

FACULTY NEWSLETTER

ENGINEERING & THE BUILT ENVIRONMENT

MESSAGE FROM THE DEAN



I am pleased to share some faculty news and exceptional highlights within EBE from the second quarter of the year.

We pay our respects to the loss of two members of our faculty community: Richard Drummond, a colleague in Professional Communication Studies, who sadly passed away in August, and Nene Karingji, a 4th-year student who tragically passed away in June. Our thoughts and prayers are with the loved ones of both families.

Our academic, teaching, and research initiatives have once again been at the forefront of our achievements. One of these innovative initiatives was the Formula Student Africa Team, formed in the Department of Electrical Engineering, which had a campus-wide launch showcasing how UCT and EBE are contributing to the future of sustainable automotive technology. We also congratulate Professor Eric Van Steen and PhD candidate and research assistant Sancho Nyoni, both from the Department of Chemical Engineering, who were recently awarded the Champion of Research Capacity Development and Transformation Award and the Excellence Award for Emerging Researcher, respectively, at the Annual NRF Awards 2024.

The faculty has officially launched its Vision 2050 campaign, which focuses on the future goals of EBE. A special thank you to the EBE Future Dreamers Group, who conceptualised this, Vision. I look forward to the exciting future that awaits the faculty for the remainder of the year.

OBITUARIES



Richard Drummond, from the Professional Communication Studies Unit, sadly passed away on Saturday, 17 August, at the age of 62.

Born on 27 June 1962, Richard joined UCT in the 1990s. He also had extensive experience in the property, education, environment, advertising, and financial industries. At the time of his passing, he was a lecturer in the Professional Communication Studies Unit.

The faculty is grateful for all of Richard's contributions to UCT and the significant impact he made in his areas of research. Our thoughts and prayers are with the Drummond family and friends.



Nene Karingi, a fourth-year Electrical and Computer Engineering student tragically passed away on 7 June. Our thoughts and prayers are with Nene's family and friends. Nene joined the faculty in 2021 and was recognized as an academic standout, as reflected by his strong academic record and his progress toward completing his degree.

He was well-liked by everyone he encountered, with many describing him as a friendly person who went out of his way for his family and friends.

STAFF WELCOME

- **Ayman Abufalgha** joined the Centre for Bioprocess Engineering Research as a Junior Research Fellow.
- **Abraham Snyders** joined the Department of Chemical Engineering as Chief Technical Officer in the Electronics workshop.

STAFF FAREWELLS

- **Itumeleng Likhoele** left the Faculty Office at the end of June.

DEANERY UPDATE

Professor Marianne Vanderschuren's term as Deputy Dean for Social Responsiveness and Transformation ended on 30 June. The faculty thanks Marianne for her commitment and significant contributions to this critical portfolio during her term as Deputy Dean.

Marianne oversaw several important projects and initiatives that positively impacted the faculty. She also provided valuable guidance and support to the EBE Transformation Committee throughout her tenure.



AWARDS AND HONOURS

Prof Eric Van Steen wins the NRF Champion of Research Capacity Development and Transformation Award



Congratulations to Professor Eric Van Steen, who won the Champion of Research Capacity Development and Transformation Award at the Annual NRF Awards.

This award category recognises individuals within the research community who contribute to the transformation and thus diversity of South Africa's science cohort through the research students they supervise.

The aim of the award is to encourage and promote researchers who have identified and are mentoring young scientists to become highly productive academics and even international leaders in their areas of expertise.

AWARDS AND HONOURS

Sancho Nyoni receives the NRF Excellence award for emerging researchers



Sancho Nyoni, a PhD candidate and Research Assistant in the Department of Chemical Engineering, was awarded the NRF Excellence Award for Emerging Researchers in the Engineering category at the Annual NRF Awards.

This award recognises outstanding research performance by current Early Career/Emerging Researchers in any discipline, who are NRF grant holders.

Associate Professor Sunetra Chowdhury to Lead IEEE Women in Engineering Efforts in South Africa



Associate Professor Sunetra Chowdhury has been appointed as the Women in Engineering Coordinator for the South African section of the Institute of Electrical and Electronics Engineers (IEEE).

Her role will involve enhancing networking and promoting membership among women in engineering by organising workshops and forums at major technical conferences. The IEEE advocates for women in leadership roles within the Section and supports their career advancement in the profession. The efforts include facilitating the formation and revitalization of Women in Engineering (WIE) Affinity Groups, supporting ongoing activities, and promoting IEEE initiatives to mentor young women in high schools and universities.

Additionally, the South African chapter of IEEE develops programs and activities to encourage the entry and retention of women in engineering programs.

AWARDS AND HONOURS

NRF Stories of Impact - Prof Alphose Zingoni



This year, the NRF is celebrating a major milestone in their history as they commemorate 25 years of Research, Innovation, Impact and Partnerships. In a series, the NRF shared accomplishments and impact of the many students and researchers they have supported during various stages of their careers.

Professor Alphose Zingoni has been associated with the NRF for exactly 25 years. He currently holds an NRF A-rating (leading international researcher in his field) and has served as an assessor on specialist NRF panels.

[Read the full article](#)

Electrical Engineering PhD candidate wins Google Africa Scholarship Award



Maurine Chepkoech, a PhD student in the Electrical Engineering Department at UCT, has been awarded the Google PhD fellowship (Africa).

Her research work entails the design and implementation of a high-performance, high-reliability, and dynamic self-healing open-source-based 5G+ mobile network testbed. This testbed will serve as a real-world validation platform for diverse applications and use cases. Specifically, she will work on realizing a Telesurgery training suite that will allow for remote, real-time, intelligent, and immersive training of surgeon students from remote areas.

She will be supervised by Associate Professor Joyce Mwangama (Department of Electrical Engineering, Faculty of Engineering and the Built Environment) and Dr Bessie Malila (Division of Biomedical Engineering, Faculty of Health Sciences).

AWARDS AND HONOURS

EBE NRF ratings

EBE welcomed the new ratings of 10 Academics in the faculty. The National Research Foundation's (NRF) rating system is a key driver in their aim to build a globally competitive science system in South Africa.

A-ratings are awarded to researchers acknowledged as leading international scholars in their fields. The rating of individuals is based primarily on the quality and impact of their research outputs over the past eight years, taking into consideration the evaluation made by local and international peers.

Apart from the sought-after A-rating, the NRF rating system has an additional four categories. They are:

- B – Internationally acclaimed researchers
- C – Established researchers
- P – Prestigious Awards
- Y – Promising young researchers

- **Emeritus Prof Mark Alexander (B2)**
- **Prof Edward Boje (C1)**
- **Prof Nico Fischer (B3)**
- **Prof Sue Harrison (A2)**
- **Prof Patricia Kooyman (C1)**
- **Prof Arnaud Malan (C1)**
- **Prof Manya Mooya (C2)**
- **A/Prof Joyce Mwangama (Y2)**
- **Prof Marianne Vanderschuren (C2)**
- **Prof Jennifer Whittal (C2)**

The Martha Schwarzkopf Award for Women in Science



Associate Professor Malebogo Ngoepe has been selected as one of the recipients of the Martha Schwarzkopf Award for Women in Science. The award, which includes a financial prize of €10,000, recognises Associate Prof. Ngoepe's groundbreaking work on the mechanics of curly hair fibers, including the development of a new classification system.

The award ceremony will be held on 5 December 2024, in Düsseldorf, Germany, where Malebogo, alongside other awardees, will present her research and engage with fellow scientists. This recognition highlights the innovative contributions to hair research and its significance for consumers, the environment, and the cosmetics industry.

FACULTY NEWS



Catalysis Institute: Shaping a sustainable future

The Catalysis Institute in EBE has transitioned its focus to reducing global greenhouse gas emissions. By leveraging its extensive expertise in fossil fuels, the Institute develops and adapts processes to minimize reliance on these fuels. The Institute was invited to the special UCT showcasing excellence event to showcase its current research.

[Read more](#)



Future Water Institute Highlights Innovations at UCT Excellence Event

The vision at the Future Water Institute is of sustainable and resilient water futures. The team specifically aim to increase knowledge and understanding of water issues, improve water management and water governance, and increase capacity across the water sector.

The Institute was asked to participate in a UCT event dedicated to showcasing excellence by presenting its ongoing research.

[Read more](#)



Launch of the Formula Student Africa Initiative

The Formula Student Africa Team at UCT, formed in the Department of Electrical Engineering had their official campus-wide launch event on 30 July.

During the event, the team presented current progress on designing UCT's first Electric Formula Student car as well as future plans. It was an excellent opportunity to learn more about the initiative, meet the team, and see how UCT is contributing to the future of sustainable automotive technology.

[Read more](#)

FACULTY NEWS - Women's Month feature



South Africans' mixed reaction to adopting alternative water sources

As climate change wreaks havoc globally – leading to less (or more) rain and an increase in droughts in usually arid regions – it has become increasingly important to diversify South Africa's long-term water strategy. Step one is ensuring that it includes unique, innovative water sources to guarantee a sustained supply of this precious commodity. This is crucial to ensure that South Africa's growing population has enough water for drinking and sanitation purposes for generations to come.

[Read more](#)



Research that transforms lives and inspires future scientists

Dr Nodumo Zulu from the Department of Chemical Engineering has been recognised for her outstanding contributions to the scientific field with a nomination by the National Science and Technology Forum (NSTF) for the TW Kambule-NSTF Award: Emerging Researcher. Women in rural areas have always played an important role in improving the overall lives and well-being of their families and communities. Dr Zulu is an outstanding example of the power that women from these often-overlooked areas can have in changing not only their immediate environment, but the world at large.

[Read more](#)



Stepping forward and assuming leadership

Professor Alison Lewis was elected to serve as a member of the private, independent, non-profit institution – the National Academy of Engineering (NAE) earlier this year. It also serves as a significant moment for women in engineering leadership, underscoring the importance of female representation in international leadership bodies. The academy membership honours Lewis for her contributions to crystallisation processes for saline water treatment and extraction metallurgy, along with her leadership in engineering education. [Read more](#)

FACULTY NEWS

Launch of Reorienting Research, Innovation & Practice to Address Future Water Challenges in Africa

The RRIP launch event was held in June and opened with a welcome from A/Prof. Kirsty Carden, Director: Future Water, and Dr. Linda Mtwisha, Executive Director: Research at UCT. Dr. Mtwisha introduced UCT's Vision 2030 Grand Challenges Program, which aims to drive research advancements beyond academic boundaries and strengthen inter/transdisciplinary partnerships. She highlighted that RRIP covers 11 Sustainable Development Goals (SDG's).

A/Prof. David Ikumi, Principal Investigator, and Dr. Amber Abrams, Co-Principal Investigator, provided an overview and discussion of the RRIP project. Dr. Valerie Naidoo from the Water Research Commission then shared insights on the water sector in South Africa in her keynote address. The event featured a panel discussion with Ntombizanele Bila-Mupariwa (DWS); Geoff Du Toit (Zutari); Jane Reddick (Greencape) and A/Prof. Kevin Winter (UCT), followed by a reflection and Q&A session. The Research Symposium concluded the event, by showcasing ongoing and completed postgraduate student research.



FACULTY NEWS

Exploring Urban Design: A Collaborative Journey

The recent Continuing Professional Development (CPD) and Master of Urban Design (MUD) course, **Urban Design Africa**, brought together a diverse group of professionals and students for the exploration of urban design within an African context.

The course welcomed a dynamic mix of participants, six CPD attendees hailing from Namibia and two from Cape Town, joined six MUD candidates on their Urban Design Theory II course (APG5085S). This diverse group, with backgrounds in architecture, landscape architecture, and planning, adopted a collaborative studio approach to learning.

Urban Design in Action

Participants explored urban design concepts across five African cities: Johannesburg, Maputo, Harare, Nairobi, and Addis Ababa. According to Dr Kathryn Ewing, the course presenter, “the week was made up of seminars and collaborative workshops that engaged participants in southern theory aligned with urban design approaches, strategies, methods, and project applications. As a learning outcome, participants formed two teams to develop and present a situated contextual evaluation and spatial design interventions for Maputo and Harare from group 1, group two covered Addis Ababa and Nairobi.” Participants further created an individual reflective e-journal of their experience over the week towards a toolbox of ideas.

Key Takeaways

Participants gained an understanding of urban structure and performance at the local scale. They analysed neighbourhoods, streets, and dwellings to understand the transformation of urban spaces. A highlight of the course was the use of the Indawo game ©, a tool that supports co-designing safer communities. Participants applied resource and budget allocation strategies within specific timeframes, gaining valuable experience in real-world scenarios.



FACULTY EVENTS

UCT Open Day 2024

The UCT Open Day took place in May and had a good turnout despite the bad weather. Thank you to all the staff and students for their contributions to the event.



FACULTY EVENTS

EBE Awards Evening

The annual EBE Awards evening acknowledged outstanding students from the 2023 academic year and featured Zinhle Hadebe as the guest speaker.

Congratulations to all the award winners for their excellent academic performance.



FACULTY EVENTS

EBE Transformation Committee Women's Day event

The EBE Transformation Committee recently held its Women's Day event, which featured a social dance session where Sinaye Mtalana from the UCT School of Dance guided the ladies through various dance routines and moves.



FACULTY EVENTS

EBE Future Dreamers Programme and launch of EBE Vision 2050

The EBE 2050 Future Dreamers programme was initiated as a proactive measure to envision the future landscape of the faculty by 2050. The group, consisting of academic and PASS staff from all EBE departments, was facilitated by Dr. Craig Wing and attended a series of workshops to conceptualise the vision. The vision was then presented to the faculty at a launch event.

As part of the launch, faculty staff received branded lanyards, stickers, and posters.



**FACULTY OF
ENGINEERING AND
THE BUILT ENVIRONMENT**

EBE Vision 2050

9 GOALS FOR THE VISION

- 1

We are caring and collaborative. We focus on excellence, innovation and sustainability.
- 2

Our teaching and learning is skills focussed and fundamentals driven.
- 3

Our curricula are inclusive and responsive to local and global challenges.
- 4

We offer customised learning and AI-driven solutions.
- 5

We are experts and leaders. We integrate research and teaching in strategic and relevant areas.
- 6

We have spaces and resources for creative thinking.
- 7

We have digital equality and seamless connectivity.
- 8

We have streamlined, efficient administration systems.
- 9

We are connected.

VISION STATEMENT

- ◆ EBE is a caring and collaborative faculty. We focus on excellence, innovation and sustainability.
- ◆ We are creative, connected, inclusive, and future-fit.
- ◆ Our students and staff are experts and leaders.
- ◆ We have customised spaces, resources and support for our vision.

A special thank you to our EBE Future Dreamers Group for conceptualising EBE Vision 2050.

- Kyle Abrahams - Chemical Engineering
- Sampath Amarasinghe Danapathi Ara - Electrical Engineering
- Sherry Bremner - Chemical Engineering
- Sheryn Gabriel - Mechanical Engineering
- Thobani Gambu - Chemical Engineering
- Obakeng Jona - Chemical Engineering
- Mailbone Mhango - Chemical Engineering
- Thato Mole - Civil Engineering
- Siphwe Mphuthi - Architecture, Planning and Geomatics
- Amanda Mtya - Construction, Economics and Management
- Liz Musvoto - Construction, Economics and Management
- Obiora Nhene - Civil Engineering
- Justin Peed - Electrical Engineering
- Moreblessings Shoko - Architecture, Planning and Geomatics

Thank you to Dr. Craig Wing, who facilitated the group and played a key role in helping formulate the thoughts towards Vision 2050.

Vision 2050 was conceptualised using the following methods and tools to facilitate its development:

- Eisenhower Model (developed by Dwight D. Eisenhower) for prioritization
- Monthly Plan (developed by Steve Craig) for understanding stakeholder needs
- Business Model Canvas (developed by Alexander Osterwalder and Yves Pigneur) for strategic planning
- 5 Horizons Model (developed by Bill Sharpe) for long-term visioning



View the [EBE Vision 2050 brochure here.](#)

STUDENT NEWS

BAS first year students work exhibited at the POZI Exhibition in Rome, Italy



When June exams culminated in youth month. It was exciting to work on this exhibition that developed agential synergy as curricula core architectural skills are being taught. The project in the design studio ran by Ms Buhle Mathole saw the students in their mid-year review project for BAS 1 working on a project called “POZI” a South African slang word for a place/home or simply put a cabin. They designed for real clients amongst those chosen clients being Giggs Kgole, a young South African visual artist based in Rome (John Cabot University) . Today’s youth despite even undergraduate degrees are faced with significant challenges such as joblessness and economic instability. Thus they are propelled to define their future in a new way. The exhibition embodied this spirit of creative thinking and binary ways of working across the arts and architecture. This signifies the bridge between local talent and skill on an international stage.

The students have explored their architectural design skills whilst also grappling with their own introduction to architectural language and ergonomics required for habitable spatial creation at first year level. This is a new narrative that fosters workspaces and a creative dialogue. Special thanks to Giggs Kgole, South African Embassy in Rome (Minister Mashao) and Art Residency Project that hosted the exhibition from 2 – 6 July 2024 in Roma.

STUDENT NEWS

ABES Student Society in CEM



The ABES student society in CEM joined hands with Blue Moon Projects, a dedicated NGO focusing on the construction and formalisation of early childhood development centres (ECDs) across the Western Cape. Their tasks included subsoil drainage, wood sealer application on external timbers, securing the retaining wall, levelling and painting the playground area, and attending to eave details.

As part of the ABES hashtag#DOITDAY initiative, students eagerly participated in the development of Lord Acres Christian Community Centre, focusing on essential tasks to enhance its functionality and resilience. The students took on the challenge of preparing the ECD for winter. Their tasks included subsoil drainage, wood sealer application on external timbers, securing the retaining wall, levelling and painting the playground area, and attending to eave details.

To have your news featured in our EBE Newsletter, please send it through to Justin.Marthinus@uct.ac.za

FACULTY CAMPAIGN

EBE Dean's Merit List campaign



At the end of the first semester, the faculty launched a Dean's Merit List sticker distribution campaign to celebrate the 1st, 2nd, and 3rd-year students who made the Dean's Merit List for the 2023 academic year.

The campaign included sending congratulatory emails to recipients and inviting them to collect a limited edition personalized sticker on specified days as a token of appreciation. This initiative introduced a new and innovative way for the faculty to engage with students and provide them with a branded item.

ALUMNI IN THE NEWS

Mail & Guardian (M&G) annual list of 200 Young South Africans

Every year, the M&G honours young changemakers and influencers who are making an impact in their respective industries. The following EBE alumni have made the list this year:



Tshilidzi Samuel Ramunenyiwa (28) is a project energy engineer at Reonet, which focuses on smarter management of water and energy resources. He focuses on conducting energy audits, as well as designing, developing and implementing energy-efficient systems. He holds an electrical engineering degree from UCT.



Bevan Mongwe (25) holds a BSc in Electrical Engineering from UCT and works for Anglo American Platinum. His practical training involves learning how to use engineering equipment in mines and process plants and shadowing and assisting engineers on site. He is also the co-founder of the Valhuri Community Development Organisation, which teaches learners about the importance of maths and science. He believes that the future of engineering is bright in our country, and has myriad employment opportunities for the youth.