

第七屆柳愛華紀念科學講座  
The 7<sup>th</sup> Lau Oi Wah Memorial Science Lecture Series

## 大豆「回家」 Soybean "Homecoming"

講者 Speaker: 林漢明教授  
Prof. H.M. Lam

農業生物技術國家重點實驗室副主任  
Deputy Director,  
State Key Lab of Agrobiotechnology  
生命科學學院副教授  
Associate Professor, School of Life Sciences

### 摘要 Abstract

大豆源自中國，已有五千年歷史，是一種重要的經濟作物，而中國擁有最豐富的野生大豆種質資源。大豆既能提供廉價的食材蛋白及食用油，亦由於它的共生固氮能力，所以大豆是一種環境友善的作物。通過基因組研究及生物訊息分析，我們證明野生大豆的基因組有較高的生物多樣性，繪製野生大豆與栽培大豆在基因組內差異的圖譜，以及發掘訊息幫助大豆育種。利用這些基因組訊息，我們的最終目的是加強大豆在它的「家」——中國內的可持續種植。

Soybean is an important cash crop originated in China about 5000 years ago, and China has the richest collection of wild soybean germplasms. Providing the most affordable sources of dietary protein and edible oil, soybean is also an environmentally friendly crop due to its symbiotic nitrogen fixation capacity. We performed genomic study and bioinformatics analysis to verify a higher biodiversity of the wild soybean genome, map the genomic differences between the wild and cultivated soybeans, and extracted information to facilitate soybean breeding. Using these genomic information, our ultimate goal is to strengthen the sustainable soybean cultivation in her "home", China.

### 講者簡介 Speaker's Biography

林漢明教授是土生土長的香港人，於香港中文大學（中大）獲得學士及碩士學位，在美國完成博士學位及接受進一步科研培訓後，選擇於1997年回到母校服務。他現任中大農業生物技術國家重點實驗室副主任及中大生命科學學院分子生物技術學課程主任。林教授是植物分子生物學家，並已從事大豆研究超過13年。最近，他帶領完成野生及培植大豆的全基因組測序項目，研究結果在國際頂尖科學期刊《自然—遺傳》以封面故事發表。他的願景是結合學術界的高端科技與傳統育種家的智慧來改進農業，從而服務中國及其他地區的人群。

Prof. H.M. Lam is a native Hong Kong citizen who obtained his B.Sc. and M.Phil. degrees at The Chinese University of Hong Kong (CUHK). After receiving his Ph.D. degree and further scientific training in the U.S.A., he chose to return to serve his *alma mater* in 1997. He is now the Deputy Director of the CUHK State Key of Agrobiotechnology and the Programme Director of the Molecular Biotechnology Programme in the School of Life Sciences. Professor Lam is a plant molecular biologist and has been working on soybean research for more than 13 years. He has recently led a project to complete the whole genome sequence analysis of wild and cultivated soybeans. The research findings were published as a cover story in the world renowned scientific journal "Nature Genetics". His vision is to combine the state-of-the-art technology from academics and the traditional wisdom from breeders to improve agriculture, which will serve people in China and beyond.



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## 超新星 Supernova

講者 Speaker: 練立明博士  
Dr. L.M. Lin

物理系導師  
Instructor, Department of Physics

### 摘要 Abstract

超新星可以說是宇宙中最壯觀的天文現象。究竟我們對超新星有多認識呢？天文學家又如何從研究超新星而得知宇宙的演化呢？講者將會簡單介紹超新星及回答以上問題。

Supernovae are probably the most spectacular events in the Universe. How much do we know about supernovae? How do astronomers learn about the evolution of the Universe by studying supernovae? The speaker will give a brief introduction to supernovae and answer the above questions.

### 講者簡介 Speaker's Biography

練立明博士畢業於香港中文大學（中大）物理系，其後在聖路易華盛頓大學取得物理學哲學博士學位。隨後他在巴黎天文台作博士後研究員，現為中大物理系導師。其研究興趣包括理論天文物理及廣義相對論。

Dr. L.M. Lin graduated from the Department of Physics, The Chinese University of Hong Kong (CUHK). He received his Ph.D. degree in Physics from the Washington University in St. Louis. He then did his postdoctoral research at the Observatory of Paris. He is now an instructor in the Department of Physics, CUHK. His research interest includes theoretical astrophysics and general relativity.



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

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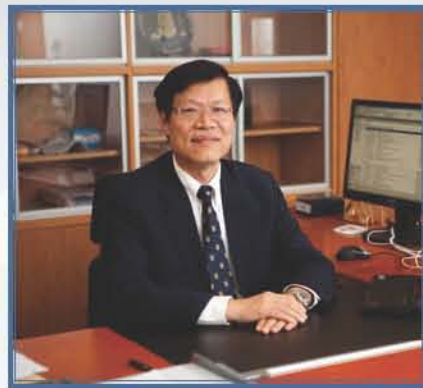
日期 Date: 25-02-2012  
時間 Time: 09:30 - 13:00  
地點 Venue: 香港中文大學邵逸夫堂  
Sir Run Run Shaw Hall, CUHK

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

### 講座程序表 Lecture Series Schedule

時間 Time	節目 Programme	講者 Speaker
09:30 - 09:45	進場及登記 Registration	
09:45 - 10:00	開幕禮 Opening Ceremony	
10:00 - 10:35	分子世界の旅 A Journey to the Molecular World	吳基培教授 Prof. Dennis K.P. Ng
10:35 - 11:10	針灸的科學原理 Acupuncture: when ancient art meets science	鍾偉楊醫師 Mr. Michael W.Y. Chung
11:10 - 11:30	小休 Break	
11:30 - 12:05	大豆「回家」 Soybean "Homecoming"	林漢明教授 Prof. H.M. Lam
12:05 - 12:40	超新星 Supernova	練立明博士 Dr. L.M. Lin





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

The Lau Oi Wah Memorial Science Lecture Series was established in 2005, in recognition of Prof. Lau Oi Wah's contribution to Science Education at The Chinese University of Hong Kong (CUHK) and in Hong Kong in general.

Professor Lau obtained her B.Sc. degree in 1965 from the University of Hong Kong (HKU). She joined Chung Chi College of the CUHK as an Assistant Lecturer in 1968, when she was still working on her Ph.D. thesis. After the completion of her doctoral degree in inorganic chemistry in 1970 at HKU, she became a Lecturer at the CUHK. She was promoted to Senior Lecturer in 1982 and Reader in 1993. She was awarded a Leverhulme Foundation Fellowship in 1971 by Imperial College, London and an 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. She was elected to the Dean of the Science Faculty for three successive terms, from 1994 to her retirement in 2003.

Professor Lau was a dedicated teacher and a caring research advisor. During her academic career, she supervised seven Ph.D. students and about 30 M.Phil. students. I am an alumnus of CUHK and was lucky to have Professor Lau as my teacher in analytical chemistry when I was an undergraduate in 1968. Our class was probably the first class that she taught at the CUHK. Since Professor Lau was just a few years older than us, and because of her warm personality, we always viewed her as our older sister. Other than an outstanding chemist and teacher, Professor Lau was also an excellent ping-pong player and was an active participant in most student activities. Her energy, as manifested in her ping-pong game, was second to none.

Professor Lau was a devoted teacher who always put her students' learning and benefit first. During her Deanship, she had successfully pushed for the establishment of many interdisciplinary teaching and research programmes. This remains a direction for the curricula developments of the Science Faculty. In addition to university teaching, she had also initiated an effort to promote science education in secondary schools. In order to recognize Professor Lau's contribution to science education in Hong Kong and to commemorate her commitment to education in general, her friends and students have established a memorial fund to support the Lau Oi Wah Memorial Science Lecture Series, after the passing of Professor Lau. Her dedication to science education has served Hong Kong high school students well, inspiring them to consider a career in science. As a former student of Professor Lau, I am honored to succeed her as Dean of Science. Returning to my *alma mater* to serve in this capacity, I feel that her dedicated spirit is always with us, helping us to succeed.

Ng Cheuk-yiu  
Dean of Science



## 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，於中文大學香風化兩三十五載。柳教授一九六八年加入崇基學院化學系任教。二零零三年自中文大學榮休。在職期間，積極參與大學教務以及書院服務，柳教授於一九九四至二零零三年期間擔任

中文大學理學院院長逾九年，八三至八六年以及九四至零三年出任香港中文大學校董，於一九八零年至二零零三年參與崇基學院院務委員會工作，八六至九五年代表院務委員會出任崇基學校董。一九七七年至一九八五年出任崇基學院獎學金委員會主席，又於一九八七年至二零零三年出任崇基學院體育委員會主席。柳教授於零三年榮休後，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，所以當柳教授在二零零四年辭世後，理學院也肩負起延續這份跟社會大眾傳遞科學知識的重任。自二零零五年起，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.



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## 分子世界の旅 A Journey to the Molecular World

講者 Speaker: 吳基培教授  
Prof. Dennis K.P. Ng

協理副校長  
Associate Pro-Vice-Chancellor  
大學輔導長  
University Dean of Students  
化學系教授  
Professor, Department of Chemistry

### 摘要 Abstract

化學是一門研究物質及物質間相互作用的科學。正因如此，化學被稱為「中心科學」。由於一切物質的特性都在於其組成的分子，所以分子可以說是化學家的主要研究對象。在這次演講裡，我們將帶你走進奇妙的分子世界，從簡單的雙原子氣體分子到複雜的天然產物及高分子置聚合物的製備過程、特性及應用。此外，我們亦會介紹催化劑、超分子化學和納米技術的基本概念。

Chemistry is a science subject that deals with materials of the universe and the changes that these materials undergo. By its very nature, Chemistry is often called a central science. Chemists are able to manipulate the nature of matter at the molecular level. Molecules therefore can be regarded as the major study target in Chemistry. In this talk, we will take a tour to see the wonderful molecular world, from the simplest diatomic gaseous molecules to the highly complex natural products and high-molecular-weight polymers, including their preparation, properties, and applications. The basic concept of catalysis, supramolecular chemistry, and nanotechnology will also be introduced.

### 講者簡介 Speaker's Biography

吳基培教授於香港中文大學（中大）獲得理學士及哲學碩士學位，並於英國牛津大學取得哲學博士學位，及後擔任美國加州理工學院研究員。吳教授於1994年加入中大，現為化學系教授，兼任協理副校長及大學輔導長。他多年來在教學及研究上屢獲獎項，當中包括於2000及2009年兩度獲頒學院模範教學獎、2009年校長模範教學獎及2005年大學青年學者研究成就獎。吳教授近年致力研究功能材料化學及其在生物醫學上的應用。

Prof. Dennis K.P. Ng received his B.Sc. and M.Phil. from The Chinese University of Hong Kong (CUHK), and D.Phil. from the University of Oxford. He then became a Research Fellow in Chemistry at the California Institute of Technology before returning to his alma mater in 1994. He is presently a Professor at the CUHK Department of Chemistry and concurrently holding the position of Associate Pro-Vice-Chancellor and University Dean of Students. Over the years, he has received a number of awards in teaching and research from the University, including the Faculty Exemplary Teaching Award (2000 and 2009), Vice-Chancellor's Exemplary Teaching Award (2009), and Young Researcher Award (2005). His current research interests lie in the chemistry of functional dyes, focusing on their biomedical applications.



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## 針灸的科學原理 Acupuncture: when ancient art meets science

講者 Speaker: 鍾偉楊醫師  
Mr. Michael W.Y. Chung

中醫學院導師  
Instructor, School of Chinese Medicine

### 摘要 Abstract

針灸是傳統中醫治療疾病方法之一，以簡便廉驗見稱，其非藥物的療效已被肯定。論其原理，中醫重視針灸調暢經絡氣血的作用，科學家於近數十年努力研究針灸的作用機理。本節講座主要介紹針灸的應用，並探討以及中、西醫對針灸作用的認識。

Acupuncture is one of the important treatment modalities in traditional Chinese Medicine. Its cost-effectiveness and non-pharmacological therapeutic effect has been well recognized in the modern world. While traditional Chinese Medicine emphasizes the regulation of flow of *qi* through the meridians through acupuncture, numerous studies have been performed in the last few decades on the investigation of the scientific basis of acupuncture. This presentation introduces the applications of acupuncture and discusses how it works in both Chinese and scientific points of view.

### 講者簡介 Speaker's Biography

鍾偉楊醫師於香港浸會大學取得中醫學學士、生物醫學理學士、哲學碩士學位，過往參與針灸基礎理論研究，以及新高中《中醫保健與美容》應用學習課程的課程發展等工作，現任職香港中文大學中醫學院導師。

Mr. Michael W.Y. Chung obtained his B.Chin.Med., B.Sc. and M.Phil. degrees from Hong Kong Baptist University. He has been involved in the basic research in acupuncture mechanisms and course development of NSS Applied Learning Course related to Traditional Chinese Medicine. He is currently a Registered Chinese Medicine Practitioner and serves an instructor of the School of Chinese Medicine at The Chinese University of Hong Kong.