But I love it."

"There is a place for everyone whether it be fighting fire, driving crews to and from the fire or helping the planning office," Knutsen added. "I would like to encourage anyone who is keen to join the Volunteer Wildfire Services. "

We take our hats off to these young people who volunteer their time to keep us safe and protect our precious landscape

# Reunion Update

Minerals to Metals 10<sup>th</sup> Year Anniversary

16 – 18 November 2017



The Minerals to Metals initiative is delighted to celebrate our 10th year anniversary of operation in 2017.

We are planning a number of events to mark the occasion and hope all previous and current participants of the programme can join us.

- Formal Dinner : Thursday evening 16th November
- Research Showcase: Friday 17th November
- ESDA Workshop : Saturday 18th November

Please diarise these dates and kindly let us know if you are interested in attending and details will follow.

For enquiries please email [Dee Bradshaw](#)

## Give to EBE

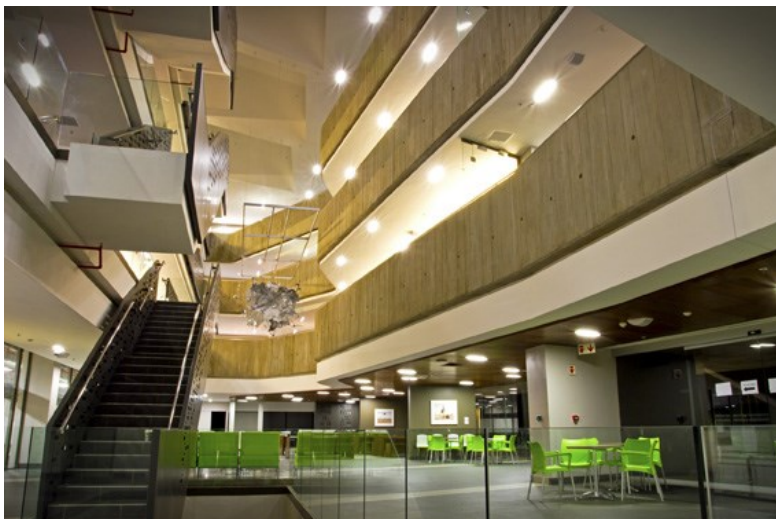
There are many ways alumni can support EBE.

Alumni donations are enabling us to assist students who have urgent financial needs. Your gift of any size, has an impact on the life of a student.

### Student in Distress Fund

Gift to the faculty to advance our strategic academic programme.

Volunteer your services to the Faculty



**New  
Engineering  
Building  
Foyer**

