NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

2024 RESEARCH AND INNOVATION MATTERS

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WELCOME

NUST RESEARCH REPORT

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Special Acknowledgment:

The Editors would like to acknowledge the assistance and support of all those who contributed to the Research Report.

NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY

Directorate of Research, Innovation and Partnerships (DRIP)

C/O Brahms and Beethoven Streets

W: https://www.nust.na/dvc-rip

Researcher Development Framework (RDF)

Research Skills and Technique

Personal and Professional Effectiveness

Knowledge Transfer and Innovation

FOSTERING STRATEGIC PARTNERSHIPS WITH INDUSTRY, COMMUNITIES, AND GLOBAL NETWORKS.

Support institutional research development, while fostering strategic partnerships

Strengthening Research and Innovation

Established in 2018, the Directorate of Research, Innovation and Partnerships (DRIP) was formed to accelerate NUST's research and innovation agenda. It plays a pivotal role in securing external funding to support institutional research development, while fostering strategic partnerships with industry, communities, and global networks.

These collaborations enable postgraduate development, applied research, and technology transfer.

DRIP emerged from the merger of key entities Project Service Unit (PSU), Innovation Design Lab (IDL), Namibia Business Innovation Institute (NBII) and Fabrication (FabLab), and now operates through three realigned units: Research Services, Research and Postgraduate Development, and the Technology, Innovation and Entrepreneurship.

Vice-Chancellor's Overview

CONSOLIDATING IMPACTFUL RESEARCH AND INNOVATION

The year 2024 marked a period of consolidating impact, our research and innovation efforts not only expanded in volume but, more importantly, deepened in societal relevance. Building on the previous theme of human centric innovation and sustainability, NUST placed people and the planet at the core of its R&D agenda. This meant aligning projects closely with Namibia's development needs and the UN Sustainable Development Goals (SDGs), from cutting edge renewable energy research to community driven health and education initiatives. One outcome of this focus was NUST's debut in the Times Higher Education (THE) Impact Rankings, a powerful testament to our rising influence and unwavering commitment to the SDGs. We take pride in being the only Namibian university ranked for global SDG *impact*, reflecting our dedication to solving real world challenges.

Equally significant in 2024 was the strengthening of a collaborative ecosystem driven by technology and innovation. Long term partnerships forged in recent years bore fruit industry and international collaborations moved beyond traditional interactions into co-creation of solutions, technology transfer, and innovation incubation. Our researchers developed future facing solutions in fields such as renewable energy, digital transformation, artificial intelligence, and sustainable development. These efforts are cementing NUST's reputation as a hub of talent and expertise recognised by stakeholders locally and globally. As Vice-Chancellor, I am proud to note that this publication remains people centred, showcasing the innovation driven by our campus community from early career to established researchers, and underscoring NUST's role as a catalyst for development. Together, we are translating knowledge into impact and steering Namibia toward a more sustainable and prosperous future.

Our researchers developed future facing solutions in fields such as renewable energy, digital transformation, artificial intelligence, and sustainable development.

Prof Erold Naomab
Vice-Chancellor

Research Themes

ONE

Water energy food nexus

An integrated approach recognising the interdependence of water, energy, and food systems for sustainable development.

THREE

Health and climate change

Climate impacts health outcomes and strengthening adaptive healthcare responses.

FIVE

Natural resources and value chain steward-ship

Sustainable management of resources across production, processing, and distribution systems.

TWO

Green transport and logistics

Sustainable mobility, low emission logistics, and efficient transport systems.

FOUR

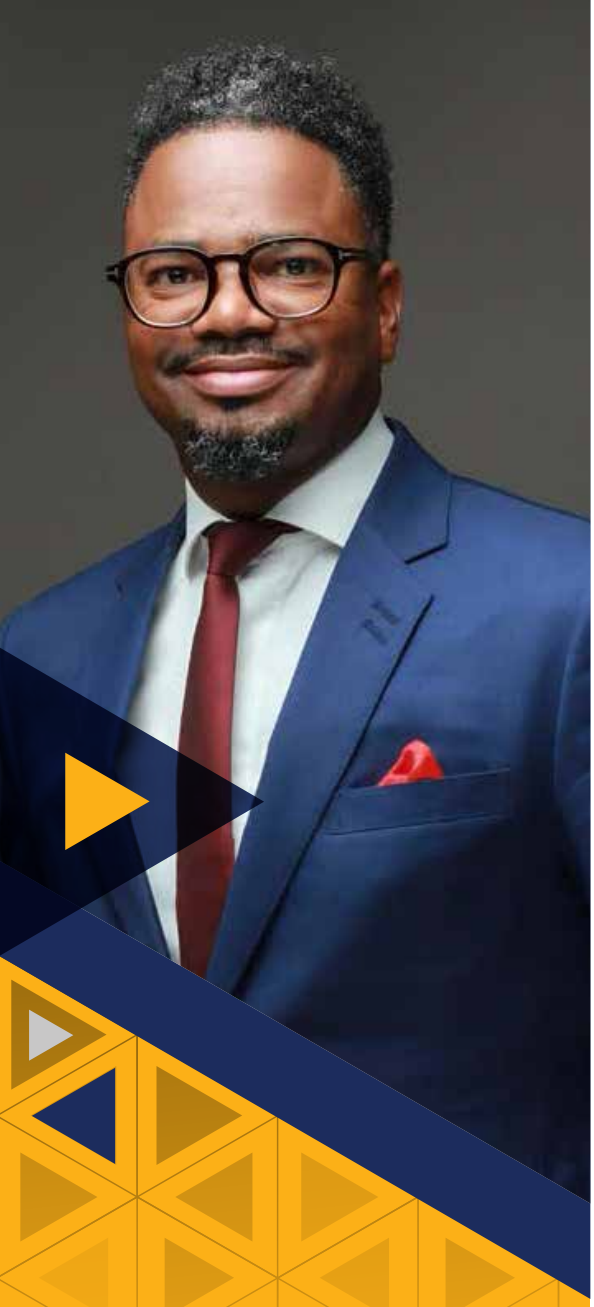
Digital humanities

How digital tools and methods enhance the study of culture, history, language, and society through computational analysis and collaboration.

SIX

Indigenous knowledge systems and sustainability

Traditional practices and wisdom to promote sustainable development, environmental stewardship, and culturally grounded resilience strategies.



Acting Deputy Vice-Chancellor: Research, Innovation and Partnerships

NUST'S RESEARCH OUTPUT FOR 2024 IS ON A POSITIVE TRAJECTORY

The Namibia University of Science and Technology (NUST) intentionally applies research: it lives in communities, industry and government, and is harnessed to solve pressing social and economic challenges. As engraved on NUST's CREST, "innovate, advance, and prosper", this innovation culture ethos empowers society and continues to shape NUST's agenda.

The Directorate of Research, Innovation and Partnerships (DRIP), is mandated to enable an impactful environment where staff and students thrive through research, technology development and entrepreneurship. Guided by the 2021–2025 Strategic Plan, current priorities include increasing the participation of international staff and students in active research and deepening work within NUST's niche themes. Notably the Food–Energy–Water Nexus a pivotal focus for addressing poverty. Third stream income from consultancy and grants is also on a steady upward trajectory, strengthening the sustainability of research activity.

To accelerate excellence, NUST is re-engineering its research support services and automating reporting. Following the onboarding of ORCID, the University is exploring a front-end system to capture outputs more accurately and reduce administrative burden. Complementing these process improvements is a refreshed incentives framework such as seed funding has supported early studies, postgraduate scholarships, conference attendance and journal publication support. The aim is to enhance quality, originality and visibility, while enabling emerging researchers to gather pilot data that unlocks larger external grants.

Capacity building is central. Full scholarships, aligned to the Council approved Researcher Development Framework, will require beneficiaries to publish with supervisors and complete within the study period. These measures are designed to increase output, particularly

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> The aim is to enhance quality, originality and visibility, while enabling emerging researchers to gather pilot data that unlocks larger external grants.

at doctoral level, and to embed good scholarly practice. In parallel, NUST is formalising editorial guidelines and advancing journal accreditation efforts. The NAWA Journal of Language and Communication, now re-named Namibian Journal of Linguistics, Literature and Communication Studies has already assigned Digital Object Identifiers (DOIs), a key step in strengthening discoverability and citation integrity, while recognising the vital (and often unseen) contributions of reviewers and editors.

NUST is also enhancing evidence based self-assessment and global visibility. Collaboration with Times Higher Education will help the University analyse performance data, refine brand messaging and strengthen international reputation while keeping the core emphasis *on impact for communities, not just league table position*.

Innovation remains the bridge from knowledge to products. The Council's adoption of Science and Technology Parks (Technovation Parks) is creating an ecosystem for R&D driven enterprise, complemented by plans to recruit dedicated research staff across seniority levels. The Lüderitz Research Satellite Campus is poised to anchor the STI ecosystem in southern Namibia, focusing on opportunities in the blue and green economy, including green hydrogen within the Southern Corridor Development Initiative. Together, these moves position NUST to translate ideas into innovations that matter.

Prof Colin Stanley
Acting Deputy Vice-Chancellor:
Research, Innovation and Partnerships

RESEARCH IN NUMBERS

104
Peer-reviewed Publications

85
Conference Proceedings

6
Research Chairs

18,485
Total Student Enrolment

1,104
Masters Enrolment

115
PhD Enrolment

12
Visiting Professors

474
Total Research Output

N$ 32m
Research Income

526
Academic Staff

51
Professors

8
Centres of Excellence

Professors across the Faculties

17% Female

FCI
0 VP | 2 FP | 2 AP

FEBE
0 VP | 0 FP | 0 AP

FHNRAS
3 VP | 2 FP | 0 AP

FCHE
0 VP | 0 FP | 2 AP

83% Male

FCI
0 VP | 2 FP | 4 AP

FEBE
3 VP | 7 FP | 5 AP

FHNRAS
4 VP | 7 FP | 6 AP

FCHE
2 VP | 1 FP | 11 AP

VP Visiting Professors
FP Full Professors
AP Associate Professors

NUST Research Income 2020 - 2024

Growing Research Output

NUST's research productivity continued to strengthen in 2024. The number of scholarly publications has increased, building on the gains from the previous year. The 2024 output shows further growth in high impact journal publications while sustaining robust conference and chapter contributions. This qualitative shift towards more journal papers is aligned with our strategy to emphasise impactful research in reputable journals.

NUST enrolled over 2,300 postgraduate students in 2024, including 115 PhD candidates, nurturing the next generation of scholars. The proportion of academic staff with doctoral qualifications also continued to rise. Across the Faculties, research active staff are ensuring that knowledge creation is an integral part of the university culture. Every Faculty contributed to the year's research outputs notably, the Faculty of Commerce, Human Sciences and Education led with 44 research outputs in 2023 and the Faculty of Engineering and the Built Environment was close behind with 42, a trend which persisted through 2024. This balanced contribution reflects a university wide commitment to inquiry and innovation.

Top 10 NUST Researchers 2024 (by Scopus H-index):

An important measure of research impact is the citation influence of individual researchers. Table 1 below highlights the top NUST affiliated scientists, ranked by their Scopus H-index (a metric of high impact publications) as of the end of 2024. These ten researchers have demonstrated outstanding and sustained scholarly impact in their fields, raising the international profile of NUST.

Table 1: Scopus H-index Top 10 NUST Researchers 2024

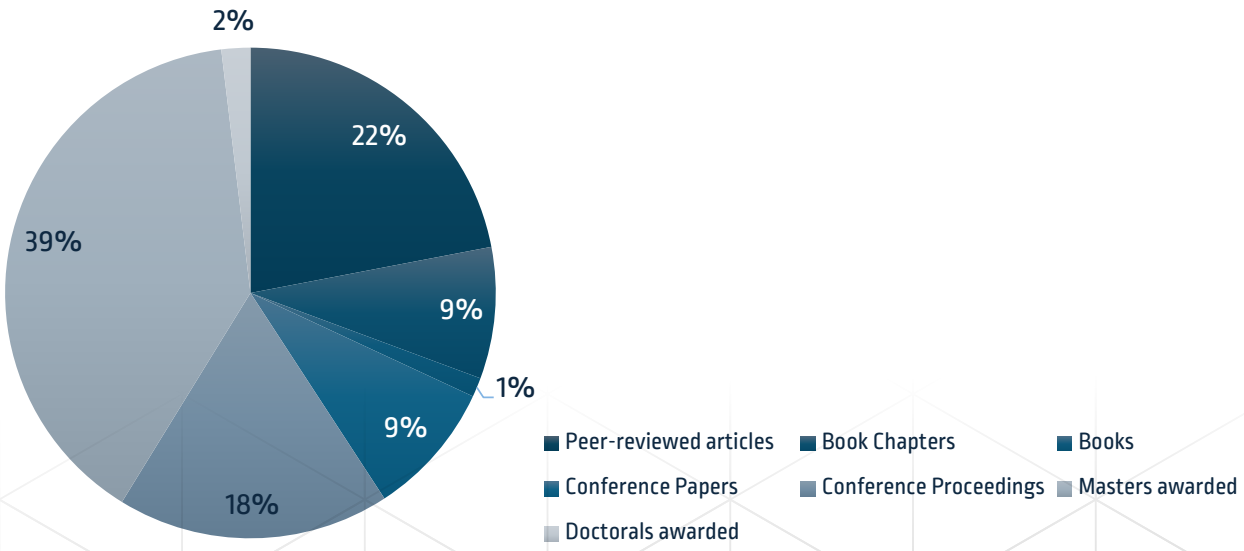
University Rank	Staff name	Scopus H-Index
1	Prof. Diptiranjan Sahu	28
2	Prof. Ben Mapani	23
3	Prof. Uchendu Eugene Chigbu	22
4	Prof. Heike Winschiers-Theophilus	21
5	Prof. Percy Chimwamurombe	15
6	Prof. Adetayo Eegunjobi	15
7	Prof. Michael Mutingi	14
8	Prof. Habauka Kwaambwa	14
9	Prof. Sulaiman Olusegun Atiku	13
10	Prof Neeta Baporikar	13

Postgraduate student enrolment aggregation across the Faculties

	Qualification Type	Females	Males	Total
FCHSE	Postgraduate Diploma	200	92	292
	Master Degree	325	209	534
	Total	**525**	**301**	**826**
FCI	Postgraduate Certificate	21	18	39
	Master Degree	108	98	206
	Doctoral Degree	9	21	30
	Total	**138**	**137**	**275**
FEBE	Master Degree	111	140	251
	Doctoral Degree	17	10	27
	Total	**128**	**150**	**278**
FHNRAS	Master Degree	78	35	113
	Doctoral Degree	36	22	58
	Total	**114**	**57**	**171**
	Grand Total	**905**	**645**	**1550**

Publications across the Faculties

Faculty	Peer-reviewed articles	Book Chapters	Books	Conference Papers	Conference Proceedings	Masters awarded	Doctorals awarded	Technical reports
FCHSE	51	10	2	6	6	101	0	0
FCI	10	8	2	0	53	26	4	0
FEBE	25	16	0	29	17	33	0	1
FHNRAS	18	7	2	7	9	26	5	0
Total	104	41	6	42	85	186	9	1



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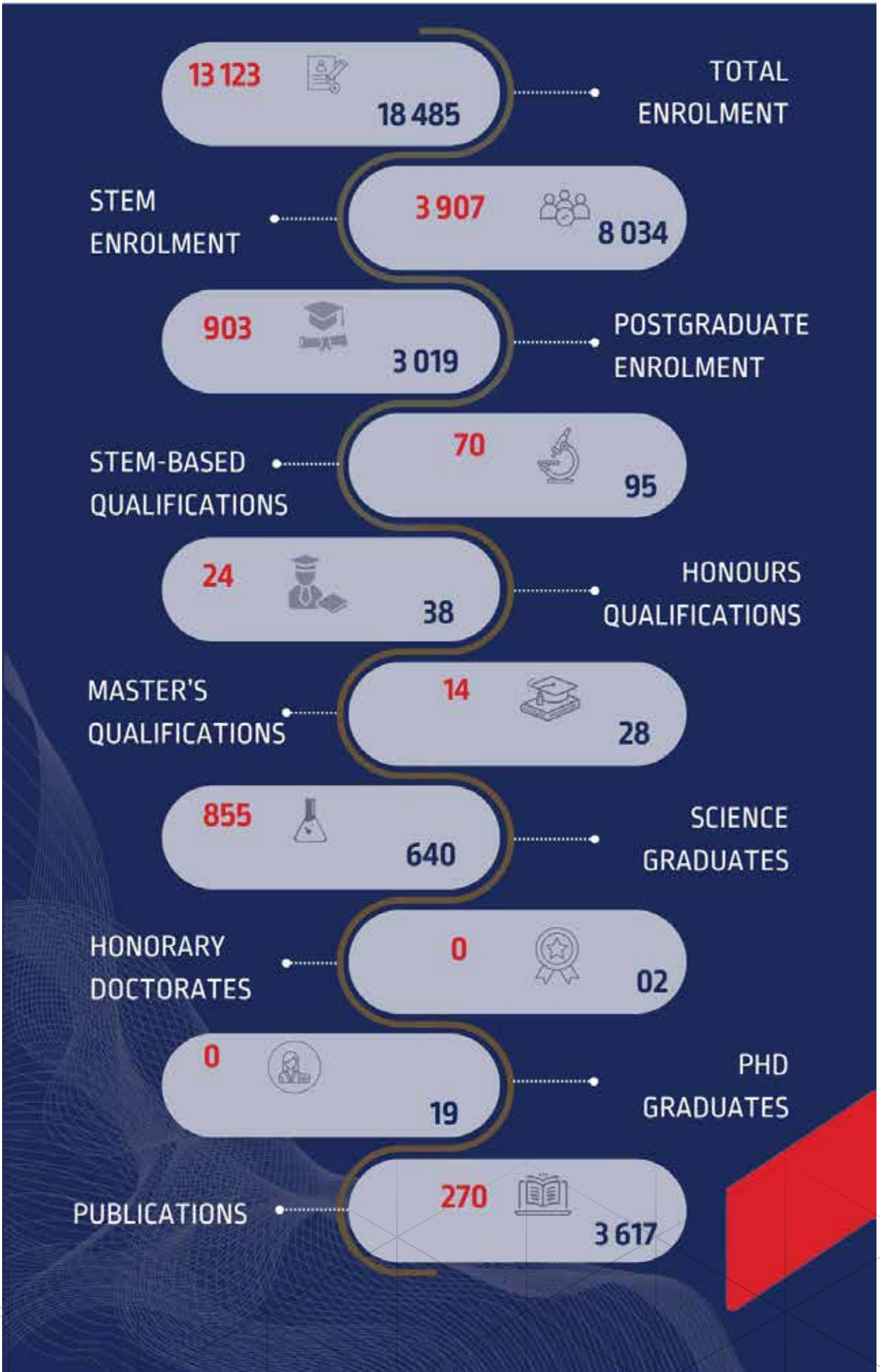
A Decade of Eminence:
Celebrating Education, Science and Technology for Development

Data Legend: 2015 - 2024 (cumulative totals in 10 years)



GLOBAL RECOGNITION THROUGH TIMES HIGHER EDUCATION RANKINGS

In 2024, the Namibia University of Science and Technology (NUST) entered a landmark collaboration with *Times Higher Education* (THE), one of the world's most respected university ranking platforms. This strategic partnership marks a significant step in NUST's journey towards global academic excellence and visibility.

The collaboration serves two key purposes:

- To position NUST among peer institutions in the THE Impact Rankings, which assess universities' contributions to the United Nations Sustainable Development Goals (SDGs), and in the Sub-Saharan Africa University Rankings.
- To leverage institutional research data for critical analysis, enabling NUST to identify areas of strength and opportunities for growth.

Through this partnership, THE also supports NUST in enhancing its research and teaching impact, refining brand messaging, and strengthening its reputation across Namibia, Africa, and the global academic community.

NUST's academic footprint continues to expand, with:

- Over **2,500 publications**
- Nearly **23,000 citations**
- **Top 50% globally across 12 research topics**, up from 11 in 2024

Notably, NUST ranks within the **global top 1000** in key disciplines such as:

- *Entrepreneurship*
- *Information Technology*
- *Management Information Systems*

These achievements reflect the university's growing influence in global scholarship and its commitment to excellence across a diverse range of academic fields.

NUST Marks a New Era in Agricultural Innovation with RUFORUM Membership

The Namibia University of Science and Technology (NUST) has officially joined the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), marking a significant step in advancing agricultural innovation and sustainable development. The announcement was made during the 2nd Triennial RUFORUM Conference held in Namibia, which brought together over 1,000 delegates from across Africa, including policy makers, researchers, and farmer organisations.

RUFORUM is a network of 170 universities across 40 African countries, focused on strengthening agricultural education, research, and innovation. The conference, themed "Operationalising Higher Agricultural Education and Research Ecosystems for Innovation, Industrialisation, and Economic Development in Africa", provided a platform for strategic dialogue and knowledge exchange.

NUST showcased its research capabilities with a presentation titled "Optimising Water Usage in Dryland Agriculture: Innovations and Implications for Namibia", reflecting its commitment to addressing regional challenges through science and technology.

Dr Onesmus Shuungula, Executive Dean of the Faculty of Health, Natural Resources and Applied Sciences, accepted the RUFORUM membership certificate on behalf of Vice-Chancellor Prof Erold Naomab. He emphasised that the membership aligns with NUST's vision to transform agricultural education and research.

This partnership opens new opportunities for collaboration, capacity building, and innovation, positioning NUST as a key contributor to Africa's agricultural development.

NUST VC secures international patent for new material

A ground breaking nanocomposite construction material, patented in Germany by a Namibian led team with Prof Erold Naomab, promises to revolutionise affordable housing in Namibia. The material is weather resistant, flame retardant, and stronger than cement, yet significantly cheaper. Developed over a decade by scientists from Namibia and Germany, the composite uses locally abundant raw materials and meets EU construction standards. It combines alkali silicate water glass, an organic gel former, silica particles, and a biological carrier.

The invention is protected under German patent law, with global WIPO protection pending. Licensing is facilitated by the Leibniz Institute for New Materials. With nearly a million Namibians living in informal settlements due to high construction costs, this innovation could drastically reduce housing expenses and improve living conditions. The patent is publicly accessible via the German Patent and Trade Mark Office website.

NUST thrives on Disruptive Innovation

Preparing the nation for the future

High-Tech Transfer Plaza Select (HTTPS), is the University's technological innovation hub, a dynamic space that fosters collaboration, providing students, industry, and experts with the resources and connections to shape the future of Namibian technology.

Digital Inclusivity through Innovation

The MTC Tech Innovation Bazaar, in partnership with NUST's ICTechHub, showcases cutting edge technologies promoting digital inclusivity and invites investors to support Namibia's growing innovation ecosystem.

Tech4Good: Ideas with Impact

A Namibian team led by Yyeni AI won Huawei's global Tech4Good competition with an AI powered teaching tool. Incubated at NUST's NBII, the project emerged from the student-based Acceleration Inspire Programme.

Experiencing Mining in the Metaverse

Hackathons at NUST have sparked cross disciplinary innovation, with students developing an AR/VR platform that virtually showcases Namdeb's diamond mining process, highlighting technology's transformative potential in real world applications.

Smart Tech for growing Cities

NUST students, in partnership with UNDP, MTC, and the City of Windhoek, used gamification to prototype smart city concepts and gather real time public data on SDG awareness and urban innovation.

NUST Participates in ACEWATER III to Advance Water Security in Africa

NUST is proud to be one of 20 consortium members of the African Centres of Excellence on Water Sciences and Technology (ACEWATER) III project, launched in Nairobi, Kenya, under the AUDA NEPAD Water Centres of Excellence framework. Hosted byIntergovernmental Authority on Development (IGAD), the kick off meeting brought together diverse stakeholders to align research with continental and regional governance priorities.

The event featured dynamic discussions on water resources management, climate resilience, infrastructure, governance, and capacity building. It also highlighted best practices and innovations from across Africa.

NUST will contribute to the Smart WEFE Innovation Model (SWIM), led by Dr Anna Matros Goreses. This research focuses on circular economy, climate resilience, and green hydrogen, aiming to develop technologies and build capacity to address emerging water sector challenges.

A key outcome was the strengthening of collaborative networks to support joint research and resource mobilisation. Stay tuned for updates as NUST helps shape a water secure and resilient future for Africa.

AI Powered Fatigue Detection: A Breakthrough from NUST's First Data Science Graduates

NUST's inaugural Master of Data Science cohort has produced impactful research, notably a fatigue recognition system developed by graduand Samuel Nghidengwa Nakale. Using AI and facial behavioural data such as eye closure and yawning the system accurately detects fatigue levels among workers, with a focus on Namdeb's mining operations.

Supervised by Prof Fungai Bhunu Shava, the project demonstrated superior performance compared to individual machine learning classifiers. This innovation supports workplace safety and aligns with global sustainability goals. The research highlights the programme's success in applying data science to real world challenges and advancing Namibia's research and innovation landscape.

NUST and EU Unveil Green Energy Mural to Inspire a Sustainable Future

In a vibrant celebration of creativity and sustainability, the Namibia University of Science and Technology (NUST), in collaboration with the European Union (EU), unveiled a striking green energy mural at its Windhoek Campus. The mural, created by local artists, serves as a powerful visual representation of Namibia's commitment to green industrialisation and energy transition.

The artwork illustrates three foundational pillars essential to Namibia's sustainable future: skills development, employment creation, and a shared vision for a greener tomorrow. It reflects the values and aspirations of both NUST and the EU, highlighting the role of innovation and creativity in shaping a resilient and inclusive energy landscape.

NUST Acting Vice-Chancellor at the event, Miriam Dikuua, described the mural as a symbol that "brings life to the face of NUST's Main Campus," while EU Ambassador to Namibia, H.E. Ana Beatriz Martins, emphasised its role in inspiring collective action toward Namibia's energy goals.

This initiative also marks over 22 years of collaboration between NUST and the EU, a partnership that has significantly advanced research, infrastructure, and sustainability focused programmes. The mural stands not only as a piece of art but as a beacon of hope and progress, encouraging students, researchers, and the public to engage with the country's green energy ambitions.

As Namibia continues its journey toward a sustainable future, the mural reminds all who pass by that together, through shared values and innovation, the nation's energy transition goals are within reach.

NUST TAKES A STRATEGIC LEAP TOWARDS A SUSTAINABLE FUTURE

NUST has taken a bold and visionary step toward decentralised, inclusive, and sustainable education with the official launch of its southern campus in Lüderitz. This landmark initiative reflects NUST's commitment to expanding access to higher education, promoting regional development, and supporting Namibia's transition to a knowledge based and green economy.

The launch event, held over two days, featured a public lecture, a fundraising gala dinner, and a ribbon cutting ceremony. These activities brought together a diverse group of stakeholders, including government officials, industry leaders, academics, students, and members of the local community.

The public lecture, themed Community Participation, Engagement, and Consultation in Oil and Gas, was sponsored by ReconNamibia and facilitated by Prof Samuel John, a renowned expert in green hydrogen. The session emphasised the importance of building trust and fostering inclusive dialogue with communities as Namibia's energy sector evolves. Youth from Lüderitz actively participated, expressing enthusiasm for the educational opportunities the new campus will offer and their role in shaping the future of sustainable development.

The gala dinner, hosted by media personality Ilke Platt and NUST's AI powered emcee "NUSTia," served as a platform for fundraising and networking. Leaders from various sectors pledged support for campus development and student scholarships. The NUST Foundation continues to welcome contributions to ensure the success and sustainability of this transformative initiative.

NUST Vice-Chancellor Dr Erold Naomab highlighted that the Lüderitz Campus is built on a Science and Technology Park (STP) model an innovation ecosystem designed to foster collaboration between academia, industry, and government. This model, the first of its kind in Namibia, is expected to drive regional economic growth, entrepreneurship, and job creation by integrating research, innovation, and community engagement.

noting Lüderitz's rich cultural and economic heritage and its potential to become a hub for sustainable development. He emphasised the importance of leveraging local strengths to create opportunities for future generations.

The Lüderitz Campus will serve the town and surrounding communities, offering academic programmes and research opportunities tailored to regional needs. It is expected to catalyse a ripple effect of educational empowerment, innovation, and socio-economic transformation.

This strategic expansion reflects NUST's broader vision to decentralise higher education, promote sustainability, and support Namibia's development goals. The Lüderitz Campus stands as a beacon of opportunity, reinforcing NUST's role as a national leader in science, technology, and innovation.

Your Success is Our Success

NUST's research and innovation story is written daily by our Faculties and Centres led with distinction by the Executive Deans and Associate Deans, and enabled by our directors who steward systems, partnerships and platforms across the university. Under the leadership of the Deputy Vice-Chancellor: Research, Innovation and Partnerships , our ecosystem has been purpose-built to translate knowledge into impact: from research services and postgraduate development to technology transfer, entrepreneurship and industry collaboration. This is the value chain that carries ideas from laboratory bench to community, from prototype to policy and enterprise.

We extend heartfelt appreciation to colleagues in every Faculty for growing outputs and recognition, and to unit heads who mobilise resources, convene partners and create space for students and staff to thrive efforts reflected in our strengthening research culture, external visibility and global benchmarking.

At the core of governance, the Institutional Research and Publications Committee (IRPC) a Senate sub-committee provides strategy, policy and budget oversight; advances capacity through scholarships, publication and conference support; and catalyses seed-funded projects that must return as stronger proposals and public value.

Together, our Centres of Excellence (as engines of thematic depth) and the Postgraduate Centre (as the talent pipeline) interlock with Technology Transfer and Entrepreneurship (as the market and societal bridge) to form one continuous, standards-driven pathway for high-quality, ethical and impactful research. In short: when Faculties lead, DRIP enables, IRPC stewards, and CoEs, Postgraduate training and Technology Transfer connect we deliver a complete research-to-impact value chain. Your success is, truly, our success.

Institutional Research and Publications Committee (IRPC)

Faculties

Prof Oluibukun Ajayi

FEBE

Prof Hilma Amwele

FHNRAS

Prof Teresia Kaulihowa

FCHSE

Prof Suama L Hamunyela

FCI

Adminstrative Entities

Dr Anna Matros-Goreses

Wynand Diergaardt

Miriam Dikuua

Judy Grobler

Maria Ugulu

NUST Awards Prestigious Scholarships to Top Postgraduate Researchers

NUST has awarded over N$2 million in Prestigious Research Excellence Scholarships (PRES) to six outstanding postgraduate students, marking a first of its kind investment through the Institutional Research Publications Committee (IRPC). The scholarships aim to support academic excellence while preparing recipients for future roles in teaching, research leadership, and higher degree functions. Funding covers tuition, monthly stipends, conference participation, and publication costs.

Dr Colin Stanley, Acting Deputy Vice-Chancellor: Research, Innovation and Partnerships, emphasised that the scholarships will enable students to focus on impactful research and innovation. Awardees must complete their studies within the designated timeframe to contribute to graduate output.

The recipients are: Peter Kaulyaalalwa (Software Development), Ericky Iipumbu (Cyber Security), Laurica Afrikaner (Hydrogeology), Charlize Rix (Biotechnology), Heino Mangundu (Applied Econometrics), and Menethe Hausiku (Logistics and Supply Chain Management). Laurica Afrikaner expressed gratitude on behalf of the group, thanking NUST for its support.

NUST Researchers Expose Scale of Unwarranted Pre-Trial Detentions

Researchers from NUST have uncovered concerning trends in pre-trial detentions at Windhoek's Wanaheda, Katutura, and Otjomuise police stations. Led by Dr Stefan Schulz, the study analysed 199 police dockets from June to August 2024, revealing that 25% of cases were dismissed due to lack of prima facie evidence, while 43.7% were resolved through admission of guilt fines. These findings suggest that many individuals are detained unnecessarily, raising serious questions about the efficiency and fairness of Namibia's criminal justice system.

Namibia currently records 185 pre-trial detainees per 100,000 people far exceeding the African average of 33.7. The study also examined the psychological toll on police officers, prosecutorial decision making, and broader human rights implications. If extrapolated, the data suggests that nearly 200 individuals could be unlawfully detained in Windhoek each year, potentially exposing the state to legal and financial liabilities.

The research calls for urgent reforms in police procedures and prosecutorial practices to reduce unwarranted detentions and safeguard civil liberties. It also highlights the importance of evidence-based policy and the role of academic institutions like NUST in driving justice sector improvements through rigorous research and public engagement.

NUST Joins Regional Universities to Launch Entrepreneurship Venture Builder

NUST has joined forces with the Technological Higher Education Network South Africa (THENSA) and six other universities to launch the Entrepreneurship Venture Builder (EVB), a transformative initiative aimed at fostering entrepreneurship in Southern Africa.

The EVB supports entrepreneurs from universities of technology, historically disadvantaged institutions, and marginalised communities. It offers expert mentorship through its Mentor in Residence programme, guiding participants from Minimum Viable Product (MVP) to commercialisation.

EVB Manager Prof Michael Twum Darko stated, “We are dedicated to breaking down barriers and creating pathways for entrepreneurs to flourish in the African market.”

Initially hosted at Cape Peninsula University of Technology (CPUT), the EVB will expand across partner institutions including NUST, Durban University of Technology, University of Venda, Tshwane University of Technology, Central University of Technology, and Walter Sisulu University. The initiative is funded by the UK’s Research and Innovation Systems for Africa (RISA) programme.

Paving the way for TVET growth

NUST, in partnership with GIZ, hosted a symposium titled "TVET Transformation Trends in Namibia" to support the growth and reform of Technical and Vocational Education and Training (TVET). The event gathered around 200 participants from government, academia, industry, and training institutions to discuss aligning TVET with Namibia's development goals. Key themes included modernisation, inclusivity, sustainability, and the implementation of the 2021 Revised TVET Policy.

Dr Godfrey Tubaundule from NUST emphasised the need to balance economic goals with long term societal benefits, warning against a narrow focus on labour market demands. He highlighted that many graduates remain unemployed or underprepared for sustainable livelihoods. Mr Abraham Ndakolute from the Ministry of Higher Education acknowledged policy progress but noted challenges in execution and stakeholder engagement.

The symposium also addressed curriculum reform, governance, and the integration of green skills to support Namibia's green hydrogen ambitions. A final report will guide future reforms, aiming to enhance collaboration, accreditation, and the overall credibility of the TVET sector.

NUST Institutional Research Week 2024

Driving Human Centric Innovation for Sustainable Development

The Namibia University of Science and Technology (NUST) hosted its highly anticipated Institutional Research Week (IRW) 2024 from 28 to 30 October, under the theme "Advancing Human Centric Research, Innovation and Sustainability." This annual event served as a vibrant platform for showcasing transformative research, fostering interdisciplinary collaboration, and aligning academic inquiry with Namibia's national development priorities.

Held at NUST's lower campus, the IRW attracted a diverse audience of researchers, students, industry leaders, and policymakers. The opening ceremony set the tone for the week, with Dr Colin Stanley, Acting Deputy Vice-Chancellor, emphasising the critical role of research in building resilient and inclusive societies. He highlighted the importance of innovation that responds to real world challenges and contributes meaningfully to sustainable development.

A keynote address by Prof Anicia Peters, CEO of the National Commission on Research, Science and Technology (NCRST), called for a shift toward community engaged research. She urged scholars to prioritise quality over quantity in their outputs, advocating for research that has tangible societal impact and relevance to local communities.

The event also featured international experts such as Prof Andreas Mogelmose from Aalborg University and Prof Suraj Kothari from Iowa State University. Their presentations on artificial intelligence and aerospace engineering underscored NUST's commitment to global collaboration and the integration of cutting-edge technologies into local contexts. These engagements enriched the dialogue and demonstrated the university's openness to cross border knowledge exchange.

Throughout the week, technical sessions explored a wide range of topics including cybersecurity in health infrastructure, smart agriculture, and indigenous language preservation. Among the standout projects were the Extended Reality Escape Room and Himbaverse, which use

immersive technologies to enhance cultural education and storytelling. These initiatives reflect NUST's innovative approach to blending technology with heritage preservation and experiential learning.

A major milestone during IRW 2024 was the hosting of inaugural professorial lectures by Prof Sulaiman Atiku and Prof Uchendu Eugene Chigbu. Prof Atiku's lecture focused on strategic human resource management in the context of Industry 5.0, emphasising the need for adaptive leadership and workforce transformation. Prof Chigbu's presentation explored land governance and community centered development, highlighting the importance of participatory approaches in shaping sustainable urban and rural futures.

The week culminated in the 2024 Institutional Researcher of the Year Awards, held at the High-Tech Transfer Plaza Select. These awards recognised excellence across three categories: emerging, developing, and established researchers. Honourees included Ms Jennilee Magdalena Kohima, Dr Nikodemus Angula, and Dr Oluibukun Gbenga Ajayi, whose work exemplifies NUST's dedication to nurturing impactful research across disciplines.

Beyond the awards and lectures, IRW 2024 served as a catalyst for dialogue on the future of research in Namibia. It reaffirmed NUST's strategic vision to foster inclusive, interdisciplinary, and globally relevant research. By aligning academic efforts with Namibia's developmental goals and the broader Sustainable Development Goals (SDGs), the university continues to empower researchers to create solutions that address both local and global challenges.

The success of IRW 2024 reflects NUST's growing reputation as a hub for innovation and thought leadership in southern Africa. As the university continues to invest in research infrastructure, talent development, and international partnerships, it is well positioned to lead the charge in shaping a more sustainable and equitable future through science and innovation.

Tradition Meets Technology: Indigenous Leaders Represent Namibia Abroad

For the first time, community elders Mr Uariaike Mbinge and Mr Shorty Kandjengo travelled beyond Africa, flying and presenting their research to an international audience. They were accompanied by Dr. Colin Stanley, Acting Deputy Vice-Chancellor of Research, Innovation and Partnerships, and Ms Selma Auala, Tech Hub Coordinator, as they attended the 2024 International Participatory Design Conference in Malaysia, co-hosted by NUST and the University of Technology Sarawak.

Representing the UNESCO CHAIR on Digital Technology Design with Indigenous People, the elders shared their insights with global IT professionals and stakeholders. Dr. Stanley highlighted the reciprocal empowerment between academia and indigenous communities, recognising the elders as respected researchers. Mr Mbinge, an OmuHimba leader from Otjisa, and Mr Kandjengo, Acting Chief of the !Khuisi Traditional Community, expressed their excitement about the opportunity.

Their participation was funded by UNESCO under the MTC Namibia Indigenous Knowledge Projects, showcasing the value of indigenous perspectives in global innovation dialogues.

Meet AIRA NUST's Latest AI Robot

On 14 November 2024, NUST unveiled the Artificial Intelligence and Robotics Accelerator (AIRA), an advanced robot designed to introduce students to robotics and artificial intelligence (AI). Developed under the University's AI and Robotics Accelerator, AIRA supports learning in Human Computer Interaction (HCI) by performing tasks such as patrolling, recording media, setting reminders, and responding to voice commands. Edward Nepolo, Head of Computer Science, highlighted AIRA's role in helping students understand automation and trust in robotic systems. Honours students and an exchange student from Aalborg University are currently exploring human robot collaboration.

AIRA also aligns with upcoming AI programmes at NUST, which will cover machine learning and data driven decision making. Future upgrades will enable AIRA to tackle campus specific challenges, enhancing her educational and practical value.

NUST, Bank of Namibia Partner Launch AI and Robotics Accelerator

On 5 November 2024, the Namibia University of Science and Technology (NUST), in collaboration with the Bank of Namibia, officially launched the Artificial Intelligence and Robotics Accelerator. Located in the Science and Technology Building, the facility aims to advance Namibia's capabilities in AI and robotics, preparing students for the demands of a digital economy.

Deputy Governor of the Bank of Namibia, Ms Leonie Dunn, highlighted the initiative's potential to inspire innovation and equip young Namibians with future ready skills. The accelerator supports new academic programmes, including Bachelor and Honours degrees in Artificial Intelligence, with specialisations in robotics, cybersecurity, and natural language processing.

NUST Vice-Chancellor Prof Erold Naomab emphasised the lab's role in transforming sectors such as agriculture and healthcare through student led innovation. The facility is equipped with advanced computing systems, robotics kits, and IoT devices, offering a hands on learning environment that fosters interdisciplinary research.

This partnership reflects a shared commitment to national development through technology and education. The accelerator not only enhances academic offerings but also positions NUST as a regional hub for AI and robotics, helping Namibia build a skilled workforce capable of driving digital transformation.

2023 2024

FINANICAL HIGHLIGHTS

The 2024 financial year demonstrated notable progress in strengthening the financial base of research activities at the University. Budget allocations for research-related expenditure reflected a mix of growth and realignment, while actual expenditure trends highlight stronger utilisation of research funds, bursaries, and awards. Overall, financial resources were increasingly channelled towards building research capacity, supporting postgraduate students, and recognising excellence.

	2023		2024	
	INCOME	EXPENDITURE	INCOME	EXPENDITURE
IRPC Funds :				
Research	729,000.00	29,000.00	1,891,510.00	840,454.85
Bursaries	1,750,000.00	-	1,363,490.00	245,223.64
Research Awards	104,000.00	6,139.70	245,000.00	36,400.00
Personnel (salaries, research assistants etc.)	14,154,140.00	7,743,394.91	7,912,619.00	11,528,899.93
Equipment and Infrastructure	153,000.00	-	680,000.00	294,483.00
Travel and Subsistence	1,306,295.00	1,056,306.96	2,245,000.00	2,005,117.72
Conferences and Workshops	412,000.00	310,083.44	363,000.00	444,418.94
Operational Costs (consumables, software, licences, etc.)	4,041,000.00	1,415,407.93	5,258,842.00	4,720,821.33

IRPC FUNDS

In 2024, IRPC funding allocations reflected both significant increases in direct research support and adjustments in bursary funding.

Research: The budget allocation for research rose sharply by 61%, from N$729,000 in 2023 to N$1.89 million in 2024. Actual expenditure increased markedly from N$29,000 in 2023 to N$840,455 in 2024, a 97% growth, demonstrating improved absorption and more effective utilisation of research funds.

Bursaries: Funding allocations decreased by 28%, from N$1.75 million in 2023 to N$1.36 million in 2024. Nevertheless, actual expenditure of N$245,224 in 2024 reflects the successful launch and uptake of bursary support, even though no spending was recorded in 2023.

Research Awards: Budgetary allocations for awards grew by 58%, from N$104,000 in 2023 to N$245,000 in 2024. Actual expenditure increased from N$6,140 to N$36,400, reflecting an 83% growth and showing stronger recognition and support for outstanding researchers.

Personnel and Human Capital

Personnel allocations decreased by 79% (from N$14.15m in 2023 to N$7.91m in 2024), reflecting tighter budgetary ceilings.

Despite this, actual expenditure increased by 33%, from N$7.74m to N$11.53m, indicating higher absorption and investment in salaries, research assistants, and associated costs.

INFRASTRUCTURE AND OPERATIONS

Equipment and Infrastructure: Budget increased by 78% to N$680,000, with N$294,483 spent in 2024 (100% increase compared to no recorded expenditure in 2023).

Operational Costs: Budget allocations increased by 23% to N$5.26m, while actual expenditure rose significantly by 70%, from N$1.42m to N$4.72m, reflecting increased spending on consumables, software, and licenses required to sustain research activities.

MOBILITY AND ENGAGEMENT

Travel and Subsistence: Budget increased by 42% to N$2.25m, and actual expenditure rose by 47%, reaching N$2.01m, showing renewed support for fieldwork and international mobility.

Conferences and Workshops: Budget decreased slightly by 13%, but actual expenditure increased by 30%, from N$310,083 to N$444,419, reflecting strategic participation in fewer but more impactful events.

KEY TAKEAWAYS

Strengthening Research Base: Increased spending on bursaries, personnel, and operational costs highlights a stronger commitment to building research capacity and supporting postgraduate training.

Strategic Reorientation: The phasing out of traditional researcher awards in favour of emerging researcher recognition reflects an institutional pivot towards nurturing early-career talent.

Improved Utilisation: Categories that previously saw low absorption, such as research funding and equipment, demonstrated higher spending in 2024, showing better alignment between allocations and execution.

COMPLIANCE AND GOVERNANCE

1. **Audits:**
   - EU funded project, STEAMBIO, came to a close at the end of October 2024. The financial spending of the project underwent external verification, and no ineligible costs were identified
   - Austrian Agency Funded funded project, Soltrain+, underwent an external verification on financial spending for 2023, and no ineligible costs were identified

NUST is poised to lead Namibia and the region into a new phase of research excellence and impact.

Reflection by the Executive Director

FROM PARIS TO NUST: INNOVATION RINGS ECHO OLYMPIC SPIRIT.

The 2024 Olympics in Paris set a global tone of excellence, unity, and inspiration that resonated far beyond sport. For us at NUST, it provided a fitting metaphor for our own journey of research and innovation. Just as athletes pushed boundaries on the world stage, we too sought to consolidate and align our efforts ensuring that our outputs increasingly spoke to national priorities while also gaining global recognition. The focus on human-centric innovation and sustainability sharpened our ability to demonstrate relevance not only in publications, but in tangible outcomes through patents, new technologies, and international partnerships. The inaugural DRIP Olympics carried forward the spirit of Paris, offering a symbolic celebration of our team spirit and resilience. Just as the Olympic rings represent unity in diversity, our five adapted rings represent Agility, Impact, Collaboration, Inspiration, and Innovation. These elements are central to how we envision research and innovation at NUST dynamic, inclusive, and impactful. The DRIP Olympics were not only a moment of fun and camaraderie but also a powerful reminder that advancing science and innovation is, at its core, a collective effort requiring the best of each of us.

Looking ahead to 2025, the momentum demands that we move further into an era where artificial intelligence (AI) and automation underpin research management itself. The automation of research information management systems will be central to reducing administrative burden, improving data accuracy, and giving decision-makers real-time insight into our institutional impact. In parallel, stronger alignment with early-career researcher capacity development will ensure that the next generation of scholars are equipped not just to publish, but to innovate intentionally, developing products and services that respond to societal needs.

The Technology Transfer Office (TTO) has made strides in awareness and partnership building, yet our next step is to cultivate a culture where innovation is not an event but a sustained process. Product development

Dr Anna Matros-Goreses
Executive Director: Research, Innovation and Partnerships

timelines are longer and more complex than hackathons or proof-of-concept pilots. As such, our emphasis must shift toward embedding innovation culture institution-wide, where every research project is viewed through a lens of application, sustainability, and eventual impact.

Encouragingly, industry partnerships expanded significantly in 2024, giving us a stronger base for 2025. But our challenge now is to channel these collaborations toward sustained product development pipelines, creating pathways that extend from laboratory to market, from idea to enterprise. By anchoring our research and innovation ecosystem in AI-enabled systems, intentional researcher development, and a culture of innovation beyond events, NUST is poised to lead Namibia and the region into a new phase of research excellence and impact.

Directorate of Research, Innovation and Partnerships (DRIP)

Olympics 2024

2024 RESEARCH AND INNOVATION MATTERS