



PRESS RELEASE

New lower back pain physiotherapy programme, brace to stabilise knee osteoarthritis patients sweep top honours at NUS' Medical Grand Challenge

For the first time since inception, international teams compete with local students to solve healthcare dilemmas

Singapore, 21 August 2020 — The fifth edition of the Medical Grand Challenge (MGC) organised by the Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine) took place online this morning. The innovative solutions of 16 teams were assessed by a panel of judges representing a variety of industries such as information technology, healthcare and research. Each team brought their proposal to life and had their ideas judged for impact on healthcare, innovation, business strategy, marketing and commercialisation.

Team Rebee+ — a team that developed a new lower-back pain physiotherapy programme, which utilises a novel wearable sensor and application technology for remote monitoring in patients recovering from musculoskeletal issues requiring physiotherapy — swept up the top prize in the Open Category. **Team Exo-brace** brought back top honours in the Nascent Category with a brace that provides knee osteoarthritis patients the stability and mechanical advantage they need to ambulate early after their total knee replacement surgery.

Runner up in the Open Category, **BioTrack**, came up with a wearable 12-Lead ECG monitor that automatically takes measurements and send them to a cloud server with Artificial Intelligence (AI) assisted diagnostic algorithms for doctors for review if any undesirable conditions are identified by the AI. Runner up in the Nascent Category was **Project Dialight** who worked on easy-to-use solution that would empower the patients to treat their diabetic foot ulcers at home. The goal of the project is to prevent infection, the progression of infection to later stages and to promote wound healing.

Team ParuKu devised a chatbot application aimed at the preliminary detection of respiratory diseases, winning the hearts of the audience and clinching the People's Choice award. Taking third place in the Open Category and winning the Social Responsibility award was **Team Screenable**, who worked with tech mentor Dr Andrew Wu of Mesh Bio, to improve the DARA® — a predictive analytics and clinical workflow automation solution that automatically structures health data streams and synthesises actionable insights for doctors and patients.

The roots of MGC began way back in 2017 and aims to inculcate a spirit of inquiry and hone problem-solving instincts among NUS Medicine undergraduates, while encouraging creativity and entrepreneurship. The multi-disciplinary nature of the competition also seeks to foster collaborative teamwork among students from different faculties and backgrounds. Over the past year, these students have gone through interdisciplinary boot camps to develop and

refine their proposed solutions and prototypes, designed to address a number of existing healthcare problems.

Students from various NUS faculties such as Medicine, Arts, Pharmacy, Business, Computing, Engineering, Science and Law — and their counterparts from Nanyang Technological University (NTU), Yale-NUS, Singapore Management University (SMU) and Singapore Polytechnic (SP), together with international competitors from America, Australia, England, Indonesia, Malaysia, and Vietnam — presented their innovative solutions to unmet healthcare challenges that the teams identified.

Competing in two categories, 11 teams in the Nascent Category presented proposed solutions to a clinical problem or unmet healthcare need they identified and tackled from scratch. Meanwhile, the Open Category saw five teams working on projects initiated by industry experts who guided them as “Tech Mentors”; or improved on ideas offered in previous competitions. This year, the Open Category also saw international teams competing.

Dr Tan See Leng, Minister for Manpower and an alumnus of NUS Medicine graced the event as Guest-of-Honour. In his speech, Dr Tan said, “The diversity of participants across countries and professional expertise epitomises the spirit of the Medical Grand Challenge to promote cultural diversity, inclusion, equity, and interdisciplinary collaboration. Not only will this accelerate our efforts to identify systemic and care gaps, but it will also allow us to co-create transformative and sustainable solutions using real world evidence.”

“The MGC is more than a competition for students to assess each other’s strengths and talents, or to beef up their portfolios. The multi-disciplinary nature of this challenge nudges our students to consider solutions from various dimensions and perspectives, and view problems they identify in a much larger context, instead of seeing global problems in conventional silos. We hope to nurture curious leaders who will be able to navigate the complexities and ambiguities of an ever-shifting global environment,” said Professor Chong Yap Seng, Dean of NUS Medicine.

Please refer to the [Annex](#) for more information on the Medical Grand Challenge and the 16 student projects.

For more information, visit the website (<https://medicine.nus.edu.sg/cenmed/mgc/>) and Facebook page (<https://facebook.com/nusmgc>)

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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 2020 by subject and the Quacquarelli Symonds (QS) World University Rankings by Subject 2020).

For more information about NUS Medicine, please visit <https://medicine.nus.edu.sg/>