

生物物理：細菌的運動

Bacteria in Motion



主講 Speaker:

吳藝林 教授
Professor WU Yilin

物理系
Department of Physics

摘要 Abstract

細菌是地球上種類最豐富，數量最多的生命形態。在每個人的身體裡，有數倍於身體細胞數量的細菌與我們和諧共存。細菌十分微小，需要放大一千倍才能被肉眼看見。如同飛鳥走獸，細菌也能獨自或群體運動。這個講座將介紹細菌如何以一些奇特的方式運動。

Bacteria are the most abundant form of life on planet Earth. In human bodies, a tremendous amount of bacteria live in peace with us and they outnumber human cells by at least 10 times. Bacteria are too small to be seen by naked eyes; we need microscopes to observe them. Bacteria are able to move, either alone or in groups that look like flocks and herds. I will show you in this talk some intriguing ways how bacteria move.

講者簡介 Speaker's Biography

吳藝林教授在2004年本科畢業於中國科學技術大學，2009年獲得美國聖母大學博士學位，隨後他到美國哈佛大學作博士後研究，2012年加入香港中文大學物理系任助理教授。吳教授研究興趣是生物物理及定量生物學，並以細菌運動和多細胞系統相互作用為其主要研究項目。

Professor Wu Yilin obtained his B.S. in Physics from the University of Science and Technology of China in 2004 and Ph.D. in Physics from University of Notre Dame in 2009. After conducting postdoctoral research at the Rowland Institute at Harvard University, he joined the Department Physics of the Chinese University of Hong Kong as an Assistant Professor in 2012. Professor Wu's research interest is in biophysics and quantitative biology, with a focus on bacterial motility and behavior in multicellular systems.



柳愛華教授生平

Biography of Prof. Lau Oi-wah

柳愛華教授一生致力在大學及高中推廣科學教育，於中文大學春風化雨三十五載。柳教授1968年加入崇基學院化學系任教。2003年自中文大學榮休。在職期間，積極參與大學教務以及書院服務，柳教授於1994至2003年期間擔任中文大學理學院院長達九年，83至86年以及94至03年出任香港中文大學校董，於1980年至2003年參與崇基學院院務委員會工作，86至95年代表院務委員會出任崇基學院校董。1977年至1985年出任崇基學院獎學金委員會主席，又於1987年至2003年出任崇基學院體育委員會主席。柳教授於03年榮休後，仍繼續匡助崇基學院的發展，出任學院資深導師，輔助推廣校園健康教育。

出任大學理學院院長九年期間，在柳教授的領導下，理學院擔任前線科學家及普羅市民的橋樑，與大眾一同分享科研成果。柳教授亦明白到，必須培養年輕一輩學子對科學的熱情，以及將科學知識傳遞至各階層人士，拉近科學與香港市民的距離。

理學院全人非常認同柳教授在香港年輕人間推動科普教育的理念，所以當柳教授在2004年辭世後，理學院也肩負起延續這份跟社會大眾傳達科學知識的重任。自2005年起，每年香港中文大學理學院與柳愛華紀念基金都會舉行「柳愛華紀念科學講座」，以延續柳教授獻身於推廣高中科普教育的無私精神。

The late Prof. Lau Oi-wah devoted herself to promoting science education in both university and high school, and left a legacy of 35 years of service to The Chinese University of Hong Kong. As a professor in the Department of Chemistry who also served as Dean of the Science Faculty from 1994 to 2003, Prof. Lau Oi-wah recognized the importance of nurturing young minds of next generation and the necessity to bringing scientific knowledge and advancement to the public.

Professor Lau joined the Department of Chemistry of Chung Chi College in 1968, and retired from the Faculty of Science of The Chinese University of Hong Kong in 2003. Active in affairs at both the college and university levels, Professor Lau served as Member of the University Council (1983 – 1986, 1994 – 2003), Member of College Assembly of Fellows (1980 – 2003), Member of College Board of Trustees (1986 – 1995), Chairperson of College Scholarships, Awards and Financial-Aid Committee (1977 – 1985), and Chairperson of College Physical Education Committee (1987 – 2003). During the nine years as the Dean of Science, Professor Lau led the Faculty of Science in building bridges between scientific frontiers and the masses, showing how science is an inherent as well as an integral part of everyday life. Even after her retirement, Professor Lau continued to assist Chung Chi College in promoting campus health education.

After the passing of Professor Lau in 2004, her former colleagues at the Faculty of Science wished to continue Professor Lau's legacy in promoting science education to the young people of Hong Kong. First held in 2005, the annual Lau Oi Wah Memorial Science Lecture Series – jointly sponsored by the Faculty of Science and the Lau Oi Wah Memorial Fund – has been one of the ways the members of the Faculty of Science at The Chinese University of Hong Kong carry on Professor Lau's dedication to igniting a passion for science among high school students.



香港中文大學理學院
Faculty of Science, The Chinese University of Hong Kong

第十二屆

柳愛華紀念科學講座

The 12th Lau Oi Wah
Memorial Science Lecture Series

日期：2016年2月27日 (星期六) Date: 27 February 2016 (Saturday)
時間：上午九時三十分 至 下午十二時三十分 Time: 9:30a.m. - 12:30p.m.

地點：香港中文大學鄭裕彤樓1號演講廳
Venue: LT1, Cheng Yu Tung Building, CUHK

時間 Time	程序表 Programme	講者 Speaker
09:30 - 09:45	登記 Registration	
09:45 - 10:00	開幕禮 Opening Ceremony	
10:00 - 10:45	改變世界的神奇分子： 有機合成的歷史旅程 Amazing Molecules that Changed the World: A Journey Through the History of Organic Synthesis	化學系 徐哲 教授 Prof. TSUI Chit Gavin Department of Chemistry
10:45 - 11:35	在數據大海中撈金 Finding Gold Needles in Stacks (of data)	統計系 薛賢鴻 教授 Prof. SIT Tony Department of Statistics
11:35 - 11:45	小休 Break	
11:45 - 12:30	生物物理：細菌的運動 Bacteria in Motion	物理系 吳藝林 教授 Prof. WU Yilin Department of Physics

www.cuhk.edu.hk/sci/memorialtalk

香港中文大學理學院及柳愛華紀念基金主辦
Organized by The CUHK Faculty of Science & The Lau Oi Wah Memorial Fund





理學院院長的話 Message from the Dean of Science

Welcome to the 12th Lau Oi-Wah Memorial Science Lecture Series at The Chinese University of Hong Kong (CUHK). Commencing in 2005, this annual lecture series is organised in recognition of Professor Lau Oi-Wah's contribution to promoting science education.

Having obtained a B.Sc. degree from The University of Hong Kong, Professor Lau joined Chung Chi College of CUHK as an Assistant Lecturer in 1968, whilst still working on her Ph.D. thesis. She became a Lecturer at CUHK upon the completion of her doctoral degree in inorganic chemistry in 1970. After having been awarded the Leverhulme Foundation Fellowship in 1971 by Imperial College, London and the Honorary Research Fellowship in 1978 by the University of Birmingham, Professor Lau became a Chartered Chemist and an elected Fellow of the Royal Society of Chemistry, U.K., in 1981. Following her success in the academic career in research, Professor Lau was promoted to Senior Lecturer in 1982; Reader in 1993; and was elected to the Deanship of the Faculty of Science for three successive terms, from 1994 until her retirement in 2003.

Professor Lau was a dedicated teacher and a caring research advisor, who always put her students' learning and benefits first. During her academic career, she supervised 7 Ph.D. students and about 30 M.Phil. students. To those who knew her well, she was undoubtedly a passionate educator with a warm personality. During her Deanship, she had successfully pushed for the establishment of many interdisciplinary teaching and research programmes, a philosophy of which continues to be a direction for curricula developments of the Faculty of Science. In addition to university teaching, Professor Lau had also initiated efforts to promote science education in local secondary schools.

After the passing of Professor Lau, her friends and students established the Lau Oi-Wah Memorial Fund in order to commemorate her commitment to education. Supported by the fund, the Lau Oi-Wah Memorial Science Lecture Series is run annually to promote public engagement in science. The Lecture Series continues to inspire young people to pursue further studies and careers in scientific fields. Professor Lau's legacy has indeed lived on through the gift of learning as we all wish.

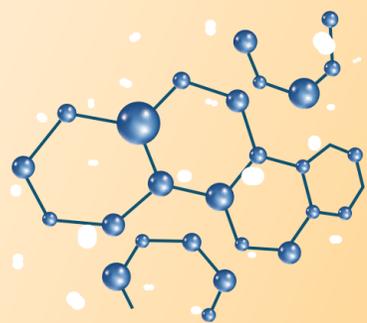
As aspiring scientists, I hope that you will be able to take home some fundamental concepts as well as some inspiration from this Lecture Series. By using your creativity, I look forward to all of you developing your innovative ideas into new technology for the advancement of our ever-changing society.

Henry N.C. Wong, Dean of Science

鳴謝
Acknowledgements



改變世界的神奇分子：有機合成的歷史旅程 Amazing Molecules that Changed the World: A Journey Through the History of Organic Synthesis



主講 Speaker:

徐哲 教授
Professor TSUI Chit Gavin

化學系
Department of Chemistry

摘要 Abstract

作為一門科學學科兼一項藝術形態，有機合成的發展歷程中不乏各種奇妙的故事。在是次演講中，我們將會回顧有機合成發展史中的里程碑及其背後的英雄。同時，我們將會介紹一些眾所週知的分子，從而例證有機合成是如何造福人類並改變我們所處的世界。透過這次演講，我們希望可以激勵年輕學生們積極地探索化學和有機合成領域，從而了解其箇中的奧妙及實用性。

The evolution of Organic Synthesis as a scientific discipline and an art form has been filled with fascinating stories. In this talk, we will take on a journey to look back at the milestones in the history of synthesis and the heroes behind them. We will use examples of legendary molecules to illustrate how this branch of science has benefited mankind and significantly changed the world we live in. We hope to inspire young students to find the study of chemistry and the practice of Organic Synthesis both intriguing and rewarding.

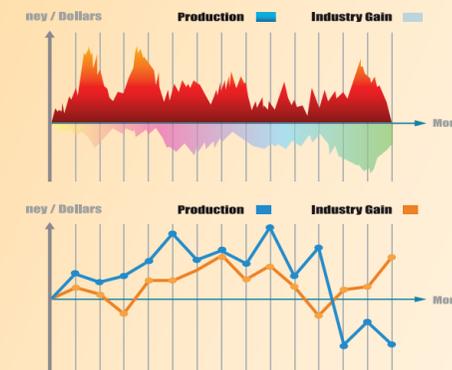
講者簡介 Speaker's Biography

徐哲教授於加拿大多倫多大學獲得博士學位，隨後獲得洪堡-拜耳聯合博士後獎學金，並在德國馬普煤炭研究所繼續深造。2015年，徐博士成為香港中文大學化學系助理教授，其研究小組的研究方向包括含氟分子的合成及催化劑的探索。

Professor Tsui Chit Gavin obtained his Ph. D. degree from the University of Toronto (Canada). He was an awardee of the Humboldt-Bayer Postdoctoral Fellowship and trained at the historical Max-Planck-Institut für Kohlenforschung (Germany). Professor Tsui became an Assistant Professor at CUHK since 2015 and the research projects in his group focus on organic synthesis of fluorinated compounds and development of catalytic methods.

在數據大海中撈金

Finding Gold Needles in Stacks (of data)



主講 Speaker:

薛賢鴻 教授
Professor SIT Tony

統計系
Department of Statistics

摘要 Abstract

傳統統計應用只局限於總結官方數據如國民經濟核算或氣象資料。科技發展和日益高速的計算機運算能力不但為收集和處理大量數據帶來方便，亦使統計於各範籌得到廣泛應用。除比較傳統的人口學、經濟和氣象學外，統計學家及資料科學家亦於生物資訊學、金融、社交網絡、市場學等領域扮演重要角色。是次講座內容將圍繞近代統計之廣泛應用和闡釋統計學如何於大數據內尋找重要寶藏。

In early times, the term "statistics" referred to information about states, which covered, for example, summaries of national accounts and climate figures. With the advancement of technology and faster computing abilities, collection and aggregation of vast volume of data have become much less challenging. In addition to applications in demography, economics and climatology, statisticians or data scientists are now playing an ever growing important role in epidemiology, bioinformatics, finance, social networks, marketing and so forth. In this talk, we shall discuss modern applications of statistics and how statistics can help in these treasure hunts.

講者簡介 Speaker's Biography

薛賢鴻教授為香港中文大學畢業生，並於母校任教統計學及風險管理科學的科目。薛教授研究興趣包括生存分析、風險管理和統計金融。

Professor Sit Tony is an alumnus of the Chinese University of Hong Kong, who is currently teaching Statistics and Risk Management Science at his alma mater. Professor Sit's research interests include survival analysis, risk management and statistical finance.