

# RESEARCH, INNOVATION & ENGAGEMENT

## ANNUAL REPORT

**2023**  
**2024**



**ENVISION2030**

transparency • honesty • integrity • respect • accountability  
fairness • professionalism • commitment • compassion • excellence

CREATIVE. DISTINCTIVE. IMPACTFUL.

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## 01

## List of Acronyms



<b>4IR</b>	Fourth Industrial Revolution
<b>AI</b>	Artificial Intelligence
<b>AMESA</b>	Association for Mathematics Education of South Africa
<b>APOS</b>	Action, Process, Object, Schema
<b>ARC</b>	Agricultural Research Council
<b>BiT-BDU</b>	Bahir Dar Institute of Technology at Bahir Dar University
<b>BRICS</b>	Brazil, Russia, India, China and South Africa
<b>CHE-HELTASA</b>	Council on Higher Education - Higher Education Learning and Teaching Association of Southern Africa
<b>CPUT</b>	Cape Peninsula University of Technology
<b>CSIR</b>	Council for Scientific and Industrial Research
<b>DAAD</b>	German Academic Exchange Service
<b>DHET</b>	Department of Higher Education and Training
<b>DMP</b>	Doctoral Mentoring Programme
<b>DRC</b>	Democratic Republic of Congo
<b>DSI</b>	Department of Science and Innovation
<b>DUT</b>	Durban University of Technology
<b>EU's JPI</b>	European Union's Joint Programming Initiative
<b>EWSETA</b>	Energy and Water Sector Education and Training Authority
<b>GOOT</b>	Grow Our Own Timber
<b>HANT</b>	Harnessing Talent
<b>HSRC</b>	Human Sciences Research Council
<b>ICON</b>	International Centre of Nonviolence
<b>INOFID</b>	Innovation with Traditional and Indigenous Crops

<b>IREC</b>	Institutional Research Ethics Committee
<b>ISI</b>	Institute for Scientific Information
<b>ISS</b>	Institute of Systems Science
<b>IWWT</b>	Institute for Water and Wastewater Technology
<b>MoU</b>	Memorandum of Understanding
<b>NICD</b>	National Institute for Communicable Diseases
<b>NRF</b>	National Research Foundation
<b>NRF/SAASTA</b>	National Research Foundation / South African Agency for Science and Technology Advancement
<b>Nuffic</b>	Netherlands Organisation for Internationalisation in Education
<b>Q1</b>	First Quartile (academic journal ranking category)
<b>RCD</b>	Research Capacity Development
<b>RIE</b>	Research, Innovation and Engagement
<b>RIMS</b>	Research Information Management and Systems
<b>SAASTA</b>	South African Agency for Science and Technology Advancement
<b>SAMS</b>	South African Mathematical Society
<b>SARCHI</b>	South African Research Chairs Initiative
<b>SASM</b>	South African Society for Microbiology
<b>STEM</b>	Science, Technology, Engineering and Mathematics
<b>TIA</b>	Technology Innovation Agency
<b>UKZN</b>	University of KwaZulu-Natal
<b>UNISA</b>	University of South Africa
<b>WHO</b>	World Health Organisation
<b>WRC</b>	Water Research Commission



## 02

## Report of the Deputy Vice- Chancellor: Research, Innovation and Engagement



Professor  
Fulufhelo  
Nemavhola

2023/2024  
Academic Year



It is with pride and purpose that I present this Annual Report on Research, Innovation and Engagement (RIE) at the Durban University of Technology (DUT) for the 2023/2024 academic year. This report captures not only quantitative performance, but the deeper institutional transformation underway as DUT positions itself as a university of impact in the Global South.

### A year of strategic consolidation and growth

The RIE portfolio has made measurable progress on multiple fronts. Faculty research productivity reached new heights, with several faculties contributing significantly to the institution's research output units (DOHET-accredited). The Faculty of Engineering and the Built Environment alone contributed 25% of the total units, while Management Sciences produced over 256

outputs, reflecting a strong culture of applied research. The University now boasts an expanding cohort of NRF-rated researchers and active postdoctoral fellows across disciplines.

Crucially, we saw robust growth in postgraduate enrolments and graduations. The 2024 graduation cycle produced hundreds of Master's and Doctoral graduates, many of them DUT staff members, signalling progress in growing internal research capacity.

## Deepening impact through innovation and engagement

This year, our Technology Transfer and Innovation Office (TTI) expanded its footprint with a sharp increase in IP disclosures, patent filings, and collaborative innovation projects aligned with DUT's strategic goals. Our researchers led transdisciplinary projects with real-world application, from the valorisation of wastewater into biogas, to AI-powered nutrition planning for diabetic patients, and child-focused public health mapping initiatives.

Community engagement was not an afterthought, it was integral. Our researchers partnered with homeless shelters, school communities, informal markets, and rural municipalities. These engagements, guided by DUT's commitment to people-centred development, illustrate how innovation and engagement can be powerfully intertwined.

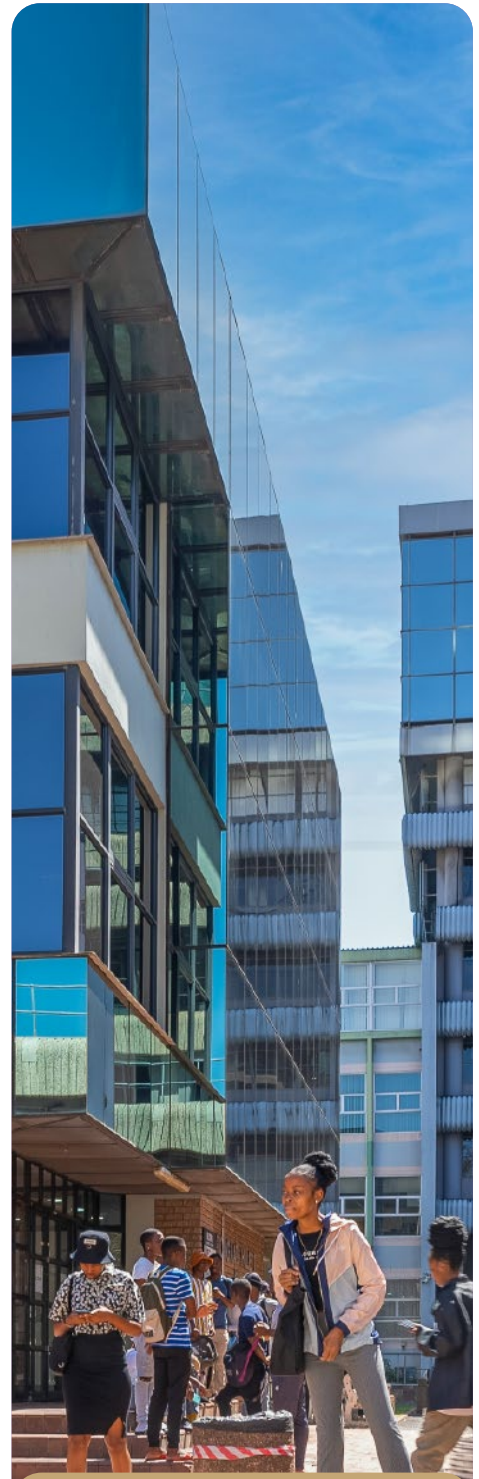
## Building institutional platforms for sustainability

The 2023–2024 period marked significant progress in the consolidation of institutional systems and platforms. The Research Information Management System (RIMS) improved data transparency and grant tracking. The Research Ethics Committees operated with strengthened governance, while Research Capacity Development (RCD) offered critical training for early-career researchers and postgraduate students.

Through targeted investment in digital systems, DUT is laying the groundwork for better decision-making, smarter resourcing, and more visible impact metrics. The establishment of research institutes and centres of excellence has gained momentum, and a new model for third-stream income and intellectual property commercialisation is now in early implementation.

## Challenges and the road ahead

Despite progress, challenges remain. Research funding remains highly competitive, and access to sustained multi-year grants is still



**"We are no longer just producing knowledge — we are shaping futures."**



uneven across faculties. The institutional burden of postgraduate supervision, particularly in departments with few doctoral staff, remains acute. There is a need to formalise the appointment and resourcing of Research Institute Directors, and to create clearer incentive models to recognise research, innovation, and engagement efforts equally.

Furthermore, the global conversation around decolonising knowledge production and measuring research differently has not bypassed us. DUT is actively exploring alternative metrics for evaluating impact, ones that align with our location, our people, and our public purpose.

## Acknowledgements

I wish to express my appreciation to the Deans, Directors, research leaders, postgraduate supervisors, and our academic and professional staff whose hard work underpins every success captured in this report. To our students, undergraduate researchers, honours, master's, doctoral candidates, thank you for choosing DUT as your intellectual home. You are the beating heart of our future. We also acknowledge our national and international partners, including the National Research Foundation (NRF), the Department of Science and Innovation (DSI), TIA, and the many communities we serve across KwaZulu-Natal, South Africa, and beyond.

## Towards 2030

As we move towards 2030, our strategic imperative is clear: to create a research, innovation, and engagement ecosystem that is inclusive, impactful, and globally connected. This will require courage, imagination, and sustained investment in people and platforms. We are no longer just producing knowledge. We are shaping futures.

### Prof Fulufhelo Nemavhola

Deputy Vice-Chancellor:  
Research, Innovation and Engagement

# Disciplinary And Interdisciplinary A



**“Innovation and engagement are no longer parallel pursuits — they are powerfully intertwined.”**



# 03

## Research and Innovation - Faculty Highlights



### Faculty of Health Sciences



The Faculty experienced a period of remarkable growth and achievement during the 2023/2024 academic year.

Faculty members and students actively engaged in research designed not only to generate new knowledge but also to effect measurable, real-world change in society, policy, industry, and academic disciplines. This research-for-impact approach prioritises the translation of scholarly work into solutions that address pressing societal challenges, influence decision-making, and drive innovation.

Despite the evolving complexities of the global and local public health landscape, the Faculty demonstrated resilience, adaptability, and a steadfast commitment to improving healthcare outcomes across South Africa and beyond. Positioned as a leader in impactful research, the Faculty is well-prepared to confront the major health challenges of the present and future, including communicable and non-communicable diseases and persistent public health inequities.



## Facts and Figures

### POSTGRADUATE ENROLMENTS



298

2023

15%

349

2024

**M.HSc:**  
Medical Laboratory Science

12

2023



22

2024

**M.HSc:**  
Chiropractic

43

2023



62

2024

**M.HSc:**  
Environmental Health

13

2023



18

2024

### 2024 POST GRADUATE GRADUATES



78

Total

61

Master's

17

Doctoral



05

Faculty  
Staff

**2023/2024**  
RESEARCH FUNDING

R1M+

The Faculty recorded a 15% increase in postgraduate enrolments in 2024, rising from 298 students in 2023 to 349 students in 2024. This growth indicates a rising interest among students in pursuing advanced qualifications, such as master's and doctoral degrees across various health-related programmes. Notable increases were observed in the M.HSc: Medical Laboratory Science (from 12 to 22), M.HSc: Chiropractic (from 43 to 62), and M.HSc: Environmental Health (from 13 to 18). The data reflects the faculty's growing role in producing highly skilled professionals equipped to address critical healthcare challenges through specialised research and practice.

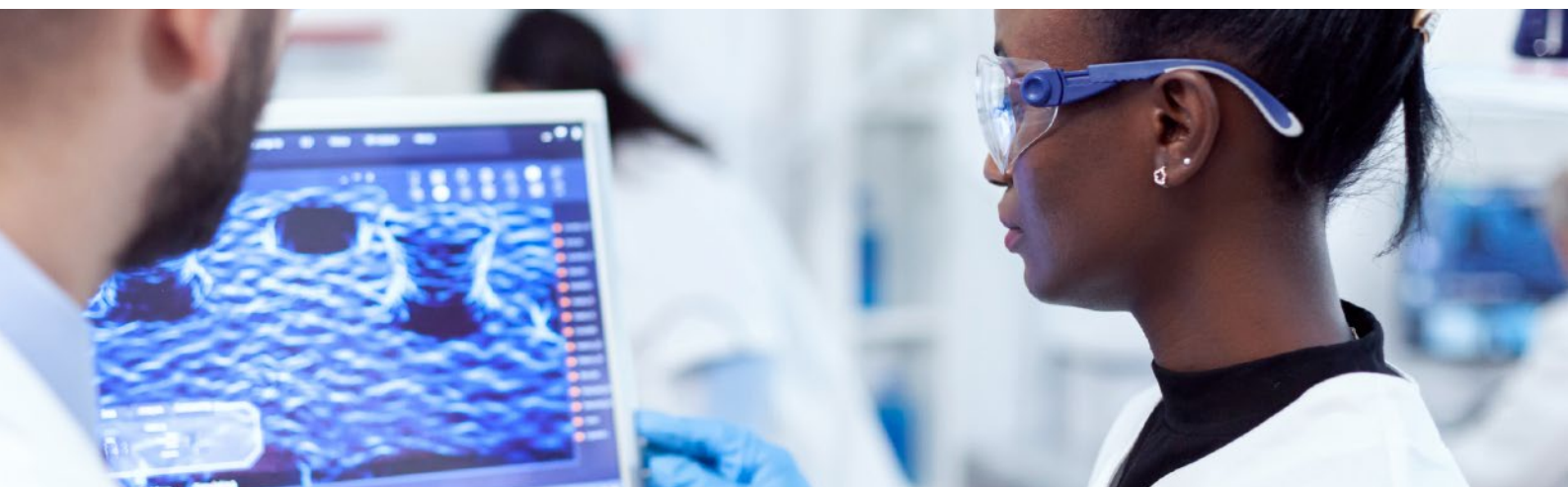
**The Faculty remains committed to expanding its funding base to ensure continued growth and excellence in health sciences education and research.**

The Faculty is pleased to report a total of 78 postgraduate graduates for the 2024 academic year, comprising 61 master's and 17 doctoral degree holders. Notably, five of the doctoral graduates are staff members within the Faculty, reflecting strong internal academic development. This graduate output underscores the Faculty's ongoing commitment to producing highly skilled health professionals capable of contributing meaningfully to both local and global healthcare systems. The success of the postgraduate programmes is attributed to robust academic support initiatives, which, despite some challenges, have been effective in fostering student achievement. The Faculty remains dedicated to enhancing these support mechanisms to further strengthen postgraduate research and professional growth.

In the 2023/2024 academic year, the Faculty of Health Sciences secured over R1 million in research funding from a range of sources, including Erasmus+, NRF, DHET, HWSETA, MRC, and DUT internal grants, among others. This funding significantly enhanced the Faculty's research output, strengthened international collaborations, and supported both academic and community engagement activities. In addition to the funding received, faculty members and postgraduate students submitted grant applications to several major funding bodies such as the NRF, SA-Swiss programme, Belmont Forum, Science by Women, and the Heart and Stroke Foundation.

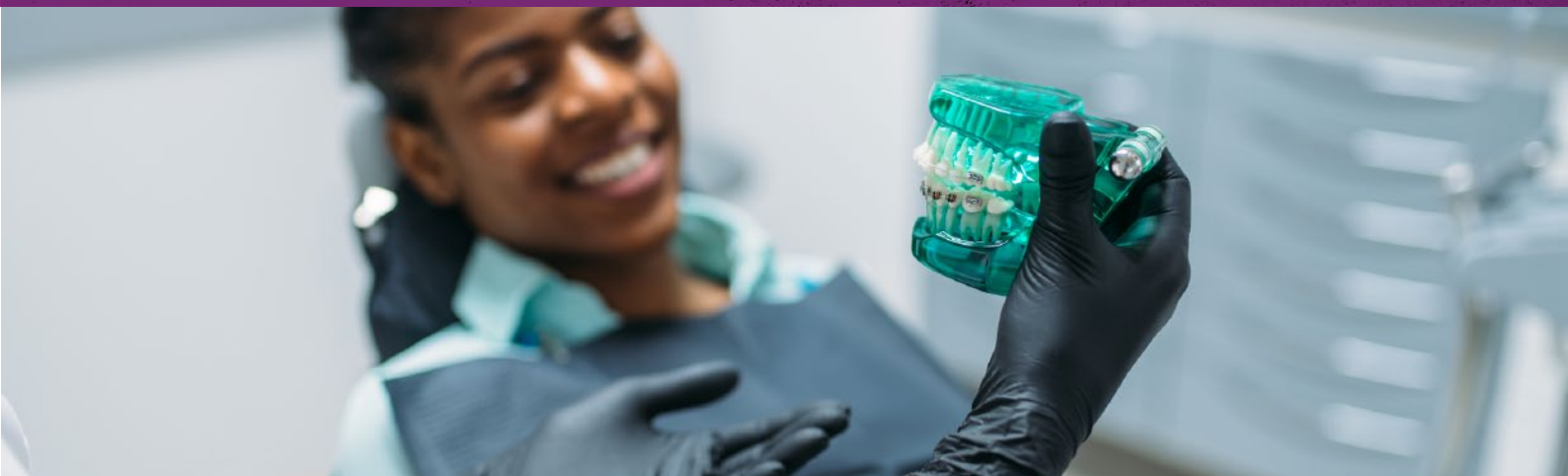
Despite this success, challenges remain in sustaining projects beyond the initial funding cycle and navigating the competitive nature of grant applications. The Faculty is actively working to diversify funding sources and strengthen grant-writing support to secure long-term, multi-year funding. Overall, the funding received has had a transformative impact on research activities, postgraduate support, and contributions to public health.

During the 2023/2024 academic year, the Faculty of Health Sciences undertook a range of capacity development initiatives aimed at enhancing the research capabilities and professional growth of staff and students. These included workshops on systematic reviews, community-based research, grant writing, data analysis, and supervision, as well as Writing Circle sessions to promote academic writing. Upcoming engagements will focus on supporting staff not yet enrolled in doctoral programmes and strengthening supervisory practices. The Faculty also introduced PhD concept presentations to the Faculty Research Committee (FRC) for scholarly feedback and established multidisciplinary research groups focused on non-communicable diseases and environmental health. These initiatives have led to improvements in research output, graduate success, and funding acquisition, reinforcing the Faculty's role as a leader in health sciences education and research, with continued investment essential for future growth and impact.





Conference  
proceedings  
published



The research conducted in 2023/2024 significantly influenced health policy, improved community health outcomes, and contributed to the broader academic and healthcare landscape. The Faculty remains focused on ensuring that its research continues to generate real-world impact.

## Special Projects and Collaborations

The Faculty undertook a number of strategic special projects and collaborations that reinforced its leadership in health sciences research, innovation, education, and community engagement. These initiatives were instrumental in advancing interdisciplinary research, expanding global partnerships, and addressing pressing health challenges.

### Key collaborative highlights include:

# 1

### MOUs in Progress with Universities in Brazil and Switzerland

Development of MOUs with the University of São Paulo (Brazil) and the University of Basel (Switzerland) (both in progress).

# 2

### Community Wellness Partnerships Support Vulnerable Populations

Community wellness initiatives with Bellhaven Harm Reduction Centre (supporting the homeless) and the Dennis Hurley Centre (focusing on female migrants).

# 3

### Climate Change Impact Project Targets Vulnerable Communities

A climate change impact project with the University of Ghana and the University of São Paulo targeting vulnerable populations such as the homeless and the elderly.

# 4

### Extensive Collaborations with Leading National and International Health Institutions

Broad collaboration with prestigious institutions including the NICD, UKZN, CAPRISA, Africa Health Research Institute, University of Pretoria, Stellenbosch, University of South Carolina, University of Arizona, University of Johannesburg, CHAI, HPCSA, and the Department of Health.

# 5

### The Children's Mapping Project: A Global Partnership for Youth Welfare

The Children's Mapping Project with Carleton University (Canada), NACCW, and the Circle of All Nations (Canada).

# 6

### Science Shop Grant Empowers Ndwedwe Community Through Participatory Research

A Science Shop Grant project (2022–2025) funded by NRF-SAASTA, engaging the Ndwedwe community through inclusive, participatory research.

# 7

### Engagement with the International Nursing Network

Engagement with the International Nursing Network for HIV Research at Columbia University.

# 8

### Partnership

Partnership with Boitekanelo College of Health Sciences (Botswana).

# 9

### Health and Safety Training for Minibus Taxi Industry with Travnik University

A short learning programme on health and safety in the minibus taxi industry, in collaboration with Travnik University (Bosnia) and funded by UCDG.





These projects enhanced the Faculty's research capacity, knowledge exchange, and access to research grants. More importantly, they resulted in measurable impacts on public health outcomes, education, and research collaboration at local, national, and international levels.

**The Faculty of Health Sciences continues to demonstrate its commitment to impactful, inclusive, and globally relevant health research.**

The Faculty of Health Sciences at the Durban University of Technology has made a significant social impact through its

commitment to advancing public health, producing skilled healthcare professionals, and addressing pressing societal challenges. Through impactful research, community-based projects, and strategic local and international collaborations, the Faculty has contributed to improving healthcare access and outcomes, particularly among vulnerable populations. Its postgraduate output, research capacity, and academic citizenship have influenced policy, strengthened health systems, and promoted innovation in health sciences, ensuring that the Faculty remains a key driver of positive change in both local communities and the broader global health landscape.

# 04

## Research and Innovation - Faculty Highlights



### Faculty of Applied Sciences



The Faculty demonstrated robust research, innovation, and capacity development during the 2023/2024 period.

The report highlights a variety of initiatives aimed at enhancing research excellence, postgraduate support, impactful societal contributions, and strategic collaborations across multiple departments, including Biotechnology

and Food Science, Chemistry, Physics, Horticulture, Sport Science, Food and Nutrition, and Statistics. Emphasis was placed on advancing scientific knowledge, fostering student growth, and engaging communities through research and development activities aligned with Sustainable Development Goals (SDGs).



## Facts and Figures

### RESEARCH OUTPUT



207

Peer-reviewed  
journal articles

20

Book  
chapters

05

Books

+14

Patents

Σ232

Scholarly  
publications

### POSTGRADUATE DEVELOPMENT



103+

Postgraduates  
enrolled

27

Postgraduates  
graduates

05

Postdoctoral  
Fellows

### RESEARCH FUNDING



R13.8M+

The Faculty maintained a commendable research output and sustained capacity-building momentum across all departments, reflecting its strong commitment to scholarly excellence.

The Department of Chemistry recorded an impressive 59 journal papers, 13 book chapters, and 5 books published in 2023, with a further 19.41 research units generated in 2024. The Enzyme Technology Research Focus Area contributed significantly with 20 publications and 6 book chapters spanning 2023 to 2024. The Computational and Systems Biology Research Group demonstrated consistent productivity, achieving over 65 peer-reviewed publications within two years. Similarly, the Plant Biotechnology Group produced more than 35 scholarly papers between 2023 and 2024, in addition to a previous output of 99 journal articles and 9 book chapters in 2022. The Food and Nutrition Security Research Focus Area also played a vital role, contributing 28 journal publications and one book chapter, further reinforcing the Faculty's research footprint.

The Faculty reported notable achievements in postgraduate development across its departments and research groups. **The Department of Chemistry** recorded 28 Master's and 19 PhD enrolments, with 4 PhD and 3 Master's students graduating in 2024. **The Department of Food and Nutrition** saw the successful graduation of 8 PhD and 12 Master's students during the 2023/2024 period. **The Enzyme Technology Research Focus Area** supervised 15 postgraduate students, while the Computational and Systems Biology Research Group also oversaw the progress of 15 postgraduate students in addition to mentoring three postdoctoral fellows.

**The Enzyme Technology Research Focus Area (RFA)**, led by Prof. Kugen Permaul, is a prominent initiative that includes key contributors like Prof. Santhosh Pillai and Prof. Tukayi Kudanga. Prof. Pillai has supervised 15 students across Honours, Master's, and Doctoral levels and leads impactful projects such as biohydrogen production from agro-industrial residues and edible coatings from fish waste collagen. These projects have secured notable funding from NRF CSUR (R390,000), TIA Seed Fund (R600,000), and BRICS (R355,000). In recognition of its research excellence, the RFA received the 2023 Faculty Award for Research Focus Area of the Year in Enzyme Technology.

**"The Faculty maintained a commendable research output and sustained capacity-building momentum across all departments, reflecting its strong commitment to scholarly excellence."**

Prof. Viresh Mohanlall, Associate Professor in the **Department of Biotechnology and Food Science**, leads the Plant Biotechnology Research Focus Area (RFA), specializing in Plant Biotechnology and Drug Discovery. His group focuses on isolating and screening secondary metabolites for antimicrobial activity and developing novel drug scaffolds for tuberculosis, malaria, and cancer. Between 2023 and 2024, the RFA registered 14 patents, primarily related to drug development. Prof. Mohanlall currently supervises six postgraduate students, one postdoctoral fellow, and one Research Fellow. Over the past two years, his group has published more than 35 scholarly articles and participated in two scientific conferences. In 2022, the group earned the Faculty Research Group of the Year (Gold Category) award, having produced 99 journal articles, 9 book chapters, 2 Master's and 2 PhD graduates, and accumulated 26.56 publication units.

Prof. Saheed Sabiu is an Associate Professor in the **Department of Biotechnology and Food Science**, where he leads the Computational and Systems Biology Research Group in the Plant Biotechnology Research Focus Area of the University. His Group bioprospects for secondary metabolites against



degenerative and microbial infections for new small molecule targets discovery. In the last two years, his research has attracted funding from the National Research Foundation (NRF), Technology Innovation Agency (TIA), South African-Sweden University Forum (SASUF), South African-China University Forum (SAJUF), the South African Medical Research Council (MRC) and ICGEB. He has mentored several postgraduate students and currently supervising 15 postgraduate (3 Honours, 6 PhD and 6 MSc) students and three postdoctoral fellows.

**The Department of Chemistry** in collaboration with

TTI hosted the International Year of Basic Sciences for Sustainable Development (IYBSSD). The workshop theme was “Gender Equality”, “Reduced Inequalities” and promotion of the Science Agenda and Women Participation and Visibility in the STEM fields. The SDGs addressed by the workshop were: Partnerships for the goals, Reduced Inequalities and Gender Equality. Funding for the workshop was received from the Academy of Science of South Africa (ASSAF) for R 150 000. The impact of the workshop was to promote science engagement and international partnerships. This event was in response to the global call by the UN in 2022 and locally by SACI.



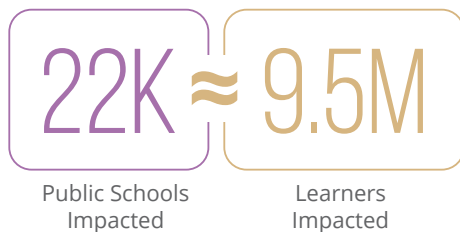
**“From advancing gender equality in STEM to pioneering AI-driven nutrition tools, our departments are driving innovation, equity, and global partnerships through science.”**

**The Department of Chemistry** acquired a Microwave Plasma unit and a GCMS in 2023 valued at R 3.35 m. Training for the MP was completed in 2023 and the GCMS training to be completed by September 2024. Both instruments will be used for research and teaching purposes. The Department of Chemistry acquired 10 desktop computers that will be loaded with the latest software for laboratory equipment such as HPLC and Gas Chromatography and for the Advanced Diploma in Chemistry and Post Graduate Diploma in Chemistry teaching room. The Department also received funding from CHIETA for 103 learners valued at R4 326 000 and Missing Middle funds of R2 520 000. An autosampler was purchased in 2024 for the HPLC instrument to reduce laboratory time for research students.

**The Department of Food and Nutrition** has undertaken impactful research initiatives aimed at advancing public health and nutritional innovation. A major project funded by UNICEF (2023–2024) with a grant of R2.1 million focuses on modelling a blueprint for improving the South African school food environment, aiming to establish healthier, more sustainable food systems in schools and contribute to better health and developmental outcomes for learners. Complementing this, the department also secured a SURE grant of R120,000 in 2024 to develop an AI-powered diabetic recipe generator, an innovative tool designed to provide personalized, nutritionally balanced meal plans for individuals managing diabetes. These projects reflect the department's commitment to evidence-based solutions that promote well-being through both policy-level impact and technological advancement.

## Research Impact

**Food and Nutrition:** Through its collaboration with UNICEF, the department developed and rolled out training materials aimed at improving school food environments across 22,000 public schools in South Africa, impacting approximately 9.5 million learners. The initiative supports the Department of Basic Education and Health with HEI participation nationwide.



**Chemistry:** Notable improvements were recorded in postgraduate enrolment, peer-reviewed publications, and the number of NRF-rated researchers. International collaborations and invitations for peer reviews further enhanced the department's visibility.

**Sport Science:** Published research on adolescent fitness, elite athlete performance, and nutrition in children. A tri-lateral project with the University of Florida and University of Valencia won an international award, showcasing the department's global engagement.

**Physics:** Dr S. Moolla's publication on seismic event detection promises valuable contributions to mining safety. The department formed a Physics Education group to measure the effectiveness of teaching interventions.

## Societal Impact

On the 21st of July students assisted KZN Athletics in a 5km and 1-mile road race. Students worked at marshals along the route.

On the 3rd of August students assisted KZN athletics at the 2024 Cross Country Championships held in Amanzimtoti. Students again worked as marshals along the route.

The Durban University of Technology (DUT) School Engagement Project and Sport Studies



Department teamed up to host a highly successful 7-school tournament, promoting school spirit and friendly competition through sport. It was held on Saturday, 03 August 2024 and Sunday, 04 August 2024 and the tournament brought together learners from seven local schools for a fun-filled day of games at the Hoy Park Sport Complex.

**“From marshaling national championships to managing school tournaments and designing sustainable gardens, DUT students are actively shaping their communities through hands-on learning and impactful partnerships.”**

The DUT partnered with seven schools around Durban, namely Bechet High, Centenary Secondary, Durban Girls Secondary, Hunt Road Secondary, Overport Secondary, Sastri College and Sparks Estate Secondary. In 2024, they created something new: boys were also given a chance to showcase their talent in netball. Seven schools went head-to-head in a riveting soccer and netball tournament. The tournament gave students a chance to do work integrated learning. Students were assigned to do their work in the tournament in fields such as technical, team managers, and referees in netball and soccer. The Sports Studies Department offered trophies for the winners, and also recognised the best player of the tournament.

In 2023–2024, the Department of Horticulture actively contributed to several impactful community engagement initiatives. As part of the Warwick Zero Waste (WZW) project, the department provided technical expertise in collaboration with the Urban Futures Centre, local NGOs, the Durban Botanic Gardens, and the eThekweni Municipality, supporting climate action in line with SDG 13.

The department also partnered with the UmKhumbane Schools Project and DUT's Department of Architecture on a landscaping initiative at Bonela Secondary School in Cato Manor. Horticulture staff and students, alongside school pupils, developed a landscape master plan that included medicinal and butterfly-attracting plants, a checkerboard garden, and plans for a future food forest, integrating environmental education into the curriculum.

Additionally, Kwazi Khomo, a 3rd-year horticulture student, participated in and presented at the Composting for Our Future course held in July 2024, engaging with over 70 international delegates. He showcased the department's garden project, linking zero-waste principles, permaculture, and healthy living.

## Special Projects and Collaborations

Two Masters students from the department of Chemistry conducted a research visit to the University of Groningen, Netherlands in 2023 for the completion of their research projects.

### 1

#### Dr Ntola Builds Global Ties in Electron Microscopy Research

Dr P Ntola from the department visited the University of New Mexico as part of her international collaboration on her electron microscopy project.

### 2

#### Erasmus Programme Fosters International PhD Exchange in 2024

Two international research visits occurred in 2024 under the Erasmus program namely one PhD student, Ms Z Tshemese, undertook a research visit to the University of Valladolid, Spain from February to July 2024 and a reciprocal PhD student Adrian De La Fuente Ballesteros visited DUT.

### 3

#### Strategic MoUs Boost Postgraduate Training and Research Collaboration

In 2023, the Department of Chemistry formalized two significant Memoranda of Understanding (MoUs) aimed at enhancing postgraduate training and research collaboration. The first MoU was established between the Department and the Central University of Jammu (CUJ) in Jammu and Kashmir, India, represented by Prof. A.K. Mishra and Prof. D. Pathania, with the primary objective of fostering increased postgraduate student engagement in shared research areas. The second MoU, signed between the Department and the Technology Innovation Agency (TIA), involved Prof. N. Deenadayalu and Mr. S. Gumedé, and was designed to strengthen partnerships with industry, specifically to support the training and development of postgraduate students through applied, innovation-driven research collaborations.

### 4

#### Chemistry Department Champions Skills Development on National and Global Stages

Dr P Ntola from the department was appointed as an Expert for Skill #52 (Chemical Laboratory Technology) by DHET in preparation for WorldSkills Competition 2024 in Lyon, France. The Department of Chemistry also supplied laboratory equipment for the DHET WorldSkills national competitions that took place on the 1 – 3 February 2024 at the Durban Exhibition Centre. Many laboratory staff members from the Department of Chemistry were co-opted to assist in this event. Dr P Ntola also participated in the CHIETA regional skills forum on 22nd February 2024.

### 5

#### DUT and SASOL Partner in Strategic Research Collaboration

Dr SS Ndlala signed a confidentiality agreement between DUT and SASOL South Africa LTD for the research collaboration between Dr Ngidi and SASOL which commenced on the 1st June 2023 until the 30th June 2025.

# 05

## Research and Innovation - Faculty Highlights

### Faculty of Engineering and the Built Environment



The Faculty has continued to be a driving force in research and innovation, aligning its activities with the University's strategic goals of "Researching for Impact."

This report highlights the faculty's key initiatives, achievements, and contributions during the 2023/24 academic year, with a particular focus on postgraduate support, research output, and industry engagement. As part of its commitment to fostering impactful research, the faculty has prioritized capacity building, innovation dissemination, and collaborative research to address pressing societal and industrial challenges.



## Facts and Figures

### RESEARCH OUTPUT (2023)



103.22

UNITS

Journal  
Publications

48.78

UNITS

Conference  
Proceedings

5.68

UNITS

Book  
Chapters

25%

of the University's  
research output.

In the 2023 academic year, the Faculty contributed 25% of the University's total research output units, amounting to 103.22 units for published journals in DHET-accredited lists, 48.78 units for conference proceedings, and 5.68 units in book chapters. These impressive numbers reflect the faculty's commitment to high-impact research. Postgraduate students and academic staff collaborated extensively on these publications, ensuring that research within the faculty contributes meaningfully to the advancement of knowledge in Engineering, Technology, and the Built Environment. Additionally, the faculty's work focused on addressing local and global challenges, with research topics ranging from sustainable energy solutions to advanced manufacturing technologies, reinforcing the theme of "Researching for Impact."

In 2024, the faculty exceeded its planned enrolment target for doctoral candidates, demonstrating strong interest and growth in advanced research degrees. However, the faculty fell significantly short of meeting its enrolment target for Master's students. This shortfall has been noted as a key area of concern, and targeted efforts will be made in 2025 to closely monitor and address this gap to ensure that future enrolment targets across both levels are met.

In April 2024, the faculty hosted a comprehensive orientation program for 58 new PG students and 177 returning students. The Faculty Orientation Day aimed to introduce students to the University's research

environment, academic policies, available supports and resources. By providing detailed information on research policies, postgraduate funding opportunities, and ethical standards, the event ensured that students were well-equipped to begin their academic journey. The orientation also emphasized the importance of conducting research with real-world impact, in alignment with the University's research objectives. This event represents the faculty's ongoing commitment to supporting its postgraduate community and preparing them for impactful research careers.

Throughout the 2023/24 academic year, the faculty organized several Research and Innovation Seminars aimed at fostering collaboration and showcasing the innovative work being done within the faculty. These seminars attracted participation from over 120 researchers and PG students, with 4 established research groups presenting their work. The primary focus of these seminars was to create awareness of cutting-edge research and promote collaboration both within and beyond the faculty. These efforts have led to the formation of new interdisciplinary research collaborations, which are expected to generate impactful research outcomes in the fields of renewable energy, space science, water management, and smart infrastructure.

The Faculty Research Day, held on 25 October 2024, and was a resounding success, with over 75 academics, postgraduates and honours students presenting their research to a diverse audience of academics, and fellow students. The event featured a prominent plenary speaker, who shared insights on demonstration of a multi-objective research output commercialization model. The Faculty Research Day served as a critical platform for students to disseminate their research findings, receive feedback, and enhance their presentation skills. The event continued to grow in prominence, with a noticeable increase in participation compared to the previous year. Through this initiative, the faculty fosters a culture of academic excellence and encourages collaboration across disciplines, further cementing its role in producing research that has real-world impact.

## Research Impact

It was noteworthy that staff within the faculty had been working exceptionally hard to advance in their academic careers, particularly in pursuit of professorial status.

In 2023, six staff members were promoted to Associate Professor (AP) and one staff member attained Full

Professor (FP) status, reflecting a significant milestone in academic progression. This upward trajectory continued in 2024, with an additional five staff members being promoted to Associate Professor. These achievements highlighted the faculty's strong academic culture, commitment to excellence, and the continuous professional development of its academic staff.

In 2024, the Green Campus Initiative, a dynamic student-led network, received the prestigious Gold Prize at the DUT Student Services Awards for being the most impactful student network on campus. The initiative spearheaded several projects centred on food security, waste management, climate change mitigation, and raising sustainability awareness, reflecting a strong alignment with global environmental goals and community resilience. That same year, Ms Nomthandazo Sibiya distinguished herself with multiple accolades in recognition of her outstanding research contributions. She was named the NRF Young Researcher of the Year and received the L'Oréal-UNESCO For Women in Science South Africa National Programme Award. Additionally, she earned the esteemed ENI Award for Young Talent from Africa, which was presented by the President of Italy during a ceremony held in Italy. Notably, this marked the third consecutive year that students from the Faculty of Engineering and the Built Environment, specifically from Chemical Engineering, had won this prestigious international award, affirming the faculty's excellence in nurturing global research talent.



## Special Projects and Collaborations

The faculty actively promoted research projects that demonstrated a tangible impact on society and contributed meaningfully toward achieving the Sustainable Development Goals (SDGs) and the National Development Plan 2030 (NDP2030) targets.

### 1

#### Advancing Urban Sustainability: The Warwick Zero-Waste Project



One such initiative was the Warwick Zero-Waste Project. This project focused on waste separation at the Warwick market, engaging a local community of bin pickers who sorted recyclable materials and converted organic waste into compost for use at the Durban Botanical Gardens. The initiative not only fostered environmental sustainability but also empowered local communities through job creation and skills development. Its success attracted international funding and laid the foundation for its expansion to the eThekweni bulk market in Clairwood. Negotiations were underway with the municipality to secure a dedicated on-site facility, ensuring the project's sustainability and broader impact.

### 2

#### Innovative Wastewater Treatment and Biogas Production Using Nanocomposite-Enhanced Anaerobic Digestion

The project titled Valorisation of Wastewater to Generate Biogas Using an Integrated System, funded by the Water Research Commission (WRC), exemplified the faculty's commitment to innovative and sustainable solutions. Initially launched as a benchtop-scale concept to demonstrate feasibility, the project quickly progressed to a pilot-scale unit on campus. Building on its success, the research team expanded the system to a larger scale, which was in the process of being commissioned at a local sugar refinery. The project utilised novel nanocomposites to enhance the anaerobic digestion of organic matter in wastewater, resulting in the production of biogas as a renewable energy source. The integrated system further employed advanced oxidation techniques to eliminate residual pollutants, followed by a magnetic recovery process to reclaim the nanocomposites. This multifaceted approach not only contributed to clean energy generation but also aligned with environmental conservation goals through advanced wastewater treatment.

### 3

#### Bridging Academia and National Discourse: Insights from the ESKOM Turnaround Lecture



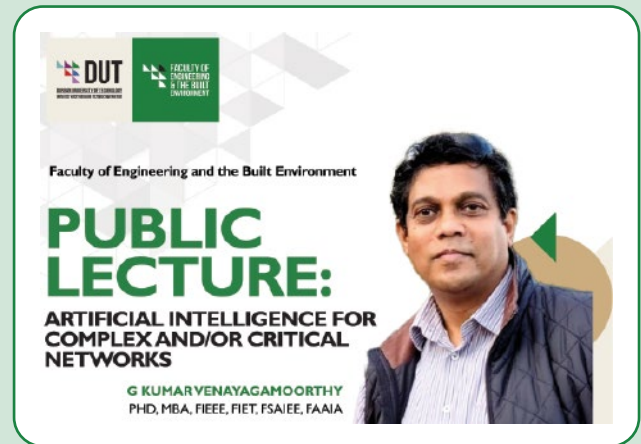
The faculty has taken significant steps to engage with industry and the public through a series of public lectures. A key highlight was the lecture delivered by the Chairperson of ESKOM board, Dr Nyati, who spoke on the ESKOM Turnaround strategy. This event attracted an audience of over 70, including academics, students, and

industry professionals both at the physical venue and online. The lecture provided valuable insights into South Africa's energy challenges and reinforced the faculty's role as a hub for addressing national issues through research and innovation. Public lectures like this one not only provided a platform for knowledge exchange but also enhanced the faculty's visibility and influence in industry and government circles.

## 4

### Artificial Intelligence for Critical Networks: A Public Lecture by Prof. Kumar Venayagamoorthy

The second notable public lecture was conducted by Professor Kumar Venayagamoorthy on Artificial Intelligence for Complex and/or Critical Networks. Prof Venayagamoorthy is currently the Duke Energy Distinguished Professor of Power Engineering and



Professor of Electrical and Computer Engineering at Clemson University, USA. Prior to that, he was a Professor of Electrical and Computer Engineering at the Missouri University of Science and Technology in Rolla, USA from 2002 to 2011.



## Societal Impact

The faculty has demonstrated a strong commitment to contributing to society through research that addresses critical environmental and developmental challenges, aligning with the Sustainable Development Goals (SDGs) and the National Development Plan 2030 (NDP2030) targets.

Notable among these initiatives is the Warwick Zero-Waste Project, which engaged a local community of bin pickers to separate recyclable materials and convert organic waste into compost for use at the Durban Botanical Gardens, thereby promoting environmental sustainability and community empowerment. The project's success attracted international funding and led to its planned

expansion to the eThekweni bulk market in Clairwood. Similarly, the Valorisation of Wastewater to Generate Biogas Using an Integrated System, funded by the Water Research Commission (WRC), showcased innovative environmental solutions. Initially developed as a benchtop-scale concept and scaled to a pilot unit on campus, the project is now being commissioned at a local sugar refinery. It utilises novel nanocomposites to enhance anaerobic digestion of wastewater, producing renewable biogas, and incorporates advanced oxidation and magnetic recovery systems for pollutant removal and nanocomposite reuse. Collectively, these projects reflect the faculty's impactful contribution to society through sustainable, solution-driven research.

**“With 25% of the University’s total research output, the Faculty of Engineering and the Built Environment continues to lead in impactful research, postgraduate development, and industry engagement.”**



**2023**

**25%**



# 06

## Research and Innovation - Faculty Highlights

### Faculty of Management Sciences



The Faculty reaffirmed its position as a catalyst for applied knowledge, public value, and business innovation during the 2023/24 academic year.

With academic activity informed by DUT's Institutional Research and Innovation Plan 2030, the faculty contributed meaningfully to building inclusive economic systems through research-led teaching, entrepreneurial support, and public sector reform.



## Facts and Figures

### RESEARCH OUTPUT 2023



256

Outputs

R30M+

Contributed to DUT  
via DHET-accredited  
publications

### POSTGRADUATE DEVELOPMENT 2024



382

Master's  
students

429

PhD  
students

Σ 811

Postgraduate  
students

### FINANCIAL IMPACT



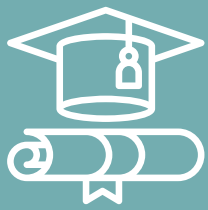
≈ R46M

Earnings from  
Master's completions

≈ R193M

Earnings from PhD  
completions

## STAFF CAPACITY BUILDING



Staff members completed their PhDs in 2024

The faculty is working hard to support especially emerging researchers through the initiatives already mentioned (publication conversations, writers' retreat, workshops, and videos in which newly graduated doctors share their research journeys and hints on how to avoid pitfalls).

The conversations videos are developed and shared by the faculty journalists who are employed on contractual basis. In 2023, this Faculty produced 256 unaudited outputs (articles, chapters and book). This was due to the team efforts of the faculty and academic departments. We plan to improve on 2023 by at least 10% in 2024 through initiatives such as writers' retreats. An annual research awards event is organized to acknowledge their contribution to the sustenance and growth of the faculty. If the university gets R120 000 per DHET accredited article, then the faculty contributed over R30 million to DUT sustainability. We plan to increase the RO by at least 10% in 2024.

In 2024, the faculty recorded 811 registered postgraduate students, 382 Master's and 429 PhD candidates; making it the largest faculty in terms of postgraduate enrolment. To support this scale, the faculty implemented strategic measures, including appointing four contract personnel for research proposal administration and maintaining a team comprising a faculty research coordinator and three permanent postgraduate administrators. This robust support structure ensures efficient processes and student-focused service across all 13 departments. Financially, the faculty is highly viable, with potential earnings of R45.84 million from Master's graduates and R193.05 million from PhD completions, significantly contributing to DUT's research goals and financial sustainability.

On 27-28 August 2024 the faculty's PG unit organized a face-to-face workshop at the Riverside Hotel at the cost of R149 220 to help staff doing their PhDs with the literature review and theoretical framework. The

workshop was attended by 34 staff members doing their PhDs. The session was facilitated by Dr Okeke-Uzodike (theoretical framework), Prof Hlengwa (how to write the literature review section) and Ms Patricia Badenhorst (PG librarian), who conducted a session on literature search. Dr Mthokozisi Luthuli and Dr Itumeleng Maome shared their doctoral experiences with the participants and the Executive Dean came to give words of encouragement. This initiative exposes colleagues to approaches of supervisors other than their own, while also providing an opportunity to compare notes and experiences. This initiative is effective because in 2024 the faculty saw an unprecedented 12 of its staff members graduate with the PhDs.

On 20 September 2024 the faculty organized and hosted its first hybrid annual postgraduate students' indaba at the Coastlands Hotel Umhlanga at the cost of R61 425 to the faculty for the plenary venue and 3 breakaway rooms. The purpose of the indaba is to provide a platform for students to practice responding to a call, preparing and submitting an abstract, preparing their presentations, presenting the findings of their studies in public and responding to questions. The themes varied in order to accommodate studies across all academic departments in the faculty. The included ICT; media and communications; marketing; operations and quality; tourism and food; disaster management and land invasion; education; consumer and labour law; as well as corporate governance, violence and politics. 35 presentations were delivered in parallel sessions and virtually. The keynote addresses were delivered by Dr N Mthombeni (Acting Director for Research & Postgraduate Support) and Prof F Netswera (Executive Dean of FMS). The event was followed by the awarding of certificates and gifts to all presenters to acknowledge them for their participation.

On 28-29 November the PG unit hosted its second face-to-face writers' retreat at the Coastlands Musgrave Hotel. The session was facilitated by Solani Ngobeni of CSPS, and was attended by 21 researchers. 15 articles were submitted to journals at the end of 2024 and 6 were submitted in January 2025.

## Research Impact

### 1

#### Real-World Learning: OQM Students Visit Skyworth Manufacturing Facility

On 9 June 2023, the Department of Operations and Quality Management visited Skyworth, leading high-tech electronics manufacturing organisation in South Africa, to expose students and staff to the practical application of operations and quality management principles in an advanced industrial setting. The visit included a guided tour of Skyworth's production facility, where participants observed key processes such as lean manufacturing, inventory control, automation, and quality inspection. This engagement provided valuable insights into how theoretical concepts are implemented in real-world operations and sparked discussions on industry trends, quality control challenges, and the role of technology in driving efficiency. Skyworth representatives shared their strategies for maintaining high standards and adapting to market demands, while also exploring opportunities for future collaboration through internships, research projects, and guest lectures. The visit enriched the learning experience, reinforcing the department's commitment to bridging academic knowledge with industry practice.

### 2

#### Global Representation: DUT Lecturer Joins BRICS Expert School in Russia

Ms Zikho Qwatekana, a lecturer in the Department of Ecotourism seized a once-in-a-lifetime opportunity to represent South Africa at the 8th Annual BRICS Expert Council International School in Moscow, Russia. Passionate about sustainability, community development through tourism and governance, Qwatekana is pursuing her PhD in Ecotourism and Environmental Management at DUT. Her research aims to push boundaries and make a significant

impact, with the goal of being recognised both locally and internationally. Discussions centred around BRICS and Africa-Challenges and opportunities of expansion, the role of BRICS in a changing world, energy transition and sustainable development in BRICS countries, and AI: new opportunities for BRICS countries.

### 3

#### Celebrating Academic Excellence: Promotions and Research Achievements

Dr Sean Jugmohan, Dr Serathi Molokwane, Dr Nkululeko Zungu, Dr Nereshnee Govender and Dr Zamokuhle Mbandlwa were recognised for promotion to Senior Lectureship. Professor Reshma Sucheran, Professor Melanie Lourens and Professor Emem Anwana were acknowledged for promotion to Associate Professorship. High flyers in research and publication Dr Zamokuhle Mbandlwa (21 publications), Prof Melanie Lourens (17 publications) and Prof Nirmala Dorasamy (16 publications) and many others were recognised for their excellent work.

### 4

#### Expanding Research Capacity: 13 New Honorary Research Associates Appointed

The faculty was very active in recruiting honorary research associates in 2024. In total 13 applications were approved by the IRIC in 2024. These were: Prof NI Okeke-Uzodike; Prof AT Agbenyegah (Applied Management); Dr S Maingi (Ecotourism); Dr G Murwirapachena (Public Management & Economics); Dr N Tshikovhi (Public Management & Economics); Prof A Collins (ICON); Prof Dluzewska (Hospitality & Tourism); Prof Smirnov (ICON); Prof Tschudin (ICON); Dr Plug (ICON); Dr Lose (Business School); Prof Simba (Business School); and Prof Ojakorotu (Business School). These appointments are crucial to the faculty to promote collaboration, enhance the quality of supervision and improve the faculty's research output.





**“With 256 research outputs and over R30 million contributed to DUT’s sustainability, the faculty continues to lead in innovation, postgraduate growth, and academic excellence.”**



## Societal Impact

### 1

#### Spreading Joy: Hospitality Students Mark Mandela Day at St Thomas Children's Home

The Department of Hospitality and Tourism Management's 67 Minutes for Mandela for 2023 were spent at the St Thomas Children's Home in Sydenham. A total of 60 children received snack packs. The treat pack consisted of vanilla and chocolate muffins prepared by Catering Management second year students.

### 2

#### Empowering Educators: Thatha Ulwazi Community Engagement at Cato Ridge

The Postgraduate Office held their Thatha Ulwazi Community Engagement Initiative at the Ngangezwe High School in Cato Ridge. This initiative seeks to enlighten teachers from remote areas about postgraduate study opportunities available at the Durban University of Technology. The department was accompanied by the Department of Marketing and Retail and the DUT Business School.

### 3

#### Women's Month Impact: DUT Joins Annual Women in Tourism Engagement

In celebration of Women's Month, the Department of Hospitality and Tourism participated in the Annual Women in Tourism Engagement hosted by eThekweni Municipality's Durban Tourism on 29 August 2024 at The Silokazi's in Inanda. Themed "30 Years into Women Power," the event focused on addressing barriers to tourism growth in South Africa and identifying opportunities to position Durban as a leading tourism destination. DUT was represented by lecturers Mrs Nozipho Sibiya, Ms Senamile Motha, Ms Nelisiwe Mlotshwa, and postgraduate students. Mrs Sibiya highlighted the importance of women leaders mentoring the next generation and helping them navigate industry challenges. The engagement provided valuable networking opportunities for students and academics, deepening their understanding of the tourism sector and career prospects. The department intends to build on these connections by inviting key industry speakers, including DUT alumna and global aviation leader Mrs Poppy Khoza, to inspire and educate students.

## Projects and Collaborations

### 1

#### Powering the Future: DUT Business School Leads New Energy Vehicles Indaba

On 2-3 October 2024 the DUT Business School, Mobility Solutions Africa and eThekweni Municipality hosted a New Energy Vehicles Indaba at the Inkosi Albert Luthuli International Convention Centre (Durban ICC). The event marked the official launch of Transport Month 2024, under the theme Powering Alternative Mobility. The Indaba focused on the global landscape of electric vehicles (EVs), unpacking both the opportunities and challenges of achieving a greener, more sustainable automotive industry. The discussions on battery technology advancements and energy storage solutions demonstrated that while South Africa faces technological hurdles, innovation in this space is accelerating at an unprecedented pace. The conversations about charging stations and smart grid integration highlighted the importance of collaboration between government, industry, and the energy sector to build the robust infrastructure necessary for a seamless transition to electric transportation.

### 2

#### Strengthening Global Ties: Faculty Forges Strategic International University Partnerships

The faculty collaborates with a number of universities globally and in Africa. Some of these collaborations are formalized in the Memorandum of Understanding and others are not. These include, but are not limited to Ravensburg University of Cooperative Education (DHBW) in Germany; Marie Curie-Sklodowska University in Poland; Takoradi Technical University (TTU) in Ghana; Afe Babalola University (ABUAD) in Nigeria and Makerere University in Uganda. The faculty collaborates with these university in areas such as postgraduate studies; supervision; research and co-publication; staff mobility; etc. As many as 13 TTU staff members have graduated with their PhDs from the faculty, ABUAD also registered a number of their students and Makerere some with the faculty.

## 07

## Research and Innovation - Faculty Highlights

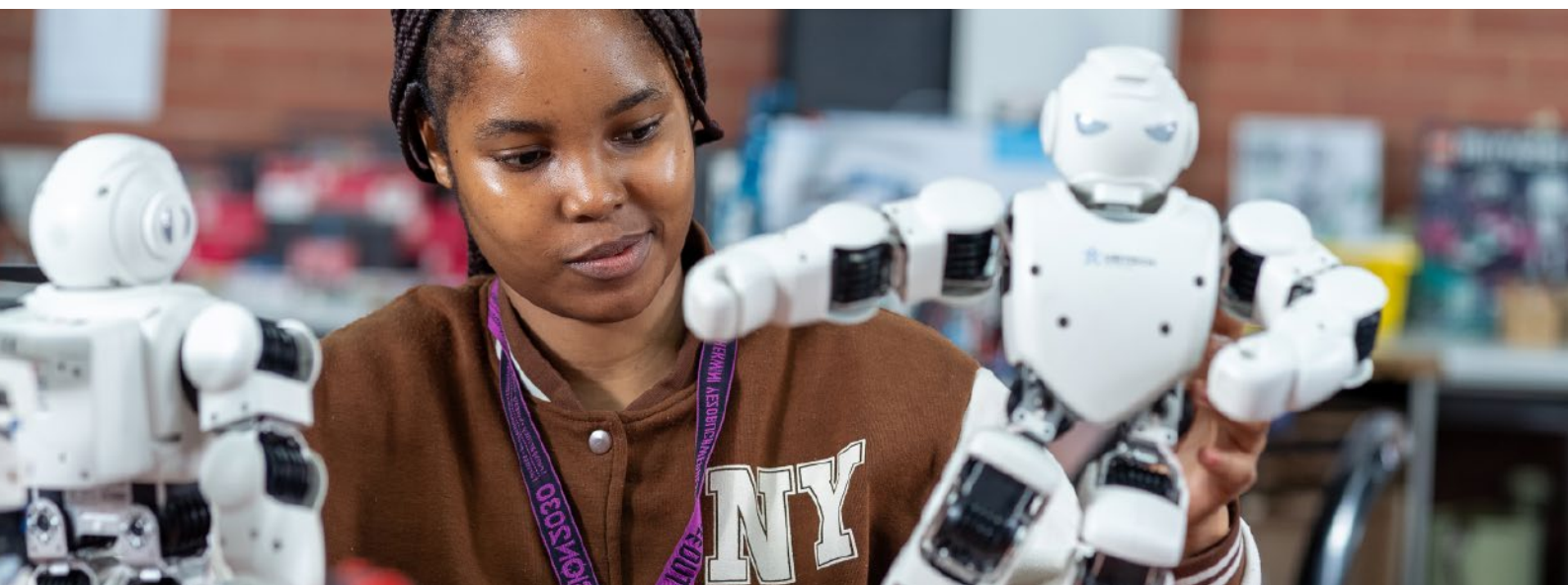
### Faculty of Faculty of Accounting Informatics



The Faculty has demonstrated remarkable progress and resilience in advancing its academic, research, and societal mandates between 2023 and 2024.

Through a strategic focus on postgraduate throughput, research excellence, inclusive education, and impactful community engagement, the faculty continues to establish itself as a dynamic hub of knowledge production and innovation. A notable 53% increase in Master's graduates and consistent doctoral completions reflect a robust postgraduate support ecosystem and a thriving research

culture. Complementing this academic growth is the faculty's commitment to societal transformation, evidenced by initiatives like the Men Carve seminars and collaborations with community organisations. The faculty's research output is further bolstered by international partnerships, capacity development workshops, and pioneering projects in Fourth Industrial Revolution (4IR) technologies. These efforts collectively underscore the faculty's role in shaping socially responsive, technologically adept, and research-driven graduates who contribute meaningfully to local and global challenges.



## Facts and Figures

### GRADUATIONS 2023 - 2024



Master's  
Graduates

17

2023

53%

26

2024

PhD  
Graduates

07

2023

14%

08

2024

### 2024 POSTGRADUATE ENROLMENT



123

Master's  
students

84

PhD  
students

Σ 207

Postgraduate  
students

The Faculty has shown notable growth in postgraduate output between 2023 and 2024, reflecting its commitment to academic excellence and research capacity development.

In 2023, the faculty graduated 17 Master's and 7 PhD students, and these numbers rose to 26 Master's and 8 PhD graduates in 2024. This represents a significant 53% increase in Master's graduates and a modest improvement in doctoral completions, indicating strengthened postgraduate support structures, effective supervision, and

a thriving research culture. The upward trend highlights the faculty's dedication to advancing knowledge production and its alignment with the institution's strategic goals for impactful research and innovation.

In 2024, recorded a strong postgraduate enrolment across its departments, reflecting the faculty's expanding research footprint and commitment to advanced scholarship. The Department of Information and Corporate Management led with the highest number of postgraduate students, enrolling 49 Master's and 18 PhD candidates. This was followed by the Department of Information Technology, which demonstrated a balanced and robust postgraduate profile with 29 Master's and 28 PhD students, indicating a thriving research culture in digital and computing

disciplines. The Financial Accounting department also reported a significant presence with 17 Master's and 7 PhD students, while Financial Information Management had 8 Master's and 8 PhD candidates, reflecting steady progress in both professional and research-oriented tracks. Both Management Accounting and Auditing and Taxation recorded 8 and 6 Master's students respectively, with 4 PhD students each, suggesting a growing interest in advanced study within these fields. The Information Systems department, though smaller in Master's enrolments with 6, showed strength in doctoral research with 15 PhD students. These figures illustrate a diverse and vibrant postgraduate landscape across the faculty, with particular strengths in information sciences and financial disciplines.



## Research Impact

The faculty actively promoted research projects that demonstrated a tangible impact on society and contributed meaningfully toward achieving the Sustainable Development Goals (SDGs) and the National Development Plan 2030 (NDP2030) targets.

The Department of Auditing and Taxation achieved a remarkable milestone in 2023 by entering an international competition for the first time and securing a position

among the top 8 globally. This prestigious recognition led to an invitation to the Risk Management Conference held in San Diego in May 2024, where the department had the opportunity to present its highly commended risk report. This achievement not only highlights the department's growing global presence and academic excellence but also underscores the faculty's capacity to produce work of international relevance and impact in the fields of auditing, taxation, and risk management.

Ms Talisa Lalthapersad from the Department of Information Systems has played an integral role in advancing the Faculty of Accounting and Informatics' commitment to inclusive education, particularly through her contributions to the holistic support approach

for Deaf students. Her active involvement has been instrumental in promoting accessibility, empowerment, and representation within the academic environment. Recognising the importance of visibility and mentorship, Ms Lalthapersad has championed the inclusion of Deaf role models, which is a critical factor in the career development and self-actualisation of Deaf students. Her efforts align with the faculty's broader vision of creating an inclusive and supportive learning space that affirms diversity and nurtures success for all students, regardless of ability.

Professor Ferina Marimuthu from the Department of Financial Accounting achieved a historic milestone in 2023 when she was promoted to the rank of Associate Professor. She holds the distinction of being the first home-grown professor within the Accounting cluster, as well as the first female professor of Accounting in the Faculty of Accounting and Informatics. Her promotion marks a significant step forward in the faculty's transformation and empowerment agenda, showcasing the impact of nurturing academic talent from within. Prof Marimuthu's achievement not only serves as an inspiration to aspiring academics, particularly women in the field of Accounting, but also underscores the faculty's commitment to excellence, equity, and leadership development.

**“Our faculty’s research doesn’t just stay on paper — it shapes policy, empowers communities, and meets global development goals head-on.”**

The Faculty has continued to prioritise research output and capacity development through a series of targeted initiatives aimed at strengthening the scholarly capabilities of postgraduate students and emerging researchers. As part of these ongoing efforts, the faculty has hosted several research capacity development workshops designed to equip students with the necessary tools for academic success. These included general Research Workshops tailored for postgraduate students, as well as specialised sessions such as a Publishing Workshop facilitated by Dr MA Modise, which focused on guiding students through the academic publishing process. In addition, Professor SO Ojo led multiple workshops that addressed critical aspects of postgraduate research, including Research Methodology, Systematizing the Postgraduate Research Endeavour, and Managing the Bumpy Road of Postgraduate Research as a Journey. These workshops have provided invaluable guidance and mentorship, reinforcing the faculty's commitment to producing high-quality research and fostering a thriving academic environment.



## Societal Impact

### 1

#### Men Carve Community Engagement Seminars

In 2023, the Faculty proudly supported Mr Zakhe Khuzwayo, a student from the Department and the founder and CEO of Men Carve, in his impactful community engagement initiatives. Men Carve hosted a series of eight seminars across various locations, addressing critical issues affecting men, including mental health, societal expectations, and gender-based violence. These seminars offered a platform for open dialogue and awareness, aiming to cultivate emotionally intelligent and responsible male citizens. Through collaborative partnerships with organisations such as TTACTSO DUT-Durban and Izithelo Ezinhle, the seminars promoted social cohesion and empowerment within communities, while reinforcing the Faculty's commitment to engaged scholarship and social justice.

## 2

**Women's Day: Liberation & Connection Celebration**

On August 9, 2023, Men Carve marked Women's Day with a special event titled Liberation & Connection, hosted at the Pinetown Exemption Matric Centre. This celebration focused on the intersection of gender, culture, and healing. Participants engaged in conversations that celebrated the role of women and encouraged male allies to champion gender equity. The event further served as a platform for cultural expression and appreciation, aligning with national objectives to foster unity and gender inclusivity.

**Empowering Men and Boys Through Vulnerability**

At the same venue, Pinetown Exemption Matric Centre, Men Carve facilitated a session dedicated to exploring the transformative power of vulnerability and authenticity among men and boys. The session encouraged introspection, emotional intelligence, and open dialogue—challenging toxic masculinity and reinforcing positive male identities. This initiative demonstrated the Faculty's innovative approach to addressing complex societal issues through student-led advocacy and reflection.

## 3

**Mandela Day Collaboration with Vodacom**

In celebration of Mandela Day, Men Carve partnered with Vodacom to support the Thandokuhle Early Childhood Development (ECD) Centre in KwaMashu. The collaborative effort brought together community members and corporate partners in honouring Nelson Mandela's legacy of service. Activities included educational engagement, facility support, and child-centered programming, fostering a spirit of ubuntu and meaningful change at grassroots level.

## 4

**Youth Month Celebrations with Izithelo Ezinhle**

June 2023 saw Men Carve collaborating with Izithelo Ezinhle Youth Organisation to host a series of activities celebrating Youth Month. These engagements highlighted the voices, challenges, and potential of South Africa's youth, particularly focusing on leadership development, social accountability, and cultural pride. The initiative demonstrated the Faculty's role in nurturing civic-minded graduates who are active agents of change in their communities.

## 5

**Global Encryption Day Awareness Campaign**

Demonstrating a dynamic and contemporary reach, Men Carve also participated in Global Encryption Day in partnership with Internet South Africa. The event, hosted at the Durban University of Technology, focused on raising awareness about online privacy, data protection, and the importance of digital literacy in the modern world. This engagement bridged technology, education, and civic awareness, equipping students and community members with vital knowledge for the digital age.

**Food Parcel Distribution to Support Communities**

Further extending their outreach, Men Carve coordinated the distribution of food parcels to vulnerable communities, DUT students, and residences. With the support of various sponsors, the initiative addressed food insecurity among students and community members, reinforcing the Faculty's commitment to social responsiveness and student wellbeing. This compassionate gesture reflected the core values of empathy, responsibility, and collective support.

**"Through Men Carve, we're building a generation of emotionally intelligent men who lead with empathy, challenge norms, and drive social change."**

## Special Projects and Collaborations

The Faculty continues to strengthen its commitment to student development and innovation through strategic partnerships and entrepreneurial initiatives.

## 1

**Driving Innovation and Entrepreneurship Through 4IR Research and Student-Led Initiatives**

Among its key collaborators is MICT Seta, which provides vital funding for South African students

undertaking research in Fourth Industrial Revolution (4IR)-related topics, thereby enhancing the faculty's focus on future-oriented skills and technological advancement. In addition to research support, the faculty is driving entrepreneurship through student-led initiatives, particularly within the Information and Corporate Management (ICM) department. Notably, two dynamic projects; Rise Africa: Construction and Development and KhulaSande the Shootist are currently being led by Extended Curriculum Programme (ECP) students. These initiatives complement the existing ECP-driven Men Carve project, reinforcing the faculty's proactive approach to cultivating entrepreneurial thinking, leadership, and creativity among its students. Collectively, these efforts reflect the faculty's broader mission to develop socially responsive, innovative graduates who are equipped to contribute meaningfully to South Africa's economy and society.

## 2

### Expanding Global Research Collaborations for Societal Impact

The Faculty continues to strengthen its research footprint through extensive international collaborations and high-impact projects that reflect its commitment to academic excellence and societal relevance. The faculty is engaged in cross-border research partnerships with institutions and researchers across a wide range of countries, including Macau, Ghana, Eswatini, Nigeria, Zimbabwe, the United Kingdom, China, South Korea, Vietnam, Canada, Brazil, India, and Malaysia. These collaborations not only enhance the global visibility of the faculty's research but also foster the exchange of knowledge and expertise across diverse academic contexts. Among its flagship international engagements are the British Council Carbon Literacy Programme and the BRICS Future Skills Working Group International Collaboration with the China Division of BRICS, both of which address urgent global challenges through innovative, interdisciplinary research.

## 3

### Pioneering Research Excellence and Prestigious Recognition

A significant milestone was recently achieved by Prof Richard Millham, who signed the 2022 South Africa–China Joint Research Programme. His project, titled Application Agreement Cloud-Edge Collaborative Multi-Agent Solution for Cross-Scene Cardiac Rehabilitation, exemplifies the faculty's focus on leveraging advanced technologies for impactful healthcare solutions. The research culture within the faculty is not only expanding in scale but

also in impact, demonstrated by a PhD student being honoured with the prestigious DUT Top Doctoral Award in the Platinum category, a testament to the quality and depth of postgraduate research being nurtured. Looking ahead, the faculty is preparing to host conferences that will address critical topics in the Management of Information, Governance, and Accountability, aiming to influence both policy and professional practice through evidence-based dialogue.

**“Through global collaborations, innovative labs, and student-led entrepreneurship, the Faculty of Accounting and Informatics is shaping future-ready graduates equipped to drive 4IR transformation and societal impact.”**

## 4

### Driving 4IR Innovation Through Technology Transfer and Student Engagement

In the area of technology transfer and innovation, the faculty is leading transformative projects aligned with Fourth Industrial Revolution (4IR) imperatives. Key developments include the establishment of innovative laboratories, namely the Immersive Centre and the Smart Robotics Lab, which serve as hubs for experiential learning and applied research. Moreover, the faculty has filed a patent application for its ground-breaking Skin Analysis Project under the 4IR Centre of Excellence. These initiatives are enriched by active student involvement, with learners working under the guidance of academic mentors on a range of innovative, real-world projects, thereby embedding a culture of creativity, experimentation, and entrepreneurship into the learning experience.

# 08

## Research and Innovation - Faculty Highlights

### Faculty of Arts and Design



The Faculty made remarkable progress from 2023 into the second quarter of 2024, advancing key projects and initiatives that aligned with DUT's ENVISION2030 strategy.

Strategic planning, partnerships, and a targeted commitment to sustainability remained central to our efforts. The innovative and creative initiatives and plans highlighted in this report demonstrated our commitment to quality service delivery in support of institutional research advancement.



## Facts and Figures

### FACULTY STAFF



Honorary Support  
Staff appointed

20

Master's  
Staff Qualifications  
Growth

72  
2022

31%  
↑

94  
2023

Staff PhDs  
earned

03

The Faculty hosts DUT's highest NRF rated researcher Prof Michael Chapman as Researcher in Residence.

Prof Chapman has been prolific in his publications and has maintained his NRF rating to date. Researcher in Residence Prof Tabitha Mukeredzi has been awarded researcher of the year for 3 consecutive years. These two senior researchers continue to supervise multiple Masters and PhD students to completion.

A total of 20 Honorary Support Staff have been appointed within the Faculty to enhance research capacity within Visual and Performing Arts. Nationally, the lowest percentage of academic staff with PhD qualifications fall under this Classification of Educational Subject Matter (CESM). Our honorary staff members continue to enhance publications and PG supervision to graduation within the Faculty.

The number of permanent staff members who completed Master's degrees in 2023 saw a significant increase, rising to 94 compared to 72 in 2022. This notable growth reflects the university's continued emphasis on academic development and capacity building among its staff. Furthermore, three full-time staff members successfully completed their doctoral degrees since 2023, demonstrating a deepening of research expertise and academic leadership within the institution. These achievements not only contribute to the university's intellectual capital but also enhance the quality of teaching, supervision, and research output across faculties, aligning with the broader goals of institutional excellence and advancement.

To strengthen postgraduate support, the Research Office introduced a postgraduate tracker in 2023 to monitor student progress and provide targeted interventions involving students, supervisors, and Heads of Department. Approved by IRIC for institution-wide implementation, the

tracker identifies delays in title registration, supervisor allocation, ethical clearance submissions, and flags students at risk of not completing within the stipulated time. It also tracks students' progress out of the 'at-risk' category on a monthly basis.

## Research Impact

The Faculty of Arts and Design's 2023 Annual Research Conference was filled with spectacular presentations that kept delegates captivated. Titled 'ENVISIONING 2030 AND BEYOND: DIVERGENT SOLUTIONS TO GLOCAL CHALLENGES', the programme included dynamic keynote speakers, outstanding presentations from academics and postgraduate students, dazzling exhibitions, including an animation exhibition presented by academics from Swedish universities, who facilitated a week-long Animation

Masterclass on City Campus. The Conference ended with awards to Masterclass participants, while graduates from the Faculty's Animation Short Course received certification. A scintillating drama performance brought the conference to a close, leaving delegates eagerly anticipating the 2024 event.

As an engaged university, sharing knowledge on international platforms and taking local culture abroad, our GOOT awardee, Dr K Adewumi, presented Tales of Graffiti: Perspectives from Durban South Africa. Art Mongering Series at an international conference in North Africa. He also presented Foucault: Art Histories and Visuality in the 21st Century at the World Congress on Foucault 40 Years After, in Canada. He also presented a Webinar: 'Bringing Ancestors and Artworks Home – The Whos, Hows and to Whoms of Returning African Cultural Heritage' for the Arts Council of the African Studies Association (ACASA).



## Societal Impact

Offering a distinctive education that enables participants to get involved in advancing Animation in and around Durban, our Animation Short Course has yielded yet another cohort of graduates set to explore opportunities for entrepreneurship, internship and career advancement in this booming industry.

The graduation was graced by the CEO of local Animation Studio KatAnimate, who is on the constant search to offer

internships to high flyers. The project has significantly advanced Animation at DUT, positioning the university as a leader in entrepreneurship, innovation, job creation and career development within this rapidly growing global industry.

Dr Juliet Ramohai, HoD for the Centre for General Education presented on "Gender-based violence in South African higher education: male contestations, voice, and responsibility. International conference on Gender and Sexuality studies held in Berlin, Germany. The Centre is also involved in a Gender- Based Violence Project that focuses on male students

2024 Honorary Doctorate recipient, Dr Gcina Mhlophe encouraged the spirit of vuk'uzenzele (Get up and do it yourself), when she accepted the Honorary Doctor of Philosophy in Visual and Performing Arts, which was conferred by the DUT Chancellor. The world-renowned South African storyteller, author, poet, playwright, activist and actress, Dr Mhlophe was honoured for her exceptional contribution in the world of Arts by the Faculty.

In celebration of Women's Month, the Department of Video Technology strengthened its commitment to community engagement by organizing a meaningful outreach initiative aimed at empowering young women. The department partnered with Gcinimfundo High School in Ndwedwe, a rural community in KwaZulu-Natal, to distribute essential sanitary items to female learners. This initiative not only addressed a critical need that often hinders girls' consistent

school attendance, but also promoted dignity, health, and educational equity. By engaging directly with the school community, the department fostered a spirit of compassion, social responsibility, and active citizenship among staff and students, while reinforcing the university's dedication to supporting and uplifting disadvantaged communities through tangible, gender-responsive action. Passion for culture and tradition has seen Zasebo Mkhize being crowned Miss Indoni KZN 2024. The 20-year-old Journalism student won the judges hearts with her stunning traditional attire at the annual prestigious Indoni event, which was held recently at Indoni Eco Village. The national cultural pageant advocates for moral regeneration targeting the youth by using identity focused programmes such as a tool for addressing social ills and bringing about behavioural change.

## Special Projects and Collaborations

### 1

#### Student Film Excellence Recognised at Sabela Awards

5 of Video Technology's student films were accepted into the Simon Mabunu Sabela Film and Television Awards – 4 under the category Best Student Film and one under the category Best Pan African Film.

### 2

#### Dr Okewu Wins Prestigious NCECA Multicultural Fellowship Award

Dr Okewu was honoured with the prestigious Multicultural Fellowship Award by the National Council on Education for Ceramic Arts (NCECA) in 2024. The award ceremony took place in Richmond, Virginia, during the annual NCECA conference, an internationally recognised platform that celebrates excellence in ceramic arts education and practice. This award recognises outstanding contributions by individuals from underrepresented communities who are making significant strides in the field of ceramics.

Dr Okewu's recognition highlights both the calibre of their artistic and academic work and their commitment to promoting cultural diversity within the ceramic arts community.

### 3

#### Advancing Animation Through Global Partnerships

Dr Dianna Moodley, Faculty Research Coordinator, participated in the South Africa-Sweden Research and Innovation Week, supported by SASUF, where she promoted innovation, entrepreneurship, and the development of future-ready graduates. At the Sustainability Forum, she highlighted the role of Animation in professional development and industry collaboration. Working with the University of West, Luleå Technical University, and the University of Zululand, she contributed to a workshop focused on co-developing Animation and Visualisation programmes, emphasising best practices and Work-Integrated Learning. Dr Moodley also initiated partnerships for a Higher Certificate in Animation at DUT, international exhibitions, joint research outputs, COIL projects, joint PhDs, and postgraduate co-supervision, enhancing DUT's global engagement in the creative industries.

## 4

### Fashion and Textile Students Thrive Through Incubation and Industry Support

The Fashion and Textile Department has ongoing relationship with INNOBIZ. 5 students were incubated by Innobiz, participating in various mentorship programs and workshops on critical and design thinking skills. The Department also has relationships with Durban Textile and Leather (DTL). DTL hosts several of our graduates and a few registered students in their incubation programs. Incubator. Through INNOBIZ and DTL our students and graduates get an opportunity to enter national and local entrepreneurship competitions.

## 5

### Graphic Design Academic Team Drives International Animation Collaboration

Two Graphic Design lecturers, Nathan Thomas and Rory van As, also funded by SASUF, presented their creative research output at the Trollywood Animation Festival and attended guest lectures by international renowned animators and VFX artists. They also engaged with Film i Väst studios, Dockhus Animation and OpenLab (University West's AR/MR/VR/AI-research area) to hold live demonstrations of latest technology in Animation and discuss potential collaborations to advance Animation in South Africa. They met with academics to discuss prospects for supervision at postgrad Level and curriculum content

for introduction into the existing Graphic Design syllabus, collaborations at Honours Level, including joint virtual lectures in ideation and animation software, joint research, ongoing capacitation of academics to teach Animation and potential moderation of 2025 DUT Hons programme. They also explored potential collaboration of a 3-year degree hybrid programme in English focusing on Graphic design, storyboarding, Animation, VR, AR and AI. They provided feedback and pursued further discussions on current curriculum development of a 1-year higher certificate in Motion Graphics at the DUT.

## 5

### Dr Esther Mahlangu's Global Retrospective Celebrates Seven Decades of Artistic Legacy

Dr Esther Mahlangu hosted a major retrospective exhibition celebrating over 70 years of her contribution to the arts. Showcasing more than 100 artworks from international collections, the exhibition also included historic photographs and a short film. In 2018, she was awarded an honorary Doctor of Philosophy in Visual and Performing Arts by the Durban University of Technology, in recognition of her artistic excellence and dedication to preserving Ndebele heritage. Following its run at the Iziko South African National Gallery (18 February – 11 August 2024), the exhibition will tour globally, beginning with the Wits Art Museum in Johannesburg and continuing to the United States in early 2026.



**“Creative research and global partnerships are shaping industry, preserving culture, and preparing future-ready graduates.”**



# 09

## Research and Innovation - Faculty Highlights

### NRF-Rated Researchers 2024

#1

**Prof MJF Chapman**

Internationally Acclaimed  
Researcher

**Rating:**

**B1**

(South African literature)



#2

**Prof F Bux**

Internationally Acclaimed  
Researcher

**Rating:**

**B2**

(Emerging environmental pollutants; Bioenergy from biomass; Microplastics; Algae biotechnology; Waste beneficiation; Biological wastewater treatment; Algae Bioprospecting; Antibiotic resistance - Prevalence; Wastewater bioremediation; Environmental health)



#3

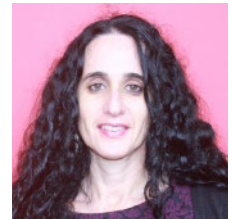
**Prof M Marks**

Internationally Acclaimed  
Researcher

**Rating:**

**B2**

(Mental health and substance abuse; Criminology; Sociology; Public Health)



#4

**Dr AP Paliathanasis**

Internationally Acclaimed  
Researcher

**Rating:**

**B2**

(Applied mathematics)



#5

**Prof J Preece**Internationally Acclaimed  
Researcher**Rating:**  
**B2**

(Education)



#6

**Prof S Singh**Internationally Acclaimed  
Researcher**Rating:**  
**B3**(Industrial Biotechnology;  
Molecular and cell biology)

#7

**Prof AK Mis**Internationally Acclaimed  
Researcher**Rating:**  
**B3**(Environmental health; Polymer  
science; Material sciences and  
technologies)

#8

**Prof K Bharuth-Ram**

Established Researcher

**Rating:**  
**C1**(Mossbauer spectroscopy;  
Nuclear solid-state physics;  
Hyperfine interactions; Dilute  
magnetic semiconductors;  
Ion beam modification of  
materials; Magnetism and  
Magnetic Materials)

#9

**Prof K Bisetty**

Established Researcher

**Rating:**  
**C1**(Chemistry (Computational);  
Electrochemical biosensors)

#10

**Prof K Kanny**

Established Researcher

**Rating:**  
**C1**(Polymer science; Mechanical  
engineering; Material sciences  
and technologies)

#11

**Dr B van Niekerk**

Established Researcher

**Rating:**  
**C1**(Cyber security; Cyberwarfare;  
Cyber Physical Systems;  
Information warfare; Cyber  
Policy; Critical infrastructures)

#12

**Prof EO Amonsou**

Established Researcher

**Rating:**  
**C2**

(Food sciences and technology)



#13

**Prof R Bhagwan**

Established Researcher

**Rating:**  
**C2**(Community engagement;  
African religion and spirituality;  
Social work)

#14

**Prof D Brijlall**

Established Researcher

**Rating:****C2**

(Education)



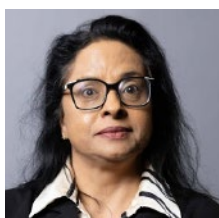
#15

**Prof N Deenadayalu**

Established Researcher

**Rating:****C2**

(biomass processing; Biomass and biofuels; Biomass Conversion to Energy; Thermodynamics; Biomass characterisation; Ionic liquids; Catalysis and Extraction; Biorefinery; Chemical separations)



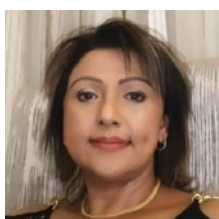
#16

**Prof N Dorasamy**

Established Researcher

**Rating:****C2**

(African development; African regional governance and Administration; Public policy & governance)



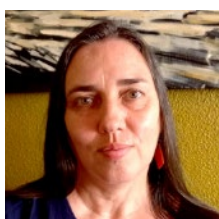
#17

**Dr K Erwin**

Established Researcher

**Rating:****C2**

(Gender and Race; Creative Activism; Structural inequality; Participatory methodologies; Participatory Action Research; Environmental justice)



#18

**Prof RM Gengan**

Established Researcher

**Rating:****C2**

(Bio-organic chemistry, Organic synthesis, Natural products - Isolation characterization, Nanochemistry)



#19

**Prof M Govender**

Established Researcher

**Rating:****C2**

(Relativistic astrophysics, Thermodynamics, Gravitation, General relativity (Physics))



#20

**Prof GT Harris**

Established Researcher

**Rating:****C2**

(African Peace and Conflict)



#21

**Prof OA Ijabadeniyi**

Established Researcher

**Rating:****C2**

(Food microbiology and Food safety; Food Science and Technology)



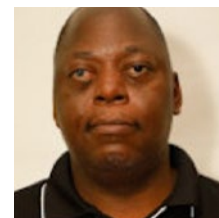
#22

**Prof T Kudanga**

Established Researcher

**Rating:****C2**

(Biocatalysis, Bioactive compounds, Antioxidants, Biotransformations, Antimicrobials, Category: Environmental biotechnology, Category: Lignocellulose, Category: Biomaterials)



#23

**Kuttan Pillai**

Established Researcher

**Rating:**  
**C2**

(Applied microbiology; Biocontrol; Applied and Environmental Microbiology; Enzyme application in biocatalysis; Industrial mycology; Biorefinery)



#24

**Prof SK Kuttan Pillai**

Established Researcher

**Rating:**  
**C2**

(Biological wastewater treatment; Molecular ecology; Applied and Environmental Microbiology; Occupational and environmental health)



#25

**Prof JJ Mellem**

Established Researcher

**Rating:**  
**C2**

(Starch chemistry and technology; Anticancer drug development; Food Science and Technology)



#26

**Dr M Moyo**

Established Researcher

**Rating:**  
**C2**

(Plant sciences, Plant biotechnology, Plant tissue culture, Plant growth regulators, Plant growth and development)



#27

**Prof CE Napier**

Established Researcher

**Rating:**  
**C2**

(Nutrition; Food sciences and technology)



#28

**Prof OO Olugbara**

Established Researcher

**Rating:**  
**C2**

(Computer science, Information technology, Computer science, Information technology, Information technology – Applications)



#29

**Prof JD Pillay**

Established Researcher

**Rating:**  
**C2**

(Community public health, Health Promotion through physical activity, Category: Physical activity in the workplace, Category: Physical activity and health, Category: Physical activity measurement, Category: Physical activity and non-communicable diseases, Category: Physical activity epidemiology)



#30

**Prof FM Swalaha**

Established Researcher

**Rating:**  
**C2**

(Biotechnology)



#31

**Dr KG Zloschastiev**

Established Researcher

**Rating:****C2**

(Superfluidity, Gravitation, Quantum physics, Degenerate quantum gases, Open quantum systems, Quantum field theory, Elementary particles, Cosmology, Category: Differential equations, Category: Nonlinear and complex systems)



#32

**Dr B Dzwaairo**

Established Researcher

**Rating:****C2**

(Remote Sensing and GIS; Integrated water resources management; Catchment management; Environmental Category: modelling; Water quality modelling; Category: Water pollution control; Wastewater management ; Water quality monitoring; Climate modelling)



#33

**Prof S Rathilal**

Established Researcher

**Rating:****C2**

(wastewater valorisation)



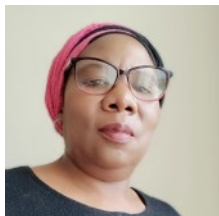
#34

**Prof TSP Ngxongo**

Established Researcher

**Rating:****C2**

(Primary health care: maternal and child care)



#35

**Dr JC Kiyala Kimbuku**

Established Researcher

**Rating:****C2**

(Public administration, Political philosophy, Practical Theology, African Indigenous Approaches of Conflict Resolution and Peacebuilding, Child Soldiers, Civil Society, Conflict Resolution / Transformation, Violence and Nonviolence, Peacebuilding, Peace Ecology, Transitional Justice).



#36

**Prof KJ Duffy**

Established Researcher

**Rating:****C3**

(Mathematical modelling, Ecological modelling, Monte Carlo methods, Computational mathematics)



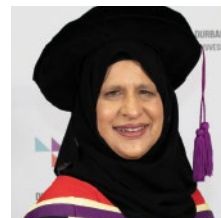
#37

**Prof F Haffjee**

Established Researcher

**Rating:****C3**

(Public Health Sciences)



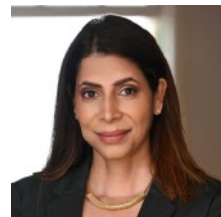
#38

**Prof P Reddy**

Established Researcher

**Rating:****C3**

(Health Sciences; Biological sciences)



#39

**Prof GG Redhi**

Established Researcher

**Rating:****C3**

(Chemical thermodynamics; Thermodynamic properties/ fluid)



#40

**Prof S Thakur**

Established Researcher

**Rating:****C3**

(Information Technology)



#41

**Dr M Turup Pandurangan**

Established Researcher

**Rating:****C3**

(processing, characterization, and thermo-mechanical property evaluation of natural fiber reinforced polymer composites and polymer nanocomposites)



#42

**Dr K Venugopala**

Established Researcher

**Rating:****C3**

(Antimicrobial screening, Pharmaceutical sciences, Antimalarial compounds, Antituberculosis drugs, X-ray crystallography, Anticancer plant products, Antimicrobial peptides, Isolation and structural elucidation, Antioxidants, Anticancer drug development)



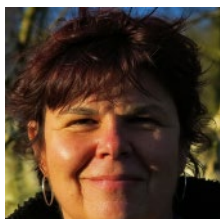
#43

**Dr D Whelan**

Established Researcher

**Rating:****C3**

(Anthropology – History)



#44

**Prof RC Millham**

Established Researcher

**Rating:****C3**

(Cloud computing; Big data; Big Data Analytics; Hybridisation of particle swarm optimization and Genetic algorithms; software evolution; Energy optimisation; Fog Computing)



#45

**Prof FJ Nemavhola**

Established Researcher

**Rating:****C3**

(Computational biomechanics; Biomechanics; Nonlinear solid mechanics; Soft tissue biomechanics)



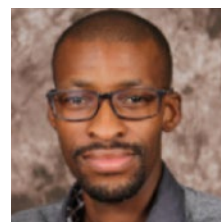
#46

**Dr T Mokhothu**

Established Researcher

**Rating:****C3**

(Application of nanoparticles; Biopolymers or Nanocomposites or Plastics or Methacrylates; Composite materials - Testing; Chemistry and Polymer Science; Nanomaterial synthesis)



#47

**Prof FO Shode**

Established Researcher

**Rating:****C3**

(Natural product chemistry and Organic synthesis)



#48

**Dr M Mewomo**

Established Researcher

**Rating:**  
**C3**

(Energy-Efficient Green Building, Sustainable Construction, Emerging Technologies in Construction, Building Information Technology, Renewable Energy, and Dispute Resolution)



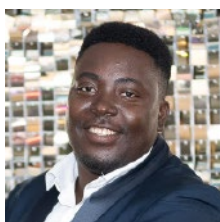
#49

**Dr K Oparinde**

Promising Young Researcher

**Rating:**  
**Y1**

(Arts; Humanities)



#50

**Dr I Rawat**

Promising Young Researcher

**Rating:**  
**Y1**

(Algal biofuels, Biotechnology and Nutrient recovery)



#51

**Dr C Chokkareddy**

Promising Young Researcher

**Rating:**  
**Y2**

(Analytical chemistry)



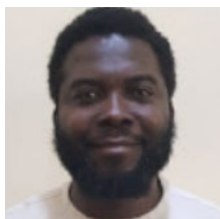
#52

**Dr DRE Ewim**

Promising Young Researcher

**Rating:**  
**Y2**

(Mechanical engineering)



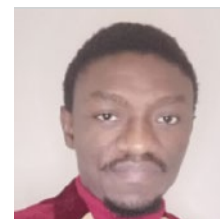
#53

**Dr FE Olalere**

Promising Young Researcher

**Rating:**  
**Y2**

(Performing and Creative Arts, and Design)



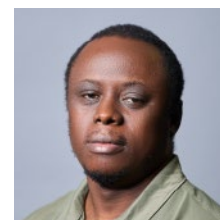
#54

**Dr OA Olanrewaju**

Promising Young Researcher

**Rating:**  
**Y2**

(Energy modelling)



#55

**Dr OM Olarewaju**

Promising Young Researcher

**Rating:**  
**Y2**

(Business banking)



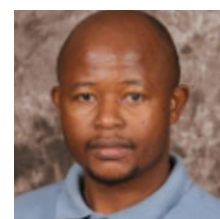
#56

**Dr MI Sabela**

Promising Young Researcher

**Rating:**  
**Y2**

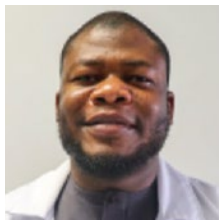
(Material sciences and technologies; Chemistry; Analytical chemistry)



#57

**Prof S Sabiu**Promising Young  
Researcher**Rating:****Y2**

(Biochemical toxicology, Molecular and cell biology, Reactive oxygen species and antioxidants, Advanced Human Genetics, Ethnobotany - Medicinal plants, Phytomedicine and Phytopharmacology)



#61

**Dr E Kweinor Tetteh**Promising Young  
Researcher**Rating:****Y2**

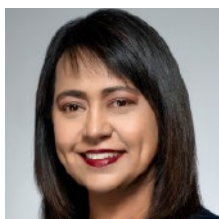
(Water and wastewater treatment technology, water-energy nexus technology, magnetic nanotechnology and catalysis, green hydrogen production technology, renewable energy, green engineering, process optimisation and modelling)



#58

**Dr A Vahed**Promising Young  
Researcher**Rating:****Y2**

(Metallographic structure of newly developed dental materials, and the teaching, learning and assessment)



#59

**Dr ID Amoah**Promising Young  
Researcher**Rating:****Y2**

(Microbiology; Gastrointestinal diseases; Ecology and environmental science; Environmental health)



#60

**Dr P Bhagwat**Promising Young  
Researcher**Rating:****Y2**

(Proteolytic enzymes; Microbial enzymes; Peptides; Remediation of hazardous waste sites; Biomass Valorization)



# 10

## Research and Postgraduate Support



### A Message from Dr NH Mthombeni (Interim Director)

On behalf of the Directorate of Research and Postgraduate Support (RPS), I extend my heartfelt gratitude and support to all colleagues who have contributed to the remarkable achievements outlined in the 2023/2024 report.

The successes across our core divisions, Research Information Management and Systems (RIMS), Research Capacity Development (RCD), the Institutional Research Ethics Committee (IREC), and Research Grants Administration and Management are a true reflection of our shared commitment to research excellence, ethical stewardship, and academic impact.

The RIMS division has continued to provide data-driven insights that inform DUT's research planning, benchmarking, and strategic interventions. Their work ensures that our institution remains aligned with national frameworks and global trends, enhancing DUT's research visibility and performance.

Through the RCD Unit, we have seen transformative efforts in building research capacity, supporting emerging and female researchers, and facilitating mentorship, writing retreats, and targeted funding programmes. Initiatives such as the Doctoral Mentoring Programme and Strengthening Postgraduate Supervision course have empowered staff and students to pursue their research aspirations with confidence and competence.

The IREC has played a critical role in upholding ethical standards and safeguarding the dignity and welfare of research participants. Their proactive approach in ethics training, seminars on emerging issues such as AI in research, and capacity development workshops underscores DUT's commitment to responsible research practices.

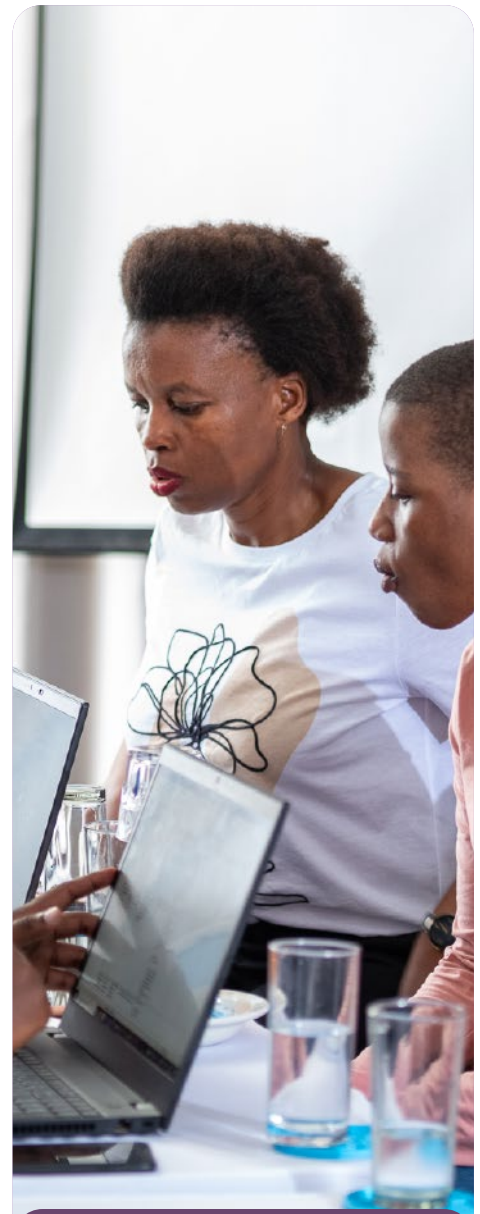
In the realm of research funding, the Research Grants Administration and Management Division has demonstrated exemplary dedication in securing and managing internal and external funding opportunities. Their contributions have supported hundreds of staff and student researchers and enhanced DUT's reputation as a competitive and ethically compliant research institution.

To the teams across these four divisions: thank you for your unwavering dedication, innovation, and professionalism. Your work significantly advances the research agenda of the university and reinforces DUT's vision as articulated in ENVISION2030. As we move forward, let us continue to collaborate, inspire, and lead with integrity in pursuit of impactful scholarship.

## Overview of Research Information Management & Systems Office (RIMS) 2023/24

The Research Information Management and Systems (RIMS) office is tasked with monitoring the university's research trends. It oversees outcomes and patterns reflected in DHET's annual assessments of university research outputs, along with various ranking systems.

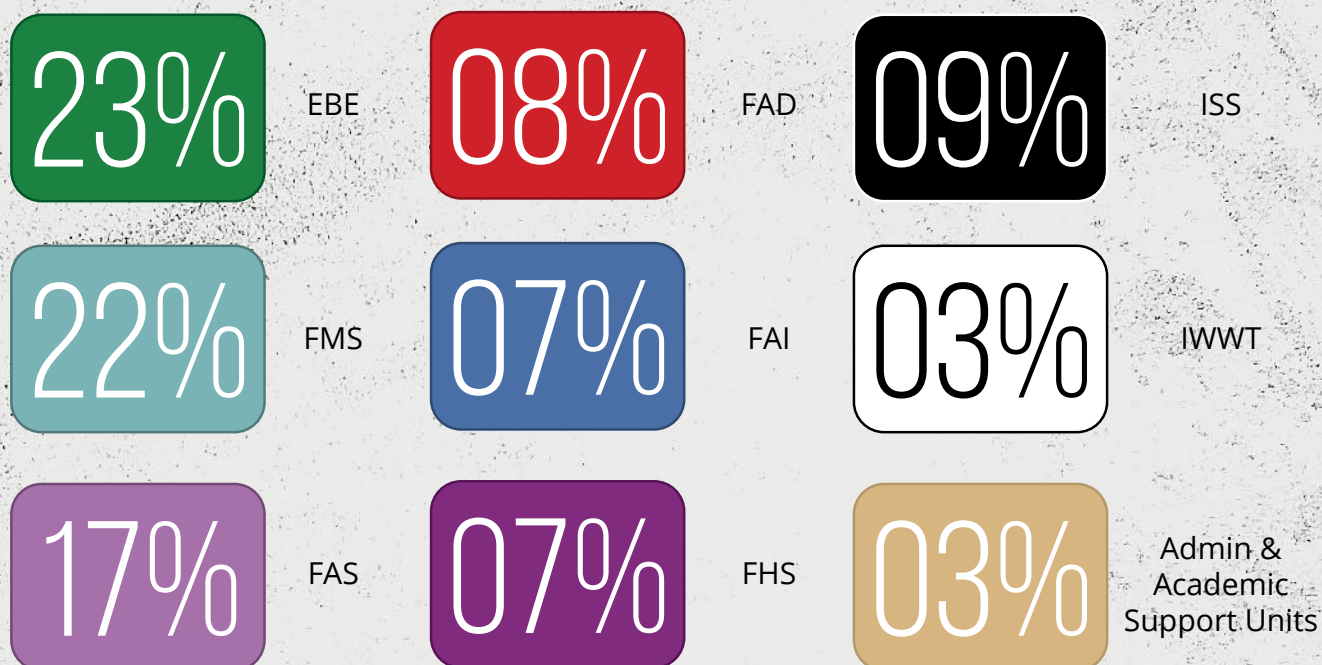
The data gathered by the RIMS office helps evaluate DUT's position within the higher education sector and informs institutional strategies for research planning, support, and interventions.



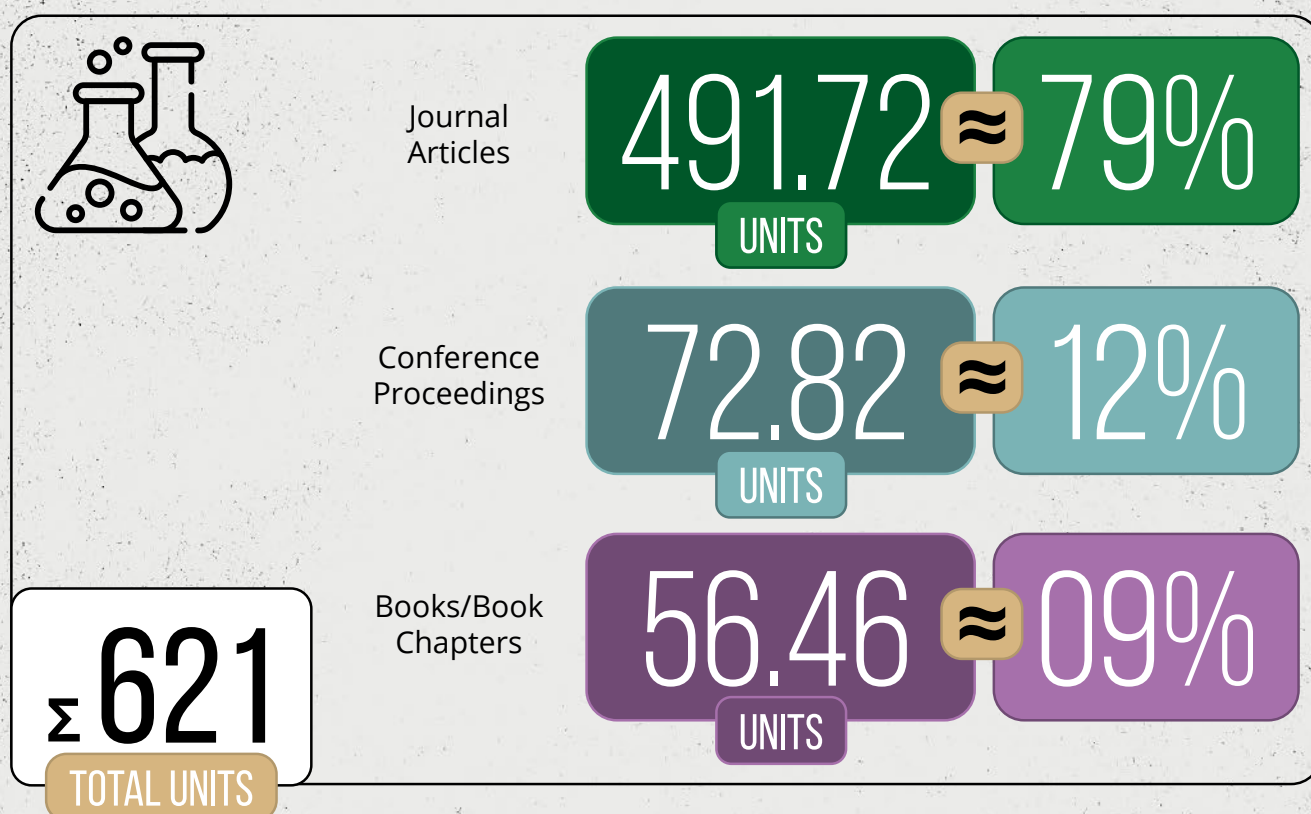
**"Together, we are building a research culture rooted in excellence, ethics, and impact — empowering DUT to lead with integrity and innovation."**

## Facts and Figures

### 2022 RESEARCH CONTRIBUTIONS



### 2023 RESEARCH OUTPUT SUBMITTED TO DHET IN 2024



Out of the six faculties at DUT, the top three faculties in terms of contributions to research output units for the year-2022 were the Faculty of Engineering and the Built Environment (EBE) (23%), Faculty of Management Sciences (FMS) (22%) and the Faculty of Applied Sciences (FAS) (17%).

These were followed by the Faculty of Arts and Design (FAD) (8%), Faculty of Accounting and Informatics (FAI), and the Faculty of Health Sciences (FHS) (7%). The two SARChi Chairs contributed a total of 12%, with 9% from the Institute of Systems Science (ISS) and 3% from the Institute for Water and Wastewater Technology (IWWT). Another 3% was contributed by various admin support and academic support departments within DUT, such as Research and Postgraduate Support, Technology Transfer and Innovation, and Gender Justice.

In 2024, the Durban University of Technology (DUT) submitted its 2023 research output to the Department of Higher Education and Training (DHET) for evaluation, with feedback expected in 2025. The submission, totalling 621 productivity units, underscores DUT's commitment to impactful research aligned with national priorities. The units were categorized as follows:

# 1

## Journal Articles (491.72 units)

Representing the largest contribution, these emphasize DUT's focus on high-quality, peer-reviewed academic publications to enhance global visibility.

# 2

## Conference Proceedings (72.82 units)

Reflecting active researcher engagement in sharing findings and networking at academic forums.

# 3

## Books and Book Chapters (56.46 units)

Demonstrating in-depth scholarly contributions to specialized topics.

The submission underwent rigorous internal quality assurance to ensure compliance with DHET guidelines. The anticipated feedback will inform future strategies to maintain DUT's leadership in research excellence and innovation, reinforcing its role in addressing societal challenges.

## Information Sessions/ Webinars

In the first quarter, DUT hosted a webinar to familiarize researchers with internal processes for managing and reporting research outputs, aligning with the DHET reporting policy.

The session introduced new researchers to the (Elements) online system, providing demonstrations on navigating the platform, inputting data, and ensuring accuracy. For experienced researchers, the webinar offered updates on DHET policies, system improvements, and best practices. The interactive format allowed attendees to ask questions and address challenges, fostering a collaborative learning environment. This initiative underscored DUT's commitment to equipping researchers with the tools and knowledge needed for effective research administration and advancing institutional goals of innovation, excellence, and societal impact.

As part of its commitment to building research capacity and promoting academic excellence, the RIMS office hosted the Publish or Perish Imperatives Webinar, targeting young and emerging researchers at DUT. The webinar featured expert insights from academics, industry professionals, and publishers, focusing on three key areas: navigating scholarly and predatory publishing, upholding ethics in research, and leveraging networks for research career development. Participants were guided on identifying credible journals, avoiding unethical publishers, maintaining integrity in authorship and data transparency, and using collaboration to advance their research profiles. The interactive platform encouraged dialogue, practical learning, and shared experiences, contributing to DUT's vision of fostering innovative, ethical, and impactful research.

**"DUT's 2023 research output submission of 621 productivity units reflects a clear commitment to innovation, ethical scholarship, and national impact."**



## Overview of Research Capacity Development (RCD) 2023 – 2024

The Research Capacity Development (RCD) Unit aims to strengthen research excellence at DUT by supporting staff through targeted capacity-building initiatives.

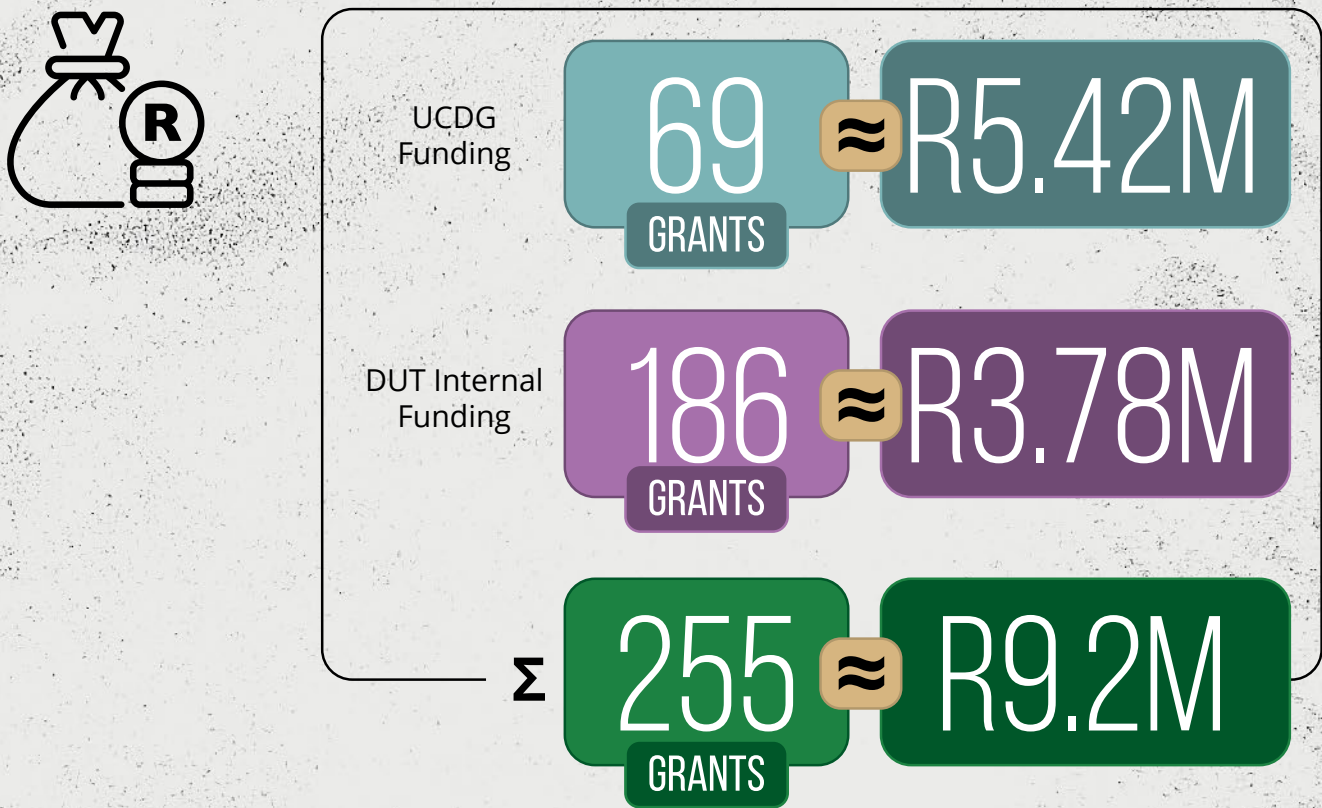
Its core focus includes offering research skills workshops for staff pursuing master's and doctoral degrees, helping recent PhD graduates align their research with institutional focus areas, and linking emerging researchers to mentorship opportunities. A key element is the mentorship programme, which pairs junior staff with experienced professors to build competencies in postgraduate supervision, NRF ratings,

research design, publication writing, and ethical research practices.

To uplift emerging and female researchers, the RCD Unit employs a multifaceted strategy that includes training workshops, mentorship, access to funding opportunities, and promotion through research showcases. It also fosters interdisciplinary networks, facilitates access to critical research resources, and implements feedback mechanisms to refine its offerings. These combined efforts aim to cultivate a sustainable, inclusive research culture that supports academic growth and advances the university's research agenda.

## Facts and Figures

### 2023/2024 RESEARCH GRANTS



In the 2023/2024 reporting period, a total of 255 research grants amounting to R9,206,292.23 were allocated through both UCDG and DUT funding streams to support a wide range of academic and research activities.

Under the University Capacity Development Grant (UCDG), 69 grants were awarded, valued at R5,424,611.22. These included Academic Exchange/Mobility Grants (10 grants, R398,270.00), Advancing Women in Research & Innovation Programme (4 grants, R296,000.00), Emerging Research Grants (10 grants, R672,500.00), Research Focus Area

Funding (21 grants, R3,310,000.00), Seed Funding (2 grants, R56,400.00), Qualification Completion Grants (9 grants, R306,799.00), and Student Mobility (13 grants, R384,642.22). From DUT internal funds, 186 grants were disbursed, totalling R3,781,681.01, which included Conference Funding (163 grants, R3,192,153.51), Research Top-Up Budget (16 grants, R243,527.50), Top-Up Funding for Students (4 grants, R196,000.00), and Sponsorship (3 grants, R150,000.00). These investments reflect DUT's strong commitment to fostering research excellence, mobility, academic development, and institutional capacity-building.

## Research Networks and Collaborations

The Research Capacity Development (RCD) Unit maintains a longstanding and impactful partnership with the Interdisciplinary Journal of Economics and Business Law (IJEBL), which has significantly contributed to fostering a culture of evidence-based research at DUT.

Spanning over five years, this collaboration has enhanced research output, with more than 40 articles published in special issues, generating approximately 40 DHET units. The 2024 special issue, published in June, contributed an additional 9 DHET units. This partnership has also facilitated valuable knowledge exchange and the sharing of best practices, enriching both DUT's internal research culture and the broader academic community. Through IJEBL, numerous faculty members, researchers, and postgraduate students have published their work, elevating DUT's research visibility and reinforcing its commitment to academic excellence and global engagement.

To promote inter-university collaboration, the Research Capacity Development (RCD) Unit facilitated a joint publication initiative with *Alternation*, a DHET-accredited journal hosted by the University of KwaZulu-Natal (UKZN). This partnership began in 2022 and led to the publication of five DUT-affiliated papers in Volume 41 of the journal in 2023.

In a bid to promote global academic engagement and research excellence, the Research and Postgraduate Support (RPS) Directorate through the RCD Unit, in partnership with the International Education and Partnerships Office, hosted a workshop on 25 August 2023 focused on international study opportunities offered by the German Academic Exchange Service (DAAD). Facilitated by DAAD representatives Ms Eden Galetta and Ms Lynn Allemann, the workshop highlighted a range of scholarships, fellowships, and grants available for students and researchers to pursue academic programmes in Germany. The session aimed to simplify the DAAD application process, showcase available opportunities, and provide insights into the academic and cultural benefits of studying in Germany. This initiative reflects the institution's ongoing commitment to broadening the horizons of its academic community, encouraging international mobility, and fostering global knowledge exchange.

**“Our IJEBL partnership has boosted DUT’s research visibility with over 40 published articles and 40 DHET units.”**



## Research Engagement – Mentorship Programmes

### 1

#### Postgraduate Induction Programme Welcomes New Researchers

The RCD Unit organized a postgraduate induction programme with the primary purpose of welcoming new postgraduate students. The induction aimed to provide a comprehensive overview of the institution's Lived Values through the Stewardship perspective of ENVISION2030, resources, services, and policies specific to postgraduate studies and the experiences of postgraduate students. The program included informative presentations, interactive workshops, and networking sessions designed to familiarize students with the research culture and academic expectations of their respective disciplines. Additionally, the induction program offered opportunities for postgraduate students to become aware of research facilities and connect with fellow postgraduate students. By organizing this induction, the RCD intended to ensure that new postgraduate students feel supported, informed, and well-prepared to embark on their research journey at the university.

### 2

#### Strengthening Postgraduate Supervision Course Enhances Supervisor Capacity

The Strengthening Postgraduate Supervision (SPS) course is an innovative course which provides the structured support needed by academics as they take on the complex and demanding role of postgraduate supervision. This internationally regarded course, organised around 4 themes, has been offered more than 90 times across seven countries. The 4-day course was facilitated by Professor Chrissie Boughey and Professor Lesley Le Grange both from Rhode University. The course which targeted DUT staff members is part of the research capacity development initiative to develop and boost capacity of the institution's supervisors. The course involved 4-day face-to-face sessions followed by online sessions lasting four weeks. Topics covered in the course included alternative models of supervision, developing students' research skills, improving writing abilities, and preparing students for examination. The course is accredited through Rhodes University's Short Course Policy and participants successfully completing the course assignment are awarded a Short Course Certificate.

### 3

#### Doctoral Mentoring Programme Supports Staff Toward PhD Completion

The Doctoral Mentoring Programme (DMP) is the flagship postgraduate research development initiative of the RCD Unit, designed to support academic staff in completing their doctoral degrees within three years. Its primary aim is to increase the number of doctoral-qualified staff, promote evidence-based teaching and learning, enhance research productivity, and align with DUT's ENVISION2030 goals. The programme offers structured, in-house mentoring and research training across six modules throughout the year. These cover all aspects of doctoral proposal development, from refining research questions and literature reviews to study design, data collection, ethical compliance, and data analysis using SPSS and NVivo. A key feature is the final oral defence of the proposal before peers, supervisors, and external facilitators, ensuring high academic standards. Participants who complete the programme receive a Certificate of Attendance, having developed a proposal ready for research committee approval.

**"By equipping researchers with practical funding skills and critical research tools, DUT is cultivating a vibrant ecosystem of innovation, collaboration, and academic excellence."**



## Overview of Institutional Research Ethics Committee 2023-2024

The Durban University of Technology-Institutional Research Ethics Committee (DUT-IREC) plays a vital role in ensuring that all research involving human participants and the environment adheres to strict ethical standards.

Guided by national frameworks such as the South African Department of Health's guidelines and international declarations like the Declaration of Helsinki, DUT-IREC is responsible for evaluating, approving, and monitoring research proposals to ensure ethical compliance. At the core of its work is the protection of participants' rights,

dignity, and welfare, upheld through key ethical principles: beneficence, justice, and respect for persons. This includes minimizing risks, ensuring fair participant selection, obtaining informed consent, and safeguarding vulnerable populations. DUT-IREC rigorously assesses research design, methodology, data collection, and participant confidentiality measures to ensure studies align with legal and ethical standards. Through this oversight, the committee fosters a culture of integrity, accountability, and societal relevance in research, reinforcing DUT's commitment to ethical knowledge creation and responsible scholarship.

## Facts and Figures

2023-2024



Postgraduate applications



Undergraduate applications



Provisionally approved **postgraduate** applications



fully approved **postgraduate** applications



Provisionally approved **undergraduate** applications



fully approved **undergraduate** applications

Postgraduate withdrawals



Between 2023 and 2024, postgraduate applications increased from 249 to 334, while undergraduate applications declined from 134 to 120. The number of provisionally approved postgraduate applications rose from 32 to 98, but fully approved applications dropped from 186 to 100.

Postgraduate withdrawals decreased slightly from 4 to 2. In contrast, undergraduate provisionally approved applications declined from 126 to 90, and fully approved applications dropped significantly from 127 to 55.

## Research Networks and Collaborations

A hybrid ethics training workshop was held on 14-15 March 2023. The workshop was facilitated by Prof T S Ramukumba from Tshwane University of Technology. The workshop had approximately 150 attendees. Ethics Training certificates have been issued to attendees.

An in-person workshop on Research Integrity was facilitated by Ms Paula Saner from the University of Cape Town was held on 5 August 2023.

An online ethics training workshop was held on 31 October 2023. The workshop was facilitated by Dr R Visagie from UNISA. The workshop had approximately 140 attendees.

The first ethics training workshop for 2024 was held on 18 June 2024 and was facilitated by the Deputy Chairperson of the National Health Research Ethics Council.

On 26 August 2024, DUT-IREC hosted a seminar on “AI and Research Ethics,” led by Dr Diana De Sousa, Chair

of the SACAP Research Ethics Committee. With around 70 attendees, the seminar explored AI’s growing role in research and the ethical challenges it presents, including bias, transparency, and accountability. Dr De Sousa emphasized the need for updated guidelines to address AI’s complexities in research, such as the “black box” issue, where AI decision-making lacks transparency. She highlighted the importance of balancing AI’s potential with human oversight to ensure ethical integrity in scientific research.

The newly reconstituted DUT-IREC committee successfully held a 2-day workshop at the Coastlands Skye Hotel. The workshop featured three distinguished speakers: Dr. Keseri Padayachy, DUT-IREC Deputy Chairperson, Prof. Dipane Hlalele, Chairperson of the UKZN Social Science Research Ethics Committee, and Mr. Francis Kombe from EthiXPERT. The speakers covered a range of crucial topics, including research ethics, research integrity, and best practices in ethics, contributing to the committee’s ongoing efforts to promote ethical research standards.

**By hosting hybrid, in-person, and online workshops, DUT ensures accessibility and inclusivity, fostering an informed research community that prioritizes ethical and responsible scholarship.**



## Overview of Grants Management Division

The goal of the Grants Management Division is to coordinate the pre- and post-award processes of external and internal funding opportunities for staff, students, postdoctoral fellows and researchers, as well as to manage, maintain and uphold ethical processes that enhance operationalisation of the Research and Postgraduate Support Directorate (RPS) (<https://www.dut.ac.za/research-ps/>).

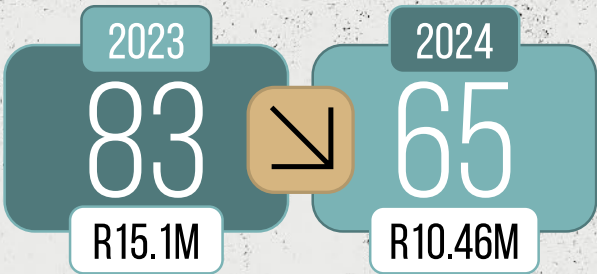
Staff, students and researchers are the Division's priority as we aspire to serve them fairly, professionally, efficiently, timeously and with progressive empathy and compassion; guided by our people-centred and engaged DNA-stranded Envision2030 strategic map's principles. Living our Durban University of technology (DUT) values entails maintaining robust and policy/guideline-anchored systems and processes that promote transparency, honesty, and respect for all our DUT and external stakeholders, against a backdrop of high ethical practices by which we are measured and also measure ourselves.

Therefore, as a funding management division, we hold a shared responsibility with the DUT community, which is premised on timeous acquisition and management of applications and grants for the DUT. The Division's organogram provides this enabled environment, which fosters stewardship and accountability for each of our actions. Hence, as a collective, we cherish the responsibility to interact with and encourage efficient use of DUT resources as we strive to reduce and minimise the Institution's environmental risk. Additionally, the Division is part of a workflow to design the Research Grants Register in collaboration with the ICTS Services sector, in order to improve the efficiency and accuracy of Grant Registration, Management and Reporting, as a one-stop-shop for all DUT Grants that are acquired by staff and students.

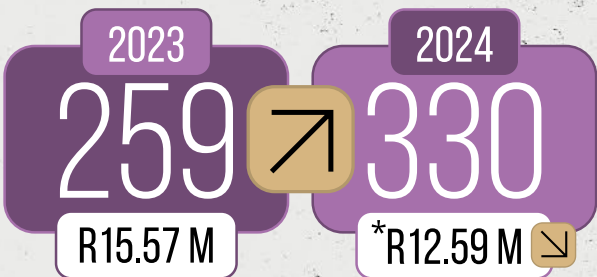


## Facts and Figures

### 2023-2024 NRF & SARAO SCHOLARSHIPS

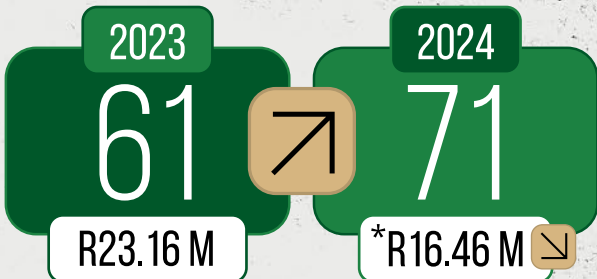


### 2023-2024 INTERNAL MASTER'S & DOCTORAL SCHOLARSHIPS



\*Decrease due to later start date

### 2023-2024 NRF STAFF RESEARCH GRANTS



\*Value per grant in 2024 decreased

### 2023-2024 NRF RATINGS



A total of 150 undergraduate, M and D National Research Foundation (NRF) and South African Radio Astronomy Observatory (SARAO) scholarships worth R25, 819, 680 were held between 1 January 2023 and 2 December 2024.

Among these, 83 scholarships worth R15, 100,282 were awarded for year 2023 and 65 scholarships worth R10,463,898 were awarded for year 2024. For NRF Master's studies 94 scholarships were held to a value of R15,136, 176, and for Doctoral studies 54 scholarships were held to a value of R10, 428,004. For undergraduate studies two SARAO undergraduate scholarships were held to a value of R255,500. For year 2024, DUT successfully submitted 232 NRF Masters and Doctoral scholarship applications for 2025 funding year, of these were 23 scholarship applications for Extension support and 209 applications for First time Masters and Doctoral scholarships.

In 2023 there were a total 259 DUT Master's and Doctoral Internal scholarships valued at R15,571,692. 120 of these were for Doctorals (R8,793,683) while the remaining 139 were for Masters (R6,778,009). By 02 December 2024, there are 330 (R12,590,123) scholarships, which was an increase of 27% from 2023. The 2024 split is 154 Doctoral (R7,975,741) and 176 Masters (R4,614,382) scholarships. The 2024 New Internal Masters and Doctoral scholarships started on 01 September 2024, therefore, the Rand values captured are up to 31 December 2024. Hence, the total Rand value for scholarships in 2024 reflects lower than in 2023, even though the headcount is higher than for 2023.

A total of 61 NRF staff research grants worth R23,158,381 were awarded to DUT in 2023. Even though the total grant count increased to 71 in 2024, the awards' value was lower than for 2023, at R16,456,385.41. This implies that the grants that were awarded in 2024 were of lower value than those for 2023. The number of researchers allocated new awards increased by 14% from 2023 to 2024. NRF ratings increased by 5% from 2023 (56 headcount) to 2024 (59 headcount). The 59 researchers holding NRF ratings comprise of 15 females (B2=1, C2=8, C3=4, Y2=2) and 44 males (B1=1, B2=2, B3=1, C1=4, C2=16, C3=9, Y1=2, and Y2=9). There was no increase in new ratings, from 2023 (9 headcount) to 2024 (9 headcount). Three rating outcomes were still awaited by 02 December 2024, which is the reporting date for this session.

In terms of the student CSIR grants, 2023 had the lowest number of female awardees (1), which increased to 6 in 2024, whereas 2023 had 5 awards that were made to



**“A total of 150 undergraduate, Master’s and Doctoral NRF and SARAO scholarships worth over R25 million were held between 2023 and 2024, reflecting DUT’s strong commitment to advancing research and postgraduate development.”**

males, decreasing to 3 in 2024. From 2023 to 02 December 2024 there was an increase of 50% in the number of CSIR Honours level awards, while the count for CSIR Master's and Doctoral awards decreased from 2 to zero (0). In 2024 up to 02 December 2024, several calls opened such as FoodBev SETA, Astron, Cyril Ramaphosa Education Trust and SAMRC Self-Initiated Grant. In terms of the FoodBev SETA bursary, a total of 176 were submitted to FoodBev during a Call that closed on 4 October 2024. Another call was in progress by the reporting date and it was going to be finalised on 6 December 2024. In 2024 some additional external grants were acquired through this portfolio, for example, ten (initially) from FoodBev SETA, nine from CSIR, one from China Training and five

from Taiwan (NPUST) Training. Additionally, the HSRC internship provided 24 placements that were managed by the Grants Management Division using the HSCR platform. The placements were allocated by the HSRC to Hosts that applied using the HSRC system.

A total of 71 NRF Honours scholarships were acquired in year 2023 (69 stand-alone and 2 grant-holder linked scholarships). The 2023 applications were treated as a block grant for funding in 2024, with an allocation of 102 individual plus 2 grant-holder linked scholarships. In 2024 the scholarship count decreased from 104 to 99 because 5 students transferred their awards to other institutions as was allowed in the NRF guidelines. In both 2023 and 2024, the NRF Honours funding landscape was dominated by the FEBE, followed by FAS and FAI, and lastly by FAD. The number of both female and male scholarship holders increased from 2023 to 2024. The gender distribution indicates a continued increasing trend for female representation as stipulated in the NRF Framework document. In 2023, 51% of awarded students who fell into the age group 20 to 25 were African ethnicity compared to 75% in 2024. Comparatively, students with Indian ethnicity were 36% in 2023 and 12% in 2024.

In 2023, DUT had a total of 98 researchers who consisted of 77 Postdoctoral Fellows (PDFs), 16 Research Assistants (RAs), and 5 Research Fellows (RFs). By 29 November 2024, selectively, 18 PDFs were funded by NRF core while one was funded by the NRF-Sasol fellowship. In 2023, there were six (6) researchers active under the GOOT program, with males comprising 66.67%. By 29 November 2024, there were 18 researchers active under the GOOT program. The Female gender increased from 33.33% (2023) to 44.44% as of 29 November 2024. The HANT Program was established in 2024. As at 29 November 2024, there were 59 HANT PDFs with the following statuses: contract running (34), processing new acquisition (8), and processing visa (17).

## Workshops and Training Sessions

The Research Grants Administration and Management Division plays a proactive and empowering role in the academic journey of DUT's students by hosting numerous training sessions and workshops throughout the year.

These sessions are specifically designed to equip students with the skills and knowledge needed to successfully apply for a variety of funding opportunities, including prestigious grants such as those offered by the National Research Foundation (NRF). More than just informational briefings, these trainings provide practical guidance on navigating the complexities of grant application processes, from crafting compelling proposals to understanding eligibility requirements and compliance protocols. By creating a supportive and engaging learning environment, the Division ensures that students are not only informed but also confident and competitive when pursuing financial support for their research. These initiatives reflect DUT's commitment to nurturing a research-active student body and fostering academic excellence through strategic and accessible funding support.

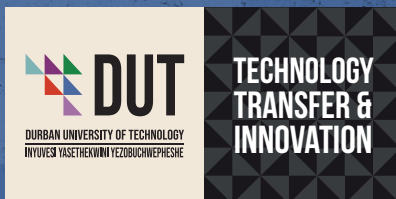


**“Through hands-on training and practical guidance, DUT empowers students to confidently navigate grant applications and secure research funding, reinforcing its commitment to academic excellence and accessible support.”**



# 11

## Technology Transfer and Innovation



### A Message from Dr P Ntola (Interim Director)

It gives me great pride to reflect on the remarkable strides made by the Technology Transfer and Innovation Office during the 2023–2024 period.

Guided by the ENVISION2030 strategy, our directorate has played a pivotal role in driving innovation, entrepreneurship, and the commercialization of research, positioning our institution as one of the leaders in technology transfer and innovation across South Africa.

Through collaborations among researchers, students, and industry experts, we have advanced solutions aligned with the Sustainable Development Goals (SDGs). Notable innovations include the eco-friendly biobrick aimed at promoting sustainable urban development, and impactful health sector contributions from our staff and students, who focused on disease prevention, community health, the agricultural sector and food security through sustainable practices.



Our collective efforts have not gone unnoticed. The department further secured substantial external funding from key agencies, including the NRF and TIA, and the UTF for the development of sustainable construction materials. These achievements underscore our commitment to innovation with impact and our resolve to shape a sustainable, inclusive future. Let us continue to build on this momentum as we drive the next wave of transformative research and innovation.

## The Overview of the Technology Transfer and Innovation Office 2023/24

The Technology Transfer and Innovation (TTI) Office at Durban University of Technology (DUT) continues to play a critical role in advancing innovation, entrepreneurship, and the commercialization of research in alignment with DUT's ENVISION2030 strategy.

DUT is committed to fostering a culture of innovation and research excellence, contributing to sustainable development, and addressing global challenges. As part of this, the Innovation Indaba 2023/24 served as a significant platform for showcasing DUT's ground-breaking research, forging key collaborations, and promoting the commercialization of innovations, while also aligning with the Sustainable Development Goals (SDGs).

## Facts and Figures

During the 2023/24 Innovation Indaba, the Durban University of Technology (DUT) significantly elevated its reputation as a leader in innovation by showcasing sustainable innovations aligned with the Sustainable Development Goals (SDGs). This platform highlighted collaborative efforts by researchers, students, and industry experts.

One of the notable projects featured was the Bio Brick Project, led by Dr. Farai Dziike and Ms. Nelisa Mabaso, which introduced eco-friendly construction materials



aimed at promoting sustainable urban development. In the health sector, Ms. Humeira Hassan and Dr. Nokuthula Mavela demonstrated innovations under Health Innovation and Disease Prevention, such as Aquagreen Technologies, that addressed pressing health issues while supporting environmental sustainability.

Additionally, Sustainable Agriculture and Food Security Innovations, spearheaded by Dr. Bonga Lewis Ngcobo and Dr. Sabiu Saheed, provided impactful solutions to enhance food security through sustainable agricultural practices. Collectively, these achievements underscored DUT's commitment to leveraging innovation for societal and environmental advancement.

For the 2023/24 period, the Durban University of Technology (DUT) secured substantial external funding from key national agencies to support its innovation-driven research initiatives. The National Research Foundation (NRF) awarded R2 million to bolster research in sustainable agriculture, resulting in the development of technologies that directly contribute to enhanced food security and environmental sustainability. The Technology Innovation Agency (TIA) provided R1.5 million to support health innovation research, which facilitated the commercialization of community-focused disease prevention technologies, thereby improving public health outcomes. Additionally, R800,000 was received from the University Technology Fund (UTF) for the development of eco-friendly construction materials, specifically funding the Bio Brick Project. This initiative advanced green building technologies and strengthened DUT's position in promoting sustainable urban development. These funding streams not only accelerated the university's research outputs but also deepened its societal and environmental impact.

## Research Impact

DUT implemented several strategic initiatives aimed at fostering innovation and entrepreneurship within the university community and beyond. The Pitch Deck Review and Training initiative reached 50 participants, including DUT researchers, start-ups, and students.

It focused on enhancing their ability to effectively pitch innovations to potential investors, thus bridging the gap between research and commercial viability. The Innovation Workshops, which attracted 200 entrepreneurs, researchers, and industry partners, delivered practical training on sustainable innovation practices and strategies for commercialization, promoting a stronger innovation ecosystem. Meanwhile, the Student Entrepreneurship Programme engaged 150 students and postgraduate researchers, equipping them with the skills and mindset

to explore commercialization pathways for their research outputs. Collectively, these initiatives expanded DUT's innovation impact and empowered its community to translate ideas into market-ready solutions.

## Societal Impact

DUT's commitment to community and societal development was exemplified through targeted engagement initiatives involving researchers and strategic partners.

The Institute for Water and Wastewater Technology, in collaboration with Rand Water, led impactful work in Water Security and Wastewater Management, providing sustainable water treatment solutions that enhanced access to clean water and contributed to improved public health outcomes in surrounding communities.

**"These achievements underscore our commitment to innovation with impact and our resolve to shape a sustainable, inclusive future."**

Under Health Innovation and Disease Prevention, Ms. Humeira Hassan and Dr. Nokuthula Mavela developed innovative health solutions that played a significant role in preventing diseases and advancing community wellness.

In the area of Sustainable Agriculture for Community Development, Dr. Bonga Lewis Ngcobo, working with the Department of Agriculture, implemented initiatives that bolstered food security and introduced sustainable farming practices, particularly benefiting rural communities. These engagements reflect DUT's broader impact beyond academia, contributing directly to societal resilience and well-being.



## Projects and Collaborations

DUT has actively pursued strategic collaborations to enhance its research impact and drive innovation aligned with global sustainability goals.

### 1

#### Industry Partnerships Advancing Water and Health Technologies

Through Industry Partnerships for Health Innovations with Rand Water and the University of Johannesburg, the institution contributed to the development of integrated water and health technologies, addressing both SDG 6 (Clean Water and Sanitation) and SDG 3 (Good Health and Well-being).

### 2

#### Cross-Border Collaboration for Sustainable Development

The Interdisciplinary Research Collaboration with the Namibia University of Science and Technology fostered robust cross-border partnerships that advanced sustainable development and multidisciplinary innovation.

### 3

#### Innovation Hub Partnerships Driving Commercialization

Additionally, the university's Innovation Hub Partnerships with private sector innovators and government agencies played a pivotal role in building a dynamic innovation ecosystem. These collaborations have supported the commercialization of research outputs and the creation of sustainable solutions to global challenges, reinforcing DUT's leadership in applied innovation and international cooperation.

**“DUT is committed to fostering a culture of innovation and research excellence, contributing to sustainable development, and addressing global challenges.”**

## Research and Innovation - Institutes Highlights

### The Institute for Water and Wastewater Technology (IWWT)



The Institute for Water and Wastewater Technology (IWWT) is a national leader in applied environmental biotechnology.

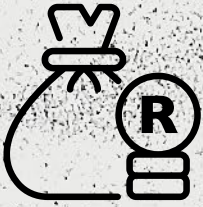
With a sharp focus on microbial water quality, anaerobic digestion, and low-cost sanitation, the Institute delivers meaningful research to advance public health imperatives

and environmental sustainability. In the reporting period, IWWT extended its work on nutrient removal, microbial detection techniques, and alternative sanitation systems tailored to local municipal contexts. These activities are embedded in strong public sector collaborations, particularly with local municipalities, and reflect DUT's broader agenda to produce research for the public good.



## Facts and Figures

2023-2024



IWWT has secured R26,364,637 in research funding across these five sources.

The diversity of funding, from national government initiatives (SARCHI, NRF), sector-specific agencies (WRC), to industry partners (ESKOM), illustrates IWWT's strong multidisciplinary appeal and its pivotal role in addressing water research challenges. The funding not only enables high-impact scientific inquiry but also supports postgraduate training, infrastructure development, and societal impact, in alignment with DUT's Envision2030 goals.

R26.36M

SARCHI

NRF

WRC

ESKOM

Secured research  
funding

## Research Impact

The IWWT achieved 12.57 Research Output Units for 2023 as per DHET submission data.

This output reflects the sustained engagement of IWWT researchers in academic publishing despite the Institute's emphasis on applied work and real-world implementation. While this may seem modest compared to other faculties, it underscores a deliberate shift towards research translation and stakeholder engagement.

## Societal Impact

The Institute plays an active role in public engagement by regularly monitoring beach and tap water quality in Durban and providing the public with accurate, up-to-date information.

Through its collaboration with the eThekweni Municipality, the Institute conducts thorough testing to ensure water safety and compliance with health and environmental standards. This ongoing interaction helps raise awareness of potential risks, promotes best practices, and reassures communities about the safety of their recreational and drinking water. The partnership underscores the Institute's

commitment to protecting public health and encouraging responsible water use.

The Institute for Water and Wastewater Technology has launched a dynamic schools outreach initiative to promote awareness of water and environmental issues among Durban's youth. Through interactive sessions, science-based activities, and educational presentations, the Institute seeks to inspire the next generation to understand and address challenges like pollution, water treatment, and sustainability. On 4 June 2024, a team of 15 staff, students, and postdoctoral fellows visited Wonder Academy of Excellence in Sherwood to engage primary school learners on topics such as microbiology, wastewater treatment, microplastics, hygiene, and water conservation. The hands-on activities were met with enthusiasm, fostering both learning and curiosity. Looking ahead, on 22 August 2024, a team from the Institute will participate as adjudicators at a science expo at Ihsaan Girls College in Chatsworth, evaluating projects across several scientific disciplines. These outreach efforts reflect the Institute's strong commitment to community engagement, environmental stewardship, and nurturing future scientists dedicated to water conservation and sustainable practices.

## Environmental Impact

### 1

#### **Pioneering Low-Energy Nitrogen Removal with Anammox Technology**

The Institute for Water and Wastewater Technology is leading the development of a sustainable and cost-effective nitrogen removal process for the wastewater sector through the implementation of partial nitrification/anammox (PN/A) technology.

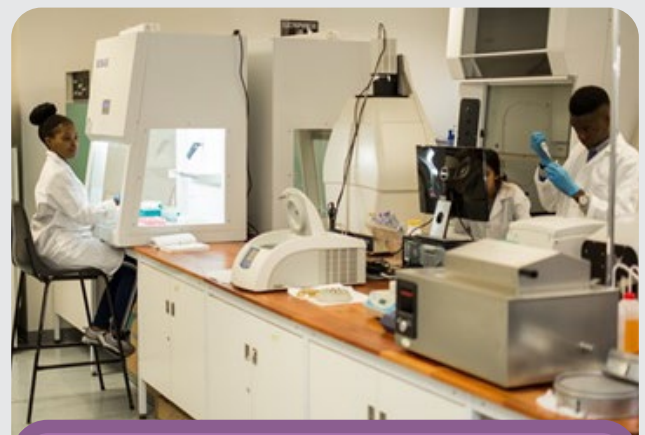
This innovative approach offers a low-energy alternative to conventional methods, addressing the significant energy demands of over 900 activated sludge systems currently operating in South Africa. By piloting a side-stream PN/A process locally, the project aims to scale the technology for high-strength industrial wastewater applications. It also contributes to human capacity development in advanced wastewater treatment technologies and fosters scientific collaboration between DUT and the eThekweni Municipality. As the only pilot-scale initiative in South Africa evaluating anammox technology, its outcomes are expected to guide

broader implementation across the country. This initiative aligns with DUT's ENVISION2030 societal and stewardship goals by delivering transformative, energy-efficient solutions to pressing environmental challenges.

### 2

#### **Combating Microplastic Pollution Through International Collaboration**

The Institute is at the forefront of research addressing the environmental threat posed by microplastics, tiny plastic particles that contaminate various ecosystems and pose significant risks to environmental and public health. Through its ongoing research, the Institute has explored the sources, distribution, and ecological impacts of microplastics, while also identifying practical solutions such as improved waste management to reduce pollution. A key highlight of this work is the Institute's participation in the European Water Joint Programming Initiative (Water JPI), a collaborative project involving South Africa, Norway, Cyprus, and France. This international



**“As the only pilot-scale initiative in South Africa evaluating anammox technology, this project is set to guide broader implementation of energy-efficient wastewater treatment solutions nationwide.”**

initiative aimed to enhance monitoring and research on emerging contaminants, specifically targeting microplastics in wastewater. The project successfully developed methodologies to detect and isolate microplastics in organic-rich environments like sludge and wastewater, provided critical data on their presence and behavior in KwaZulu-Natal treatment plants, and examined their potential role as carriers of pathogens and antibiotic-resistant genes. This research not only informs sustainable environmental practices but also supports DUT's broader vision under ENVISION2030 by promoting innovation and international collaboration in environmental conservation.

### 3

#### **Innovative Approaches to Pharmaceutical Contaminant Removal**

The Institute is leading vital research in tracking and removing pharmaceutical contaminants (PCs) from wastewater, an urgent environmental challenge with significant implications for aquatic ecosystems and public health. Using advanced analytical technologies such as mass spectrometry and chromatography, researchers have accurately traced and quantified contaminants including antiretrovirals, anti-inflammatory, and anticonvulsant medications throughout the treatment process. This research provides crucial data to optimize treatment efficiency and ensure pollutants are effectively removed before reaching natural water bodies or drinking sources. In a parallel study, the Institute explored the use of microalgae as a tertiary treatment method to eliminate antiretroviral drugs from wastewater. The findings revealed that algae-based systems can convert these compounds into simpler, non-toxic forms, offering a sustainable and eco-friendly solution to pharmaceutical pollution. This work not only advances innovative wastewater treatment strategies but also supports DUT's commitment to environmental stewardship under ENVISION2030.

### 4

#### **Addressing the Spread of Antibiotic Resistance in Water Systems**

Antibiotic resistance genes (ARGs), such as those linked to *Mycobacterium tuberculosis* and *Pseudomonas aeruginosa*, are an escalating threat to global health due to their ability to render antibiotics ineffective. The Institute for Water and Wastewater Technology has undertaken critical research to investigate how anthropogenic pollution, particularly from wastewater effluents, informal settlements, hospitals, and veterinary clinics, contributes to the spread of antibiotic-resistant bacteria in aquatic environments. By analysing surface water and wastewater

samples, the study identified bacterial isolates that were not only antibiotic-resistant but also potentially pathogenic. This is particularly alarming given that samples were collected from areas with regular human and animal activity, increasing the risk of exposure and transmission. The research highlights the urgent need for improved wastewater management and surveillance systems to curb the environmental spread of ARGs and safeguard public health.

### 5

#### **Microbial Risk Assessment for Safer Water Reuse and Public Health**

Microbial risk assessment (MRA) is a vital, interdisciplinary approach used to evaluate health risks posed by microorganisms in environments such as water systems, food production, and healthcare settings. By integrating microbiology, epidemiology, toxicology, and risk analysis, MRA identifies microbial hazards, assesses exposure pathways, evaluates potential health outcomes, and examines the effectiveness of control measures. At the Institute for Water and Wastewater Technology, several significant projects have been undertaken in this field. These include water quality modeling and quantitative microbial risk assessments for the Msunduzi River, and the development of a semi-quantitative tool for assessing health risks linked to wastewater reuse. Other notable studies involve analyzing the removal of helminth eggs in wastewater treatment systems in South Africa and Lesotho, and estimating infection risks from sludge used in agriculture in South Africa and Senegal. These projects contribute to safer water reuse practices and inform public health interventions across diverse African contexts.

**"As South Africa's only pilot-scale project on anammox technology, this initiative is set to transform energy-intensive wastewater treatment."**

## Projects and Collaborations

### 1

#### Advancing Genomic Research Skills through Bioinformatics Training

The Institute for Water and Wastewater Technology continues to play a key role in advancing scientific capacity through targeted training programmes and international collaboration.

From 2–5 October 2023, the Institute partnered with the National Institute for Communicable Diseases (NICD) to host a Bioinformatics (Metagenomics) Workshop. The workshop focused on genomic databases, functional annotations, taxonomic classification, and statistical analysis, equipping participants with essential skills in microbial genomics and data interpretation.

### 2

#### Technical Capacity Building in Molecular Biology

In 2024, two additional training programmes were held. From 22–24 May, a Molecular Biology Techniques Course was conducted for Mhlathuze Water. The course introduced participants to molecular methods, DNA and RNA extraction, and optimization of real-time Quantitative PCR, strengthening technical expertise in water quality monitoring.

### 3

#### International Collaboration on Algae Biotechnology

From 6–16 August 2024, the Institute provided specialized training in large-scale algae cultivation to Mr. Abdul Wahab Al 'Ouweini, a Master's student from Sultan Qaboos University in Oman. The programme covered microalgae cultivation in both laboratory and greenhouse settings, microscopic and PAM analysis, and included visits to the Kingsburgh wastewater treatment plant. Practical components focused on algae seed culture development, nutrient optimization, harvesting, drying, and grinding processes. Collectively, these initiatives reflect the Institute's commitment to capacity building and its growing international footprint in research and training.





## Institute of Systems Science (ISS)

The Institute of Systems Science (ISS) drives cutting-edge research that connects technology, innovation, and societal needs.

ISS' research endeavours to enhance life quality through scientific exploration and practical application. ISS investigates diverse subjects ranging from dietary impacts on health to astronomical theories.

The contributions from these studies significantly advance understanding and management across various fields, including agriculture, food security, environmental science, astrophysics, and applied mathematics. By developing models for disease dynamics in sugarcane, the research aids in effective management strategies to enhance crop yields and economic stability. The promotion of legume-based protein formulations addresses food security and encourages sustainable diets, particularly in South Africa. Insights into shallow water dynamics and dark sector interactions deepen the comprehension of astrophysical phenomena and the universe's structure. Lastly, the investigation into biosorption processes using natural materials offers practical solutions for wastewater treatment, promoting environmental sustainability. Collectively, these contributions can assist stakeholders with knowledge and tools to address pressing challenges, fostering sustainable practices and informed decision-making in their respective domains.

## Facts and Figures

ISS has secured the NRF SARCHI: Applying Mathematics to Natural and Human Systems funding since year 2021 over the period of five years. It receives R1,430,000.00 in research funding annually. The funding not only enables high-impact scientific inquiry but also supports postgraduate training, industry collaboration, and societal impact, in alignment with DUT's Envision2030 goals.

# R1.43M

**NRF SARCHI**



Total secured research funding since 2021

## Research Impact

The ISS achieved approximately 57 Research Output Units for 2023 as per DHET submission data. This output reflects the sustained engagement of ISS researchers in academic publishing despite the Institute's emphasis on applied work and real-world implementation. While this may seem modest compared to other faculties, it underscores a deliberate shift towards research translation and stakeholder engagement.

The ISS' research, such as the dynamics and control of sugarcane smut disease and the application of plant-based protein formulations, demonstrates a commitment to innovative research that generates new knowledge and solutions. This aligns with DUT's objective of providing curricula that stimulate creativity and innovation, which is crucial for developing future-ready graduates.



## Societal Impact

The ISS plays a vital role in engagements and collaboration with international partners and local industries, like the Umngeni-Uthukela water project, which demonstrates the vision of DUT as an engaged university. These partnerships not only enhance research capabilities but also lead to practical applications that benefit society, fulfilling the strategic objective of establishing mutually beneficial collaborations. Institute's staff also partakes as mentors and judges at the Eskom Science Expo, which assists learners with evaluating projects across several scientific disciplines. These outreach efforts reflect the Institute's strong commitment to community engagement, environmental stewardship, and nurturing future scientists.

## Environmental Impact

The Institute of Systems Science projects focused on environmental sustainability and food security, such as the valorisation of biomass waste and the promotion of legumes, directly contribute to the sustainability goals of DUT. These initiatives support the university's aim to ensure future knowledge production in a manner that is environmentally responsible and economically viable.

## Projects and Collaborations

### 1

#### Advancing Scientific Knowledge Through Mathematical Modelling

The primary aim of the ISS is to advance scientific knowledge toward improving aspects in society. In doing so the institute maintains robust local and international partnerships that is potentially valuable. The Institute of Science's several significant projects involve developing mathematical models to study disease dynamics and their transmission, which has shown promising progress in understanding and controlling disease progression. These models have been particularly applied to diseases like monkeypox and sugarcane smut, helping to determine factors influencing transmission and the effectiveness of control measures.

### 2

#### Industry Collaboration for Environmental Sustainability

The Institute has also strengthened its collaboration with various industry leaders, including the Umngeni-Uthukela Water Project, focusing on improving water quality through innovative AI tools. This collaboration is part of the ISS's broader commitment to environmental sustainability and is aligned with the ENVISION2030 objectives to enhance infrastructure resilience under various climate scenarios.



**Our collaborations turn research into real-world solutions—empowering communities, protecting the environment, and nurturing future scientists.” – Institute of Systems Science**



## International Centre of Nonviolence (ICON)

The International Centre of Nonviolence (ICON) is a cornerstone of DUT scholarship that bridges academic inquiry and social engagement.

Operating within the Faculty of Management Sciences, ICON upholds its mission to promote peace education, non-violent praxis, and critical pedagogy rooted in social justice.

In the 2023/24 period, ICON extended its collaborative teaching initiatives and community-based research programmes, embedding the principles of nonviolence within educational institutions and broader civic society. Through its thought leadership and capacity-building work, the centre has advanced DUT's vision of transformation by reimagining the role of higher education in promoting democratic citizenship and participatory justice. ICON's work is grounded in South Africa's evolving post-apartheid landscape but reaches across borders to influence peace-oriented pedagogies globally.

## Facts and Figures

ICON's scholarly activities in the reporting year matched DUT's institutional objectives under ENVISION2030.

The centre offered sustained support for curriculum innovation, by teaching modules offered by the Centre for General Education where nonviolence and peace studies are mainstreamed as critical areas of learning. ICON's academic team collaborated with local schools, teacher education colleges, and civil society organisations to embed values-based education frameworks into teaching and learning environments.



**Sustained curriculum support** for modules in peace and nonviolence studies.



**Collaborations** with schools, colleges, and civil society organisations



**Postgraduate research output**, including dissertations, journal articles, and policy contributions



**Recognition** as one of the few national centres dedicated to nonviolence



**International engagement** through scholarly partnerships



ICON's influence also extended into postgraduate research, emphasising praxis-oriented dissertations that interrogate violence, inequality, and educational transformation. The centre produced and disseminated knowledge through academic publications, community workshops, and national dialogues. Staff members contributed to accredited journal articles, policy development discussions, and editorial contributions that shaped public discourse on peacebuilding and conflict transformation in the education sector.

Institutionally, ICON stands among the few research centres in the country explicitly devoted to nonviolence, positioning DUT at the forefront of transformative peace education. Its multidisciplinary approach, drawing from education, philosophy, and activism, has attracted growing interest from international scholars and partner institutions invested in collaborative knowledge production and ethical leadership.

## Societal Impact

### 1

#### Community-Based Interventions for Gender Equity and Democratic Dialogue

ICON's work resonates far beyond the university campus. Through participatory action research and school-based interventions, the centre has helped foster inclusive spaces for dialogue on gender equity, youth agency, and democratic values. Its engagement with educators and learners in local schools has contributed to developing safe learning environments where the dignity and voice of every learner is affirmed.

### 2

#### Empowering Educators as Agents of Change

The centre's capacity-building programmes empower educators with tools to critically examine systemic violence, both structural and interpersonal, within the schooling system. By offering reflective frameworks and experiential learning models, ICON has helped teachers and youth workers reimagine their roles as agents of change. The ripple effects of this work are visible in classroom dynamics, school governance practices, and community leadership structures.

### 3

#### Facilitating Regional Knowledge Exchange in Peace Education

ICON also played a key role in regional knowledge exchange, hosting and participating in roundtables, workshops, and conferences focused on peace education. These platforms enabled South-South collaboration and shared learning between practitioners from different socio-political contexts.

### 4

#### ICON's Enduring Legacy of Nonviolent Transformation

The legacy of ICON is one of quiet transformation, changing mindsets, curricula, and institutional cultures through an enduring commitment to nonviolence. As South Africa confronts the aftershocks of its violent past and the complexities of its democratic present, ICON's work remains urgent, relevant, and deeply humanising.



**"ICON bridges academic inquiry and social justice, reimagining education as a catalyst for nonviolent transformation."**



## Advancement and Alumni Relations Unit

The Advancement and Alumni Relations Unit (AARU) was central in cultivating meaningful connections between DUT and its broader universe in 2023/24.

Its work demonstrated how alumni relations can move beyond celebration and nostalgia into tangible support for entrepreneurship, social development, and student success. Situated within the Technology Transfer and Innovation and International Partnerships domain, AARU reinforced DUT's people-centred approach through targeted initiatives that brought together students, graduates, staff, and strategic partners in service of a shared institutional future.

This was not a year of incremental growth but one defined by purposeful engagement. The Unit curated inclusive spaces for connection, support, and celebration while ensuring alumni influence extended to business incubation, bursary support, and local development. Through its efforts, AARU affirmed that alumni relations, rooted in institutional priorities and DUT's values and vision, are not merely ceremonial but catalytic.

## Facts and Figures

The Valentine's Movie Night Fundraiser attracted a diverse audience and provided a showcase platform for alumni-owned enterprises, further nurturing DUT's entrepreneurial ecosystem.

The Alumni Business Breakfast, hosted in collaboration with Innobiz and the Centre for Social Entrepreneurship, brought together graduates from across sectors, igniting new partnerships in step with DUT's transformation agenda enshrined in the ENVISION2030 strategy.

Over 700 high school learners participated in the Career Day initiative hosted in Ixopo, supported by Albaraka Bank and other partners, providing young people with critical insights into post-matric pathways.

The DUT President's Cup Golf Day returned after a five-year hiatus, raising funds for three priority programmes: The Alumni Bursary Fund, the Alumni Business Fund (AlumBiz Fund), and the Phakimpilo Food Security Project.



The School Engagement Project reached eight secondary schools in Durban and its surroundings through seven key project pillars. Activities included tuition in gateway subjects, career guidance, and talent shows, which enhanced learner development and ethical leadership among DUT's student tutors.





## Societal Impact

AARU's signature projects demonstrated the Unit's deliberate correspondence with the University's strategic imperative to be engaged and inclusive. From Suncoast theatres to township classrooms, its work engaged audiences with vastly different life trajectories yet a shared stake in DUT's success.



In August, the Super Troopers fundraiser, celebrating Women's Month, doubled as a platform for female alumni and a cultural experience reinforcing DUT's focus on diversity and empowerment.

The inaugural AlumBiz Fund award went to Sihle Sibisi, spotlighting the transformative potential of alumni-led entrepreneurship and DUT's readiness to seed that ambition.

The School Engagement Project, involving peace clubs, Super Chefs competitions and social entrepreneurship programmes, underscored DUT's belief that visionary leadership is cultivated, not inherited. It also illustrated how current students grow as ethical professionals through service to others.

Whether fostering economic resilience, strengthening food security or nurturing tomorrow's entrepreneurs, the Unit remains at the forefront of DUT's people-first, future-focused journey.



**The AARU departs from conventional alumni work, instead positioning itself as a strategic contributor to transformation.**





## Community Engagement



Community engagement at DUT is not an add-on but a defining element of the institution's identity.

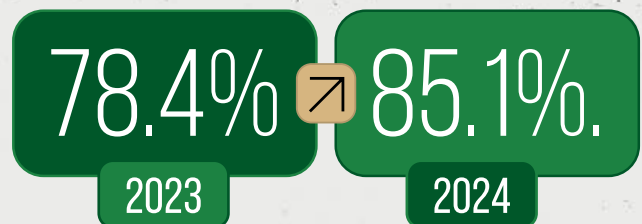
Coordinated by the Office of the Deputy Vice-Chancellor: Research, Innovation and Engagement, DUT's approach to engagement involves genuine partnerships with schools, civil society organisations, and under-resourced communities. In the 2023/24 cycle, the University supported a wide portfolio of initiatives that brought staff and students into practical collaboration with communities across KwaZulu-Natal and beyond. These efforts gave tangible form to DUT's vision of being an engaged, people-centred university that responds to societal challenges with relevance and integrity.

From improving high school pass rates to supporting zero-waste communities, DUT's initiatives championed knowledge-sharing, mentorship, and co-creation of solutions. Each activity was rooted in recognising that universities must serve as responsive institutions, shaping not only ideas but also the futures of those they serve.

## Facts and Figures

08

Secondary schools reached in Durban



Matric pass rate at Hunt Road Secondary School

20%

Improvement in Physics results at  
Durban Girls Secondary School

04

≈

600

SCHOOLS

LEARNERS

Primary school learners in Bergville  
benefitted from the Book Club  
Programme

50+

≈

3,000

SCHOOLS

LEARNERS

learners in Mahlabathini district who  
engaged in curriculum-aligned science  
experiments

The School Engagement Project reached eight secondary schools in and around Durban through seven structured pillars: tutoring in gateway subjects, peace clubs, talent development, career guidance, and learner-driven entrepreneurship. Students from DUT served as tutors and mentors, while high school learners benefited from leadership development and academic support. Surveys by partner schools confirmed notable academic gains, including a rise in matric pass rates from 78.4% to 85.1% at Hunt Road Secondary School, and a 20% increase in Physics results at Durban Girls Secondary School. In rural Bergville, DUT implemented the Book Club Programme to improve literacy across four primary schools, targeting over 600 learners. Supported by the Library Unit and students from the Faculty of Arts and Design, the programme offered poetry, debating,



and storytelling workshops, culminating in an annual bookathon. At Intumbane Primary School, the latest addition, learners created original writing compiled into annual reading collections.

In the deep rural Mahlabathini (Ulundi) district, DUT's staff and students worked with over 50 schools, delivering science experiments aligned with the national curriculum to more than 3,000 learners. The Chemistry Department and Health Sciences and Career Resource units led classroom interventions to supplement remote communities' lack of laboratory infrastructure.





## Societal Impact

# 1

### Transforming Schoolyards into Living Classrooms

The value of community engagement lies not only in academic results but in relationships forged and futures opened. In Bonela, DUT's Architecture and Horticulture students transformed schoolyards into learning gardens. These efforts supported curriculum enrichment and climate awareness, with plant species selected for medicinal, aesthetic, and biodiversity purposes.

# 2

### Co-Developing Urban Solutions: Warwick Zero Waste

The Warwick Zero Waste project in the inner-city showcased how urban communities and the University can co-develop solutions for environmental health.



# 3

### Design Thinking for Social Impact: The Archithon

Learners also developed prototypes to address local challenges through the Architecture Design and Engineering Programme, culminating in the Archithon Design Competition. Under mentorship from student volunteers, learners applied design thinking to produce socially responsive concepts.

# 4

### Building Leadership Through Sport

In sports, the School Engagement Project joined forces with the Department of Sport Studies to host a netball and soccer tournament for seven Durban high schools, giving learners and DUT students opportunities to lead, organise, and compete with pride.



# 5

### Long-Term Collaboration Rooted in Community

From science classrooms in Mahlabathini to theatre workshops in Bergville, DUT's engagement strategy positions the University not as a visitor to communities but as a long-term collaborator. These engagements breathe life into DUT's values, showing what is possible when knowledge walks hand in hand with empathy and learning is shared beyond campus gates.



## The Postgraduate Library Experience



The DUT Library remains an essential partner in cultivating a thriving postgraduate research culture.

It provides tailored support services, curated resources, and dedicated spaces that foster focused academic work. Its approach is both responsive and anticipatory, working in tandem with the Research and Postgraduate Support Directorate to help master's and doctoral students navigate the complexities of postgraduate study.

Specialist librarians at multiple campuses support students through individual consultations, workshops, and curated research tools. From facilitating systematic reviews to assisting with referencing and formatting, the team actively embed research skills within the broader postgraduate journey. The Research Commons, now located at more accessible campus points, provides quiet zones for focused study and interaction with research support tutors.

## Facts and Figures



Dedicated postgraduate librarians



Research tutors

The library postgraduate support team consists of three dedicated librarians: Sara Bibi Mitha at Alan Pittendrigh Library, Patricia Badenhurst at BM Patel Library (named after Bhekabantu Moyo Patel), and Themba Nkuna at the Midlands campuses. Four research tutors were employed in the 2023/24 financial year to strengthen frontline support. These tutors offer hands-on assistance in the Research Commons, which caters to postgraduate students and researchers. The BM Patel Research Commons relocated to the ground floor in June 2023 to improve accessibility and enable future twenty-four-hour access.

Postgraduate students can access various subject databases, citation indexes, and full-text resources through OpenAthens. This online access management platform authenticates user entry to electronic resources. The DUT Open Scholar institutional repository, developed to archive and disseminate scholarly work, is set for growth, with theses and dissertations uploaded in collaboration with faculty officers. The currently supported software includes EndNote for reference management, NVivo for qualitative data analysis, SPSS (Statistical Package for the Social Sciences), and QuestionPro for online survey research. Installation support is available via the library's website.

Workshops focused on information and digital literacy, academic writing, referencing, and formatting are offered in partnership with the Research Capacity Development Programme. Despite increasing registration numbers, midday sessions in August 2024/24 attendance was lower than expected. To accommodate varied needs, librarians are available through multiple channels: email, WhatsApp, Microsoft Teams, and LibChat, the Library's live online support tool.

Queries received during the year included requests for generating an h-index, a metric used to measure research productivity and citation influence, along with assistance on referencing, verifying publication status, and using supported software. The monthly "Read for Research" alert and the Postgraduate Guide to the Library remain vital tools for helping students navigate available support.

## Societal Impact

### 1

#### A Hub for Scholarly Confidence

The Postgraduate Library Experience has become more than a support mechanism—it is a hub for scholarly

confidence. The Library cultivates habits that lead to sustained academic success through dedicated spaces, trained staff, and targeted services. In 2023/224, the Library also championed Transformative Agreements, which reduce or eliminate article processing charges in selected journals, enabling DUT researchers to share their findings with broader global audiences.

### 2

#### Driving Postgraduate Research Engagement

Participation in Open Access Week, the University Capacity Development Doctoral Conference, and the Strengthening Postgraduate Supervision programme further illustrate the Library's role in the postgraduate research ecosystem. Whether guiding thesis structuring or bibliometric tools, the team helps researchers develop a foundation that supports meaningful academic work beyond graduation.



**"The Postgraduate Library is more than a resource—it's a launchpad for academic growth, offering hands-on support, digital tools, and spaces where research thrives."**

# Acknowledgements

This Research, Innovation and Engagement Annual Report emerges not merely as a record of achievement but as a collaborative expression of DUT's values, transparency, innovation, transformation, and excellence woven into the lived experiences of our researchers, scholars, students, and partners.

We sincerely thank the team from the Office of the Deputy Vice-Chancellor: Research, Innovation and Engagement, whose stewardship has ensured that this publication resonates with the strategic intent of ENVISION2030. Dr. Nomcebo Mthombeni's leadership, supported by Nomnikelo Patience Lundall, Philisiwe Cele, and Waheeda Peters, was central to curating this dynamic narrative of scholarship in motion.

The creative direction and design layout, delivered with distinction by ....? provided clarity and visual coherence to a complex document. We acknowledge Izinga Creatives Media for their end-to-end project management, which ensures quality and consistency across every touchpoint. The copywriting and editing, expertly led by Bhekisisa Mncube, transformed raw information into an accessible and inspiring institutional narrative.

We also acknowledge the essential contributions of Sithabile Thandeka Thungo and Dr Vaneshree Govender, whose administrative and research support enriched both the process and the outcome. Photography by .....? Khulasande Tshayile, Mngqobi Ngobese, the Audio-Visual Unit, and open-access visuals from Google Images and Freepik.com helped capture people, places, and purpose. This publication is the result of many hands and hearts across our university. From research administrators to faculty communicators, postgraduate supervisors to grant officers—every contributor shaped this report in spirit and substance. Your work affirms that excellence is never incidental; it is built deliberately, collaboratively, and carefully.

The stories within these pages form part of a broader journey to rethink the university's role in society, where knowledge is shared rather than hoarded, innovation

benefits the local population, and engagement is not a programme but a mindset. We thank every student, staff member, and stakeholder who walks this path with us. May this 2023/24 report rejuvenate us and serve as a living document—an invitation to dream, question, and act. It is not merely a reflection of what has been done but a provocation towards what remains possible, particularly as institutional transformation confronts entrenched inequities, resource limitations, and the pressures of global competitiveness.

As DUT reimagines its role within society, we are called upon to navigate complex ethical terrains, bridge the digital divide, deepen inclusion, and address the uneven landscapes of postgraduate access and academic mentorship. These are not peripheral concerns but defining challenges of our time. Yet, with every challenge, new possibilities emerge—for collective inquiry, principled leadership, and scholarly work that responds to both historical injustice and the contemporary imbroglia facing our nation, including gender-based violence, endemic crime, systemic corruption, and uneven service delivery, particularly in critical areas such as water—a life-saving necessity—and electricity—an economic enabler.

The journey ahead demands critical imagination, institutional agility, and a shared responsibility across the university and its partners. Only through our collective action can we effectively address these challenges. Our collective responsibility is to move intentionally, not for prestige, but for purpose. Not for compliance but for contribution. Not just to be counted but to count. The future belongs to the sceptics of the status quo, who side with the marginalised and those who speak truth to power.

**"The future belongs to the sceptics of the status quo, who side with the marginalised and those who speak truth to power."**





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