



第八屆柳愛華紀念科學講座
The 8th Lau Oi Wah Memorial Science Lecture Series

宇宙在旋轉嗎？ Is the Universe Rotating?

講者 Speaker: **朱明中教授**
Prof. CHU Ming-chung
物理系教授
Professor, Department of Physics

摘要 Abstract

從小行星至星系團，最細小至最大型的星體都在自轉。著名物理學家伽莫夫 (Gamov) 於三十年代提出，若宇宙在旋轉，便可以很自然地解釋各星體的自旋。不過，旋轉的宇宙便有了特定的方向，與標準宇宙學模型各向同性假設有所抵觸。更甚者，在著名數學家哥德爾 (Gödel) 的旋轉宇宙模型中，時間可能形成閉環圈，人們便可以進行時間旅行、回到過去了。我會簡介這個有趣的宇宙學課題的歷史，及我們最近做的相關研究。

Most if not all celestial objects we can observe – from asteroids to galaxy clusters - rotate. Gamov pointed out that if the universe as a whole is rotating, all such rotations can be 'explained' naturally. However, the rotation of the universe would imply that there exists a preferred direction, and our basic understanding of the evolution of the universe, as described in the standard cosmological theory, would be fundamentally wrong. Even worse, in some models of rotating universe, such as the one discovered by the famous mathematician Gödel, time goes in a closed loop and time travel is possible. I will give an informal and non-technical review of the subject, and I will also present briefly our own work on the subject.

講者簡介 Speaker's Biography

朱明中教授於美國加州理工學院獲得理學士及博士學位。1995 年加入香港中文大學之前，受聘於麻省理工及加州理工學院從事研究工作。他現在的研究興趣以天體物理、宇宙論、及粒子物理為主。

Prof. Chu Ming-chung obtained his B.Sc. and Ph.D. degrees both from California Institute of Technology (Caltech). He held research positions at MIT and Caltech before joining The Chinese University of Hong Kong in 1995. His current research interest includes astrophysics, cosmology, and particle physics.



第八屆柳愛華紀念科學講座
The 8th Lau Oi Wah Memorial Science Lecture Series

從涼茶看中醫 Starting from Chinese Herbal Tea – An introduction to Chinese Medicine

講者 Speaker: **吳梓新講師**
Mr. NG Chi-sun
中醫學院講師
Lecturer, School of Chinese Medicine
註冊中醫師
Registered Chinese Medicine Practitioner

摘要 Abstract

「涼茶」，一個既熟悉又陌生的名字。我們自小不乏喝涼茶的體驗，在生活中除了街道旁隨處可見的傳統涼茶舖，也會發現在便利店和超級市場中都有各式各樣的涼茶商品出售，連同那些如「熱氣」、「清火」、「解毒」等，一堆堆似懂非懂的名詞，已深深滲透在每個人的心中，成為嶺南文化的一部份，而在這些我們習以為常的文化背後，更蘊藏著中國人獨有的智慧。這次講座將帶大家從一碗最簡單不過的涼茶，理解中醫對自然、天地、生命以至人類健康的獨特認識，從而窺探中醫學的奧妙。

Chinese herbal tea is so common that it is readily available from small herbal tea shops at street corners, chained convenient stores and supermarkets, but conversely promoted with a basket of uncommon jargons such as "clearing heat", "lowering fire evil" and "detoxification". It constitutes the experience of the general public, the cultures of southern China, as well as the wisdom of ancient Chinese. The seminar will introduce the unique understanding of Chinese Medicine towards the universe and life, by beginning with a bowl of Chinese herbal tea.

講者簡介 Speaker's Biography

吳梓新醫師2005年畢業於香港浸會大學中醫藥學院，同年遠赴杭州跟隨國家級名老中醫連建偉教授習醫，並於浙江中醫藥大學取得中醫碩士學位。回港後先後於多間醫療機構任職臨床工作，曾任職中大東華書院擔任中醫課程講師，並於本年轉職任教于香港中文大學中醫學院，以中醫經典理論為主要研究方向。

Mr. NG Chi-sun, a Registered Chinese Medicine Practitioner, graduated from the School of Chinese Medicine, HKBU in 2005 and received his Master degree in Chinese Medicine from Zhejiang Chinese Medical University in 2008. Mr. Ng joined the CUHK this year as a lecturer and his research interests include TCM theories and the classic readings in Chinese Medicine.



第八屆 柳愛華紀念科學講座 The 8th Lau Oi Wah Memorial Science Lecture Series

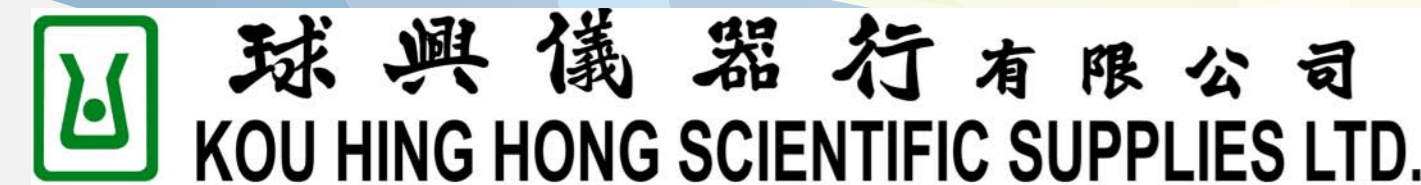
日期 Date: 17-11-2012
時間 Time: 09:30 - 13:00
地點 Venue: 香港中文大學邵逸夫堂
Sir Run Run Shaw Hall, CUHK

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	人類基因組的迷思 Decoding Human Genome	關海山教授 Prof. KWAN Hoi-shan
10:40 – 11:15	奇妙的質數 Amusing Primes	李俊捷博士 Dr. Charles LI Chun-che
11:15 – 11:30	小休 Break	
11:30 – 12:05	宇宙在旋轉嗎？ Is the Universe Rotating?	朱明中教授 Prof. CHU Ming-chung
12:10 – 12:45	從涼茶看中醫 Starting from Chinese Herbal Tea – An Introduction to Chinese Medicine	吳梓新講師 Mr. NG Chi-sun

鳴謝 Acknowledgements



聯絡 Contact Information



Faculty of Science
The Chinese University of Hong Kong,
Shatin, New Territories, HKSAR
(Tel): 3943 6327
(Fax): 2603 5156
email: sfo@cuhk.edu.hk
website: www.cuhk.edu.hk/sci
facebook: www.facebook.com/CUHKScience



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 to 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 CUHK as an Assistant Lecturer in 1968, during which 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 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 Deanship 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 who always put her students' learning and benefit first. During her academic career, she supervised seven Ph.D. students and about 30 M.Phil. students. To many of us who knew her well, she was a passionate educator with a warm personality. During her Deanship, she had successfully pushed for the establishment of many interdisciplinary teaching and research programmes, which remains a direction for curricula developments of the Faculty of Science for the years to come. In addition to university teaching, Professor Lau had also initiated an effort to promote science education in local secondary schools.

After the passing of Professor Lau, her friends and students have established a memorial fund to support the Lau Oi-wah Memorial Science Lecture Series in order to recognize Professor Lau's contribution to science education in Hong Kong and to commemorate her commitment to education. The Lecture Series, now running for the 8th year, continues to inspire young people to pursue further studies and careers in Science. Professor Lau's legacy has indeed lived on through the gift of learning as we all wish.

Henry N.C. Wong
Interim 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，於中文大學春風化雨三十五載。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達九年，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院校董。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，又於一九七七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達科學知識的重任。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.



第八屆柳愛華紀念科學講座
The 8th Lau Oi Wah Memorial Science Lecture Series

人類基因組的迷思 Decoding Human Genome

講者 Speaker : 關海山教授
Prof. KWAN Hoi-shan

生命科學學院教授
Professor, School of Life Sciences

食品研究中心主任
Director, Food Research Centre

聯合書院副院長及通識教育主任
Associate Head and Dean of General Education, United College

摘要 Abstract

基因，一段具有功能的DNA或者RNA序列，是控制性狀與發育的基本遺傳單位。顧名思義，基因組是生物個體的所有基因。人類基因組擁有3億個DNA鹼基對，就像一本「天書」，由3億個字母組成了不同的單詞、句式和章節（染色體）。人類基因組計劃確定了這本天書的所有字母，可以想像，對它的解讀將對醫學、人類生物學和人類進化的研究帶來革命性的變化。此外，和我們朝夕相伴的微生物，它們的基因構成了人類的「另一個基因組」，其細胞數量和類型超過了我們自身的10倍。我將從人類基因、基因組、人體微生物組等幾方面為您一一解讀人類基因組的迷思。

A gene is a molecular unit of DNA or RNA sequence that encodes RNA or a polypeptide. Gene is the functional unit in cells. Human Genome refers to the entire collection of our genes providing all our biological functions. Our genome has 3 billion DNA base pairs, like a big book containing 3 billion letters of the alphabet forming different words, encoding enormous information. Genome projects determined the human genome sequence and applied this knowledge in medicine, human biology and human evolution. We have also learned that humans have another genome, microbiome, from the microorganisms associated with us. Number and types of cells in our microbiome are 10 times more than that in our genome. I will tell you about the human genes, genome and microbiome.

講者簡介 Speaker's Biography

關海山教授自1984年起任教於香港中文大學，歷任理學院院長；現任生命科學學院教授、聯合書院副院長及通識教育主任、食品研究中心主任及中醫學院名譽教授。關教授一直致力於分子遺傳及基因組學方面的前沿熱點研究，其興趣主要涵蓋病原細菌、食用及藥用真菌、藥用植物和海洋動物相關的分子遺傳機制及基因組信息探索，同時在分子生物技術的應用與開發方面傾注心血。自1990年以來，關教授密切關注人類基因組計劃的發展，並將基因組研究的先進技術運用於香港分子遺傳學的研究和發展。

Prof. KWAN Hoi-shan has been teaching in The Chinese University of Hong Kong since 1984. He was the Dean of Science. He is currently Professor of School of Life Sciences, Associate Head and Dean of General Education of United College, Director of Food Research Centre, and Professor by courtesy of the School of Chinese Medicine. His research interests include molecular biotechnology, genetics and genomics of enteric bacteria, edible and medicinal fungi, medicinal plants and marine animals. Since its inception in 1990, Professor Kwan has closely followed the development of the Human Genome Project. He has pioneered the transfer of advanced technologies of genomic analysis to molecular genetics research and development in Hong Kong.



第八屆柳愛華紀念科學講座
The 8th Lau Oi Wah Memorial Science Lecture Series

奇妙的質數 Amusing Primes

講者 Speaker : 李俊捷博士
Dr. Charles LI Chun-che

數學系講師
Lecturer, Department of Mathematics

摘要 Abstract

質數是指只能被自己和一整除的自然數。它們可說是自然數中的原子。質數的研究，從歐基里德（Euclid）的年代，已經是數學其中一個主要課題。儘管質數的定義非常簡單，質數的世界仍然籠罩著很多神秘的色彩，尤其是質數與自然界的微妙關係，在這次講座中，講者將會討論質數與上述問題的奇妙關係。

Prime numbers are those numbers divisible by one and itself only. They are the 'atoms' of numbers. The study of primes has been one of the important human intellectual pursuit since Euclid. Despite the simple looking definition of primes, the primes are shrouded with a lot of mysteries, especially because the primes are miraculously connected to the nature. Some of the mysteries are:

How do the primes help in the searching of extra-terrestrials?
Why do some cicadas emerge above ground every 13 or 17 years?
How are primes used in sending secret information over the internet?
Why are they related to a notorious Intel Pentium processor bug that triggered the company to recall all the processors?

In this talk, we will discuss among other things the above-mentioned amusing facts related to primes.

講者簡介 Speaker's Biography

李俊捷博士於香港中文大學獲得理學士，並於美國加州大學洛杉磯分校獲得博士學位。2005年加入香港中文大學之前，受聘於美國加州大學洛杉磯分校及台灣中央研究院從事研究工作。他現在的研究興趣以數論、自守函數、表示論為主。

Dr. Charles LI Chun-che obtained his B.Sc. obtained his B.Sc. from The Chinese university of Hong Kong (CUHK) and Ph.D. degree from the University of California at Los Angeles (UCLA). He held research positions at UCLA and Academia Sinica, Taiwan before joining CUHK in 2005. His current research interest includes number theory, automorphic forms and representation theory.