PRESS RELEASE

Medical education goes Holographic with mixed reality from Microsoft

NUS Yong Loo Lin School of Medicine partners with Microsoft to use holographic technology to teach medical and nursing undergraduates

Singapore, 11 January 2022 — From April 2022, medical and nursing students at NUS Yong Loo Lin School of Medicine will be using three-dimensional holographic technology from Microsoft to help them learn certain medical procedures and study anatomical structures.

The collaboration, which spans NUS Medicine, the National University Health System and Microsoft adds mixed reality to the learning experience; named Project Polaris. Through holographic technology, medical and nursing undergraduates can expect to better hone their skills through training enabled by the Microsoft HoloLens 2. This progressive use of mixed reality in healthcare education stems from Microsoft's work with the National University Health System, which is embarking on Holomedicine research in Singapore with the aim to enhance patient care.

In Project Polaris, the HoloLens 2 will be used to project three-dimensional holograms to give medical and nursing students a visual appreciation of actual clinical scenarios in practice. The suite of instructional software developed by the team from NUS Medicine and Microsoft Industry Solutions provides 3D, mixed reality technology which will be used to help students practice clinical procedural skills such as inserting a cannula, as well as inserting catheters in male and female urinary tracts.

Project Polaris comes with three levels of difficulty, with a goal to train and provide sufficient direction to allow students at varying levels of competence to achieve the highest standards of clinical practice in a safe space, said the School's Assistant Dean for Education and co-project lead, Associate Professor Alfred Kow. "We are truly excited to see how far this collaboration with Microsoft can go in terms of offering our students innovative and effective visual aids and teaching mechanisms. With the ongoing pandemic, virtual reality and mixed reality has been identified as a must-have tool for teaching and learning at onsite and remote environments."

Polaris is part of a larger programme called Project Horizon, which consists of more initiatives like Project Delphinus and Project Mira. These aim to train students in clinical soft skills and clinical anatomy respectively, positioning NUS Medicine as the first in Southeast Asia to introduce holographic mixed reality as a teaching tool to train medical and nursing students.

The medical and technical expertise of NUS Medicine and Microsoft will pave the way for the development of a niche technological competency, in which clinical training tools can be developed to introduce realistic clinical scenarios for use in medical education.

"We are continually pursuing new and innovative teaching methods to help medical and nursing students better understand the medical curriculum and gain a new appreciation for healthcare and health, while striving to maintain a balance with time-tested traditional approaches," said Associate Professor Lau Tang Ching, the School's Vice-Dean for Education. "This incorporation of holographic mixed-reality learning fits in well with our teaching initiatives and we hope to see this collaboration with Microsoft flourish in the coming years."

"From delivering better healthcare experiences at the frontlines to helping neurosurgeons keep patients better informed of what could happen during their surgeries, technology has been an empowering tool for healthcare workers as they protect and save the lives of patients. As one of the few hospitals in Southeast Asia that has a tertiary education arm which collaborates with a training hospital, NUS Medicine is in a unique position to use mixed reality solutions and the Microsoft HoloLens 2 to aid in the transformation of healthcare education, for years to come," said Richard Koh, National Technology Officer, Microsoft Singapore.

Professor Chong Yap Seng, Dean of NUS Medicine, said he looked forward to the impact that technology would bring to medical education, "I'm glad to see that our educators have found like-minded industry partners to work with in educating the next generation of medical professionals. With such interdisciplinary partnerships, we are even more confident that our graduates will be future-ready clinicians."

About the National University of Singapore (NUS)

The National University of Singapore (NUS) is Singapore's flagship university, which offers a global approach to education, research and entrepreneurship, with a focus on Asian perspectives and expertise. We have 17 faculties across three campuses in Singapore, with more than 40,000 students from 100 countries enriching our vibrant and diverse campus community. We have also established our NUS Overseas Colleges programme in more than 15 cities around the world.

Our multidisciplinary and real-world approach to education, research and entrepreneurship enables us to work closely with industry, governments and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, 30 university-level research institutes, research centres of excellence and corporate labs focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research and cybersecurity.

For more information on NUS, please visit www.nus.edu.sg

About the NUS Yong Loo Lin School of Medicine (NUS Medicine)

The NUS Yong Loo Lin School of Medicine is Singapore's first and largest medical school. Our enduring mission centres on nurturing highly competent, values-driven and inspired healthcare professionals to transform the practice of medicine and improve health around the world.

Through a dynamic and future-oriented five-year curriculum that is inter-disciplinary and inter-professional in nature, our students undergo a holistic learning experience that exposes them to multiple facets of healthcare and prepares them to become visionary leaders and compassionate doctors and nurses of tomorrow. Since the School's founding in 1905, more than 12,000 graduates have passed through our doors.

In our pursuit of health for all, our strategic research programmes focus on innovative, cutting-edge biomedical research with collaborators around the world to deliver high impact solutions to benefit human lives.

The School is the oldest institution of higher learning in the National University of Singapore and a founding institutional member of the National University Health System. It is Asia's leading medical school and ranks among the best in the world (Times Higher Education World University Rankings 2022 by subject and the Quacquarelli Symonds (QS) World University Rankings by subject 2021).

For more information about NUS Medicine, please visit http://nusmedicine.nus.edu.sg