

NATIONAL OUTSTANDING CLINICIAN SCIENTIST AWARD 2023

Associate Professor Mahesh Choolani

Associate Professor and Head
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“For his immense dedication, passion, unwavering commitment to developing the clinician scientist community in Singapore, and outstanding leadership in revolutionising the obstetrics and gynaecology field.”

Associate Professor Mahesh Choolani is a clinician scientist with a long track record in clinical and basic science research. His main research goal is in translational medicine through the development of advanced technology that addresses the unmet need for faster and more accurate diagnostic testing for precision healthcare of Asian women.

A/Prof Choolani has been actively pursuing technology for the isolation of cell-based foetal DNA non-invasively from maternal blood for prenatal diagnosis of chromosomal abnormality. He introduced and validated non-invasive prenatal testing/screening using cell-free fetal DNA in the plasma fraction of maternal blood. This liquid biopsy assay is an excellent screening tool for three common foetal trisomies (21, 18, 13) and is currently offered to pregnant women in Singapore and the region.

A/Prof Choolani's work has been well-recognised by his colleagues in the field locally, regionally and internationally, and also by industry partners. Over the years, he has attained more than \$20 million in grant funding as Principal Investigator, and more than \$15 million in grant funding as Co-Principal Investigator. This funding has translated to more than 220 peer-reviewed publications including in top tier journals such as *The Lancet*, *Nature*, and *Cell*, with over 12,000 citations and a Hirsch index of 59. He has seven patents with six of them licensed by the industry.

The importance of collaboration between science, medicine, and industry cannot be overstated. Cognisant of this, A/Prof Choolani founded INEX Innovate in 2006, as a women's health diagnostic company offering molecular tests and developing new point-of-care diagnostics in the women's health space. In recognition of INEX Innovate, the Association of Small and Medium Enterprises awarded him the Entrepreneur of the Year 2022 Award for Established Entrepreneur (Overall Winner). This highlights the relationship between Singapore's medical academia and industry, and the role of the clinician scientist in converting a clinical need, through science, into a viable product for industry and society.

A/Prof Choolani has been actively imparting his knowledge and skills. Over the years, he has introduced many programmes that have fostered closer interactions between

clinicians, scientists, and other research professionals. Many of these programmes have led to collaborations, grant-funded projects and publications. He has worked tirelessly to establish a community of clinician scientists beginning with the establishment of the National University of Singapore (NUS) Clinician Scientist Unit in 2006 and continuing with his active involvement in the National University Health System (NUHS) Clinician Scientist Academy. A/Prof Choolani is now serving his second term as President of the College of Clinician Scientist, Academy of Medicine, Singapore.

The most significant recognition of A/Prof Choolani's work is his leadership in various organisations that focus on foetal diagnosis and therapy regionally and internationally. He has held the appointment of Chairman or President in several professional societies, including the Asia-Pacific Conference for Fetal Therapy (2015 to 2016), the International Fetal Medicine and Surgery Society (2018) and the International Fetal Transplantation and Immunology Society (2018). He is currently the President of the International Society for Prenatal Diagnosis (ISPD), and the recently appointed President-at-Large for the International Fetal Medicine and Surgery Society (IFMSS). His goal in these societies is to cultivate a cadre of clinician scientists working in his own field and the broader field of medicine, and to build an eco-system to drive scientific medicine in Asia.

For his immense dedication, passion, unwavering commitment to developing the clinician scientist community in Singapore, and his outstanding leadership in revolutionising the obstetrics and gynaecology field, Associate Professor Mahesh Choolani is awarded the National Outstanding Clinician Scientist Award 2023.