

Singapore Mathematical Society Annual Report 2016

1. Membership

Membership in the various categories at the end of 2016 is shown below.

Membership	2016 figures	2015 figures
Honorary	9	9
Life	93	91
Ordinary	55	74
Institution	68	71
Junior	13	43
TOTAL	237	288

2. Officials

The officials of the Society for 2016 were:

President : Professor Ling San

Vice-Presidents : Dr Hang Kim Hoo
A/P Victor Tan

Professor Toh Kim Chuan

Hon Secretary : Dr Tang Wee Kee

Hon Treasurer : Mr Wang Haibin

Editor : A/P Toh Tin Lam

Asst Secretary : Dr Wang Fei

Asst. Treasurer: A/P Chew Tuan Seng

Asst Editors : Dr Lim Kay Jin

A/P Yap Von Bing

Committee Members: Professor Gan Wee Teck

Dr Gwee Hwee Ngee

Mrs Tan-Foo Kum Fong

Dr Toh Pee Choon

3. Activities

a. Publications

- The Society published two issues (Volume 42, Numbers 1, 2) of the Mathematical Medley and the SMO 2016 solution book (edited by Dr Ku Cheng Yeaw, A/P Tay Tiong Seng, Dr Toh Pee Choon and A/P Toh Tin Lam).

b. Lectures

- SMS Public Lecture “An Introduction to Algorithmic Game Theory” by A/Prof Chen Ning (NTU) was held on March 9 at LT31, NUS.
- Two Talks for Teachers entitled “Clueless Voting” and “Thinking versus Knowing” by Professor Imre Leader was held on May 25 at the Academy of Singapore Teachers.

c. Distinguished Visitor Programmes

- The distinguished visitor for DVP 2016 is Professor Phillip A. Griffiths from the Institute for Advanced Study. During his visit, Prof Griffiths conducted
 - Public Lecture on “**How Mathematics Fuels the Knowledge Economy**” at the School of Physical and Mathematical Sciences, NTU on May 20;
 - Academic Talk on “**A Tale of Two Mathematicians**” at the Department of Mathematics, NUS on May 20.

- The distinguished visitor for DVP 2017 is Professor Ron Aharoni from the. During his visit, Prof Aharoni conducted
 - Academic Talk on “**Using Topology in Combinatorics**” at the School of Physical and Mathematical Sciences, NTU on February 8;
 - Secondary Math Teachers’ Workshop on “**Teaching quadratic equations – a test case for some teaching principles**” at the Academy of Singapore Teachers on 9 February;
 - Public Lecture on “**Some Principles in the Teaching of Elementary Mathematics**” at LT 31, NUS February 10.

d. Singapore Mathematical Olympiad

- The Society conducted the Singapore Mathematical Olympiad (Junior, Senior and Open Sections) in June 2016. A total of 7959 students from 120 secondary schools and junior colleges participated in the various sections of the Olympiad.
- For Junior Section, there were 3809 participants from 100 schools. For Senior Section, there were 2562 participants from 95 schools. For Open Section, there were 1589 participants from 70 schools. In addition, there were 87 participants from Indonesia and Vietnam.
- The SMO Subcommittee 2016 consisted of
 - Associate Professor Victor Tan (Chairman)
 - Dr Hang Kim Hoo (Deputy Chairman/Administration)
 - Dr Toh Pee Choon (Junior Section Coordinator)
 - Dr Ku Cheng Yeaw (Senior Section Coordinator)
 - Associate Professor Toh Tin Lam (Open Section Coordinator)
 - Associate Professor Tay Tiong Seng (Second Round Coordinator)

The following were contributors of competition problems:

Tay Tiong Seng, Wong Yan Loi, Chua Seng Kee, Toh Tin Lam, Dong Fengming
Zhao Dongsheng, Ku Cheng Yeaw, Wang Fei, Toh Pee Choon, Ho Foo Him, Ng Wee Leng,

e. International Mathematical Olympiad

- The 57th International Mathematical Olympiad (IMO) was held in Hong Kong from 6 to 16 July 2016. A total of 602 contestants from 109 countries or regions participated in this IMO.
- The Singapore National Team to the 57th International Mathematical Olympiad consisted of the following members:

Team Leader:	Wong Yan Loi (National University of Singapore)
Deputy Team Leader:	Zong Lixing (Hwa Chong Institution)
Contestants:	Ma Zhao Yu (Raffles Institution)
	Lim Wei An Glen (Raffles Institution)
	Tan Kieren Sheldon (Raffles Institution)
	Toh Shan Hong Dylan (NUS High)
	Wang Peng Jun Bryan (Hwa Chong Institution)
	Tan Junyao Joel (NUS High)
Observers:	Tay Tiong Seng (National University of Singapore)
	Lim Jeck (sponsored by MOE)
	Yap Jitwu (sponsored by SMS)
- Ma Zhao Yu, Lim Wei An Glen, Tan Sheldon Kieren, Toh Shan Hong Dylan received gold medals. Wang Peng Jun Bryan, Tan Junyao Joel received silver medals.
- Unofficially, the team was ranked 4th among 109 countries.
- The Singapore International Mathematical Olympiad Committee 2016 consists of the following members and trainers:
 - Wong Yan Loi (Chairman)

- Tay Tiong Seng
- Barry Chia (MOE)
- Chua Seng Kee
- Chua Seng Kiat
- Denny Leung
- Tay Yong Chiang
- Jeffrey Pang Chin How
- Wang Fei
- Lu Shang-Yi
- Thomas Teo Teck Kian
- Wang Haibin
- Zong Lixing
- Ai Xinghuan
- Ngan Ngiap Teng
- Wu Jiawei.

f. China Western Mathematical Invitation

- The China Western Mathematical Invitation 2016 was held in Mianyang, Sichuan Province, China, from 14th August to 18th August 2016.
- The Singapore National Team consisted of:
Team Leader: Mr Ai Xinghuan
Contestants:
 - Zhang Xiaorui (NUS High School of Mathematics and Science)
 - Gabriel Goh Kheng Lin (NUS High School of Mathematics and Science)
 - Cheng Puhua (Raffles Institution)
 - Wang Jianzhi (Raffles Institution)
 - Lucas Boo Tse Yang (Raffles Institution)
 - Ng Yu Peng (Hwa Chong Institution)
 - Goh Hong Pei (Hwa Chong Institution)
 - Estelle Lee (Raffles Girls' School)
- Results:
 - Gold – Cheng Puhua, Wang Jianzhi, Zhang Xiaorui, Gabriel Goh Kheng Lin, Ng Yu Peng
 - Silver – Lucas Boo Tse Yang, Estelle Lee, Goh Hong Pei

g. China Mathematical Olympiad

- The 32nd China Mathematical Olympiad was held in Changsha, Hunan Province, China from 22nd to 26th November 2016. 5 students were selected to represent Singapore accompanied by 2 teachers as team leaders.
- The Singapore National Team consisted of:
Team Leaders: Mr Ai Xinghuan (Catholic Junior College) and Mr Thomas Teo Teck Kian (Raffles Institution)
Contestants:
 - Lee Ker Yang (Raffles Institution)
 - Matthew Fan Xin Yu (NUS High School of Mathematics and Science)
 - Bryan Wang Peng Jun (Hwa Chong Institution)
 - Clarence Chew Xuan Da (NUS High School of Mathematics and Science)
 - Cheng Puhua (Raffles Institution)
- Results:
 - All students obtained Silver medals.

h. Singapore Mathematics Symposium

- SMS organized the Seventh Singapore Mathematics Symposium on 30th September 2016 at Institute for Mathematical Sciences NUS.
- The symposium featured 4 speakers –Ajay Jasra, from NUS Department of Statistic and Applied Probability, Dinh Tien Cuong, from NUS Department of Mathematics, Hoang Viet Ha from NTU School of Physical and Mathematical Sciences, and Zhang Louxin, from NUS Mathematics Department.
- There was also a poster competition participated by graduate students from NUS and NTU. Deborshee Sen of Department of Statistics and Applied Probability, NUS and Ruan Xinran Department of Mathematics, NUS were selected by the panel of judges to be the winners of the poster competition.
- The organizing committee for the Seventh Singapore Mathematics Symposium were Gan Wee Teck (Chair), Chua Chek Beng and Lim Tiong Wee.

i. Singapore Mathematical Project Festival

The Singapore Mathematics Project Festival 2016 attracted a total of 40 projects (from 14 schools). Judging panels, made up of mathematicians and schoolteachers, were formed to grade the presentation of each team. The grades were used as a reference for shortlisting the projects for the final round. Consequently, 5 teams from the Junior Section and 5 teams from the Senior Section were invited to the Festival Congress held at NUS High School of Mathematics and Science on 19th March.

The judges for the Festival were

Junior Section

- Teo Kok Ming (NIE)
- Toh Pee Choon (NIE)
- Zhao Dongsheng (NIE)

Senior Section

- Ku Cheng Yeaw (NUS)
- Tay Tiong Seng (NUS)
- Wang Fei (NUS)

j. Mathematics Teachers Conference 2016

The Society supported the Association of Mathematics Educators and the Mathematics & Mathematics Education Academic Group of NIE in the organization of the Mathematics Teachers Conference 2016 on 2nd June 2016. The theme of the conference was Empowering Mathematics Learners. The conference attracted over 700 participants, most of whom were local mathematics teachers. Dr Toh Pee Choon delivered a keynote lecture and conducted a workshop for Junior College teachers. Dr Hang Kim Hoo also conducted a workshop for Junior College teachers while A/P Toh Tin Lam and Dr Gwee Hwee Ngee each conducted a workshop for Secondary School teachers.

k. Annual Prize Presentation Ceremony

The Prize Presentation Ceremony was held on 3rd September 2016, at the NUS High School of Mathematics and Science Auditorium. The event was opened by the Vice President of SMS, Dr Hang Kim Hoo. Mr Wong Siew Hoong, Director General of Education, officiated at the event. The following prizes were given out during the ceremony:

- 14 prizes for the Singapore Mathematics Project Festival (Junior Section)
- 14 prizes for the Singapore Mathematics Project Festival (Senior Section)
- 30 individual prizes for the Singapore Mathematical Olympiad (Junior Section)

- 31 individual prizes for the Singapore Mathematical Olympiad (Senior Section)
- 30 individual prizes for the Singapore Mathematical Olympiad (Open Section)
- 48 School Awards for the Singapore Mathematical Olympiad (Category 1)
- 16 School Awards for the Singapore Mathematical Olympiad (Category 2)
- Awards to the Singapore Team to the 57th International Mathematical Olympiad

Winners of the Best Presentation Award for the Singapore Mathematics Project Festival (Junior Section) also presented their winning projects: Minimum Distance Problem by Aung Kaung Kaung, Lim An Jun and Ng Yu Peng.

l. Silkroad Mathematics Center

The Society had been invited to be one of the mathematical societies involved in the Silkroad Mathematics Center (SMC) – a new initiative of the Chinese Mathematical Society under the One-Belt-One-Road scheme. There were currently 9 societies from 8 countries involved.

m. Enrichment Programmes in Mathematics

- Primary Mathematics Olympiad Programme (PMOP)
SMS conducted the programme in June and December at NUS and NUS High respectively. Altogether 276 students attended the programme.
- Talent Outreach Programme (SMS-TOP)
The Society conducted 9 modules of enrichment programmes at Nanyang Primary School, Catholic High School, NUS High and NTU.
- Secondary Enrichment Programme
SMS conducted 7 sessions of enrichment courses/talks for MOE Gifted Programme in 2016. In addition, the Society also conducted another 7 sessions of enrichment classes for five different secondary schools (River Valley High School, Paya Lebar Methodist Girls' School (Secondary), Singapore Chinese Girls' School, Temasek Junior College, Catholic High School).

4. SMS Prizes in Mathematics

- The **Singapore Mathematical Society Challenge Trophy** for Junior Section (Team) of the Singapore Mathematical Olympiad 2016 was won by Raffles Institution.
- The **Singapore Mathematical Society Challenge Trophy** for Senior Section (Team) of the Singapore Mathematical Olympiad 2016 was won by NUS High School of Mathematics and Science.
- The **Singapore Mathematical Society Challenge Shield** for Open Section (Team) of the Singapore Mathematical Olympiad 2016 was won by Raffles Institution.
- The **Singapore Mathematical Society Prize** for Open Section (Individual) of the Singapore Mathematical Olympiad 2016 was awarded to Glen Lim Wei An and Sheldon Kieren Tan of Raffles Institution.
- The **Singapore Mathematical Society Prize** for the Top Three Performers of the National Mathematical Olympiad of Singapore (Primary) 2016, organized by NUS High School of Mathematics and Science.
- The **Singapore Mathematical Society Gold Medal and Book Prize** 2016 at NUS was awarded to Zhou Jun, a student in Mathematics with First Class Honours and best overall performance in Mathematics.
- The **Singapore Mathematical Society Gold Medal and Book Prize** 2016 at NTU was awarded to Wong Dai Quan, 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 Book Prize** 2016 at NIE was awarded to Er Ying Ying, best student teacher in Mathematics in the BSc (Education) program.

- The **Singapore Mathematical Society Book Prize for Engineering Mathematics** 2016 at Temasek Polytechnic was awarded to Teo Wei Wen, the best Mathematics student from Engineering School.
- The Society has donated a sum of \$20,000 to Nanyang Technological University for the setting up of the **SMS Medal in Mathematical Sciences**. The medal will be awarded to a graduate student with the best PhD thesis in Mathematical Sciences in NTU.

5. Finance

This is dealt with in the Treasurer's report. The Society wishes to record its thanks to the Honorary Auditor, A/P Chua Seng Kee, for auditing the accounts.

6. Acknowledgements

The Committee wishes to express its thanks to

- the Ministry of Education and Micron Technology for their financial support;
- the Southeast Asian Mathematical Society for donating the SEAMS prize for the Singapore Mathematical Olympiad;
- NUS High School of Mathematics and Science, Catholic High School and Hwa Chong Institution for their assistance in the organization of the Singapore Mathematics Project Festival;
- NUS High School of Mathematics and Science for their assistance in the organization of the Prize Presentation Ceremony;
- - 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
 - Division of Mathematical Sciences of Nanyang Technological University
 for their support and cooperation.

Tang Wee Kee
Honorary Secretary

February 2017