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Faculty Newsletter

Message from the Dean

These past couple of months have been like no other. I cannot express how thankful I am to have such an amazing team who worked around the clock to reschedule the exams and get them done within the first week of the second semester. Thank you to everyone who played a role in making this happen.

It has also been an extremely emotional time with the news of our colleagues, family members and friends who have died. It is a time for us all to reach out and be kind, empathetic and supportive to one another. Nazeema Ahmed, our faculty psychologist, will be hosting a session for students on dealing with grief and loss on Thursday 23 September. A session will be organised for staff.

The applications for undergraduate study closed on 31 August, and the faculty office has received 20 300 applications compared to 15 000 in 2020. 17 405 are first-time entering applicants and the faculty office has to date made 2967 offers. So far, 1222 applications have been received for postgraduate study in 2022.

I do hope we will be able to get together before the end of the year to celebrate with our retirees and staff who have received their long-service awards.

If you have not been vaccinated yet, I would like to encourage all staff and students to use the UCT Community of Hope Vaccination Centre.

Research award for Professor Tomá Berlanda

Last December UCT researchers were invited to submit proposals to help establish and/or strengthen collaborative partnerships between academics at UCT and research institutions in Palestine and in the territories that are engaged in academic or research-related activities that seek to address gross human rights violations. The purpose of these research collaborations is to build knowledge of relevance to both regions, with identifiable potential for positive impact in the occupied Palestinian territories and identifiable academic development outcomes, preferably in both regions.

R850 000 has been awarded over two years to Professor Tomà Berlanda, in the School of Architecture, Planning & Geomatics. Professor Berlanda is working with Dr Adila Laidi-Hanieh, the Director-General of the Palestinian Museum in Birzeit, on a creative research project that considers the historical similarities and the peculiarities of the systematic regime of human rights violations and land confiscation of the segregationist policies in South Africa and the Israeli occupation of the Palestine territory. Through workshops and mobility exchange, the objective is to bridge between a museographic

approach on preserving, documenting, and exhibiting the history of spoliation of the landscape, and a design-based approach on how to conceptualise and exhibit the transformation of the topography of occupation.

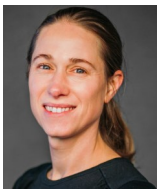
New NAPP graduates

Four EBE academics participated in and successfully completed the 2021 New Academic Practitioners' Programme (NAPP) in an online, socially connected mode.

NAPP supports the induction, transition, and orientation of new academics to higher education at UCT. As a contextualised professional development programme, NAPP is strongly aligned with UCT's Vision 2030. It adopts an Africa-centered approach to disciplinary teaching and learning which makes the programme relevant and responsive to the changing university community and society. NAPP provides the opportunities for new academics to learn, grow, reflect, network, connect and thrive in a supportive community that builds their confidence to tackle the challenges of diverse university classrooms.

As part of the requirement for the successful completion of NAPP, new academics must take on a teaching project at the beginning of the programme, explore it fully with support from NAPP facilitators who were Professor Alan Cliff, Dr Benita Moolman and A/ Professor Kasturi Behari-Leak. The academics had to present their interventions, insights and strategies for mediating teaching and learning challenges in their disciplines and classrooms, to the NAPP cohort on the last day of the programme.

Listed below are the EBE academics who participated and their teaching project topics.



Dr Mariette Smart, research officer in the Centre for Bioprocess Engineering in the Department of Chemical Engineering.
Ten fingers, ten toes, two eyes, one nose - Safety counts

Dr Daniel Ramotsoela, lecturer in the Department of Electrical Engineering.
Using research and design projects as an effective tool to teach engineering students

Miss Catherine Edward, lecturer in the Department of Chemical Engineering.
Improving process design thinking and project management strategy. The good, the bad and the honesty

Mrs Heidi Boulanger, lecturer in the School of Architecture, Planning & Geomatics.
A digital Indaba – using technology to reconnect

Prestigious fellowship for Professor Beushausen

Professor Hans Beushausen was elected as a RILEM Fellow at the annual RILEM Week in Merida, Mexico, held virtually on 31 August. [International Union of Laboratories and Experts in Construction Materials, Systems and Structures (RILEM, from the name in French)] The fellowship is awarded to RILEM senior members who have made exceptional contributions to RILEM in their capacities as a research scientist, engineer, technical leader, or educator. Emeritus Professor Mark Alexander said, "This is a very prestigious award, and Hans richly deserves it."

Nomination for CESA Aon Engineering Excellence Award

Confidence Tshilande has been nominated for the Consulting Engineering South Africa's CESA Aon Engineering Excellence Awards, which celebrates and showcases the innovation, quality, outstanding workmanship and professionalism in the industry. Confidence is an EBE alumna who completed her Master of Geotechnical Engineering degree in 2018. She is currently working as a professionally registered geotechnical engineer and client manager at Zutari (Pty) Ltd, specialising in geotechnical designs, project management, and client strategy development.

Confidence Tshilande

Confidence said, "I have an irrepressible enthusiasm for solving problems, employing my technical capability and engaging approach to collaboratively create solutions with diverse teams for clients and the communities the company serves." She added that her technical stature and leadership skills had been developed and enhanced through her experience working in the consulting engineering industry and the various roles and activities she engages in with universities and the broader industry.

Confidence is driven by a pursuit of empowering and creating lasting change. Seeking to address challenges faced by women in the industry, she founded Prestiio, a very first-ever (in the world) social networking platform targeted for women only around the globe, offering a safe space or platform to connect, engage and celebrate one another.

She currently serves at the University of Johannesburg (UJ) as a member of Council and a member of the Executive Committee of Convocation. She also serves on the Geotechnical Division of the South African Institute of Civil Engineers (SAICE) Board. Through this board, she is also a South African liaison member for the International Society of Soil Mechanics and Geotechnical Engineering Young Members Presidential Group.

Amongst many other publications, Confidence has been profiled by SAICE's Engage as one of the 'Phenomenal women in civil engineering who are making dynamic moves in taking South Africa to the next level'. She has been a keynote speaker on events and webinars hosted by SAICE, UJ and the South African Research Chair Initiative. She has been invited to speak on various radio and television programmes. She is currently mentoring young peers of diverse backgrounds at university and graduate levels. Confidence has a passion for community building, education, innovation and mentorship. She is an all-rounded engineer who inspires young engineers worldwide and is considered an outstanding and worthy nominee for the CESA AON award by Zutari.

Celebrating our retirees

Cheryl Wright joined civil engineering 36 years ago. She worked half days for many years while her boys were growing up. She has seen many changes over the years. including the move from the Snape building to the NEB in 2013. Final year classes were around 28 when she first started and are now over 100. As the senior secretary, Cheryl was the face of the department and was the go-to person for vac work.

When asked what she was going do in her retirement she said, "Hopefully, all the things I never had the opportunity to do when I was working, as I never had the time!!! I am a very creative person, so designing and making things is when I am in my happy place. I will also have designed my cottage, which is in the process of being built in Betty's Bay, and I hope to move in by the end of the year, but I have started the process of establishing a garden already. It is three minutes' walk from the beach, so I will also be spending many hours on the beach with my dog.

Isabel Ncube spent 21 years in the Diplomatic Missions in Zimbabwe before moving to Cape Town. She joined UCT in 2002, where she worked in the Department of School of Languages and History for two years.

In 2004, she joined the Department of Civil Engineering as an academic administrator. On retiring, Isabel said, "This is the end of an era of my long admin career and the beginning of another exciting journey. It was fun working with students and the university community at large. I leave the department with a rich experience. There are many things that I look forward to doing post my retirement."

Willie Slaverse joined UCT in July 1984. He spent his first two years in the Garden Services before joining the Department of Mechanical Engineering, where he spent 35 years. Willie is a technical assistant and worked with facilities and IT support.
He had seen so many changes in the department and was hoping that, before he retired, he would see the completion of the new workshop, but then COVID hit and put a halt to construction. He promises that he will come back to see it. He has seen many students come through the department and graduate, including Brandon Collier-Reed, who is now his boss.
Willie is determined to keep himself fit and healthy during his retirement and wants to do volunteer work in his church when it is possible again. He will spend time with his family, including two sons and one daughter, and six grandsons.

Julie Thompsett started working at UCT in 1993 as a temp in the HR appointments office in Bremner. She wasn't there long before she moved to Architecture & Planning in the Centlivres Building, when it was still part of the Faculty of Fine Art & Architecture. Julie worked there in various roles as a temp, receptionist, finance assistant, BAS secretary, BArch Secretary, general help in the faculty office of Fine Art & Architecture, and as the secretary to the then Dean of Fine Art & Architecture, Prof Derek Japha. In 1999 Architecture and Planning joined the Faculty of Engineering & the Built Environment and became the School of Architecture, Planning & Geomatics. In 2002, Julie took over from Kay Orrell as the admin officer. In 2016, she joined the Department of Construction Economics and Management as the departmental manager. Julie hopes to travel as much as possible in her retirement – visiting her children and grandchildren and putting some ticks on her travel bucket list. She will also work with horse and dog rescue shelters – get up a bit later than 05h00 and generally enjoy life!

Joachim Macke joined UCT in July 1993 and says has worked 28 fast years for the constantly growing Department of Chemical Engineering. He is the Principal Technical Office in the Chemical Engineering workshop. He said that he has never experienced a quiet or boring time during his time in the department.

During his retirement he hopes to spend his time with outdoor activities.

Celebrating our staff

Pierre Bizimana is the IT Technical Officer in the Department of Electrical Engineering. He has been the one person in the department who has been on campus every day since lockdown. Most days he is the go-to person on the fourth floor as most of the administrators are still working from home, and the receptionist post is vacant. In March this year a flood happened on the 5th floor and moved quickly down to the 4th floor – pouring into the server room, and the postgrad and undergrad admin offices. Luckily Pierre was in his office at that time and heard the water gushing down the walls and through the ceilings. "He moved things quickly out of the way and contacted maintenance, so we are very grateful to him," said Janine Buxey, the departmental manager.

Long Service Awards

10 years

Pierre Smith
Mechanical Engineering Workshop Manager

Dominic De Maar
Chief Technical Office, Electrical Engineering

Brendon Daniels
Technical Officer in Electrical Engineering

15 years

Sarojini Pillay
Departmental Manager, Chemical Engineering

25 years

Nanette Pickover,
Admin Assistant, Architecture, Planning & Geomatics

Kenneth Maseko
Technical Assistant, Chemical Engineering

John Coetzee.
Principal Technical Officer, Architecture, Planning & Geomatics

35 years

Miranda Waldron
Principal Scientific Officer, Electron Microscope Unit

Breaking records in Tokyo

Chemical Engineering PhD candidate and star athlete Mpumelelo Mhlongo put on an exhilarating performance at the 2021 Paralympics in Tokyo, Japan. The exceptionally talented athlete came in at 11:03 seconds in the men's 100 m combined T44 and T64 class final, and 6:80 m in the men's long jump T44 final, breaking the world record in both events.

"It's been a real privilege to compete with the best on the world stage and I am heartened by the response my achievement has received," he said.

At 27, Mhlongo has overcome a lot in life. He was born with amniotic band syndrome, which resulted in a clubfoot and his right leg being shorter than his left. But with his can-do attitude, he has achieved great things – on the track and in the lecture hall. He's currently completing his PhD under the supervision of Professor

Klaus Möller. His research project focuses on converting plastic waste into diesel. Read More

While doing all this, Mpumi and his high school friend Zain Bana, a 2016 civil engineering graduate, founded a healthcare company start-up called Steady State Ventures.

Against all odds

2021 has been a tough year for us all. Still, Nuraan Hartley, the undergraduate administrative assistant in the Faculty Office, did not let that get in her way of achieving her goal of completing her Higher Certificate in Adult Education from UCT with a 70% average.

Nuraan registered at the beginning of 2020 for the certificate to further her personal growth. She is also passionate about helping people grow and develop themselves. In 2018, she volunteered and qualified as a sexual assault advisor, which she continued to do until April 2020.

On 9 March 2020 Nuraan collapsed in the office and was rushed to hospital with respiratory failure. When she was finally discharged, the country was in lockdown, and Nuraan had to adapt to working from home while recovering and looking after her husband, Loedfie and her two sons. Ameer is 17 years old and in Grade 11 and needed supervision and help with his homeschooling. Na-eem, her 20-year-old, is doing graphic design at Cape Town College and needed lots of support and encouragement during lockdown.

Because Nuraan has such a big heart, her responsibilities increased during the lockdown period. She became responsible for financial and emotional support to her extended family, who were going through tough times. Nuraan was heartbroken as for months she had not seen her grandfather, who she describes as her best friend, and even though they remained in constant contact, it was not the same as having him close by. She said, "We have lost more than ten close family members and close friends this year and not even counting the loss of last year."

Then in March 2021, Nuraan was again rushed to hospital with a nearly fatal illness. She was unable to see her family due to the COVID restrictions in the hospital, and she did not know if she was going to see them again. She is slowly recovering but is still experiencing many side effects. She said, "I am grateful for life, and I value my time much more than I did before."

Due to her health challenges, she could not attend the start of the semester this year. However, she pulled through and managed to catch up and will graduate in December 2021.

"The course helped me discover so much about myself, and it is really helping me grow as an individual in my overall conduct," she said. "I've applied for the Advanced Certificate in Adult Education but will decide if I will proceed or whether I need more time to focus on my health."

On Monday 2 August, her dear husband, Loedfie suddenly passed away. She has shown such determination and strength in the face of aversity and heartache. We will all be there to celebrate when she graduates in December.

Study on Residential Electricity Consumption

In late June, Alison Hughes, senior research officer in the Energy Systems Research Group (ESRG) in the Department of Chemical Engineering, and Richard Larmour, a research officer in the Advanced Machines & Energy Systems group in the Department of Electrical Engineering, presented their findings of a research study they did over 2020 and 2021. The study was on Residential Electricity Consumption in South Africa and was funded by the South African National Energy Development Institute (SANEDI). The work was presented to experts from industry and academia.

In the introduction of their report, they say: *"*On a global basis, the residential sector consumes one-fifth of the world's energy (International Energy Agency 2018: 2) and has a large untapped potential to benefit from the multiple positive economic and social impacts of energy efficiency. These benefits include increased disposable income, poverty alleviation, improved health & well-being, improved energy security and macro-economic benefits (IEA 2015: 31–37). Improved energy efficiency means that less energy is used while maintaining the same level of service or increasing service levels while maintaining energy use. In the residential context, this is achieved by utilizing more efficient appliances and by utilizing appliances more efficiently, meaning that efficiency improvements may be affected both by investments in technical interventions and by changes in behaviour."

The research quantified the likely energy impacts of the national appliance Standards & Labelling (S&L) programme over the past five years using estimates of household appliance electricity consumption across three income groups. The study found that the implementation of appliance Minimum Energy Performance Standards (MEPS) and the S&L programme have undoubtedly set residential consumption on a favourable trajectory and have probably achieved savings in electricity consumption in the sector of about 4.9 TWh over the past five years. The results show that these savings can substantially reduce electricity use in lower-income households. It also provided an insight into the potential future impacts that both technical and behavioural interventions might achieve under different scenarios over the coming two decades. The scenarios considered a tightening of appliance MEPS and an extension to cover additional appliances, including televisions. The results provide a basis for measuring whether current residential energy-efficiency policy targets set out by the Post-2015 National Energy Efficiency Strategy (NEES) are likely to be met. It indicates that the NEES target for the residential sector is unlikely to be met without a tightening of standards and that an accelerated adoption of solar water heaters can play a very important role. There is generally a dearth of detailed knowledge about how electricity is used within households in South Africa and it is hoped that this work will provide a launch pad for further research and broad collaboration.

You can read the full report on SANEDI website.

Runner-up in Mobitecture competition

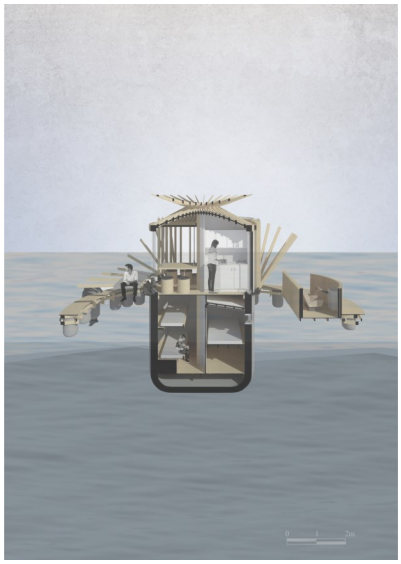
Kira Van Zyl, a third-year architecture student, was announced as a runner-up in the Mobitecture competition, hosted by UNI, a web platform for individuals or organisations seeking architectural design solutions or generating ideas.

Kira said, "The competition was given to us as a university project, and I decided to enter it. The task was to design a mobile home for a family of four to embrace a nomadic lifestyle. The brief invited the realisation of utopias and drawing on nature as inspiration.

Kira's project was inspired by the sea anemone and its relationship with the clown fish, which is a form of mutualism. Mutualism describes

a symbiotic relationship where both species benefit from co-existing. The clownfish receives shelter and protection, whilst the sea anemone receives food by consuming the clown fish's scraps.

The mobile houseboat follows a similar principle. It provides shelter for its human inhabitants, whilst consuming plastic waste from the rivers leading into the ocean. "Thus my design is given the title anemone. The anemone is constructed from recycled plastic. The collected plastic waste is therefore used to produce another anemone," Kira said. "Thus, one anemone breeds another, nurturing a cycle of inhabitation that serves our environment rather than



harming it."

Unconditional accreditation for architecture

The School of Architecture, Planning & Geomatics received unconditional accreditation by the *South African Council for the Architectural Profession* (*SACAP*) for the three architecture programmes:

- Bachelor of Architectural Studies,
- Bachelor of Architectural Studies (Honours)
- MArch (Prof).

The SACAP Validation Board commended the School for its dedication and incredible work, not only during the more regular teaching periods but specifically in 2020 when emergency teaching became a reality. The Board also recognised that lessons learned in 2020 would be implemented going forward.

Step toward CO_2 hydrogenation technology

A team of researchers from the Catalysis Institute in the Department of Chemical Engineering and Sasol have made advancements in the use of a commercial iron catalyst, produced cheaply and at large scale at Sasol's Secunda plant, which will enable conversion of unavoidable or biogenically derived carbon dioxide (CO_2) and green hydrogen directly to a variety of green chemicals and jet fuel.

This development is a significant step towards the implementation of CO_2 hydrogenation technology in South Africa.

For decades Sasol has been using its Fischer Tropsch (FT) technology to convert low-grade coal and gas into synthetic fuels and chemicals. The largest scale example of the commercial application of this technology is its Secunda plant in Mpumalanga, which converts synthesis gas – a mixture of carbon monoxide (CO) and hydrogen (H2) – derived from coal gasification and supplemented by reformed natural gas into 160 000 barrels of products per day.

Professor Michael Claeys, the director at UCT's Catalysis Institute, said: "Sasol and UCT have a longstanding collaboration on the fundamental aspects of FT technology, on both commercial

cobalt and iron catalysts, which provides workable solutions for operating plants. The partnership brings together Sasol's established expertise around FT catalysis and synthesis gas conversion, and UCT's modelling and in situ characterisation capabilities."

Read more at UCT News

Nurturing Africa's Future Leaders

2019 KJB scholar Callum Tilbury is part of a group of UCT graduates who have given learners in five rural Eastern Cape villages a technological leg up by building a scaleable, low-cost tech centre using Raspberry Pi computers and free open-source software. Read more.

In his application for the KJB scholarship, Callum described himself as an eager entrepreneur with ambitious dreams of using his skills to create high-impact businesses. In the long term, he hopes to impact the world in a positive way through innovative solutions to tough socio-economic problems.

"It gives us this great sense of fulfilment to see one of our 2020 graduates going out and making a difference already," said Professor Zingoni, director of the programme. "The primary goal of the KJB programme is to produce 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."

Callum graduated in 2020 with a first in Electrical and Computer Engineering. He has just embarked on an MSc in Artificial Intelligence at the University of Edinburgh. On this, Professor Zingoni remarked, "We are proud that Callum has been accepted into one of the top institutions in the world, and wish him success."

Professor Klaus Jurgen Bathe, the founder of the programme, graduated from UCT in 1967 with a BSc in Civil Engineering. Click here to read about the KJB programme.

Online Aqualibirum competition

On Saturday, 21 August, Alex Newlands, a postgraduate student in civil engineering and a member of the Western Cape South African Institution of Civil Engineering (SAICE) committee, organised an online Aqualibrium water-distribution network competition. Nine high schools from the Western Cape participated in the competition.

The Aqualibrium water distribution network competition started in 2003 when SAICE and Rand Water launched a joint water competition as part of their centenary celebrations. The success of the competition on a regional and national level has ensured its continuation. The Aqualibrium Challenge was developed in South Africa by Professor Kobus van Zyl, who was based in Civil Engineering at the University of Cape Town. The competition emphasises the importance of engineering and water distribution networks for supplying safe and clean drinking water to the citizens of our country and encouraging learners to take mathematics and science as school subjects.

It was the first time the competition was held online. Teams, comprising three learners each, were presented with a model of a simplified water distribution network on EPANET, a software used to model water distribution networks. They had to configure pipework between reservoirs so that, when a supply reservoir was drained, it would drain in a prescribed manner to each of the demand reservoirs. They were given time to try various configurations and options within a prescribed time limit, after which their network was tested. The

competition gave learners some insight into the functioning of water distribution systems, the complexity of the design and its operation. Congratulations to Parel Vallei and DF Malan High schools who tied in first place.

End of the final-year design project for ChemEng

Dr Malibongwe Manono from the Department of Chemical Engineering said, “This week, we concluded a 6-7 week long show on a final-year chemical engineering design course with students presenting their feasibility studies for a zero-liquid-discharge acidic mine water treatment to a portable water plant. This picture shows the last group of students, “consulting engineers”, presenting their case to the “board” of the concerned mining company. I felt a little “cela nithi hooray” (shout hooray) moment there after we successfully ran this course in a face-to-face mode with very few glitches while complying with the UCT’s physically distanced learning modus operandi (noting that we weren’t able to do this in 2020, it was great to have face-to-face interactions with students). Kudos to

the unstoppable Class of 2021 and the teaching team in the Department of Chemical Engineering.”

Women's day event

On Thursday, 12 August, Professor Marianne Vanderschuren, Deputy Dean for Transformation and Social Responsiveness, hosted an online Women's Day event. The guest speaker was Heather Allen, an independent international consultant on gender and urban transport, who spoke on Women during COVID.

Nicky Wilson-Harris, an executive coach and leadership development facilitator, gave several short exercises and tips to help staff deal with anxiety and stress during this challenging time.

Do you think we will just go back to normal "after COVID" and women will get back into the economy as before? This was the question asked to the participants, and the answers were judged. Carol Koonin from the Department of Electrical Engineering was declared the winner and received a hamper.

Carol's response was: "Firstly, there will be no 'after COVID' as COVID is probably here to stay for many years to come. As long as there are anti-vaxxers and people who are ill-informed and scared to take the vaccine, we will never get to herd immunity. I think women's roles will be more demanding in that women will be expected to provide home tutoring, as well as their current roles in both their households and in the work situation. If there is a long-term impact on the economy, it is most likely that women will take the brunt of job losses, as we live in a male-dominated world (it is unfortunate that I have to state this, but the reality is that men dominate CEO positions in companies, earn more for doing the same work as a woman.) This is a reality, which I might add, needs to change."

Bridgette Cloete, Deputy Chair for the Transformation Committee, handed the hamper over to Carol Koonin

Instead of receiving flowers for her participation, Heather Allen donated the money to a women's NGO. Carol Koonin said, "Thank you so much for organising the get-together. It was a much-needed different aspect on the usual meetings."

WomEng Southern Africa Fellowship

13 EBE students have been selected for the prestigious WomEng Southern Africa Fellowship. In 2021, 75 engineering and technology university students from across South Africa, Namibia and Botswana have been selected to develop leadership, innovation, employability and well-being skills required by young graduates to succeed in the engineering industry and beyond.

The students are:
Ayanda Ndlanzi, Diana Eshibukho , Ella Mc Carthy-Page, Eshler Muchongwe, Gabriella Norval Mikano Masithi, Millicent Kwangwari, Morina Sikushumane, Ongezwa Mbaba, Sarty Sheetekela, Shivani Manga, Flourish Oluwamakinde and Zahra Motlekar.

NEW STAFF

Bettina Kaine Tawa joined HySA Technology Development on 1 July as a technical assistant.

Thulani Nyathi joined c*change in the Department of Chemical Engineering on 1 August as a Junior Research Fellow.

Lisa October joined the Department of Chemical Engineering on 1 July as a lecturer.

Lerato Motsepe joined the Department of Chemical Engineering on 1 July as a lecturer.

Resignations

Professor Pieter Levecque from the Department of Chemical Engineering.

New chair for the Transformation Committee

Dr Malibongwe Manono is the newly elected chair of the Transformation Committee. Malibongwe is a Senior Lecturer in the Department of Chemical Engineering. He works on several research and development projects around the consideration of closed water circuits within minerals processing and the extraction of value from metallurgical wastes. He has been a member of EBE's Transformation Committee since 2018. Outside teaching and learning, research, and admin thereto, he is a fitness and wellness enthusiast.

Bridgette Cloete is the deputy chair of the Transformation Committee. Bridgette is the undergraduate admin officer in the Department of Chemical Engineering. She describes herself as a peoples person who loves to spend her weekends with family, friends and her husky. She misses singing in the church choir, as with covid; they only have solo singing for Sunday services.

Farewell

A/Professor Pieter Levecque resigned from the Department of Chemical Engineering to start new adventures with his family. Pieter said, "It has been a strange time to leave without people in offices to walk by one more time. But South Africa is a part of the family, so we will come and visit."

Pieter and his family are living in the Netherlands. His wife is working on a project around climate justice with eight African countries, including South Africa. The aim is to coordinate campaigns on the continent and advise the Dutch ministry on which policy decision will have the biggest positive impact on Africa. Pieter will be joining the University of Antwerp and will travel by train across the border into Belgium. He said," I am still in chemical engineering and similar research. I will be in a city with the largest immigrant community in Belgium, so looking forward to wiggling myself into spaces around inclusivity, etc. The memories of the students will forever stay with me. The privilege of being part of the life of so many super talented young people is very special. If a number of them climb the ladder in the next few years, South Africa will be in a good space."

RIP

Mr Heinrich Christians, Chief Technical Officer in the Department of Mechanical Engineering, passed away on Sunday, 18 July 2021. He leaves behind his wife, Natasha, and his two sons, Curwen and Enrique.

He joined the Mechanical Engineering workshop in August 2016. Colleagues fondly remember him as a key member of the workshop team, regularly standing in for Pierre in a leadership position. He was an expert craftsman on his machines, creating the most amazing things for researchers and students alike. "You knew that you could count on him to bring your drawings accurately to life. He was such a genuine person, with a great sense of humour, someone who you could count on. We will miss having him as a member of our team," said the head of the department, Professor Brandon Collier-Reed. The department collated messages of support and condolences, which they sent to his family. Colleagues attended a drive-by Memorial which took place on Friday, 30 July.

Mr Tahir Mukaddam, Chief Technical Officer in the Department of Civil Engineering passed away on 19 July 2021. Tahir joined the department in October 2014. He has been described as a UCT rising star, a gentle giant and a person who was respectful, compassionate, and loving. He will be remembered as a caring colleague who always put others' needs before his own. He had an extremely friendly demeanour.

Colleagues said he would be sorely missed by the Department of Civil Engineering staff, especially his "work family" in the laboratory. He was like a son who treated them with the utmost respect and love. He is survived by his grandmother, Naimah Mukaddam; mother, Nazreen Peters; and brothers and sisters from the Mukaddam, Jacobs and Peters families. The department collated messages of support and condolences, which they shared with his family.

Emeritus Professor Vanessa Watson passed away on 15 September after a long, brave fight with cancer. Vanessa joined UCT 42 years ago and was a professor of city planning in the School of Architecture, Planning and Geomatics. She was the founder of the Cities in Africa project, which became the African Centre for Cities, and a founder of the Association of African Planning Schools.

Professor Cyril O'Connor said, "She was a wonderful colleague and of a Deputy Dean for some years. I hope that it is well known that the African Cities in Africa was really her brainchild."

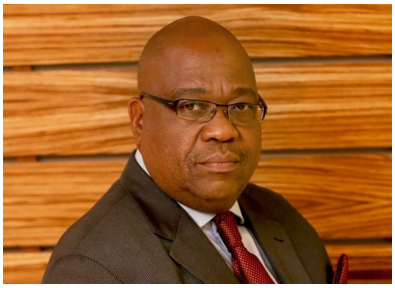
She was a senior scholar and a mentor to so many staff and students. She was a Fellow of the University of Cape Town and received numerous awards over the years. Vanessa delayed her retirement until last year and became a Senior Scholar in the faculty.

Janine Meyer, the departmental manager in APG, said, " Having touched so many staff, students, colleagues internal and external to UCT, her reach and her impact was global. Vanessa will be remembered for her kindness, her quiet strength, her mentorship and guidance, her passion for planning, her friendship and so much more."

RIP

Mr Cyril Vuyani Gamede died on 1 August at the age of 58. Cyril graduated from EBE with a BSc in mechanical engineering in 1986 and his master's degree in 1988. He was the president of the Engineering Council of South Africa for two terms, with his last term ending in November 2020. "Mr Gamede as President of the Council was faced with a mammoth task of providing strategic guidance and repositioning the ECSA brand as an effective regulator, and with his inimitable leadership, Gamede steered the ECSA ship towards great success and solidified ECSA`s advisory role to the public sector and industry at large," said the present ECSA president, Mr Mashao Lebea. He also served as founding president of the National Society of Black Engineers and president of the South African Institution of Mechanical Engineering.

In January 2020, he was appointed CEO of the Construction Industry Development Commission (cidb) . "Gamede made a big difference to



cidb in a short period of time. He was passionate about engineering and strongly believed that construction projects would turn the country's economy around," said cidb's chairman. Natalie Skeepers.

Successful MechEng Product Design course

The mechanical engineering final-year students were on campus to work on their Engineering Product Design course, part of the department's new fourth-year curriculum. The course aims to teach the structured engineering product design process from concept, basic, detail design to manufacturing, integration, and testing.

The course spans a whole year, and students work individually on the design brief and in groups when they build and test the designed product. The brief for the product design was: You must design, build, and test a battery-operated torque wrench as per the supplied user specification. You will have a constrained budget to produce one single working prototype. You should make optimum use of the available mechanical components in the department. Specifically, you must use the supplied Li-ion cells and motor in your design.

Course convener A/Professor Wim Fuls said, "The course went very well. There has been no formal course feedback yet, but informally the students really enjoyed the course – a stark contrast to previous years." The following benefits were also experienced:

- The workshop's load reduced from about 1400 hours to less than 100 hours – Pierre Smith, the workshop manager said his stress levels dropped from ten to minus five.
- The sunk cost for purchased items that cannot be re-used dropped from R170 000 to below R40 000.
- Each student had the opportunity to see how their design turned up in real life, and used hand tools to assemble and fix stuff. For some it was the first time they actually had to insert or remove a drill from a cordless drill.

International student design competition

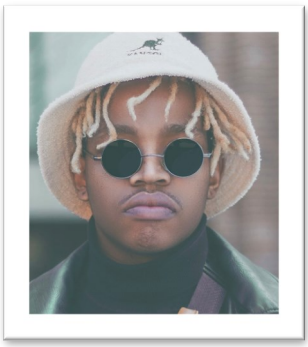
Adam Oosthuizen, a third-year architectural studies student, came second in the Canadian Academy of Architecture for Justice's (CAAJ) design competition, Breaking the Cycle — designing for a Community Justice Centre.

Social Infrastructure is Justice—Mqhekezweni Community Centre

Entrants had to choose the site and design a new Community Justice Centre. The goal was to challenge their current perceptions of the judicial and corrections process — especially pertaining to the notions of race, poverty, gender and the inherent inequalities that exist in regard to the accessibility of justice services — designing a new type of courthouse that aids in mediation and healing of both victims and those who've gone through the correctional services.

Adam's project was Social Infrastructure is Justice - Mqhekezweni Community Centre for Justice in the Eastern Cape. Mqhekezweni is situated in a circuit court district, a type of travelling court in the South African law system. The region often has prolonged periods of crime, backlog, and a lack of trust in the Western justice system. Access to service delivery is still heavily dictated by the region's history as the Transkei homeland, or “Bantustan”, a territory designated for black people by the pre-democracy National Party to further its Apartheid policies. The lack of clinics, schools, justice services, public infrastructure and employment have continued to exasperate the effects of poverty, disease and environmental degradation, threatening a perpetual neo-Apartheid of service delivery in the region.

Tankiso Hantsi, also a third-year



architectural studies student, received an honourable mention for his submission. His project was Lekhotla, a court of justice. Khotla is a public meeting, community council or traditional court in the context of Southern Basotho, a custom of allowing the community a say in convening meetings of all kinds. In Southern African cultures and traditions, the circular motif represents philosophical, ideological and spiritual undertones linking to cosmology, eternity, community and greater interconnectivity with all nature. It underpins the daily ritual of every citizen in realising that an individual represents one node of a wider network that works to sustain itself. Each individual's actions contribute to the greater whole, propagating the civilisation going forward.

Adam said, "Big shout out and thanks to the BAS3 lecturers (especially to Albert Van Jaarsveld) for guiding us through this project. I am very grateful to have represented EBE in this competition."

Lekhotla, a court of Justice

UCT ICE Student Chapter is inaugurated

A group of civil engineering students were head-hunted by the Institution of Civil Engineering (ICE), a UK-based professional body, to set up a UCT ICE Student Chapter. They were chosen based on their current contribution to the civil engineering industry. ICE assists students and young graduates towards their professional registration as Charted Engineers and is a global leader in training and equipping engineering professionals with the necessary knowledge to be at the forefront of the engineering industry.

Left to right back: Alex Newlands (Treasurer), Karabo Mashane, Hugendra Moodley
Left to right middle: Mahima Maharaj (IT & memorabilia) Erik Mwangingo (Recruitment) , Calvin Ndlovu (outreach), Patrick Mwaka (fundraising), Karabo Makole (secretary-general)
Left to right front: Zindzi Tendo (Vice-Chair) and Nicholas May (Chair)

ICE is growing its presence in South Africa, so it approached the SAICE student chapter members. The prospective committee members underwent an intensive month-long background check by the ICE in London, which subsequently approved the UCT ICE Student Chapter committee on 10 August 2021. UCT is the first among the three universities in the Western Cape to host an ICE student chapter.

The UCT ICE Student Chapter aims to provide students with opportunities to network with industry-leading professionals and learn about the opportunities and challenges the profession deals with. ICE-SA hosts informative lectures such as a recently presented one by Mr Donald Midgely, one of the lead engineers in constructing The Leonardo, Africa's tallest building. The UCT ICE Student Chapter will assist students in becoming Student Members of ICE through the ICE webpage.

The UCT ICE Student Chapter will also facilitate student engagement in initial professional development recognised by ECSA and ICE. Networking with both industry professionals and other ICE Student Chapters will provide solid connections to other engineers across South Africa and the globe.

"We aim to enhance the working relationship between the international civil engineering industry and the UCT student populace, ensuring UCT graduates have exposure to the industry we will work in," said Nicholas May, the UCT ICE Chair. "The chapter hopes to make a real-world difference in the lives of civil engineering students and have a long-lasting impact on the civil engineering industry in South Africa."

Celebrating sustainability in EBE

Environment and Services course in Architecture

When it comes to transformation in sustainable design thinking, the School of Architecture, Planning & Geomatics is a trailblazer. The Environment and Services course run by Dr Tom Sanya has been praised for its ability to reshape the way that students approach a project – challenging them to find natural ways to facilitate intervention and make a space more comfortable, useable and sustainable. The School hosts a Global Studio project which happens in first which the ES course builds upon.

Jenna Bramley, Chisomo Phiri and Thuto Vilakazi

The course runs from second to third year and accommodates roughly 80 students each year. At present, owing to the Covid pandemic, the course runs online with content accessible at any time for a more self-regulated method of learning. Each student has access to a dedicated tutor whom they meet through regular, scheduled zoom consultations. The project for this year is the re-imagining of the Fuller Garden on UCT upper campus – preserving the gardens while improving the space.

ES Head tutor Chisomo Phiri has described the course as a means through which students can learn how to improve the quality of life for both local and global communities through architecture, planning and design. By getting to grips with the context and geographical nature of a project, they can effect tangible transformation in the face of big-world issues like climate change.

Thuto Vilakazi, a second year ES student, has said that the course has had a profound impact on him: “ES isn’t a course that operates in a silo because the environment is not something that is separate from everything else – it’s about synergy. I have learned that Architecture is a service to people that goes back to the important fundamentals of comfort, safety and context.”

Jenna Bramley, another ES student, has shared that the course has created a “complete shift” in her design thinking and execution: “I went from learning how to merely comply with a design brief to approaching designs with sensitivity. Now, I look at the global context and what changes can be made to existing infrastructure to make them better for the user.”

Phiri has said that this course is just one segment of a curriculum that continues to evolve in the direction of sustainable design education. We look forward to seeing many more exciting developments in APG as EBE continues to move towards the global Sustainable Development Goals.