



香港中文大學理學院

**FACULTY OF SCIENCE**

THE CHINESE UNIVERSITY OF HONG KONG

# Newsletter

## Introduction of the Faculty Brand Identity

The Faculty is going to present itself with a fresh brand identity!

The Faculty has long been devoting in educating and inspiring future generations of scientists and expanding the frontier of human knowledge.

The Faculty logo reflects the experimental nature of “Science”. It is organic and revolving. It subtly forms a triangular pointer leading forward. The rich colour suggests the solid achievements of the Faculty, while the purple and orange on the edges inherit the color tone of CUHK. The tone and manner of the brand identity is inspirational, powerful and academic.

The brand statement “Science Empowers Your Dreams” encapsulates the vision and aspiration of the Faculty. We believe dream is powerful. We strive to create an environment which allows our students and staff to dream and fulfil their dreams by the power of knowledge and energy of science.

The brand guidelines and tool kits will soon be sent to each unit and will also be available for download on the Faculty website in coming months.

## Highlights

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**SCIENCE EMPOWERS YOUR DREAMS**



### MoE Higher Education Outstanding Scientific Research Output Awards 2016



The award presentation ceremony is grandly held on 25 May, 2017 at Cho Yiu Hall, CUHK campus. Congratulations to all award recipients!

Professor Wang Jianfang of Department of Physics, Professor Lam Hon Ming and Professor Samuel Sun Sai Ming of School of Life Sciences were awarded the Ministry of Education Higher Education Outstanding Scientific Research Output Awards 2016.

Professor Wang Jianfang was presented the First-class award in Natural Sciences for his profound research finding of Colloidal plasmonic nanocrystals: synthesis, properties and applications. Meanwhile, Professor Lam Hon Ming and Professor Samuel Sun Sai Ming were awarded the Second-class award in Natural Sciences for their cutting edge research on Identification of functional genes for crop improvement.

The award presentation ceremony was held on 25 May, 2017 at CUHK. Three honorable guests were invited to present the prizes: Mr. Zhao Ling Shan, Deputy Director of the Office for Hong Kong, Macau and Taiwan Affairs, MoE; Mr. Zhang Zongming, Deputy Inspector of the Education, Science and Technology Department, Liaison Office of The Central People's Government in the HKSAR and Mr. Brian Lo Sai Hung, Deputy Secretary for Education, HKSAR Government.



Prof. Henry Wong congratulates Prof. Wang Jianfang, Prof. Lam Hon Ming and Prof. Samuel Sun Sai Ming at the award presentation ceremony.

### Professor Kenneth Young has been conferred Honorary Fellowship

The 16th Honorary Fellowship Conferment Ceremony was held on 22 May, 2017 on campus. Among six distinguished persons, our Emeritus Professor, Professor Kenneth Young has been conferred the honor for recognition of his remarkable contributions to both the University and the community, including the leadership in preparation for the new curriculum for the 4-year academic structure.

Professor Kenneth Young is currently Emeritus Professor of Physics and a member of the Governing Board, CUHK (Shenzhen). Spending his whole career in education and science, Professor Kenneth Young joined CUHK in 1973, and has been Chairman of the Department of Physics, Dean of the Faculty of Science and the Graduate

School, Pro-Vice-Chancellor, and the Founding Master of C.W. Chu College. He has also served in many positions in public services related to curriculum development and Physics. The Faculty would like to extend our heartfelt congratulations and sincere gratitude to Professor Kenneth Young.



Prof. Kenneth Young (right) at the Fellowship Conferment Ceremony.



Prof. Kenneth Young receives the Honorary Fellowship.

## Vice-Chancellor's Exemplary Teaching Award 2016

Professor Lin Yuanyuan of Department of Statistics has been selected for the Vice-Chancellor's Exemplary Teaching Award 2016 for her outstanding achievements in teaching and learning. The award will be presented at the 83rd Congregation scheduled for 16 November, 2017.

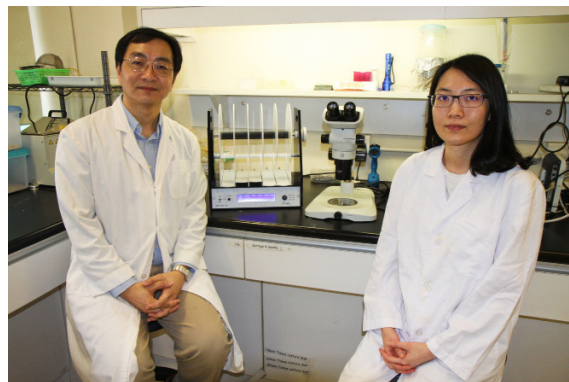


## Research Achievements

### Provide a new direction to intervene the pathogenesis of cerebellar ataxia

Professor Kwan Kin Ming of School of Life Sciences and his team have recently published a research article unveiling a novel mechanism for how innate genetic factors modulate specific neurons to acquire their specific cell morphology to perform their normal functions.

The findings provided a new direction where upregulating specific F-actin regulatory elements in Purkinje cells can be a potential therapeutic intervention for cerebellar ataxia. LIM-homeodomain transcription factors Lhx1 and Lhx5 are identified to have a critical role in regulating the dendritic development of Purkinje cells. Mutant mice lacking Lhx1 and Lhx5 in postnatal Purkinje cells display ataxic phenotypes due to dendritic defects found in the Purkinje cells was recognized by Professor Kwan and his team. Their findings show that Lhx1 and Lhx5 can transcriptionally activate an F-actin regulatory protein, Espin, which in turns controls F-actin localization in the Purkinje cell dendrites. Proper F-actin localization facilitates the elongation and branching of dendrites and the maturation of dendritic spines. More importantly, Professor Kwan and his team show that overexpression of Espin can rescue the dendritic defects in Purkinje cells of the ataxic mutant mice in vitro. This discovery may project solid impact on molecular pathology of cerebellar ataxia and led to new direction to intervene the pathogenesis of the diseases. Professor Kwan and his team will try to overexpress Espin in the cerebellum of mice in vivo to test whether it can relieve the ataxia symptoms in the live mutant mice. The research results have been published in *Nature Communications*.



Prof. Kwan Kin Ming (left) and his research team have casted fresh light on the pathogenesis of cerebellar ataxia.

#### Further Reading:

Nga Chu Lui, Wing Yip Tam, Caiji Gao, Jian-Dong Huang, Chi Chiu Wang, Liwen Jiang, Wing Ho Yung, and Kin Ming Kwan. "Lhx1/5 control dendritogenesis and spine morphogenesis of Purkinje cells via regulation of Espin" in the *Nature Communications*, 2017; DOI: [10.1038/ncomms15079](https://doi.org/10.1038/ncomms15079)

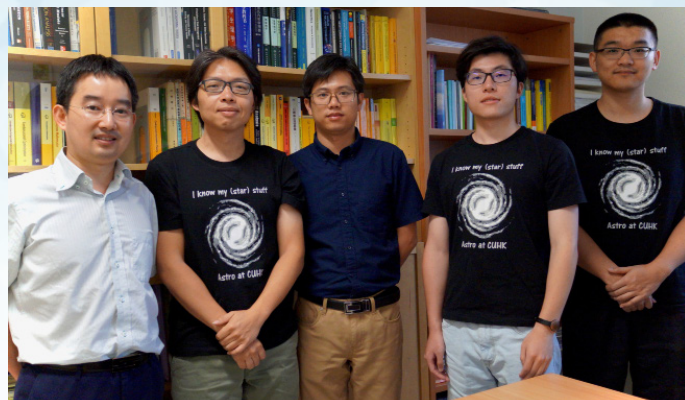
## Interdisciplinary Research team has found the relationship between Magnetic Fields and Birth Rate of Stars

Professor Li Hua-bai of Department of Physics and Professor Fan Xiaodan of Department of Statistics joined hands to discover a correlation when comparing the cloud-field alignments with star birth rates: the clouds parallel with B-fields happen to have higher birth rates. Their cutting edge finding has been published in *Nature Astronomy*.

Professor Li Hua-bai, and his Ph.D. students Gu Qilao and Zhang Yapeng studied these dense clouds from a different point of view: magnetic fields (B-fields), which are ubiquitous in the Milky Way while the main stream theories on star birth rates are based on cloud turbulence. Led by Professor Li, the team finds that clouds and their B-fields have two typical alignments: either parallel or perpendicular. Moreover, a correlation between the cloud-field alignments and star birth rates is identified by the team: the clouds parallel with B-fields prone to have higher birth rates.

Meanwhile, with the professional statistical analysis of Professor Fan Xiaodan and his Ph.D. student Jiang Hangjin, the significance of the correlation is determined. Professor Fan's group designed a statistical method with full account of the sample size of the data, the sampling design, and the uncertainty of measurements.

To further the studies, the team is now working on the construction of the next generation B-field mapping instrument. With this new instrument, the team will be able to tackle the link between B-fields and star formation with a higher resolution or more clouds.



Prof. Fan Xiaodan (left), Prof. Li Hua-bai (2nd from left), and Ph.D. students in the research team Jiang Hangjin, Gu Qilao and Zang Yapeng.

Further Reading:

Hua-bai Li, Hangjin Jiang, Xiaodan Fan, Qilao Gu and Yapeng Zhang. "The link between magnetic field orientations and star formation rates" in *Nature Astronomy*, 2017; DOI: [10.1038/s41550-017-0158](https://doi.org/10.1038/s41550-017-0158)

## Student Achievement

### Innovation and Technology Scholarship Award Scheme 2017

The Award Presentation Ceremony of Innovation and Technology Scholarship Award Scheme 2017 was held at the Hong Kong Convention and Exhibition Centre on 25 April, 2017. Among eight outstanding CUHK awardees, three students, Chan Pok Fung, Ho Ka Ka and Cheng Wai Chung, came from the Faculty of Science. They will receive a scholarship of up to HK\$150,000 for supporting them to join the Overseas or Mainland Attachment Programme, Mentorship Programme, Service Projects and Local Internship in the coming months.



Three awardees would like to share a few words below:

“The IT Scholarship Scheme provides me an internship opportunity with Prof. Shi Yigong in Tsinghua University . It connects me with mentors and peers who share my interests. In my internship, I have been exposed to cutting-edge technology such as Cryo-EM, and learnt from the methods of thinking at Shi Lab. I am very thankful to Prof. Kenneth Young who connected me with Prof. Shi, professors from my college, and faculty who allowed me to gain scholarship-related academic experiences” Cheng Wai Chung said.



“I always want to explore the scientific development in some frontier places. Well-developed

technologies and facilities inspired us the future development of Hong Kong. By participating in the IT Scholarship Scheme, not only can I gain support for visiting Lawrence Berkeley National Lab, but also learn from my mentor. I would like to express my sincere thanks to Dr. Lin, Dr. Leung and Prof. Chu from Department of Physics. Following their advice, I caught a chance participating in a research project. In the future, I wish my devotement can contribute to the development of tidal and wave power.” Chan Pok Fung recalled.



“I am able to apply for overseas undergraduate chemistry research exchange at the University of Michigan by participating in the IT Scholarship

Scheme. This will benefit me a lot in terms of gaining research experience and international exposure. Also, I am so grateful to have Dr. Roy Chung as my mentor. He is professional and knowledgeable in the field of Innovation Technology. I would also like to thank Dr. Kendrew Mak who helped me to handle my documents during the application process and Prof. Chow Hak Fun who arranged me a mock interview and provided me constructive feedback.” Ho Ka

## Recent Events

### Yen Kwo-Yung Lecture in Life Sciences 2016-17 by Professor Peter Holland

The Yen Kwo-Yung Lecture in Life Sciences 2016-17, organized jointly by School of Life Sciences and New Asia College from 4-7 April, 2017, attracted hundreds of professors and students. It is our honor to have Professor Peter WH Holland, Linacre Professor of Zoology, Former Head of Department of Zoology, The University of Oxford to deliver three inspiring lectures.



The audiences are captured by the series of the intriguing illustration of the animal Evolution.



Prof. Holland analyses developmental mechanisms differ between humans and other species.

In the first lecture titled “The Power of Evolution and the Path to Scientific Discovery”, Professor Holland explained the power of evolution, drew on his personal experiences and offered advice for young scientists on their road to scientific discovery. It was followed by the second lecture, “The Tree of Life: an Idea that Changed the World”. Professor Holland introduced an influential scientist Charles Darwin and led the audiences to a modern tour of the whole animal kingdom. Last but not least, Professor Holland shared his expertise in genetic differences between species and discussed the recent data showing how control genes are lost and changed through evolution in his talk “Embryos, Evolution and the Homeobox: Why Animals are Similar and Different”.

The School of Life Sciences and New Asia College have joined hand to organize the igniting Lecture series since 2015, aiming to instill the knowledge of life sciences to students and the general public, especially its importance and applications in the ever-changing modern society.

## HK SciFest 2017

The Faculty participated in the HK SciFest 2017 hosted by the Hong Kong Science Museum, which aims at elevating the public awareness and interest in science and technology. The Faculty has been supporting the HK SciFest since the programme started in 2014. Six of our teachers delivered interesting science lectures this year:



### Dr. Tammy Tam Pui Yuk

Let the Rock Tell you More about Hong Kong History

### Professor Gavin Tsui

Amazing Molecules that Changed the World: A Journey Through the History of Organic Synthesis

### Dr. Jeff Chak Fu

New Wave Mathematics Series-Journey on an Shaped Curve

### Professor Wang Yi

Celebrating Physics-A Series of Physics Lecture

### Professor Tony Sit

There Is Such a Thing as a Free Lunch

### Professor Wu Yilin

Physics of Microbes: Move in a Bacterial Way

## Faculty Retreat 2016-17

2016-17 Science Faculty Retreat took place on 24 April, 2017. This year, three of our Dean Team members shared their visions on research, admissions and education. Professor Xie Zuowei kicked off the Retreat by introducing the faculty research area and explaining the next research assessment exercise. Professor Shannon Au Wing Ngor then gave us an insider’s view on admissions strategies, analysis of incoming students statistics and student event highlights. In the afternoon session, Professor Thomas Au Kwok Keung shared some insights on the curriculum, especially the next ADP.



Prof. Henry Wong and faculty members at the Faculty Retreat.

## Research Day 2017

The Research Day 2017 was held on 13 June, 2017 in which over 30 faculty members participated in this event. The highlight of this year fell into enhancing the success rate in research grant applications. We are honored to invite two former RGC Panel members, Professor Chen ZhenYu (Biology and Medicine Panel) and Professor Chan Ngai Hang (Physical Sciences Panel) to share their experience on proposal evaluations and the definition of “good” proposals. Meanwhile, three experienced Faculty staff members, including Professor Jiang Liwen, Professor Miao Qian and Professor Conan Leung Nai Chung conveyed some useful tips in preparing successful research grant proposals in AoE, CRF and GRF.



Prof. Xie Zuwei (middle) and Prof. Song Xin Yuan (left) take a group photo with the speakers.

Faculty members gain invaluable insights from speakers' sharing.

[▶ More Photos](#)

## 2017 JUPAS Interviews for Broad-based Science

Over 800 S6 students attended the JUPAS Admission Interviews 2017 held on 9-10 May, 2017 at Cheng Yu Tung Building. In addition to the interview, current undergraduate students shared their stories of student life at CUHK with the prospective students. We would like to express our appreciation to all teachers and student ambassadors who participated in the event.



## The First STEM Course at CUHK

The first ever STEM course jointly organised by the Faculty of Engineering and Faculty of Science was held on 3-7 July, 2017. The newly launched course attracted more than 200 applicants and 106 students were admitted.

Professor Henry Wong was invited to deliver a welcoming speech at the opening ceremony. Secondary school students participated in Mathematics and Physics lectures and tutorials and Engineering project workshops. Guest Speakers, Professor Daniel Ong Hock Chun and Professor Jeff Wong Chak Fu, delivered two inspiring talks entitled “Physics and Applications of Light-Emitting Diodes” and “S-Shaped Curve Analytics” respectively to all potential scientists.

The course aims to foster the essence of STEM and integrates science and engineering into a cohesive learning paradigm based on real-world applications to nurture future scientists.



(from left) Dr. Kelvin Liu Chun Lung, Dr. Alvin Leung Hoi Tik, Prof. Henry Wong, Prof. Wong Hoi Ying and Dr. Lam Tak Kei in the opening ceremony with the participants.

## Luncheon for Retiring Staff

The Dean hosted a farewell lunch in honor of our retiring staff on Friday 23 June, 2017. The Faculty would like to thank you all of the retiring staff for their professional performance during the past decades. All of them have brought us inspiration and contributions. Staff retiring on 1 August, 2017 are :

### Department of Mathematics

Professor Lau Ka Sing



### Department of Physics

Mr. Lee Chung Kay  
Professor Leung Pui Tang  
Mr. Wun Yuk Man

# Best of luck!

### Department of Statistics

Professor Gu Minggao  
Professor Leung Pui Lam  
Professor Wu Ka Hou Eden

### School of Life Sciences

Professor Susanna Lee  
Sau Tuen  
Mr. Yeung Hon Bun  
Professor Zhang Jianhua

### Science Centre Management Office

Mr. Chun Gum Mon

## University Appointments

### Congratulations to Professor Dennis Ng Kee Pui, our new Pro-Vice-Chancellor and Professor Edwin Chan Ho Yin, our new Associate Vice-Chancellor

Professor Dennis Ng Kee Pui, Department of Chemistry is appointed as Pro-Vice-Chancellor of the University with effect from 1 August, 2017. He has been the Associate Vice-President since 2011.

Professor Edwin Chan Ho Yin, School of Life Sciences, is appointed as Associate Vice-Chancellor of the University and University Dean of Students, with effective from 1 August, 2017.

Professor Poon Wai Yin has been reappointed as Pro-Vice-Chancellor for a period of three years and Professor Samuel Sun Sai Ming as (Founding) Master of S.H.Ho College for a further period of one year.

Congratulations to all of them!





## Upcoming Events

### Monthly Meetings with Dean of Science

All faculties members are cordially invited to chat over, grab a cup of coffee and enjoy a laid-back afternoon with Professor Henry Wong, in C N Yang Reading Room (Room 126), Science Centre North Block at 3:30pm - 4:30pm, on

25 August (Friday)	22 September (Friday)	27 October (Friday)	24 November (Friday)	22 December (Friday)
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### Inauguration Ceremony for the New Undergraduates 2017

Date: 4 September, 2017 (Monday)

Time: 11:45am

Venue: Science Centre L1

### Orientation Day for Undergraduate Admission 2017

Date : 21 October, 2017 (Saturday)

### Master's Degree 2016-2017 Graduation Ceremony

Date: 17 November, 2017 (Friday)

Time: 11:00am

Venue: Sir Run Run Shaw Hall

## Call for applications

### National Natural Science Award

Discipline: Engineering / Medicine / Science / Space and Earth Science

Internal Deadline: 28 August, 2017 (Monday)

Details of the above invitation and other latest research funding opportunities are available at the ORKTS website:  
<https://www.orkts.cuhk.edu.hk/research-and-funding/funding-opportunities>

*Wish you a great summer and  
a fruitful academic year!*



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