



NEWS RELEASE

Singapore, 13 September 2023

NTU Singapore to launch Climate Transformation Programme led by the Earth Observatory of Singapore, a S\$50 million interdisciplinary climate research programme

Nanyang Technological University, Singapore (NTU Singapore) is launching a S\$50 million interdisciplinary climate research programme, the **Climate Transformation Programme (CTP)**, to investigate climate change.

The new initiative was announced today at NTU's **Earth Observatory of Singapore (EOS)** 15th Anniversary Celebration at Shangri-La Rasa Sentosa, which was attended by Minister for Sustainability and the Environment, Ms Grace Fu.

Hosted by EOS and funded by Singapore's Ministry of Education, CTP's mission is to develop, inspire and accelerate knowledge-based solutions, and to educate future leaders to establish the stable climate and environment necessary for a resilient and sustainable Southeast Asia.

CTP will be the first research programme to bring together researchers across many different disciplines at NTU, other local autonomous universities such as the National University of Singapore, Singapore Management University and Singapore University of Technology and Design, and research centres across the globe.

Its unique offering as an interdisciplinary research programme allows scientists to coordinate, collaborate, and draw on each other's research expertise for mutual benefits. It also has an ambitious stakeholder engagement plan through which researchers will work collaboratively with government agencies, industry partners and communities to provide opportunities for cross-sector participation and to translate the research and solutions for each group.

This programme is supported by a S\$50 million investment over seven years, with S\$47 million from the Ministry of Education and the remaining amount from NTU.

Professor Benjamin Horton, Lead Principal Investigator of CTP, and Director, EOS, said, "The impacts of climate change are interconnected, yet they are unevenly

distributed globally and primarily affect the most vulnerable populations, such as the many developing countries in Southeast Asia. The Climate Transformation Programme led by the Earth Observatory of Singapore can contribute uniquely by building solutions to secure the region against this existential threat in the coming decades”.

CTP comes amid a time of climate emergency. The first comprehensive stocktake by the United Nations shows that the world is not on track to meet the climate goals under the Paris Agreement, and it has urged countries to take more ambitious action to cut emissions or risk broad and serious consequences for humans, ecosystems, and economies.

Professor Luke Ong, Distinguished University Professor and Vice President (Research), NTU, said, “This new research programme leverages NTU’s strong interdisciplinary approach in pedagogy and research to address climate change, the most pressing challenge of our time. It builds on NTU’s strengths in climate and Earth science, AI, and more, and is aligned with the research pillar of **NTU 2025**, the University’s five-year strategic plan which aims to use innovative research to mitigate human impact on the environment.”

CTP will conduct research activities in Singapore and Southeast Asia under **six strategic clusters**. Each cluster is interdisciplinary, linked by **three cross-cutting themes**. They are as follows:

- 1) **Climate processes and extremes**: Address key knowledge gaps in the understanding and modelling of climate change. An example is extreme weather events like heatwave and the consequential wildfires.
- 2) **Climate and biodiversity**: Examine how biodiversity respond to climate change, for instance, the tipping points beyond which species extinction occurs.
- 3) **Climate mitigation**: Investigate negative emissions pathways that are an essential part of the net zero transition. For example, tree planting for carbon sequestration.
- 4) **Novel engineering solutions for climate impacts**: Focus on urban flood risk and develop innovative construction methods for climate adaptation.
- 5) **Climate and finance markets**: Concentrate on evaluating business risks and new opportunities posed by the impacts of climate change. For instance, pricing the climate risk exposure of various financial assets.
- 6) **Climate and human health**: Explore effects of climate change on heat and air pollution exposures, and the resultant impacts on human physical and mental health.

Three cross-cutting themes, namely **sustainable societies**, **satellite remote sensing**, and **artificial intelligence**, will integrate findings across the six clusters, enabling comprehensive research to be conducted by CTP.

An example of interdisciplinary research at CTP is a research project to protect existing trees in the forests of Sumatra, Borneo, and here in Singapore for carbon sequestration and to spur reforestation. In the course of this research, the mitigation cluster works closely with colleagues from:

- (i) The climate processes and extremes cluster – to understand how rainfall affects tree growth in these forests;
- (ii) The climate and biodiversity cluster – to validate the biological processes in the forest;
- (iii) The satellite remote sensing team – to leverage data and analyses using artificial intelligence; and
- (iv) The climate and finance markets cluster – in proposing final solutions for reforestation, some of which involve financing.

Building a home-grown climate expert community

CTP also aims to help develop a pool of new generation of climate leaders across all fields ranging from the sciences to humanities.

To achieve this goal, graduate students will be enrolled into NTU's Interdisciplinary Graduate Programme, where students concentrate on two or more disciplines, instead of one.

CTP is expected to recruit 30 PhD students and close to 45 researchers for its projects over seven years.

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About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore

(NTU Singapore) has 33,000 undergraduate and postgraduate students in the Engineering, Business, Science, Medicine, Humanities, Arts, & Social Sciences, and Graduate colleges.

NTU is also home to world-renowned autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N).

Under the NTU Smart Campus vision, the University harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

Ranked amongst the world's top universities, the University's main campus is also frequently listed among the world's most beautiful. Known for its sustainability, NTU has achieved 100% Green Mark Platinum certification for all its eligible building projects. Apart from its main campus, NTU also has a medical campus in Novena, Singapore's healthcare district.

For more information, visit www.ntu.edu.sg