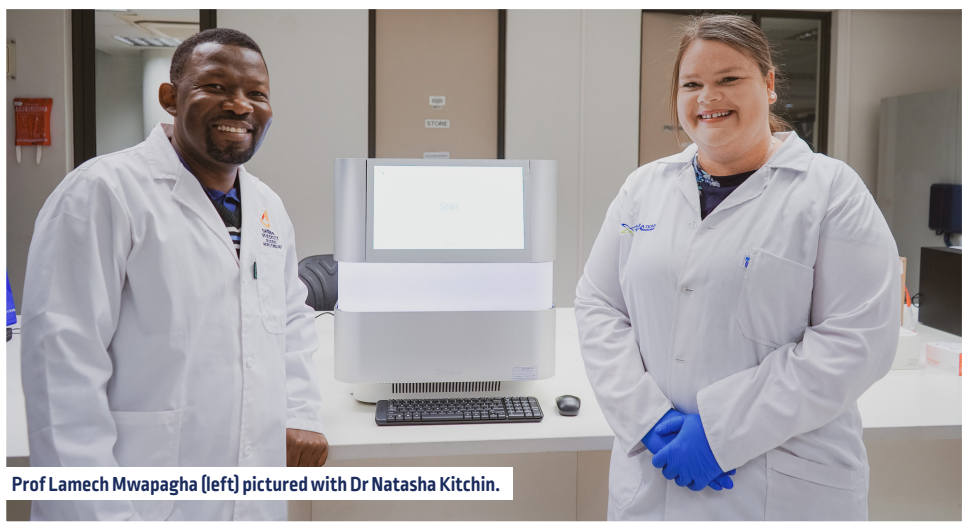


NUST Unveils Namibia's First Genome Sequencing Platform

A new chapter in Namibia's scientific journey has begun with the arrival of the country's first high-throughput genome sequencing platform at the Namibia University of Science and Technology (NUST). The state-of-the-art Illumina NextSeq 2000 will enable researchers to analyse DNA locally, reducing the need to send samples overseas while strengthening Namibia's capacity for scientific research, innovation and healthcare. The milestone reinforces NUST's commitment to building world-class research infrastructure and advancing solutions to national and global challenges.



Prof Lamech Mwapagha (left) pictured with Dr Natasha Kitchin.

"Having the country's first high-throughput Next-Generation Sequencing (NGS) platform represents a defining moment for scientific research in Namibia," said Prof Lamech M. Mwapagha, Associate Professor of Medical Biochemistry. "We now have the capacity to conduct advanced genomic sequencing locally, enabling our researchers to generate high-quality data within the country while reducing dependence on international facilities," he elaborated.

Transforming Genomic Research in Namibia

NGS has transformed biological and biomedical research by enabling rapid, high-throughput analysis of DNA and RNA. Its applications span human health, infectious disease surveillance, cancer research, antimicrobial resistance monitoring, agriculture, biodiversity conservation and environmental genomics.

By bringing this technology to Namibia, NUST is creating new opportunities for locally driven scientific discovery and innovation. The successful sequencing of the first Namibian human whole genomes entirely within Namibia marks a defining milestone in the country's scientific history. For the first time, Namibia has demonstrated the capability to perform high-quality human whole-genome sequencing locally, laying

the foundation for precision medicine and population genomics.

According to Mwapagha, locally generated genomic data will improve understanding of the genetic diversity of Namibian populations, enable the identification of population-specific disease-associated variants, and support the development of diagnostics, therapeutics, and preventive healthcare strategies tailored to local needs. "It also positions Namibia to contribute valuable African genomic data to global research efforts, helping address the longstanding underrepresentation of African populations in international genomic databases," he added.

Building Local Expertise

To ensure the successful implementation of the platform, Illumina specialists from Separations South Africa recently conducted comprehensive technical training for NUST staff and postgraduate students. Led by Senior Applications Specialist: Molecular, Dr Natasha Kitchin, the programme combined theory with practical sessions covering the complete sequencing workflow, including sample preparation, library construction, instrument operation, quality assurance, sequencing performance monitoring and primary data analysis.

Built on Illumina's internationally recognised Sequencing by Synthesis (SBS) technology, the NextSeq 2000 supports a wide range of applications, including whole genome and exome sequencing, RNA sequencing, cancer and pathogen genomics, microbiome analysis, population genomics and genomics, and biodiversity research. Its scalable design allows researchers to undertake projects ranging from small laboratory studies to large population-scale investigations.



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NUST Deepens China Collaboration for Agricultural Innovation



NUST delegates pictured at the China-Namibia Education and Innovation Cooperation Seminar.

NUST has strengthened its international footprint following its participation in Namibia's high-level State Visit to the People's Republic of China, opening new opportunities for strategic partnerships in higher education, research, innovation, agriculture and technology.

Led by Acting Vice-Chancellor, Prof Andrew Niikondo, the NUST delegation joined the national delegation accompanying Her Excellency Dr Netumbo Nandi-Ndaitwah, President of the Republic of Namibia, during the official visit to China. The mission formed part of Namibia's broader strategy to



deepen bilateral relations with China while promoting trade, investment, education and skills development. The delegation visited Shanghai, Shenzhen, Chengdu and Beijing, where it engaged government institutions, universities, research organisations, technology companies and potential in-

vestors. A key priority for NUST was the promotion of the proposed Otavi Agricultural Campus, an initiative designed to strengthen Namibia's agricultural sector through research, innovation and agro-processing.

Unlike traditional agricultural institutions that focus primarily on farming practices, the Otavi campus aims to bridge agriculture and industry by promoting value addition, food processing, mechanisation and entrepreneurship. The initiative aligns with Namibia's Vision 2030 and national aspirations to industrialise agricultural production, improve food security and create sustainable employment opportunities.



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Recruiting Tomorrow's NUSTodians in Lüderitz

The NUST Lüderitz Campus welcomed prospective students during a series of recruitment engagements aimed at introducing learners to the University's diverse academic offerings, admission requirements and career opportunities. Through these interactions, the Recruitment Team empowered future students with the information needed to make informed decisions about their higher education journey, reaffirming NUST's commitment to making quality education accessible across Namibia.

