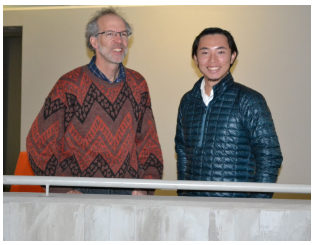
July 2017 Faculty of Engineering & the Built Environment University of Cape Town Vol. 13 Issue 2

Faculty Newsletter

As of July 2017, Associate Professor Azeem Khan is the new deputy dean for research and postgraduate matters. He has taken over from Professor Pilate Moyo who will be on sabbatical for the rest of the year and take up the headship of Civil Engineering from 1 January 2018.

Professor Dave Deglon has been elected a Fellow of the South African Academy of Engineering. Professor Deglon currently holds the Anglo American Platinum Chair in Minerals Processing and is the Director of the Centre for Minerals Research. This is a worthy tribute to his many achievements throughout his career.

Message from the Dean

It was wonderful and inspiring to see so many of our 2016 graduates attending the May graduation ceremonies. Graduation is an important part of our academic life, and I would like to thank the academic staff who took the time to be part of the platform party. And a big thank you to all the admin staff who work tirelessly in the background to ensure students graduate. We shared the July graduation ceremony with Commerce and Science and graduated 65 Master's and 13 PhD students – worthy achievement for the Faculty.

I am delighted that A/Professor Azeem Khan agreed to take up the position as the new deputy dean responsible for research and postgraduate matters. I look forward to working with him. A big thank you to Professor Pilate Moyo for the role that he has played over the past two years.

It is important as a Faculty that we remain pro-active in addressing the various issues that the students and staff have raised. We are moving ahead with a number of different initiatives, and there have been some interesting engagements and discussions on free fee education, decolonise curriculum and the culture on campus. I am grateful to the EBE undergraduate and postgraduate student councils who have been active in this area and have organised various events.

The Faculty Office has been hard at work processing applications for 2018. They have received 7882 and as of 26 July, had processed 7176. This compares to 7314 for 2017 at this time last year.

The contractors are still busy working on the Glass House on the third level of Menzies Building, together with the foyer area and the balcony above. I am assured it will be finished in time for the next semester. The area will provide an improved environment and much-needed learning spaces for students.

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

Congratulations to the staff and students who have been recognised for the work they do. The newsletter is full of their achievements.

New Deputy Director for ACC

Dr Andrew Tucker joined the African Centre for Cities (ACC) as Deputy Director on 1 July 2017. The role will see him supporting Director Prof Edgar Pieterse in the overall management of the centre and ensuring that ACC maintains and advances its position at the forefront of urban research and engagement on the continent and in the Global South.

Tucker has extensive experience working to understand and address inequality in a variety of forms across Africa. His work has explored how social markers such as race, sexuality and gender relate to the urban environment.

"The ACC has an incredibly rich research environment, defined by interdisciplinarity and a need to apply research findings to the material needs of different populations," says Tucker. "The ACC's approach therefore speaks very much to my own desire to straddle disciplinary boundaries to find innovative ways to understand and address the diverse needs of communities."

Tucker completed his PhD at the Department of Geography, University of Cambridge, in 2006, where he examined the way sexual minorities from across South Africa's historical racial categories were able to strategically and pragmatically appropriate urban spaces in diverse ways, to become visible to wider heteronormative societies.

This led to the publication of his monograph *Queer Visibilities: Space, Identity and Interaction in Cape Town*, as part of the RGS-IBG book series by Wiley-Blackwell in 2009.

Subsequently he was appointed as the Deputy Director of the University of Cambridge Centre for Gender Studies and a Fellow of Jesus College, Cambridge.

In 2014 Tucker relocated to South Africa and took up a position at the Anova Health Institute to conduct research into the particular healthcare needs of Key Populations such as Men who have Sex with Men (MSM). This work included the development of the first community-based HIV prevention programme for MSM in South Africa. More recently Tucker worked as the Project Manager for Anova Global Programmes, where he managed teams working to address the healthcare needs of Key Populations in countries such as Namibia, Mozambique, Malawi, Botswana, Lesotho and Haiti.

Dr Andrew Tucker

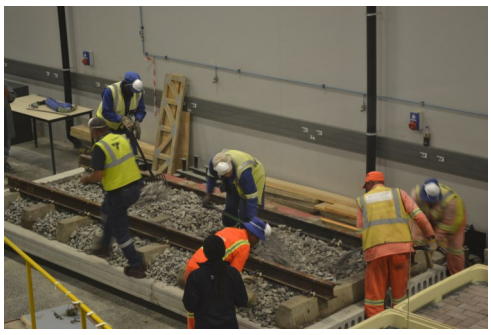
"We are very excited about the expansive skills and insights that Dr Tucker will bring to the position. His experience in leading large-scale global research on urban health questions will greatly enrich the interdisciplinary scope of ACC," says Prof Pieterse of the appointment.

Article by Alma Viviers

CoMSIRU's open day

CoMSIRU (Concrete Materials and Structural Integrity Research Unit) held an open day on 29 May 2017 which was attended by its advisory board members, students, staff and other industry partners. The day consisted of student seminars, demonstrations of the various types of equipment that is used for both laboratory and field testing and exhibition of current and completed research projects. The exhibition included a full size, 5m long rail track mounted on a concrete slab to illustrate the various components of a rail track on a bridge deck. The unit's research is focused on durability of concrete structures, structural health monitoring, structural integrity assessment, and repair and rehabilitation strategies for concrete structures.

In 2016, CoMSIRU was accredited for another five years. The unit has grown and over the past five years it has graduated an average of 10 master's students per year and 3 PhDs between three academics, Professor Pilate Moyo (Director), Professor Hans Beushausen (Co-Director) and Emeritus Professor Mark Alexander. It has two postdoctoral fellows, Dr Fulvio Busatta, who joined in 2014 from Italy, and Dr Ines Tchetgnia Ngassam, who joined in 2015 from Cameroon.



Experts see radical changes ahead in the oil and gas industry

On 7 June, the day the university closed down due to a huge storm hitting Cape Town, Professor Harro von Blottnitz, from the Environmental and Process Systems Engineering Group in Chemical Engineering, and Jim Petrie, an IChemE Energy Centre board member, hosted a workshop on the Future of Oil and Gas in South Africa. About 45 people braved the weather and attended the workshop, which was chaired jointly by Professor Stefaan Simons (Chair: IChemE Energy Centre, and Dean of Engineering at Brunel University in the UK) and Honorary Professor Jim Petrie (IChemE Energy Centre board member).

Before the workshop, Prof Harro von Blottnitz said, "Whilst there has been robust public and professional discussion about challenges in the electricity (and now water) sectors, there is very little understanding of vulnerability to possible acute disturbances in the transport and fuels sectors. And given that our largest import bill and the second-largest contribution to our nation's carbon footprint comes from transport, we see much scope for radical thinking about techno-economic transformation in this sector. IChemE is a good resource partner in this discourse because of its global technical capacity and reach."

The workshop showcased contributions from a range of industry associations, land eading experts in sector infrastructure investment, as well as speakers who talked to the current operational challenges within the sector.

For more information on the workshop, see the article Experts see radical changes ahead in the oil and gas industry, written by Kim Cloete for *Engineering News*.

Vivienne Japha / Len & Gunnel Hicks Memorial Lecture

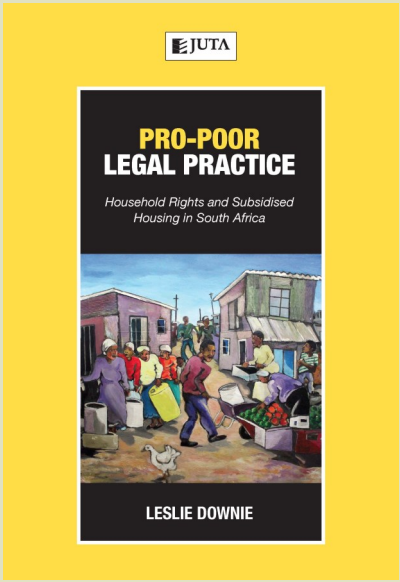
On 24 May the School of Architecture, Planning & Geomatics held its annual School prize giving and exhibition event, together with the Vivienne Japha / Len & Gunnel Hicks Memorial Lecture.

This year, as part of its international lecture series, the School hosted Joy Mboya, the executive director of the GoDown Arts Centre, the leading non-profit multidisciplinary arts facility in Nairobi, Kenya. She is a performer and cultural activist. Educated as an architect, Joy has led the Centre's development as a site for artistic experimentation, cross-sector partnerships and creative collaboration. Widely recognised for both her programming vision and her managerial skills, Joy has served on the Governing Council of the Kenya Cultural Centre, which oversees the Kenya National Theatre, was a member of the Steering Committee for the ARTerial Network, a pan-African consortium for the cultural sector, and is currently trustee of Gaara Dance Foundation. Joy's work has been recognised by numerous awards: she received the Head of State Commendation Medal for her contributions to the development of Kenya's creative economy in 2009, and was awarded the Order of the Golden Warrior State Commendation in 2013 for her outstanding leadership in the field.

Joy Mboya

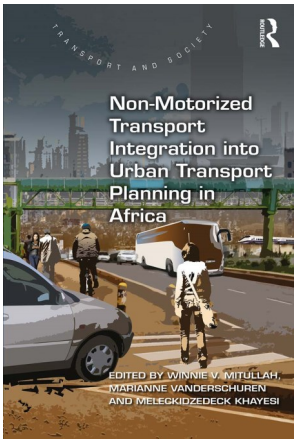
In her talk titled **Unfolding Together: The Story of one Arts Centre and its City,** she illustrated how, since its establishment in 2003, the GoDown Arts Centre has sought to explore the role and meaning of contemporary African art, alongside the intensifying urbanisation of Kenya, with its concomitant challenges and opportunities. Organically, the GoDown has become immersed in issues of transformation, identity and agency in the city and has been engaging with this over the past 6 years through two projects - *Nai Ni Who* (Who is Nairobi) and *Shukisha Nairobi*. The latter is an urban transformation project in partnership with local and Swedish architects, while the former is an annual citywide festival initiated by the GoDown but curated in the main by Nairobi residents.

BOOKS

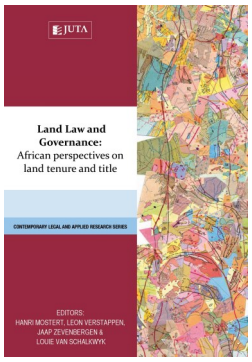


Leslie Downie BA LLB Hons (English) achieved her MPhil (Geomatics) in 2015, with distinction. The thesis was supervised by Jenny Whittal from Geomatics and Amanda Barratt in the Law Faculty. Leslie recently converted the material into a textbook published by Juta, entitled *Pro-Poor Legal Practice: Household Rights and Subsidised Housing in South Africa.* The book develops a methodology for adding legal weight to informal land agreements, and various universities are currently discussing its potential for use in transformed curricula.

Pro-Poor Legal Practice grapples with how people's private lives and informal practices intersect with the legal and cadastral land-information system. It argues that in Africa, mapping of 'people-belonging-to-land' should be given equal weight to mapping of 'land-belonging-to-people'. While the book is written primarily for pro-poor lawyers, it is of interest to engineering consulting firms and surveyors dealing with subsidised housing developments.



A/Professor Marianne Vanderschuren collaborated with researchers in Kenya and they have edited a book entitled *Non-Motorized Transport Integration into Urban Transport Planning in Africa.* The book is based on in-depth research conducted in Cape Town, Dar es Salaam and Nairobi. It demonstrates that transport and urban planning remain situated in a logic of automobile-dependent transport planning and global city development. The editors of the book are A/Prof Marianne Vanderschuren from Civil Engineering, Winnie Mitullah, an Associate Professor of Development Studies based at the Institute of Development Studies at the University of Nairobi, and Dr Meleckidzedeck Khayesi, a teacher by profession, conducting research in Human Geography, with a focus on transport and safety.



A/Professor Jenny Whittal has contributed to a chapter in the book *Land Law and Governance: African Perspectives on Land Tenure and Title*. The book explores different ways of conceptualising secure land holding in Africa. The book brings together voices from different contexts, offering contrasting perspectives and methodological approaches. *Land Law and Governance: African Perspectives on Land Tenure and Title* also juxtaposes a range of political and academic viewpoints through theoretical discussions and case studies. The book thus opens up the discourse on forms of security of tenure in Africa, in a global context.

Jenny contributed to the chapter "Customary Land Rights in the Context of Urbanisation and Development: Case Studies from Botswana, Namibia and Ghana" together with Emmanuel O Akrofi .

Polity Books has just published *New Urban Worlds: Inhabiting Dissonant Times* by AbdouMaliq Simone and Edgar Pieterse, which explores the emerging epicentres of global urbanisation.

It is well known that the world is transitioning to an irrevocable urban future whose epicentre has moved into the cities of Asia and Africa. The full implications of this transformation cry out to be understood because city building (and retrofitting) cannot but be an undertaking entangled in profound societal and cultural shifts.

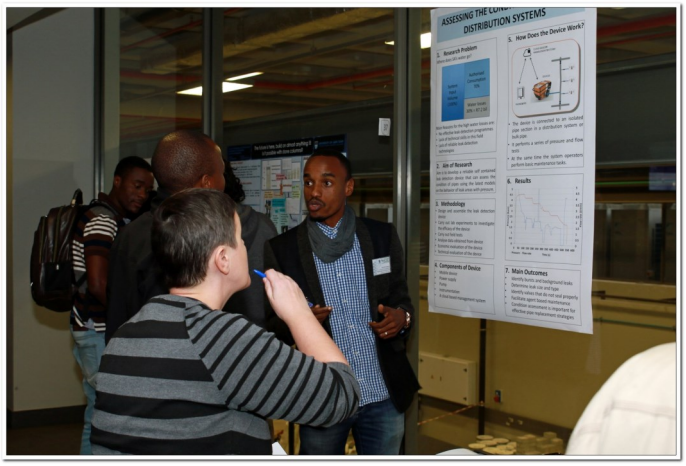
In this highly original account, renowned urbanists AbdouMaliq Simone and Edgar Pieterse offer a call for action based fundamentally on the detail of people's lives. Urban regions are replete with residents who are compelled to come up with innovative ways to maintain or extend livelihoods, whose makeshift character is rarely institutionalised into a fixed set of practices, locales or organisational forms.

4th EBE Research Expo

On 25 May 2017, the fourth EBE Research Expo, organised by the EBE postgraduate student council, celebrated and showcased the research work being done across all departments in the faculty. Over the years the number of students exhibiting has grown, and this year there were 50 exhibitors with topics that ranged from water desalination, hydrogen fuel cells, and complex urban food systems to the long-term sustainability of outer space. The expo coincided with Africa Day and the focus was on innovative research projects that were looking at solutions for the challenges that we face in Africa.

Professor Phakeng, the deputy vice-chancellor responsible for research and internationalisation, addressed the guests. "UCT may be the best in Africa but is it the best for Africa? Are we doing research for Africa, with Africa and not just about Africa?" she asked. Research needs to be informed by our location in Africa and this would help us understand how we can go about decolonising research and research excellence at UCT.

Dr Rob Adam, director of the SKA project, was the keynote speaker and his topic was "Success Factors in Large High Technology Projects: a comparison between PBMR and SKA. Why did one fail and one is such a success?" Dr Adam said it is about being fully invested in the project, having more than one strong champion and strong allies, understanding your limitations, knowing the market and having the right culture – fostering rigorous engineering culture to get things done within the time frame.



Prof Genevieve Langdon, a judge from Mechanical Engineering judging Rene Nsanzubuhoro's poster presentation

EBE academics judged the projects and departmental prizes were awarded to the following:

- Chemical – Cledwyn Mangunda
- Electrical – Louis Wei-Yu Feng
- Mechanical – Shaun Kriek
- Civil – Rene Nsanzubuhoro
- CEM – Alireza Moghayedi
- APG – Lesego Bantsheng, Joshua McFarland, Hlohi Ndlovu and Sasha Vaughn.

Staff and students attending the expo were able to vote for the People's Choice Award and Rene Nsanzubuhoro from Civil Engineering was the most popular choice. Sponsors for the event were Aurecon and HySA/Hyplat.

Teaching at Huazong University of Science and Technology

Emeritus Professor Fabio Todeschni, of the School of Architecture, Planning and Geomatics, has just returned to Cape Town from another lengthy stint of invited teaching of two postgraduate urban design courses at the School of Architecture and Urban Planning of the Huazong University of Science and Technology (HUST) at Wuhan, Peoples' Republic of China.

This follows bi-lateral RSA/China research with colleagues undertaken over several years, aimed at the promotion and design of sustainable settlements.

Besides Chinese students registered for professional degrees in architecture, landscape architecture, urban design and city planning, participants in the courses also included PhD candidates from Russia, Tunisia, Pakistan and Mauritius, all registered at HUST.

Todeschini will be giving a compact and intense version of these courses in a one-week CPD course entitled "Aspects of City Design" during July at UCT. He has been invited by the President of ARCASIA (an "umbrella" professional association of Institutes of Architecture in Asia) to give a similar course in Manila, the Philippines, during November/December and again in Colombo, Sri Lanka, during February 2018. By invitation, he has previously given the course in India and Pakistan.

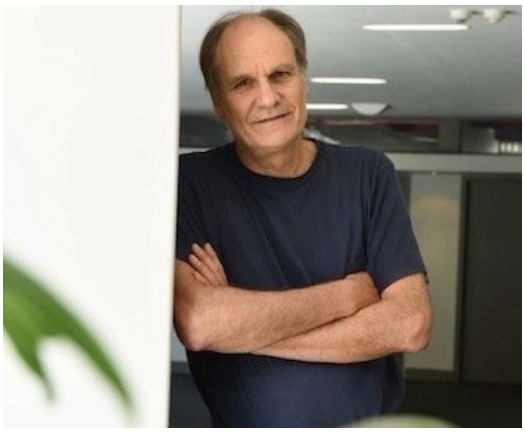
Em. Prof Fabio Todeschini seen with students in China

NSTF-South32 award for Professor George Ekama

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

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

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



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

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

The collaboration currently includes a large research project on greenhouse gas N2O emissions from biological nutrient removal activated sludge systems. These experiments were run in Palermo, and Ekama assisted them and their postgraduate students to evaluate the pilot plant data. This work is now beginning to appear in journals.

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

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

Second place at international congress

The 13th International Mine Water Association Congress took place in June in Finland. The Congress theme was Mine Water & Circular Economy. There were 243 oral and poster presentations from across the globe.

Malibongwe Manono, lecturer in the Department of Chemical Engineering, and PhD student in the Centre for Minerals Research, was awarded second place for his presentation. His paper involving the potential for recycling of water within minerals processing was well received and sparked some good conversation.

Malibongwe also received an EBE research award for his paper titled *The influence of electrolytes present in process water on the flotation behaviour of a Cu -Ni containing ore* which was published in Minerals Engineering. His supervisors were Dr Kirsten Corin and Jenny Wiese. The awards are awarded to encourage postgraduate students to publish during their degrees.

Grant Writing Support for NRF Scholarships

Successfully applying for grant funding is an important part of being a researcher. Grant writing shares features with academic research writing, such as presenting a rigorous and coherent research programme that responds to an identified research problem. Yet grant writing also requires that the applicant "sell" a concise action plan to reviewers who may not be experts in the focus area and a funder with specific interests. Most researchers learn strategies for successful grant writing by trial and error during the application process. EBE students who are currently completing their undergraduate, honours or master's degree and are applying in advance for funding for their master's or PhD studies face the dual challenge of having to conceptualise a research project and get to grips with the genre of grant writing.

Kate le Roux seen chatting to EBE postgraduate students at the grant writing workshop

Recognising these challenges, A/Prof Tanja Winkler, Deputy-Dean of Transformation and Social Responsiveness in EBE, initiated a process to support postgraduate students with their applications for the NRF Freestanding, Innovation and Scarce Skills Development Fund Master's/Doctoral Scholarships. The 2017 support – in preparation for the July 2017 deadline for 2018 scholarships – was co-ordinated by Dr Kate le Roux from the Language Development Group (LDG) in UCT's Centre for Higher Education Development (CHED). The three-month programme for 2017, which developed on lessons learned from one workshop in 2016, was planned in collaboration with Ilyaas Abdullah, Avela Kunene and Alireza Moghayedi from the EBE Postgraduate Student Council.

Three workshops were offered from May to July 2017. Fifty-six students made use of one or more workshops, with twelve students attending two workshops and five students attending the full set. Workshops included input on the NRF application process (provided by the Bongiwe Ndamane from the Postgraduate Funding Office), grant-writing strategies (given by successful student and staff grant writers in EBE), and writing strategies (provided by LDG). The workshop format created space for small group discussions between student writers and EBE staff, and between the students themselves.

The following EBE staff and postgraduate students worked intensively with students at these workshops: Ilyaas Abdullah, Adrian Fortuin, Dr Reuben Govender, Prof Arnaud Malan, A/Prof Fred Nicolls, Dr Amir Patel, Melinda Silverman, Dr Siew Tai, Prof Vanessa Watson and A/Prof Abimbola Windapo.

In addition to the three workshops, participating students were signed on to a Vula site offering online resources such as grant-writing strategies from successful grant writers, workshop materials, and answers to "frequently asked questions" about the process. It is envisaged that the online resources will be developed over time by the student and staff collaborators across units at UCT, and that the Vula site will offer an opportunity for students to communicate with and support one another in this challenging process.

The 2017 process – including the student feedback – will be used to strengthen support in the future. For example, students should be encouraged to start their applications a few months before the application deadline, using the workshops to help structure the process.

Article written by Kate le Roux, CHED

Electrical Engineering teams up with d-school

The Department of Electrical Engineering is teaming up with the Hasso Plattner Institute of Design Thinking at UCT (d-school) to pioneer a design-thinking programme for final-year electrical engineering students, the first of its kind in South Africa.

A/Professor Amit Mishra from electrical engineering said that systems engineering is a challenging subject to train students and until 2016 it was a classroom lecture-based course with lots of theory. In 2016 Mishra and A/Prof Riana Geschke drastically modified the course and introduced a team project in which the students worked towards designing an engineering solution to a local problem. Mishra said that this year he is expanding the course from 8 to 16 credits. "We are lucky to get the d-school involved. They have been very generous regarding volunteering to contribute their expertise." The idea for the course arose after ECSA determined that students needed to engage with more complicated real-life problems and work in teams as part of their learning outcomes.

The course introduces complex problem-identifying and collaborative work in teams to come up with innovative solutions to real-life problems. Mishra will be facilitating the engineering component of the course and the design-thinking component will be led by Richard Perez, the director, and Dr Rael Futerman, programme manager at the d-school. Perez has an engineering, product design and business background, and Rael has experience in teaching industrial design and has a doctorate in design.

This year the students will be given the challenge of how to improve the safety of South African taxis. Futerman says the first six weeks will see them helping students looking at 'designing the right thing, before designing the thing right," basically determining the exact nature of the problem through interviewing people most affected by unsafe taxis, i.e. passengers, owners and drivers. The students will be taken through team-building and understanding the value of diversity in design teams.

Hasso Plattner Institute of Design Thinking at UCT (d-school)

The engineering component will be run after the problem-finding section and students will be developing mechanical/electronic solutions either for a passenger or taxi owner, or to improve the taxi vehicle. Perez explains that the idea is to blend design thinking and systems engineering to uncover needs and aspirations and to use the students' engineering knowledge around viability and feasibility. Design thinking provides a seamless journey from the problem-finding and understanding space (research) into the problem-solving and testing space (building a technical solution).

The course picks up one Afro-centric problem each year, and the students will be taken through design-thinking activities (including interactions with the potential user) to decide on the right problem to tackle. Mishra introduces model-based system engineering (MBSE) tools which enable them to solve the problem the right way. It ends with a presentation and a design document from each group.

Mishra says, "The course is highly beneficial to students as design thinking is a powerful approach to create solutions and to foster innovation. A formal way of bringing this into the engineering curriculum is desirable and essential. The fusion of design thinking with MBSE-based system engineering is a unique combination which will give our students an added advantage in both the job market and the startup world." He added that this is in line with the vision 2025 document of INCOSE, the major international body for system engineering. The engineering challenges of the future will be extremely complex and will need system engineering and design thinking. Hence this course is a timely step in the right direction.

Farewell

Jenni Case was introduced to the Department of Chemical Engineering in the 90s when she was a school science teacher who attended a teachers' afternoon hosted by the department. In 1995, she found an advert in her pigeon hole for a position of Education Development Officer in the department and decided to apply for it. In the minutes of the Advisory Board who interviewed her, it said, "Her appointment is a departure from the usual practice of appointing chemical engineers to the staff, but the Department has high hopes for Jenni and looks forward to her arrival."

Jenni felt she was extremely fortunate to be in the department as she was given the freedom to develop the position around her interests of teaching and student learning. She found that the department had an extraordinary research culture but was also serious about its undergraduate teaching and was innovative and forward-thinking. She said academic development is not a one-person job and she was very grateful for the support she received from all the staff. Jenni worked with staff and tutors, looking at how teaching and student learning could be improved. She had a master's in Education and completed her PhD in Education from Monash University in 2001. To strengthen her role and understanding in the department, she did a master's in chemical engineering under the supervision of Professor Eric van Steen.

In 2001, she took over the first-year course and took it in new directions. She introduced the first-year camp, tutor workshops, mentoring, boot camps and much more. To understand what was happening in a third-year course, Jenni enrolled for the course and did it alongside the students.

Since 2009, Jenni has been involved with the development of the new curriculum. She worked closely with Prof van Steen, the late Prof Duncan Fraser and Hilton Heydenrych on developing the new curriculum which they would continually present to the rest of the staff. There was a lot of robust debate and disagreement, but by the end they had buy-in from all the staff, and in 2013 the new curriculum was rolled out to the new first-year intake. This year the final-year curriculum was rolled out, so Jenni feels it is the right time to move on and gain new experiences.

Professor Cyril O'Connor said that what started out as an initiative to assist students from disadvantaged backgrounds had turned out to be a methodology which could be used for all students. "Jenni turned Engineering Education into a robust scholarly activity and has put it on the global map," he added.

Jenni is leaving UCT at the end of July to join Virginia Tech in the USA as Professor and Head of Department of Engineering Education. The Department of Chemical Engineering is hoping to make her an Honorary Professor, so Jenni will still have ties with UCT.

Samuel Ginsberg graduated with his undergraduate degree in electrical engineering with a first-class pass in 1999. He did his master's degree under the supervision of Professor Jon Tapson and after completion did a short stint at MLT Drives before returning to UCT as a lecturer. Emeritus Professor Barry Downing, who met Samuel as a third-year student said, "Samuel was born an engineer, and we have all benefited from him being in the department. He has an immense amount of experience and knowledge in the fields of electronics and computers. He was always willing to help and give advice." Samuel said the Department of Electrical Engineering was the place he had grown up in. He came there as a young 18-year-old in first year and was grateful for the opportunity he had to grow and develop. He had fun but was now moving on to a new venture in a small electronics company, where he would be given the space to innovate and develop new gadgets.

Welcome to new staff

May

* Alma Viviers joined African Centre for Cities as the Communications Officer.
* Portia Johnston joined Centre for Catalysis as Chief Technical Officer.
* Christopher Ceasar joined Civil Engineering as a Departmental Assistant.
* Hylton Crous joined the Crystallisation Precipitation Unit as a Research Assistant.
* Deborah Kalume joined the Crystallisation & Precipitation Unit as an Intern.
* Maashitoh Rawoot joined APG as a Teaching Assistant.
* Lameec Hassan joined the ERC as the Operations Manager.

June

* Shelley Niekerk joined the Faculty Office as the IT and Facilities Manager
* Lunga Mseleni joined CeBER as an Intern.
* Michael Shirran joined Mechanical Engineering as a Senior Research Officer.

July

* Ruegshana Ederies joined CeBER as personal assistant to Professor Sue Harrison.
* Muven Naidoo joined Chemical Engineering as an Assistant Lecturer.
* Nosrah Nosaibeh joined Chemical Engineering as an Assistant Lecturer.
* Kathija Shaik joined Chemical Engineering as an Assistant Lecturer.

Resignations

* Professor Jenni Case from Chemical Engineering
* Mr Samuel Ginsberg from Electrical Engineering
* Mr Albertrum Crowder from Architecture
* Mandisa Ralane's contract came to an end at the end of June.

Zodwa Mcoteli joined civil engineering at the beginning of May as the receptionist at the desk on the 2nd level of the NEB. Previously, Zodwa worked at Student Housing .

CONGRATULATIONS

Congratulations to Tasha Dilraj, the postgraduate administrator from the Department of Mechanical Engineering, who has qualified for a Bachelor of Social Science Honours specialising in Social Anthropology. Her degree will be conferred at the December graduation ceremony as she was away during July.

Early Retirement

Chris Wozniak from the Department of Electrical Engineering is taking early retirement and will be leaving at the end of June. Chris was the Principal Technical Officer in the Machines Lab.

Mandela Day

For Mandela Day, staff in the ERC filled and decorated 81 comfort packs which will be distributed to rape survivors at the Thuthuzela Centre at Atlantis Hospital. The boxes are given to the survivors after they have given their statement to the police and have been examined by a doctor. They are then able to have a shower and make use of the contents of the box. Kim Coetzee, who arranged the Mandela Day activity, organised sponsors and staff to donate the contents of the comfort boxes, which include shampoo, soap, facecloth, body lotion, glucose sweets, tissues, panties, sanitary pad and juice.

Rover mission in UCT Spacelab

On the 7th floor of the Menzies Building on Thursday 13 and Friday 14 July, you would have been forgiven for thinking you were standing in a Mission Control Centre in Canada. Ewan Reid, CEO of Mission Control Services (MCS), was seated in front of computers, counting Team Alpha down as they navigated a rover from its lander in a simulated Mars exploration mission.

Ewan Reid was hosted by UCT SpaceLab and he presented a course to the space studies master's students on rovers for Mars exploration. Reid and his MCS colleagues have been presenting lectures on rover design, Mars exploration and mission planning, and on Thursday and Friday teams were given the opportunity to control a rover at the Canadian Space Agency's "Mars yard" in real time over the internet. For this they set up a mission control centre and the students were able to put into practice what they had learnt in the lectures by controlling a rover remotely to execute a science mission. Each student was allocated a role – navigator, scientist responsible for the instruments, communications person and driver. They selected their scientific targets and planned a route for their rover and had to overcome obstacles put in its way – including a dust storm.

Space Studies postgrad students with Ewan Reid

Professor Peter Martinez, head of the SpaceLab said, "This is a unique learning experience in Africa. The mission is offered by Mission Control Academy as part of their education programme and we are very grateful that they agreed to collaborate with UCT SpaceLab."

Engineering honour for Prof O'Connor

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

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

Prof O'Connor said that he was both honoured and humbled by the election. "I am also greatly indebted to many colleagues at UCT who have contributed in many different ways to this recognition. I wish to share this honour with them since this election also recognises the outstanding research carried out over many years in the Centre for Minerals Research."

#LearnActImpact

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

This year Coursera has launched a campaign featuring Education for Social Impact content that connects learners with high-quality, social conscious learning experiences that equip them with the skills they need to be drivers of social change.

An ERC online course, *Climate Change Mitigation in Developing Countries,* and a GSB course, *Becoming a Changemaker: Introduction to Social Innovation,* were selected as two courses from UCT to be offered as part of the Social Impact campaign.

Visit the blogspot, Facebook page (over a million followers) or their Twitter account.

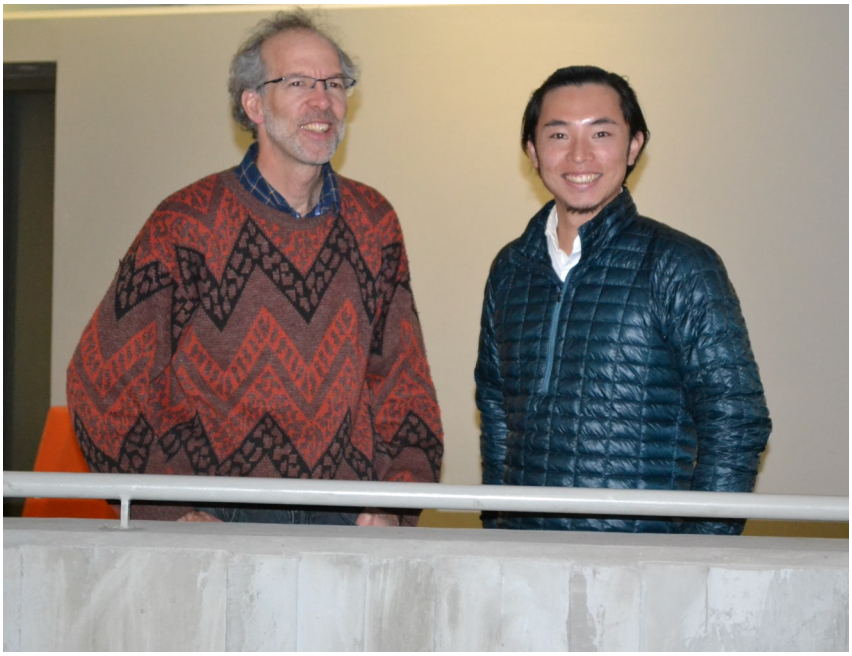
Celebrating 50 master's students

On 14 July, Professor Harro von Blottnitz celebrated his 50th master's student graduating, and at the same time celebrated 50 peer-reviewed papers.

Harro joined UCT in 1998 and has headed up the Environmental & Process Systems Engineering Group in the Department of Chemical Engineering. He is passionate about the green economy, and his research is firmly rooted in sustainable development issues. Many of the 50 students he has supervised have been interdisciplinary – and from different homes across the university, including Chemical Engineering, the Urban Infrastructure Design and Management programme in Civil Engineering, Environmental Management in the Science faculty, the Energy Research Centre and even the Graduate School of Business. Harro said, "It is rewarding to see a number of my graduates making a real contribution to sustainability and the green economy."

At the end of 2014, Professor J-P Franzidis, the course convenor for the MPhil degree specialising in sustainable mineral resource development, retired and Harro, together with A/Prof Jenny Broadhurst, took over the reins.

Shuhei Kato, Harro's 50th graduate, was the fourth student to graduate from the MPhil course. His dissertation was awarded distinction and investigates human and social capital dimensions of the minerals-industry cluster in Richards Bay, where he undertook fieldwork, hosted by the Richards Bay Industrial Development Corporation. His research fitted in well with UCT's quest to make some of its research interdisciplinary and focused on real-world problems. Harro was his lead supervisor, and Prof Anthony Black, an economist, co-supervised.



Professor Harro von Blottnitz and Shuhei Kato

Shuhei worked at the Japanese Embassy in Pretoria, where he was introduced to the MPhil degree. He was fascinated by the question whether South Africa and African countries with mineral endowments, could overcome the resource curse and follow the model of Japan and a few other countries which have managed to industrialise off their original mineral endowments. He drinks his tea from a titanium cup, made by Japanese artisans from a centuries-old metal working town, to drive home the message that resource-based industrialisation is possible.

During his time at UCT, Shuhei became involved in the Hasso Plattner Institute of Design Thinking at UCT. He was one of the first people to complete both the foundation and the advanced programme and is now a coach at the Institute. The d-school embraces entrepreneurship and innovative thinking through collaboration between a multidisciplinary group of people from all over the world. Shuhei said, "I believe this is key to transforming sustainability in theory into practice and provides great examples to the rest of the world."

Second best student paper

Stephan Sandenbergh received 2nd prize in the student paper competition at the 2017 IEEE Radar Conference which was held in May in Seattle. His supervisor is Professor Mike Inggs and the prize was for his paper titled *Synchronizing Network Radar Using All-in-View GPS-Disciplines*. He had to give a special presentation to the panel and made the top five from about 120 student papers, and then, second prize. The premier supporter of the conference was Boeing and the conference has a very high international standing.

UCT shines at the annual EPPEI Student Workshop

Colin du Sart and Willie le Grange from Mechanical Engineering received awards at the recent Eskom Power Plant Engineering Institute (EPPEI) annual student workshop held at the Eskom Academy of Learning in Midrand.

Students presented to Eskom specialists, academics and peers on their projects aimed at addressing Eskom challenges. Five students from the Eskom Specialisation in Energy Efficiency in Mechanical Engineering presented at the conference this year. The students and their presentations were:

- Nikki Basson - Studying water-wedging as a cause for short term overheating in the boiler of a coal-fired power plant
- Colin du Sart - Design and prototyping of a pneumatic conveying test facility
- Wille le Grange - Component development of a high fidelity transient simulation of a coal-fired power plant using Flownex SE
- Rendani Khobo - A systematic study of the causes of ID fan capacity limitations in coal fired power plants
- Gary de Klerk - Dynamic modelling of once-through boiler heat exchangers during shutdown to determine the origin of condensate

Colin du Sart receiving the award from Professor Wikus van Niekerk

Willie le Grange receiving the award from Professor Wikus van Niekerk

ACC Senior Researcher honoured with international award

African Centre for Cities Senior Researcher Dr Jane Battersby was honoured as the 2017 laureate of the Premio Daniel Carasso at a ceremony in Valencia, Spain, on 18 May. The international prize, first presented in 2012 by the Daniel and Nina Carasso Foundation, is awarded in recognition of outstanding scientific research into and social commitment to sustainable food systems and diets for long-term health. Jane was selected as the laureate by a jury of experts from among 40 candidates from 25 countries.

According to the jury: "Her work on feeding poor populations in urban areas in southern cities undergoing rapid growth is extremely relevant. Strong urban growth will be a major issue in the next few decades. On the global level, our ability to feed urban populations could either be a vector for stability or a destabilising force. Jane Battersby tackles these fundamental questions from the perspectives of social justice, governance, education, fairness and gender equality.

Her commitment to local actors is remarkable and

Dr Jane Battersby

contributes to the quality, credibility and impact of her academic work, which is considered excellent, was also highlighted.

Read more on the African Centre for Cities website.

Story by Alma Viviers

Visiting Engineers Programme

Motlatsi Mabaso, a 2007 chemical engineering graduate, was the second alumnus to be part of the Chemical Engineering's Visiting Engineer Programme, which brings in experienced engineers to speak to the chemical engineering students about their experiences in the workplace.

Motlatsi grew up in Soweto, where he was raised by his grandparents, who instilled the importance of education in him. At school, he enjoyed chemistry, mathematics and biology and was considering engineering as a study option before he was influenced by family members to choose medicine. He was accepted by various universities for medicine, and after receiving a good-luck card for matric from UCT, he decided that UCT was the one. He received only a partial scholarship in his first year and was concerned about the financial burden on his grandparents. At the end of first year, he made the decision to change to chemical engineering, where he received a bursary from Hatch. During his time at UCT, he became involved in student-leadership positions where he got to meet a diverse group of people and experienced what management entailed.

At the end of 2007, he graduated and went to work for Hatch. 2008 was a turbulent economic year in the world, and South Africa was experiencing load shedding. During his first year at Hatch, he worked on

Motlatsi Mabaso

interesting mining projects and was thrown into the deep end when he had to present to senior management on a project which was analysing data from a furnace control room. He said that, even though he was nervous, he was grateful for the opportunity as he got to connect with the senior management of Hatch and the client, which gave him good exposure early on in his career.

At the end of 2009, he accepted a redundancy package from Hatch and spent three months having fun, before accepting a position with ERM, a leading global provider of environmental, health, safety, risk and social-consulting services company. During this time, he travelled to Manchester and Houston, Texas, where he performed safety and risk studies and compiled emergency response plans for onshore industrial facilities. Motlatsi said, "When working you realise how important it is to maintain and develop relationships in the workplace. It also helps to keep your contacts from your university days. You never know when your thermodynamics or mass-transfer lecturer could be helpful in assisting you with a problem you face."

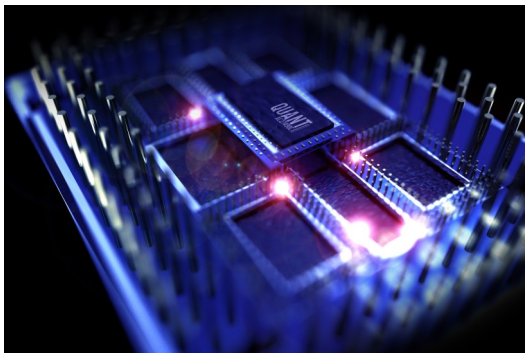
Working for ERM, he worked in a small team which gave him the opportunity to manage projects from a young age. At the end of 2011, he was transferred to Oxford where his work included a project in the Niger Delta in Nigeria. Here he was exposed to the realities of big oil companies working in and around very poor communities who do not benefit from development. "You see the same situation in South Africa where the big mines are surrounded by poor communities," he said. "As young engineers, I plead with you to look at the way you do business and the impact it has on the community and the sustainability of the projects."

During his time in the UK, Motlatsi registered as a chartered chemical engineer. He also started his own consulting business and had clients in the Middle East. When the oil price dipped in 2015, he returned home and joined ERM as the Principal Safety and Risk Consultant.

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

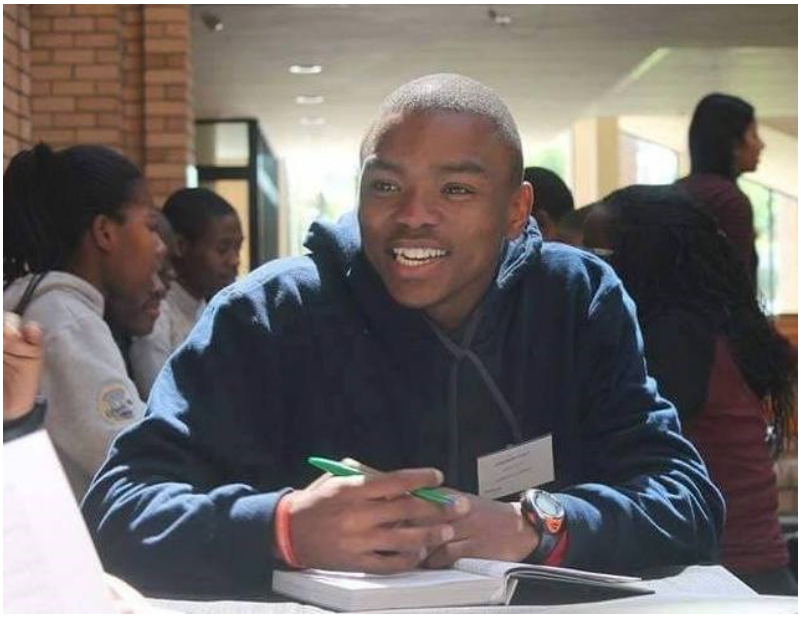
Quantum Computing at Stanford

Peter McMahon, an electrical engineering graduate is doing great things in Quantum Computing at Stanford University. In 2006, Peter graduated with his undergraduate degree in electrical and computer engineering and went on to complete two simultaneous master's degrees, with full research dissertations. He left UCT and joined Stanford, where he got his PhD and is now a postdoc in the Department of Applied Physics.



LEADSA HERO

LeadSA is a personal call to every person to make a difference. The LeadSA heroes are people who are making our country a better place. A final-year civil engineering student, Athenkosi Nzala, was chosen as a LeadSA hero for the month of June. Athenkosi is a remarkable young man who is passionate about uplifting young people and giving them the guidance and mentorship they need to help them succeed in life. He joined UCT in 2012, and over the years he has committed himself to his studies and has done well academically.



Athenkosi Nzala

From his second year, he has been a mentor to first-year students in the residences and the civil engineering department. In 2014, he was a member of the EBE student council where he held the portfolio for outreach and transformation. He has been an orientation leader, 100 UP schools mentor, and an active member of Engineers without Borders, Green Campus Initiative, and Ultimate Frisbee UCT. He was part of the interim 2017 UCT SRC student council and held the portfolio of Labour Relations and Student Services.

As if this was not enough, he has recently founded a career-development and mentorship organisation called Afrika·Can. This provides a creative tutoring and mentorship programme to fuel the passion for academic and social success through encouraging and inspiring high-school learners to learn and think about how they learn.

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

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

Book launch for ChemEng graduate

Dr Disa Mogashana, a UCT chemical engineering graduate and a former ASPECT academic development lecturer, published a book titled *Unfathered*, a memoir of rejection and abandonment, but also a story of the search for healing.

In June, she launched her book at UCT, where Professor Jenni Case was the facilitator for the evening, and Disa, Melissa Hill (a 2008 chemical engineering master’s graduate) and Dumisani Gumba (IT governance specialist) were the panellists. They each gave a moving account of their lives growing up, which opened the conversation for the audience to interact and share their experiences.

Disa also held book launches in Johannesburg and Bloemfontein. Her book received good media coverage, and she was interviewed on numerous radio and television shows. She is continuing the conversation by holding workshops. Disa kindly donated ten books to the Student in Distress Fund, which will be distributed and shared amongst the students.

Dumisani Gumba, Disa Mogashana, Jenni Case and Melissa Hill

Queen's Young Leader Award

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

Having started off as a mentor for the organisation, she now leads its operations in South Africa and Kenya. WomEng has reached more than 10,000 girls and women via its GirlEng and Fellowship programmes, which support high-school girls and university engineering students. In 2016, in celebration of the organisation's 10th anniversary, Aditi and her team launched the #1MillionGirlsinSTEM campaign. They now aim to reach a million girls through STEM (Science, Technology, Engineering and Mathematics) education and awareness initiatives in at least ten different countries over the next ten years.

Aditi Lachman receiving her award from the Queen

Mail & Guardian Top 200

The Mail & Guardian 200 Young South Africans 2017 list features notable South Africans under the age of 35 who have made a mark for themselves in categories ranging from business and entrepreneurship to the environment, arts and entertainment. There were 2400 nominations this year, which went down to 500 shortlisted, 350 shortlisted and finally 200. Two EBE graduates were included in the 200.

Khadija Patel, Editor-in-chief of the Mail & Guardian said, "We have chosen these 200 young South Africans for their feats of brilliance as individuals, yes, but we have also chosen these wonderfully talented, resourceful, caring people because they remind us that all is not lost. They remind us that the pursuit of a better world is never in vain. Mostly, these young people remind us that we are not so alone in the world."

Vere Shaba, a 2012 mechanical engineering graduate, said, "It's always so humbling to be honoured in this way when all you're doing is what you love. Let us not become weary in doing good, for at the proper time we will reap a harvest if we do not give up."

In 2013, Vera went to work for WSP Parsons Brinckerhoff, where she was exposed to green buildings. In 2016, she opened her own consulting firm, Shaba & Ramplin Green Building Solutions, which is a multinational green building consulting firm specialising in energy, engineering, green building solutions and strategic partnerships across the African

Lethabo Motswaledi completed her undergraduate degree in geomatics in 2015 and is presently registered for her MSc (Eng). She started her own company, 3D Power, a 3D printing company, in 2014 while completing her undergraduate degree.

Decolonisation in EBE

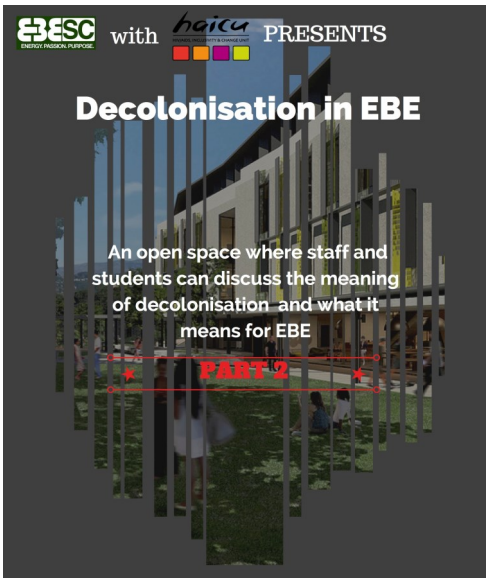
A series of decolonisation dialogues was held to engage on issues of decoloniality and institutionalism. Anjalee Ramjee, the EBESC member with the transformation portfolio, along with the undergraduate EBESC, created a platform where these differences could be discussed. Staff and students were invited to take part in the dialogues, which were facilitated by Sianne Abrahams from HAICU. The first two sessions occurred in June with the following sessions planned for the second semester.

The need for the dialogue arose from Anjalee's experience from sitting in the faculty transformation meetings, "I realised that there is a disconnect between what students understand to be decolonisation and what staff understand to be decolonisation."

In the first session three questions were posed:

- What is decolonisation?
- What does it mean to you?
- What should be prioritised – decolonising the curriculum content or the university culture or both?

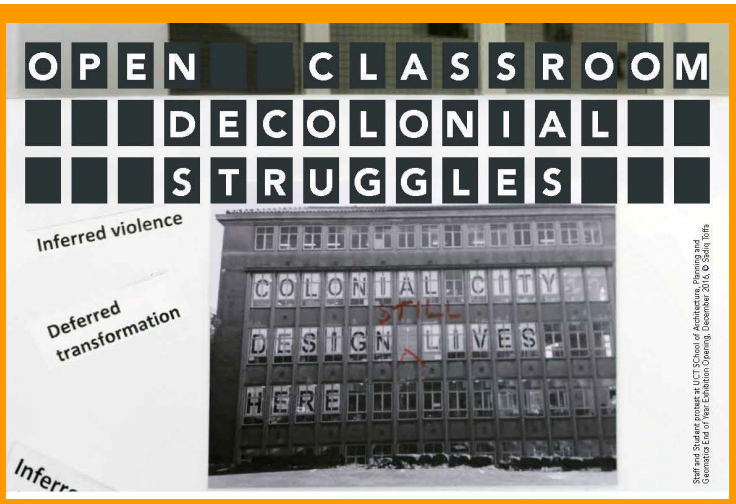
The audience was divided into groups of students, academics and PASS staff, who engaged on the questions. The second session brought these questions to the group as a whole where some ideas and solutions were formed.



After the sessions, Anjalee said, "As you can imagine, decolonisation is quite a complex topic and only a small part was discussed. Bridging the gap between the understandings of decolonisation will take time, so we will continue the discussion in our faculty by hosting more sessions in the second semester. Our aim is to try to engage with the topic in more detail and to try to get as many voices heard as possible. "

Architecture's Open Classroom

The School of Architecture, Planning and Geomatics "Open Classroom: Decolonial Struggles and the Architecture of the City" continued its work during the first semester. The Open Classroom comprises curatorial experimentations in critical public pedagogy in recognition of the emergent time of ideological contestation and re-politicisation of the [post] colonial university. Its aim is to interrogate the political cultures of knowledge relations between multiple intersections of social difference with spatial justice in the contemporary city. Open Classroom is curated by Sadiq Toffa (Lead), Fadly Isaacs and Iain Low.



The "Unsettling Colonialism: Frontier and Intimate Spaces" exhibition was held at the Centre for African Studies Gallery. It combined apartheid and post-apartheid photography by Cedric Nunn and Ernst Cole, together with an emergent struggle archive by student and staff constituencies in the School of Architecture, Planning and Geomatics. The exhibition provided a contextual reference for the introductory research focus of the Open Classroom, "Settler Colonialism Now" and the screening of an associated mini-film series "Reconsidering the 20th Century."

Visit the website to find out about the events planned for the second semester.

EBE students fighting fires

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

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

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

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

Back row (left to right) *Jason Arnold (4th-year Electro-Mechanical– active member since 2015), Nathanael Boulle (4th-year Mechanical Engineering– active member since 2016), Anja Mühr (3rd-year Electrical and Computer Engineering –active member since 2015), David Le Roux – (Graduated Civil Engineering 2016 active member since 2013)*
Bottom row (left to right) *Christopher Knutsen (4th-year Mechanical Engineering - active member since 2015), Ryan Hudson (4th-year Mechanical Engineering –active member since 2016), Alex Brock (3rd-year Chemical Engineering –active member since 2014)*

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

Anja Mühr, third-year electrical and computer engineering student, said, "The biggest fire I ever went to had flames that were at least double my height, and my crew of seven people were the only ones on the ground on top of this cliff fighting this blaze. We did have helicopter support, but it's still very intimidating. There's so much smoke everywhere, so breathing isn't much fun, and you get extremely hot, both from the flames, the midday summer sun and from the protective gear we have to wear. I find that I am more exhausted when I come home from a fire, and more sore the next day, than any other form of exercise I do, but I still love it."

"There is a place for everyone whether it be fighting fire, driving crews to and from the fire or helping the planning office," Knutsen added. "I would like to encourage anyone who is keen to join the Volunteer Wildfire Services. What makes the experience more enjoyable are the other people who volunteer in the unit." He said we call them our "yellow family." When you step onto the fire line, you know that the other eight members of your crew have your back.

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

Chemical Engineering hosts Minquiz

The Department of Chemical Engineering was the proud host of the Western Cape provincial round of Minquiz 2017. The Western Cape provincial organizer, Dr Kirsten Corin, was ably assisted by an eager team of postgrad volunteers to create a very enjoyable event.

Minquiz is South Africa's premier annual national science competition for Grade 12 learners. The provincial round of the competition took place on Thursday, 18 May 2017, at Wynberg Boys' High School. Schools are divided into two categories, Platinum and Gold depending on their schools' average pass rates and how often they have competed in Minquiz in the past. Schools from across the province sent their top three learners to compete both individually as well as in teams. The competition comprises a written quiz completed as individual learners; the marks from this written quiz are used to determine the top five schools who go through into an oral quiz round.

The Western Cape competition was exciting, with a tie break in the oral round for the Platinum category between Somerset College and Rondebosch Boys' High. In the end Rondebosch scooped the oral quiz top prize, while the top individual learner of the written quiz in the Platinum category hailed from Somerset College. Spine Road High gained the oral quiz top prize in the Gold category, and the top individual learner was from Monument Park.

The Western Cape team pictured with the Minquiz 2017 MC; Rodney van Wyk (Monument Park), Nanji Sheni (MIntek), Laaiqah Jeewa (Protea Heights Academy), Adam Begg (SACS) and Joshua Putterill (Somerset College)

The national competition took place on 18 and 19 July 2017 at Mintek Head Office in Randburg. The Western Cape team had learners from SACS, Somerset College, Monument Park and Protea Heights Academy, accompanied by the provincial organiser, Dr Kirsten Corin. Again, learners sat for a written quiz which determined the five provinces to compete in the oral quiz round. Ms Nanji Sheni, a recent MSc graduate of UCT and Mintek employee, was the MC for the event. Following an intense oral quiz round, the Western Cape team was placed 4th overall. Joshua Putterill from Somerset College took the National Top Learner award for the Platinum category. Only two distinctions were awarded for the written quiz, both going to Western Cape learners: Joshua Putterill from Somerset College and Adam Begg from SACS. Apart from the grueling quiz, Mintek treated the learners to an interactive workshop after which each learner was challenged to develop a device which would allow an egg to safely drop three storeys without breaking. Creativity and a large amount of laughter ensued as each learner dropped their device into Mintek's central quad. Three of our Western Cape team's devices were successful, with one gaining the Judge's Most Ingenious design award.

Great honour for Dr Kalumba

The Geotechnical Division of the South African Institution of Civil Engineers (SAICE) has appointed Dr Denis Kalumba to Chair the Organising Committee for 17th African Regional Conference on Soil Mechanics and Geotechnical Engineering (ARCSMGE) to be held in Cape Town in 2019. Supported by the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE), this wide-ranging and inclusive technical conference will bring together academics, researchers, professionals, practitioners and students of all types from Africa and beyond. In 2015, Dr Kalumba successfully presented the SAICE Geotechnical Division bid (at the 16th ARCSMGE in Tunisia) to host the following Regional Conference in South Africa.

Architecture outreach programme

In the July holidays, Simone Le Grange from the School of Architecture, Planning & Geomatics organised the 10th Architecture outreach programme for high-school learners. 40 Grade 10, 11 and 12 learners from across the Western Cape and two from KwaZulu-Natal attended the two-day programme to find out more about architecture, how to apply and what the portfolio entails.

The 40 learners were selected from a pool of about 100 applicants. Students, staff and volunteers from outside the university gave of their time and expertise voluntarily. The learners spent time in the studio drawing and doing creative work, they were exposed to landscape architecture, and the admissions process and had the opportunity to engage with students and recent graduates.

Aqualibrium Competition

On 25 July, the foyer of the NEB was abuzz with teams of students involved in Aqualibrium. Students from the International Alliance of Research Universities (IARU) Global Summer Programme 2017 course on Sustainable Water Management in Africa, and the Civil Engineering master's course on Design and Modelling of Water Distribution Systems participated in the competition. The aim is to distribute three litres of water equally between three reservoirs (containers) placed randomly on a grid of 16 points. Participants build a pipe network between a water source and the three reservoirs using pipes of different diameters.

Professor Kobus van Zyl and his team have recently redesigned the Aqualibrium kit. The kit is used internationally and across schools in South Africa. Recently the SAICE UCT chapter organised the competition for high-school learners from the 100UP programme. SAICE run the Aqualibrium Schools Water Competition to create awareness regarding the issues surrounding water in South Africa. It spreads the message that water is a precious commodity, which should be recycled, re-used and respected.

Blanket and Clothing drive

As part of their outreach programme, ABES (Association of Built Environment Students) organised a Blanket and Clothing drive and donated all they collected to James House in Hout Bay. James House provides basic needs for children in need. They run a residential programme for children at risk and provide a number of programmes in the local schools.

Ryan Hawke (ABES treasurer) and Carel Swarts (ABES Chair) handed over the donations to Siya Manqunyana, the volunteer coordinator at James House .