

Faculty Newsletter

Message from the Dean

Thank you very much to the academics who participated in the April graduation ceremonies. It was rewarding to see our graduates celebrate their success and share their achievements with their families and friends. It marks an end of a chapter for them, and we hope that they will stay in touch with us and become active alumni.

I am proud to see how each department participates in the annual open day event. Thank you to all the staff and students for being part of the day and interacting with all the visitors. I am grateful to you for giving up your precious time to promote the faculty to potential applicants and their parents. I would also like to thank all those who participated in the EBE Research Expo where 31 students presented their research from departments across the faculty. It is a great way to showcase our research during the celebrations of Africa month. Well done to the EBE postgraduate council who organised the event.

A reminder that Development Dialogues with PASS staff will be taking place in June. These are meaningful conversations and to make the most of the process, PASS staff should start preparing for the engagement with their

line managers.

Over the past couple of weeks, the Deanery (Deans and Deputy Deans) have been attending departmental teas to listen and engage with staff. They have been convivial and collegial, often quite robust and important issues have been raised. After some intense feedback on the new calendar configuration I am pleased to report that we have been successful in getting the 2020 calendar changed to the six-week/six-week split, shortened consolidation week, extra marking days and extended mid-year vacation time. The focus of the departmental teas is to ensure that there is a good flow of communication and that we address the issues that are raised. I look forward to the ongoing engagement.

It is hard to believe it is mid-year exam time. Thank you to Dirk Findeis, Chair of the Timetable Committee who has been hard at work sorting out clashes in the final examination timetable. It is great to see departments working together to come up with solutions to ensure that the timetable gives students enough time to prepare for each exam.

I wish you all the best over this busy time.

New HOD for Architecture, Planning & Geomatics



Dr Philippa Tumubweinee is the new Head of the School of Architecture, Planning and Geomatics (APG). She is a senior lecturer at the School and

co-founder and director of IZUBA INAfrica Architects.

In February 2019, Philippa was awarded her PhD in the field of Architecture and Higher Education from the University of the Free State. After completing her MArch (Prof) degree in 2006 with a distinction in Construction, Philippa was introduced to academia at the University of Pretoria where she was an assistant Studio Master in the first-year studio. In 2007 she joined the

Department of Architecture at the University of Johannesburg as the first-year coordinator and design studio master. During her time at UJ, she was involved in curriculum revision and programme development. She then joined the Department of Architecture at the University of the Free State while working on her doctoral degree.

She served on the national judging panel for the 2012 SAIA Awards of Merit and Excellence and presented a paper on one of her projects, the Esquared House at the ARCH THEO'12 conference in Istanbul. She was the co-master of programme and ceremonies at the second AZA 2012 Architectural Conference in Cape Town and gave the keynote address at the NEXUS Architectural Students Conference in Australia. Philippa served on the national judging panel for the

prestigious AfriSAM Sustainability Awards, and from 2009 to 2012 she served on the Board for the Gauteng Institute for Architects (GifA) where she contributed to the re-branding and rejuvenation of GifA as an active vehicle through which the significance of architects and architecture is made visible in the broader society. As a member of this Board, Philippa was privileged to be part of the project team that brought that first international architectural festival AZA 2010 to the shores of South Africa.

Philippa's commitment to architectural education has developed through her involvement as an external examiner for MArch (Prof), and B(Hons) students at the University of Pretoria and the Namibia University of Science and Technology.

New Deputy Vice-Chancellor



The Vice-Chancellor announced the appointment of Professor Sue Harrison as the new Deputy Vice-Chancellor (DVC) for Research and Internationalisation with effect from 1 August 2019.

The VC said, "The appointment of Professor Harrison, who will coincidentally take over at the start of Women's Month, means that all four executive leaders of the academic

enterprise at the University of Cape Town (UCT) are women. This is a significant moment of transformation for women in academia and leadership positions, both in our society and across the world. We are delighted that the UCT Council has placed their confidence in the experience and expertise of each of my executive colleagues."

Sue will only officially commence in her new role in August, but will in the interim transition from her current role in the Department of Chemical Engineering at UCT between now and 31 July 2019.

Among her responsibilities as deputy vice-chancellor will be to improve research quality, quantity and impact and to ensure that UCT maintains or improves its place as a research-intensive university as reflected in the international ranking of institutions. The appointment is for five years, with the possibility of renewal based on performance.

[Read more](#)

Arrangements will be made to find a new SARChI Chair in Bioprocess Engineering as well as a director for the Centre for Bioprocess Engineering Research (CeBER) and the Future Water research institute.

Honorary degree for Chemical Engineering graduate



Dr Georges Belfort, a 1963 chemical engineering graduate will receive an honorary doctorate during the December 2019

graduation season. He is one of the premier academic scientists in the field of bio-separations engineering and is a leading academic chemical engineer in liquid-phase pressure-driven membrane-based processes. He received his PhD in 1972 and his master's in 1969 from the University of California at Irvine – both in engineering.

Dr Belfort has made seminal wide-ranging fundamental and applied research contributions to the understanding, design and application of pressure-driven membrane

processes for the recovery of biological molecules.

His research, both fundamental and developmental, is conducted in the areas of membrane-separations engineering and surface science and the behaviour of proteins at interfaces. In particular, the research involves the design of new membrane modules with highly efficient mass-transfer characteristics, modification of membrane surfaces for reduced fouling, and the use of genetic engineering as a tool in the separation of biological molecules.

He is currently the Russell Sage Professor (endowed chair) of Chemical and Biological Engineering, Howard P Isermann Department of Chemical and Biological Engineering at the Rensselaer Polytechnic Institute in New York.

He has received the two major awards in the US on separations, from the American Chemical Society (ACS) in 1995 and the American Institute of

Chemical Engineers (AIChE) in 2000, the ACS EV Murphree Award in Industrial and Engineering Chemistry in 2008 and was one of the "100 Chemical Engineers of the Modern Era" as part of the AIChE Centennial Celebration in 2008. He was elected a member of the US National Academy of Engineering in February 2003.

Dr Belfort was appointed member of the Scientific Advisory Board, Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Germany, in April 2011, and inducted as foreign corresponding member of the Academy of Sciences of Bologna Institute, Class of Physical Sciences, Section of Technical Sciences in March 2012.

Dr Belfort's wife, Dr Marlene Belfort, a UCT Science graduate, will also be receiving an honorary degree at the December graduation ceremony.

Celebrating 50 years

The Concrete Society of Southern Africa is celebrating their 50th anniversary this year and as part of their celebrations, they donated a special polished concrete seat to the Department of Civil Engineering at UCT.

Emeritus Professor Mark Alexander, the 2018/2019 President of the Concrete Society, unveiled the bench at an event hosted by the Society at UCT on 17 April 2019.

Read the article in [Engineering News](#) on UCT engineers test Africa's longest suspension bridge



Standing: Peter Flower, Past President of Concrete Society of Southern A Professor Marianne Vanderschuren, Mark Alexander and Pilate Moyo

Successful apprentice programme in the MechEng workshop

Leighton Adams is the 7th Mechanical Engineering workshop apprentice to pass his trade test at Northlink College and qualify as a professional artisan. He joined the workshop in January 2017 and has managed to graduate in two years instead of three. Leighton completed his N2 apprenticeship at Northlink in 2013 and joined Micro Tool and Dye from 2014 to 2016. He was not able to complete his trade test so applied for an apprenticeship at the Mechanical Engineering workshop.

Pierre Smith, the manager of the workshop and responsible for the apprentice programme, said, "Leighton started his apprenticeship with a huge advantage. He was working as a Toolmaker's assistant for about two years before his appointment and had a lot of experience in the basic machining processes. Not always the correct methods, but he knew the basics. We just had to fine-tune his methods and get his mindset correct. He was a bit impatient and overeager towards the end of his second year, and it showed when he failed his first attempt at doing his trade test. It was only on his second



Leighton Adams and Pierre Smith

attempt that he was successful. This also taught us as the mentors a few lessons that will help identify the readiness of the future apprentices. We like it when students progress quickly and encourage them to work hard towards an early qualification."

Leighton was fortunate to land permanent employment and has joined Zibo Containers.

The apprentice programme was

introduced in 2011 as students coming out of the trade colleges find it hard to secure apprentice positions. The apprentices spend three years in the workshop, where they gain practical experience on the different machines and develop skills for the workplace. The University contributed a once-off donation, and the funding now comes from the SETA.

International expert working with civil engineering

International expert on choice modelling, Professor Stephane Hess, has joined UCT as an honorary professor. He explains how choice modelling can help address crucial issues in transport, health and education.

Professor Stephane Hess, director of the Choice Modelling Centre at the University of Leeds, forged links with UCT when the university was selected as the host for the 2017 International Choice Modelling Conference, a conference series for which he is the chair.

"I first visited UCT in 2015 to start preparing for the event," he explains. "I also taught a course at UCT that year, which was repeated in 2018. Since then, I have forged close links with Professor Mark Zuidgeest, SANRAL Chair at the Centre for Transport Studies at UCT, and we collaborate

actively in our research."

Late last year Hess officially joined UCT as an honorary professor of modelling behaviour, working between both the Health Sciences and Engineering and the Built Environment Faculties. His work will focus both on how choice modelling can be applied to problems in health and transport within a developing country context as well as finding solutions to practical issues faced when applying choice modelling in very different settings from those found in most developed world contexts.

"My link with UCT has really taught me that the choices people face in many African countries are very different from those that choice models have been traditionally applied to. While the mathematics applied is the same wherever you use the approaches, the context of application



Professor Stephane Hess

differs extensively. This raises interesting challenges but the general feeling is that we can provide valuable insights in these very different settings," he says. [Read More](#)

Full Accreditation for Construction Studies and Quantity Surveying

The Department of Construction Economics and Management's HoD, Professor Kathy Michell announced in January that the department had received full accreditation (no conditions) for the BSc Construction Studies and the BSc (Honours) in Quantity Surveying degrees from the South African Council for the Quantity Surveying Profession for the next five years (1 January 2019 to 31 December 2022). Great work from everyone in the department who ensured that the accreditation status with the SACQSP was retained.

Elected Fellow of SAICE

Congratulations to Professor Marianne Vanderschuren who has been elected as a Fellow of the South African Institute of Civil Engineering (SAICE). The fellowship is the senior grade of membership at the Institution and is accorded to those who are acknowledged by their peers to have reached a position of eminence within the profession.



UCT graduates in the world's No.1 enduro-race across the Atlantic

In December 2018, four young men from UCT took on one of the toughest endurance challenges: the Talisker Whisky Atlantic Challenge. It is the world's No.1 ocean enduro-race and is widely considered to be one of the hardest challenges on the planet: racing across the Atlantic Ocean in nothing but a rowing boat. Fewer people have rowed across the Atlantic than have reached the summit of Everest, journeyed to the North Pole or ventured into space.

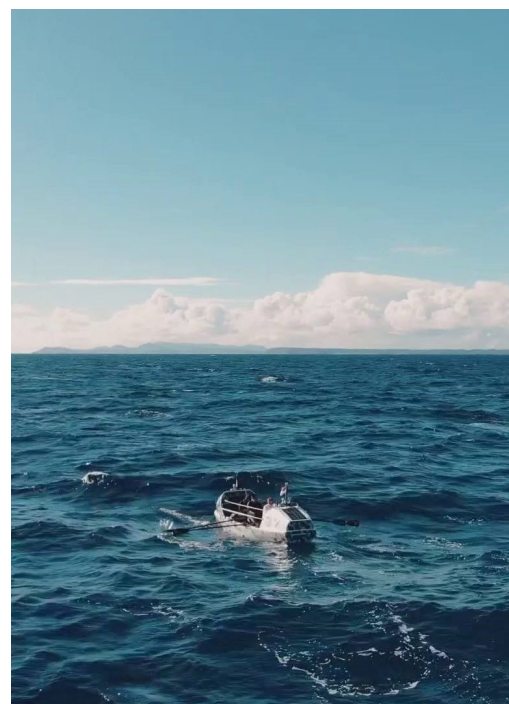
Team MAD4 Waves was made up of three UCT engineering students, Cole Barnard who is in his final year of civil engineering, Lee Gordon and Grant Soll who graduated in April with a BSc in chemical engineering, as well as

Matthew Boynton, a BSc Physics Honours graduate who also graduated in April.

The 5 500 km journey from the Canary Islands to the Caribbean took them 39 days, 8 hours and 43 minutes.

The team partnered with Make a Difference Leadership Foundation to raise funds to sponsor a promising child through high school and to provide desks for 1000 learners across South Africa.

Team MAD4 waves was the only South African team in the 2018 race, and they were the youngest to have ever rowed across the Atlantic.



2nd year MechEng student off to compete in Spain and Hawaii

Hayley Preen, a second-year mechanical engineering student represented South Africa at the International Triathlon Union (ITU) Cross Triathlon World Championships in Pontevedra in Spain which took place on 27 April to 4 May. She finished fifth in the highly-contested U23 women's cross triathlon. She also qualified for the XTERRA World Championships in Hawaii in October after an impressive qualifying win at the South African leg of the tournament in February.

Hayley took the top spot among her female counterparts in the XTERRA SA Full race in Grabouw, said to be the largest XTERRA event in the world. On race day, Hayley participated in a 1.5 km swim, 28 km mountain bike ride and 12.5 km trail run.

She was the first woman to cross the finish line, automatically qualifying her for the global race – billed as the “world's



premier off-road triathlon” – on 27 October in Kapalua, on Maui's north-west coast in Hawaii.

“I've always wanted to win, but never thought I would actually get there. It's an incredible feeling and I am still on a high,” she said.

While this year's course was “a lot different” to last year, Hayley clocked in at 2:52:40, 13 minutes faster than her finishing time in 2018.

Story by Niémah Davids of UCT news

Nominees for 2018/2019 NSTF-South32 Awards

The nominees for the 21st NSTF-South32 Awards have been announced. Congratulations to the EBE staff who have been nominated. In recognition of the 2019 International Year of the Periodic Table of Chemical Elements as declared by the UN, the theme is the Periodic Table of Chemical Elements. The winners will be announced at the awards gala dinner on 27 June 2019.

TW Kambule-NSTF Award: Researcher through research and its outputs (by an individual up to 15 years as a researcher, predominantly in South Africa.)



Professor Tunde Bello-Ochende
from Mechanical Engineering.

Communication Award: for outreach and creating awareness of SET and innovation (by a team or individual over the last 5 years)

Dr Dyllon Randall - Civil
Engineering



Engineering Research Capacity Development Award (by an individual over the last 5 to 10 years)

Professor Alison Lewis - Chemical
Engineering



Professor Eric Van Steen - Chemical
Engineering

Dr Abimbola Windapo—
Construction Economics and
Management.

Dr Windapo is also a nominee for
the Special Annual Theme Award:
material for inclusive economic
development (in recognition of the
'International Year of the Periodic
Table to Chemical Elements' as
declared by the United Nations)



MOU signed with leading French geological institute

In February, UCT and the French Geological survey, BRGM, signed an MoU dedicated to the sustainable management of natural resources. This agreement will promote scientific cooperation to contribute to research in the broad areas of mineral resources and environmental management.

Professor Sue Harrison said, "This represents an exciting opportunity for both the BRGM and UCT to work in a more targeted way in the areas of natural resource efficiency. In particular, the teams will collaborate on both sustainable water resource management and sustainable mining and resource use. The former will focus on groundwater and aquifer recharge amongst others. The latter will include socio-economic and environmental issues across a range of scales of operation, in addition to fundamental science and technology development."



Seated: Mr Pierre Touhoat (BRGM Deputy Chief Executive Officer and Scientific Director) and Professor Kevin Naidoo (Acting Deputy Vice-Chancellor for research and internationalisation) **Standing:** Mr Laurent Amar (Counsel General of France in Cape Town), Professor Sue Harrison (Director of CeBER) and Professor Aubrey Mainza (Head of the Chemical Engineering Department)

Future Leaders – African Independent Research Fellow



Dr Dyllon Randall from the Department of Civil Engineering is one of seven young UCT scholars to be in the inaugural 2019 cohort of Future Leaders – African Independent Research (FLAIR) Fellows. FLAIR Fellowships are awarded to talented African early-career researchers who

have the potential to become leaders in their fields.

The initiative is a partnership between the African Academy of Sciences and The Royal Society, supported by the Global Challenges Research Fund.

The fellowships give the researchers an opportunity to build independent research careers in a sub-Saharan African institution. The proviso is that they undertake cutting-edge scientific research that addresses global challenges facing developing countries.

Each FLAIR Fellowship is awarded for two years initially, and offers up to £300 000 per year (about

R5.56 million) alongside a programme of support to develop fellows as independent research leaders. This programme includes training and mentoring, opportunities to network, both regionally and with the United Kingdom, and to develop international collaborations.

In February this year, Dyllon was awarded the IChemE's Warner Prize for 2018/2019. This was in recognition of his research in the field of sustainable sanitation systems which has resulted in the world's first fertilizer-producing urinal that also uses no water.

Story by Helen Swingler [Read more.](#)

Students continue winning tradition at Greenovate

The Civil Engineering department made it two out of two while the Construction Economics and Management department chalked up their fourth consecutive win at the prestigious Greenovate Awards for final-year students.

An initiative by Growthpoint Properties in association with the Green Building Council South Africa (GBCSA), the competition challenges senior students to create innovative green solutions to environmental issues facing the property industry.

The competition is open to final-year property studies, quantity surveying, construction management and engineering students.

Story by Helen Swingler. [Read more](#)



Dr Dyllon Randall (civil engineering), Michael Inskip (property studies), Chloe Bolton (civil engineering), Morgan Knowles (property studies), Samantha Johnson (property studies), and Saul Nurick and Karen Le Jeune (supervisors, property studies).

Edgar Pieterse at Global Development Institute

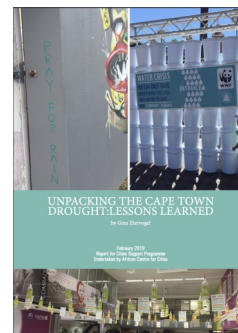


On 8 May, the Global Development Institute at the University of Manchester hosted Edgar Pieterse as part of the GDI Lecture Series, talking about: *Ambitious and ambiguous public investments in African cities*. The lecture series brings experts involved in global development to the University of Manchester. It aims to facilitate dialogue and discussion, providing a space for leading development thinkers to share their latest research and ideas.

Unpacking the Cape Town Drought Lessons Learnt

In anticipation of National Water Week (18-24 March 2019) and UN World Water Day (22 March 2019) African Centre for Cities (ACC) released a new paper *Unpacking the Cape Town Drought Lessons Learnt* by Associate Professor Gina Ziervogel. The research was commissioned by the Cities Support Programme, within National Treasury in the South Africa National Government, to ensure that lessons learned from the Cape Town drought experience would serve to inform other municipalities when adapting to drought and water insecurity.

[Read more](#)



Multidisciplinary research project

The Canadian Centre for Architecture (CCA) with the generous support of the Andrew W Mellon Foundation, is organising a multidisciplinary research project Centring Africa: Postcolonial Perspectives on Architecture to investigate architecture's role in decolonisation, neo colonisation, and globalisation, and their manifestations across Africa.

Following an open call for applications launched in July 2018, the CCA has invited 18 researchers to present their work and discuss the scope and urgencies of the Centring Africa project.

Professor Tomá Berlanda from the School of Architecture, Planning & Geomatics is one of the researchers selected to participate and present his research at a seminar which will be held at the Ethiopian Institute for Architecture, Building Construction and City Development on 20 and 21 May 2019.



Womxn Award for Professor Kooyman



Professor Patricia Kooyman, the SARChI chair in Nanomaterials for Catalysis in the Department of Chemical Engineering, is a recipient of one of the

Vice-Chancellor's meritorious womxn awards. A total of five substantial grants were awarded to women researchers to make space for more women's voices to be heard – both for their own advancement and for the advancement of others.

Prof Kooyman was successful in the category "For womxn by womxn: conducting research in a field in which womxn are in short supply." In her research work she is exploring ways to remove carbon monoxide gas from hydrogen gas with the goal of improving methods for preparing fuel for fuel cells. Providing cheap, easy-to-use and -maintain, stand-alone fuel cells may contribute to the economic empowerment of people who are

socially disadvantaged.

As part of her project, Patricia will train a cohort of black female or trans postgraduate researchers in critical skills in chemical engineering, catalysis research and transmission electron microscopy – areas in which men still dominate. The skills in physics and chemical engineering will be unique to the African continent.

Announcing the initiative on National Women's Day in August last year, the VC said that while they would target human capital development, the projects would also "help us rethink our views of gender in South Africa and give us new insights into ourselves and others in different communities".

Celebrating EBE students



Daniel Mesham, a 2018 final-year mechatronics student received the ECSA medal which is awarded to the best student graduating in 2018 with a BSc (Eng). Mr Zeblon Mayongo, the ECSA Branch Coordinator in Cape Town handed the award over to Daniel.

Each year, a call goes out for nominations for the Special Faculty Awards which are awarded to students who are doing great things over and above their academic work at UCT. They are involved in their communities, schools, student societies and most of all they are making a difference in the lives of others. The Faculty wanted to celebrate these students' achievements. This year there were 16 nominations which came from students and staff, and six were selected to receive the award. The awards were handed out by Naadiya Moosajee, the guest speaker at the annual awards evening held on 24 April.



Tshepang Mapiti is a final year mechanical engineering student who has been active in community outreach programmes from his first year. He was part of Phumelela, a group that helps Grade 12 students from disadvantaged schools. He is a mentor for StudyTrust which provides mentors to help tertiary students thrive academically and personally. He has been a mentor for first-year students, class and departmental representative for mechanical engineering and an EBE orientation leader for two years. He is the transformation officer for the UCT Chess society and is taking chess out to disadvantaged schools. He and some friends created a platform for students which saves them time when they are looking for certain types of services. His nominator said, "He made most of us believe that it is possible regardless of where you are coming from or the challenges you face."

Thabang Sebetoane, a final-year mechanical engineering student from the Free State was concerned about the failure and drop-out rate of Free State engineering students. He spent time investigating the issues and developed a proposal for funding which he presented to Mr Tate Makgoe, the MEC for Education in the Free State who provided them with funding. He established a mentoring and tutoring non-profit organisation Tshehetso which is a programme that bridges the gap between secondary and tertiary education to prepare students for their first year of study.

Thabang and his team assist students

through the application process, run pre-university training programmes including coaching, maths and physics tutoring, and support camps before the start of the academic year. They host interactive revision classes for the students once they are registered. They have developed training manuals and high school manuals for maths and physics.

Thabang is a recruit in the South African Air Force, and he uses his stipend from the air force to buy laptops for students who cannot afford one. He said, "We have successfully managed to increase the pass rate year-on-year. The programme also inspires confidence, and our students display high levels of maturity and discipline, which is an



indication that we are doing something right. I want to accept the award on behalf of the group also, my committed tutors and the rest of the team."

Celebrating EBE students

Sister Kashala has a track record of good leadership both as an undergraduate student at UCT and in her current capacity as an employed quantity surveyor and a registered MSc property studies student. During her undergraduate studies, she was a departmental mentor for first-year students, a residence tutor, dining hall monitor, a member of the executive committee of the Namibia Students' Society, Library assistant, sub-warden, computer lab assistant and the Vice Chairperson of the 2015 EBE student council. When she completed her honours degree, she moved back home to Namibia where she started Tekula, a mentorship and career development organisation that empowers young people in rural areas in Namibia. Her nominator said, "It is quite evident that Sister is a leader in her own league. Her willingness to help and her dedication to the university and community make her a worthy candidate for this award." Sister was unable to attend the awards evening, so Febe Gaweses received it on her behalf.



Vukheta Mukhari is currently pursuing his MSc in civil engineering. He is passionate about sustainability and making a difference in the lives of others. He is a teaching facilitator for the Social Infrastructures course taught to engineering students to make them think critically and engage innovatively with a range of key social justice issues facing South Africa and the world today.

He is the Vice-Chair of SMILE – a programme that teaches yoga to students, runs feeding projects for shelters and facilitates distress workshops for disadvantaged students.

He is a mentor to first-year students and was part of the 2017 EBE student council where he helped raise funds, was the magazine editor, health and safety officer and helped organise a pad drive and textbook donation drive. He is an International Association of Human Values trained facilitator where he focuses on mindfulness and destresses workshops for marginalised schools and communities. His nominator said, "Not only is Vukheta an exceptional researcher, but he also epitomises what it means to be socially aware and to do good. We need more people like



Vukheta who tirelessly volunteer while aiming to improve society."



Gcinisizwe Dlamini is a registered MSc student in chemical engineering. During his undergraduate degree, he was on the Kopano residence IT and marketing subcommittee, the academics

and external relations for UCT Swazi Society, member of the 2016 EBE student council, and a volunteer for the UCT phonathon to raise money for the EBE Student in Distress Fund. He is passionate about education and uplifting young learners. He was actively involved in SHAWCO and joined the AfrikaCan! Foundation as a mentor and tutor in 2017. He held the portfolio of Graphic and Marketing in 2017 and became the Academic Head in 2018. He is currently serving in the executive committee as the Platforms Manager. When he goes home to Swaziland, he organises free tutoring classes in Maths, Physics and Accounting for high school learners.

He has strong business acumen and is an entrepreneur at heart. He co-founded Antagonists Design in 2013 which is a graphic design and marketing company. In 2016 he established the Jelly Bean Convenience tuckshop in Woolsack residence which provided a platform for students to sell their products and explore their entrepreneurial talents. He received a 3rd place at the BIG national business plan competition.

In 2018, he received a Mandela Rhodes Scholarship which recognises aspiring young Africans that show qualities of leadership, education, reconciliation and entrepreneurship.

Celebrating our students

Christian Leprince Polorigni is an MSc student in civil engineering. He has been a volunteer for the Disability Unit where he assisted in tests invigilation and graduation ceremonies, editing and scanning materials for visually impaired students. He has been a mentor to first-year students in civil engineering, as well as an orientation leader where he assisted first-year students in navigating the university space. In 2015, he was a member of the EBE undergraduate student council where he held the IT and Transformation portfolio. During his term, he actively recruited students to assist the Disability Unit which is always in need of volunteers. He was the driver

behind setting up the student in distress fund and with other council members raised the first R6 000 for the fund. He was awarded a Mandela Rhodes Scholarship for 2017. He is a member of the AfriKaCan! Foundation and is the Head of the Academic Development team. He prepares content for mathematics and physical science for the Grade 12 students in Bulumko High School in Khayelitsha. He is a tutor and mentor to the students and assists them with applying to university, NBT tests, career guidance and job shadowing. To raise funds for the foundation, Christian ran the Sanlam Marathon in September 2018. He is currently serving in the



executive committee as a Leadership Advisor to make sure the foundation implements its vision and achieves its goals.

Celebrating our staff

Lisa Williams is a proud mum who has managed to balance her studies, her babies and her full-time work. A remarkable young woman who is the postgrad admin person in the Faculty Office.

When Lisa matriculated from Wynberg Girls High School in 2008, she went into Hotel Management with Protea Hotels. She soon realised this was not for her, and in 2011 she got a position at Tsonga Shoes but decided that this was not going to be her future. Lisa's passion was to work in disadvantaged communities where she could make a positive change in lives. She also enjoyed journalism, so in 2013 she registered for a BA in Social Development and Media Studies at UCT.

During her studies, she continued to work part-time for Tsonga, and she worked part-time in the Admissions Office as a student assistant. In 2015, she fell pregnant and gave birth in September to her baby boy Emlin – just before exams. But this did not stop her

from completing her undergraduate degree at the end of 2015. In 2016, she worked part-time for the Admissions Office but realised that she now needed a permanent job, so applied for positions across campus. In November 2016, she accepted the offer in EBE postgraduate administration.

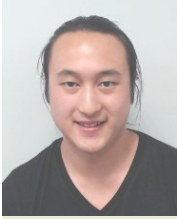
In 2018, Lisa registered to do her honours in Social Development while working full-time in the EBE Faculty Office, and during this time she fell pregnant with her second son, Hunter who was born in August 2018. Lisa still had to finish her dissertation and write her exams which she managed to do while looking after a 3-year old, and a new-born baby. Emlin now attends UCT creche and Hunter is on the waiting list for 2020. Lisa breastfed Emlin for three years and three months and then went straight on to breastfeeding Hunter. Since she returned from her maternity leave, she manages to find a quiet spot in the office where she can express her milk for Hunter.



Lisa Williams

She got accepted to do her master's degree this year but decided she needed to take a break. She will register for her master's in 2020, and she hopes to continue to do her PhD in Social Development as she wants to end up in academia.

Welcome to new staff



Jarryd Son joined the Department of Electrical Engineering in January as a lecturer. Jarryd did his undergraduate degree in mechatronics at UCT as well as his master's degree and is busy with his PhD.

Mr Curwin Nomdoe joined the Chemical Engineering Electrical workshop in March as a workshop assistant.

Mrs Buhle Mathole joined the School of Architecture, Planning and Geomatics in February as an architecture lecturer.

Mr Sampath Amarasinghe Danapathi Ara joined the Department of Electrical Engineering in February as a lecturer.

Resignations

After 13 years at UCT, Ms Gaynor Yorath, Senior Scientific Officer in the Department of Chemical Engineering left at the end of February to look after her parents in England.

After 15 years, Dr Brandon Weber, Principal Scientific Officer at the Centre of Imaging and Analysis resigned and left at the end of March. He is now working in a completely different field for a non-profit organisation.

Mr Rubin Van Schalkwyk, Scientific Officer in the Centre for Minerals Research left at the end of February.

Dr George Sithole, senior lecturer in the Division of Geomatics left at the end of April.

A/Professor Riana Geschke from the Department of Electrical Engineering left at the end of January to join Fraunhofer in Germany.

Congratulations

Kezi Mfundisi gave birth to a healthy baby boy weighing 3.5kg on Friday 19 April 2019. The names chosen for the baby are Lusemi- Unam, which means "still standing with me".

We wish Kezi all the best with her new baby.



Off to the UK

Xolelwa Kakaza, a cleaner in the NEB, will be flying off to the UK in June to participate in the Glastonbury Festival.

Xolelwa is a member of the Langa Methodist Church choir and Michael Eavis, the Creator and Managing Director of the Glastonbury Festival, heard the choir singing when he visited Cape Town. He said, "I am very familiar with the hymns they were singing—but their singing was absolutely amazing. I have never seen anything like it before in my life. I instantly invited the choir to England."

Glastonbury is the largest greenfield festival in the world, and is now attended by around 175,000 people. The performance will take place on 30 June and afterwards the choir will be taken on a six-day guided tour, visiting churches, schools and places of cultural interest. The Glastonbury Festival has sponsored the full trip.



Visitors from Birmingham City University

In January 2019, Prof Lynsey Melville, Roger Wall and Laura Leyland, senior lecturers from the School of Engineering and the Built Environment at Birmingham City University visited EBE. They met with Dr Kirsty Cardin, and Dr Nicky Wolmarans to discuss possible collaborations, including joint research projects and potential student and staff exchanges. They worked with several organisations to develop sustainability projects and visited Wupperthal on their visit. They also met with representatives from UCT Engineers without Borders (EWB) as they work with EWB UK on their undergraduate engineering courses.



EWB representatives with the visitors

SAICE bridge building competition

The annual South African Institution of Civil Engineering's (SAICE) bridge building competition was held on 4 May at Canal Walk. SAICE initiated the competition in 1991 to attract high school learners to civil engineering, as well as promoting a general awareness of the profession.

Civil engineering staff and students from the UCT SAICE chapter assisted on the day. 33 teams with three learners per team, entered the competition. Each team was given a kit to construct a model bridge which had to be completed within a certain time. Bobby Jarrat, a 2007 civil engineering graduate gave the learners a lecture on the interpretation of the rules, and on



aspects of the model bridge construction. On completion of the bridge, each team was required to load their bridge model until it failed. Score for the bridge included a score for aesthetic value, plus a score for the maximum load which it carried.

The top two teams were Brackenfell

High School with a load of 337.5kg, and Swartland High School with a load of 237.5kg. Brackenfell's win was accomplished with the bridge remaining intact once all the weights had been used – quite an achievement! Brackenfell will go on to represent SAICE Western Cape at the National Competition to be held in Gauteng in August this year.



Demystifying BIM

Over the past few years, there has been a lot of hype around the use of Building Information Modelling (BIM) on projects in South Africa.

To demystify BIM and find out how it works, Kenny Mudenda, a senior lecturer in the Department of Civil Engineering, organised a presentation where representatives from industry shared their experiences with BIM. Peet de Klerk of GIBB Engineering and Architecture, Mark Behrmann of WSP Africa, as well as Dewlene Africa and Taryn Landman from SVA architects highlighted the opportunities to be gained through using BIM on projects, and the challenges involved in implementing it.

Although primarily based on 3D modelling platforms, BIM is not about software but is about ensuring improved cooperation between all parties in the project environment. This leads to improved efficiencies and a superior final product delivered to the client.

Individuals use current BIM software, as well as businesses and government agencies who plan, design, construct, operate and maintain diverse physical infrastructures such as water, refuse, electricity, gas, communication utilities, roads, railways, bridges, ports and tunnels. Students wanting to



Dewlene Africa from SVA architects sharing her BIM experiences

work in these areas will need to be familiar with BIM.

Kenny said, "I wanted to raise awareness of BIM and showcase some projects where it is being implemented and the benefits that come with its use. BIM is something I am actively exploring for integration into my course, and I hope that other colleagues can begin to envision areas of collaboration on BIM education in the Faculty." Around 50 people attended the presentation.

Supporting our entrepreneurs

In 2017, Nyasha Mawungwe started Whynut while he was a third-year chemical engineering student.

The initiative began with the goal of providing healthy, tasty and affordable snacks to the student body. Since then it has made strides and has partnered with Food and Connect, UCT's catering company operating on the various campuses, as well as local health shops in the southern suburbs.

Whynut is also sponsoring the first team women and men football teams which entails providing post-match snacks. Nyasha said, "This is in line with the brand's goal of producing products that provide a quick energy boost for physical activities and to be recognised as a brand that's at the intersection of health and physical performance enhancement. We realised it would add value to the football teams that have had a fantastic season so far but hadn't secured any sponsorship for the 2019 season." In return, the football teams will help with promoting the Whynut brand on campus.



The newly launched website www.whynut.co.za supports e-commerce and offers the main mobile payment gateways, Zapper and Snapscan. This was to better serve customers that would like to buy in bulk and those outside the UCT sphere.

EBE students off to compete in Germany



(From left) Clara Stassen, Stefan Schröder, Marc Layne (Dell), Jehan Singh and Dillon Heald.

A group of third year UCT electrical and computing engineering students were placed first in the final round of the Student Cluster Competition (SCC) which is aimed at giving undergraduate students at South African universities exposure to the high-performance computing (HPC) industry. Students built small HPC clusters from hardware provided by the Centre for High Performance Computing (CPHC).

As the winning team, the members **Jehan Singh, Stefan Schroder, Clara Stassen and Dillon Heald**, each received a Dell Vostro 15 notebook as well as a place in the South African team for the International Supercomputing Conference HPCAI Advisory Council Student Cluster Competition in Germany, June 2019.

ISC 2019 Team consists of the four members from UCT and two members from Wits.

First Prize for EBE students

4IR Mobile Clinic – the brainchild of Tlotliso Jonas (Mechanical and Mechatronics), Namhla Juqu (Chemical Engineering) and Evans Tjabadi (Electrical Engineering), all in their final year of study – took first prize in the Ideation category at the Pitch finals held at UCT on 9 May.



The VC with members of the 4IR mobile clinic

The competition is an event run by the Academic Representatives' Council that gives students the chance to pitch their business or business idea and stand a chance of winning a monetary and mentorship prize.

The 4IR Mobile Clinic team identified poor access to healthcare facilities and lack of personalised medical consultations as a major problem in South Africa. Their winning idea is to address the challenge with a convenient, digitalised mobile clinic.

The mobile clinic is divided into sections. The first is where machines conduct vital-signs checks, such as pulse rate and blood pressure. The data is sent to the doctor in the second section, the examination area. The doctor uploads a prescription to the patient's smart card and at the final set of machines, the patient retrieves their medication from a self-help dispensary.

EBE Research Expo—4th Industrial Revolution and Sustainability

On Thursday 9 May, the NEB foyer was abuzz with the activity of the annual EBE Research Expo which was part of the University's Africa month celebrations. Eugene Fotso Simo of the EBE postgraduate student council organised the event with the assistance of the other council members. Undergraduate finalists, postgraduate, academics and industry partners attended the evening.

The Vice-Chancellor opened the evening and spoke about how a university exists for ideas, and how important it is to create an environment that allows ideas to develop. Staff and students need to engage, listen and respond to different people's ideas. To be successful in a research career, you need to be curious, have courage and discipline. She was encouraged to see more women in engineering and said that we needed their perspective and ideas to come up with solutions.

Mr Abbas Jamie, Director of Innovation and Transformation at Aurecon was the guest speaker, and his topic was 'The 4th Industrial Revolution is disrupting me – Now what?' His message to the postgraduate students was that the three most important skills they will need are complex problem solving, critical thinking and creativity. Engineers will need to think out of the box, be creative and innovative. Engage with musicians, artists, storytellers – bring the engineering and creative worlds together where ideas can really flourish. To address the "wicked" problems systems thinking and design thinking is needed, and the human needs to be at the centre of the problem. He said that the students had the opportunity to be the leaders in this space – design thinking in Africa. "You are doing postgraduate studies at the best academic institution in



EBE postgraduate students

Africa, and if anyone is going to make a change on this continent, it is the engineers in the room," he added. 31 students were selected from across the Faculty to showcase their research work. Five judges from the departments judged the students on the content of their poster, the research relevance and the look and clarity of the poster, as well as the students' oral presentations. There were six winners, and they were Danielle Goho (Chemical Engineering), Lizé-Mari Ferreira (Mechanical Engineering), Mavis Lewis (Chemical Engineering), Sfiso Mkhize (Chemical Engineering), Simcelile Chenge (Geomatics) and Veroushia Padayachee (Chemical Engineering).

Big thank you to the five judges who gave up their time – Professors Kathy Michell, Jane English, Tunde Bello-Ochende Isafiade Adeniyi and A/Professor Amit Mishra. The EBE Research Expo booklet can be found [here](#).

"Kit a kid for Grade 1" campaign

In November 2018, Portia Johnston and Shireen Govender initiated and co-ordinated a ChemEng "Kit a kid for Grade 1" campaign for children from disadvantaged backgrounds.

They identified two schools associated with and supported by a local NPO Elf Montessori Teacher Training.

Thanks to the generosity of staff and students, they raised R7000.00. 13 learners from Jo's school in Vrygrond were kitted out with their grade 1 uniforms for 2019, and a further 17 learners from Ithemba Daycare in Samora Machel received school shoes and other goodies for Grade 1. They were also able to purchase a microwave and kettle for the new kitchen at Ithemba Daycare.



Portia Johnston, Shireen Govender and Bridgette Cloete with the children from Jo's school in Vrygrond

EBE OPEN DAY



Architecture

Electrical Engineering



Civil Engineering

Geomatics



Construction Economics and Management



Chemical Engineering





Mechanical Engineering



Faculty Office