An online publication for NUS Science students, staff and alumni [June 2018]

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NUS President Prof TAN Eng Chye graced the ceremony

**What's Up? Check out the events from June to November 2018!**
New Academic Programmes

The Faculty continues to increase our suite of academic programmes to provide students with the breadth and depth of educational training to face an increasingly complex future.

B.Sc. (Hons) in Pharmaceutical Science

A new B.Sc. (Hons) in Pharmaceutical Science Programme will be offered from Academic Year 2018/2019. This addresses the growing demand for skilled professionals who can effectively work across the whole continuum of the pharmaceutical business.

Pharmaceutical science forms the foundational scientific basis of the physical, chemical, biological and the biomedical aspects of drug properties and actions.

Students joining this landmark programme will be trained in a range of foundational sciences, gaining understanding of drug discovery and development, as well as the regulatory and commercial environment in the pharmaceutical industry. They will acquire knowledge in areas such as Medicinal Chemistry, Pharmacetics, Pharmaceutical Technology, Pharmaceutical Analysis, Pharmacokinetics, Pharmaceutical Biotechnology, Pharmacoeconomics and Pharmacogenetics.

Joint Degree Programme in B.Sc. (Biological / Biomedical Sciences) with University of Dundee

A new four-year Joint Degree Programme combining NUS’ B.Sc. (Hons) in Life Sciences and University of Dundee (UoD)’s B.Sc. (Hons) in Biological Sciences / Biomedical Sciences will equip students with drug discovery and design expertise. The first batch of students will be admitted in Academic Year 2018/2019.

The first of its kind joint Honours programme enables NUS Life Sciences students to complete a full-year research project at UoD in drug discovery and design. Students will also gain hands-on training in drug optimisation and design, by leveraging UoD’s partnerships with leading pharmaceutical and biotechnology companies in the fight against diseases.

Graduates will be equipped with the knowledge and skills to effectively work in the upstream and downstream aspects of the pharmaceutical industry.
Concurrent Degree Programme with University of Melbourne

Doctor of Veterinary Medicine

From Academic Year 2018/2019, students can opt for a new Concurrent Degree Programme (CDP) combining NUS’ B.Sc. in Life Sciences and the Doctor of Veterinary Medicine offered by the Faculty of Veterinary and Agricultural Sciences, University of Melbourne. The CDP integrates the two degree programmes so that it is possible to accelerate and complete the programme in 5.5 years.

Students will acquire specialised theoretical, practical and clinical training in veterinary medicine, which deals with the prevention, diagnosis and treatment of disease in animals, as well as veterinary science, which deals with the health and well-being of animals.

Graduates will have career opportunities as veterinary physicians or surgeons, veterinary science researchers, educators, animal nutritionists etc.
On 31 May, the Faculty’s Data Analytics Consulting Centre (DACC) organised a conference which featured leading data science experts from the public sector, multinational corporations and a startup, who shared how they deployed data analytics to benefit their respective organisations and industries.

Prof Carol HARGREAVES, DACC Director, kicked off the event by outlining DACC’s consulting services and how it can help businesses to unlock value from Big Data.

The keynote address was delivered by Dr Daniel LIM, Acting Deputy Director (Data Science), Government Technology Agency (GovTech) and Acting Deputy Director (Policy and Governance), Smart Nation and Digital Government Office, who gave an overview of how insights derived from data enable evidence-based decision-making. Noting the importance of real-world implementation, Dr Lim cited how visualisation science was applied to address Circle Line disruptions; text analysis to understand topics debated in Parliament; and topic modelling to analyse public feedback on HDB flat sales.

Thereafter, various distinguished industry speakers took to the stage to share on practical data-driven challenges encountered, and solutions adopted, in their respective sectors.

Prof NGIAM Kee Yuan, Consultant, Division of Thyroid and Endocrine Surgery, Group Chief Technology Officer, Deputy Chief Medical Informatics Officer, National University Health System Singapore, discussed how artificial intelligence is transforming healthcare.
Mr Suresh V SHANKAR, Founder of Crayon Data, then gave an insightful presentation on his experiences as an entrepreneur and data evangelist, and how data analytics is changing the competitive landscape for customers’ wallets.

The conference was paired with a workshop on 1 June, which combined essential data science tools and techniques with hands-on case studies, under step-by-step guidance from experienced practitioners.

Prof Hargreaves said, “Through this event, we hope that participants acquired knowledge to create data-driven solutions for business competitiveness. We were also pleased to note the collaborative discussions with industry experts.”

Dr BALASUBRAMANIAN Srilatha, Clinical Sexologist, Senior Researcher, Singapore Cancer Society said, “The workshop was a learning platform on the role of data scientists in delivering extensive outcome measures through sophisticated, software-based applications. This evolving science will have quality implications on clinical care optimisations and health economics.”

Mr Marcus LOH, Director, Asia Pacific Communications, Tableau said, “Congratulations on a power-packed conference on the impact of data science in Singapore today.”

Mr WOO Jian Sheng, Senior Consultant (Analytics and Insights), Technology Transformation Group, Singapore Tourism Board said, “It was an intellectually stimulating conference which clearly shows how data science is applied across industries. I gained new perspectives and inspiration on addressing the business challenges I face.”

Ms CHONG Lee Ling, Spares – Delta, COHU Malaysia said, “The sharing from industry experts and educators at the conference was informative and eye-opening. I gained insights into how the data science approach is practical and attainable. I am now a data science advocate!”

Mr Keneth LIM, Chief Technology Officer and Director (Research & Technology and Industry Development), Maritime and Port Authority of Singapore, gave the audience insights into how intelligent systems are digitalising port operations.

Dr ZHAO Jingyuan, Director of NTUC Link Analytics Centre (LAC) shared how analytics enables LAC to uncover growth opportunities through more effective marketing, better product development and stronger customer engagement.

Mr Fredric FANTHOME, Programme Director (Data First Programme), DBS Bank, shared how the bank leverages data analytics to enhance the customer experience.

Mr Jay JENKINS (left), Head of Customer Engineering Southeast Asia and Mr YONG Shao-Horng (right), Customer Engineer, Google Cloud, then brought the audience through Google’s journey with data.

Mr Dexter WAH Yixiang, Year 2 Data Science and Analytics said, “The conference showed us case studies of how analytics solves real-world problems. In class, we learn about theories and tools like clustering and visualisation, but we discovered how they could be used in actual situations such as addressing the Circle Line disruptions.”

FU Weizhi, Year 3 Statistics said, “The conference was very informative and well-explained, with a nice variety of experts from different industries.”
STEM CELL TECHNOLOGY BREAKTHROUGH

A multidisciplinary research team from the Department of Pharmacy in collaboration with Duke-NUS Medical School, National Cancer Centre Singapore (NCCS) and Singapore General Hospital, has developed a novel, fast and potentially cost-effective technique to expand the amount of haematopoietic stem and progenitor cells (HSPC) in umbilical cord blood. This can be harvested to treat more than 80 diseases, including blood cancers, as well as metabolic and immune disorders.

C7, a small molecule designed and synthesised by Prof Christina CHAI and her team from the Department of Pharmacy, is the key to this breakthrough in stem cell technology as C7 has the ability to expand umbilical cord blood stem cells. Nano-technology based drug delivery specialist Prof Gigi CHIU also contributed to this discovery. Subsequent to the discovery of C7, efforts were made to elucidate the expansion mechanism of C7 through the design and synthesis of C7 analogues.

Currently, the volume of HSPC taken from the umbilical cord is insufficient for most adult patients requiring transplants. The expansion of HSPC is therefore critical to address this clinical issue.

The team found that the addition of C7 yielded more HSPC within a shorter duration. This significant advancement enables more patients to benefit from umbilical cord blood transplants.

The research team includes (from left) Prof Hwang, Prof Chai, Prof Chiu, Dr Zhong Qixing and Dr Sudipto Bari. (Photo credit: NCCS)
There is nothing more rewarding than inspiring the next generation of scientists.

Prof SOW Chorng Haur
Head, Department of Physics

Making Physics Fun

Explore the motion of satellites, charges, light and empty space! Be fascinated by molecular motors, black holes and the beauty of nature! Prof SOW Chorng Haur, Head, Physics Department, explains how he uses intriguing demonstrations to bring physics to life for students.

What inspired you to develop science demonstrations?

When the Physics Demonstration Laboratory was set up in 2002, its initial intent was to illustrate that science is fun to students from all levels. Soon we realised that this platform was extremely useful for engaging teaching, which enables students to better relate to physics.

How do youths benefit from the demonstrations?

Science demonstrations provide visually appealing and thought-provoking stimuli to promote a spirit of enquiry and interactive teacher-student exchange. This helps students grasp underlying scientific concepts, or spot and correct misconceptions. The demonstrations also add reality to concept formation and the application of principles. I believe in synergising hands-on-minds-on learning and classroom activities to complement demonstrations. This maximises student participation.

What are some of your most interesting demonstrations?

We have many demonstrations! The list includes magnetic levitation of a superconductor on a magnetic track; fascinating and complex laser light patterns formed by a laser beam reflected off a mirror on a membrane that can be controlled by sound; a Cartesian diver which has a chilli pack inside a bottle of water that sinks when it is squeezed; beautiful patterns formed when a piece of plastic is sandwiched between a polarising film; and many more!

“"
How are science communication skills passed down to students?

We present interesting phenomenon to viewers and invite them to propose reasonable and logical explanations on what they see. We guide them along when they formulate their proposed model. In this way, they undergo a process of discovery and take ownership of their own model. To enable our undergraduate students to develop science communication skills, the Faculty set up the Young Educators in Science (YES) programme where members explore and share their teaching and scientific communication experiences and discoveries. YES is a very rewarding and enriching programme which truly supports what Aristotle said: "Teaching is the highest form of understanding".

Are you planning new demonstrations?

We recently put up an interactive science demonstration in our department. When people walk pass the corridor, they will be piqued by the presence of three bottles (Cartesian Divers) displayed on the notice board. Many stop and try the demonstration. It is very gratifying to hear their exclamations of surprise when they discover how the demonstration works. You can lift the flap and find an explanatory note on the poster board to understand the science behind it. This is a science demonstration without the demonstrator!

Click [here](#) to view some of Prof Sow’s interesting science demonstrations.
A celebratory opening ceremony for the new Science Frontier canteen was held on 12 March.

The new Frontier canteens have 1,100 seats, with 700 seats in the non-air-conditioned area and 400 seats in the air-conditioned area. The refreshed non-air-conditioned seating area reopened this January, since its closure in July 2016.

Unlike its previous three-tiered seating arrangement, the seats in the non-air-conditioned area are now located on a single level for ease of movement. The area also has huge industrial ceiling fans for enhanced air circulation, as well as charging points at the seats.

The new canteens offer a range of food, such as Thai, Taiwanese and Japanese cuisines, vegetarian food, customisable pasta, Chinese desserts, halal mini wok, and more. Some of the stalls have stayed with the Frontier for many years, such as the noodles stall (32 years) and the drinks and snacks stall (25 years).
COMMUNITY SERVICE INITIATIVES

The Faculty offers various volunteering initiatives for students and staff to contribute to disadvantaged communities.

The Science Volunteer Corps (SVC), a sub-committee under the NUS Students’ Science Club, collaborated with Kraft-Heinz Singapore as well as Rise Against Hunger to organise Pack-A-Meal on 11 December 2017. With the help of staff from Kraft-Heinz Singapore, current students, alumni and staff, the event achieved its objective of packing 80,000 meals.

The volunteers spent the first day of the December vacation packing the meals. A gong was hit for every 10,000 meals packed to indicate a milestone. The 80,000 meals were shipped to Cambodia for orphans suffering from malnutrition.

“"It was nice to see the smiles on the volunteers’ faces as they packed meals for a good cause.""

Jaymond TAN Jia Wen, Vice-President (Internal Affairs), Year 2 Applied Mathematics

Project La Lumiere is an Overseas Community Service Project organised by NUS Science Computer-Based Learning Centre.

It was held from 15 to 27 December 2017 in partnership with Vietnam-based social enterprise Youth Employment & Society Development, to increase English literacy in the Ha Giang province and preserve the cultures of minority communities in the area through responsible tourism.

""We learnt responsible tourism by designing a mural, which was painted on the walls of the community house. We also worked together as a team to overcome challenges."

Ms Joelle LING, Co-Project Director, Year 2 Life Sciences
On 24 February, the NUS Science Sports Committee organised the Science Sports Games (SSG), where students, staff and alumni of the Faculty of Science participated in exciting games and activities.

The SSG aims to provide an avenue to forge friendships through a fun and novel event, where sports is utilised to build teamwork amongst participants. It also promotes a healthy lifestyle through different sports, while building up anticipation for the Inter-Faculty Games (IFG) 2018.

The SSG comprises various competitive games such as Captain’s Ball, Frisbee, Dodgeball and Football, where different teams battle against each other to clinch a medal in the top three positions.

Tchoukball and Volleyball were also introduced to expose SSG participants to sports enroute to the IFG. Activities such as Bubble Soccer, Laser Tag and Darts were also organised, and were received with excitement and enthusiasm by participants.

XU Wanwei, a staff member from the Lee Kong Chian Natural History Museum, said, “The SSG 2018 was well-organised, offering a good variety of sports. I especially enjoyed the Captain’s Ball game.”

“"This is my first time joining a Science Club event. I participated in the Frisbee game with my hall mates and I found it really fun!”

PHUAN Mei Hui, Year 3 Chemistry
An online publication for NUS Science students, staff and alumni

INDUSTRY SHARING SERIES

The Industry Sharing Series for the semester continued to focus on the impact of Big Data on different industries, including consumer businesses, and the marine and energy sectors.

NTUC Link
On 14 March, Mr Alan YEO, Vice President of Human Resources, and Dr ZHAO Jingyuan, Director of the Link Analytics Centre from NTUC Link Pte Ltd were invited to share how NTUC Link is transforming its business by leveraging on digital technologies to enhance innovation in a world of accelerated change.

Mr Yeo shared how NTUC Social Enterprises addresses the social needs of Singapore, such as cost of living, financial security and healthy living, especially for the elderly, as well as provision of childcare and education opportunities for all.

Dr Zhao, an NUS Statistics Ph.D. alumna, discussed how the Link Analytics Centre uses analytics as a differentiating capability. Noting that the system continuously evolves based on customer feedback, Dr Zhao explained how she builds models to interpret and predict consumer behaviour. Through this, NTUC Link uncovers growth opportunities for partners through more effective marketing, better product development and stronger customer engagement.

Quoting Steve JOBS, she said, “Get closer than ever to your customers. So close that you can tell them what they need before they realise it themselves.”

Lloyd’s Register
On 4 April, Ms Priyanka RAINA, Data Scientist at Lloyd’s Register’s Digital Innovation Hub, and Mr Dinesh SINGH, Data Scientist at QiO Technologies, a 4.0 software company, shared how Big Data is transforming the marine and energy industries.

Ms Raina spoke on the transformative impact of 18 technologies on ship design, naval power and the use of ocean space in 2030. She then went on to explain the value of “horizon scanning”, which calls for both quantitative skills such as statistics and research, as well as qualitative information gathered from platforms like workshops and interviews with experts.

Thereafter, Mr Singh described how QiO leverages its native cloud platform, which is customisable for any asset or source, at any scale and on any cloud, to provide end-to-end Internet of Things solutions. The session also took the audience through cutting-edge technologies like robotics, drone inspections, smart assets, and communication and sensors.
On 11 April, the Chemistry Department organised a networking session with its alumni, held back-to-back with the Chemistry Honours Symposium.

Eight Chemistry alumni, namely Senior Forensic Scientist at Health Sciences Authority Dr ANG Thiam Peng; Trainee Patent Attorney at Davies Collison Cave Intellectual Property Dr YANG Jie An; Senior Consultant Forensic Scientist and Founding Partner of The Forensic Experts Group Ms LIM Chin Chin; Teacher at the Chemistry Department of Anglo-Chinese Junior College Mr Rayston LEONG; Manager (Festivals, Events, and Exhibitions) at National Parks Board Mr CHUA Zi Han; Senior Laboratory Analyst at Nalco Champion Mr Elgin TING; Asia Product Manager at Metrohm Regional Support Centre Singapore Mr HENG Aik Kian; and Research Scientist at Solvay Specialty Chemicals Asia Pte Ltd Mr Ryan LIN took time off their busy schedules to join some of the Department’s faculty members for a catch-up lunch.

The alumni were split into three groups to evaluate 52 nominated posters. They then selected three winners for the Chemistry Honours Poster Achievement Award. During the networking session that followed, the alumni shared their insights on career seeking and the employment market with the students.

At the end of the event, Head of Department, Prof Richard WONG presented a token of appreciation to the alumni and prizes to the winners.

CAO Xujun, LIM Si Ying and Shawn NG Voon Hwee were the winners of the Chemistry Honours Poster Achievement Award 2018.
On 15 May, as part of the international Pint of Science Festival, volunteers from the Special Programme in Science (SPS) and the Master in Science Communication programme organised activities at Tiong Bahru Hawker Centre.

This special evening was entitled “Bits and Bites of the Earth” and showcased interactive exhibits and demonstrations explaining the Earth system structure and mechanisms. Diverse Earth bites were delivered across various stalls from the ocean to the sky to life.

As an interdisciplinary programme, SPS’ emphasis was to show how all the science disciplines work together to elucidate earth’s mysteries. A few themes were covered, including ocean acidification, marine life, physics of the ocean, volcanoes, minerals and microscopy, and magnetism.

The Lee Kong Chian Natural History Museum also participated with exhibits on shells and impressive black soldier flies.

The annual Pint of Science Festival aims to communicate contemporary scientific developments to the public in an interesting and engaging way by bringing scientists to accessible places. This was the first time that science was brought to the public in a hawker centre.

The event was organised in collaboration with the Faculty of Science and supported by the National Environment Agency through the Vibrant Hawker Centres programme, which enhances hawker centres as social spaces.
NG Jing Yi, Year 4 Chemistry, is keen to contribute to entrepreneurial ventures to help the elderly when she graduates.

To this end, she participated in the inaugural Robots@NUS Competition 2017, where 36 NUS students across 12 teams developed innovative robotic aids for the elderly and the disabled. To foster cross-disciplinary collaboration, project teams comprised students from at least two different faculties.

Participants attended a three-day workshop, from 12 to 14 December 2017. They were taught basic programming, construction using LEGO sets, as well as how to use 3D printers and laser cutters. Each team was required to submit a robot built from the materials provided, and a video detailing their construction process and explaining their invention. Additional materials required for the prototypes had to be either 3D-printed or sourced from recycled materials.

Jing Yi said, “My soft spot for the elderly convinced me to try this competition. Our team faced a steep learning curve as we had no engineering and programming experience. The concept of building a robot and the fundamentals taught were fascinating. I was in awe of the wide variety of functions that we can programme in a robot!”

She added, “To functionalise our robot, it was dismantled and improvised at least five times before the product design was finalised. Every change in design was a tedious thinking and physical process, but the complete design was worth the effort.”

On her experience, she said, “I believe that skills grow with experience. Three weeks into the competition, we acquired the “Lego mindset” after assembling and reassembling the blocks. We must be willing to experiment, to discover our interests.”

The completed robot will reduce the possibility of the elderly slipping and falling. The two circular wipers at the front help to spread water out on wet surfaces, while the conveyor belt cleaner at the back mops up the remaining moisture on a specific area. This is set to be automated after elderly members leave the bathroom, to accelerate the evaporation rate of moisture from wet surfaces.

The competition results were announced on 8 January. An exhibition featuring the 12 projects was held at University Town.
Recipe for Success: Nutrition Entrepreneur
CHAN Joy Seng

Today's consumers are more health conscious. They are looking for nutritious food options but may not be familiar about how to apply the nutrition knowledge in their daily life, such as reading food labels.

With this gap to fill, Mr CHAN Joy Seng seeks to share his knowledge on the health impact and nutritional benefits of food to help consumers make healthier food choices.

To achieve this, he founded Alive Nutrition Consultancy in 2014 when he was pursuing a Masters of Medical Science in Human Nutrition.

“Setting up my own company allows me the flexibility to contribute to both nutrition and education.”

Mr CHAN Joy Seng
Director, Alive Nutrition Consultancy

Alive Nutrition focuses on nutrition consultancy and services. This includes providing nutrition and health talks, supermarket tours on reading food labels, hawker centre tours on eating out healthily, cooking demonstrations on preparing healthier meals, and working with the food industry to develop healthier food products.

Joy Seng explained various food labels to the elderly during the supermarket tour.

Joy Seng shared health tips with the Singapore Cancer Society.

Joy Seng shared with the elderly on healthy cooking alternatives and prepared a healthy and flavourful meal for them.

Joy Seng also conducts nutrition counselling for weight management and sports performance, implements workplace health programmes and develops materials for public health education.

Joy Seng was invited to share on the TV programme "The Food Detectives vs Diabetes".

Joy Seng derives great satisfaction from his career. He said, “My work contributes to public health. The nutrition education that I conduct provides consumers with insights on healthy eating. This contributes to preventive health in our society.”

Joy Seng at a Residents’ Committee Health Training session.
Alumni Events
The Faculty regularly organises events to strengthen the Science alumni network.

Single Mingle

More than 60 Science alumni attended the Single Mingle workshop on 2 December 2017. The Single Mingle event encourages close interaction amongst participants through various interesting activities.

The leather crafting workshop started off with interactive ice-breaker games, followed by an introduction to leather crafting. Participants were then brought through hands-on leather craftwork activities. Over networking and refreshments, one of the participants, Mr TAN said, “The event was well-organised. I am looking forward to more workshops, especially recurring ones!”

This event was co-sponsored by the Social Development Network, an agency offering opportunities for singles to interact in social settings.

Inaugural Class Ambassadors Gathering

An inaugural class ambassadors gathering took place on 4 March. Hosted by Prof CHAN Woon Khiong, the Faculty’s Director of Alumni Relations, this event was an opportunity to update our alumni on the latest developments in NUS. It was also a platform for class ambassadors and volunteers to reconnect and share their views on building the Science alumni network.
Science Alumni

Industry Lunch

The inaugural Science Alumni Industry Lunch was held on 25 May in collaboration with BLOCK71 Singapore and NUS Enterprise. The session, which drew close to 40 participants, delved into Singapore’s startup ecosystem and entrepreneurship community.

Science alumnus Mr KOO Ping Shung, who is the Co-Founder of Data Science Rex Pte Ltd, shared his startup journey and experience as a data science practitioner with Science alumni who are aspiring entrepreneurs.

The participants also toured BLOCK71 Singapore, which houses hundreds of technology-related startups, venture capitalists and incubators.

Alumni Go Out

Over 30 Science alumni were given an insightful tour of the Asian Civilisations Museum on 17 March by Ms Diana CHUA, a registered guide from the Society of Tourist Guides (Singapore). Situated next to the Singapore River, the museum showcases Asia’s rich artistic heritage, especially the ancestral cultures of Singaporeans. The tour culminated with an outdoor picnic where participants reminisced on their student experiences at NUS.
The Faculty of Science is at the forefront of cutting-edge scientific research. Our researchers are realising this vision in their various fields by breaking new ground and gaining acclaim for their work.

Some of our researchers share their achievements, the challenges and rewards of their work and their plans moving forward.

Prof GONG Zhiyuan
Department of Biological Sciences

Prof Gong has aligned his research focus areas with the national agenda at different times, successfully acquiring research funding from different grant agencies such as the Ministry of Education, the Biomedical Research Council, the National Medical Research Council and the Environment and Water Industry Programme Office. He has published 175 research papers and 22 review/book chapters from NUS. His NUS publications received a total of 6,530 citations according to Web of Science. Prof Gong was awarded the Faculty of Science Outstanding Scientist Award 2017.

Over my long research career, I have made research contributions in different areas, including aquaculture, developmental biology, environmental toxicology and biomedical research using the zebrafish model.

I take pride especially in two accomplishments. One is the development of GloFish technology, which has established a new and growing industry for generating novel varieties of fluorescent ornamental fish through genetic modification. I am very gratified that our technology has become an established tool to develop novel varieties of ornamental fish and how it created a new and growing industry in the pet market. I am even prouder that the GloFish has become part of the teaching material in classrooms, museums and aquariums for public education in topics ranging from classical genetics to modern biotechnology.

The second is my contribution to the national NEWater project. Our fish tests have provided scientific data for the government to make critical decisions to address Singapore’s efforts to overcome water shortage and attain water independence. Both projects have high social impacts on society.

Currently, I am focusing on translational research by collaborating with industry partners to translate my research findings and technology to products that benefit society.

I was amongst the fortunate generation to be able to develop my research career in an environment with relatively abundant resources and less stringent regulations. I could initiate my experiments immediately after an exciting research idea. This is important for research creativity and productivity.

Now the landscape is different. The new generation of scientists has to find their own way to succeed. My advice for scientists is to be open-minded in research topics and to stay abreast on national research priority areas. Since I joined NUS in the mid-1990s, my research interests have undergone several changes according to the national research agenda.”
Every year the Faculty honours faculty members and staff who have excelled in the areas of teaching, research and service, and staff who have dedicated a large part of their career to the University, at the Faculty Awards Ceremony. The ceremony was held on 26 January and graced by Guest of Honour, Prof PHOON Kok Kwang, Vice Provost (Academic Personnel).

This year, 26 academic staff were awarded the Teaching Excellence Award or Honour Roll for their contributions to science education. 18 full-time and part-time teaching assistants were recognised for their dedication and commitment in teaching. Teaching Excellence Award recipients were nominated for their ability to make the modules more interesting.

The Honour Roll was awarded to six recipients with a track record of teaching excellence, having been Teaching Excellence Award recipients for the past three consecutive years, namely: Prof Peter Alan TODD and Mr N Sivasothi from the Department of Biological Sciences; Prof CHNG Shu Sin, Prof Jason YEO and Dr ZHANG Sheng from the Department of Chemistry; and Prof LEE Soo Teck from the Department of Mathematics.

The Faculty continues to push research boundaries beyond being a global competitor, towards the goal of being a global leader, with a focus on innovation with long-term impact, and developing translational research that has local relevance. In support of this vision, the awards honour the research achievements of exceptional academic staff.

Prof GONG Zhiyuan from the Department of Biological Sciences was awarded the Outstanding Scientist Award for the creation of Glofish™ technology, and contributions to zebrafish model research. Dr Alexandre Hoang THIERY from the Department of Statistics and Applied Probability was the recipient of the Young Scientist Award for his contributions to computationally intensive Big Data and Big Model algorithms.

This year, 11 staff received the Outstanding Service Award for their exemplary service. In line with the Organisational Excellence initiative to increase service efficiency, Deputy Dean Prof Peter HO urged the Award recipients to continue to lead by example as service role models.

The Faculty also honoured 145 long-service faculty members and staff. Mr Muthusamy s/o ANNANVY from the Department of Physics, who retired last year, drew tremendous applause from the audience when he received his 50-year Long Service Award from Dean of Science, Prof SHEN Zuowei.
The Faculty’s Annual Teaching Workshop, held on 24 May, was attended by 69 participants.

In support of the theme “Teaching the Sciences Today”, the workshop brought together various speakers who focused on the changes in science education, teaching pedagogies and students’ learning patterns over the years. The workshop also highlighted the importance of interdisciplinary learning enabled by technology.

Prof GOH Say Song, Chair of the Faculty’s Teaching Excellence Committee, said, “Students today are active on the Internet and enjoy interacting on social media. They are more global in outlook, but have a shorter attention span. It is therefore critical to develop new pedagogies, to effectively engage digitally-savvy students.”

Prof Alex IP from the Department of Biological Sciences shared his perspectives on how to inspire unmotivated students to learn through lively lectures to capture students' interest.

Dr Stanislav Ivaylov PRESOLSKI from Yale-NUS College’s Division of Science discussed how the Yale-NUS programme had evolved in response to student and faculty feedback in its efforts to offer liberal arts education and a broad-based undergraduate curriculum.

Dr Vik GOPAL from the Department of Statistics and Applied Probability then brought participants through the changes in statistics education and the subsequent growth in data science, and how these developments have led to curriculum changes to stay relevant to students.

The workshop concluded with a panel session where participants were invited to discuss the topic of “Evolving Science Education for Generation Z” with the panellists. The panellists included Prof Adam SHAFFIQUE from Yale-NUS College; Prof CHAN Lai Wah from the Department of Pharmacy; Dr Vik Gopal; and Prof Alex Ip.

On the same day, the NUS Teaching Academy held a roadshow at the Faculty, where participants had the opportunity to learn more about the Academy, meet its Fellows and exchange views on future-proofing university education.
The Lee Kong Chian Natural History Museum (LKCNHM) launched a new exhibition, titled “Christmas Island Red”, on 18 December 2017. The special exhibition focused on remote Christmas Island located in the Indian Ocean south of the island of Java and its rich biodiversity.

Christmas Island has over 200 endemic species of animals found nowhere else on Earth and is well-known for the yearly migration of millions of Christmas Island Red Crabs from the forest to coast for breeding during the wet season.

Christmas Island’s connection to Singapore goes back a long way, with a history of research on Christmas island fauna, such as its charismatic crabs and birds, stemming from 1904. More recent museum expeditions have also yielded some interesting findings and new species such as the Blue Crab (*Discoplax celeste*) and cave crabs (*Christmaplax mirabilis* and *Orcovita spp.*).

The exhibition launch was graced by the Australian High Commissioner Mr Bruce GOSPER, alongside Polish Ambassador Mr Zenon KOSINIAK-KAMYSZ, NUS senior management, donors and distinguished guests.

The Christmas Island Red exhibition will run until mid-2018.
Scientists who participated in the South Java Deep Sea Biodiversity Expedition 2018 collected more than 12,000 creatures during their 14-day voyage from 23 March to 5 April to survey the unexplored deep seas off the southern coast of West Java, Indonesia.

The expedition, jointly led by Prof Peter NG, Lee Kong Chian Natural History Museum and Dr Dwi Listyo RAHAYU, Research Centre for Oceanography of the Indonesian Institute of Sciences, is the first deep-sea exploration of the area’s biodiversity.

The team, comprising experts in different marine organisms, collected samples across 63 stations, at depths averaging 800 metres, with the deepest at 2,100 metres.

Some 800 species from over 200 families of sponges, jellyfish, molluscs, starfish, urchins, worms, crabs, prawns and fish were uncovered. Over a dozen new species of hermit crabs, prawns, lobsters and crabs were discovered. Among the deep-sea creatures new to science is a crab that has fuzzy spines and blood-red eyes, a lobster with long arms and zebra-patterned shell, and a hermit crab with green eyes and orange banded pincers.

Prof Ng said, “This is the culmination of 15 years of discussions. The teams learnt how to conduct deep-sea science and handle the equipment needed for such work.”

Dr Rahayu said, “Our scientists were exposed to new techniques and methodologies in an environment that presented a different set of challenges from their own scientific specialities.”

The samples obtained will be sorted, photographed, preserved and labelled on board the vessel. Samples will also be kept alive in special chilled aquariums for additional study.

The expedition ties in with RISING50, a celebration of 50 years of diplomatic ties between Singapore and Indonesia.
22ND BIOLOGICAL SCIENCES GRADUATE CONGRESS

The annual 22nd Biological Sciences Graduate Congress (BSGC) 2017 was held from 19 to 21 December 2017.

More than 170 graduates from 10 universities in eight countries gathered to share their research on various topics in four areas, namely: Biochemistry and Biophysical Sciences; Biodiversity, Ecology and Environmental Biology; Molecular, Cell and Developmental Biology; and Biotechnology and Computational Biology.

The BSGC2017 theme - “In a Nutshell” - aimed to encourage participants to present their research in an interesting and easy-to-understand way. Ms Rangsinee SANKHOM from Chulalongkorn University and Mr SEE-TOO Wah Seng from the University of Malaya received the Best Oral Presenter and Best Poster Presenter awards, respectively.

The congress culminated with a Christmas-themed Gala Dinner featuring cultural performances and traditional games from the participating universities. Chulalongkorn University’s cultural performance introduced a traditional Thai game played by children (below).

The BSGC is an annual congress organised by graduate students from three collaborating universities: NUS’ Department of Biological Sciences (DBS); University of Malaya, Malaysia; and Chulalongkorn University, Thailand. The organising team was led by Ian CHAN from DBS’ Experimental Marine Ecology Laboratory.
13th China-Singapore Joint Symposium on Research Frontiers in Physics

The China-Singapore Joint Symposium on Research Frontiers in Physics is an annual symposium that provides opportunities for physicists from China and Singapore to exchange scientific ideas and develop collaborations.

The 13th symposium from 7 to 9 December 2017 covered wide-ranging topics from biological physics to two-dimensional materials, oxides and novel topological materials. The symposium also served as a platform for in-depth discussion on the latest research findings and prospective advances in the various fields.

The event drew over 40 participants.
PHARMACY EVENTS

The Science, Art and Regulation of Consumer Care Products Workshop

On 22 and 23 February, the Department of Pharmacy organised "The Science, Art and Regulation of Consumer Care Products" workshop for research managers, research scientists, manufacturing scientists and regulatory affairs specialists from the consumer care and pharmaceutical industries.

The workshop featured talks by regulatory, industry and academic experts in various fields. Participants donned laboratory coats and got actively involved in the various practice-based activities. They were also captivated by the experiments conducted during the practical sessions.

NUS Pharmacy-DAAD Symposium

On 13 April, the Department of Pharmacy and the German Academic Exchange Service (DAAD), the largest German support organisation in international academic cooperation, co-organised the "Innovation at the Heart of Discovery" symposium.

With rapid technological advancement, innovation for sustainable economic growth is increasingly imperative. The symposium brought together leading experts to share their insights on building a vibrant culture of innovation. The event also celebrated the close relationship in science and research between Germany and Singapore.

Following opening remarks by Prof Christina CHAI, Head of the Pharmacy Department, Mr Knut ZUCHAN, Head of the Science and Technology Department at the Embassy of the Federal Republic of Germany, Singapore delivered his welcome address.

Dr Peter NAGLER (below left), Executive Director, Institute of Chemical and Engineering Science, a research institute under the Agency for Science, Technology and Research (A*STAR), spoke about creating value through innovation from an industry perspective.

Prof Freddy BOEY (below right), Senior Vice President, Graduate Education and Research Translation, NUS, shared his experiences from research to innovation.

Ms Claudia FINNER, Director of the DAAD Information Centre Singapore, then spoke about the research landscape in Germany.

The symposium included two keynote speakers.

The symposium concluded with a question and answer session.
Inaugural Pharmacogenomics Workshop 2018

On 26 and 27 February, the Department of Pharmacy organised a workshop, sponsored by Vishuo Biomedical Pte Ltd, on “Pharmacogenomics: Clinical Implementation Strategies and Pharmacists’ Roles”.

The workshop was conducted by Prof Christina AQUILANTE, Professor at the Department of Pharmaceutical Sciences, Skaggs School of Pharmacy & Pharmaceutical Sciences, University of Colorado, where she works on pharmacogenomics (PGx) implementation.

The fundamentals and clinical applications of PGx, educational strategies and cost-effectiveness of PGx implementation were discussed. Relevant case studies were also presented.

ZHENG Weiling, Business Development Manager, Vishuo Biomedical Pte Ltd said, “The workshop was well-planned and executed. It was a great opportunity to meet practicing pharmacists and PGx researchers, and we learnt a lot from the lectures.”

8th Foundation of Clinical Diabetes Management

The 8th Foundation of Clinical Diabetes Management: Certification Programme for the Healthcare Professionals, held from 25 to 27 April by the Department of Pharmacy, focused on the prevalent healthcare issue of combating diabetes through continuing education (CE).

This annual programme is one of the most comprehensive CE workshops offered in Singapore. The workshop was delivered by a team of multidisciplinary experts in diabetes care, including clinical pharmacy, endocrinology, family medicine, physiotherapy, ophthalmology, dietetics / nutrition, podiatry and nursing education.

The participants attended 18 hours of interactive lectures coupled with small-group clinical case discussions which allowed them to apply their knowledge to real patient cases.

Some 40 healthcare professionals from the community, primary care sector, long-term care sector and tertiary care health institutions attended. They received a Certification of Participation upon completing the course. Those who completed an online assessment after the programme received a Certification of Achievement. The programme certifications are recognised by employers from different health institutions.

The programme helps to strengthen foundational diabetes knowledge and skills, to improve the quality of life for diabetic patients. Many participants shared that they gained confidence in managing patients with Type 2 diabetes.

Since 2011, the programme has certified and recertified more than 400 healthcare professionals from Malaysia, Thailand, Philippines, Indonesia, Taiwan and Hong Kong.
13th Singapore National Crystal Growing Challenge

The finale of the 13th Singapore National Crystal Growing Challenge was held at the Chemistry Department on 26 May. This is a biennial event for secondary school, junior college and polytechnic students.

During the crystal growing process, students learn about the chemical processes behind crystallisation, factors affecting crystallisation and crystal growing techniques.

A total of 109 teams from 47 schools participated this year. The students presented ammonium cobalt (II) sulphate hexahydrate crystals for the Junior category and sodium zinc sulphate tetrahydrate crystals for the Senior category.

In the Open category, they were challenged to grow a "Crystal Tree".

After months of hard work, the students showcased their crystals at the Chemistry Teaching Laboratories for judging.
During the educational session, the participants attended a special lecture on gemology by Mr TAY Kunming, Gemologist, Director of Far East Gems and Jewellery and Far East Gemological Institute.

Prof GOH Say Song, the Faculty's Vice Dean (Outreach and Admissions), also gave an overview of programmes offered by NUS Science.

The event culminated in the presentation of tokens of appreciation to Mr Tay and the panel of judges, as well as the presentation of awards to the winners.
The annual Faculty of Science Open House on 12 May drew more than 1,000 prospective students and their parents. Through the programme featuring academic talks, Master Classes delivered by award-winning professors on diverse enrichment topics, alumni sharing sessions, student activities and tours to the Faculty’s facilities and laboratories, the visitors gained a first-hand experience of life as an NUS Science undergraduate.

In his welcome address, Dean of Science, Prof SHEN Zuowei, said, “With strong fundamental science knowledge and an interdisciplinary perspective, our graduates have a strong headstart...to lead innovation and technological advancement in industry.”

The department and student society booths at the foyer bustled with visitors who were keen to find out more about our curriculum, overseas exchange and internship programmes and student activities.
The student societies' booths featured demonstrations and hands-on activities.

Visitors got to view our state-of-the-art laboratories through various tours.
Department Engagement Events

The Departments of Biological Sciences, Chemistry, Mathematics, Physics and Statistics and Applied Probability, as well as the Food Science and Technology, and Data Science and Analytics programmes, each hosted a half-day visit to encourage prospective students who received admission offers to study Science at NUS. The departments customised their programmes to provide information on our Science courses, other learning opportunities and the career prospects of science graduates.

The activities, held from 18 to 28 April, included talks, laboratory visits, hands-on activities and meetings with faculty members and students. These visits complemented the Faculty’s key pre-admission events, namely, NUS Open Day and the Faculty Open House.

Department of Biological Sciences

The Department of Biological Sciences organised an engagement session which commenced with a welcome address by Head of Department Prof YU Hao. This was followed by an overview of the Life Sciences curriculum by Prof Henry MOK. Prof Darren YEONG then shared on the Environmental Biology modules, Prof Timothy SAUNDERS on Biophysics modules, Prof LOW Boon Chuan on Cell and Molecular Biology, and Prof Maxey CHUNG on Biomedical Science.

After tea, visitors went on guided laboratory tours to the Protein and Proteomics Centre (PPC), which allows advanced research in proteins and oncology biomarker research for rapid cancer detection and screening applications, and the bee diversity laboratory.

Another group visited the Centre for Bioimaging Sciences, which focuses on the science and application of biological imaging by light and electron microscopy, and teaching laboratories focusing on Biodiversity and Cell and Molecular Biology. The visit drew 282 students and their parents.

Thereafter, Dr Zeehan JAAFAR introduced the Student Life Committee members of the NUS Life Sciences Society (LSS).
The Department of Chemistry held a half-day programme, which commenced with a welcome address by the Head of Department Prof Richard WONG, followed by a Chemistry curriculum and career talk by Deputy Head (Administration and Student Life) Prof ANG Wee Han.

Thereafter the visitors toured the renovated teaching laboratories, instrument laboratories featuring mass and nuclear magnetic resonance spectrometers, and the research laboratories. Each group was led by one of 14 student assistants who provided a commentary describing how the laboratories support education and research.

The prospective students also conducted a hands-on experiment to prepare one of two metal-organic frameworks. Comparing their results with their peers piqued their interest in inquiry-based experiments. The event ended with an optional campus bus tour.

The Department of Physics welcomed over 50 prospective students and their parents. Head of Department Prof SOW Chorng Haur introduced the department while Deputy Head (Education) Prof Valerio SCARANI delivered a talk on the curriculum structure and career options of physicists.

The highlights included tours to the Centre for Ion Beam Applications where visitors learnt about novel applications using proton beams, and the Centre for Quantum Technologies which focuses on quantum physics research.
The Department of Mathematics arranged a half-day programme for visiting students and their parents, comprising a welcome address by Head of Department Prof ZHU Chengbo, and a talk on the Mathematics undergraduate curriculum by Assistant Head (Teaching) Prof Victor TAN.

To provide a comprehensive perspective of Mathematics at university level, a panel of four undergraduates majoring in Mathematics, Applied Mathematics and Quantitative Finance were invited to share their learning experiences.

The Department of Statistics and Applied Probability’s programme started with a mini datathon where attendees were given a set of data, which they had to use to solve a problem.

Student ambassadors from the NUS Mathematics Society then brought the visitors on a department tour. The programme ended with a tea session and the option to attend a mini lecture on calculus by Dr WANG Fei.

Deputy Head (Academic) Prof LIM Tiong Wee then explained the datathon solution, and introduced the Statistics curriculum as well as the diverse learning opportunities at NUS.

Dr ZHAO Jingyuan, a Statistics alumnus, then shared about her experience as a data science practitioner at NTUC Link.

The Data Science and Analytics (DSA) session commenced with an introduction by Prof Lim Tiong Wee, on the DSA curriculum as well as career opportunities for data science graduates.

An early engagement session was conducted by the Food Science and Technology (FST) Programme, which comprised a programme introduction and engagement with student ambassadors who shared on their learning and campus life experiences.
OUTREACH TO TEACHERS

FRONTIERS IN BIOLOGY
SERIES FOR TEACHERS

The Department of Biological Sciences and the Academy of Singapore Teachers jointly launched the event as part of educator outreach efforts, and to provide continual training and development opportunities for Singapore school teachers.

The lecture topics under the series are broad-ranging, enabling teachers to learn about the latest advances in various life sciences-related areas.

A total of 32 junior college teachers participated in the inaugural talk “Genetics: Research and the Real World” by Prof CHEW Fook Tim on 11 April. Prof Chew shared on genetic strategies for yield improvement in crops, including how new genetic and genomic tools allow scientists to evaluate underlying mechanisms for diseases and major phenotypes in agriculture. The presentation provided insights on the application of fundamental genetics for industry practice.

TEACHERS WORKSHOP IN BIOLOGY

The Department of Biological Sciences organised a two-day workshop from 30 to 31 May to equip biology / science school teachers with enhanced knowledge and skills to more effectively teach students advanced biology in light of ever-changing developments and new discoveries in the field.

This workshop aimed to update teachers on concepts of fundamental biology and introduce contemporary topics and classroom techniques. With this knowledge, teachers can develop or improve science / biology curriculum materials.

The workshop featured lectures and hands-on laboratory sessions conducted by professors and staff specialising in various fields of biology, ranging from the fundamentals of Teaching Biology and Plant Biology to specialised topics like Genetics and Model Organisms.

A total of 36 teachers from 11 secondary schools and three pre-tertiary schools attended.
Creative and Heuristic Applications of Science
2018

The Creative and Heuristic Applications of Science (CHAOS) is an internet-based science competition for secondary school students. The programme, a joint initiative by the Faculty and the Ministry of Education, challenges participants to work on open-ended science problems which require them to undertake intensive research, higher-order thinking and critical analysis in developing their solutions.

The theme was “Cyclones”, given the increasing occurrence of this phenomenon over the last 10 years. Participants were encouraged to integrate and apply scientific knowledge and ideas to address this real-life issue.

Out of 34 teams from 19 schools, six teams were selected to present their research findings at the finals on 23 May. All the teams displayed impressive presentation skills through their skit performance and quick thinking at the Q&A session.

After much deliberation, NUS High School Team 2 emerged as the winner of CHAOS 2018 and also received the Best Presentation Award.
An online publication for NUS Science students, staff and alumni

The Mathematics Learning Journey, organised by the Department of Mathematics, is designed for pre-university students with interest and aptitude in mathematics and / or those who plan to study mathematics in university. The programme introduces prospective students to NUS’ Mathematics course and creates awareness on the relevance of mathematics in our daily lives.

Each Learning Journey runs for about four hours, giving students an overview of the department and its programmes.

This is followed by two enrichment talks related to the topics in ‘A’ Level H2 mathematics, such as calculus, sequences and series, as well as probability. Students also get to interact with professors and undergraduates to find out more about university life. The event ends with a hands-on activity for students to experience graph plotting using Maple software.

Into its fourth run this year, the department hosted 186 students over five sessions, held on 31 January, 28 February, 26 March, 5 April and 11 April, from Anderson Junior College (JC), Anglo-Chinese JC, Catholic JC, Innova JC, Jurong JC, Meridian JC, National JC, Pioneer JC, Temasek JC, Millennia Institute, Raffles Institution and River Valley High School.

Jean LOW Jing Yi, Year 6, River Valley High School said, “We gained insights into the real-world applications of mathematics. I never knew that mathematics could be applied to create movie animations in interactive digital media. The talks were also very educational, giving us a clearer picture of how mathematics is applied to finance. Through the Maple session, we learnt to solve mathematical problems.”

Click here to view the photo gallery
For the second year running, the Department of Mathematics held a Data Science and Analytics themed event on 14 March as a platform to share with the general public and pre-university students about data science, its applications and career prospects.

Prof ZHU Chengbo, Head of Department, welcomed the audience and gave an overview on the Data Science and Analytics four-year direct Honours programme, which was designed to equip graduates with the ability to develop novel analytical tools for new scientific applications and industry problems that arise in the future.

Three speakers from different backgrounds were invited to share their expertise.

Our Science alumnus Dr LOKE Chok Kang, Principal Analyst (Human Resource) in the Public Service Division, Prime Minister’s Office, shared how data science has become a mainstream tool that aids decision-making for businesses in different sectors, spanning the private and public sectors. He also shared how data science can derive game-changing insights, enabling business growth and transformation.

Prof Adrian ROELLIN at NUS’ Department of Statistics and Applied Probability, explained how computers have surpassed humans at playing Go, and how mathematics and Big Data played a crucial role in this development.

The event was attended by more than 80 participants.

Dr LI Qianxiao, Scientist at the Institute of High Performance Computing, focused on the theory and applications of reinforcement learning, an important branch of machine learning that mimics the way biological agents learn through experience.

“"The speakers provided a good representation of different perspectives on data science. Besides broad ideas of how data science can unlock opportunities by enabling informed data-driven decisions, the talks also shed insights into specifics such as the role of mathematics in developing computers to play Go. The session enhanced my appreciation of the usefulness of mathematics and data science in the world today.""  

Ms LIM Fen Niu, Head of Department, Mathematics, River Valley High School
Educational Institutions’ Visits to the Faculty

The Faculty runs various pre-undergraduate programmes, school visits and talks to promote awareness and interest in science education and encourage students to read Science at NUS.

GREENRIDGE SECONDARY SCHOOL VISIT

The Department of Chemistry hosted a visit for 39 Secondary Four science students and two teachers from Greenridge Secondary School on 5 January. Prof LAI Yee Hing, the Faculty’s Associate Dean (Education and International Programmes), provided an overview of the Faculty’s six departments, so that the students could appreciate the broader range of sciences beyond chemistry and physics, the pure science subjects they take for ‘O’ Levels. The students were then brought through the learning, research and other enrichment opportunities offered by the Department of Chemistry. They also tried an experiment on thin layer chromatography.
INNOVA JUNIOR COLLEGE VISIT

On 8 January, the Faculty hosted a visit for 60 students and teachers from Innova Junior College (IJC).

Prof TAN Meng Chwan, the Faculty’s Assistant Dean (Outreach and Admissions), introduced the Faculty’s undergraduate programmes and explained that NUS Science equips students with domain knowledge as well as soft skills which are critical in today’s workplace.

Science Student Ambassador, Kenneth LEE, an IJC alumnus, then shared on his enriching educational experience here. Kenneth is currently a final year undergraduate majoring in Life Sciences. Kenneth encouraged the students to take advantage of the numerous opportunities available to broaden their perspective beyond their studies. He cited his participation in the NUS Study Trips for Engagement and EnRichment (STEER) programme to Costa Rica, Central America, as an example of how he applied classroom learning to the field, and the knowledge he gained about Costa Rica’s biodiversity and conservation efforts.

Senior Lecturer Dr Emelyn TAN shared on the Chemistry programme and academic enhancement programmes, as well as career opportunities for chemistry graduates.

In closing, Prof TAN Zhi Kuang delivered a Master Class on how new semiconductor materials can be solution-processed and printed onto thin films, as well as their applications in wall-sized colour displays and solar energy generation.

Year 2 IJC student TAN Jean Yee said, “The chemistry lecture truly changed my perception of materials chemistry. I learnt that this area is chemistry-centred and its relevance to our daily lives.”

BIOLOGICAL SCIENCES OPEN DAY

On 13 January, the Department of Biological Sciences hosted a visit for medallists from the 2017 International Biology Olympiad.

Head of Department Prof YU Hao gave an overview of the department, its diverse undergraduate programmes and the wide array of research opportunities.

Students were then brought on a tour of the department’s research facilities. At the internationally accredited protein laboratory, they were shown how technical equipment is applied to derive answers to research questions, such as the structure of molecules, and how this helps in cancer studies. Students were also shown how high power microscopes could examine beneath cell layers, enabling researchers to understand how cell attachments work. They then visited the plant growth room where they were shown how agrobacteria could be incorporated into plants to modify them for specific research purposes.
## Check out the events from June to November 2018!

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