

# Quarter 2, 2026 **RESEARCH AND INNOVATION NEWS**

The Newsletter of the  
**DVC: Research, Innovation and Engagement**



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Professor Fulufhelo Nemavhola, Deputy Vice-Chancellor: Research, Innovation and Engagement at DUT, who will lead the multidisciplinary team.

The 15-month project will involve a comprehensive policy scan and the creation of a National Policy Guidelines Framework on Entrepreneurship for the country's 26 public universities.

The initiative will be undertaken by a multidisciplinary team led by Prof Fulufhelo Nemavhola, Deputy Vice-Chancellor: Research, Innovation and Engagement at DUT, as project leader. Joining him are: Prof Pfano Mashau, Prof Rendani Maladzhi, Prof Bongani Innocent Dlamini, Dr Nomcebo Mthombeni, Dr Pinkie Ntola, Mr Solomon Nyamurima, Ms Nontokozo Ngcobo, Ms Dorinda Borg and Ms Senamile Dlangalala.

*"This project represents a critical step towards strengthening entrepreneurship as a core pillar of the higher education system in South Africa. It is also, in a meaningful sense, a recognition of the important work that DUT continues to do in advancing entrepreneurship, innovation and societal relevance. In developing a cohesive and evidence-based policy framework, we aim to support universities in fostering innovation, nurturing entrepreneurial talent, and contributing meaningfully to economic growth and societal development." said Prof Nemavhola.*

Phase 1 of the project will involve an in-depth, sector-wide review of existing institutional entrepreneurship policies, strategies, and frameworks. This diagnostic phase is designed to identify emerging trends, systemic gaps, barriers to implementation, and best practices. It will also include extensive stakeholder engagements and the development of key analytical instruments, such as a policy matrix, alignment dashboard and institutional commitment index.

The project further responds to a recognised need for coherent and standardised entrepreneurship policy frameworks across South Africa's universities, ensuring more equitable and effective implementation of entrepreneurship development initiatives across the sector.

Phase 2 will focus on translating these insights into a robust and future-oriented National Policy Guidelines Framework. This framework will be aligned with South Africa's broader development priorities and the evolving mandate of higher education institutions. The phase will include stakeholder validation workshops, a national

# DUT TO LEAD NATIONAL ENTREPRENEURSHIP POLICY PROJECT

PROFESSOR PFANO MASHAU

**T**he Durban University of Technology (DUT) has secured a national contract from Universities South Africa (USAf) under the Entrepreneurship Development in Higher Education Programme (EDHE).

This highlights DUT's leadership in entrepreneurship and innovation in the higher education sector, crucial for tackling youth unemployment and promoting economic growth in South Africa.

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**DUT ML Sultan Campus** – home to the university’s entrepreneurial faculties, academic departments, and specialised support centres.

colloquium and the development of a dissemination toolkit to support sector-wide implementation.

Aligned with DUT’s ENVISION2030 strategy, the project reinforces the university’s commitment to innovation, societal impact and the development of entrepreneurial graduates equipped to contribute meaningfully to the economy.

This national award highlights DUT’s excellence in research and positions it as a leader in fostering an entrepreneurship ecosystem in South Africa’s higher education. By providing evidence-based policy solutions, DUT aims to empower graduates as agents of change in society.

*“This initiative provides an important opportunity to consolidate institutional knowledge and best practices in entrepreneurship across the sector. Working collaboratively will be instrumental to developing a framework that is both contextually relevant and responsive to the evolving needs of higher education and the economy.” said Prof Mashau.*



Today's PhD graduates are stepping into a world that demands more than academic excellence. As societies confront complex challenges, their knowledge is called to move beyond publication into practice, transforming ideas into solutions that make a meaningful difference, writes Professor Fulufhlelo Nemavhola | DUT

# THE FUTURE PHD MUST PRODUCE CAPABILITY, NOT JUST KNOWLEDGE

PROFESSOR FULUFHLELO NEMAVHOLA

**S**outh Africa does not need to decommission the PhD. It needs to be re-engineered for the country, continent and future we are trying to build.

For generations, the doctorate has been treated as the highest expression of academic achievement. A candidate identifies a research problem, reviews the literature, designs a methodology, collects and analyses evidence, writes a thesis, defends an original contribution and, increasingly, publishes articles from the work.

This model has served universities well. It has produced scholars, scientists, public intellectuals and disciplinary experts. It remains essential to academic life.

But the world around the doctorate has changed.

The PhD can no longer be imagined only as preparation for an academic career. In South Africa, as in much of the

Global South, societies face urgent problems that require high-level knowledge to move beyond publication into practice: energy insecurity, water stress, weak industrialisation, public health pressures, technological dependency, climate vulnerability, youth unemployment, and fragile public institutions.

These are not only theoretical problems. They are engineering, policy, institutional, scientific, social, and technological problems. They require knowledge of thinking, designing, testing, validating, implementing, and scaling.

That is why the debate about the future of the PhD should not be reduced to whether countries produce enough doctorates. The deeper question is whether doctoral education is producing the kind of capability that societies now require.

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## SOLVING PROBLEMS THAT MATTER

South Africa's National Development Plan 2030 (NDP) sets an ambitious target of producing more than 100 doctoral graduates per million people per year by 2030. It also called for more than 75% of university academic staff to hold doctorates, and for postgraduate enrolments to constitute more than 25% of university enrolments.

The latest available figures show the scale of the challenge. South Africa produced 3,620 doctoral graduates in 2023, equivalent to 58 doctoral graduates per million of the total population. The proportion of academic staff with doctorates reached 52.7% in 2023, reflecting progress but still falling short of the NDP target.

These figures confirm that South Africa still needs more doctoral graduates. But numbers alone will not be enough. If doctoral education expands without redesign, countries may produce more PhDs without producing the capabilities needed to transform their economies, institutions and societies.

*The old doctorate asked candidates to make an original contribution to knowledge. The future doctorate must still demand this, but it must go further. It must also ask whether that knowledge can strengthen systems, improve practice, generate technology, inform policy, support communities, create enterprises and solve problems that matter. This is not a call to lower doctoral standards. It is a call to raise them.*

## APPLICATION & IMPLEMENTATION

A future PhD should not be satisfied with publication alone when the field itself demands application, translation or implementation. In many disciplines, especially at universities of technology and applied institutions, doctoral work should produce patents, prototypes, software, technological standards, clinical tools, policy instruments, community interventions, industrial processes, and new enterprises.

These outputs should not be treated as secondary decorations added after the 'real' academic work has been completed. In appropriate fields, they should be recognised as legitimate doctoral outputs, provided they are original, rigorous, ethical, independently examined and intellectually defensible.

A patent without scholarship is not a PhD. A prototype without theory is not a PhD. A policy instrument without evidence is not a PhD. A community intervention without

a method is not a PhD. But, equally, a thesis that produces articles without any pathway to social, technological, or professional usefulness should not automatically be treated as superior to a doctoral project that produces a validated medical device, a working software system, a tested governance model or an innovation that improves public service delivery. Universities must stop treating usefulness as the enemy of rigour.

## SKILLS REVOLUTION

This is particularly important for Africa. The African Union's Agenda 2063, often called 'The Africa We Want', imagines a prosperous and self-confident continent built on inclusive growth, sustainable development, and technological capability. It calls for a skills revolution underpinned by science, technology and innovation (STI). It also speaks of transformed economies, STI-driven industrialisation, water security, climate resilience, renewable energy, and a stronger African role in global knowledge systems.

*If Africa wants this future, then the African doctorate must change. It cannot remain a mere credential of academic arrival. It must become an instrument of continental capability. It must help Africa build, manufacture, diagnose, govern, invent, design, heal, conserve, compute and compete.*

In South Africa, the qualification framework is not entirely hostile to this future. The Higher Education Qualifications Sub-Framework recognises doctoral study at the National Qualifications Framework Level 10 and provides for both the traditional doctoral degree and the professional doctorate. It recognises advanced research, original contribution and, in the case of professional doctorates, the relationship between knowledge and high-level professional practice.

The Council on Higher Education has also undertaken national work on doctoral standards and the quality of doctoral education. This confirms that the doctorate is not merely a private agreement between a supervisor and a candidate. It is a national qualification with public meaning. It must carry public trust, international credibility, and the highest level of intellectual achievement. This is precisely why reform is needed.

## INNOVATION, PRACTICE, IMPACT UNDERVALUED

The existing framework contains flexibility, but it still gives insufficient status to innovation, practice, and impact as central features of doctoral education. It continues to carry the weight of an older imagination in which the doctorate is associated with the thesis,

the academic career and publication-based scholarly contribution.

The professional doctorate offers one route to practice, but it is often perceived as less prestigious than the traditional PhD because it is not awarded the globally recognised PhD title. This creates an unnecessary hierarchy between scholarly knowledge and practice-based excellence. That hierarchy is dangerous for developing countries.

Africa cannot build technological sovereignty, industrial capability, and stronger public institutions if the highest qualification in the knowledge system is designed too narrowly around the reproduction of academic careers. The doctorate must continue to serve universities, but it must also serve society. It must develop scholars, but also inventors, policy thinkers, technology builders, clinician-scientists, public-sector innovators, industrial researchers, and community-based knowledge leaders.

### INTEGRATED PROTOTYPES, POLICIES

A re-engineered doctoral framework should allow an engineering candidate to submit a tested prototype along with an integrative thesis that explains the theory, design process, validation, limitations, and original contribution.

A candidate in health sciences should be able to submit a clinical tool, diagnostic platform or intervention model supported by rigorous evidence.

A candidate in public administration should be able to produce a policy instrument or governance model that is theoretically grounded and tested.

A candidate in computing should be able to submit software, an algorithmic system, or a data platform, accompanied by a critical account of its originality, robustness, bias, risk, and social value.

The thesis should not disappear. Rather, it should evolve.

One model is the doctoral portfolio with an integrative thesis or exegesis. In this model, the candidate submits a body of work that may include publications, patents, prototypes, designs, software, standards, policy tools, professional instruments, or community interventions. The integrative thesis then demonstrates the intellectual architecture of the work: the research problem, theoretical grounding, methodology, ethics, originality, validation, limitations and contribution to knowledge or practice. This model would protect academic rigour while recognising that high-level knowledge can take more than one form.

### BROADEN DOCTORAL RECOGNITION

South Africa should initiate a national review of the doctorate for the next generation. The Council on Higher Education, the South African Qualifications Authority, the Department of Higher Education and Training,

universities, professional councils, science councils, industry, public-sector institutions, and civil society should be part of this conversation.

Such a review should modernise the language of the doctorate, broaden the recognition of doctoral outputs, include translation and impact in doctoral assessment, reconsider the status of the professional doctorate, and allow universities of technology to pilot impact-oriented PhD models.

*This is not only a South African debate, it matters across the Global South. Many countries are trying to expand doctoral education while also seeking industrialisation, technological sovereignty, public-sector reform, and inclusive development. If doctoral education continues to follow models designed for academic reproduction, it will not fully serve these goals.*

The future PhD is not weaker. It is a more demanding PhD. It asks candidates not only to demonstrate what they know, but also what their knowledge can do. It asks universities to take responsibility, not only for enrolment and graduation, but for the destination and value of doctoral knowledge. It asks regulators to protect standards without freezing the doctorate in the past.

The doctorate must still produce knowledge. But for South Africa, Africa, and the wider Global South, it must also produce capability.

That is the PhD the future requires.

***\*This expert commentary was first published in University World News.***



***Universities must stop treating usefulness as the enemy of rigour, Professor Fulufhelo Nemavhola writes in a call to raise doctoral standards.***



# DUT AWARDED NEW SARCHI CHAIRS TO BOOST RESEARCH EXCELLENCE

The newly appointed DUT Research Chairs with Deputy Vice-Chancellor: Research, Innovation and Engagement at DUT, Professor Fulufhelo Nemavhola, along with the Minister of Science, Technology and Innovation, Prof Blade Nzimande and NRF Board Member, Ms Funeka Khumalo, at the prestigious event. | National Research Foundation (NRF)

SIMANGELE ZUMA AND WAHEEDA PETERS

**T**he Durban University of Technology (DUT) has received eight South African Research Chairs Initiative (SARCHI) Chairs from the National Research Foundation (NRF) as part of a programme to boost research at historically disadvantaged universities and universities of technology.

These Chairs were announced by Minister of Science, Technology and Innovation, Professor Blade Nzimande, in April, alongside 41 new Chairs aimed at enhancing research capacity and fostering innovation in South Africa's public universities.

## THE EIGHT NEW RESEARCH CHAIRS AT DUT ARE:

- ▶ Professor Eric Oscar Amonsou (Chair in Sustainable Protein Innovation)
- ▶ Professor Sheena Kumari Kuttan Pillai (Chair in Wastewater Treatment and Reuse)
- ▶ Professor Rendani Wilson Maladzhi (Chair in Smart Manufacturing Technologies)
- ▶ Professor Pfano Mashau (Chair in Future-Fit and Inclusive Entrepreneurship for a Pan-African Society)
- ▶ Professor Tabitha Grace Mukeredzi (Chair in Education, Social Justice and Society)
- ▶ Professor Kugen Permaul (Chair in Biovalorisation)
- ▶ Professor Olive Stumke (Chair in Digital Transformation, Governance, SME Innovation, Education and Skills), and
- ▶ Professor Molusiwa Stephan Ramabodu (Chair in Sustainable Construction and Infrastructure Development).

Deputy Vice-Chancellor: Research, Innovation and Engagement at DUT, Professor Fuluwelo Nemavhola, said securing eight Research Chairs marked a significant achievement for DUT, in line with the university's ENVISION2030 strategy.

*"These SARCHI Chairs will play a critical role in advancing our strategic research priorities, strengthening postgraduate training and nurturing the next generation of scholars. We are proud of this recognition and remain fully committed to building a vibrant and impactful research ecosystem at DUT. These national Research Chairs are also aligned with our recent implementation of 18 research institutes at DUT," said Prof Nemavhola.*

Also speaking at the launch, Minister Nzimande emphasised that the aim of the appointment of the 41 Chairs was to expand the footprint of the NRF's Research Chairs at historically disadvantaged institutions, universities of technology and emerging universities.

This Minister added: "We also expect them to be deliberate about the development and mentoring

of young, black and women researchers. You have a duty to ensure that the knowledge that is produced by our public universities enables our strategic mission of placing science, technology, and innovation at the centre of government, education, industry, and society. Congratulations to all our new Research Chair holders. I wish you well as you undertake this significant role."

Dr Angus Paterson, the NRF Acting CEO, said the new Research Chairs carry with them the responsibility of building research communities, mentoring the next generation, and producing knowledge that is both excellent and socially responsive. He indicated that the impact of their work will extend well beyond their disciplines; it will be felt within institutions, communities, and the broader society they serve.

*"What we celebrate today is not simply the awarding of research chairs. We celebrate the strengthening of institutional research ecosystems, the creation of new pathways for emerging scholars, and the positioning of universities across the country as meaningful contributors to national development priorities," added Dr Paterson.*

## DUT RESEARCH CHAIRS | BY NUMBERS

8

DUT Research Chairs

41

New Chairs Nationally

18

Research Institutes

2026

Launch Year



# PROF AMONSOU POSITIONS DUT AT THE FOREFRONT OF FOOD INNOVATION

Professor Eric Oscar Amonsou (CENTRE)

WAHEEDA PETERS

**P**rofessor Eric Oscar Amonsou, a Full Professor of Food Science at the Durban University of Technology (DUT), has been appointed as the NRF SARCHI Tier 1 Research Chair in Sustainable Protein Innovation.

The prestigious appointment recognises his leadership in food science research and creates a platform to advance innovative solutions to food security, nutrition and sustainable development challenges in South Africa and beyond.

Prof Amonsou's research journey began in Benin, where he worked at the National Institute of Agricultural Research before pursuing postgraduate studies in Food Science in Ghana and South Africa. Since joining DUT in 2013, his work has focused on food chemistry, processing technologies and the characterisation of proteins from underutilised crops.

As global food systems face mounting pressure, his research evolved towards alternative protein sources,

including pulse grains, fungal proteins and insect proteins, which now form the foundation of his research programme.

*"Personally, it represents the culmination of many years of dedication to research, teaching, and mentorship. Professionally, it provides a unique opportunity to build a strong research programme that addresses critical challenges in food and nutrition security," he explained.*

Prof Amonsou said the appointment reflects the collective efforts of his students, colleagues, collaborators and DUT in fostering research excellence. "I see this SARChI Chair position as a platform to elevate DUT's contribution to national and global food innovation while creating opportunities for future generations of scientists."

The Chair focuses on four interconnected pillars: plant proteins, mycoprotein, insect protein, and advanced food design and commercialisation. "These pillars are integrated through food chemistry, processing technologies, product development, and commercialisation pathways," he explained.

His research aligns closely with South Africa's Decadal Plan priorities, particularly food security, the bioeconomy, sustainable industrialisation and inclusive economic growth.

"The SARChI Chair position contributes by developing locally sourced protein ingredients, reducing dependence on imported proteins, supporting value addition to indigenous crops, and creating new opportunities within the agri-food sector. Through innovation, skills development, and industry partnerships, we aim to translate scientific discoveries into tangible socio-economic benefits," he added.

Over the next decade, Prof Amonsou aims to position South Africa as a leader in sustainable protein innovation through the development of new protein ingredients, food products and locally commercialised technologies. His vision includes creating jobs, supporting start-ups, adding value to African crops, and improving nutrition and food security in vulnerable communities.

His research is rooted in addressing challenges such as food insecurity, malnutrition and unemployment in KwaZulu-Natal, while offering solutions that can be scaled across South Africa and the continent.

"KwaZulu-Natal faces significant challenges related to food insecurity, unemployment, malnutrition, and

agricultural sustainability. Our research addresses these challenges by developing affordable protein solutions from locally available resources such as pulse grains, food processing by-products, fungi, and insects. We also work closely with farmers, industry, government agencies, and communities to ensure that our innovations are practical, scalable, and relevant to local needs," he explained.

Prof Amonsou said human capital development is a key focus of the SARChI Chair. "We will provide postgraduate students and postdoctoral fellows with access to state-of-the-art facilities, multidisciplinary research projects, international collaborations, industry exposure, and entrepreneurship training."

Having already supervised 12 Master's and 10 PhD graduates, he aims to expand this impact by mentoring the next generation of researchers, particularly those from underrepresented backgrounds.

*"The SARChI Chair position will create an environment where students from diverse backgrounds can thrive through structured mentorship, research training, leadership development, and networking opportunities. I want students not only to become excellent researchers but also future leaders, innovators, and entrepreneurs who contribute meaningfully to society," he said.*

Prof Amonsou has led projects that resulted in intellectual property development, technology transfer activities, and prototype products for commercialisation. He also founded INOFID, a DUT-linked spin-off company focused on innovative food solutions.

"The Chair will strengthen this trajectory by supporting technology development, product prototyping, industry partnerships, and start-up creation, ensuring that research outcomes translate into economic and societal value," he shared.

By 2030, Prof Amonsou sees DUT emerging as one of Africa's leading universities in applied research and innovation, particularly in sustainable food systems, biotechnology, and alternative proteins.

"With strategic investments in infrastructure, research chairs, postgraduate development, and international collaborations, DUT has the potential to become a globally recognised hub for sustainable protein research and food innovation," he said.



Professor Faizal Bux, Director of the Institute for Water and Wastewater Technology (IWWT).

## PROF BUX RANKED AMONG WORLD'S LEADING ENVIRONMENTAL SCIENTISTS

TIYANI MBOWENI

**T**he Durban University of Technology (DUT) is celebrating a significant research milestone following the recognition of Professor Faizal Bux, Director of the Institute for Water and Wastewater Technology (IWWT), as one of the world's leading environmental scientists.

In the 2026 Research.com Ranking of Best Scientists in Environmental Sciences, Professor Bux was ranked third in South Africa and 1 857th globally.

Professor Bux also received the 2026 Research.com Environmental Sciences Leader Award for South Africa, recognising his outstanding contribution to environmental science research, innovation, and sustainability.

The ranking honours researchers whose published work and citation impact have made a substantial contribution to their disciplines. Professor Bux's inclusion reflects a distinguished career dedicated to advancing research in water and wastewater treatment, environmental

sustainability, biotechnology, and renewable resource management.

Deputy Vice Chancellor: Research, Innovation and Engagement, Professor Fulufhelo Nemavhola, congratulated Professor Bux on the achievement.

"Professor Bux's ranking is a well-deserved recognition of his commitment to research excellence and his contribution to environmental science. His work continues to raise the profile of DUT's research locally and internationally while contributing solutions to environmental issues that affect communities and industries alike," said Professor Nemavhola.

Professor Bux's research focuses on renewable energy, sustainability, wastewater treatment, pollution control and environmental biotechnology. Over the years, he has become widely recognised for his work in algal biotechnology, wastewater treatment and reuse, biodiesel production, carbon sequestration and water quality management.

His research has also explored the environmental impact of pharmaceuticals, antibiotics and microplastics, and the use of wastewater monitoring to better understand the spread of diseases such as COVID 19.

Through his leadership of the Institute for Water and Wastewater Technology, Professor Bux has helped establish DUT as a centre of excellence in water and environmental research. His work has contributed to the development of research capacity, the supervision of postgraduate students and the strengthening of research partnerships in South Africa and abroad.

Professor Bux has published extensively in leading international journals, including Science of The Total Environment, Algal Research, Journal of Environmental Chemical Engineering and Chemosphere. His research continues to contribute to scientific knowledge and practical environmental solutions.

Professor Bux said the achievement reflects the collective efforts of students, researchers and collaborators who have contributed to the success of various research projects over the years.

"It is an honour to receive this recognition. Research is a collaborative effort, and I am grateful to the many students, colleagues and partners who have contributed to this journey. I remain committed to conducting research that supports sustainable development and addresses environmental challenges facing our country and the wider world."

Professor Bux's achievement is a source of pride for DUT and highlights the important role of research in finding solutions to environmental and sustainability challenges while contributing to the advancement of scientific knowledge.

# RECYCLING SUCCESS COMES DOWN TO ONE SIMPLE THING: HABIT

ALAN KHAN

Why do some people recycle without thinking twice, while others rarely do it at all? A new study by researchers from the Durban University of Technology (DUT), the Baden-Wuerttemberg Cooperative State University (DHBW) in Germany and the Cape Peninsula University of Technology (CPUT) suggests the answer lies less in what people know and more in what they do repeatedly. The research found that habit is one of the strongest predictors of consistent recycling behaviour.

*While environmental awareness, personal values, government policies and access to recycling facilities remain important, the study shows that these factors alone do not always translate into action. People are far more likely to recycle when it becomes part of their everyday routine.*

The findings suggest that creating lasting recycling behaviour requires more than education and regulation. Communities also need practical support and convenient

recycling opportunities that help people develop positive recycling habits over time.

The study focused on recycling behaviour in South African township communities and provides valuable insights for policymakers, municipalities, environmental organisations and community leaders working to increase recycling participation and support sustainable development.

Lead researchers Professor Mercy Makhita and Professor Thomas Dobbelsstein, who is based at DHBW in Germany, and is also an Honorary Research Professor at DUT, said the findings highlighted the importance of making recycling easy, accessible and part of everyday life. Professor Dobbelsstein currently also serves as Chairperson of the Advisory Board of the DUT Business School and as a Board Member of the Innobiz DUT Centre for Entrepreneurship and Innovation.

The researchers expressed their appreciation to both DHBW and DUT for supporting the project. The study contributes to growing efforts to promote sustainability and strengthen the circular economy in South Africa.



**THE FULL RESEARCH ARTICLE IS AVAILABLE AS AN OPEN-ACCESS PUBLICATION:**

[CLICK HERE TO READ MORE](#)



Dr Fathima Razack (above) and Dr Sharanam Abbana.

# PASSION, PURPOSE AND RESEARCH EXCELLENCE SHAPE SCHOLARS' SUCCESS

WAHEEDA PETERS

**R**esearch-driven, future-focused, and committed to making a difference, two Durban University of Technology (DUT) academics are using their doctoral achievements to advance innovation, teaching, and societal impact. Their Autumn Graduation milestones reflect not only years of academic dedication, but also a shared belief in the power of research to solve real-world challenges and shape the future.

## DR FATHIMA RAZACK

**A**mong these scholars is Dr Fathima Razack, whose doctoral journey reflects DUT's strategic investment in building research capacity and academic excellence. Earlier this year, DUT announced the phased implementation of 18 research institutes aimed at strengthening the University's ability to deliver high-impact, solutions-driven research aligned with economic development, social progress, and sustainable innovation. Razack's achievement contributes to this broader vision of developing a strong pipeline of researchers and academic leaders.

A Quality Promotions Officer in the Faculty of Accounting and Informatics, Dr Razack graduated with a Doctor of

Philosophy in Business and Information Management at DUT's Autumn Graduation Ceremony. Her success was supported through the University's Doctoral Mentoring Programme, a flagship initiative of the Research and Postgraduate Support Directorate that accelerates doctoral completions, strengthens research productivity, and develops staff research capacity.

Dr Razack joined the programme in 2023 and pursued research focused on the future of higher education in the tourism sector. Her doctoral thesis, *Towards a Transformative Higher Education Curriculum Model in Smart Tourism within the Fourth Industrial Revolution for Accommodation Establishments in KwaZulu-Natal*,

addressed the growing gap between higher education curricula and evolving industry demands.

The study proposed a model integrating Fourth Industrial Revolution competencies through digital skills development, experiential learning, industry collaboration, and internationalisation.

*"This journey was motivated by a passion for lifelong learning, a belief in the transformative power of education, and a commitment to advancing institutional relevance, graduate employability, and sectoral innovation," she expressed.*

Her academic relationship with DUT spans almost three decades, beginning in 1996 when she enrolled

for a National Diploma in Travel and Tourism at ML Sultan Technikon. Encouraged by Faculty Executive Dean Professor Olugbara, she embarked on her doctoral studies in 2023, culminating in this significant achievement.

"This milestone affirms my commitment to contributing meaningfully to higher education. As I move forward, I remain dedicated to advancing research, supporting institutional excellence, and mentoring others on their academic journeys," she accentuated.

Looking ahead, Dr Razack hopes her research will contribute to curriculum innovation and policy development in response to the demands of the Fourth Industrial Revolution.

"Ultimately, my goal is to serve as a scholar practitioner who mentors future academics, supports institutional excellence, and contributes knowledge that bridges theory, technology, and real world application," she concluded.

## DR SHARANAM ABBANA

Similarly committed to advancing knowledge through practical application is Dr Sharanam Abbana from the Department of Financial Accounting. Having progressed from a first-year Accounting student to earning a PhD at DUT, his academic journey reflects a commitment to innovation, interdisciplinary thinking, and student-centred learning.

His research spans Accounting, Corporate Finance, Sustainability, Integrated Reporting, Financial Technology, and emerging digital tools. His doctoral study examined Integrated Reporting and firm valuation in Sub-Saharan Africa, highlighting how organisational culture and audit quality influence reporting effectiveness.

Beyond his own research, Dr Abbana is helping to transform teaching through Project-Based Learning, Design Thinking, Work-Integrated Learning, and interdisciplinary student research.

"These projects encourage students to identify real-world financial and accounting problems and develop practical solutions. One example is a student project that began as an AI-rich prototype and later became a live system used in the student's own cleaning business, demonstrating how applied learning can move beyond assessment and create practical business value," said Dr Abbana.

His work illustrates how research can generate tangible benefits beyond academia. Students are encouraged to develop solutions for real organisations

and communities, creating meaningful impact while enhancing learning outcomes.

*"The impactful aspect is reflected in projects where students apply accounting knowledge to real-world problems. Through Project-Based Learning and Design Thinking, students have developed solutions that address actual business and public sector challenges. In another case, a student project developed a spreadsheet-based budgeting tool for the Department of Health's eThekweni District Office, supporting real-time financial information and helping prevent overspending after implementation," said Dr Abbana*

He has also supervised projects exploring the integration of artificial intelligence and financial analysis, with student research presented at international conferences and recognised for advancing research culture within the faculty.

Together, Dr Razack and Dr Abbana demonstrate how research excellence extends far beyond graduation. Through impactful scholarship, innovation, and a commitment to developing future generations, they continue to strengthen DUT's research culture while contributing solutions that respond to the needs of industry, communities, and society.



# DR KASUMBWE TARGETS COMPLEX DISEASES THROUGH DRUG INNOVATION

Dr Kabange Kasumbwe at work in the lab

WAHEEDA PETERS

**T**he urgent need for more effective and affordable treatments for diseases such as cancer, tuberculosis, malaria and diabetes inspired Durban University of Technology (DUT) researcher Dr Kabange Kasumbwe to pursue a career in medicinal chemistry and drug discovery.

Based in DUT's Department of Biotechnology and Food Science, his research focuses on developing innovative therapeutic solutions through medicinal and organic chemistry, computational biology and green nanotechnology.

Dr Kasumbwe's academic journey at DUT began with an Honours degree in Biotechnology and progressed through to a Master's and PhD. His doctoral research centred on the design and synthesis of novel coumarin-based compounds with potential therapeutic applications, resulting in a South African patent linked to tuberculosis treatment.

"This research led to a South African patent related to the treatment of tuberculosis, highlighting the translational and therapeutic potential of these compounds," he explained.

Building on this foundation, Dr Kasumbwe expanded his focus beyond traditional drug development approaches. Recognising that complex diseases often require more than single-target treatments, he began integrating computational modelling with laboratory-based research to identify more effective therapeutic solutions.

Today, as a postdoctoral researcher at DUT, he works at the intersection of chemistry, biology and computational science, designing multi-target therapeutic agents aimed at improving efficacy, safety and accessibility for populations most affected by disease.

"In addition, I am increasingly integrating green nanotechnology approaches, particularly the development of environmentally sustainable nano-enabled drug delivery systems aimed at improving therapeutic efficacy while minimising environmental impact," he shared.

Among his recent scholarly achievements is the publication of the book chapter, *Cutting-Edge Molecularly Imprinted Polymer Technologies for Targeting Lung Cancer (Elsevier)*. "It explores innovative smart polymer systems for selective cancer targeting and highlights DUT's growing contribution to precision oncology and advanced biomaterials," he shared.

Over the next five to ten years, his goal is to contribute to the development of clinically relevant therapeutic candidates, particularly for the treatment of tuberculosis, cancer, and antimicrobial-resistant infections.

*"A key objective of my research is to advance one or two lead compounds from early-stage discovery toward preclinical development, building on my previous work, including a patented anti-tuberculosis candidate. Ultimately, I aim to strengthen the pathway from laboratory-based research to translational and therapeutic applications," said Dr Kasumbwe.*

Beyond drug development, Dr Kasumbwe is committed to developing affordable therapies for African populations while strengthening local pharmaceutical and biotechnology sectors through collaboration, innovation and technology transfer. His ultimate goal is to improve health outcomes and contribute to the growth of the bioeconomy.

At DUT, he aims to advance interdisciplinary research spanning chemistry, biology, computational science and green nanotechnology, with a focus on developing locally relevant drug candidates and sustainable drug delivery solutions.

Regionally and globally, Dr Kasumbwe's work contributes to addressing antimicrobial resistance and neglected diseases, areas in which Africa's research voice is increasingly vital.

Attracting and retaining young talent requires both inspiration and opportunity. For Dr Kasumbwe, this involves early exposure by introducing undergraduate students to research through hands-on laboratory and computational projects. His goal is to create an environment in which students feel they are contributing to meaningful, globally relevant work, which he considers essential for long-term retention.

Dr Kasumbwe highlighted the vision underpinning his work:

*"My goal is to develop therapeutic drugs that are not only scientifically robust but also accessible and relevant to the populations most affected by disease. By integrating computational tools with experimental validation, we can accelerate drug discovery while improving precision and efficiency."*

He also highlighted the value of collaboration: "Scientific progress today depends on collaboration across disciplines and borders. Being part of DUT enables me to contribute to a growing network of researchers working toward innovative and sustainable healthcare solutions."

Looking ahead, Dr Kasumbwe believes DUT is well positioned to become a leader in applied and translational research, particularly in health sciences, biotechnology and drug discovery. "With continued investment in research infrastructure, talent development, and international partnerships, DUT can significantly enhance its global research footprint," he said.



Mosa Nkoko with her book.

Today, Nkoko is building a growing body of scholarship that examines the social and economic forces shaping individual and community development. Her work seeks to deepen understanding of the challenges and opportunities that influence people's educational, professional and life trajectories, particularly within contexts marked by inequality and change.

Through an interdisciplinary approach, she contributes to research that informs policy, supports inclusive development, and advances conversations around social justice and human wellbeing. Her work also highlights the role of education and opportunity in fostering more equitable and sustainable societies.

*"My research broadly sits at the intersection of higher education, labour, migration and development, with a focus on how systems of inequality shape lived experiences and how individuals navigate these structures in pursuit of opportunity and meaningful lives," said Nkoko.*

"Currently, my work at DUT, within the International Centre of Nonviolence, engages with questions around education, mobility, labour and social justice, while also contributing to broader conversations on peace, development, and nonviolence," she explained.

In addition to her research, Nkoko contributes to postgraduate learning and mentorship, which she values as an opportunity to engage with emerging scholars and ongoing academic debates.

A pivotal chapter in her journey began when she travelled to Turkey as a student. Initially, it was simply an opportunity to study abroad. However, navigating a new language, culture and academic environment soon became a transformative experience that reshaped how she viewed herself and the world around her.

Over time, the experience sparked deeper reflections on identity, belonging and home.

"Being away allowed me to step back and look at my own country with a different lens, to appreciate certain things more, but also to question and reflect in ways I had not before. That journey eventually gave rise to *The Land Beyond My Home*, which first began as a blog.

"What started as personal reflection, moments of observation and trying to make sense of my experiences, gradually evolved into something more," added Nkoko.

Through the blog, she documented her experiences in real time, opening conversations around race, identity

# HOW A STUDENT EXCHANGE SPARKED DR MOSA NKOKO'S STORYTELLING JOURNEY

WAHEEDA PETERS

What began as a student exchange to Turkey evolved into a powerful exploration of identity, belonging and social justice for sociologist and postdoctoral researcher Dr Mosa Nkoko from the Durban University of Technology's (DUT) International Centre of Nonviolence (ICON).

and navigating unfamiliar environments. One essay, *Being Black in Turkey, You Should Have Warned Us*, was nominated for the Best British Writing Award in 2015 and later republished by several Turkish media platforms, expanding its reach and impact.

As readers connected with her writing, Nkoko realised that many of the experiences she had considered personal resonated with others navigating similar transitions and questions of belonging.

Reflecting on those experiences after returning home eventually led to the development of a book.

"The idea of turning *The Land Beyond My Home* into a book took longer than I had initially expected. For some time, it remained something I continued to sit with and reflect on. Eventually, it evolved into a more intentional body of work, one that extends beyond the immediacy of the blog, capturing both the experience itself and the deeper emotional and psychological reflections that came with it.

In that sense, the journey bore fruit both as a creative output and as a platform for dialogue, one that continues to highlight the importance of storytelling, representation, and making sense of lived experiences," she emphasised.

Nkoko believes sharing such experiences is important.

*"Sharing it was vital because many of these experiences are lived quietly. People go through moments of change, discomfort, and transformation without always having the language or space to make sense of them. I wanted to offer something that reflects those realities, without simplifying them."*

Looking ahead, she plans to deepen her research on inequality, access and opportunity while continuing to produce scholarship that speaks to real-world challenges.

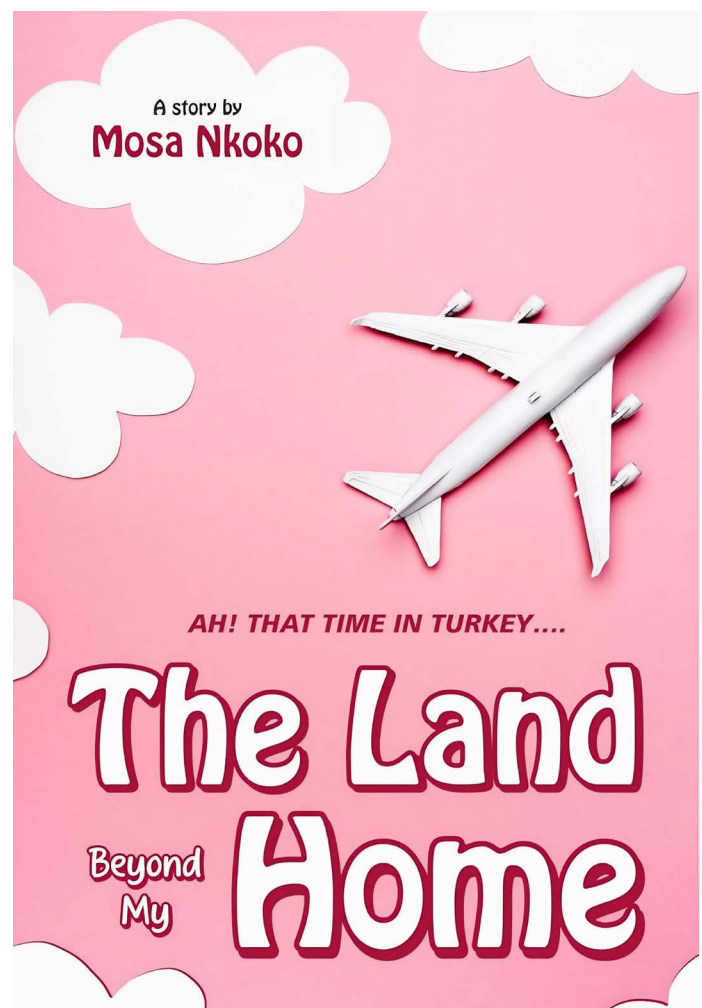
"For me, that means producing research that speaks to real concerns and takes seriously the conditions people are navigating in their everyday lives. I also see my work connecting with broader sustainable development priorities, particularly in areas such as education, inequality, and access to opportunities," she highlighted

## SYNOPSIS

### THE LAND BEYOND MY HOME BY DR MOSA NKOKO

What happens when the dream of living abroad becomes your biggest teacher? *The Land Beyond My Home* is a warm and honest story about navigating life in Turkey; the beauty, the shock, the humour, the fear, the kindness, the growth, and the complicated journey of coming back home forever changed.

It's a story about courage. It's a story about identity. It's a story about finding yourself in unfamiliar places. Relatable, heartfelt, and unforgettable. This is a book for anyone who has ever stepped into the unknown... or wished they could.





Dr Ismail Farouk

## DR ISMAIL FAROUK'S PHD REIMAGINES HOW KNOWLEDGE IS CREATED

WAHEEDA PETERS

For Fine Art lecturer Dr Ismail Farouk, earning a PhD this year marks more than an academic achievement. It represents the culmination of a decade of teaching, artistic practice, and critical inquiry at the Durban University of Technology (DUT), where he teaches Studio Practice and Art Theory.

Now celebrating 10 years at DUT, Dr Farouk has built a career exploring the intersections of art, society and culture, using creative practice to challenge dominant narratives and open space for alternative ways of knowing.

Reflecting on completing his doctorate, he said: "For me, it is not only an academic milestone but also a personal and political one, an affirmation of the value of practice-based, decolonial modes of knowledge production.

The process has reshaped how I think, make, and engage with the world, and I see my PhD less as an endpoint and more as a continuation of a longer trajectory of research and artistic practice."

His doctoral dissertation, *Politics of the Gut: Food, Art, and Colonial Modernity*, examines food as both a subject and method of inquiry within the Fine Arts.

"This dissertation lays out a terrain for food-based practice in the Fine Arts, where food is both subject and method of inquiry, and where food-based art practice is central to challenging dominant narratives, subverting visual economies, and foregrounding embodied and multisensorial dimensions that remain under-theorised in the visual arts," he emphasised.

The study draws on academic texts, cookbooks, archival material and art practices to explore the relationships between food, memory, identity, race, gender and power. Through this lens, Dr Farouk investigates how food and eating shape understandings of the body and broader social structures.

"This engagement aligns with the principles of practice-based research, where creative practice is not separate from but integral to the production of knowledge. The visual, embodied, and performative works explored and created in this study are not only part of the archive but function as modes of analysis through which food, race, gender, and power are critically examined. This work demands that we taste, smell, touch, serve, cook, and eat as analytical and political acts," he added.

A key finding of the research is the role of food as an embodied and relational archive that can reveal histories of race, labour, land and power.

"One of my key findings is that food is mobilised as a relational, embodied, and archival method, foregrounding eating, serving, and tasting as ways to engage memory, power, and histories of race, land, and labour within a living, multisensorial framework," he shared.

Dr Farouk believes his work aligns closely with DUT's values of innovation, critical engagement and social responsibility. Looking ahead, he plans to continue developing his artistic and research practice while creating opportunities for interdisciplinary and decolonial engagement.

"I hope to continue contributing to these conversations through my work," he emphasised.

His advice to aspiring artists and researchers is simple: "Allow your work to evolve, and don't be afraid of taking unconventional paths. It is also important to build a supportive community and to take care of yourself throughout the process," he said.

A portrait of Akira Singh, a woman with long dark hair and a bindi, smiling slightly. The background is a solid blue color.

# AKIRA SINGH CELEBRATES PHD SUCCESS

WAHEEDA PETERS

DUT lecturer in the Department of Auditing and Taxation, Akira Singh

Earning a PhD at the age of 30 is a milestone achievement for Dr Akira Singh, a lecturer in the Department of Auditing and Taxation at the Durban University of Technology (DUT). As the Faculty's first PhD graduate in Accounting, her accomplishment marks both a personal and a significant academic triumph.

Dr Singh's journey at DUT has come full circle. Having progressed from student to academic staff member, she now contributes to teaching, postgraduate coordination, research and community engagement while advancing scholarship in taxation and emerging technologies.

"My PhD reflects years of dedication, discipline, and perseverance; it represents not only academic achievement but also personal growth and the ability

to contribute meaningfully to my field, particularly in advancing the role of Artificial Intelligence in South Africa's tax administration systems."

Her doctoral research, titled *Further Adoption of Artificial Intelligence for Optimal Tax Administration in the 21st Century South Africa: An Evaluative Study*, explores how Artificial Intelligence (AI) can strengthen efficiency, compliance and governance within the South African Revenue Service (SARS).

She explained that the study examines the opportunities and challenges associated with integrating AI into tax administration while considering stakeholder readiness and institutional capacity.

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"The research identifies key systemic challenges, examines stakeholder perspectives, and proposes a comprehensive AI-integrated conceptual framework aimed at strengthening tax administration in a rapidly evolving digital environment," she added.

Her findings revealed significant potential for AI to improve compliance, fraud detection and operational efficiency. However, challenges such as regulatory complexity, limited digital skills, data privacy concerns and resistance to change remain barriers to implementation.

"A key contribution of the study is the development of the AIDOTA framework, Artificial Intelligence Driven Optimal Tax Administration, which provides a structured roadmap for the responsible, phased, and sustainable implementation of AI within SARS, ensuring alignment with governance, stakeholder readiness, and institutional capacity," she said.

Driven by a passion for taxation and the growing influence of technology, Dr Singh recognised the need for innovative approaches to modernise tax administration in South Africa. Her research contributes to an evolving field that has the potential to transform public sector operations and strengthen governance.

As an academic, she believes her work reflects DUT's commitment to excellence, integrity and innovation.

"I strive for excellence in my research and teaching, upholding integrity through ethical academic practice, and embracing innovation by focusing on the integration of Artificial Intelligence into tax administration systems," she said.

Completing a PhD while balancing academic responsibilities was not without challenges. Managing research alongside teaching and professional commitments required discipline, resilience and strong time-management skills. Navigating the complexities of doctoral research also demanded adaptability and a commitment to continuous learning.

Looking ahead, Dr Singh plans to expand her research profile through publications, collaborative projects and postdoctoral opportunities.

*"I intend to continue contributing to academic research through publications and collaborative projects, while also exploring opportunities for postdoctoral research and further academic development," added Dr Singh.*

Her long-term goal is to advance within academia towards professorship, where she hopes to lead impactful research, mentor postgraduate students and contribute to both academic and practical developments in taxation.

For aspiring academics, her advice is clear: remain focused, seek guidance from mentors and stay committed to your goals. She believes perseverance, discipline and clarity of purpose are essential ingredients for success in higher education.

## DR SINGH'S JOURNEY | KEY MILESTONES



### PHD ACHIEVEMENT 2025

First PhD graduate in Accounting at DUT.



### ACADEMIC JOURNEY DUT LECTURER

Lecturer in the Department of Auditing and Taxation.



### RESEARCH FOCUS AI & TAX ADMINISTRATION

Artificial Intelligence, tax administration and governance.



### RESEARCH CONTRIBUTION AIDOTA FRAMEWORK

Developed the AIDOTA framework for AI-driven tax administration.



### LOOKING AHEAD FUTURE IMPACT

Advancing research, mentorship and innovation in taxation.



Learners from Phambili High School engage with representatives from DUT's Student Recruitment Unit during an information-sharing session aimed at promoting higher education opportunities and academic excellence.

# DUT RECOGNISES PHAMBILI HIGH AS SECOND-HIGHEST FEEDER SCHOOL

PHIWAYINKOSI SIBIYA

**T**he Durban University of Technology's (DUT) Student Recruitment Unit visited Phambili High School in Umbilo in June to engage Grade 12 learners on study opportunities, career pathways and the university application process.

The visit also celebrated Phambili High School's recognition as DUT's second-highest feeder school for the 2026 academic year, underscoring the strong partnership between the school and the University.

Building on a successful engagement in 2025, the Student Recruitment Team returned to encourage learners to pursue higher education and make informed career choices. The previous visit contributed to increased applications and registrations in Science, Technology, Engineering and Mathematics (STEM) programmes at DUT.

Mr Michael Zulu, DUT Student Recruitment Officer,

emphasised the importance of education, academic excellence and early preparation for university admission. He explained the application process, highlighting that prospective students apply to DUT through the Central Applications Office (CAO).

Mr Zulu also provided an overview of the wide range of academic programmes available at DUT and outlined the admission requirements for various fields of study.

Learners received prospectuses and were encouraged to work hard towards achieving strong academic results that would enable them to access higher education opportunities.

Ms Aphiwe Khanyile, a third-year student for the Bachelor of Health Sciences in Environmental Health, delivered a motivational address to the learners. She

*Continued on next page*

encouraged them to remain focused on their academic goals, persevere through challenges, and not be discouraged by negative perceptions surrounding demanding subjects.

Ms Zandile Langa, Phambili High School's Deputy Principal, expressed appreciation to DUT for recognising the school's achievements and for investing in the development of its learners.

She noted that Phambili High School achieved a 91.4% matric pass rate in 2025 and was recognised as DUT's second-highest feeder school for the 2026 academic year.

*"This year at Phambili High School, we aim to become the leading feeder school to DUT. We have 561 learners who are committed to achieving strong academic results and reaching their full potential," said Langa.*

She said that the visit was timely, as students are preparing for mid-year exams. Langa emphasised that the engagement would motivate them and highlight the importance of setting clear academic goals.

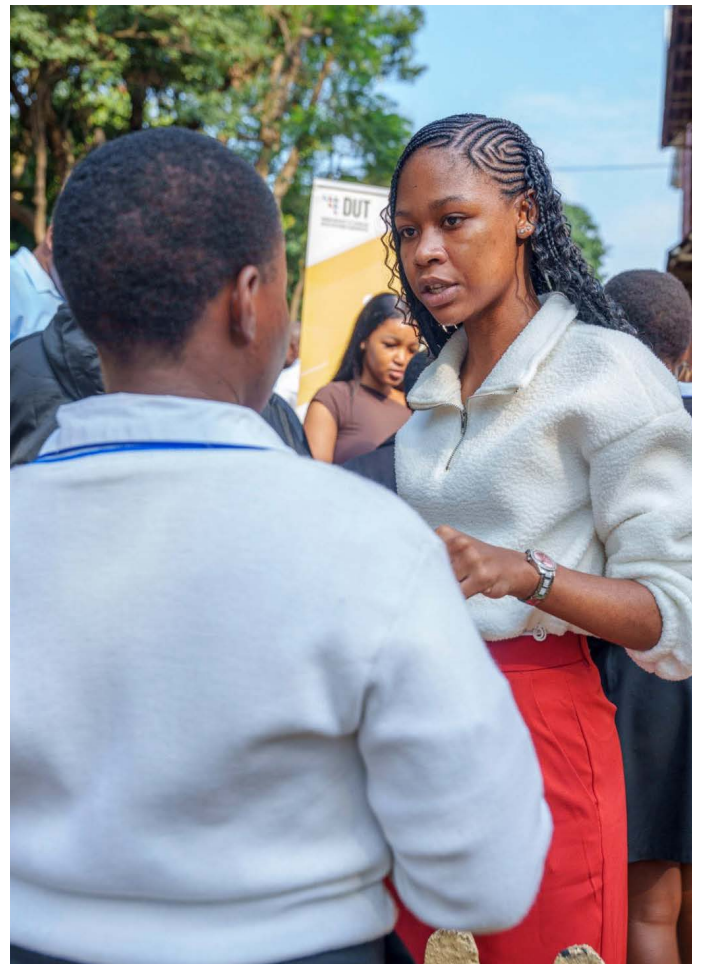
Ms Taniq Khuzwayo, an educator at the school, welcomed the opportunity for learners to engage directly with university representatives. She said the visit provided learners with first-hand and accurate information about higher education opportunities and future career pathways.

The enthusiasm among learners was evident throughout the engagement. Lusanda Phakathi, Grade 12C learner, expressed gratitude for the opportunity to interact with DUT representatives and, adding that she was motivated to apply for admission in 2027.

"DUT representatives explained everything clearly and helped us understand the opportunities available at the University. The session was informative, engaging and inspiring," she said.

The visit forms part of DUT's ongoing commitment to supporting prospective students, strengthening relationships with feeder schools and encouraging learners to pursue higher education opportunities that will enable them to contribute meaningfully to society and the economy.

PHOTOGRAPHER: S'BONELO DLAMINI





DEPUTY VICE-CHANCELLOR  
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