



**NANYANG  
TECHNOLOGICAL  
UNIVERSITY**  
SINGAPORE

# NTU

ADVANCEMENT  
**INDUSTRY**  
LIFELONG LEARNING POLICY  
**CHANGE**  
INTERDISCIPLINARY  
**EDUCATION**  
SUSTAINABILITY  
**DIGITAL  
TECHNOLOGY**

WORLD  
COMMUNITY  
FUTURE  
**ONENTU**  
GROWTH  
**CULTURE**  
CREATE  
**VISION**

SMART CAMPUS  
VALUES  
**IMPACT**  
TRANSLATIONAL  
**RESEARCH**  
TALENT  
COLLABORATION  
**INNOVATION**

ENTREPRENEURISM  
TRANSFORMATION  
**PILLARS**  
PARTNERSHIPS  
COMMERCIALISATION  
EXCELLENCE  
AMBITIONS  
**GRAND  
CHALLENGES**  
QUALITY  
INITIATIVES  
SOLUTIONS  
FOCUS  
**ECONOMY**  
CAPABILITIES  
GRADUATES

# MESSAGE FROM NTU PRESIDENT



**U**niversities have long played a pivotal role in creating new knowledge, advancing the frontiers of human intellect, fostering innovation to produce economic value, and addressing societal needs and challenges. Consequently, they serve as catalysts in the preparation of future workforce and leadership of communities, organisations and countries to improve lives and livelihoods. The COVID-19 pandemic has reinforced the role of universities in providing critically needed and timely information, scientific knowhow, and support to policymakers and governments.

Judging by the historical time constants of evolution and yardsticks of impact of universities, NTU has emerged as one of the leading universities in the world, in the relatively short time span of only several decades. This rapid ascent stems from the broad recognition that the core activities of NTU have had a demonstrable influence in advancing knowledge, talent pool and cutting-edge technologies that benefit national priorities and the global scientific and innovation ecosystem. Current and former members of the entire NTU community deserve significant credit and our gratitude for nurturing and shaping a young university. NTU's current momentum and agility position the University well to set an ambitious agenda for the next stage of significant growth and impact through our five-year strategic plan, NTU 2025.

Success in our NTU 2025 efforts requires ensuring uniformity of excellence, fostering interdisciplinary collaborations, and creating impactful innovation to benefit society. As a publicly funded institution, NTU has an obligation to play an important role in helping to address national and regional priorities. As an internationally acclaimed university, NTU has an opportunity and a platform, and indeed a responsibility, to help address global challenges. In this effort, NTU's unique strengths will serve as catalysts for discoveries, discussion and discourse that seamlessly span a wide spectrum of disciplines including engineering, natural sciences, humanities, arts, social sciences, business, medicine, and policy.

The NTU 2025 Strategy, or simply **NTU 2025**, is the culmination of a year-long effort to design a plan that will shape the evolution of the University over the next

five years. This effort benefited from strong engagement and input from every part of the university community, from faculty and staff across all academic and administrative domains, and from the Board of Trustees to student leaders to many alumni. It also benefited significantly from the tireless efforts of colleagues who were members of the NTU 2025 Strategy Task Force. I express my profound gratitude to all of them.

NTU 2025 builds on the University's unique intellectual assets while articulating our bold ambitions and goals for significantly enhancing and deploying these strengths. As NTU implements this plan, it will strive to play a key role in supporting Singapore's national R&D priorities outlined in the Research, Innovation and Enterprise 2025 plan, and to address four of humanity's grand challenges. To this end, specific initiatives, pathways, and goals have been established to strengthen NTU's **four core pillars**: education, research, innovation, and community. These activities will be supported through enablers that enhance excellence to achieve NTU 2025 goals: talent, financials and technology.

The plan also specifically calls for action to maximise the potential of NTU in areas covered by the core pillars. We will foster an inclusive and cohesive **OneNTU** community grounded in shared values representing the unique and diverse culture of NTU and where the wellbeing of every member is a priority. This emphasis on building the OneNTU spirit requires practices and processes that ensure commitment to respect, fairness, wellbeing, and equal opportunities for all members. The plan also prioritises our commitment to environmental sustainability and by deploying our beautiful Smart Campus as a living testbed to translate our intellectual strengths into actionable pathways.

Over the next five years, NTU will introduce new initiatives with the goal of providing a deeply transformative experience for our undergraduate students. A carefully designed interdisciplinary core curriculum will be launched later this year to emphasise digital literacy, teamwork, communication skills, and experiential learning. Through this effort, the University will provide greater breadth and depth of intellectual, social, and cultural nourishing that will strive to prepare NTU students for impactful service and global citizenship. The University will also set new standards for recruiting, rewarding, and recognising faculty and staff dedicated to teaching and research who transcend traditional intellectual boundaries. Finally, NTU aims to be at the epicentre of pioneering research, knowledge creation, innovation, and industry engagement by serving as the academic anchor in major new infrastructure projects and ecosystems planned for development around our campuses.

This document is a summary of our ambitious agenda for NTU 2025. I very much look forward to working with our talented and committed community of scholars, students, staff and alumni to bring NTU to new heights in the service of humanity. I invite you all to participate in this extraordinary journey.

**Prof Subra Suresh**  
President, NTU Singapore

## NTU vision

A great global university founded on science and technology, nurturing leaders and creating societal impact through interdisciplinary education and research

### CORE PILLARS

**Education** - to nurture leaders with character, competence and cognitive agility

**Research** - to strengthen deep disciplinary discoveries and high-impact interdisciplinary research

**Innovation** - to translate knowledge into enterprise that benefits industry and society through partnerships

**Community** - to foster a diverse, inclusive and cohesive community

### GOALS

#### EDUCATION

- Future-ready graduates
- Beyond grades
- Research immersion
- Lifelong learning
- Future of education

#### RESEARCH

- Catalyse high-impact research
- Integrate research with learning
- Six clusters

#### INNOVATION

- Enterprising pathways
- Entrepreneurial mindset
- Maximise impact
- Influence policies

#### COMMUNITY

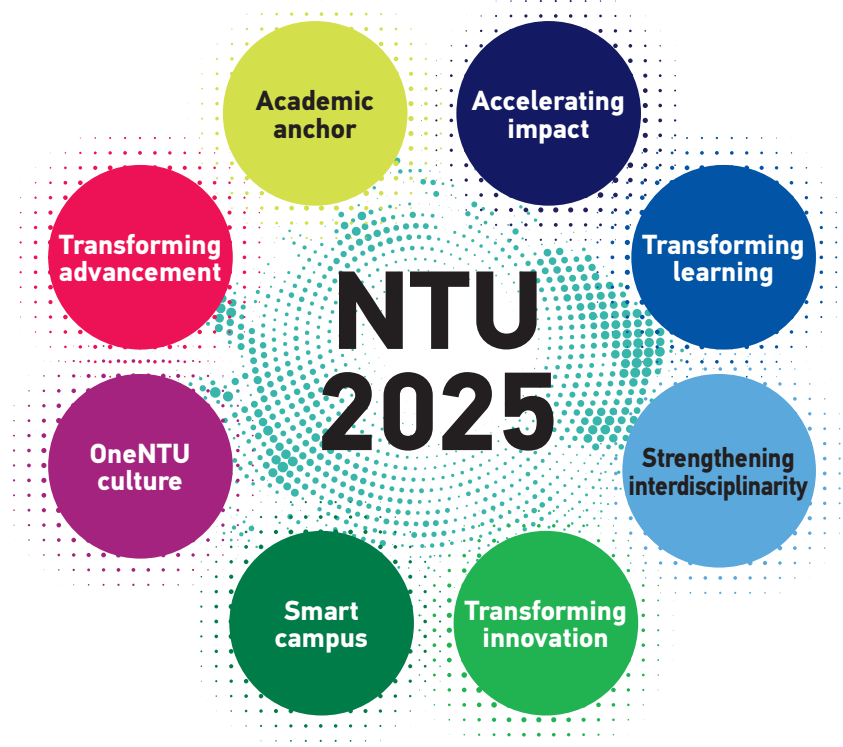
- Wellbeing
- Diversity
- OneNTU

## Addressing humanity's grand challenges

- Mitigating our impact on the environment
- Harnessing the science, art and technology of learning
- Addressing technology's impact on humanity
- Responding to the needs and challenges of healthy living and ageing

## ENABLERS – TALENT, FINANCIALS AND TECHNOLOGY

### EIGHT KEY INITIATIVES DRAWN FROM THE PILLARS



## EDUCATION

*to nurture leaders with character,  
competence and cognitive agility*



**E**ducating and training the next generation of thinkers, innovators, leaders and lifelong learners is central to our mission.

Within this pillar our goals are:

### **Future-ready graduates**

We will equip NTU students with the skills and knowledge necessary to thrive in rapidly changing work and living environments.

### **Beyond grades**

To maximise learning outcomes for students, we will broaden the range of programmes outside of the classroom that offer experiential learning and unique learning opportunities to complement traditional classroom education.

### **Research immersion**

We will integrate research and education activities more closely, giving students increased opportunities to engage in research and creative work in their undergraduate journey.

### **Lifelong learning**

We will help students navigate through the dynamic changes in the workplace and develop a mindset that prepares them for lifelong learning. We aim to become a leading provider of continuing education.

### **Future of education**

We aim to share NTU's unique strengths in educational research, EdTech, science of learning, and pedagogical techniques through strategic collaborations with other institutions.

### **Transforming learning**

NTU will intensify its focus on interdisciplinary approaches across both Education and Research, and expand holistic learning opportunities for students.

- **New interdisciplinary programmes**
- **New learning spaces and models that tap into advances in the science, art and technology of learning**
- **New industry-relevant, modular continuing education course offerings**
- **Synergistic integration of NTU's unique strengths with the unique capabilities of the National Institute of Education (NIE) and the National Institute of Early Childhood Development (NIEC)**

## **Harnessing the science, art and technology of learning**

How can universities best equip learners of the 21st century?

This challenge will draw on approaches to the science, art and technology of learning, including pedagogical research, lifelong learning models, neuroscience, and educator training to benefit learners of all ages.



*to strengthen deep disciplinary discoveries and high-impact interdisciplinary research*



**W**ith NTU's continued rise as a leading research university, its research has evolved to be more collaborative, global and interdisciplinary in nature. We will place greater emphasis on our pursuit of quality and uniformity of excellence in research, while also addressing Singapore's national priorities and some of humanity's grand challenges.

To achieve our research ambition, we will pursue the following goals:

### **Catalyse high-impact research**

We will cultivate an environment that motivates researchers to participate in curiosity-driven and applications-inspired research of deep intellectual value while nurturing strong interdisciplinary collaborations.

### **Integrate research with learning**

We will provide greater opportunities for students to engage in research in their undergraduate programme.

### **Six clusters**

We will focus on these clusters with potential for significant intellectual and societal impact, which are aligned with Singapore's national Research, Innovation and Enterprise 2025 plan:

**Health & Society**

**Culture, Organisations & Society**

**Artificial & Augmented Intelligence**

**Resilient Urbanisation & Natural Ecosystems**

**Future of Industry**

**Brain & Learning**



### Accelerating impact

- Create and nurture unique, world-leading academic and research entities and foster outcomes that address industry and societal needs
- Build cross-college teams and local and global networks to address grand challenges

### Strengthening interdisciplinarity

- Interdisciplinary faculty appointments across Schools and Colleges
- A critical mass of faculty, staff and students in areas of scientific and strategic importance

### Academic anchor

- Develop NTU as the academic and research backbone of a new ecosystem of R&D centres, technology partners, training providers and Factories of the Future in the Jurong Innovation District adjacent to the NTU Smart Campus
- Connect NTU's wide range of intellectual assets in diverse areas including logistics, supply chains, autonomous systems, commerce and maritime studies with the new Tuas Mega Port infrastructure close to the NTU main campus to propel Singapore's role as a major commerce hub
- Enhance NTU's island-wide connectivity with the new Jurong Region Line running through the campus
- Strengthen NTU's Lee Kong Chian School of Medicine as one of the key pillars of HealthCity Novena, a new holistic ecosystem that includes health services, research and education

## Mitigating our impact on the environment



How do we better understand, articulate and address humanity's impact on the environment through the interplay of technology, policy and human behaviour? How can we best do this in partnership with other academic institutions, industry, public agencies, and non-profit organisations?

This grand challenge addressing our relationship with the environment will bring together approaches that examine areas such as ecosystem resilience, food and water security, climate science, energy science, sociology, human behavioural science, business, biotechnology, pandemics, and global trade.

## INNOVATION

*to translate knowledge into enterprise that benefits industry and society through partnerships*



**F**ollowing the successful stock market listing of Nanofilm Technologies International in 2020 that made it the largest company yet built on IP created at NTU, the Innovation pillar is aimed at significantly expanding NTU's impact on industry and society, by translating inventions and creativity into outcomes that enhance economic benefits and quality of life. We will support:

### **Enterprising pathways**

We will accelerate the translation and commercialisation processes by assisting faculty and students with the right tools, resources and knowhow.

### **Entrepreneurial mindset**

We will support students, faculty and researchers seeking to enhance the outcomes of their scholarly work through entrepreneurial activities.

### **Maximise impact**

To become a regional hub for the sourcing of knowledge, capabilities and partnerships, we will develop a network of partnerships.

### **Influence policies**

We will actively contribute to and shape the development of public policy and public sector initiatives drawing upon our research and education expertise, through increasing community engagement, and in collaboration with public agencies and industry partners.



## Smart campus

The NTU Smart Campus initiative will encompass targeted efforts to promote sustainability and the use of the NTU campus as a testbed to demonstrate how innovative digital and tech-enabled solutions can support better learning and living experiences for members of our community:

- Support efforts for on-campus testbedding projects in areas including innovative green energy, lower carbon footprint and waste management technologies
- Convert all NTU buildings to Greenmark Platinum certification
- Undertake clean energy and autonomous vehicle development and pilot projects both on and off campus
- Set an ambitious target of halving our net energy utilisation, water usage, and waste generation each by March 2026, compared to the levels of 2011
- Encourage the use of digital technologies to improve working, learning and living experiences on campus



## Transforming innovation

NTU aims to bring about a step-change in its innovation and entrepreneurship culture and ecosystem through:

- New ways to support Small and Medium Enterprises (SMEs) through technology transfer
- Creating specialised training for entrepreneurship at NTU
- Developing policies and practices that make it easier for interested faculty to translate research into commercial ventures
- Growing visibility of entrepreneurship on campus
- Creating and growing a seamless network of NTU's global industry partnerships with companies

## Addressing technology's impact on humanity



How will humans, the workforce, and society respond to rapid changes in technology?

To examine technology and its relationship with humanity and society, focus areas for this grand challenge will encompass academic and intellectual disciplines catalysing Industry 4.0, business and commerce, public policy, as well as the humanities and social sciences.

## to foster a diverse, inclusive and cohesive community



To continue its climb as a great global university based in Singapore, NTU must be a community that is open and welcoming to all individuals and one that provides its members a safe environment and equal opportunities for learning and working.

Three goals are set for this core pillar:

### Community wellbeing

We will strengthen our efforts to build a community that strives to ensure the wellbeing and quality of life and work for all its members.

### Diversity

As a highly diverse and cosmopolitan community, NTU is committed to treating all its members with respect, fairness and equal opportunity.

### OneNTU

We will nurture a strong OneNTU spirit grounded in a set of core values shared by our community.



This initiative will engage widely within the NTU community to develop and nurture the OneNTU spirit.

- Nurture shared values
- Engage key stakeholders including alumni
- Undertake longitudinal surveys to gauge and improve employee and student engagement



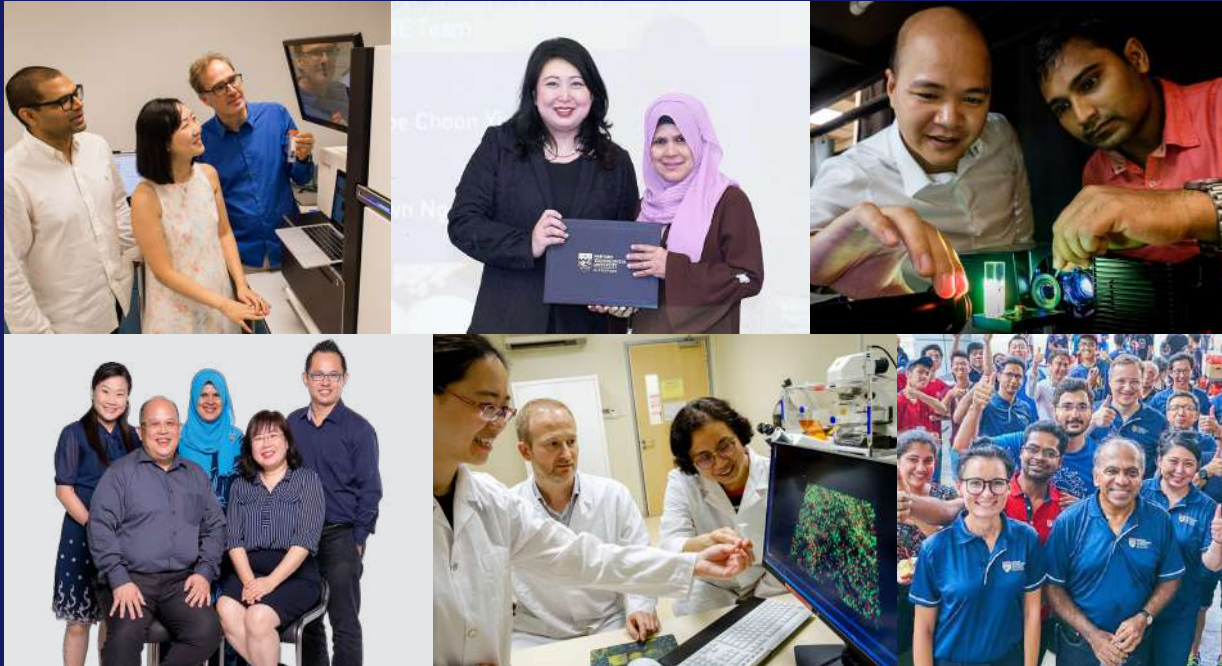
This initiative focuses on the engagement of the University's alumni, partners, industry collaborators, foundations and other stakeholders to strengthen the efforts of university advancement.

### Responding to the needs and challenges of healthy living and ageing

How will the needs of a rapidly ageing society evolve and be addressed?

Disciplines that will address healthy living and ageing at NTU include healthcare, natural sciences, engineering, social sciences, humanities, business, and health sciences.





# Enablers

Enhancing excellence to achieve NTU 2025 goals

## Talent

*A mission-led and high-performing organisation*

Attract top talent

Foster an engaged, high performing workforce

## Financials

*Diversified revenue streams and efficiency across the University*

Financial responsibility, accountability and effectiveness

## Technology

*Enabling technologies to power innovation and growth*

Next-generation digital infrastructure and a collaborative digital workplace

Technology to transform teaching and learning

Agile and future-ready administration and workforce

Secure and cyber-resilient university systems to enhance productivity and creativity

# ON THE HORIZON



NTU will be at the epicentre of knowledge creation, innovation and industry engagement in the Jurong Innovation District and the new Tuas Mega Port, which is in close proximity.

Photo: JTC



The upcoming Jurong Region Line will have 3 MRT stations located within the NTU Smart Campus, providing much easier connections to the rest of the city state.



Photo: JTC



NTU's Lee Kong Chian School of Medicine is one of the pillars of HealthCity Novena, a new holistic ecosystem that includes health services, research and education, as well as commercial, leisure and public spaces.

Photo: Tan Tock Seng Hospital

