

WELCOME ADDRESS **Director of IMS**

Professor CHONG Chi Tat

Professor Tan Eng Chye, President of NUS, Professor Chen Tsuhan, Deputy President for Research and Technology, colleagues and friends,

Good morning. Welcome to the 21st anniversary celebration of the Institute for Mathematical Sciences (IMS). In the next few minutes, I wish to give you a brief account of its history.

The story of the IMS can be traced back to 1978, the year that I attended the International Congress of Mathematicians in Helsinki and also the international Mathematical Union General Assembly that was held two days prior to the Congress, representing the Singapore Mathematical Society. By chance, I was seated across the table from the great differential geometer Shiing-Shen Chern, 陈省身 of UC Berkeley. He was on the US delegation. We had a good conversation and I took the opportunity to invite him to visit Singapore, which he readily accepted. In June of 1980, he came to Singapore for a two-week visit, during which he gave a public lecture at the Bukit Timah campus in the New Lecture Theater 4 (or NLT 4 as it was then called). The talk was attended by more than 450 people, standing room only. I believe it was by far the biggest mathematical event in Singapore.



In 1986, Professor Peng Tsu Ann, then Head of the Mathematics Department, and I attended the International Congress of Mathematicians in Berkeley. Chern hosted a party at his residence one afternoon and invited Tsu Ann and me to the party. His house was located about half an hour's drive from the Berkeley campus, with a floor-to-ceiling glass window in the living room overlooking the beautiful San Francisco Bay. At the party Chern showed us a nicely made wooden chair with the inscription "Director" on it and told us that it was a gift from the Mathematical Sciences Research Institute (MSRI), which he had served as its founding director. Chern told us many stories about the wonderful things that MSRI was doing and the contributions that the Institute was making to the American mathematical community. As we were leaving the party, we shook hands and Chern smiled at me, and said, "Maybe one day Singapore would have its own mathematical institute too".

Between 1986 and the late 1990s, the topic of a mathematical institute in Singapore often came up among the members of the Department of Mathematics over lunch and during meetings. At least two proposals were made to the university on setting up a mathematical institute. But perhaps the time was not right.

However, in 1998, an opportunity came up. The Singapore government began to look at new economy for the country in the new century. The term "knowledge economy" was often mentioned. NUS took this opportunity to propose the setting up of a mathematical institute to the Ministry of Education (MOE). And to our great delight, the proposal was accepted.

In the year 2000, IMS was officially launched with Louis Chen as its founding director. A generous start-up funding was provided by MOE for the first five years. Thereafter, NUS took over the responsibility of funding the Institute. The first program that was organized at the IMS was "Coding Theory and Data Integrity". It was a six-month program and Jean-Pierre Serre, perhaps the most eminent living mathematician today, gave the inaugural lecture. Serre just turned 95 recently. Between 2001 and 2021, IMS organized 163 activities. These included thematic programs, workshops, summer schools, winter schools, industry-based undergraduate research program, and public lectures. Overall, more than 15,000 mathematical scientists passed through the doors of IMS, including Fields Medalists, members and fellows of national academies, leading figures in various mathematical fields, young mathematicians and mathematical scientists beginning their research career, as well as graduate and undergraduate students.

From the beginning, the mission of the IMS has been to serve as a platform for research collaboration between the local research community and its international counterpart. It also aims to provide research opportunities to young mathematical scientists beginning their careers, as well as to graduate students, for them to have the opportunity to attend workshops, lectures, and tutorials given by leading figures. This mission has remained unchanged over the years. Internationally, IMS has collaborations with a number of institutes. These include the Vietnam Institute for Advanced Study in Mathematics based in Hanoi, the National Institute for Mathematical Sciences in Daejeon, South Korea, the Institute for Pure and Applied Mathematics, which is an NSF funded mathematical institute based in UCLA, with which we have a collaboration called Research in Industry Projects for Students (this year is its third year in running). We also have a collaboration with the Simons Institute for the Theory of Computing based in Berkeley, with which we

will have a joint program on machine learning soon.

Looking to the future, we see two important developments. First, the emergence of a number of very well-funded mathematical institutes in the Asia Pacific region, especially those in China. Second, the evolution of the STEM ecosystem in Singapore. For example, the growing importance of data science and artificial intelligence. The Both developments will have great impact on the role of IMS, locally and internationally. IMS will continue to strive to maintain its position as a leading mathematical Institute in the new era.

To conclude, let me thank all who have made IMS possible. First, to President Tan Eng Chye, Senior Deputy President and Provost Ho Teck Hua, Deputy President for Research and Technology Chen Tsuhan, for their continued support, encouragement, and generous funding over the years to the Institute. Next, to the Scientific Advisory Board and the Management Board, led respectively by Iain Johnstone of Stanford University and Lai Choy Heng of NUS. We thank them for their advice and guidance on IMS programs and activities. We thank all the colleagues in NUS ranging from the Department of Mathematics, Department of Statistics and Data Science, Department of Biological Sciences, Department of Physics, Department of Economics, Department of Electrical and Computer Engineering, Department of Computer Science, and the Saw Swee Hock School of Public Health, for their involvement and participation in organizing IMS activities. Lastly, I would like to thank all the staff at IMS who, with great dedication and professionalism, ensure that all the activities are given superb administrative and technical support so that every program runs smoothly. It is to their great credit that the Institute has received many compliments from participants and organizers alike. So thanks to all of them. And to all of you for coming today in celebration of the joyous occasion.

