

NEWS RELEASE

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NTU launches nationwide research initiative to promote lung health

To understand the unique characteristics of lung diseases in Singapore and improve their prevention, treatment and care services, **Nanyang Technological University, Singapore (NTU Singapore)** is launching a nationwide research initiative on lung health.

Existing research and treatment recommendations for lung diseases focus on data from Caucasian populations. Yet, lung diseases affect different ethnicities in different ways.

The Academic Respiratory Initiative for Pulmonary Health (TARIPH), which will be spearheaded by NTU's Lee Kong Chian School of Medicine (LKCMedicine), aims to address this pressing gap in knowledge for the Singaporean population and Asian patients.

The findings from TARIPH could aid policymakers and the healthcare sector in determining strategies and implementation of medical interventions, healthcare delivery and access, health promotion and disease awareness in Singapore, and potentially throughout Asia.

For a start, TARIPH will bring together more than 30 investigators from local and international institutions to generate evidence on how lung diseases present and develop in local patient populations.

The formation of TARIPH was officially announced today at the **2nd International Symposium on Respiratory Research**, hosted by LKCMedicine at its Novena campus.

Professor Lam Khin Yong, NTU Vice President (Research), said, "With our strong track record of successful industry and academic collaborations, NTU is well-placed to lead this new initiative that aims to promote better lung health for Singaporeans. We strive to ensure that what we do has the potential to impact society in a meaningful way. With the dedicated leadership provided by NTU's LKCMedicine in this initiative, and working in tandem with our Singapore and international collaborators across disciplines, I am certain TARIPH will be able to develop new and innovative ways to improve the lung health of Singaporeans."

Professor James Best, Dean of the Lee Kong Chian School of Medicine said, "TARIPH will focus on the full spectrum of research – from bench to bedside and to the population. Its flagship research effort will characterise lung diseases at the molecular level to understand the cause of illness in Asian patients. At the same time, clinical data from hospitals and clinics in Singapore will allow clinician scientists to address pertinent questions that will improve clinical care in the near future."

"With the high burden of lung diseases in Singapore, LKCMedicine is taking the lead in driving respiratory research to deepen our understanding of lung health, improve prevention and develop better treatments for lung diseases, with a focus on the population of Singapore and its region."

An interdisciplinary, international partnership

TARIPH investigators have diverse backgrounds ranging from physiology, engineering to data analytics, epidemiology and clinical medicine.

They are from Singapore's research agencies, hospitals and polyclinics, and international partners such as the University of Newcastle, Australia, Imperial College London, University of British Columbia, Canada, and the Karolinska Institutet, Sweden.

Slated to start this year, **TARIPH's flagship project "Phenotypes of Respiratory Disease"** will detail the characteristics, behaviours and progression of respiratory diseases specific to Singapore.

This will allow medical decisions, practices and interventions to be tailored to Asians and the individual rather than the disease. It will develop new DNA-based tests for common lung infections.

TARIPH will also study the economic and social costs of respiratory disease in Singapore and examine how to improve the ways chronic lung disease patients access care.

There will be other collaborative and interdisciplinary projects under TARIPH, some of which are already underway. (Refer to the Annex for more information on the projects.)

Respiratory disease is a major contributor to disease burden in Singapore, with Chronic Obstructive Pulmonary Disease (COPD) rising in terms of leading causes of death, while asthma has moderate prevalence but high rates of mortality.

With the rapidly ageing population and contributing factors such as environmental pollution, prevalence of respiratory disease could worsen and through research, TARIPH will be best placed to address the challenge ahead.

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About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,500 undergraduate and postgraduate students in the colleges of Engineering, Business, Science, Humanities, Arts, & Social Sciences, and its Interdisciplinary Graduate School. It also has a medical school, the Lee Kong Chian School of Medicine, set up jointly with Imperial College London.

NTU is also home to world-class 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), Energy Research Institute @ NTU (ERI@N).

Ranked 11th in the world, NTU has also been placed the world's top young university for the last four years. The University's main campus is frequently listed among the Top 15 most beautiful university campuses in the world and has 57 Green Mark awards (equivalent to LEED-certified), of which 54 are Green Mark Platinum. NTU also has a campus in Novena, Singapore's medical district.

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

ANNEX**FACT SHEET ON TARIPH PROJECTS****Fungal Profiling of Bronchiectasis**

- This study is led by investigators from LKCMedicine and involves TARIPH members from Tan Tock Seng Hospital, Singapore General Hospital, Changi General Hospital and A*STAR institutes, the Institute of Molecular & Cell

Biology and the Genome Institute of Singapore.

- They have found that the rate of fungal infections underlying bronchiectasis, a disease in which there is permanent enlargement of parts of the airways of the lung, is remarkably high in Asian populations. As well as causing irreversible lung damage, these infections also induce greater allergic responses in Asian patients that need to be treated.
- In addition to setting out localised guidelines that take these factors into consideration, the team is also looking into developing new rapid diagnostics to identify patients early, so that further damage to 'already damaged lungs' can be prevented.

Barriers to accessing care in the community

- Many patients with chronic lung diseases, such as asthma and chronic obstructive pulmonary disease (COPD), seek help very late, when they are already unwell and need urgent treatment.
- A team of TARIPH collaborators at LKCMedicine and in the polyclinics will study the factors that prevent patients here from seeking help early, and identifying potential touchpoints for meaningful interventions, which will be evaluated through nation-wide clinical trials.

Understanding early Inflammatory, infectious and immune changes in COPD

- This project examines molecular mechanisms of early COPD using a novel cohort of Singaporean smokers at risk of lung function decline and thus COPD.
- The participants are recruited through collaboration with local TARIPH clinicians, primary care leaders and NTU's newly established Centre for Population Health Sciences (CePHas).
- The study aims to identify early signs of COPD to develop new biomarkers and new targets for therapeutic intervention.

[Video on TARIPH](#)