



## **JOINT NEWS RELEASE**

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### **NTU, NNI and NHG launch Singapore's first brain bank to study neurological disorders**

Nanyang Technological University, Singapore's (NTU Singapore) Lee Kong Chian School of Medicine (LKCMedicine), in partnership with National Healthcare Group (NHG) and National Neuroscience Institute (NNI), is launching Singapore's first brain bank.

Hosted at LKCMedicine, the brain bank aims to be a research repository for brain and spinal cord tissues from donors who have passed away.

Setting up a national brain bank resource for Singapore is a vision shared by researchers and clinicians in the neuroscience community. Conceptualised by a joint team from LKCMedicine, NHG, and NNI, the brain bank will open up new research possibilities that will generate new knowledge of brain diseases.

Named **Brain Bank Singapore**, the joint research centre is co-funded by the three partners.

Tissue donations from both healthy donors and from those with neurodegenerative conditions and neurological disorders will be stored and used for ethically approved research.

This research, which falls under one of LKCMedicine's key research pillars – Neuroscience and Mental Health – will facilitate greater understanding of the underlying mechanisms and symptoms of brain-related illnesses so that more effective treatments and cures can be developed.

**Professor James Best, Dean of NTU LKCMedicine**, said, "Together with our partners, we are already conducting robust research on dementia, as well as collecting baseline population health data from a large cohort of the population. Brain Bank Singapore is an elevated platform on which neuroscientists and clinician scientists can

work together to find solutions that will address debilitating brain diseases in Singapore.”

Heading the Brain Bank Singapore as its Director will be LKCMedicine’s **Professor Richard Reynolds**, who is also Professor of Cellular Neurobiology at Imperial College London, which jointly established LKCMedicine with NTU.

“We now know that genetic background is very important in determining the onset and course of neurodegenerative and neuropsychiatric disorders. It is essential that neuroscientists in Singapore have access to brains from patients with the appropriate genetic and ethnic background,” said Prof Reynolds.

Prof Reynolds has over two decades of expertise as the founding Director of the Multiple Sclerosis and Parkinson’s Tissue Bank, an international brain tissue bank based in London, UK.

Working together with key colleagues from LKCMedicine and his counterparts Dr Adeline Ng, a Consultant Neurologist from NNI, and Dr Jimmy Lee, a Senior Consultant and psychiatrist from the Institute of Mental Health (IMH), Prof Reynolds spearheaded the setting up of Brain Bank Singapore.

NNI under the SingHealth Group, as well as NHG, LKCMedicine’s primary clinical training partner, fit naturally as partners, sharing in the vision for research that transforms patient care and health outcomes.

Both organisations have been treating patients with neurological and neuropsychiatric disorders respectively for Singapore and have successfully completed impactful research studies in both fields.

NHG and its institutions, including IMH and Tan Tock Seng Hospital (TTSH), are integral to this partnership given their clinical experience in treating patients with neurodegenerative and neuropsychiatric conditions. NHG’s shift towards preventive care and population health aligns with Brain Bank Singapore’s worthy endeavour to discover new and improved treatment of neurological conditions in our population.

**Professor Philip Choo, Group CEO of NHG**, said, “Research into neurological conditions such as stroke, Parkinson’s disease and dementia is timely for Singapore as our population continues to age. The National Healthcare Group (NHG) is thus privileged to partner the National Neuroscience Institute and Lee Kong Chian School of Medicine, NTU Singapore, to establish the Brain Bank Singapore (BBS). It is our hope that establishing a robust data bank and conducting safe brain tissue research will expand our understanding of the underlying disease mechanisms of neurological disorders. With BBS, we seek better and more effective treatment strategies.”

With an ageing population – one in four here will turn 65 years old by 2030 – and an increased life expectancy of 84.8 years, age-related neurological disorders are expected to increase, accounting for a growing proportion of Singapore’s disease burden.

According to a report by the Ministry of Health<sup>1</sup>, neurological diseases rose from eighth to the fifth leading cause of Disability-Adjusted Life Years, defined as the years of healthy life lost to premature death and disability.

**Associate Professor Ng Wai Hoe, Medical Director, National Neuroscience Institute**, said, “The impact of neurological diseases can be long and devastating, with patients experiencing neurological disability for many years. With the Brain Bank Singapore, we are one step closer to understanding brain disease. With this knowledge, we can make earlier diagnosis, improve care outcomes and raise the quality of life for our patients. This will help Singaporeans live long and live well.”

Brain Bank Singapore has recently begun brain donor recruitment after receiving approval from the SingHealth and NTU Institutional Review Boards. Over the next four years, the brain bank aims to recruit about 1,000 brain donors.

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<sup>1</sup> Epidemiology & Disease Control Division, Ministry of Health, Singapore; Institute for Health Metrics and Evaluation. *The Burden of Disease in Singapore, 1990 – 2017: An overview of the Global Burden of Disease Study 2017 results*

### ***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, Humanities, Arts, & Social Sciences, and Graduate colleges. 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) and Energy Research Institute @ NTU (ERI@N).

Ranked 11th in the world, NTU has been placed the world's top young university for the past six years. The University's main campus is frequently listed among the Top 15 most beautiful university campuses in the world and it has 57 Green Mark-certified (equivalent to LEED-certified) building projects of which 95% are certified Green Mark Platinum. Apart from its main campus, NTU also has a campus in Novena, Singapore's healthcare district. For more information, visit [www.ntu.edu.sg](http://www.ntu.edu.sg).

### ***About the National Healthcare Group***

The National Healthcare Group (NHG) is a leader in public healthcare in Singapore, recognised at home and abroad for the quality of its medical expertise and facilities. Care is provided through an integrated network of six primary care polyclinics, acute care and tertiary hospitals, national specialty centres and business divisions. Together they bring a rich legacy of medical expertise to our philosophy of integrated patient-centred care.

NHG's vision is "Adding Years of Healthy Life". This vision goes beyond merely healing the sick to the more difficult and infinitely more rewarding task of preventing illness and preserving health and quality of life. With some 18,000 staff, NHG aims to provide care that is patient-centric, accessible, seamless, comprehensive, appropriate and cost-effective.

As the Regional Health System (RHS) for Central Singapore, it is vital for NHG to partner and collaborate with stakeholders, community advisors, and voluntary welfare organisations. Together with our patients, their families and caregivers, we aim to deliver integrated healthcare services and programmes that help in Adding Years of Healthy Life to all concerned. More information is available at [www.nhg.com.sg](http://www.nhg.com.sg).

### ***About National Neuroscience Institute (NNI)***

The National Neuroscience Institute (NNI) is the national specialist and regional centre of care for the brain, spine, nerve and muscle. NNI offers Neurology, Neurosurgery and Neuroradiology services with advanced technology and multi-disciplinary care teams. Committed to improving patients' lives, NNI aims to shape neuroscience care for a better tomorrow through innovation, research and education. NNI is a member of the Singapore Health Services (SingHealth) – a public healthcare cluster which manages four hospitals, five specialty centres, eight polyclinics and a network of community hospitals. For more information, visit [www.nni.com.sg](http://www.nni.com.sg).

## ANNEX A

### About Professor Richard Reynolds, Director of Brain Bank Singapore

Professor Richard Reynolds is the founding Director of Brain Bank Singapore and a Professor at the Lee Kong Chian School of Medicine since 2015. He is also Professor of Cellular Neurobiology in the Department of Brain Sciences at the Faculty of Medicine, Imperial College London, a position he's held since 2000. Prof Reynolds joined Imperial in 1986 and was awarded a Wellcome Trust Senior Research Fellowship two years after.

Since 1998, Prof Reynolds has been Director of the UK Multiple Sclerosis and Parkinson's Tissue Bank, which collects central nervous system tissue samples donated by donors with multiple sclerosis, Parkinson's and other related neurodegenerative conditions. His own research focus is on the understanding of pathogenetic mechanisms involved in demyelination – when the myelin coating the nerves deteriorate, or become damaged, thereby causing messaging problems between the body and the brain – and neurodegeneration in multiple sclerosis and other brain disorders; and developing new potential pathways for therapy. Collaborations with the biopharmaceutical sector has brought about vital progress in translation to treating multiple sclerosis under clinical conditions.

## ANNEX B

### Chinese Translations of Key Terms

Professor James Best NTU LKCMedicine Dean	詹姆斯·贝斯特教授 院长 南洋理工大学李光前医学院
Brain Bank Singapore	脑库新加坡
Professor Richard Reynolds Director, Brain Bank Singapore	理查德·雷诺兹教授 主席 脑库新加坡
Institutional Review Board	机构审查委员会
A/Prof Ng Wai Hoe Medical Director National Neuroscience Institute	伍伟豪副教授 院长 国立脑神经医学院
Steering Committee Brain Bank Singapore	指导委员会 脑库新加坡

<p>Dr Adeline Ng, Consultant, Neurology National Neuroscience Institute</p> <p>Assistant Director Brain Bank Singapore</p>	<p>黄愆琳医生 神经内科顾问医生 国立脑神经医学院</p> <p>副主席 脑库新加坡</p>
<p>Dr Zeng Li Principal Investigator Neural Stem Cell Research Laboratory National Neuroscience Institute</p>	<p>曾力 首席科学研究员 神经干细胞研究室 国立脑神经医学院</p>
<p>Professor Philip Choo Group CEO National Healthcare Group</p>	<p>朱伟仁教授 集团首席执行总裁 国立健保集团</p>
<p>Dr Jimmy Lee Senior Consultant, Department of Psychosis Chief, North Region Institute of Mental Health</p>	<p>李志强医生 错乱症精神科部门高级专科顾问 北区主任 心理卫生学院</p>

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