

Quarter 3, 2026 **RESEARCH AND INNOVATION NEWS**

RIE NEWSLETTER OF THE
DVC: RESEARCH, INNOVATION AND ENGAGEMENT

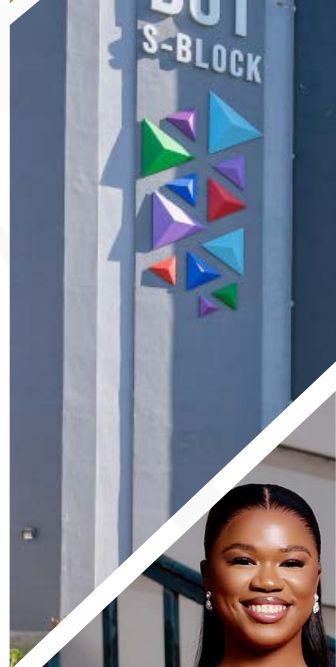


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CREATIVE. DISTINCTIVE. IMPACTFUL.



DUT RESEARCH GROWTH EARNS TOP NRF HONOUR

TIYANI MBOWENI

Sustained investment in research capacity, postgraduate development and research productivity has placed the Durban University of Technology (DUT) at the forefront of South Africa's Universities of Technology, earning it the Focused Research Advancement Award at the 2026 National Research Foundation (NRF) Awards.

The recognition reflects DUT's progress across a five-year evaluation period and acknowledges the University's continued efforts to strengthen its research environment and support the people driving its growing research output.

For the 2026 award, universities were assessed across several research performance indicators, including doctoral staff capacity, postgraduate outputs, research productivity, NRF investment and growth in NRF-rated researchers.

DUT recorded the strongest overall performance across these indicators, placing the University at the top of the Universities of Technology category evaluated for the 2026 award.

DUT's position was therefore not based on a single research output or indicator. Rather, the assessment considered the University's overall progress in building doctoral staff capacity, producing postgraduate research outputs, increasing research productivity, attracting NRF investment and growing its base of NRF-rated researchers over the evaluation period.

The award was received on behalf of DUT by Deputy Vice-Chancellor: Research, Innovation and Engagement, Professor Fulufhelo Nemavhola, at the NRF Awards ceremony held on Thursday, 3 September 2026, at the Boardwalk Hotel and Casino in Gqeberha, Eastern Cape.



Professor Fulufhelo Nemavhola, DVC: RIE at DUT, receiving the Focused Research Advancement Award at the 2026 NRF Awards.

He said emerging as the top achiever in the Universities of Technology category was significant because the award considers performance over time and across several areas of research.

"Emerging as the top achiever in the Universities of Technology category is particularly significant because the assessment looks beyond a single measure or a single year. DUT's performance across doctoral staff capacity, postgraduate outputs, research productivity, NRF investment and the growth in NRF-rated researchers demonstrates the progress we have made in strengthening our research ecosystem over the five-year evaluation period. We must now build on this achievement and continue investing in research capacity, postgraduate development and excellence," said Professor Nemavhola.

The 2026 recognition follows DUT's receipt of the Focused Research Advancement Award in 2024 and 2025. In both years, the award recognised the University's growth in research productivity and research support over a five-year period.

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"Receiving the Focused Research Advancement Award is a proud moment for DUT and, most importantly, a recognition of the collective work of our researchers, postgraduate students, faculties and support teams. Our continued growth in research productivity demonstrates what can be achieved when we invest in our researchers and create an environment that supports innovation, collaboration and impactful research," said Professor Nemavhola.

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The latest NRF recognition comes as DUT continues to strengthen its research performance. In its latest submission to the Department of Higher Education and Training, DUT submitted 975.4 publication units, compared with 702.62 units submitted in the previous reporting period.

DUT has also recorded a significant improvement in the 2026 Times Higher Education Impact Rankings. The University moved into the 401–600 global band, from 1001–1500+ in 2025. DUT was also ranked 60th globally for SDG 1: No Poverty.

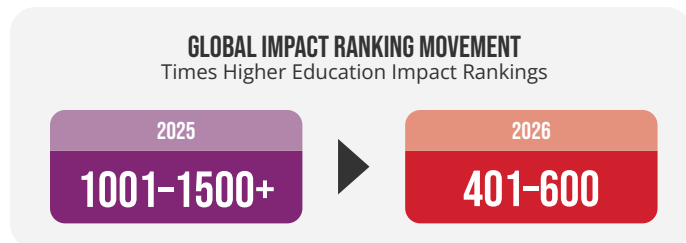
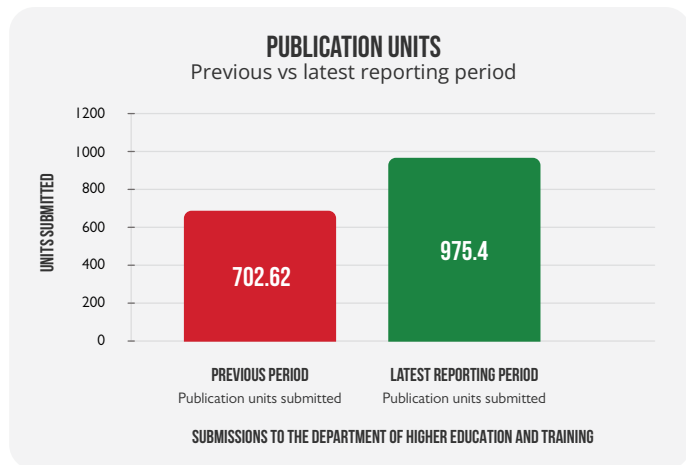
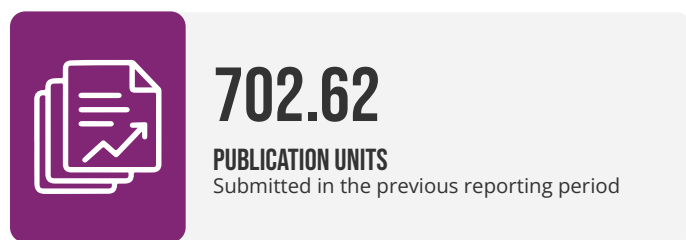
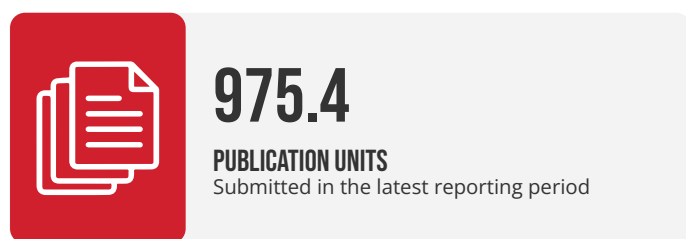
The NRF award is significant because it measures sustained growth rather than performance in isolation. For DUT, emerging as the top achiever in the Universities of Technology

category points to progress across the research system, from developing research capacity and postgraduate talent to increasing productivity, investment and the number of NRF-rated researchers.

The achievement also places greater responsibility on the University to sustain the gains made over the evaluation period and continue strengthening the conditions that enable researchers and postgraduate students to produce high-quality research.

The 2026 NRF Awards brought together South Africa's research community to recognise achievements across the country's research and innovation landscape.

DUT RESEARCH ACHIEVEMENTS | AT A GLANCE



THE AWARD RECOGNISES SUSTAINED PROGRESS IN RESEARCH CAPACITY, POSTGRADUATE DEVELOPMENT AND RESEARCH PRODUCTIVITY.



RESEARCH POWERS DUT'S GLOBAL RANKING RISE

DUT Steve Biko Campus.

TIYANI MBOWENI

The Durban University of Technology (DUT) has made a significant improvement in the Times Higher Education (THE) World University Rankings 2027, moving up 209 places globally, strengthening its position among universities worldwide and securing a place in South Africa's Top 10.

DUT is now ranked in the 1201 to 1400 band, improving from the 1501+ band in the previous ranking. The movement places DUT at number nine amongst all South African universities.

DUT has also recorded a 5-point improvement in its overall score, with research performance accounting for 78% of the gain.

The result comes as DUT continues to strengthen its research and innovation profile. It follows the University's third consecutive National Research Foundation (NRF) Focused Research Advancement Award in 2026, where DUT emerged as the top achiever among Universities of Technology. The award recognises sustained growth in research productivity and research support over a five-year evaluation period, including doctoral staff capacity, postgraduate outputs, research productivity, NRF investment and growth in NRF-rated researchers.

DUT's research capacity has also expanded significantly. The University now has 11 South African Research Chairs Initiative (SARChI) Chairs, covering areas including sustainable protein innovation, wastewater treatment and reuse, smart manufacturing, inclusive entrepreneurship, social justice and education, bipolarisation, digital transformation and

sustainable construction and infrastructure development.

The University further strengthened this research ecosystem on 30 September 2026 with the official launch of 18 new Research Institutes alongside its 11 SARChI Chairs.

The launch event brought together DUT researchers, academic leaders, industry partners, government representatives, students and other stakeholders. The new Research Institutes provide platforms for collaboration across disciplines and support research that responds to regional, national and global challenges.

The ranking improvement comes against this backdrop of continued investment in research and innovation. Research metrics contributed 3.9 points to the University's overall improvement, accounting for 78% of its total score gain. Research Quality increased by 2.3 points, while Research Environment improved by 1.6 points.

One of the most notable improvements was in citation impact. DUT's Citation Impact Score increased from 30.1 in 2026 to 36.2 in 2027, an improvement of 6.1 points. The University's

Field Weighted Citation Impact stood at 1.15, compared with a world median of 1.24. Research productivity also emerged as a key contributor, with DUT recording a score of 65.8 and an improvement of 1.4 points.

DUT Deputy Vice-Chancellor: Research, Innovation and Engagement, Professor Fulufhelo Nemavhola, said the ranking movement is an encouraging indication of the progress being made in research and innovation at the University.

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“The positive movement in the Times Higher Education World University Rankings is an encouraging indication of the progress being made in research and innovation at DUT. The fact that research metrics contributed 78% of our overall score improvement is particularly significant and reflects the work of our researchers, postgraduate students, supervisors, faculties, Research Institutes, SARChI Chairs and professional support teams,”
said Professor Nemavhola.

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He added, “Our three consecutive NRF Focused Research Advancement Awards, the growth of our SARChI Chairs and the establishment of our new Research Institutes are important milestones in strengthening our research capacity.

“As we continue to implement ENVISION2030, we will strive to focus on research excellence, developing the next generation of researchers and building partnerships that increase the impact and visibility of our work,” said Professor Nemavhola.

The latest results also show progress beyond research. Teaching increased by 1.0 point, while the Industry pillar improved by 0.3 points.

DUT also recorded scores above the world median in several individual metrics, including institutional income, international staff, research productivity, international co-authorship, doctorate staff ratio, research influence and industry income.

The 2027 ranking reflects the progress being made in strengthening DUT’s research and innovation capacity, while highlighting areas where further work is needed.

The University’s global ranking movement, continued NRF recognition, 11 SARChI Chairs and 18 new Research Institutes mark an important period in the growth of its research profile.

TIMES HIGHER EDUCATION WORLD UNIVERSITY RANKINGS | AT A GLANCE

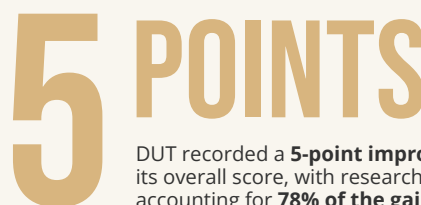
GLOBAL RANKING IMPROVEMENT

DUT’s Times Higher Education World University Rankings



DUT has moved into the **1201–1400** band in the Times Higher Education World University Rankings 2027, improving from the 1501+ band in the previous ranking.

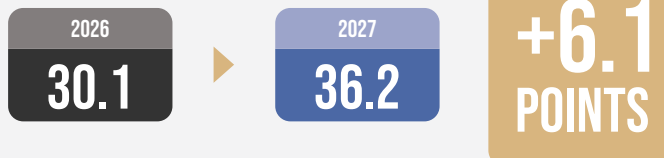
OVERALL SCORE IMPROVEMENT



DUT recorded a **5-point improvement** in its overall score, with research performance accounting for **78% of the gain**.

CITATION IMPACT IMPROVEMENT

DUT’s Citation Impact Score increased from 30.1 in 2026 to 36.2 in 2027, an improvement of 6.1 points.



78%

RESEARCH PERFORMANCE ACCOUNTED FOR 78% OF THE OVERALL SCORE GAIN.



18 RESEARCH INSTITUTES LAUNCHED, 11 SARCHI CHAIRS SHOWCASED

DUT PhD candidate Charles Gnana and Karlsruhe Institute of Technology researcher Kea Limbeck collaborate on sustainable biomass research. | S'bonelo Dlamini

TIYANI MBOWENI

The Durban University of Technology (DUT) officially launched 18 Research Institutes and showcased 11 South African Research Chairs Initiative (SARCHI) Chairs at the Durban International Convention Centre (ICC) on Wednesday, 30 September 2026.

The event brought together academic leaders, researchers, industry partners, government representatives, students and other stakeholders as DUT marked an important milestone in the development of its research and innovation landscape.

The official launch of the 18 Research Institutes provided a platform for researchers from across the University to work collaboratively on areas of research that respond to regional, national and global challenges. The new Institutes bring together research expertise and capacity, with a focus on advancing knowledge and developing solutions with practical and societal relevance.

The event also showcased DUT's 11 SARCHI Chairs, highlighting areas of specialised research and research leadership within the University. The SARCHI Chairs form part of DUT's broader efforts to strengthen research capacity, support research excellence and develop the next generation of researchers.

The launch comes as DUT continues to receive recognition for its research development and impact.

In the Times Higher Education (THE) World University Rankings 2027, DUT is now ranked in the 1201 to 1400 band, improving from the 1501+ band in the previous ranking. The movement places DUT at number nine amongst all South African universities.

The rankings assess universities' contributions to the United Nations Sustainable Development Goals (SDGs) through areas including research, teaching, stewardship and engagement. DUT's performance provides an indication of the growing visibility of the University's work in areas connected to sustainability and societal impact.

The official launch also follows DUT's receipt of the National

Research Foundation's Focused Research Advancement Award. This was the third consecutive year that DUT was announced as the winner of this NRF award.

The award recognised sustained growth in research productivity and research support over a five-year evaluation period. The 2026 assessment considered areas including doctoral staff capacity, postgraduate outputs, research productivity, NRF investment and growth in NRF-rated researchers.

These developments provide important context for the establishment of DUT's Research Institutes, bringing together research capacity, specialised expertise and collaborative platforms at a time when the University's research profile is receiving national and international recognition.

Professor Fulufhelo Nemavhola, Deputy Vice-Chancellor: Research, Innovation and Engagement, said the launch represents an important step in strengthening the University's research platform.

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“The establishment of the Research Institutes provides DUT with an opportunity to bring together expertise, strengthen collaboration and create a platform through which our researchers can respond to complex challenges. It also provides an important foundation for developing the next generation of researchers and strengthening partnerships that can extend the reach and impact of our research.”

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The launch provided an opportunity for DUT to introduce the Research Institutes and SARCHI Chairs to a wider audience, while highlighting the researchers, research areas and partnerships contributing to the University's research development.

For DUT, the launch event marks the formal introduction of a research platform through which the University can strengthen collaboration, develop research capacity and advance knowledge that contributes to society.



DUT'S RESEARCH ECOSYSTEM



18 RESEARCH INSTITUTES



11 SARCHI CHAIRS

RESEARCH WITH IMPACT

COLLABORATION
Bringing researchers and expertise together across disciplines.

RESEARCH EXCELLENCE
Strengthening specialised research and developing new knowledge.

PRACTICAL SOLUTIONS
Addressing regional, national and global challenges.

Building research capacity, collaboration and specialised expertise.

RESEARCH AND INNOVATION NEWS

RIE NEWSLETTER OF THE DVC: RESEARCH, INNOVATION AND ENGAGEMENT



Deputy Vice-Chancellor: Research, Innovation and Engagement at DUT, Professor Fulufhelo Nemavhola delivering a keynote address at the 2026 Global Smart Education Conference in Beijing, China.

DVC: RIE PUTS HUMAN-CENTRED AI IN GLOBAL SPOTLIGHT

LIN WU

The Durban University of Technology (DUT) has taken its thinking on artificial intelligence (AI) and the future of higher education to the global stage, contributing to an international dialogue on how universities can harness technology while remaining inclusive, sustainable and human-centred.

Representing DUT at the 2026 Global Smart Education Conference in Beijing, China, Deputy Vice-Chancellor: Research, Innovation and Engagement (RIE), Professor Fulufhelo Nemavhola, challenged universities to look beyond simply adopting AI and consider how technology can help build more capable and responsive institutions.

Held from 18 to 20 August 2026, the conference, jointly organised by Beijing Normal University and the UNESCO Institute for Information Technologies in Education, was held under the theme "Artificial Intelligence and Sustainable Development in Education". It brought together policymakers, scholars and educators from more than 60 countries to examine emerging technologies and approaches to smart

education and their role in advancing equitable, inclusive and quality-driven education.

“Speaking during the parallel session on “Open Education and Lifelong Learning in the Intelligent Era”, Professor Nemavhola delivered a keynote titled “Beyond AI Adoption: University Generativity for Inclusive, Sustainable and Capability-Driven Higher Education”

He argued that the future of higher education should not simply focus on automating existing university systems and processes, but on developing institutions that are increasingly capable of responding to the changing needs of students, society and the broader education landscape.

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“The goal is not to automate the university we already have, but to build a university that becomes increasingly capable,”
said Professor Nemavhola.

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He emphasised that AI will play an important role in the future of higher education, but should remain an enabler of human and institutional purpose rather than a substitute for it.

“AI will be part of that future, but it must always remain an amplifier of human and institutional purpose, not its substitute,” he said.

The session was organised by the International Council for Open and Distance Education (ICDE), with the State University of Rio de Janeiro, the Open University of Malaysia and the Smart Learning Institute of Beijing Normal University among its co-organisers. It brought together international education leaders to explore the future of open education and lifelong learning in an increasingly technology-driven environment.

The broader conference explored the role of artificial intelligence and smart technologies across all levels of education, with discussions covering AI governance, student well-being, the future of teachers and schools, rural education, special education and learning sciences.

As the annual meeting of the Global Smart Education Network (GSENet), the conference provided a platform for cross-regional and cross-sectoral dialogue on the future of education. It received support from international organisations including the Arab League Educational, Cultural and Scientific Organization (ALECSO), the Commonwealth of Learning (COL), the International Society for Technology in Education (ISTE) and the Southeast Asian Ministers of Education Organization (SEAMEO).

Professor Nemavhola said DUT’s participation provided an opportunity for the University to contribute to global discussions on the future of higher education while strengthening relationships with international academic institutions and education leaders.

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“By taking part in the conference, DUT not only demonstrated its pioneering efforts in AI-enabled education but also forged direct communication links with top global academic institutions, offering invaluable opportunities to advance its digital transformation and boost its global profile,” he said.

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Professor Nemavhola’s participation positioned DUT within a growing international conversation on how universities can harness emerging technologies while retaining their human-centred purpose and strengthening their capacity to contribute meaningfully to society.



RESEARCHER SHINES WITH SHERO SCIENCE HONOUR

WAHEEDA PETERS

From experiencing water scarcity in rural Umbumbulu to developing sustainable water treatment technologies, Nomthandazo Precious Sibiya-Dlomo is building a research career rooted in solving challenges that affect communities. Her contribution to science and technology has now earned her further recognition at the 10th annual Gagasi FM SHERO Awards 2026.



Nomthandazo Precious Sibiya-Dlomo, pictured with her SHERO Award in the Science and Technology category.

The Durban University of Technology (DUT) lecturer and doctoral candidate was named the second SHERO winner in the Science and Technology category at an awards ceremony held at the Radisson Blu Oceans Mall in Umhlanga. The SHERO campaign celebrates women making an impact across different sectors, with the Science and Technology category recognising achievements in scientific and technological research.

Sibiya-Dlomo, who is a lecturer and fourth-year doctoral candidate in the Department of Chemical Engineering at DUT, was nominated for the award by her husband, Mr Khanyisani Dlomo. "I could not believe it when I received an email confirming my nomination. To make it even more special, only two people were chosen for the Science and Technology category in the whole of KwaZulu-Natal (KZN). For me, that was

massive, even if I wasn't going to win. Getting the recognition was beyond my imagination, and I am thankful to DUT for providing a good environment to conduct my research," she said.

Her research focuses on developing sustainable and affordable water treatment technologies to address water scarcity and pollution. She also teaches and mentors undergraduate, honours and master's students, contributing to the development of the next generation of researchers and professionals.

Her passion for water research is closely connected to her upbringing in Umbumbulu, where water scarcity and limited access to clean water were part of everyday life. Experiencing these challenges first-hand showed her the impact environmental issues can have on quality of life and motivated her to pursue engineering and water research.

Her journey has also been inspired by women in STEM who have challenged barriers in traditionally underrepresented fields.

"Their achievements showed me that gender or background should never limit one's ambitions. The greatest lesson I have learned is that resilience is often more important than talent. Success rarely comes without setbacks, but persistence, discipline, and a willingness to keep learning can open doors that once seemed impossible," she said.

Sibiya-Dlomo's growing list of accolades includes the L'Oréal-UNESCO For Women in Science Young Talents Award and Eni Young Talents in Africa Prize in 2024, the NRF Research Excellence Award for Next Generation Researchers in 2023 and the Dr Ivy Matsepe-Casaburri Doctoral Fellowship in 2025. She was also named DUT Alumnus of the Month in October 2025 and among the Mail & Guardian 200 Young South Africans 2026 in the Climate, Environment and Energy category.

Sibiya-Dlomo hopes to build a legacy of excellence, innovation and service through research that delivers meaningful solutions to water and environmental challenges. She also wants to strengthen DUT's research profile while inspiring young researchers and women in STEM to pursue their ambitions.

PROF MARIMUTHU HONoured FOR LEADERSHIP IN ACCOUNTANCY

SINAMILE SITHOLE

Leadership, collaboration and a commitment to developing others have earned Durban University of Technology (DUT) academic Professor Ferina Marimuthu national recognition from the South African Institute of Professional Accountants (SAIPA).

The Head of the Department of Financial Accounting in DUT's Faculty of Accounting and Informatics received the SAIPA Mastery Circle Award in the Leadership category at the SAIPA Accounting iNdaba, recognising her contribution to the accountancy profession and the development of future professionals.

The occasion brought further recognition for the University, with DUT receiving the SAIPA Mastery Circle Partner Award for its collaborative partnership with the professional body. Together, the awards highlight the value of leadership and strategic partnerships in strengthening accounting education and preparing graduates for an evolving profession.

For Prof Marimuthu, the recognition reflects a career shaped by professional excellence, ethical leadership, continuous learning and a commitment to empowering others. She believes leadership extends beyond a position or title and is about creating opportunities, developing people and leaving an environment stronger than one found it.

Reflecting on her professional journey, Prof Marimuthu said one of her greatest achievements has been contributing to the development of people and creating opportunities for them to progress academically and professionally. She takes particular pride in seeing former students grow into successful accounting professionals, academics and leaders.

Her contribution to accounting education supports the development and transformation of accounting programmes, strengthening professional accreditation and building partnerships between higher education institutions and professional bodies. This includes the DUT and SAIPA collaboration, and the implementation of a 20-week Work Integrated Learning simulation aimed at strengthening student development and professional readiness.

The recognition of DUT with the Partner Award made the achievement even more meaningful for Prof Marimuthu.

"Leadership achieves its greatest impact through collaboration, and the Partner Award reflects what can be achieved when academia and the profession work together with a shared purpose," she said.



Prof Ferina Marimuthu was recently awarded the SAIPA Mastery Circle Award in the Leadership category.

As the accountancy profession evolves, Prof Marimuthu believes universities cannot prepare future professionals in isolation. Collaboration with professional bodies, industry and other stakeholders is essential to ensuring curricula, teaching practices and graduate development remain relevant.

Her future focus includes future-ready accounting education, Work Integrated Learning, technology, sustainability and the development of emerging professionals and academics. She encourages young professionals to build competence, protect their integrity, remain open to learning and adapt to technological change.

"Recognition often follows meaningful work, but meaningful work should always come first," she said.

At this stage of her career, Prof Marimuthu views legacy not in terms of titles or individual achievements, but through the people, programmes and partnerships that can continue making an impact. She hopes to inspire emerging professionals to recognise that leadership can be demonstrated in the classroom, professional practice, communities and through supporting the development of others.

"Success becomes more meaningful when it creates opportunities for others," she said.

Prof Marimuthu's recognition, alongside DUT's SAIPA Mastery Circle Partner Award, reinforces the role of academic leadership and collaboration in strengthening the accountancy profession and developing ethical, adaptable and future-ready graduates.



LIGHTING THE WAY TO A SMARTER ENERGY FUTURE

Professor Oludolapo Akanni Olanrewaju.

WAHEEDA PETERS

From industrial energy systems to artificial intelligence (AI) and climate resilience, Professor Oludolapo Akanni Olanrewaju's research is helping to chart pathways towards a more sustainable and energy-efficient future. His contribution to this evolving field took centre stage when the Durban University of Technology (DUT) celebrated his professorial milestone with an inaugural lecture titled "Energy, Efficiency and Intelligence".

Professor Olanrewaju, Head of the Department of Industrial Engineering and Interim Director of the Institute of Systems Science in the Faculty of Engineering and the Built Environment, used the lecture to reflect on his scholarly journey and demonstrate how advanced modelling and AI can improve energy efficiency, strengthen climate resilience and support sustainable development, particularly in developing economies.

Welcoming guests to the event at the DUT Hotel School Conference Centre, Deputy Vice-Chancellor: Research, Innovation and Engagement, Professor Fulufhelo Nemavhola, described Professor Olanrewaju's research as "both a compass and a lantern", pointing towards sustainability while illuminating new pathways.

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"Your journey from electrical and industrial engineering to integrated energy modelling and artificial intelligence demonstrates that scholarship is not merely about interpreting the world, it is also about redesigning its possibilities. Through your work on energy efficiency, climate change, life-cycle analysis and intelligent optimisation, you have built bridges between equations and human needs, between technological advancement and environmental responsibility," he said.

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Acting Executive Dean of the Faculty of Engineering and the Built Environment, Professor Molusiwa Ramabodu, highlighted Professor Olanrewaju's extensive research achievements, including an NRF C2 rating and numerous research accolades. These include DUT Researcher of the Year awards in the Gold Category in 2020 and Platinum Category in 2021, as well as Faculty Platinum Awards for PhD Research Supervision and PhD Excellence in Research Outputs in 2025.

His scholarly contribution also extends to academic publishing. He is editing a book with Elsevier, serves as Guest Editor for international journals and sits on the editorial board of the SAGE Journal on Renewable Energies.

During his inaugural lecture, Professor Olanrewaju traced the development of an integrated analytical and intelligent framework for advancing sustainable energy transitions.

He outlined the IDA ANN DEA modelling architecture, which combines decomposition analysis, predictive artificial neural networks and data envelopment analysis to address limitations associated with single-method approaches.

Drawing on long-term case studies from Canada and South Africa, he demonstrated how activity, structural and intensity effects influence industrial energy consumption and how efficiency gaps can reveal significant opportunities for energy savings.

Professor Olanrewaju also shared insights into a deep Multi-Task Learning-Reinforcement Learning framework aimed at optimising hybrid renewable-energy deployment in underserved communities across sub-Saharan Africa.

"By integrating heterogeneous data sources, ranging from satellite imagery to socio technical indicators, the framework supports intelligent energy classifications, demand forecasting, and autonomous recommendation of optimal microgrid configurations," he explained.

The research, he indicated, has the potential to deliver social, environmental and economic benefits while contributing to a broader agenda of continental collaboration, climate resilience and sustainable development.

Closing the event, Deputy Vice-Chancellor: Teaching and Learning, Professor Vusi Gumede, congratulated Professor Olanrewaju on the milestone and his contribution to DUT.

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"This prestigious achievement of professorship is awarded to academics who demonstrate excellence and scholarship on teaching, research, innovation and engagement. We wish you continued success and further knowledge generation, and we thank you for the honour that you have brought to our university," he concluded.

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Professor Oludolapo Akanni Olanrewaju.

A portrait of Dr. Nomakhosi Mpofana, a Black woman with long, dark, curly hair, wearing glasses and a purple sweater over a light-colored collared shirt. She is smiling and looking towards the camera. The background is a blurred indoor setting with vertical elements.

BRIDGING INDIGENOUS KNOWLEDGE AND SKIN SCIENCE

Dr Nomakhosi Mpofana

WAHEEDA PETERS

A childhood curiosity about the traditional healing practices she witnessed in her community has grown into a research career dedicated to bringing indigenous knowledge and modern science closer together. For Durban University of Technology (DUT) researcher Dr Nomakhosi Mpofana, that connection is also helping to advance more inclusive approaches to skin health.

A Senior Lecturer and researcher in the Department of Somatology within the Faculty of Health Sciences, Dr Mpofana's research spans allied health sciences, photobiology and indigenous knowledge systems, with a particular interest in skin rejuvenation and melasma in darker skin types.

Growing up in the rural Nomlacu area in the Eastern Pondoland region of the Eastern Cape, she observed people using clay and indigenous medicinal plants to treat wounds and skin conditions. These experiences sparked questions about the relationship between traditional healing and science that would later shape her academic journey.

Her determination to address gaps in skin healthcare deepened while working as a therapist at a dermatology medical centre,

where she saw how people with skin of colour could struggle to access appropriate treatment because many available therapies had been developed for lighter skin types.

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“Seeing patients who could not be treated effectively because suitable therapies did not exist was deeply concerning. It became clear that more research was needed to develop solutions that reflected the diversity of our communities.”

expressed Dr Mpofana.

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Dr Mpfana subsequently pursued research aimed at improving treatments for hyperpigmentation and other conditions affecting darker skin tones. Her work has been published in leading international Q1 journals and attracted support from the National Research Foundation (NRF), University Capacity Development Programme (UCDP) and DUT seed funding.

"My inspiration comes from my patients' stories, my students' curiosity, and the chance to bring indigenous knowledge to the heart of scientific research. My work is also deeply rooted in the Ubuntu philosophy, 'umntu ngumuntu ngabantu' (a person is a person through other people)," she explained.

Collaboration across disciplines has become another defining feature of her research. She has led initiatives including the DUT Inclusive Wellness Project and Translingual Competence in Health Professions Education initiative, while contributing to research into artificial intelligence in higher education and the integration of Traditional African Medicine into modern drug discovery.

Her research contribution has earned institutional recognition. In 2024, she received the DUT Research, Innovation and Engagement Institutional Gold Multidisciplinary and Interdisciplinary Award, followed by the Institutional Gold Research Excellence Award for Emerging Researchers in 2025. She views these accolades as recognition not only of her work, but of Somatology's growing contribution to research, innovation and society.

Dr Mpfana is also continuing her postgraduate studies

in Public Health at the University of Pretoria, exploring connections between clinical dermatology, public health and community engagement. Alongside her research, she mentors students and hopes to encourage emerging researchers to see challenges within their own communities as opportunities for meaningful enquiry.

"I want students to understand that the challenges they observe in their communities can become powerful research questions. Our cultural heritage is not a limitation; it is a source of knowledge that can enrich science when approached with academic rigour."

Ultimately, Dr Mpfana hopes her work will help establish inclusive skin-of-colour research as an important area of scholarship while contributing to healthcare that better reflects the diversity of the communities it serves.

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"Until all people, regardless of their skin colour, can receive effective treatment with minimal unwanted side effects, I will continue pursuing research that advances culturally inclusive skin care by bridging the gap between our rich traditional medicinal knowledge and modern science. These two pillars should complement one another in improving people's lives."

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Dr Khosi Mpfana receiving the DUT Research, Innovation and Engagement Institutional Gold Multidisciplinary and Interdisciplinary Award at the 2024 ENVISION2030 Institutional Awards, in recognition of her outstanding research contributions and commitment to advancing scientific understanding of melasma in African women.



TURNING CHEMISTRY INTO POSSIBILITIES FOR HEALTHCARE

Dr Senzekile Majola

WAHEEDA PETERS

For Dr Senzekile Majola, chemistry holds the potential to do far more than advance scientific knowledge. It can contribute to new treatments, improve disease detection and ultimately help address healthcare challenges affecting communities.

A lecturer in the Department of Chemistry in the Faculty of Applied Sciences at the Durban University of Technology (DUT), Dr Majola is building her research profile in medicinal chemistry, with a particular focus on drug discovery and diagnostic technologies for diseases such as cancer and diabetes.

Her research centres on the design and synthesis of fused indole-pyrazole heterocyclic compounds with potential therapeutic applications, while also exploring their use as functional materials in electrochemical sensing platforms for disease biomarkers. Her work has been published in peer-reviewed international journals and presented at national and international scientific conferences.

“Currently, my research is focused on expanding the work arising from my doctoral studies on fused indole-pyrazole heterocyclic compounds, which has resulted in the filing of intellectual property,” she explained.

The research is deeply personal for Dr Majola. “Through this integrated approach, my research aims to contribute to both drug discovery and innovative diagnostic technologies. What inspired me to pursue this area of research was witnessing the impact that diseases such as cancer and diabetes have on individuals close to me. Those experiences made me reflect on how I could contribute as a chemist,” she professed.

A significant outcome of her doctoral research was the filing of intellectual property through DUT’s Technology Transfer and Innovation (TTI) Office. For Dr Majola, this demonstrates the innovation potential of the research and provides a foundation

for further investigation into therapeutic strategies and diagnostic technologies.

Her work also aligns with DUT's ENVISION2030 strategy through its focus on innovation, impactful research and postgraduate development. Dr Majola co-supervises postgraduate research in medicinal chemistry and sustainable synthetic chemistry.

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“I believe bringing these two areas together creates new opportunities for research in drug discovery and disease diagnostics. Through my publications, collaborations and postgraduate supervision, I hope to contribute to the growth of medicinal chemistry while encouraging collaboration between chemistry, engineering and health sciences. Ultimately, I would like my research to inspire future researchers to develop innovative solutions that address real healthcare challenges and improve people's lives,”

expressed Dr Majola.

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Looking ahead, she intends to further integrate therapeutic discovery, electrochemical sensing and innovative synthetic methodologies. Obtaining an NRF rating is also among her long-term goals as an early-career researcher.



Importantly, Dr Majola wants her research to move beyond academic publication towards practical application and impact. She plans to continue working with DUT structures such as the TTI Office to explore opportunities for research with societal and commercial potential.

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“While publications remain an important measure of research excellence, I believe research should also create tangible value through innovation and translation into practical applications that benefit society. To achieve this, I intend to work closely with the Directorate such as TTI to ensure that my research has the potential to progress beyond the laboratory into innovations with societal and commercial impact,”

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Through this approach, Dr Majola hopes to contribute to DUT's vision of innovation, entrepreneurship, research excellence and sustainable development while advancing medicinal chemistry research that improves lives.





DR MOSO ENGINEERS SMARTER, SUSTAINABLE INDUSTRIAL SYSTEMS

Dr Matshidiso Moso

WAHEEDA PETERS

Years spent working across the automotive, food-manufacturing, electronics and chemical sectors gave Dr Matshidiso Moso first-hand insight into the challenges industries face and now inform her research into practical engineering solutions that improve productivity, quality, safety and environmental performance.

A lecturer and researcher in the Department of Industrial Engineering in the Faculty of Engineering and the Built Environment at the Durban University of Technology (DUT), Dr Moso is developing a research niche focused on integrated lean, sustainable and intelligent industrial systems.

Her current research brings together lean manufacturing, quality management, ergonomics, environmental sustainability and Industry 4.0 technologies, with a particular interest in helping organisations address recurring operational problems more effectively.

“A central theme of my research is improving the way organisations investigate and resolve recurring operational problems. In many manufacturing environments, corrective actions are implemented only after defects, breakdowns or safety incidents occur. However, the underlying causes are not always eliminated, resulting in repeated nonconformances, waste and financial losses,” she explained.

Her industry experience revealed that organisations often use separate systems for quality, safety, maintenance and production, despite the interconnected nature of many

operational challenges. This inspired her to explore integrated approaches to problem identification, root-cause analysis, corrective and preventive action, and continuous improvement.

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“My research therefore seeks to move organisations from reactive problem-solving towards predictive, preventive and evidence-based decision-making,” she added.

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While rooted in industrial engineering, Dr Moso believes the resulting models could have applications across manufacturing, healthcare, construction, logistics, public infrastructure and municipal services. Her research also creates opportunities for postgraduate students to test and adapt these approaches across different organisational and geographical contexts.

Through publication, supervision and collaboration, she hopes to contribute to a stronger African body of knowledge in sustainable industrial engineering and operational excellence. Collaboration with academic departments, students, professional bodies, municipalities and industry partners is already central to her work at DUT, supporting industry-based projects, postgraduate research and knowledge transfer.

Dr Moso is also working towards an NRF rating by strengthening her publication record, expanding national and international collaborations, supervising postgraduate students and demonstrating the practical and scholarly impact of her research.

Looking ahead, she plans to integrate Artificial Intelligence, machine learning, the Internet of Things, computer vision, digital dashboards and Digital Twin technologies into her research. These technologies could support real-time defect detection, predictive maintenance, automated process monitoring and improved environmental-performance management.

Her longer-term ambition is to establish a multidisciplinary research group or centre at DUT focused on lean, sustainable and intelligent industrial systems, bringing together researchers, postgraduate students, industry partners and communities.

Alongside her research ambitions, Dr Moso is particularly committed to supporting women in engineering and developing emerging researchers. She wants students to engage directly with industry and community challenges while seeing engineering research as a pathway to practical impact.

For Dr Moso, this reflects the wider purpose of engineering research: moving knowledge beyond academic publication and translating it into measurable and sustainable solutions for organisations, workplaces and communities.

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“My long-term vision is to establish an integrated centre or research group for lean, sustainable and intelligent industrial systems at DUT. Such a platform could bring together researchers, postgraduate students, industry partners and communities to develop solutions that are creative, distinctive and impactful,” she concluded.

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PROF NGIDI ADVANCES PEACEBUILDING THROUGH RESEARCH AND ENGAGEMENT

ICON Director at DUT, Professor Ndumiso Daluxolo Ngidi.

SIMANGELE ZUMA

From volunteering at the International Centre of Nonviolence (ICON) more than a decade ago to now leading the Centre, Professor Ndumiso Daluxolo Ngidi's journey at the Durban University of Technology (DUT) has come full circle. Today, he is helping to strengthen research, teaching and community engagement focused on peacebuilding, social justice and positive social change.

Professor Ngidi, an Associate Professor in the Faculty of Management Sciences and Director of ICON, brings academic expertise and extensive community-based experience to a Centre dedicated to fostering peaceful and just societies.

Originally from KwaMashu and Umlazi townships in Durban, Professor Ngidi holds a PhD in Education and Development from the University of KwaZulu-Natal. His interdisciplinary research spans the sociology and psychology of education, gender and sexuality in childhood and youth, gender-based violence, youth

development, childhood studies, and the geographies of violence and inequality.

At ICON, he provides strategic direction to research and community-led initiatives addressing violence and inequality. The Centre also offers postgraduate programmes aimed at equipping students with the knowledge and skills to contribute to social transformation.

His connection with DUT began in 2013 when he joined the HIV/AIDS Centre as a Project Officer before moving to

the Student Governance and Development unit. During this period, he also volunteered at ICON and helped to design and teach the Cornerstone module.

"I have come full circle back to DUT," said Professor Ngidi. After leaving DUT to pursue his PhD, his academic journey took him to the Human Sciences Research Council, the University of KwaZulu-Natal and the University of Fort Hare before he returned to DUT to lead ICON. For Professor Ngidi, returning to the Centre where he once volunteered has been particularly significant.

His leadership is anchored in trauma-informed, transformative teaching and learning, research and community engagement. He has worked extensively with young people in township and rural communities, developing initiatives addressing HIV, gender-based violence and social inequality. Participatory and creative research methodologies have been central to this work, helping to amplify marginalised voices and encourage dialogue around social transformation.

Professor Ngidi's research contribution has also attracted international recognition. His accolades include the Harry Frank Guggenheim Young African Scholars Award and recognition from the World Bank, in partnership with the Sexual Violence Research Initiative, for his work in gender-based violence prevention.

Under his leadership, ICON continues to build on its growth from a small centre into an internationally focused research hub that develops researchers and connects academic enquiry with societal challenges. Its work contributes to national development priorities and global frameworks, including the United Nations Sustainable Development Goals.

For Professor Ngidi, research, education and engagement are closely connected. His approach reflects a belief that universities can contribute to social change not only through generating knowledge, but by working



with communities and creating spaces in which lived experiences can inform research and learning.

As ICON enters its next chapter, Professor Ngidi's focus is on strengthening this connection between scholarship and society, using research and engagement to deepen understanding of violence and inequality while contributing to more peaceful, inclusive and equitable communities.

RESEARCH THAT ADVANCES PEACEBUILDING



RESEARCH

Understanding violence, inequality and social change.



TEACHING & LEARNING

Trauma-informed, transformative learning.



COMMUNITY ENGAGEMENT

Working with communities to amplify marginalised voices.

TOWARD MORE PEACEFUL, INCLUSIVE AND EQUITABLE COMMUNITIES.



OPENING RURAL CLASSROOMS TO THE WORLD THROUGH MANDARIN

James Nxumalo Agricultural High School learners, their teachers, and teams from the Durban University of Technology (DUT) and the DUT Confucius Institute (CI), during the launch

PHUMZILE XULU

A rural classroom in Ulundi is connecting with a wider world of language and culture through a new Mandarin programme introduced by the Durban University of Technology (DUT).

The programme, launched at James Nxumalo Agricultural High School on 2 June 2026, is a collaboration between the DUT Confucius Institute (CI) and Community Engagement Office and aims to expand access to international language learning and intercultural exposure for learners in a rural schooling environment.

The programme introduces Grade 10 learners to Mandarin language and Chinese culture, creating an opportunity for them to engage with a global language while still at school. As part of Level 1 of the programme, learners completed 20 online lessons.

Beyond learning a new language, the initiative seeks to broaden learners' educational horizons and expose them

to cultures and experiences beyond their immediate environment. This is particularly significant in rural communities where access to international language programmes and global learning opportunities can be limited.

The partnership draws on the complementary strengths of two areas within DUT. The Confucius Institute provides Mandarin language teaching and cultural expertise, while the Community Engagement Office facilitates the relationship with the school and supports the initiative as part of DUT's commitment to socially responsive, place-based engagement.

By extending university resources and expertise beyond its campuses, DUT is creating educational opportunities within communities while strengthening relationships with basic education institutions. Such partnerships also

create possibilities for continued learning, engagement and future scholarship.

its appreciation to DUT and the Confucius Institute for extending the opportunity to its learners.



Delivering the programme online has not been without challenges. Internet connectivity in the area has affected access, highlighting some of the practical realities of delivering digitally enabled learning in rural communities. DUT and the school are continuing to explore ways of strengthening the programme and supporting learners as they progress with their Mandarin studies.

The initiative demonstrates the potential of community engagement to connect rural schools with global learning opportunities. Through language education, intercultural exchange and sustained university-school collaboration, DUT is helping to create a space where learners can encounter another language and culture without leaving their community.

More importantly, the programme shows how meaningful engagement can help expand access to opportunities and encourage young people to imagine possibilities that extend far beyond the boundaries of their classroom.



DUT CI Director, Mr Lin (Frank) Wu, highlighted the importance of taking Mandarin learning beyond the university environment and giving younger learners an opportunity to develop an early interest in Chinese language and culture. The programme supports the Institute's broader work in promoting language learning, cultural exchange and connections between South African and Chinese communities.



Acting Principal of James Nxumalo Agricultural High School, Mrs T. Magubane, also welcomed the opportunity to expose learners to different languages and cultures while they are still at school. She noted that experiences of this nature can broaden their perspectives and encourage them to imagine possibilities beyond their immediate surroundings, including the prospect of travelling to and experiencing another country.

The school has embraced the partnership and expressed



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