Acknowledgements

Writers
Kristy Yi Wen Chang
Tan Jin Hui

Image Sources
Prof Liou Yih Cherng
SPS Facebook Page
SPS Members who may have contributed to the pictures

Editors
Mavis Kang Pei Lin
Park Kun Hee
The Special Programme in Science (or SPS) was established in 1996 as the Faculty of Science’s premiere academic programme to nurture aspirant scientists toward the growing R&D demands of the 21st-century knowledge-based economy. The programme was modelled after the interdisciplinary Science One programme at the University of British Columbia. In the course of completing the programme requirements, SPS students are introduced to broad areas of contemporary scientific research through an interdisciplinary approach; this has been a key cornerstone and hallmark of SPS over the years. Today, SPS has produced many successful graduates who have progressed to Science-based and Science-oriented careers, here in Singapore as well as at many renowned universities and institutions around the world. This year marks the 20th anniversary of SPS and it will be commemorated with a SPS20 Dinner, where all SPSians, past and present, can gather.

2016 marks the 20th Anniversary of the Faculty of Science’s Special Programme in Science (SPS). To commemorate this special occasion, an Anniversary Dinner will be held on Friday 28 October 2016 with NUS President Professor Tan Chorh Chuan as Guest-of-Honour.

The event is open to all SPS alumni. Come back and re-ignite the passion of your SPS days!

For more information, please contact Andreas “Andrew” Dewanto (SPS 2001) at Tel: 65152817 / Email: andreas.dewanto@spsci.nus.edu.sg

The SPS20 Anniversary Dinner will see a massive gathering of all SPSians, join SPS now to be part of our celebrations!
To start off the year (2016), SPS welcomed two new members of staff, Professor Liou Yih Cherng and Dr Robert Lieu Zi Zhao who took over as the new director of SPS and lecturer for “The Cell” module respectively. We also welcome the new SPS student committee for 2016. The SPS student committee is an important aspect of SPS as they are involved in the planning and execution of the many social events that SPS holds every year.
SPS ushered in the year of the monkey with our annual SPS steamboat where we gathered to eat and be merry in preparation for the hectic semester ahead. The food was enjoyable but the company of fellow SPSians was even better. Question: how many scientists does it take to fix a steamboat? More than five…

SPSians enjoying their steamboat dinner while catching up with one another.
“Discovering Science” is a research-oriented module spanning over two semesters of the freshman year for SPS students. SPS students are encouraged to work together and research on a subject that interest them. It aims to improve students’ computational, modelling and communication skills, as an integral part of the integrated science curriculum. A group completion of a literature review based on their selected topic is involved among other deliverables such as simple programming tasks.

After several sleepless nights, SPS rounded off the first half of the semester with the mid-semester presentation by our freshmen batch. This session allows the first-year students to get feedback on their project from other members of the SPS community. Despite the low weightage of the assessment, the effort put in by the freshmen batch was inspiring with many groups presenting with skills far beyond expectations.

Prof Liou giving the debrief after the end of all the presentations, with the SPS seniors and alumnus sitting just outside the seminar room.
\[ \pi \] commonly approximated as 3.14159, is the symbol used to represent the ratio of a circle’s circumference to its diameter. \( \pi \) not only appears in mathematics, it is also commonly used in physics, to describe waves and in biology, with regards to the spiral of the DNA double helix.

Just as how moon cakes are eaten in celebration of mid-autumn festival, SPS celebrated \( \pi \) day by consuming a certain baked pastry. Delicious apple pies and muffins were baked by our resident chef Divya, who certainly helped set the mood for the round-celebrating festival.

\[ \pi \] Day (Pie Day) - 4 - 14 March 2016

The beautifully decorated cupcakes and yummy apple pies baked to celebrate the symbolic day.
Conducted by Dr Lim Zhi Han, The Universe module brings students through developments in theoretical and observational cosmology, covering Einstein’s cosmology and the Big Bang, the formation of black holes and many others. There was excitement and lots of mathematics in the air as the Year 2s come together for their last presentation of their SPS modules. Groups showcase various mini projects that circle around topics such as astronomy, relativity and life in space! Each poster packages the group’s work in both theory and experiment as they seek an answer to their various questions. Be it questions on gravitational waves or proteins in space, each group explores their topics using combinations of observation, experiments, modeling and simulations before putting them all together with hard work and showing them off during the poster presentation to aid everyone’s learning.

The Year 2s actively engaging their peers and the rest of the SPS community by bringing them through the work that they have done.
The slime mould DIY experiment sought to answer the question: “are a thousand heads better than one?” with the star of the show, the slime mould Polycephalum physarum. The slime mould experiment is the typical SPS’s “end with a bang” activity where the freshmen batch are challenged to come up with an experiment that involves the use of slime mould as part of their course for SP2174, The Cell. This inaugural slime mould experiment saw many groups coming up with novel ideas: from using the slime mould to study the MRT line to observing gravitational responses by the slime mould. This assignment challenged SPSians to grapple with the everyday problems that researchers face: designing an experiment, being constrained by a budget, a lack of time and of course, obtaining less-than-favourable results. After three intensive weeks of collecting data and crunching the numbers, the experiment culminated with the first slime mould congress where the second battle of the great animation war took place...
After an entire year under the tutelage of Dr Chammika Udalagama, the Mathematica component of SPS saw its closure as the freshmen batch underwent the gauntlet, that is the Mathematica Viva (short for viva voce). The Viva is an oral examination taken in place of a written examination and Mathematica is a simple mathematical computation program that can be used to do various simulations and graphs plotting. A “rite of passage for every padawan”, students were questioned extensively by their assessing mentors about the itty-gritties about Mathematica and were tasked to perform several coding feats such as figuring out the minimum distance between two dots. In all, the freshmen batch learned a great deal from Dr Chammika and his Mathematica evangelism which will indubitably be extremely useful for modelling scenarios in The Earth module.

*Freshmen in the midst of completing the tasks given by SPS staff mentors as well as graduate mentors.*
A yearly affair, the congress is the coup de grace to the arduous SP2171: Discovering Science journey for the freshmen batch. After reading countless papers and spending endless hours planning, crafting and writing their literature reviews, the freshmen batch put on a worthy presentation to finally place the module to rest. This year’s congress saw a variety of different presentation styles from animations bordering on CGI to full-on demonstrations which finally culminated to Team Abiogenesis comprising of Ong Han Wee, Jeric Kwan and Willy See and Team Spider Silk comprising of Amanda Ng, Ang Shi Hui and Tan Jin Hui (Max) taking home the “best presentation” prizes.

The freshmen giving their all in their last presentation for SP2171 Discovering Science.
For the final event to wrap up the academic year, SPS had its annual Mentors’ Appreciation Night (MAN) where SPSians took time to dedicate the final day of school to their mentors. In SPS, students are provided close mentoring from both the staff mentors as well as the student mentors. The student mentors are highly involved and play prominent roles in imparting “soft” skills, such as communication skills and project management skills. This year’s MAN was held at Yusof-Ishak House and was hosted by freshmen Genevieve and Emmy. SPSians took time to play “guess-the-mentor”, pen their appreciation for their mentors and, as with every SPS event, eat! Awarded with the Mr Buffet Crasher award, Yuan Zhe had the honour of opening up the buffet line. Also, Chi Yan was awarded Miss Busy Bee, Miss Cute went to Amelia Tan, Kai Qing was crowned Miss Fashionista and lastly, Miss Spontaneous was presented to Yi Han.

Finally, this day also marked the start of Nevin, Vivienne and Jin Feng's duties as Head Mentors as they succeeded Danielle, Yuan Zhe and Sukainah, who will be graduating. We wish that the odds will forever be in their favour.
The Outstanding Undergraduate Researcher Prize is awarded to a maximum of 15 students each year across NUS to recognise their excellent performance. This year, our very own SPSian, Arthur Yong from the faculty of Life Science has been awarded this prestigious award for his research in cell-therapy cancer under Prof Dario Campana from the Department of Pediatrics. Interestingly, Arthur first started this project as a SP3172 student and have since stayed in the same lab from then till his graduation last December. Arthur, who is also a video and board game buff, has attributed the winning of this award to the supervision of Prof Campana and Dr Shimasaki. We wish him all the best as he continues his postgraduate studies as a MD-PhD in Duke-NUS!

Outstanding Undergraduate Researcher Prize

Objective

The Outstanding Undergraduate Researcher (OUR) Prize was launched in AY 2006-2007. The objective of this annual, university-wide competition is to encourage research among undergraduates at NUS by presenting opportunities for them to participate in research while integrating teaching and research at various levels of experience and expertise. This allows undergraduates to develop the capacity for discovery through research.

Through this competition, undergraduates will have more meaningful experiences at university by fostering learning through hands-on work. It also serves to develop their research skills for use in courses and other academic and professional pursuits; identify academic and career interests; learn about a new field; develop working relationships between classmates and faculty mentors; and provide them a glimpse of graduate life.

Guidelines

Entry Type

- either by individual category or by group category.
- submit only one entry to each category (if student participant is submitting more than one entry in the same academic year).

Candidates’ Eligibility

- full-time registered undergraduates (including honours students) at NUS in the Academic Year that the Prize is to be awarded; and
- with Faculty’s support on the merit of the project.