

Imperial Debuts First Foreign Innovation Hub in Singapore

Imperial has opened its first overseas research and innovation centre in Singapore to strengthen collaboration between the UK and Singapore.

Imperial Global: Singapore will see Imperial's scientists working closely with university, industry, government, and third-sector partners in Singapore.

The first research programme taking place at the new centre is a major S\$20million grant in collaboration with Nanyang Technological University, Singapore (NTU Singapore) to improve the security of medical devices and health data. The programme, IN-CYPHER, will leverage Imperial's expertise in this area to establish Singapore as a global leader in health cybersecurity and AI for healthcare as it bolsters research and funding in these emerging areas.

“Imperial Global: Singapore will connect with world-leading science and technology in Singapore and Southeast Asia and open a gateway for stronger collaboration with the UK.” Hugh Brady President of Imperial College London

The centre, which builds on the longstanding [Imperial-NTU Singapore strategic partnership](#), will enable scientists to rapidly scale new scientific breakthroughs and technology to societal benefit and commercialisation in Southeast Asia.

Imperial staff and PhD students will be working in cutting-edge laboratories at the centre alongside partners from Singapore's top universities and institutes. It will foster a wide range of high impact collaborative research projects to tackle major global challenges such as pandemic preparedness, climate, the transition to net zero, and artificial intelligence.

The Singapore-based centre will also enable Imperial to expand activity in the region such as entrepreneurship programmes, startup accelerators, student placements, and programmes aimed at delivering new technology and breakthroughs to benefit society.

“NTU and Imperial College London have a longstanding strategic partnership and a history of successful collaborations.” Professor Luke Ong Distinguished University Professor and Vice President (Research), NTU Singapore

The pioneering research centre will be based at the National Research Foundation Singapore (NRF) Campus for Research Excellence and Technological Enterprise (CREATE). CREATE is an international research campus and innovation hub that hosts interdisciplinary research centres from top global universities and research institutes to work in collaboration with local institutions.

Professor Hugh Brady, President of Imperial said: "We are immensely excited to further boost Imperial's contribution to Singapore's research and innovation ecosystem. Imperial Global: Singapore will connect with world-leading science and technology in Singapore and Southeast Asia and open a gateway for stronger collaboration with the UK. The initial focus on medical device and

health data security could not be more timely given the importance of this area to improving patient outcomes and health system integrity."

Professor Luke Ong, Distinguished University Professor and Vice President (Research), NTU Singapore, said: "NTU and Imperial College London have a longstanding strategic partnership and a history of successful collaborations. This latest initiative leverages NTU's strong interdisciplinary approach in research to address challenges in healthcare and builds on NTU's research strengths in AI, cybersecurity and more. The objectives of this partnership are also aligned with the research pillar of NTU 2025, the University's five-year strategic plan which aims to catalyse high impact research through collaborations."

Professor Subodh Mhaisalkar, Executive Director of Academic Research, National Research Foundation, Singapore, said: "CREATE's collaborative model of partnership encourages multilateral research within Singapore's research, innovation and enterprise ecosystem. We welcome Imperial College London to our international campus and the opportunity to ideate and innovate research solutions for existential challenges for the future."

Professor Mary Ryan, Vice Provost (Research and Enterprise) of Imperial, said: "Joining CREATE will kickstart a pipeline of innovative research and technology between scientists and engineers at Imperial and partners in Singapore. Global challenges such as health, climate and sustainability cannot be tackled by one country alone, we need to collaborate around the world to develop and share ideas and breakthroughs."

A special event at the British High Commissioner's residence in Singapore was held to celebrate the launch of the new centre.

British High Commissioner to Singapore, Kara Owen, said, "In September 2023 our two Prime Ministers committed to work together in science, innovation, research and technology to develop solutions to tackle global challenges and drive economic growth, and to safeguard our future security and bolster economic prosperity. This partnership could not be a better example of what they meant: a long-term partnership commitment, fusing academic and research excellence with the innovation of our private sectors on a critical issue for our people. I offer my warm congratulations and can't wait to see what this collaboration produces".

Protecting the security of medical devices and wearables

The first research project the new centre will focus on is improving the cybersecurity of medical devices.

Academics from Imperial and NTU Singapore have been awarded a four-year S\$20million grant from NRF Singapore to develop better ways to protect implantable active devices, such as pacemakers, and secure the data protection of connected wearables and healthcare systems.

As technology in healthcare improves and more personal data are collected and stored, there have been security concerns about the risks and threats of personal data being stolen or medical devices operation being disrupted by accidental or malicious actors.

Imperial's Professor Anil Anthony Bharath and NTU Singapore's Professor Liu Yang will lead the research programme, called IN-CYPHER, which brings together complementary expertise from Imperial and NTU Singapore to tackle existing security challenges, and to protect emerging sensing technologies – and their data – from being compromised. The team believe that the research will have applications for a range of devices such as continuous glucose monitors, smart electronic skin patches and activity monitors.

Professor Bharath said: "Data and AI offer great potential to improve healthcare around the world, but the rapid adoption of technology brings risks and challenges. As we incorporate more data and technology to reach the era of truly personalised healthcare, we increase both the 'attack surface' for devices, and the risk of leakage of sensitive data. This major grant will bring together expertise and know-how from Imperial and NTU Singapore to explore solutions for these challenges."

Imperial and Singapore

The new centre builds on a history of close collaboration between Imperial College London and Singapore. In 2010, Imperial and NTU Singapore established the Lee Kong Chian School of Medicine (LKCMedicine) – which admitted its first students in 2013.

The two universities also established the virtual NTU-Imperial Health, Sustainability and Technology Hub in 2022, which focuses on collaborative research in fields of scientific research and development that tackle some of the world's most pressing challenges.

Academics from Imperial's School of Public Health are collaborating with Singapore's National Centre for Infectious Diseases on pandemic preparedness and response. Imperial College Business School has set up the Singapore Green Finance Centre with the Singapore Management University, backed by the Monetary Authority of Singapore and leading global financial institutions.

Imperial is proud to currently host more than 350 students from Singapore and to have more than 3,000 alumni who call Singapore home.

Professor Maggie Dallman, Vice President (International) at Imperial said: "Singapore is one of Imperial's most important partners and we continue to deepen these strong academic ties. This new research centre is a significant step in our international collaboration."

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