

INTERPORT



he NMRC Awards Ceremony and Research Symposium is an annual event organised by the NMRC to recognise outstanding clinician scientists, and showcase research achievements and breakthroughs. It also serves as a networking platform for the research community to interact and exchange views.

This year, the NMRC held the day-long event virtually on the 6th of December. The morning's programme kicked off with a welcome address by Chairman of the NMRC, Professor Ranga Krishnan, and an opening address by the event's Guest-of-Honour (GOH), Permanent Secretary for Health, Mr Chan Yeng Kit. Despite not having a physical awards presentation, NMRC continued its tradition to recognise Clinician Scientists who were recipients of the NMRC Human Capital Awards and Talent Development programmes. This was followed by the plenary session, where participants had the privilege of hearing from four internationally renowned overseas speakers.

About 200 attendees were present at the event, including leaders from healthcare clusters and institutions, clinician scientists, researchers, industry partners and other stakeholders in the biomedical research areas. Our STaR awardees represent the pinnacle of Singapore's strengths in biomedical research. Each of them is recognised both locally and internationally for their achievements.



Guest-of-Honour, Mr Chan Yeng Kit, Permanent Secretary for Health

As the research funding arm of the Ministry of Health, NMRC continues to promote excellence in healthcare research and support the translation of research into innovative solutions that benefit the healthcare system.

Professor Ranga Krishnan, Chairman, NMRC



Four overseas speakers at the NMRC Awards Ceremony and Research Symposium 2021 event. From left to right: Prof Miles Carroll, Prof Patrick McGorry, Prof Werner Poewe, Prof John Lavis







Event NATIONAL MEDICAL EXCELLENCE AWARDS 2021



So we must make innovation and transformation our top priority in healthcare. Today, we see its key ingredients – talented people working together; the spirit of continuous learning and teaching, change, and improvement; and undergirding it all, the values of public service, dedication and professionalism even in the darkest of times.

Guest-of-Honour, Mr Ong Ye Kung, Minister for Health

The National Medical Excellence Awards (NMEA) Ceremony is held annually to recognise the efforts of outstanding clinicians, clinician scientists and other healthcare professionals for their contributions to the advancement of healthcare. This year, the event organised by NMRC/Ministry of Health (MOH), was held on the 5th of November 2021.

The night's programme started off with a citation video, in which awardees spoke about their achievements. This year, the NMEA Ceremony was a small-scale and fully vaccinated event with no mask-off activity. Up to 50 individuals, including NMEA 2020 and 2021 award winners, attended the event physically, while their families and friends and the rest of the healthcare community were invited to attend the event virtually.

Following this, there was an opening address by GOH, Minister for Health, Mr Ong Ye Kung. In his speech, he lauded the frontline healthcare workers for their courage and invaluable work during the COVID-19 pandemic. He also recognised the awardees for their excellence and innovation in contributing to the healthcare sector.

Next, there was a formal awards giving ceremony, presented by GOH, to NMEA awardees from both 2020 and 2021. To round off the evening, a pre-recorded finale performance that paid tribute to our healthcare workers was shown.

NMEA 2021 Individual Award Recipients



National Outstanding Clinician Award

Professor Dale Fisher

For his outstanding leadership in advancing key initiatives in the areas of infection prevention and infectious diseases that have shaped and improved patient outcomes in Singapore and globally.



National Outstanding Clinician Scientist Award

Professor Chong Siow Ann

For his outstanding contributions to mental health research and treatment, and changing the perception of mental illness.



National Outstanding Clinician Educator Award

Professor Tan Hak Koon

For his inspiring dedication and exemplary contributions in advancing Obstetrics and Gynaecology clinical education in Singapore and beyond.



National Outstanding Clinician Mentor Award

Associate Professor Wong Kok Seng

For his exemplary contributions and unwavering commitment to being an active role model in guiding and training young clinicians.

National Clinical Excellence Team Award Recipients



COVID-19 Research Workgroup

- Associate Professor David Lye Chien Boon
- Professor
- Lisa Ng Fong Poh Dr Barnaby Young
- Dr Chia Wan Ni

For their instrumental contributions and significant achievements in COVID-19 research, and management of the pandemic response in Singapore and globally.



GPFIRST Programme

- Clinical Associate Professor Steven Lim Hoon Chin
- Clinician Associate
- Professor How Choon How Ms Priscilla Goh
- Dr Oh Hong Choon

For their timely contributions in enhancing Accident & Emergency efficiencies and shaping a holistic and collaborative healthcare ecosystem with better health outcomes for the community.

UNDER THE MICROSCOPE

The Fight Against Cancer: Immunotherapy

HSA-CTF's in-house CAR-T Manufacturing Programme

CAR-T cell therapy is one of the most promising and rapidly advancing treatments for haematological cancers. In collaboration with Miltenyi and KK Women's and Children's Hospital (KKH)/Singapore General Hospital (SGH), the Cell Therapy Facility of Singapore Health Sciences Authority (HSA-CTF) has successfully developed an in-house CAR-T manufacturing programme. Thus, patients can receive this life-saving treatment at a fraction of the cost of commercial CAR-T therapy.

HSA-CTF has already effectively and safely delivered CAR-T therapy to several patients with haematological cancers who have relapsed or been resistant to all available treatment. None of the patients experienced any major unexpected side effects. The CAR-T therapy manufactured by HSA-CTF has a very promising efficacy as well. The treatment has been effective for more than 80% of participating patients, with some achieving complete remission and free of leukaemia for over a year.

Following its initial success, HSA-CTF set up three more clinical trials to manufacture more complex CAR-T treatments—such as double CAR-Ts and allogeneic CAR-Ts—in-house.

In addition, the HSA-CTF partnership with the academic group at the National University Hospital (NUH) to develop dendritic cell vaccines for nasopharyngeal carcinoma was particularly noteworthy, both academically and in clinical manufacturing. Their research paper has been presented at an international conference and published in a peer reviewed journal.



HSA-CTF is also working in partnership with SCG Cell Therapy Pte Ltd to develop T cell therapy for hepatocellular carcinoma, representing an exciting cross-fertilisation between the academic and commercial spheres.

Besides cancer immunotherapy, HSA-CTF is also involved in other areas of cell therapy research. This includes ongoing projects with the Burns Unit at SGH for in vitro growth of skin keratinocytes and in the field of induced pluripotent stem cells (iPSC) in collaboration with Agency for Science, Technology and Research (A*STAR).

NMRC Human Capital Award Recipients Leading Immunotherapy Studies

Professor Dario Campana, National University of Singapore



Cell Therapy of Cancer

- The project hypothesises that precisely directed immune cell therapy can yield better and less toxic outcomes than standard treatment in patients with cancer.
- The research aims to generate new treatment options for patients with T cell and myeloid malignancies and, if successful, will revolutionize their clinical management.

Associate Professor Toh Han Chong, National Cancer Centre Singapore



Development of Epstein-Barr virus (EBV)-specific T cell Therapy for Nasopharyngeal Carcinoma (NPC)

- NPC is endemic in Asia and this project proposes to develop an improved adoptive cell therapy strategy—autologous EBV-specific cytotoxic T lymphocytes (CTLs)—for advanced NPC patients.
- The strategy has wide implications for immunotherapy especially against virally transformed tumours.

Professor Antonio Bertoletti, Duke-NUS Medical School



T cell Receptor Mediated Immune Therapy in Chronic Hepatitis B (HBV) and Hepatocellular Carcinoma (HCC)

 The project aims to increase the clinical efficacy of the TCR-T cell therapy to treat HBV related HCC and HBV chronic infection, through improvements in the selection of patients, therapy administration and the development of a method to assess the treatment's efficacy in the therapy of HBV-related HCC.

FROM LAB TO LIFE

Seeing Your Way Through with uSINETM

NHIC Innovation to Develop (I2D) Project: **Ultrasound Guided** Automated Spinal Landmark Identification— uSINE[™]

ssociate Professor Sng Ban Leong and his team from KKH, supported by National Health Innovation Centre Singapore (NHIC) I2D grant, have collaborated with NUS to develop an ultrasound guided automated spinal landmark identification system. The technology was licensed to HiCura Medical Pte Ltd, a medtech spin-off company from this project. HiCura aims to enhance patient care by improving the accuracy and success rate of the first-attempt needle insertion during spinal anaesthesia with their patented Al-based imaging assistant–uSINE[™].

Over 90% of the neuraxial procedures are performed manually with the landmark and palpation method resulting in undesirable first-attempt puncture success rate. This affects procedures like epidural anaesthesia for women in labour, spinal anaesthesia for surgeries such as hip or knee replacement, and lumbar punctures for disease diagnosis such meningitis. Multiple needle as insertions may increase risk of complications and procedure time, and decrease patient satisfaction.

Medical boards have been encouraging clinicians to use ultrasound as an assistive tool to determine the right needle entry location and angle. However, the ultrasound adoption rate has been very slow, mostly due to lack of neuraxial sonography training.

uSINE[™] has the potential to transform the way clinicians are currently performing these procedures. uSINE™ automatically identifies spinal landmarks during an ultrasound scan in real time, guiding the clinicians to the right needle insertion spot and angle, so they can get it right at the first try. uSINE[™] software runs on a commercial tablet or laptop and can be easily connected to any existing ultrasound machines. uSINE™ is also a great training tool for clinicians new to neuraxial sonography. Two clinical studies that were performed on 148 patients in KKH, Singapore have shown very positive outcomes.

uSINE[™] gives clinicians the confidence to move away from the manual palpation method to a safer and more efficient ultrasound image-guided way of performing neuraxial procedures.



Photo by Vernon Wong, for Singapore Health



Transverse view of the spine as seen on the uSINE[™] system interface Photo by HiCura Medical Pte Ltd

