Science Faculty e-Newsletter

Science Career Fair 2017

The 2nd Science Career Fair was grandly held on 15-16 March, 2017 at the Science Centre Podium, attracting more than 1,800 students to explore their career opportunities and plan their career path. 40 companies joined the fair covering a broad spectrum of businesses, including testing and accreditation, accounting and finance, civil services, insurance and actuarial, pharmaceutical and so forth.

This year's fair started early in January, 2017 through a series of resume writing workshops and pre-fair talks conducted by alumni, lecturers and specialists of various fields. Dr. Philip Lee Pak Kuen of Department of Statistics, who possesses incredible overseas investment bank and human resources experience, presented to students the ways to write impressive and effective resumes. Some students were then participated in the one-to-one resume session, also hosted by Dr. Lee, with the purpose of getting their resume be perfectly ready before the fair. Along with that, a series of pre-fair talks were organized where students took home in-depth information about working culture, operations and recruitment requirements of companies from various industries. These activities assisted in preparing students who soon will enter the workforce to put their best foot forward.

A series of pre-career fair talks are successfully held.

Representatives of enterprises from various industries and government units share with science students about their daily work operations, career opportunities and prospects.

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CUHKScienceCareerFair

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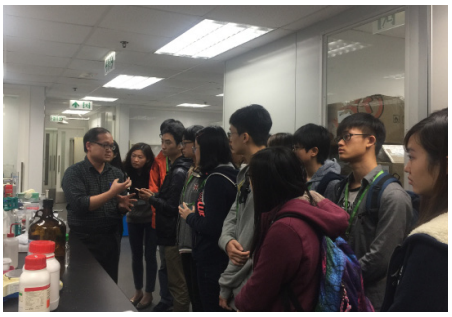
On 15-16 March, more than a hundred job vacancies, including graduation positions, internships and part-time jobs were offered on the spot. Exhibitors introduced the operations and careers prospects, and answered students' enquiries. Some executives interacted with students in the recruitment talks and shared with them personal working experience and valuable advice. Compared to last year's fair, there were more accounting and finance firms as well as testing and accreditation laboratories participated and 97.5% exhibitors reported that they were willing to join the fair again according to the survey.

Apart from on-site exhibitions, students were given the opportunity to visit a finance firm and a testing and accreditation firm at their workplace and get a feel for what the working environment would be like. Students were able to talk to financial executives and testing professionals, get direct exposure to the latest technologies and internal operations of the companies.

Recruitment talks allow students to understand the natures and operations of companies and ask questions about differernt intustries.

CASH Algo Finance Group Limited at the Hong Kong Science Park kindly arrange alumni of CUHK to share their work experience with science students.



A group of students participate in the Lab Tour offered by the HK Standards & Testing Centre Limited where they have a chance to know more about the testing equipment and related technologies.

More photos

"Energy and Environment Growth Strategies"by Eurlng. Henry K. H. Wang

It is our honour to invite Eurlng. Henry K. H. Wang, who is an international business adviser, author and speaker, to deliver an inspiring talk on "Energy and Environment Growth Strategies" on 8 March, 2017. The seminar, co-organised by Faculty of Engineering, attracted not only students, professors but also professional executives of enterprises.

Eurlng Henry K. H. Wang presented an overview on the seminar topic and shared with audiences further about the Energy and Environment Climate Change Plans in China and its economic social growth scenarios, Silk Road Initiative, New Innovation and Research opportunities as well as international cooperation and expansion strategies. He gave reviews on the Hong Kong Climate Change Action Plan 2030 and New Energy Car Program in China, which stimulated participants to think about carbon reduction and energy saving.

Prof. Henry Wong presents Mr. Wang a souvenir for his inspiring talk.

Students, professors and professional executives listen to Mr. Wang's innovative views on new energy strategies.

"Science Education in the 21st Century" by Professor Kwok Sun

Professor Kwok Sun, former Dean of Science at The University of Hong Kong, shared his view on "Science Education in the 21st Century" on 20 January, 2017 at CUHK. He started off with his view on the goals of university education, the problem of current science education and the underlying causes of curriculum reform. He showed audience that objectives of the curriculum reform including provision of broader education with more flexibility, preparing students to think analytically in the diverse academic environment which could involve not just one specialized science subject but across disciplines.

Prof. Kwok analyses the goals of science education and the importance of science education reform.

HKU introduced the Common Core courses in 2010, which aimed to train students to think, observe and be aware of their surroundings, instead of memorizing what were stated in theories or told by teachers. He pointed out that the curriculum reform had trained students to develop an enquiring mind, different from the traditional and authoritative way of teaching science. He trusted that the integrated foundation courses were essential for students' all rounded development in terms of providing students broad views of nature, history, fundamental concepts, methodology and thereby enchance impact on civilization and society.

13th Lau Oi Wah Memorial Science Lecture Series

The 13th Lau Oi Wah Memorial Science Lecture Series had been successfully held on 25 February, 2017. Over a hundred of secondary school students gathered at Cheng Yu Tung Building LT1 to hear the lectures.

The day kicked off with Dr. Apple Chui Pui Yi 's talk on "Are Hong Kong corals worth saving?" which demonstrated the potential roles of Hong Kong corals in future under projected climate changes. Her research interest includes reproductive and larval ecology of corals, coral recruitment dynamics and reef restoration using sexually reared corals.

Prof. Wong Hoi Ying, Associate Dean (Student Affairs), thanks three speakers, Prof. Liu (2nd from left), Prof. Ronald Lui (2nd from right) and Dr. Apple Chui (right), for their dedication in promoting science to youngsters and the public.

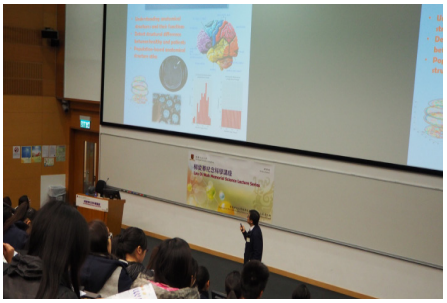
Professor Ronald Lui Lok Ming shared his expertise in computational conformal/quasi-conformal geometry, medical imaging and mathematical shape analysis. He gave us an insider's view on how Medicine and Mathematics work together and revealed some latest applications.

More photos

It was followed by Professor Liu Lin 's talk named "A tale of two seasons in the Arctic", taking the audiences on a journey to the Arctic, sharing his research experience and illustrating the consequences of global warming issue.

Dr. Apple Chui displays her own work of coral photos taken under the sea in HK.

Prof. Liu leads students the way to raise and answer questions via the e-platform.



Prof. Ronald Lui explains how mathematics help in detecting diseases.

e-Learning Sharing

The faculty based e-Learning sharing, co-organized by CLEAR, Faculty of Education and Faculty of Science, was held on 15 February, 2017. Professor Cecilia Chun Ka Wai, Director of CLEAR, presented positioning of e-Learning, strategies, actions and related grant schemes. Professor Morris Jong Siu Yung and Dr. Chan To of Faculty of Education delivered the pedagogical design of micro-modules and e-Learning tools. Dr. Kendrew Mak Kin Wah of Department of Chemistry and Dr. Cherry Chow Cheung Ming of School of Life Sciences then shared their experience and challenges on using e-Learning platform and showed audience the related resources and technologies offered by the university.

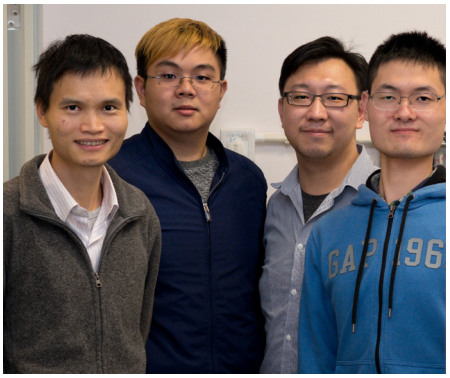
CU Astro Day

The Astro Day aimed at introducing scientific theories and encouraging the public to get further understanding on astronomy and astrophysics was held on 18 March, 2017. A group of students participated in the demonstrations of research topics, for example, gravitational wave, cosmic rays and stars formation. Participants enjoyed the planetarium show, hands on experiments and a solar/planet observation. The public talks, namely, The Brave New Worlds of Exoplanets, Large Scale Structure of the Universe, The Birth of Stars and Gravitational Wave: A new Window on the Universe equipped students with holistic astronomy knowledge.

CUHK students participate in the demonstration of research topic and having fun with publishing the astronomy knowledge.

Research Achievements

Discover Hidden Order in Bacterial Collective Motion



The team has uncovered a new form of biological collective motion which has been published in Nature.

Further Reading:

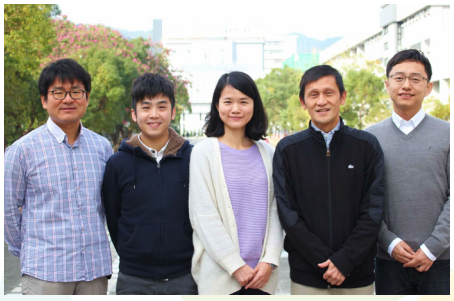
Chong Chen, Song Liu, Xia-qing Shi, Hugues Chaté, and Yilin Wu. "Weak synchronization and large-scale collective oscillation in dense bacterial suspensions." in *Nature,* 2017; DOI: 10.1038/nature20817

Professor Wu Yilin of Department of Physics and his international research team unveiled the highly robust collective oscillatory motion that is generated from millions of self-organize motile cells in dense bacterial suspensions.

Although collective oscillatory motion can be seen everywhere in nature and plays important role in many biological processes, like embryogenesis, organ development, and pace-making in neuron networks, it is elusive and unseen as it appears in large numbers of erratic but weakly-linked tracks of single bacteria. The discovery may project solid impact on the formation and structure of bacterial biofilms, and that are vital to ecology and human health. This mechanism of collective oscillation may also inspire new applications of previously unnoticed active matter systems and new directions of active matter science. The research results have been published in *Nature*.

A Stride in Plant Autophagy Research

Professor Jiang Liwen, Choh-Ming Li Professor of Life Sciences, and his internationally recognized plant cell research team have revealed the mechanism of plant autophagy. The discovery of autophagy, that plays important roles in various cellular events, casted new light on the unique role of ATG9 protein in plant autophagosome membrane initiation. This finding has far-reaching implications for improving agricultural productivity. The results have been published in *Proceedings of the National Academy of Sciences (PNAS)*. Professor Jiang' s further studies on plant autophagy would be conducted with the aim to enhance crop quality to overcome serious agricultural problems like extreme environment or pathogen infection.



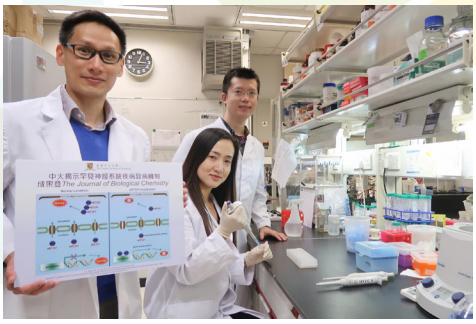
*Prof. Jiang Liwen (**2nd from right**) and his research team has achieved a breakthrough on the study of protein transport and organelle biogenesis in plant cells.*

Further Reading:

Xiaohong Zhuang, Kin Pan Chung, Yong Cui, Weili Lin, Caiji Gao, Byung-Ho Kang, and Liwen Jiang. "ATG9 regulates autophagosome progression from the endoplasmic reticulum in Arabidopsis" in *Proceedings of the National Academy of Sciences (PNAS)*,2017; DOI 10.1073/pnas.1616299114

Uncover Pathogenic Mechanism for Rare Neuronal Diseases

Professor Edwin Chan Ho Yin of School of Life Sciences and his research team have recently published a research article reporting a novel pathogenic mechanism of a group of rare neurological and neuromuscular disorders, named polyalanine (polyA) diseases. Polyalanine diseases are caused by the expansion of a continuous alanine amino acid runs in the disease proteins. Many polyA disease proteins are transcription factors and their roles are to regulate gene transcription inside the cell nucleus. In polyA diseases, the expanded continuous polyA disease protein acquires a "nuclear export signal" function which causes the protein to mislocalize to the cytoplasm. As a result, the transcription machinery in the nerve and/or muscle cells becomes malfunctioned. Professor Edwin Chan's team further unveiled the role of Eukaryotic Translation Elongation Factor 1 Alpha 1 (eEF1A1) in modulating expanded polyA protein subcellular localization. To date, polyA diseases remain incurable. Finding ways to control such process can lead to a new direction to intervene the pathogenesis of the diseases. The research results have been published in *The Journal of Biological Chemistry*.



Prof. Edwin Chan (Left) and his research team have recently discovered a drug candidate P3, a 13-amino acid peptide, which can neutralize toxic RNA and rescue neurodegeneration.

Further Reading:

Li Li, Nelson Ka Lam Ng, Alex Chun Koon , and Ho Yin Edwin Chan. "Expanded Polyalanine Tracts Function as Nuclear Export Signals and Promote Protein Mislocalization via Eukaryotic Translation Elongation Factor 1 Alpha 1" in *The Journal of Biological Chemistry*, 2017; DOI 10.1074/jbc.M116.763599

UGC Areas of Excellence 7th Round

Professor Lam Hon Ming of School of Life Sciences and his team of professional plant and agricultural researchers have been awarded HK$81 million in the 7th round of UGC AoE for the project "AoE Centre for Genomic Studies on Plant-Environment Interaction for Sustainable Agriculture and Food Security". Professor Lam and his team make use of the state-of-the-art technology in genomic study, molecular biology, biochemistry and cell biology to investigate the soybean environment interaction which expected to enhance agriculture sustainability, quality and quantity of crops.

Research Details

Vice Chancellor, Prof. Joseph Sung congratulates Prof. Lam's research success.

Faculties and Students Achievements

Professor Henry Wong has been awarded the 2nd S.Chandrasekara Endowment Lecture Award

Professor Henry Wong was awarded the 2nd S. Chandrasekaran Endowment Lecture Award, in recognition of his outstanding contributions to Chemistry in the areas of asymmetric synthesis, new synthetic methods and carbohydrate chemistry, during the 20th CRSI National Symposium in Chemistry from 2-5 February, 2017 held at Gauhati University, Guwahati.

The objective of Chemical Research Society of India (CRSI) is to recognise, promote and foster talent in Chemistry and chemical sciences and to improve the quality of chemical education at all levels. The 1st S. Chandrasekaran Endowment Lecture Award was conferred on Professor Dieter Enders, a Professor of Organic Chemistry in RWTH Aachen University, whoes research interest focuses on the general area of organic synthesis.

Prof. Sourav Pal, President of the Chemical Research Society of India, presents the plaque to Prof. Herny Wong.

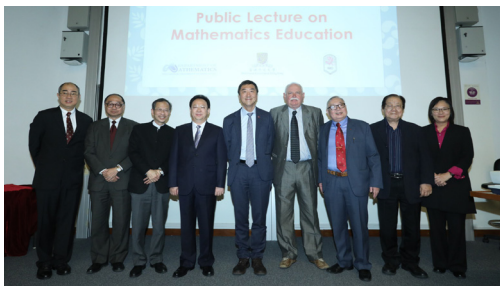
Professor Shum Kar Ping receives the Paul Erdös Award 2016

Father of Hong Kong Mathematical Olympiad, Professor Shum Kar Ping, who had been teaching in the Department of Mathematics, CUHK for over 30 years, has recently received the Paul Erdös Award 2016, a highly esteemed international award in the mathematics academia, in recognition of his distinguished accomplishment in promoting mathematics education.

Professor Shum is the first academic in Hong Kong to receive the award. He devotes himself passionately to the promotion of mathematics education in Hong Kong and all over Southeast Asia while emphasizes nurturing the youth and encouraging elites to "learn out of the box". He established International Mathematical Olympiad (IMO) Hong Kong Committee in 1985 and has facilitated the Olympiad movement in Hong Kong since then.

To further cultivate mathematics talents in Hong Kong, Professor Shum believes more emphasis should be put on advanced level of mathematics questions, triggering the interest of talented students.

Congratulations to Prof. Shum to be the first academic in Hong Kong to receive the highly esteemed international award in the mathematics academia.



Prof. Shum (3rd from right) and Prof. Peter Taylor (4th from right) take group photos with Vice Chancellor, Prof. Joseph Sung and other guests.

Faculty Exemplary Teaching Award cum Student Awards Ceremony

The Faculty of Science hosted the Faculty Exemplary Teaching Award cum Student Awards Ceremony on 14 January 2017 to honor our outstanding teachers and and celebrate students' academic accomplishment and international competitions during academic year 2015/16.

Professor Henry Wong, Dean of Science, thanked all the 2016 awardees for their dedication to strive for excellence in teaching performance and their commitment to nurture future scientists. He also encouraged students, who were named to the Dean's List or obtained the Admission Scholarships, to continue to work hard, follow their dreams and wills in developing a better world.

Professor Wong also presented certificates to those secondary school students who achieved outstanding performance at the 2016 IJSO competition under the guidance of the Faculty members. See *more photos* at Faculty Facebook.

From left to right: Prof. Yung Po Lam, Dr. Leung Po Kin, Prof. Liu Lin, Prof. Lin Yuanyuan, Dr. Iris Pang Kok Shuen, Prof. Lam Sik Lok and Prof. Henry Wong

A group of outstanding Chemistry students receive the Dean's Honour List Awards from Prof. Henry Wong and Prof. Miao Qian of Department of Chemistry.

CUHK Chemistry Students win the Chemistry Olympiad 2017

The 28th Chemistry Olympiad (for Tertiary Institutions), co-organized by the Hong Kong Chemical Society and the Royal Society of Chemistry, was held on 25 February, 2017 at the City University of Hong Kong. Teams from six local universities participated in this event. The theme for this year was "Chemistry and Environmental Protection".

A team of Chemistry students made a presentation on "Sustainable Energy" and won the championship for the competition. Department of Chemistry, Professor Chan Man Chor and Dr. Cheung Yu San, assisted the team by giving training and advices throughout the competition. Professor Lee Hung Kay were invited to sat on the panel of judge.

Our students take photo with teachers, Dr. Cheung Yu San (left), Prof. Lee Hung Kay (2nd from left) and Prof. Chan Man Chor (4th from left).

Science students show their talents at FameLab 2017

FameLab 2017 announced its results in February. This year, CUHK has been awarded again the Best University Award for the most number of participants at FameLab 2017. Some of our students achieved extraordinary results. Martin Chan Yin Ha (FNSC, Year 4) was awarded the 1st runner up for his presentation. His speech *"Gut Bacteria: Our Lifelong Partners"* explains the roles gut bacteria plays in our health and how to achieve a good composition of gut bacteria that would eventually result in better health. Carol Lee (MBT, Year 4) was awarded the Video Favourite Award. Inspired by her interest towards music, Carol Lee presented *"Music: Your Big Stress Killer"* which illustrates music is not only immensely enjoyable, but also scientifically proven that make us happier, healthier and headier.

Martin Chan (FNSC, Year 4)

> "It's been a wonderful journey and I learnt a lot about public speaking through the competition. I was not confident in delivering my speech during the audition, but I got a lot insights from the master class offered by Famelab. I would also like to thanks Ms. Peggy Yip of my programme, who reviewed my script and gave me a lot of invaluable advices."

> "This was definitely a very valuable learning experience. I learnt more about the science behind music when I did my research for my speech, named "Music: Your Big Stress Killer". In particular, how music affect our brain and how to utilize this understanding to improve life. I also learnt a lot of presentation and communication skills from the master class, which was a two-day training workshop for the 10 finalists, taught by a famous science communicator."

Carol Lee (MBT, Year 4)

FameLab is a competition which allows young scientists and engineers to deliver a public presentation to convey a scientific concept of their choice for 3 minutes. Finalists have a chance to learn presentation skills, arising public engagement and networking with scientists from various scientific fields in the communication master class. The overall national winner will be given the opportunity to attend the Cheltenham Science Festival in the UK and competes in the FameLab International Final.

Promoting Postgraduate Studies in Malaysia

In an effort to promote CUHK taught and research programmes and strengthen our global presence, the Faculty was invited to join a delegation organized by the Graduate School and attended the largest education fair in Malaysia, Postgradasia Postgraduate Studies Fair, held at the Kuala Lumpur Convention Centre in Malaysia on 18-19 February, 2017. The event attracted thousands of visitors who planned to further their studies. Professor Shannon Au Wing Ngor, Assistant Dean of Student Affairs, and Professor Dickon Ng Hang Leung, Chairman of Department of Physics, represented the Faculty to meet prospective students plan on pursuing postgraduate study in science disciplines. They introduced CUHK and respective research opportunities to visitors and provided useful advices to them on the programmes offered.

Prof. Shannon Au and Prof. Dickon Ng introduce our postgraduates programmes and givie academic advices to prospective students.

UPCOMING EVENTS

- 9-10 May, 2017 JUPAS Interviews for Broad-based Science 2017
- 16 May, 2017 Programme Exploration Days for S6 Stduents

CALL FOR APPLICATIONS

- Croucher Summer Courses 2018
  Deadline: Wednesday 24 May, 2017

Science Faculty e–Newsletter

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