

New technologies to diagnose and treat neurological diseases

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The partnership between NNI and NTU Singapore will see the development of innovative technologies to better diagnose and treat patients with neurological conditions such as Parkinson's disease and brain injuries. Credit: NTU Singapore

The National Neuroscience Institute (NNI) and Nanyang Technological

University, Singapore (NTU Singapore) are collaborating to develop innovative technologies to better diagnose and treat patients with neurological conditions such as Parkinson's disease and brain injuries.

These include developing an artificial intelligence system that can accurately identify types of traumatic brain injuries from computed tomography (CT) scans.

Another project involves coming up with a computing algorithm for more precise identification of tissues during brain surgeries. It aims to restore the neurological functions of patients suffering from various conditions such as Parkinson's disease.

Over the next three years, the collaboration will also foster closer working relations between medical practitioners and engineers through annual fellowships and student attachment programmes.

Managed by NTU's Institute for Health Technologies (HealthTech NTU), the one-year fellowship programme will see up to two neurosurgical residents at NNI work full-time with NTU professors on campus. Each resident will receive S\$100,000 to complete and commercialise their projects.

A student attachment programme that spans a few weeks will also be introduced, allowing NTU engineering students to work alongside neurosurgeons at NNI.

Aimed at grooming multidisciplinary scientists, students will get to widen their engineering knowledge into medical practice. They will gain first-hand exposure to various aspects of clinical medicine by interacting with neurosurgeons in the course of their work.

Associate Professor Ng Wai Hoe, Medical Director of the National

Neuroscience Institute, said, "Innovation occurs at intersections of disciplines, knowledge and expertise. Doctors have a deep understanding of clinical needs from their everyday interactions with patients. Our unique collaboration brings these medical needs to engineering laboratories - an environment where imagination is encouraged in the form of technological advances and capabilities.

"The rapidly ageing population will lead to a significant rise in neurological diseases globally. By harnessing the power of the human brain, neurotechnology can provide solutions to revolutionise the treatment of brain disorders. This partnership has great potential to be an innovation launchpad for Neurotechnology."

Professor Lam Khin Yong, NTU's Chief of Staff and Vice President for Research, said, "This collaboration creates a unique multidisciplinary research environment by integrating healthcare with both medical and engineering expertise from NTU's Lee Kong Chian School of Medicine and College of Engineering.

"This will not only nurture next-generation doctors armed with a multidisciplinary skillset to meet Singapore's healthcare needs, but also enhance medical technologies to diagnose and treat [neurological conditions](#) more effectively."

HealthTech NTU develops and translates new technologies to solve health problems and improve the quality of life. It tackles healthcare challenges with innovative solutions, cutting-edge technologies, and expert interdisciplinary teams.

Provided by Nanyang Technological University

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