

**Singapore Mathematical Society
Annual Report 2022**

1. Membership

The membership in the various categories at the end of 2022 is shown below.

Membership	2022 figures	2021 figures
Honorary	9	9
Life	98	82
Ordinary	36	20
Institution	59	55
Junior	8	4
TOTAL	210	170

2. Officials

The officials of the Society for 2022 were:

President :	A/P Victor Tan	Asst Editors :	A/P Adrian Roellin
Vice-Presidents :	Dr Tang Wee Kee		A/P Toh Pee Choon
	Dr Hang Kim Hoo	Committee Members :	Dr Lau Jing Feng
	A/P Yap Von Bing		A/P Ng Keng Meng
Hon Secretary :	Dr Soon Wan Mei		Dr Tan Liang Soon
Hon Treasurer :	Mr Wang Haibin		Dr Wong Wei Pin
Editor :	A/P Toh Tin Lam		
Asst Secretary :	Dr Wang Fei		
Asst. Treasurer:	Dr Jonathon Teo		

3. Activities

a. Publications

The Society published the SMO 2022 solution book (edited by A/P Toh Pee Choon, A/P Toh Tin Lam, Dr Lau Jing Feng and Dr Tay Tiong Seng).

b. Lectures

- The SMS Lecture Series “What is a generalized function?” by Professor Zhu Chengbo (NUS) was held on March 9, 2022, from 4-5pm via Zoom.
- The SMS Public Lecture titled “Probability and Combinatorics in School Mathematics” by Professor Helmer Aslaksen was held on Aug 4, 2022 in NUS LT34 from 4-5pm.

Both lectures were well attended with more than 100 participants.

c. Singapore Mathematical Olympiad

- The Society conducted Round 1 and Round 2 of the Singapore Mathematical Olympiad (Junior, Senior and Open Sections) in June and July 2022. A total of 8133 students from 118 secondary schools and junior colleges participated in the various sections of the Olympiad.

- For Junior Section, there were 3599 participants from 92 schools. For Senior Section, there were 2647 participants from 98 schools. For Open Section, there were 1887 participants from 61 schools.
- The SMO Subcommittee 2022 comprised:
 - Dr Lau Jing Feng (Chairman and Senior Section Round 1 Coordinator)
 - Dr Hang Kim Hoo (Deputy Chairman/Administration)
 - Associate Professor Toh Pee Choon (Junior Section Round 1 Coordinator)
 - Associate Professor Toh Tin Lam (Open Section Round 1 Coordinator)
 - Associate Professor Tay Tiong Seng and Associate Professor Wong Yan Loi (Round 2 Coordinators)
- The following were contributors of competition problems:
Toh Tin Lam, Dong Fengming, Ku Cheng Yeaw, Tay Tiong Seng, Toh Pee Choon, Wang Fei, Wong Yan Loi.

d. International Mathematical Olympiad (IMO)

- The 63rd IMO was held in Oslo, Norway from 6 to 16 July 2022.
- A total of 589 participants from 104 countries or regions participated in IMO 2022.
- The Singapore National Team to the 63rd IMO consisted of the following members:
Team Leader: Wong Yan Loi (National University of Singapore)
Deputy Team Leader: Wang Haibin (NUS High School of Math and Science)
Contestants: Cheng Wenhao (Hwa Chong Institution)
Wu Xinyue (Hwa Chong Institution)
Goh Hao Xiang, Gabriel (Hwa Chong Institution)
Drew Michael Terren Ramirez (NUS High School of Math and Science)
Shevonne Chia (NUS High School of Math and Science)
Peh Yan Xi (Raffles Institution)
- Observers: Tay Tiong Seng (formerly NUS Mathematics Department)
Zong Lixing (Hwa Chong Institution)
Teo Teck Kian, Thomas (Raffles Institution)
Seet Wenshan (MOE)
Tan Junyao, Joel (Student of University of Cambridge)
Ng Yu Peng (Student of NUS)
- Cheng Wenhao, Wu Xinyue, Goh Hao Xiang, Gabriel and Drew Michael Terren Ramirez received Silver medals. Shevonne Chia received a Bronze medal. Peh Yan Xi received an Honourable mention.
- The team attained a total score of 165. The Singapore team was ranked 24th among 104 countries.
- The Singapore IMO Committee 2022 consisted of the following members and trainers:
Wong Yan Loi (Chairman), Soh Yong Sheng, Chua Seng Kee, Wang Fei, Wu Jiawei, Chua Seng Kiat, Wang Haibin, Zong Lixing, Thomas Teo, Lu Shang-Yi, Tay Tiong Seng, Ng Yu Peng, Joel Tan.

e. Singapore Mathematical Project Festival

- The Singapore Mathematics Project Festival 2022 attracted 27 projects from Junior section and 27 projects from Senior section. Judging panels, made up of mathematicians, were formed to grade the project and presentation of each team.

The grades were used as a reference for short-listing the projects for the final round. Consequently, 5 teams from the Junior Section and 5 teams from the Senior Section were invited for the final round.

- The judges for the Festival were
 - Junior Section: Dr Teo Kok Ming, Assoc Prof Zhao Dong Sheng, Assoc Prof Toh Pee Choon (NIE)
 - Senior Section: Dr Ku Cheng Yeaw (NTU), Dr Tay Tiong Seng (SMS), Dr Wang Fei, Dr. Liu Yiqun (NUS)

f. SMS Essay Competition

- The Society organized the 12th SMS essay competition with the theme “Mathematics and Environmental Sustainability”. The competition was officially launched on 9 March. Environmental Sustainability, being one of the pillars of Singapore Green Plan 2030 to advance the national agenda on sustainable development, is key to improving the lives of our future generations. We hoped that through this competition, students will discover the different types of mathematical models for its corresponding Environmental Sustainability response.
- By the closing date of 8 July 2022, we received a total of 64 essay entries from 17 schools with the following breakdown: Category A (secondary 1 & 2 or equivalent): 30, Category B (Secondary 3 & 4 or equivalent): 16, Category C (JC or equivalent): 18.
- The judges for the competition were:
 - Category A: Mdm. Low Leng (MOE) and Dr. Tan Liang Soon (MOE).
 - Category B: Mr. Low Fook Hong (MOE) and Mr. Christian Ong Go (NUS).
 - Category C: Assoc. Prof. Ho Weng Kin (NIE) and Asst. Prof. Cheong Kang Hao (SUTD).

g. Annual Prize Presentation Ceremony

- The Prize Presentation Ceremony was held on 3 September 2022, at the NUS High School of Mathematics and Science Auditorium. The Guest of Honour was Professor Loh Po-Shen from Carnegie Mellon University.
- The following prizes were given out at the ceremony:
 - 16 prizes for the Singapore Mathematics Project Festival (Junior Section)
 - 13 prizes for the Singapore Mathematics Project Festival (Senior Section)
 - 9 prizes for the SMS Essay Competition (3 each in categories A, B and C)
 - 32 individual prizes for the Singapore Mathematical Olympiad (Junior section)
 - 30 individual prizes for the Singapore Mathematical Olympiad (Senior section)
 - 32 individual prizes for the Singapore Mathematical Olympiad (Open section)
 - 41 School Awards for the Singapore Mathematical Olympiad (Category 1)
 - 22 School Awards for the Singapore Mathematical Olympiad (Category 2)
 - Challenge trophies for the Singapore Mathematical Olympiad (Junior, Senior, Open)
 - Awards to the Singapore Team to the 63rd International Mathematical Olympiad

h. SEAMS

Victor attended 1 SEAMS council meeting through zoom on May 21, 2022

i. International Union of Mathematics (IMU) General Assembly and International Congress of Mathematicians (ICM) 2022

Victor represented Singapore Mathematical Society to attend the GA in Helsinki, Finland. Zhu Chengbo was a speaker at ICM 2022 which was conducted virtually.

j. Enrichment Programmes in Mathematics

- Primary Mathematics Olympiad Programme (PMOP)
The Society conducted PMOP in June and November. There was a total of 286 students in 10 groups.
- Secondary Enrichment Programme
SMS conducted 5 sessions (16 hours) for MOE Gifted Programme, 2 sessions (4 hours) for Yuan Chin Secondary School, 2 sessions (4 hours) for River Valley Secondary School, 1 session (2 hours) for St. Margret's Secondary School.

k. Singapore Science & Engineering Fair (SSEF)

SMS supported the annual SSEF2022 with the institution of the **SMS Special Award for Ingenuity** for mathematics projects. The SSEF is an annual event organized by MOE and Science Centre Singapore. The SSEF is a national competition for research projects done by full-time students up to the Junior College level. This SMS Special Award for Ingenuity was awarded to two individuals and one team. Two projects were from NUS High School of Math and Science, titled "Crossing Number of Join Product of Some Graphs", and "Investigation of Machin-Like Formulas". One project was titled "On elliptic curves of the form $y^2 = x^3 + Ax + t^2$ ", from Hwa Chong Institution. The following members from SMS helped in the judging of the Mathematics Projects for this award: Victor Tan, Hang Kim Hoo, Tang Wee Kee and Hang Hao Chuien.

l. Teachers' workshops

- An SMPF Workshop on Mentoring Mathematical Research Projects in Secondary Schools was conducted online via ZOOM on 19th July 2022. Teachers from 22 Secondary Schools participated in the event. The workshop consisted of
 - Sharing by organizer for SMPF (Wang Fei)
 - Sharing by chief judge for SMPF (Toh Pee Choon)
 - Sharing by Gold Prize winner of SMPF
- An SMS Workshop for Teachers - Student Preparation for Mathematical Olympiads, was organised on 31 August 2022 at the NUS Faculty of Science LT28. A total of 53 teachers from 33 secondary schools participated in this workshop which was conducted by Dr Hang Kim Hoo and Mr Wang Haibin.

m. SMS blog

The SMS blog was launched on 9 March 2022, with the first post titled "Product of two natural numbers". The blog aims to promote mathematical conversations among the mathematics community, locally and beyond. The intended audience are students from schools (upper secondary school and above) and tertiary institutions. In May, the second post titled "How to Find out if a Number is Prime" was announced. Three further blogs were posted in July, September and December, respectively.

n. **SMS 55th Anniversary Forum**

- SMS celebrated its 55th Anniversary on November 9, 2022, from 3-5pm at the Shaw Foundation Alumni House Auditorium (NUS).
- As part of the celebration of SMS 55th Anniversary, the past presidents of SMS, Professor Tan Eng Chye (NUS president) and Professor Ling San (NTU provost) spoke at the forum with the theme “The Future of Mathematics and Mathematics Education in Singapore”. The Vice-President of SMS, Dr Hang Kim Hoo, moderated the forum. The aim of the forum was to gather educators and thought leaders to look into several issues that are pertinent to Mathematics in Singapore.
- The event was well-attended by more than 120 people, including 7 Past-Presidents of SMS, Director General of Education from MOE, Director of Sciences Branch (MOE), Mathematics Specialists and officers from both the MOE Sciences Branch and Gifted Education Branch, and colleagues from NUS, NTU, SPMS and SUTD.

4. **SMS Prizes in Mathematics**

- The **Singapore Mathematical Society Gold Medal and Book Prize 2022** at NUS was awarded to Tan Likai, a student in Mathematics with First Class Honours and best overall performance in Mathematics.
- The **Singapore Mathematical Society Gold Medal and Book Prize 2022** at NTU was awarded to Teo Jia Xuan, Joven, a student in the School of Physical and Mathematical Sciences with First Class Honours and best overall performance in Mathematical Sciences.
- The **Singapore Mathematical Society Medal in Mathematical Sciences 2022** at NTU was awarded to Zhang Zhixiang And Johan Chrisnata, who are graduate students with the best PhD theses in Mathematical Sciences in NTU.
- The **Singapore Mathematical Society Book Prize 2022** at NIE was awarded to Queenie Qiu, the best student teacher (Secondary Track) in Mathematics in the Bachelor of Science (Education) Programme.
- The **Singapore Mathematical Society Book Prize for Engineering Mathematics 2022** at Temasek Polytechnic was awarded to Javier Khoo Jun Ying, the best Mathematics student from Engineering School.
- The **Singapore Mathematical Society Special Award for Ingenuity** for mathematics projects at SSEF was awarded to two individuals and 1 team from NUS High School of Math and Science and Hwa Chong Institution.

5. **Finance**

This was dealt with in the Treasurer’s report. The Society wishes to record its thanks to the Honorary Auditor, A/P Ma Siu Lun, for auditing the accounts.

6. **Acknowledgements**

The Committee wishes to express its thanks to

- The Ministry of Education;
- Department of Mathematics of the National University of Singapore;
- Department of Statistics and Applied Probability, National University of Singapore;
- Mathematics Society of the National University of Singapore;

- Mathematics and Mathematics Education Academic Group of the National Institute of Education; and
 - School of Physical and Mathematical Sciences of Nanyang Technological University
- for their support and cooperation.

A handwritten signature in black ink, appearing to be 'Amanda', written over a faint star-like graphic.

Soon Wan Mei Amanda
Honorary Secretary

March 2023