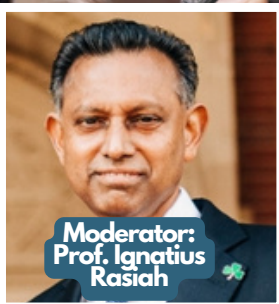


ENABLERS FOR HEALTHCARE AND AGEING POPULATION

NATIONAL UNIVERSITY OF SINGAPORE (NUS)
AND HEALTH DISTRICT @ QUEENSTOWN



This seminar brings together experts from the National University of Singapore (NUS) to explore how engineering, digital innovation, and healthcare technologies are transforming the future of healthy ageing. Through presentations on community-based health initiatives, AI-driven cognitive training, and innovative digital eye care solutions, participants will gain insights into how technology can support preventive healthcare, empower seniors to age in place, and improve healthcare delivery beyond traditional clinical settings.

The programme concludes with an interactive Q&A session, providing attendees with the opportunity to engage with speakers and discuss the challenges and opportunities in advancing healthcare for an ageing population.

**Scan Here to
Register Now!**



Thursday, 10.00am - 12.00pm



**Room TR48, IES Academy
Devan Nair Institute for Employment
and Employability (e2i)
80 Jurong East Street 21, #04-10,
Singapore 609607**

Aug
13
2026



NUS
National University
of Singapore



**HEALTH
DISTRICT**
@ QUEENSTOWN

ENABLERS FOR HEALTHCARE AND AGEING POPULATION

THURSDAY, 13 AUGUST 2026

10.00AM - 12.00PM

Room TR48, IES Academy
Devan Nair Institute for Employment and Employability (e2i)
80 Jurong East Street 21, #04-10, Singapore 609607

Time	Activity
1000HRS	Engineering the Future of Healthy Longevity: From the Health District @ Queenstown and Beyond Presenter: Dr Yoann Sapanel, Head, Health Innovation at the Institute for Digital Medical (WISDM), Yong Loo Lin School of Medicine, National University of Singapore
1030HRS	Digital Play as a Prescription Presenter: Associate Professor Bina Rai, Senior Lecturer, Department of Biomedical Engineering (BME), National University of Singapore
1100HRS	Technology Use Case And Demonstration: 'FourSight' Presenter: Dr. Rubin Yong, Research Fellow, Centre for Innovation and Precision Eye Health, National University of Singapore <i>*Hands-on experience for physical attendees</i>
1130HRS	Q&A Session Moderator: Prof. Ignatius Rasiah, Programme Director, Institute for Design & Engineering Leadership, Faculty Advisor for the Medical Grand Challenge, National University of Singapore Panellists: Dr. Yoann Sapanel, Assoc Prof Bina Rai and Dr. Rubin Yong
1200HRS	END OF EVENT

SPEAKER'S PROFILE & SYNOPSIS



Dr. Yoann Sapanel

Head, Health Innovation at
The Institute for Digital Medicine (WISDM),
Yong Loo Lin School of Medicine,
National University of Singapore

Biography

Over the past 16 years, Yoann has dedicated most of his time to Singapore, where he has been deeply involved in the design and implementation of innovative solutions, particularly in the digital realm. His focus has been on shaping a healthcare system that revolves around individuals, driven by data and outcomes. His journey led him to the Institute for Digital Medicine (WisDM) at NUS, where he now strives to foster and accelerate cross-industry, public-private collaborations to validate, implement, and scale pioneering pharmacological and digital interventional technologies into the clinic. Prior to that, Yoann was the Head of Health Partnerships at MetLife focusing on the development of new products and services grounded in technology and data for cancer, dementia, and cardiovascular diseases. Earlier, Yoann led the Asia Pacific Center of Excellence for Business Model Innovation at Medtronic. As program director for Medtronic Asia's Value-Based Health Care Council, Yoann was instrumental in advancing the adoption of outcome-based models to ensure better patients outcomes, reduce costs, and deliver value across the region. Looking ahead, Yoann is enthusiastic about leveraging his wealth of experience towards the development a scalable multi-sectoral program which will prevent, delay, and where possible, reverse the onset and progression of frailty in residents living in Housing and Development Board (HDB) homes, in the Mei Ling and Stirling sub-districts of Queenstown.

Engineering the Future of Healthy Longevity: From the Health District @ Queenstown and Beyond (30 mins)

Synopsis

Dr Yoann Sapanel will highlight how technology can be co-designed with end-users and integrated into clinical and community settings to enhance health outcomes, empower individuals to age in place, and strengthen health and community care. The session will explore how data, artificial intelligence, digital health solutions, and cross-sector partnership can translate research into effective, scalable and sustainable solutions, and give insights into the opportunities and challenges of deploying technology.

SPEAKER'S PROFILE & SYNOPSIS



Associate Professor Bina Rai

Associate Head of the Department (FYP), Department of Biomedical Engineering in the College of Design and Engineering,
PI at the N.I Institute for Health (N.I), National University of Singapore and
Resident Fellow, Valour House.

Biography.

Dr Bina Rai is Associate Professor and Associate Head (FYP) in the Department of Biomedical Engineering at the National University of Singapore (NUS). A microbiologist, bioengineer, and community-engaged educator, she leads modules in bioanalytical methods, serious games for health, and biomedical engineering practice and innovation. An educational innovator and instructional designer, Dr Rai is dedicated to bringing joy, play, and creativity back into the classroom. Her teaching and research focus on gamification, virtual reality simulations, and serious games for education and healthcare. Through her work with bGood, the Health District Initiative, and the Centre for Environment and Ageing Well, she conducts co-design workshops and guides student-developed solutions for engaged, inclusive communities. Dr Rai is active in science communication and serves on the editorial board of the Journal of Applied Learning and Teaching (JALT). Her contributions have been recognized through multiple honors, including the EduTECH Asia Tertiary Educator of the Year Award, InnovPlus Award, College Educator Award, Annual Teaching Excellence Awards, and the SCDF Strategic Partner and Star Customer Award.

Digital Play as a Prescription (30 mins)

Synopsis

In Singapore's rapidly aging society, cognitive decline poses significant challenges to healthcare systems and quality of life for seniors. This presentation introduces an innovative cognitive training platform developed at NUS Biomedical Engineering. Built on NASA's validated Multi-Attribute Task Battery (MATB) framework, the game integrates culturally resonant themes like gardening to engage elderly users while dynamically adapting difficulty levels via the CURATE.AI algorithm. Unlike traditional "one-size-fits-all" approaches, this platform personalises training in real time using individual performance data, optimising cognitive load to enhance executive function, attention, and multitasking abilities. The platform's gamified design features task-specific challenges that mirror real-world activities, from strategic jug repairs to time-sensitive plant harvesting, all governed by a standardised 100-point scoring system. A built-in economy lets users earn coins to unlock gameplay utilities, while adaptive time pressure and future streak mechanics ensure balanced cognitive stimulation. Post-session leaderboards and video tutorials in local languages further enhance accessibility. Preliminary trials with seniors demonstrated high engagement and usability improvements through iterative design, with majority of trial participants endorsing its potential for community implementation.

SPEAKER'S PROFILE & SYNOPSIS



Dr. Rubin Yong

Research Fellow,
Centre for Innovation and Precision
Eye Health,
National University of Singapore

Biography

Rubin is a research fellow at the Centre for Innovation and Precision Eye Health, National University of Singapore, taking an end-to-end thinker role in advancing innovation-focused solutions for eye care. His work spans the full pipeline of multi-disciplinary activities – from prototype development and product design to health services research, health technology assessment, and the commercialization of novel devices. He works closely with industry partners to develop IP strategy and management, and to drive real-world adoption of new technologies. As an entrepreneurial innovator, Rubin co-founded I-NOVA Technologies Pte Ltd, a spin-off from the NUS GRIP incubator programme, dedicated to translating cutting-edge research into impactful healthcare solutions. Guided by an impact-oriented approach, his research aims to empower newer care models and deliver meaningful improvements to patient outcomes. For the Health District @ Queenstown initiative, he works to deploy a suite of novel innovations to better manage patients with chronic eye conditions in the community setting.

Technology Use Case And Demonstration: 'FourSight' (30 mins)

Synopsis

The session will introduce FourSight, an innovative technology solution designed to support community-based monitoring of individuals at risk of glaucoma. The presentation will demonstrate how novel digital technologies and connected care pathways can enable accessible, efficient, and patient-centred eye care beyond traditional hospital settings. Mr Rubin Yong will showcase the key features and capabilities of FourSight, illustrating how the technology supports routine eye monitoring within the community while integrating with existing healthcare services. The session will also provide an overview of the ongoing clinical evaluation on FourSight, which is assessing its performance, patient acceptance, and feasibility in community settings.

MODERATOR'S PROFILE



Prof. Ignatius Rasiah

Programme Director, Institute for
Design & Engineering Leadership,
Faculty Advisor for the Medical
Grand Challenge,
National University of Singapore

Biography.

Prof. Ignatius Rasiah was a Professor of Practice at the National University of Singapore where he served at the Yong Loo Lin School of Medicine from 2017 – 2023, however he remains as the Faculty Advisor for the Medical Grand Challenge. He is currently the Programme Director at the Institute for Design & Engineering Leadership at the National University of Singapore.

Prior to his current appointment, he was the VP for Breakthrough Research at Medtronic. In his capacity as VP, Ignatius led the effort for the launch of a Digital Health incubator for start-ups called MindUp in Israel together with IBM, Rambam hospital in Haifa and Pitango (the largest Israeli VC fund). He also led the Medtronic Center for External Technology Incubation (CETI). This was a global effort in incubating research projects outside Medtronic. They included research projects, product development and startups funded by government grants, venture funds, incubators and entrepreneurs. This center has a focus on breakthrough technologies and business models relating to surgical and patient monitoring spaces.

Prof Rasiah, who has more than 20 years' experience in R&D management of product development in industry, received his PhD in Physics in 1992 and continued onto his postdoctoral fellowship at the Lash Miller Labs in the University of Toronto in Canada.

He was the Chief Technology Officer for Asia at PerkinElmer Optoelectronics from 2004 to 2007. He was previously the Global Technology Manager at Honeywell Electronic Materials until 2003 and has been holding key positions at national levels such as the Cardiovascular Taskforce in Singapore, the National Lung Cancer Taskforce in Malaysia and the Institutional Review Board at NTU.

He is on the Industrial Advisory Board of the Engineering Science Programme at NUS and has been a consultant and advisor to several companies on healthcare, electronics and optical technologies in US, Europe and Asia. Prof. Rasiah has his own consultancy company, JR Tech Services, and is a member of the American Physical Society (APS), the CPMT chapter of the IEEE and was an Adjunct Professor at the University of Galway in Ireland