Faculty of

Engineering & the Built Environment

ALUMNI UPDATE

July 2015

CONTENTS

Message from the Dean

I am delighted to write to you as the new Dean of the Faculty. I have been in office for a month and have spent my time listening, learning and collecting data about the Faculty. I am pleased to hear how many of our alumni play an important role in the Faculty, and I look forward to engaging with them, and building new relationships.

The first half of 2015 has certainly been an interesting time for us all at the University of Cape Town. It has given us an opportunity to look at what we are doing in the Faculty. On Thursday 30 July we are holding a Special Faculty Assembly to give staff and students the opportunity to raise issues of concern around transformation, as well as proposed solutions.

I am in the process of setting up a new Faculty Advisory Board. It is critical to the Faculty that we have input and guidance from our industrial partners on issues such as curriculum revision, the industry needs, funding, and research opportunities. We are busy preparing for our five-yearly ECSA accreditation visit, which will be taking place in September 2015.

We remain focussed on our academic development programme, and I am pleased to see that there has been some progress in improving our through-put rate. The programme provides much more than academic support. Interventions are done to support students' personal development and provide support for their journey through university. All these initiatives point to a strong commitment at all levels in the Faculty to improving the overall quality of teaching and learning in EBE, in order to increase the number and quality of engineering and built environment graduates.

As a Faculty we have much to be proud of. Our staff, students and graduates continue to excel as you will see in the newsletter.

I look forward to engaging with our alumni. You are welcome to contact me at Dean.EBE@uct.ac.za.

Kind Regards
Professor Alison Lewis
Dean

New Courtyard area of Centlivres Building

Innovation Awards

Staff and students in the Faculty of Engineering & the Built Environment have received numerous awards for their work.

Dr George Vicatos and his MSc student Severin Tenim won the *Popular Mechanics* Inventor of the Year award in the 'Cutting Edge' category for their mechanical prosthetic hand. The artificial hand is low-cost, and provides greater functionality than alternatives in the category.

Lumkani -- the fire detector designed for use in homes in informal settlements, to alert residents to fires -- continues to win awards, locally and internationally. The project was the brainchild of senior lecturer Samuel Ginsberg from the Department of Electrical Engineering, and was developed as Francois Petousis's electrical engineering student project. Some of the awards are:

* Best start-up in the Global Innovation through Science & Technology sector
* Best student business idea - Western Cape Premier's entrepreneurship Recognition Awards
* Finalist in Chivas Regal 'The Venture' - social enterprise competition
* Award in Comfortable Home category for Better Living Challenge 2014
* Shuttleworth Foundation Flash Grant

A/Professor Arnaud Malan from Mechanical Engineering received the NSTF-BHP Billiton Award 2014 for an individual or a team for an outstanding contribution to SETI through research leading to innovation: in a corporate organisation or institution. The award was for 'Elemental' - a computational fluid dynamics software, developed by Prof Malan. It provides unprecedented insight during product design and has already been used in the design of aircraft for Airbus.

Developing Young African Leaders

Bakang Palai, a 2007 UCT Property Studies graduate, has been selected for the 2015 Mandela Washington Fellowship for Young African Leaders. This programme forms part of the President's Young African Leaders Initiative, and embodies President Obama's commitment to invest in the future of Africa.

Palai will be one of 13 Fellows from Botswana, selected for their proven record of accomplishment in leading and promoting positive change in their work as well as in their communities. They will be joining 500 leaders from across Africa.

In June, Bakang will join the University of Reno in Nevada for a six-week academic residency which will include leadership seminars, mentoring and networking sessions, as well as community service opportunities. After the academic component, the Fellows will travel to Washington DC for a presidential summit to interact with senior US government, business, and civic leaders, including Barack Obama.

"The continent is going through a great transformation. As leaders, there is a need to address critical challenges, which include employment for the youth, poverty alleviation and wealth creation. We need to come up with strategies and programmes that will provide the best quality of life, to promote good governance and to fight corruption and other ills in our countries," Mr Palai said.

Bakang has over seven years' experience in Real Estate Developments and Investments. He is currently the Property Development and Investments Manager at Khumo Property Asset Managements. He is the co-founder of the Botswana Green Building Council and is currently serving as an independent grading assessor for the Botswana Tourism Organisation.

On his return, Bakang will be available to mentor students as well as give talks to the Faculty.

PhD at Oxford University

Andreas Elombo graduated from UCT in 2009 with a BScEng (First-class honours) in electrical engineering. During his time at UCT, he was on the Dean's Merit List in 2007 and 2008. He graduated cum laude in 2012 with an MSc(Eng) from the University of Stellenbosch and is currently doing his PhD at Oxford University. At Oxford, he was delighted to meet up with Dr Andrew Markham, who taught him Control Engineering at UCT and is now with the Computer Science Department at Oxford University. He was also thrilled to get the opportunity to meet Dr Ramphele, who was a keynote speaker at the Intercollegiate Model African Union Summit 2014, held at Oxford University.

Elombo's PhD focuses on developing an engineering methodology to be applied in deploying distributed renewable energy systems to enable access to basic electricity services for rural off-grid communities in the developing nations of Southern Africa. Elombo said, "It is unfortunate that more than half of the population in most African nations live in rural areas, where lack of access to electricity is a harsh reality. I believe that this massive proportion of the population deserves and can have access to electricity, especially if genuine human and economic development are to be realised." He added that the main challenge is to understand the complex issue of the major energy requirements of these communities, in order to devise an innovative technology that is effectively tailored to meet their electrical energy and power requirements.

It gives me a lot of pleasure and pride to be associated with UCT.

In June 2014, he conducted a survey in Namibia, to gain an in-depth understanding of the energy situation of rural communities. The survey yielded insightful findings. His work now proceeds to a more advanced stage, building on the work of the previous year.

Andreas at the matriculation ceremony, which constitutes the formal admission to Oxford University as a student.

Elombo wrote to share his appreciation of the role that UCT played in his life. "It gives me a lot of pleasure and pride to be associated with UCT," he said. Elombo is from Namibia, and was working for NamPower (Namibia's national power utility) when he was admitted to Oxford University.

Mouldless Manufacturing of Boats

Dr Chris von Klemperer from the Department of Mechanical Engineering has developed a 'mouldless manufacturing' technology that has particular application for boat hull manufacture, on-board housings, etc. The major advantage of the technology is the ability to create curved surfaces without the use of expensive moulds. The aim of this project was to create a prototype that would both demonstrate the technology and attract potential investors, and an international Moth Sail boat hull was selected for this purpose,

Extensive market research was done and it was found that there was great interest in the concept from the marine industry. A joint funding application with an industry partner was made to the new Marine Manufacturing Industry Innovation Fund.

Mabentsela returns to ChemEng

Arthur Mabentsela has come a full circle and returned to UCT as a lecturer in the Department of Chemical Engineering.

He graduated from UCT in 2010 with a BSc in Chemical Engineering (with honours). Mabentsela lived in Khayelitsha and attended COSAT school. He began his working career in 2011 with Anglo American Rustenburg as a graduate engineer, and was involved in commissioning work at their base metals refinery. In 2012, he moved to Anglo American's Platinum smelters, located in Northam, Limpopo, and worked on a furnace upgrade project.

In 2013, he joined Exxaro in Mayoko, in the Republic of Congo, where he worked in their new iron-ore washing plant and mine. Wanting to further his studies, Mabentsela resigned from Exxaro in 2014 to pursue a master's degree at the University of Stellenbosch. In January 2015 he joined UCT's Department of Chemical Engineering as a lecturer. He is hoping to do his PhD in the pyrometallurgy field. During his working career, Mabentsela has been involved in mentoring programmes and in training graduates on image management.

Mabentsela said, "I have always wanted to be a lecturer. I want to motivate the young, talented minds we have in this country, and instil in them the knowledge that will help better themselves and South Africa as a whole."

He added, "Being back in the Department of Chemical Engineering

is a fantastic opportunity to share ideas with the best chemical engineers in Africa, and in the world. At the same time, I think it is a key position to be in as I have the understanding both of what it means to be a young graduate in a company, and of what the industry requires. I can construct my courses to fill in some of the gaps that I experienced during my early working years."

Hidden talent in MechEng

Julian Mayer is the principal technical officer in the Department of Mechanical Engineering, where he has been for 36 years. What a lot of people don't know about Julian – is that in his spare time he plays bass guitar in a country-rock band, the Rocking Horse. In March this year, the band was travelled to Nairobi to headline the first country music festival in Kenya. They spent three days in Nairobi as guests of the concert management, and were accommodated, wined and dined in the finest fashion.

Second from left Julian Mayer playing the bass guitar for Rocking Horse

The show was well-organised and staged at a popular outdoor venue – the Ngong Road Racecourse. Entertainment was provided by several local bands, as well as musicians from neighbouring countries. Julian said, "One of the highlights was a goat race – one of the most entertaining things I've ever witnessed." He added, "Our band closed the show; and we were very well received by the audience, many of whom had dressed in appropriate 'Boots and Hats' style."

Although it was a long way to travel to deliver a performance, it was well worth the effort, and they are looking forward to playing at the next concert in Kenya. "The hospitality and friendliness of all the people we met - management staff, musicians and local folk - was wonderful," said Julian.

We remember

Emeritus Associate Professor Brian Paddon

Emeritus Associate Professor Brian Paddon passed away on 20 June 2015, having been an academic in the Department of Chemical Engineering from 1969 until his retirement in 1994.

Paddon was born in Calcutta, India, in 1932 and spent his early childhood in Amritsar, attending school in Darjeeling. During World War II he and his sister were sent to back to South Africa, and Paddon matriculated at St Andrew's College in Grahamstown in 1950. He went on to UCT, where he graduated with a degree in Applied and Industrial Chemistry (shortly thereafter to become Chemical Engineering). His first job was at Mobil refinery in Durban, where he was involved in the early development of Mobil's first fluidised catalytic cracking unit.

He returned to Cape Town in 1963, continuing to work with Mobil; and during that time, completed his MBA as one of the first graduates from UCT's Graduate School of Business. In 1969 Paddon left the corporate world for a position in the

Department of Chemical Engineering at UCT, joining other luminaries from the early days of Chemical Engineering such as the late Donald Carr and Heinrich Buhr. The Department in those days was small, with only a handful of lecturers, and graduating classes of between 10 and 20. However, Paddon and his colleagues created a wonderful foundation for what is today widely regarded as one of the leading Departments of Chemical Engineering globally.

The Department benefited greatly from having someone on its lecturing staff with such extensive industrial experience, and Paddon became renowned as the convener of the tough Design Course - the capping course to the Chemical Engineering degree. His knowledge of chemical engineering processes was legendary, and through this he made an enormously positive impact on generations of chemical engineering students. Paddon, ever cheerful and pleasant to all and sundry, was passionate about his teaching and will be fondly remembered by colleagues not only in Chemical Engineering, but in all the Engineering Departments at UCT. Staff and students will recall how wonderfully helpful he was to students struggling with the basics of chemical engineering, and to new young academics still finding their feet.

The University and Chemical Engineering in particular are deeply indebted to Paddon for his dedicated and passionate contributions to the Department over almost three decades, and he will long be remembered by all those with whom he came into contact.

Professor Alan Nurick

Professor Alan Nurick passed away in December 2014. He graduated from the Department of Mechanical Engineering at the University of Cape Town in 1963. He received a CA Parsons Travel Scholarship, and spent two and a half years as a graduate apprentice at Parsons' Heaton Works in Newcastle-upon-Tyne, and on power station construction sites. He returned to South Africa and spent time in industry, and then received his DSc (Meg) Ing degree from the University of Pretoria.

Nurick spent two years at the CSIR in the Aeronautics Research Unit as a senior chief research engineer, before joining the School of Mechanical Engineering at the University of the Witwatersrand. He was appointed the Jack Davison Professor of Aeronautical Engineering, a position he held for 13 years. He also served as Head of the School for four years and Assistant Dean Postgraduate Studies in the Faculty of Engineering for his last two years at the University. He was instrumental in getting Aeronautical Engineering raised to degree status from an option in

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Mechanical Engineering. He initiated the Composites Research Facility, as it was felt that the proper use of composites materials could make a significant contribution to the design of aeronautical structures. Nurick carried out research on helicopter-related topics, with emphasis on circulation controlled helicopter anti-torque systems. This resulted in a patent that was registered in six countries. On two occasions he was appointed president of the South African Institute of Aerospace Engineering.

On leaving Wits University he had a career diversion and obtained a diploma in fine art. This was followed by involvement in a number of private academic bodies as academic director. In 2006 he joined the Department of Mechanical Engineering Science of the University of Johannesburg, and was head of department from 2008 to 2011. He carried out research on solar energy with an emphasis on the ducting of solar illuminance, hybrid solar cells comprised of both photovoltaic and thermal cells, and air-flow windows.

In 1991 he received the South African Council for Professional Engineer's Merit Award for Outstanding Service to the Profession, and in 1994 the South African Institute of Aerospace Engineering's John Weston Gold Medal for dedicated service to the South African Aerospace Industry. Professor Gerald Nurick, Nuricks's brother, who is in the Department of Mechanical Engineering at UCT, said, "At the time, we were the only two brothers who were professors in mechanical engineering in South Africa."

2014 Young Engineer of the Year Award

Makotsene Makgalemele, a 2008 UCT civil engineering graduate, received the 2014 Young Engineer of the Year Award from Consulting Engineers South Africa (CESA). The judges looked for outstanding performance in areas including technical achievement on a project; educational achievement; recognition, such as awards received; contributions to sustainable development; leadership ability; and the candidate's contribution to the image of the firm and the industry as a whole.

Makotsene Makgalemele talking to first-year civil engineering students

In May 2015, Makgalemele visited the Department of Civil Engineering to talk to the first-year students about her experiences. While at studying UCT, Makgalemele was an active member of the EBE Student Council, SAWOMEng Committee and SAICE Student Chapter. She is currently an Associate Director and shareholder at HHO Africa Infrastructure Engineers, where she was a bursary student. She is a Senior Project Leader/Engineer in the Roads and Transportation Division of the Johannesburg Office.

Makgalemele is an active member of her firm and industry, having assisted in starting up the company's Young Professional Forum at HHO. She is also a member of the SAICE National Young Members Panel and CESA's YPF Exco. Makgalemele is a registered Candidate Engineer with ECSA and is determined to be registered as a professional this year.

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.

Spin-off companies

HyCat (Pty) Ltd

HyCat (Pty) Ltd, currently an entirely UCT-owned company, was formed as an IP holding company and commercial vehicle of UCT's current and future fuel-cell technology portfolio. These technologies flow from 'HySA Catalysis,' the national Centre of Competence for the DST's National Hydrogen and Fuel Cells Technologies flagship project, which aims to establish South Africa as one of the few countries around the world to export high-value products into the growing hydrogen and fuel cells market. The centre is hosted in the Department of Chemical Engineering.

HySA Catalysis appointed a new director to take the centre to market. Dr Sharon Blair has more than a decade of experience in high-technology start-ups in Canada and will drive the commercialisation of several innovative products and manufacturing processes developed by HySA Catalysis over the past five years.

HyCat's primary goal is to develop the fuel-cell supply chain in South Africa to offer technologically advanced products and components to a global market. This will be achieved through in-licensing IP from strategic global partners, to provide a platform onto which SA IP can be integrated to ensure that the ventures are immediately at the global forefront.

Fuel cells are one of the promising power sources for replacing internal combustion engines powered by fossil fuels. They are highly efficient, quiet, clean, and maintenance-free electricity generators that use hydrogen and air as fuel. They are of strategic importance to South Africa, as the activity will unlock value-addition for SA's platinum resources and create manufacturing jobs, a service industry and secondary businesses.

The initial focus at HyCat will be on establishing a catalyst and membrane electrode assembly supplier. The HyCat metal-based gas-diffusion electrode is cheaper and more durable than the commonly used carbon-fibre-based electrode, which also relies on a complicated manufacturing process. Two patent applications have been filed to date, with several others in preparation.

Several additional innovative developments are underway; including novel materials for electrolyte membranes, compact fuel-cell assembly structures, and novel gasket systems for metal-based electrodes. These technologies can make the fuel cells smaller, with increased power and durability. In addition to this, the fuel-cell design aims to remove certain sub-systems surrounding the fuel cell, resulting in system cost reduction, which is the most crucial issue for fuel-cell-related companies.

DroneSAR (Pty) Ltd

DroneSAR (Pty) Ltd was formed to commercialise 'know-how' in radar technology generated over a decade in the Department of Electrical Engineering. One of the first applications of radar to drones will focus on the requirements for applications such as precision agriculture. IP will be developed primarily as software, and a close relationship will be maintained with the department. UCT was granted equity in this spin-off company in recognition of the know-how generated within the university.

Representing Africa in Dublin

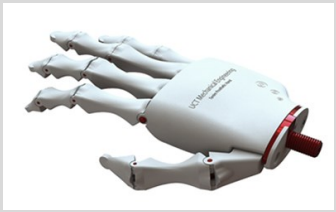
Daniel Avutia, a civil engineering graduate, won the National Institute of Materials, Minerals and Mining Young Persons' Lecture Competition for his lecture entitled: *Analytical study of sinkhole propagation in South Africa.* He will represent Africa at the World Championships in Dublin, Ireland in October 2015, where he will compete with the winners from the other five continents.

Avutia completed his BSc Civil Eng at UCT in 2010 and proceeded to do his Masters in Geotechnical under the supervision of Dr Denis Kalumba. He graduated in June 2014; the title of his thesis was *Analytical and numerical study of dolomite sinkholes in Centurion, South Africa.*

Avutia is presently a geotechnical engineer with SRK Consulting in Johannesburg. The SRK Consulting (SA) Chairman and corporate consultant, Roger Dixon, said, "Daniel epitomises the technical excellence for which SRK is renowned."

New Provisional Patents Filed

Mechanical Prosthetic Hand



Mechanical engineers, Dr George Vicatos and his MSc student Severin Tenim have developed a light-weight, mechanically operated hand that offers greater functionality than competitors in the low-cost market – ideal for the South African public sector.

Assessing the Condition of a Fuel Cell

Dr Paul Barendse and his PhD student Chris de Beer from the Department of Electrical Engineering have invented a low-cost, compact and scalable hardware platform that is able to determine the impedance spectrum far more rapidly than conventional impedance analysers (e.g. EIS). It has been shown to work under various fuel-cell fault conditions and can also determine the operational state of other of other electricity-producing cells.

Metal Gas Diffusion Layer for a Hydrogen Fuel Cell

HySA Catalysis Hydrogen South Africa

This is the second of a number of patents that will be filed concerning advanced fuel cell technology developed by HySA, DST's Hydrogen Fuel Cell Centre of Competence in Chemical Engineering. The UCT invention of Dr Shiro Tanka and Nabeel Hussain includes a microporous layer on a porous, metal gas-diffusion layer, which prevents water accumulation. The metal GDL improves the diffusion of gases to the catalyst layer - and the design allows for more uniform pressure application, resulting in improved overall performance of the cell. In addition, the higher thermal conductivity of the metal makes it possible to apply this to higher-temperature fuel cells.

Biotransformation of Linear Alkanes

CeBER CENTRE FOR BIOPROCESS ENGINEERING RESEARCH

Large stockpiles of linear hydrocarbons have arisen as by-products from the global expansion of gas-to-liquid refining processes. There is particular research focus on deriving valuable products from these linear alkanes, which feature some of the strongest chemical bonds in nature and typically are of a low value due to their inertness.

Femi Olaofe, Dr Carryn Fenner and Professor Sue Harrison from the Centre for Bioprocess Engineering in the Department of Chemical Engineering built on existing EnBase® technology on order to apply it to enhance enzymatics biotransformation processes for the production of valuable oxygenated chemicals, such as alcohols, ketones, aldehydes, hydroxyacids and dicarboxylic acids, from alkanes. They have found that in contrast to conventional processes, growing whole microorganisms can be used as the biocatalyst, leading to a significant increase in catalyst efficiency and activity.

Giving back to honour Prof McLaren

Mlamli Booi arrived at UCT in 1982, and he found life on campus quite a challenge. On top of this, his bursary had not been paid, which meant he had no money for stationery, books or transport. At registration, Prof McLaren, a professor in the Department of Electrical Engineering, noticed him— needless to say, in the 80s you could count black students on one hand, so that made him conspicuous. Because of the interest Mclaren showed, Booi found it easier to go to him and inform him of his financial situation. Prof McLaren made the decision to help Booi personally and gave him money to buy stationery and books,— and for his transport, as in those days, as a black student, he had to stay off campus.

Booi said, "I have never forgotten the kindness that Prof McLaren showed me. It remained in my heart that some day I would honour him by extending the same gesture of support as he did to me. It is for that reason that I am part of this project – the Prof McLaren Book Fund— to honour a man who took a stranger and supported him. During my third year, he lectured me in the electrical machines course. He was a great teacher who did not leave any student behind. May his family know that he was such a great man on campus." Anyone wishing to contribute to the fund may contact Mandisa.Zitha@uct.ac.za

Architecture outreach

During the June vacation our second-year architecture students, together with a few key staff members and members of the local community, helped to construct the sixth annual platform situated at Imizamo Yethu in Hout Bay. This year, an additional seating pavilion was constructed at the Hout Bay Sports Ground, to add to the first one that was built last year.

The design of the platform and its parts has been integrated into the course curriculum, and after designs had been developed and the necessary planning and community liaison had been completed, the project moved onto site. The students did earthworks, built formwork, tied and installed reinforcing, placed concrete, and finished the structure within quite a limited timeframe despite the winter weather. Initial reports from the community are that they are very happy with the additional pavilion, and there are potential plans to build a few more in due course.

40-year reunion for civil engineering

The civil engineering classes of 1972 to 1974 held a 40-year reunion in October 2014. The reunion was a resounding success, thanks to Mandisa Zitha and a dedicated reunion committee chaired by Terry Wallace (1974). Also on the committee were: Colin Hall (1973), Alastair Bishop (1973) and Peter Silbernagl (1972).

The reunion weekend began on the Friday evening at the newly opened Snape Building. Professor Neil Armitage, HOD of the Department of Civil Engineering, gave an informative presentation that gave the alumni insight into the expansive progress in the academic field of civil engineering since the 70s. Professor Armitage then took them on a tour to see some of their old lecture theatres, and the new labs in the New Engineering Building, before they gathered in the foyer for a cocktail event.

Saturday night proved to be a memorable dinner for alumni and their partners at Kelvin Grove. The invited keynote speaker and former lecturer, Professor Sparks, exhibited his vast knowledge of tales of the Spartans in their David and Goliath campaigns. The dinner gave the alumni more opportunities to catch up and resume old friendships.

Kirstenbosch's lush gardens were the 'surprise venue' for breakfast on Sunday, which was enjoyed by all. The alumni decided to contribute towards a bursary for a civil engineering student in need, and raised R15 500, which was greatly appreciated by the Faculty. The success of the 40th Civil Engineering Reunion has opened the door for a 50th anniversary reunion.

New cohort of leadership students

A dinner to inaugurate the 16 new scholars of the Klaus-Jürgen Bathe Leadership Programme was held at the Vineyard Hotel in Newlands on 19 February 2015. The event was hosted by the Programme Donor, Professor Klaus-Jürgen Bathe of Massachusetts, USA, and the Programme Director, Professor Alphose Zingoni of the Faculty of Engineering & the Built Environment at the University of Cape Town.

The Consul General of the US Consulate in Cape Town, Mr. Teddy Taylor, the Head of Cultural Affairs of the German Consulate in Cape Town, Ms Kirsten Buchhorn, UCT Deputy Vice-Chancellor, Professor Francis Petersen, and other invited guests, attended the dinner to welcome the first cohort of Bathe Leadership scholars. The evening also provided the opportunity to introduce the programme to the German and US governments, regarded, together with the South African government, as key partners for the future sustainability of the programme.

The Klaus-Jürgen Bathe Leadership Programme was formally launched in 2014 with the primary goal of producing graduates with outstanding leadership qualities and a strong sense of social justice, who will go on to play leading and significant roles in business, government, industry and civil society in South Africa and on the African continent. Full-cost scholarships will be provided to selected undergraduate students from across all faculties at UCT. Candidates must be academically outstanding, with demonstrated leadership potential and a strong commitment to serving South Africa and the African continent. Under the programme, scholars

will be nurtured towards becoming excellent leaders of tomorrow. They will be availed the opportunity to spend six weeks attached to an approved organisation in Germany, the USA or South Africa, learning the skills of good leadership through observation.

Nearly R20 million has already been committed to the programme, and the first phase will see 46 students graduating.

Professor Klaus Jürgen-Bathe has maintained strong ties with the University of Cape Town since graduating in 1967 from Civil Engineering. He has been sponsoring the Klaus-Jürgen Bathe undergraduate scholarships in the Faculty of Engineering & the Built Environment over the past 20 years.

More information on the programme can be found on the website.

Director: Green Economy

Dr Rethabile Melamu graduated with a BSc in Chemical Engineering in 2005, an MSc in 2008 and a PhD in 2014. Professor Harro Von Blottnitz was her supervisor. In 2014, Melamu was a Biofuels Project Manager for Green Cape, and in February 2015 she joined the Gauteng Provincial Government as Director: Green Economy.

Alumni bequest

Victor Glasstone graduated from UCT in about 1949, from the School of Architecture. He went on to become a world-renowned theatre architect and consultant. He was a prolific writer and photographer, and was published throughout the world over the course of 40 years.

In January 2013, at the age of 88, Victor passed away. In his will, he left the proceeds of the sale of an Irma Stern painting to the School of Architecture. In April 2014, the painting was sold for £140 100, which equated to R1.8 million. The money was bequeathed to enable a student to visit Italy annually, and on their return, to write a report on the experience. The School is busy drafting the regulations for the travel grant.

Harry Glasstone, Victor's nephew, who facilitated the transfer of the bequest, said, "Although he left South Africa in the 50s, he always held fond memories of UCT. He kept in contact with his UCT friends for many years."

Construction industry investing in research

The Concrete Materials & Structural Integrity Research Unit (CoMSIRU) is a research unit within the Department of Civil Engineering at the University of Cape Town and has been developing technologies and procedures for the design and assessment of concrete structures for more than 20 years. Within the unit, there has been a marked focus on infrastructure performance and renewal research in the last decade, largely in response to industry needs.

A Master's degree in Civil Infrastructure Management and Maintenance was introduced last year by Professor Pilate Moyo from CoMSIRU. "The degree will produce graduates with the necessary knowledge and skills to engage effectively in structural and materials engineering with respect to maintenance, rehabilitation and management of civil infrastructure," said Professor Moyo.

The Unit provides technical expertise to industry; and recently, construction industry companies have committed themselves to funding the Unit. Mr Enzo Menegaldo, MD of Haw & Inglis, graduated from UCT in 1983 with a BSc in Civil Engineering. The company's core focus is major national and provincial arterial roads and urban highways, and its expertise extends to urban infrastructure and select industrial, commercial, residential and sporting building projects. The group has strong vertical integration with in-house crushing and concrete work operations to support its roadwork activities.

Professors Pilate Moyo, Mark Alexander and A/Professor Hans Beushausen

"We needed to look at ways of retaining young graduates in the company. As career development is important to them, we will give them the opportunity to register for the MEng degree in CoMSIRU, which will take three to five years to complete. The research projects they will be working on will feed into the company, and Aveng Grinaker-LTA will fund their research work," said Mr Chris Botha, MD of Aveng Grinaker-LTA.

Chryso SA, a major supplier of concrete and cement admixtures in South Africa, have donated R90 000 towards laboratory equipment to assist with postgraduate studies and research to ensure that the products they supply, are suitable for today's climate."

Professor Mark Alexander, CoMSIRU Director, said, "I am delighted to see the industry investing in the Unit. We rely heavily on funding to ensure that we continue our research work, which is critical for the industry."

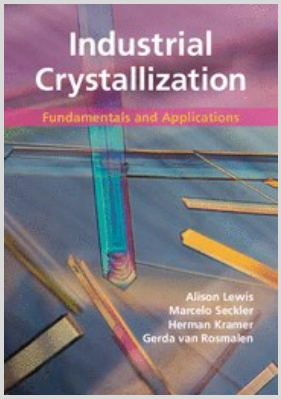
Professor Pilate Moyo will be the new director from January 2016.

New book by Professor Lewis

Professor Alison Lewis has co-authored a new book, *Industrial Crystallization: Fundamentals and Applications,* which bridges the gap between theory and practice, and provides the reader with a comprehensive overview of industrial crystallization.

Her co-authors are A/Professor Marcelo Seckler from the University of São Paulo, and A/Professor Herman Kramer and Professor Gerda van Rosmalen from the Delft University of Technology.

Newcomers will learn all of the most important topics in industrial crystallization, from key concepts and basic theory to industrial practices. Topics covered include the characterization of a crystalline product and the basic process design for crystallization, as well as batch crystallization, measurement techniques, and details on precipitation, melt crystallization and polymorphism. Each chapter begins with an introduction explaining the importance of the topic, and is supported by homework problems and worked examples. Real-world case studies are also provided, as well as new industry-relevant information, making this is an ideal resource for industry practitioners, students, and researchers in the fields of industrial crystallization, separation processes, particle synthesis, and particle technology.



The book was published in July 2015 and can be viewed at Cambridge University Press.

Dates to diarise

Western Cape Alumni Event

Date: 19 August 2015
Venue: New Engineering Building, UCT Upper Campus,
Time: 18h30

Gauteng Alumni Event

Date: 3 September 2015
Venue: TBA
Time: 18h30

Reunion Update

30-Year Reunion, Electrical Engineering, classes of 1984, '85 and '86

6-8 November 2015, Cape Town

Please contact Mandisa Zitha for the following reunions being planned.

- **30-Year Reunion, Civil Engineering – Classes of 1984, '85 and '86**
- **50-Year Reunion, Civil and Chemical – Classes of 1964, '65 and '66**

For further information, please contact: Mandisa Zitha – Mandisa.zitha@uct.ac.za or call +27 21 650 4334

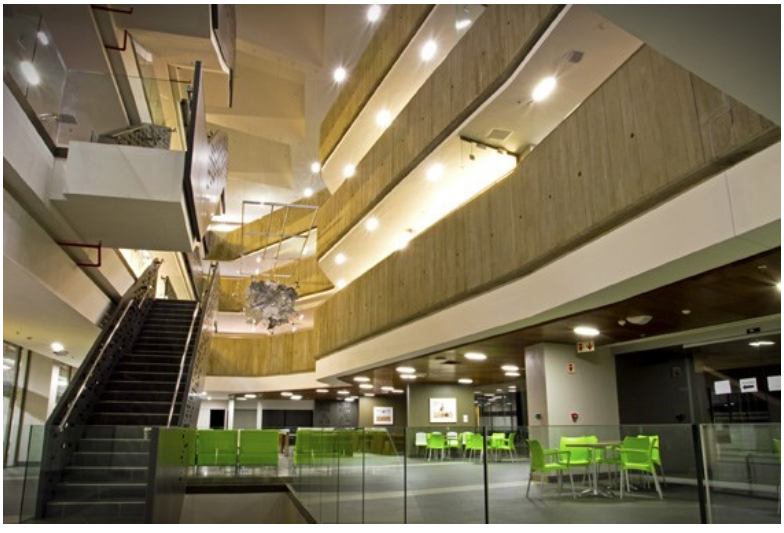
Message from the EBE Alumni Officer

It was a great pleasure to receive your congratulatory messages sent to Prof Alison Lewis on her appointment as the new Dean of EBE. This is an exciting time for the Faculty. In partnership with students, staff and alumni, we look forward to continuing to provide the best value and experience for our students, as well as maintaining the quality of our Engineering degree. We hope you will deepen your connection with the Faculty and support our efforts. Please send me an email should you wish to find out about the areas of need.

Our mentorship programme continues for another year, providing critical professional and personal development to our undergraduate students. The response from alumni has been overwhelming; however, we are in need of mentors from the Built Environment industries. We will be profiling alumni across our networks regularly. If you have suggestions for people to profile, or news to share, please let me know.

I appreciate your support for the Engineering & the Built Environment Faculty, and look forward to seeing you soon at our events and when you visit the Faculty.

Warm regards
Mandisa Zitha
EBE Alumni Officer



New Engineering Building Foyer