

Society 5.0: Energy from Carbon Dioxide and Waste **社會 5.0：從二氧化碳和廢棄物中獲取能量**

Dr. CHAN Ka Long Donald
Department of Chemistry
The Chinese University of Hong Kong

Our society is facing the challenge of managing and reducing carbon dioxide emissions to mitigate climate change. Moreover, there is an urgent need to reconsider our current practice in waste management. Emphasis will be placed on waste reduction and resource recovery. In the future, we will be capable of harvesting energy from carbon dioxide and waste instead of “throwing things away”.

Green chemistry involves the design of chemical products and processes that reduce hazardous substances and wastes. This lecture covers basic concepts in green chemistry and discusses how carbon dioxide and waste can be transformed into useful products. Throughout the lecture, we will highlight the recent advances in waste-to-energy technologies. Students will be able to appreciate the importance of chemical knowledge in the sustainable development of our society.

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above (Prefer students who study Chemistry)
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	December 2025 and April - July 2026
Equipment:	PowerPoint projector, microphone

Dr. CHAN Ka Long Donald obtained his B.Sc. and Ph.D. in Chemistry from The Chinese University of Hong Kong in 2012 and 2017 respectively. He subsequently joined the local research and development sectors, working on improvement and commercialization of nano-structured materials and functional polymers. In 2019, he returned to The Chinese University of Hong Kong as a Lecturer. He is also serving as a Deputy Director of the Natural Sciences Programme. His research interests focus on analytical chemistry and environmental applications of advanced materials.

陳家朗博士分別於 2012 年及 2017 年取得香港中文大學化學理學士學位及哲學博士學位。他隨後在本地的研發部門工作，致力推動納米結構材料和功能性聚合物的改良及商品化。他於 2019 年重返香港中文大學成為講師，現時亦擔任自然科學課程副主任。他的研究興趣集中在分析化學和先進材料於環境領域的應用。

Chemistry: The Hidden Star of Pop Culture 化學：流行文化中的隱藏明星

Dr. HAU Chun Kit Sam
Department of Chemistry
The Chinese University of Hong Kong

Pop culture, encompassing music, TV shows, movies, and books, significantly influences public perceptions of science, particularly chemistry. From the dramatic chemical reactions in action films to the forensic science in crime dramas, chemistry often drives storytelling. Iconic media like ***Breaking Bad*** highlights chemical processes, while ***The Martian*** showcases chemistry's practical applications in survival scenarios. This talk explores how such representations shape public understanding and appreciation of chemistry, examining their impact on career aspirations, public trust in science, and science education. It analyses the accuracy of these portrayals and their role in making chemistry relatable and engaging. By connecting pop culture to scientific concepts, the talk aims to inspire students to see chemistry as a dynamic field integral to everyday life, beyond textbooks and labs. The goal is to foster a deeper appreciation for chemistry, making it more accessible and sparking interest in its real-world relevance.

Presentation Mode:	Face to Face
Language of Talk:	English / Cantonese
Suitable Level:	S.3 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026
Equipment:	PowerPoint projector, microphone

Dr. HAU Chun Kit Sam received his B.Sc. (First Class Honour) in Chemistry at Hong Kong Baptist University in 2005 and obtained his Ph.D. in the area of Organic Synthesis from the Department of Chemistry of The Chinese University of Hong Kong in 2010. He spent four years in the same department as a postdoctoral fellow, working on X-ray Crystallography and Structural Characterization. In 2019, he returned to the Department of Chemistry of The Chinese University of Hong Kong and is currently a Lecturer. His research focuses on crystal engineering and coordination network assembly.

侯俊傑博士於 2005 年本科畢業於香港浸會大學化學系，2010 年於香港中文大學化學系獲得博士學位。隨後他續在香港中文大學從事了四年多博士後工作，致力研究 X 射線晶體學和晶體結構分析。他於 2019 年重返香港中文大學，並擔任講師。他目前的研究方向是晶體工程和多方位配位化合物的自組裝。

Unveiling the Mystery of Common Narcotics 淺談常見毒品的化學結構及其研發過程

*Professor LEE Hung Kay
Department of Chemistry
The Chinese University of Hong Kong*

A drug is a chemical substance that affects an individual in such a way as to bring about physiological, emotional or behavioural changes. A drug can be a natural product (e.g. an alkaloid) or a synthetic compound (a semi-synthetic or synthetic drug). To date, a wide variety of drugs have been developed for diagnosis, treatment, or prevention of various diseases. Unfortunately, some of these substances are liable to abuse. Morphine, an alkaloid isolated from opium, is one of the most effective pain-killer drugs. Codeine and heroin are close analogues of morphine. Codeine is used as a cough suppressant, whereas heroin is a powerful narcotic analgesic. Fentanyl is a synthetic opioid drug. Cocaine, isolated from coca plants, is the most potent stimulant of natural origin, whilst amphetamine is a synthetic stimulant drug. Ketamine is commonly used in veterinary anaesthesia. Etomidate has been used as a short-acting anaesthetic agent. In this talk, we look at the development, chemical structures and activities of these common soft drugs.

藥物是化學物品，服用後能引致生理上、情緒上及行為上出現改變。藥物大致可分為兩類：一類為天然產物（如生物鹼），另一類可在實驗室裡製備（半合成或全合成藥物）。今天，人們研製出不同種類的藥物，用作診斷、治療或防治各種疾病。可惜部份藥物常被濫用。嗎啡是一種從罌粟提取出來的生物鹼，具有強力的鎮痛作用。可待因和海洛英可從罌粟經化學方法提煉而成。可待因用作止咳藥物，而海洛英是一種強力的麻醉鎮痛類毒品。芬太尼是一種合成的鴉片類藥物。可卡因是從古柯樹葉提取出來的一種生物鹼，屬強力興奮劑。安非他明屬合成的興奮劑藥物。氯胺酮是一種用於動物手術的麻醉劑。「太空油」是一種新興毒品，主要成分為依托咪酯，曾用作靜脈注射的短效麻醉藥。此講座將探討這些常見軟性藥物的研製過程、化學結構及其特性。

Presentation Mode:	Face to Face
Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	60 minutes
Audience Size:	40 or above
Speaker Availability:	December 2025 and May - June 2026
Equipment:	PowerPoint projector, microphone

Professor LEE Hung Kay (李鴻基) obtained his B.Sc. and Ph.D. degrees at The Chinese University of Hong Kong. After completing his Ph.D. study, he spent two years as a Postdoctoral Scholar at California Institute of Technology. He joined The Chinese University of Hong Kong as an Assistant Professor in the Department of Chemistry in 1997, and he is now an Associate Professor in the Department. His research interest focuses on synthesis and structural characterisation of low-valent organo-transition metal and rare earth metal complexes.

Nano and Medicine**納米與醫學**

*Professor LI Hung Wing
Department of Chemistry
The Chinese University of Hong Kong*

Development of nanomaterials and nanotechnology has been attracting attention in scientific research worldwide during the last decade. Nanomaterials have unique properties that make them very promising to be applied in many different fields, including textile, electronics and medicine. In this talk, I will introduce the basic composition of nanomaterials and their potential applications in biomedical areas.

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 - July 2026
Equipment:	PowerPoint projector, microphone

Professor LI Hung Wing is an Associate Professor in the Department of Chemistry, The Chinese University of Hong Kong. She received her B.Sc. degree in Chemistry Science from The Chinese University of Hong Kong and Ph.D. degree in Analytical Chemistry from Iowa State University and post-doctoral training from University of Chicago. Her research interest is development of novel bioanalytical techniques for disease detection and treatment using nano-materials.

Application of Essential Oil for Hand-Made Skin Care Products**香薰油在手工護膚品中的應用**

Dr. LO Chui Man Cat
Department of Chemistry
The Chinese University of Hong Kong

Essential oil is a form of aromatic volatile oil derived from plants. For thousands of years, it has been utilized in various everyday applications, such as aromatherapy, cosmetics, home products, and mosquito repellents. Each type of essential oil contains unique major components that provide distinct benefits. For example, Tea Tree oil is effective for treating acne, skin fungal infections, and insect bites. Peppermint oil helps relieve symptoms of the common cold, flu, and other respiratory issues. Lemongrass oil is recognized for its ability to alleviate stress, anxiety, and depression, while Citronella oil is mainly employed as a mosquito repellent.

In this Popular Science Talk, we will explore the extraction methods of essential oils from plants. We will also demonstrate simple procedures for making your own skincare products, giving you the chance to try them at home.

Presentation Mode:	Face to Face / Online
Language of Talk:	Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026 (Afternoon only)
Equipment:	PowerPoint projector, microphone

Dr. LO Chui Man Cat (盧翠雯) is a Lecturer in the Department of Chemistry, The Chinese University of Hong Kong. She received her Bachelor of Science (1st Class Hons) in Chemistry and Doctor of Philosophy in Chemistry from The Chinese University of Hong Kong. Her teaching and research mainly focus on the application of chemistry in daily life.

Photochemistry in Action and Educational Video Gaming 幾何與醫學圖像

Prof. Oleksandr SAVATIEIEV
Department of Chemistry
The Chinese University of Hong Kong

Chemistry is an inclusive science – it requires only a “back side of the envelope” to draft an idea, a few pieces of glassware, and simple analytical techniques to verify it. In this talk, I will take you to the latest development in photochemistry – a branch of chemistry that uses light to drive target chemical reactions. Moreover, I will explain how playing the right video games may be used to study chemistry and design new photochemical reactions.

Presentation Mode:	Face to Face / Online
Language of Talk:	English
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 - 100
Speaker Availability:	October 2025 – December 2025 (except all Tuesdays and Thursdays) January 2026 – July 2026 (except all Wednesdays in January-March 2026)
Equipment:	PowerPoint projector, microphone

Prof. Oleksandr Savatieiev is an Associate Professor in the Department of Chemistry, The Chinese University of Hong Kong. He received his B.Sc. and M.Sc. degrees in Organic chemistry and technology of organic compounds from the National Technical University of Ukraine “Kyiv Polytechnic Institute”, Ph.D. degree in Organic Chemistry from the Institute of Organic Chemistry of the National Academy of Science of Ukraine, and Dr. rer. nat. habil. from the University of Potsdam (Germany). He is interested in designing chemical reactions that are driven by light and validating his ideas in the laboratory.

Solving Molecular Mysteries: How Computers and Artificial Intelligence are Changing the Way We Do Chemistry

破解分子之謎：電腦與人工智慧如何改變化學研究方式

*Prof. Zhang Xinglong
Department of Chemistry
The Chinese University of Hong Kong*

Have you ever wondered how scientists know what atoms and molecules do to bring about chemical reactions? In this talk, we will go on a journey into the world of molecules and chemical reactions in the subfield of catalysis. You will discover how computers can simulate molecules and reactions using the strange rules of quantum mechanics, and how increasingly artificial intelligence is helping us understand and design better catalysts to solve different chemical challenges. We will explore how chemistry is becoming more like detective work, with computers as our microscopes and AI as our partner in solving molecular mysteries!

Presentation Mode:	Face to Face / Online
Language of Talk:	English
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	50
Speaker Availability:	November 2025 – July 2026
Equipment:	PowerPoint projector, microphone

Prof. Zhang Xinglong received his Bachelor of Arts in Natural Sciences (2014) from the University of Cambridge, UK. He then obtained his Master of Science in Theoretical and Computational Chemistry (2016) and Doctor of Philosophy (2019) from the University of Oxford, UK. After a brief postdoctoral stint at the California Institute of Technology (Caltech), USA, he joined the Institute of High Performance Computing (IHPC), A*STAR, Singapore, as a research scientist. Since 2024, he has been an assistant professor at the chemistry department of the Chinese University of Hong Kong. His research interests include computational catalysis in transition metal-catalysed C–H functionalisation and asymmetric organocatalysis, as well as automation tools development and applications of machine learning in solving chemistry problems. To date, Prof. Zhang has published more than 40 peer-reviewed articles in top-tier journals including Nature Catalysis, Nature Chemistry etc. More information can be found on his group webpage: <https://xinglong-zhang.github.io>.

Does Water Always Swirl Counterclockwise in the Northern Hemisphere in the Toilet?

在北半球馬桶水流漩渦一定會逆時針轉動嗎？

*Dr. AU YEUNG Yee Man Andie
Department of Earth and Environmental Sciences
The Chinese University of Hong Kong*

It has been an urban myth that water swirls counterclockwise in the toilet when you are in the northern hemisphere. Coriolis force is believed to be behind this swirling myth. We do see the effect of Coriolis force in natural phenomena such as typhoon (or as they call hurricanes in the Atlantic). While Coriolis effect in fluid motion is observed on Earth (and some other planets), can we really see that in our toilet bowls?



Picture 1: Typhoon Mangkhut (credits: NASA)

Picture 2: Water swirling in a toilet bowl (credits: internet)

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Cantonese
Suitable Level:	S.3 or above
Talk Duration:	45 minutes
Audience Size:	30 - 40
Speaker Availability:	October 2025 – April 2026
Equipment:	PowerPoint with projector, microphone

Dr AU-YEUNG Yee Man Andie joined CUHK as an Assistant Lecturer in the Faculty of Science in 2016 and she is now a Lecturer in Earth and Environmental Sciences Programme. She has been working on atmospheric science research projects and is particularly interested in tropical meteorology. The projects she has worked on include exploring the opportunities to use computer simulation models to make typhoon seasonal forecasts in the Western North Pacific region and how urbanization (or land surface roughness) could affect TC moving tracks.

歐陽綺雯博士於 2016 年以助理講師身份加入香港中文大學，現為地球與環境科學課程講師。在加入中大前，他一直從事有關大氣科學研究，當中對熱帶氣象學尤其有興趣。相關經驗包括研究用電腦模擬方式去預測西北太平洋颱風季度活動，以及城市化對颱風路徑的潛在影響。

Extreme Weather Forecasting**極端天氣預報***Dr. LI Kwan Kit Ronald**Department of Earth and Environmental Sciences**The Chinese University of Hong Kong*

Extreme weather events, such as intense heatwaves and devastating floods, are becoming more frequent across the globe. How much do we understand extreme weather? How do weather forecasts perform in terms of these extremes? How is global warming affecting their intensity and frequency? We shall first learn about the fundamentals of weather forecasting. Then, we shall investigate some recent case studies of extreme weather, and our ability as well as limitation in forecasting them. Finally, we shall discuss what the future holds for extreme weather under global warming.

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 - July 2026 (Afternoon only)
Equipment:	PowerPoint projector, microphone

Dr. LI Kwan Kit Ronald is an Assistant Lecturer in Department of Earth and Environmental Sciences, at The Chinese University of Hong Kong. He received his Ph.D. degree in Atmospheric Physics from the University of Oxford. He is currently teaching courses in clouds and atmospheric dynamics. His research interests include weather and climate forecasting.

Can We Forecast Volcanic Eruptions?**我們可以預測火山噴發嗎？***Professor ZHAN Yan**Department of Earth and Environmental Sciences**The Chinese University of Hong Kong*

Volcanoes are among the most awe-inspiring natural phenomena on Earth, but they also pose significant risks to communities. Have you ever wondered how volcanoes form, or why they erupt? In this talk, we'll journey into the fiery depths of our planet to uncover the secrets of volcanic activity. We'll explore the hazards associated with eruptions, investigate whether volcanic risks exist near Hong Kong, and discuss how scientists use early warning systems to save lives. Most importantly, we'll dive into the cutting-edge technologies—like satellites, sensors, and artificial intelligence—that are revolutionizing our ability to forecast volcanic eruptions. Together, we'll discover how science and technology are helping us better understand and predict one of nature's most powerful forces.

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Mandarin
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	November 2025
Equipment:	PowerPoint projector, microphone

Professor ZHAN Yan (詹彥) is the Ng Yin Ying Assistant Professor of Geophysics in the Department of Earth and Environmental Sciences at The Chinese University of Hong Kong. He received his B.S. and M.S. degrees in Geochemistry and Structural Geology, respectively, from Peking University, and his Ph.D. in Geology from the University of Illinois at Urbana-Champaign. Before joining CUHK, he was a postdoctoral fellow at the Earth and Planets Laboratory of the Carnegie Institution for Science. His research focuses on volcanic processes, magma dynamics, and geophysical modeling, with a strong emphasis on using modern technology and data assimilation to forecast volcanic eruptions and understand planetary evolution.

Can a Healthy Gut Give You Good Protection from Diseases?**健康的腸道能保護您免受疾病的侵害嗎？**

Professor CHEUNG Chi Keung Peter

School of Life Sciences

The Chinese University of Hong Kong

Gut health is a current hot topic that attracts great attention in the public. Health food products such as probiotics, prebiotics and synbiotics targeting a balanced gut microbiota are making multiple health claims for the prevention and treatment of human disease. What is the science behind that a healthy gut can maintain good health? How to keep our gut healthy simply by our daily diet without the use of expensive supplements? In this talk, I will give some answers to the above questions with the aim of conveying a message of the importance of a healthy living.

Presentation Mode:	Face to Face
Language of Talk:	English / Cantonese
Suitable Level:	S.3 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026 (Afternoon only)
Equipment:	PowerPoint projector, microphone

Professor CHEUNG Chi Keung Peter received his PhD from the University of New South Wales in Australia and is the current Director of Food Research Centre and Associate Director of the Food and Nutritional Sciences Programme at the Chinese University of Hong Kong. Professor Cheung's primary research interest is on functional foods with a main focus on dietary fiber/non-starch polysaccharides, especially their effect on gut microbiota and their potential application as novel prebiotics. He is the current associate editor of Bioactive Carbohydrates and Dietary Fiber and editorial board member of a number of international food journals. He is the author or coauthor of over 200 SCI publications. He is the current Vice-chairman of the International Food Safety Association, advisor of the Hong Kong Nutrition Association and the Hong Kong Public Health Inspector Association.

How AI Can Revolutionize Modern Food Production and Safety?**人工智能如何改變現代食品生產和安全？**

Professor CHEUNG Chi Keung Peter

School of Life Sciences

The Chinese University of Hong Kong

Artificial Intelligence (AI) is rapidly transforming modern food production and safety by integrating modern technologies and building intelligent control systems that provide rapid solutions for the entire food supply chain from farm to fork. The impact of AI on food production include improving agriculture, facilitating crop classification, developing formulation and new food products, etc. AI also enhances food safety by eliminating hazardous chemicals, identifying pest and disease as well as food spoilage, building food traceability, etc. In this talk, I will highlight some AI-powered innovations in food production and safety with a view to better understand the multifaceted impact of AI in our society.

Presentation Mode:	Face to Face
Language of Talk:	English / Cantonese
Suitable Level:	S.3 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026 (Afternoon only)
Equipment:	PowerPoint projector, microphone

Professor CHEUNG Chi Keung Peter received his PhD from the University of New South Wales in Australia and is the current Director of Food Research Centre and Associate Director of the Food and Nutritional Sciences Programme at the Chinese University of Hong Kong. Professor Cheung's primary research interest is on functional foods with a main focus on dietary fiber/non-starch polysaccharides, especially their effect on gut microbiota and their potential application as novel prebiotics. He is the current associate editor of Bioactive Carbohydrates and Dietary Fiber and editorial board member of a number of international food journals. He is the author or coauthor of over 200 SCI publications. He is the current Vice-chairman of the International Food Safety Association, advisor of the Hong Kong Nutrition Association and the Hong Kong Public Health Inspector Association.

Will There Be Enough Food to Feed the 9 Billion World Population in 2047?
2047年是否有足夠的糧食養活世界 90 億人口？

Professor CHEUNG Chi Keung Peter
School of Life Sciences
The Chinese University of Hong Kong

It is predicted that the world population will reach a staggering 9 billion in 2047. Therefore, an urgent problem we are going to face is that will there be sufficient food to feed such huge population, given that the resources on our earth is limited. To solve this problem, a concerted effort from different countries, government policy makers, corporations, food producers and even individuals have an important role to play. In this talk, I will discuss with you some suggested solutions to tackle this problem from the food and nutritional sciences perspective. Most important, I hope to bring your awareness to this global issue so that you can also make your own contributions to address this issue for this and the future generations.

Presentation Mode:	Face to Face
Language of Talk:	English / Cantonese
Suitable Level:	S.3 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026 (Afternoon only)
Equipment:	PowerPoint projector, microphone

Professor CHEUNG Chi Keung Peter received his PhD from the University of New South Wales in Australia and is the current Director of Food Research Centre and Associate Director of the Food and Nutritional Sciences Programme at the Chinese University of Hong Kong. Professor Cheung's primary research interest is on functional foods with a main focus on dietary fiber/non-starch polysaccharides, especially their effect on gut microbiota and their potential application as novel prebiotics. He is the current associate editor of Bioactive Carbohydrates and Dietary Fiber and editorial board member of a number of international food journals. He is the author or coauthor of over 200 SCI publications. He is the current Vice-chairman of the International Food Safety Association, advisor of the Hong Kong Nutrition Association and the Hong Kong Public Health Inspector Association.

EarthBioGenome Project: Hong Kong 香港地球生物基因組計劃

*Professor HUI Ho Lam Jerome
School of Life Sciences
The Chinese University of Hong Kong*

Understanding the biodiversity on Earth is more than just scientific interests, as it can also inform how to maximise the utilisation of its resources in a sustainable way. This is both scientifically and socially important. In terms of science, it will allow better fundamental understanding of the evolution and interactions of organisms on earth, and socially, it will allow new applications development as well as using the resources in a sustainable way. The Earth BioGenome Project, which has been described as a moonshot project for biology, aims to sequence, catalogue, and analyse the genomes of all eukaryotes on Earth, including animals, fungi, and plants. The benefits of revealing these genomes will form an informative base to solve many current issues in human society, including but not limited to increasing the understanding of how biodiversity is evolving under climate change, conservation of endangered species, provision of ecosystem services, to discover the hidden biological knowledge for new technological inventions and development. In this talk, I will introduce to the audience the past and ongoing efforts of the EarthBioGenome Project Hong Kong (EBPHK).

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 - 60 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 - July 2026
Equipment:	PowerPoint projector, microphone

Professor HUI Ho Lam Jerome (許浩霖) is the Professor of the School of Life Sciences, and Director of the Biology Programme at The Chinese University of Hong Kong. He is also the Director of the Master of Biodiversity, Environmental Management, Sustainability and Technology. He received his doctoral degree and postdoctoral training from The University of Oxford, and his current main research interests include comparative genomics, invertebrates biology, zoology, agriculture biotechnology, marine biotechnology, molecular ecology, conservation of biodiversity, and evolutionary biology. He leads the EarthBioGenome Project Hong Kong, which comprises of all 8 local universities.

Lessons from Tiny Teachers: What Fruit Flies have Taught Us about Learning and Memory

小老師的教導：果蠅教會了我們什麼關於學習和記憶的知識

*Dr. KOON Chun Alex
School of Life Sciences
The Chinese University of Hong Kong*

“Without memory, we are nothing.” Memory is essential to all our lives. Without memory of the past, it is impossible to operate in the present or plan for the future. Without memory, we wouldn't be able to learn anything at all. Since ancient times, enhancing memory has been one of mankind's greatest dreams. Our brain is made up of approximately 100 billion neurons. During learning, neurons must construct new synapses to communicate with one another, thereby forming a neural network; and our memories rely on these synapses and networks to be maintained. To date, scientists have accumulated over 150 years of research on learning and memory. What have we learned so far? Are there “super drugs” for memory? Can we apply this knowledge in the clinical setting to help patients of neurodegenerative diseases? How about in the educational setting to improve student learning? In this lecture, we will discuss some of the scientific milestones and explore some of the answers.

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	60 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 (Monday, Wednesday and Friday), January – April 2026 (Wednesday and Friday)
Equipment:	PowerPoint projector, microphone

Dr. Alex Chun Koon is a Senior Lecturer in the School of Life Sciences, The Chinese University of Hong Kong. He received his B.Sc. in Biochemistry from Boston College and his Ph.D. in Biomedical Sciences (Conc. in Neuroscience) from the University of Massachusetts Chan Medical School. He has over 20 years of experience as a neuroscience researcher, focusing on topics, such as synaptic plasticity, learning & memory, and neurodegenerative diseases. As a full-time educator, he actively promotes a lively/ humorous teaching style to create a more enjoyable learning experience for students and to enhance their learning effectiveness. He was a recipient of the Faculty Exemplary Teaching Award in 2024.

A New Direction in Medicine: Gene and Stem Cell Therapy Technology

醫學新方向：基因與幹細胞治療技術

*Professor KWAN Kin Ming
School of Life Sciences
The Chinese University of Hong Kong*

Genes control many aspects of our life. Thus, when there is something wrong with our gene, usually it will result in some sort of disease condition. The advancement in molecular biology and genetic engineering allows scientists to manipulate genes in our body. On the other hand, stem cells are the cellular origin of many different tissues and organs. By studying the biology of stem cells and research on how to induce stem cells to become various cell types of different tissues, scientists are finding out new hope in medicine, which is using stem cells to offer the possibility of a renewable source of replacement cells and tissues. And by combining gene therapy and stem cell technology, scientists are also searching for new direction in medicine through manipulating genes and stem cells so as to offer the possibility of treating different diseases, conditions and disabilities such as Parkinson's and Alzheimer's diseases, diabetes, immunodeficiency, heart disease, and etc. A broad review and the current advancement of the gene and stem cell therapy will be discussed.

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026
Equipment:	PowerPoint projector, microphone

Professor KWAN Kin Ming (關健明) received his B.Sc. and Ph.D. degrees from The University of Hong Kong in 1990 and 1998 respectively. He then pursued his postdoctoral training in transgenic mouse technology and developmental biology at the University of Texas MD Anderson Cancer Center USA. He joined The Chinese University of Hong Kong in 2006 and he is now the Associate Dean (Education) of the Faculty of Science and Professor in the School of Life Sciences. He awarded the Exemplary Teaching Award of CUHK in 2009, 2013 and 2022 and Vice-Chancellor's Exemplary Teaching Award in 2022. His current research interest focuses on mouse genetics, developmental biology and organogenesis.

Looks Beneath the Surface: Discovering The Significance of Soil Biodiversity
探索表面之下：認識土壤生物多樣性的重要

Dr. LAW Man Suet Michelle
School of Life Sciences
The Chinese University of Hong Kong

The food we consume daily comes from our soils. The soils support various crops and provide us with a reliable food supply as part of ecosystem services. The entire soil ecosystem is sustained by a high diversity of soil organisms, including microbes, bacteria, nematodes, arthropods, and earthworms. In this talk, I will introduce the diversity of soil organisms and explain how soil biodiversity is crucial for maintaining human well-being and sustainability.

Presentation Mode:	Face to Face / Online
Language of Talk:	Cantonese
Suitable Level:	S.3 or above
Talk Duration:	40 mins
Audience Size:	20 - 80
Speaker Availability:	December 2025 – July 2026
Equipment:	PowerPoint projector, microphone

Dr. LAW Man Suet Michelle (羅文雪) is a Lecturer at School of Life Sciences, CUHK teaching Biology and Environmental Sciences. Michelle obtained her Bachelor's degree in Ecology and Biodiversity and MPhil degree in Social Science from The University of Hong Kong and subsequently her PhD degree in Geography and Resource Management at CUHK. Her research interests are soil ecology and ecosystem functioning, and environmental education. She is also ISA Certified Arborist and holder of Lantra Awards certificate (UK).

Glycemic Index and Why Should We Care?**為甚麼我們需要關注升糖指數**

*Professor LI Cheng
School of Life Sciences
The Chinese University of Hong Kong*

Have you ever wondered why some foods give you energy quickly, while others keep you full for longer? The secret lies in something called the Glycemic Index (GI). The GI is a number that tells us how fast our bodies turn the carbohydrates in food into sugar. Foods with a high GI give you a quick energy boost, but that energy can disappear just as quickly, leaving you feeling hungry again. On the other hand, low GI foods release energy slowly, keeping you satisfied and focused for longer. In this talk, we'll explore why understanding the GI of the foods we eat is so important. We'll discuss how making smart food choices can help you manage your energy levels, improve your focus in school, and even maintain a healthy weight. You'll also learn some surprising facts about everyday foods and how they affect your body. Join us to discover how a simple number can make a big difference in your health and well-being!

Presentation Mode:	Face to Face
Language of Talk:	English
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026
Equipment:	PowerPoint projector, microphone

Professor LI Cheng (李成) is an Assistant Professor at the School of Life Sciences, The Chinese University of Hong Kong. He received his B.Sc. degree in Biotechnology from Northwest A&F University and Ph.D. degree in Food Science from The University of Queensland. His research interest is carbohydrate chemistry and nutrition. He is passionate about transforming staple foods into much healthier products with a lower glycemic index.

The Amazing Biodiversity of Hong Kong's Marine Environment

Professor McIlroy, Shelby
School of Life Sciences
The Chinese University of Hong Kong

In its most simple form, biodiversity is "Life on Earth". As the humans continue to grow, especially in coastal cities, the diversity and distribution of marine animals is changing. This, in turn, changes the way that coastal ecosystems such as coral reefs function and what services they can provide for humans. The marine environment of Hong Kong has changed dramatically in the past century but there remains a surprisingly high biodiversity within Hong Kong waters including more than 80 species of corals. Here we will talk about how scientists' study marine biodiversity in Hong Kong and Hong Kong fits into a global picture of conservation. Information on past and current trends in biodiversity will provide a better understanding of marine systems and what management actions may have the most positive impact on preserving marine life on earth.

Presentation Mode:	Face to Face
Language of Talk:	English
Suitable Level:	S.1 or above
Talk Duration:	30 minutes
Audience Size:	20 - 30
Speaker Availability:	January – July 2026 (Wednesday and Friday)
Equipment:	PowerPoint projector, microphone

Professor McIlroy, Shelby is an Assistant Professor in the School of Life Sciences at the The Chinese University of Hong Kong. She earned her B.Sc. at the University of Florida, a master's degree in marine science at Moss Landing Marine Laboratories in Monterey Bay, California, and then her Ph.D. in Evolution and Ecology from the University of Buffalo in New York. She has been studying marine life in Hong Kong for the last eight years and uses genetic tools to understand the past, present, and future of marine ecosystems.

Life Science in Daily Life 日常生活中的生命科學

Prof. NGO Chi Ki Jacky
School of Life Sciences
The Chinese University of Hong Kong

Life science is the study of all living organisms and life processes at all levels from ecological to molecular. While many people refer life science as biology, it is an enormous field of study that also covers genetics, molecular biology, cell biology, biochemistry, food science, biotechnology, ecology, and more. The knowledge of life science teaches us to respect and love the nature and all life forms. It also plays a substantial role in human welfare and helps to create many of our daily needs ranging from food to medicine. In this talk, we will explore how the principles of life sciences are applied in everyday life.

Presentation Mode:	Face to Face
Language of Talk:	English / Cantonese
Suitable Level:	S.3 or above
Talk Duration:	50 minutes
Audience Size:	20 or above
Speaker Availability:	December 2025 - July 2026 (Afternoon only)
Equipment:	PowerPoint projector, microphone

Professor NGO Chi Ki Jacky (敖志祺) received his B.Sc., M.Sc., and Ph.D. degrees from the University of California San Diego in 2000, 2003, and 2006 respectively. He then pursued his postdoctoral training in the Division of Hemostasis and Thrombosis at the Beth Israel Deaconess Medical Center of Harvard Medical School. He joined The Chinese University of Hong Kong in 2009 and he is now an Associate Professor in the School of Life Sciences and the Director of the Biochemistry Program. His current research interest focuses on the structure-function studies of proteins and RNA that are important for cancer development and rare neurodegenerative diseases, and structure-based drug discovery against these diseases.

Structural Biology and Drug Discovery: How Basic Science Saves Lives**結構生物學和藥物研發：基礎科學如何挽救生命**

*Professor NGO Chi Ki Jacky
School of Life Sciences
The Chinese University of Hong Kong*

Seeing is believing. To understand how biological macromolecules like RNA, proteins, etc. function and make life possible, scientists rely on a special field of research called structural biology to look at their 3D structures and study how they carry out their functions. However, due to their small sizes, it is no simple task to visualize the macromolecules at atomic detail. Structural biologists thus need to integrate the principles of molecular biology, biochemistry, and biophysics and rely on special techniques like X-ray crystallography, nuclear magnetic resonance (NMR) spectroscopy, and single-particle cryo-electron microscopy to visualize macromolecular structures. The knowledge on the structure-function relationships of different biological macromolecules helps scientists to understand how they interact and work together in our cells to keep us functional and healthy. Structural biology also serves as a powerful tool to understand the mechanisms of diseases and identify potential inhibitor-binding sites on disease-causing macromolecules. With this information, scientists can accelerate the process of drug discovery using a structure-guided approach. In this talk, we will discuss on the major and recent developments in structural biology and how the 3D structures of macromolecules play critical role in drug discovery for various diseases including COVID-19.

Presentation Mode:	Face to Face
Language of Talk:	English / Cantonese
Suitable Level:	S.5 or above
Talk Duration:	50 minutes
Audience Size:	20 or above
Speaker Availability:	December 2025 - July 2026 (Afternoon only)
Equipment:	PowerPoint projector, microphone

Professor NGO Chi Ki Jacky (敖志祺) received his B.Sc., M.Sc., and Ph.D. degrees from the University of California San Diego in 2000, 2003, and 2006 respectively. He then pursued his postdoctoral training in the Division of Hemostasis and Thrombosis at the Beth Israel Deaconess Medical Center of Harvard Medical School. He joined The Chinese University of Hong Kong in 2009 and he is now an Associate Professor in the School of Life Sciences and the Director of the Biochemistry Program. His current research interest focuses on the structure-function studies of proteins and RNA that are important for cancer development and rare neurodegenerative diseases, and structure-based drug discovery against these diseases.

Hidden Wonders of Hong Kong: A Journey into Mushroom Diversity

菇菌秘境：探索香港自然界的隱藏瑰寶

*Dr. Tang Ming Chak Alvin
School of Life Sciences
The Chinese University of Hong Kong*

The world of fungi presents a fascinating duality in nature. These organisms serve both as prized culinary delicacies and as nature's most enigmatic decomposers. The rich aroma of matsutake mushrooms, the luxurious appeal of truffles, and the health benefits of Lingzhi mushrooms showcase fungi as true “forest treasures.” Yet, their ability to thrive in dark, damp environments gives them an air of mystery.

These remarkable organisms grow without sunlight, often appearing suddenly in the most unexpected places—a “magical” quality that has captivated people across cultures throughout history. Remarkably, within Hong Kong's compact territory thrives an astonishing diversity of fungal life.

In this special lecture, Dr. Alvin Tang, Mycologist and Lecturer at CUHK School of Life Sciences, will guide us through Hong Kong's most beautiful mushroom wonders. Through stunning visuals and engaging narration, you will discover the vibrant colors and extraordinary forms of our local mushrooms, revealing the most enchanting side of these “natural alchemists.” Join us as we unveil the secrets of the Kingdom Fungi and celebrate these hidden gems that flourish quietly all around us.

菇菌世界充滿著令人驚嘆的兩面性。它們既是珍貴的美味食材，又是大自然最神秘的分解者。松茸的醇香、松露的奢華、靈芝的養生價值，展現了菇類作為「森林珍寶」的一面；而它們在陰暗潮濕的環境中蓬勃生長的特性，則為這個族群披上了一層神秘的面紗。這些神奇的生物不需要陽光便能生長，常常在最意想不到的地方突然出現，這種「魔法般」的特性使古今中外的人們深深著迷。然而，在香港這片彈丸之地，竟孕育著令人驚嘆的菇菌多樣性。

在本次講座中，真菌學家兼香港中文大學生命科學學院講師鄧銘澤博士，將帶領大家探索香港最美麗的菇菌世界。透過精彩的影像與生動的解說，您將見識到香港郊野中那些形態各異、色彩繽紛的菇菌明星，發現這些「自然魔法師」最動人的一面。讓我們一同揭開菇菌王國的神秘面紗，認識這些在我們身邊默默生長的自然瑰寶。

Presentation Mode:	Face to Face
Language of Talk:	Cantonese
Suitable Level:	S.1 or above
Talk Duration:	45 minutes
Audience Size:	50 - 100
Speaker Availability:	October 2025 – July 2026 (Thursday afternoon only)
Equipment:	PowerPoint projector, microphone

Over the past 25 years, Dr. Alvin Tang has conducted research, taught, and written on various topics related to plant pathology, tree management, mushroom ecology and poisonous mushroom. He is the Chairman of Hong Kong Mushroom Society, specialist of the Hong Kong Council for Accreditation of Academic & Vocational Qualifications, as well as a member of the Arboriculture and Horticulture Industry Development Advisory Committee under the Development Bureau. He has been engaged in court cases associated with tree failure liability, Coroner's Court hearings, and judicial reviews. Dr. Tang has published 27 refereed papers, written 2 single-authored books, contributed 2 book chapters (including the Chronicles of Hong Kong), written 21 magazine articles, authored 3 government leaflets, developed 1 mobile app, and participated in 147 media interviews on various scientific topics.

鄧銘澤(Alvin)博士從事環保教育 25 年，現為香港中文大學生命科學學院講師，研究植物病理學、樹木管理、真菌生態及有毒菇類。鄧博士是香港菇菌學會會長、香港學術及職業資歷評審局認證評審委員、發展局樹藝及園藝業發展諮詢委員會委員、國際褐根病專家小組成員、真菌分類全球聯盟成員，著有書籍《一菇一世界—菇菌趣味新知》、《開拓人類與真菌的共同未來》和篇章《香港志：自然資源與生態卷—菌類生物》。他曾接受了 147 次媒體訪問，發表了 48 篇文章，並擔任法庭樹木專家證人。

Meeting our Marine Life Neighbours – Introducing Hong Kong’s Marine Invertebrate Diversity and Ecology
與我們的海洋生物鄰居見面 – 簡介香港海洋無脊椎動物多樣性及生態

Professor TSANG Ling Ming
School of Life Sciences
The Chinese University of Hong Kong

Did you know that Hong Kong’s coastlines and underwater habitats are home to hundreds of different crustacean species? These fascinating animals—including crabs, shrimps, and lobsters—play crucial roles in keeping our marine ecosystems healthy. For example, mangrove crabs don’t just scuttle about—they help recycle nutrients and keep the mud healthy by feeding on fallen leaves and burrowing, which helps other creatures survive too. Some shrimps have a unique relationship with sea anemones: they may help clean their hosts, or perhaps they’re just using the sea anemones for protection—scientists are still investigating! These stories show how diverse and surprising Hong Kong’s marine invertebrates can be. By learning about these crustaceans, we also discover how they can tell us if the environment is changing for better or worse. Dive in with us to uncover more amazing facts about Hong Kong’s hidden marine treasures!

Presentation Mode:	Face to Face / Online
Language of Talk:	Cantonese
Suitable Level:	S.1 or above
Talk Duration:	30 - 45 minutes
Audience Size:	20 or above
Speaker Availability:	March – July 2026 (Afternoon only)
Equipment:	PowerPoint projector, microphone

Professor TSANG Ling Ming is an Associate Professor in the School of Life Sciences, The Chinese University of Hong Kong. He received his B.Sc. degree in Biology from The Chinese University of Hong Kong and then further pursued his MPhil and Ph.D. degree in CUHK. His research interests are biodiversity, ecology and the evolution of marine invertebrates. He is particularly keen on identifying the factors that generate the species richness in different animal groups and distribution of biodiversity in different habitats and regions. He hopes this information can help scientists to design appropriate conservation strategies to strike a balance between development and environmental quality.

Living in Our Salty World 活在鹽世界

*Ms. YIP Pui Sze Peggy
School of Life Sciences
The Chinese University of Hong Kong*

Excessive salt intake is a global public health concern, yet many people remain unaware of how much salt they consume daily and the consequences it may have on their health. This presentation aims to explore three key questions: How much salt are we eating? Why is it important? And why is it worth talking about?

We will begin by examining current data on population-level salt consumption, comparing it with recommended dietary guidelines. The presentation will then highlight the health implications of high sodium intake, including its association with hypertension, cardiovascular disease, and other chronic conditions. Finally, we will discuss why salt reduction is a critical yet often overlooked topic in nutrition education and how raising awareness can lead to meaningful changes in dietary behavior and health outcomes.

Through this session, participants will gain a clearer understanding of the hidden salt in everyday foods, the science behind sodium-related health risks, and practical strategies for reducing salt intake in daily life.

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Cantonese
Suitable Level:	S.1 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026
Equipment:	PowerPoint projector, microphone

Peggy P.S. Yip is a Lecturer and Assistant Director in the Food and Nutritional Sciences Programme at The Chinese University of Hong Kong. She is also a Registered Dietitian (US), a Registered Nutritionist (UK), and an Accredited Dietitian (HK). With a strong background in community nutrition and nutrition education, she is passionate about promoting evidence-based dietary practices and engaging students through innovative teaching.

The Whole Spectrum of Malnutrition: from Undernutrition to Micronutrient Deficiency to Overnutrition

營養不良的全貌：從營養不足、微量營養素缺乏，到營養過剩

*Ms. YIP Pui Sze Peggy
School of Life Sciences
The Chinese University of Hong Kong*

Malnutrition is often misunderstood as a condition solely associated with low body weight. However, its spectrum is far broader and more complex. This presentation aims to illuminate the full continuum of malnutrition, encompassing undernutrition, micronutrient deficiencies, and overnutrition.

We will begin by defining each form of malnutrition and exploring their distinct characteristics, causes, and health implications. The session will emphasize that malnutrition is not always visible and cannot be accurately assessed by body weight alone. Individuals may suffer from nutrient deficiencies despite appearing well-nourished, while others may experience overnutrition and its associated risks, such as obesity and chronic disease. Attendees will gain a deeper understanding of why addressing all forms of malnutrition is essential for improving nutritional health outcomes across diverse populations.

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Cantonese
Suitable Level:	S.1 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026
Equipment:	PowerPoint projector, microphone

Peggy P.S. Yip is a Lecturer and Assistant Director in the Food and Nutritional Sciences Programme at The Chinese University of Hong Kong. She is also a Registered Dietitian (US), a Registered Nutritionist (UK), and an Accredited Dietitian (HK). With a strong background in community nutrition and nutrition education, she is passionate about promoting evidence-based dietary practices and engaging students through innovative teaching.

Double My Money: 'Rule of 72,' or Is It 'Rule of 69'?

資金翻倍的祕密：是「72 法則」還是「69 法則」？

Dr. Wong Chak Fu Jeff
Department of Mathematics
The Chinese University of Hong Kong

In the world of personal finance and investment planning, few tools are as elegantly simple and widely adopted as the "Rule of 72"—a mental shortcut for estimating how long it takes for an investment to double at a fixed annual rate of return. But is 72 truly the magic number? This paper examines the mathematical foundations and practical applications of the Rule of 72, comparing it to its lesser-known yet arguably more accurate counterparts: the Rule of 69 and the Rule of 70. Through historical data analysis, compound interest modelling, and real-world investment scenarios, we examine the precision and limitations of each rule across varying interest rates. The study reveals that while the Rule of 72 offers convenience and intuitive appeal, the Rule of 69.3—derived from the natural logarithm of 2—delivers greater accuracy, especially at lower interest rates. Ultimately, this investigation empowers investors with a deeper understanding of exponential growth, helping them choose the right rule for more informed financial forecasting.

Understanding the content of this presentation only requires simple algebra calculations. For more information about my latest and past popular science talks, please visit the following link:

<https://www.math.cuhk.edu.hk/~jwong/pst.html>

在個人理財與投資規劃的領域中，「72 法則」是一項簡潔又廣泛使用的心算工具，用來快速估算資金在固定年利率下翻倍所需的時間。但 72 真的是那個神奇數字嗎？本研究深入探討 72 法則的數學基礎與實際應用，並與較少人知曉但可能更精準的「69 法則」與「70 法則」進行比較。透過歷史數據分析、複利模型建構，以及真實投資情境模擬，我們檢視各法則在不同利率下的準確性與限制。研究發現，雖然 72 法則具備便利性與直覺吸引力，但源自自然對數 $\ln(2)$ 的「69.3 法則」在低利率情況下表現更為精確。最終，本研究旨在協助投資者深入理解指數成長，並選擇最適合的法則，以提升財務預測的準確性與智慧。

理解本講座的内容只需要具備基本的代數計算知識。要了解有關我最近和過去的科普講座的更多信息，請訪問以下鏈接：

<https://www.math.cuhk.edu.hk/~jwong/pst.html>

Presentation Mode:	Face to Face
Language of Talk:	Cantonese and English
Suitable Level:	S.3 or above
Talk Duration:	40 - 50 minutes
Audience Size:	20 - 100
Speaker Availability:	• October 2025 – December 2025 (Friday only) • January 2026 – April 2026 (Monday, Wednesday, Thursday and Friday) • May 2026 – June 2026
Equipment:	Computer & Projector (pdf)

Dr. Jeff C. F. Wong (黃澤富) holds a B.Sc. in Mathematics, an M.Sc. in Geodesy from the University of New Brunswick, Canada, and a Ph.D. in Mathematics from the Chinese University of Hong Kong. His research interests include artificial intelligence, board games, educational data mining, machine learning, financial mathematics, and quantitative social network analysis. He is currently a Senior Lecturer in the Department of Mathematics at the Chinese University of Hong Kong.

From Numbers to Life: Exploring Functions in Everyday Decisions 從數字到生活：探索日常決策中的函數應用

Dr. Wong Chak Fu Jeff
Department of Mathematics
The Chinese University of Hong Kong

This talk explores how mathematical concepts, including ordered pairs, relations, functions, and recurrence relations, can be applied to solve everyday problems. We demonstrate how functions facilitate tasks such as planning school schedules, conserving water, and cooking rice. We also use recurrence relations to model how economic wealth can decrease during a recession, showing how prices change over time. With clear examples, simple calculations, and helpful graphs, this study demonstrates how understanding functions can enhance decision-making and make math more applicable in real life.

Understanding the content of this presentation only requires simple algebra calculations. For more information about my latest and past popular science talks, please visit the following link:

<https://www.math.cuhk.edu.hk/~jwong/pst.html>

本次演講深入探討數學概念，包括有序對、關係、函數以及遞迴關係，如何應用於解決日常生活中的各種問題。我們展示函數如何協助完成如安排學校課表、節約用水及烹煮米飯等實際任務。同時，透過遞迴關係，我們模擬經濟衰退期間財富的遞減過程，並呈現價格隨時間變化的趨勢。藉由清晰的範例、簡明的計算與直觀的圖表，本研究說明瞭解函數不僅能提升決策能力，更能使數學在生活中發揮實際效用。

理解本講座的内容只需要具備基本的代數計算知識。要了解有關我最近和過去的科普講座的更多信息，請訪問以下鏈接：

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Presentation Mode:	Face to Face
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Equipment:	Computer & Projector (pdf)

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Making Better Decisions Using Probability Tree Diagrams 使用機率樹圖做出更好的決策

Dr. Wong Chak Fu Jeff
Department of Mathematics
The Chinese University of Hong Kong

Make better decisions using probability tree diagrams which help the decision-maker to analyze complex situations with numerous alternatives and a wide range of potential consequences and to determine a course of action aligned with the decision-maker's economic and psychological preferences. This talk offers easy-to-understand solution steps for any decision problem. We will explain how to use these diagrams to break down large, complex decision problems into smaller components, allowing us to obtain effective solution strategies and criteria. Examples will be discussed, including scenarios such as board game designs, 'Deal or No Deal,' comparisons between losses and gains, considerations of risk aversion versus risk-seeking behaviour, and game theory analysis. We will also introduce software with tools and visuals to help you learn about creating and using probability trees to improve decision strategies.

Understanding the content of this presentation only requires simple algebra calculations. For more information about my latest and past popular science talks, please visit the following link:

<https://www.math.cuhk.edu.hk/~jwong/pst.html>

使用概率樹圖可以說明決策者分析複雜情況，特別是涉及多種替代方案和廣泛潛在後果的決策。通過概率樹圖，我們可以確定符合決策者經濟和心理偏好的行動方案。在這次講座中我們將探討如何使用概率樹圖解決各種決策問題。我們討論如何將大型複雜的決策問題分解為更小的組件，使我們能夠獲得有效的解決策略和標準。我們將討論一些例子，包括棋盤遊戲設計、「交易或不交易」等場景、損失和收益之間的比較、風險規避與風險尋求行為的考慮以及博弈論分析。此外，我們還將介紹配備各種工具和視覺效果的軟件，幫助學習創建和使用概率樹圖，以找到更好的決策策略。

理解本講座的內容只需要具備基本的代數計算知識。要了解有關我最近和過去的科普講座的更多信息，請訪問以下鏈接：

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Speaker Availability:	• October 2025 – December 2025 (Friday only) • January 2026 – April 2026 (Monday, Wednesday, Thursday and Friday) • May 2026 – June 2026
Equipment:	Computer & Projector (pdf)

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Solving Chemical Puzzles with Matrices: The Case of H₂O

以矩陣解開化學謎題：以水（H₂O）為例

Dr. Wong Chak Fu Jeff
Department of Mathematics
The Chinese University of Hong Kong

Balancing chemical reactions might seem like solving a tricky puzzle—but what if we could crack it using math? In this talk, we'll discover how matrices, a powerful tool from algebra, can help us balance chemical equations with precision and ease. Focusing on the formation of water (H₂O), we'll use matrix methods to find the correct coefficients by solving a system of linear equations—no guessing required! Once balanced, we'll dive into the real-world implications of this reaction: how much hydrogen and oxygen are needed, what energy is released, and how these reactions affect our environment. From understanding the basics of chemical conservation to modelling pollution and energy use, this journey shows how math and science work together to explain the world around us—and how even everyday reactions can have significant consequences.

Understanding the content of this presentation only requires simple algebra calculations. For more information about my latest and past popular science talks, please visit the following link:

<https://www.math.cuhk.edu.hk/~jwong/pst.html>

平衡化學反應看似複雜，其實可以透過數學輕鬆解決。本演講介紹如何運用代數中的矩陣工具，精準地平衡化學方程式。我們以水（H₂O）的生成為例，透過解線性方程組找出正確係數，完全不需猜測。反應平衡後，我們將探討其實際意義：所需的氫氣與氧氣量、釋放的能量，以及對環境的影響。從化學守恆的基本概念，到污染與能源使用的模型分析，本研究展現數學與科學如何攜手解釋我們周遭的世界，並揭示日常反應背後的重要影響。

理解本講座的内容只需要具備基本的代數計算知識。要了解有關我最近和過去的科普講座的更多信息，請訪問以下鏈接：

<https://www.math.cuhk.edu.hk/~jwong/pst.html>

Presentation Mode:	Face to Face
Language of Talk:	Cantonese and English
Suitable Level:	S.3 or above
Talk Duration:	40 - 50 minutes
Audience Size:	20 - 100
Speaker Availability:	- October 2025 – December 2025 (Friday only) - January 2026 – April 2026 (Monday, Wednesday, Thursday and Friday) - May 2026 – June 2026
Equipment:	Computer & Projector (pdf)

Dr. Jeff C. F. Wong (黃澤富) holds a B.Sc. in Mathematics, an M.Sc. in Geodesy from the University of New Brunswick, Canada, and a Ph.D. in Mathematics from the Chinese University of Hong Kong. His research interests include artificial intelligence, board games, educational data mining, machine learning, financial mathematics, and quantitative social network analysis. He is currently a Senior Lecturer in the Department of Mathematics at the Chinese University of Hong Kong.

Zipf's Law: The Hidden Math in Your Messages and Maps 齊普夫定律：藏在訊息與地圖中的數學祕密

Dr. Wong Chak Fu Jeff
Department of Mathematics
The Chinese University of Hong Kong

Have you ever noticed how some words are used way more often than others, or how a few cities have huge populations while most are much smaller? That's not just coincidence—it's a pattern called Zipf's Law! This fascinating rule is evident in many aspects of our lives, from the way we speak and write to how cities grow, and even how we use email and mobile phones. Zipf's Law says that the most common item (like a word or city) is used or sized about twice as much as the second most common, three times as much as the third, and so on. In this fun and curious exploration, we'll discover how this simple idea helps us understand human behavior, communication, and even technology. Whether you're texting friends or learning about geography, Zipf's Law is quietly shaping the world around you!

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你是否曾注意到，有些字詞使用頻率遠高於其他，或是少數城市人口極多，而大多數城市則相對較小？這並非巧合，而是一種名為「齊普夫定律」的數學模式！這個有趣的規律廣泛存在於我們的生活中，從語言表達、城市發展，到電子郵件與手機使用行為。齊普夫定律指出，最常見的項目（如字詞或城市）出現或規模約為第二名的兩倍、第三名的三倍，依此類推。在這場充滿趣味與好奇心的探索中，我們將發現這個簡單的概念如何幫助我們理解人類行為、溝通方式，甚至科技運作。不論是與朋友傳訊息，或是學習地理知識，齊普夫定律正悄悄地形塑著我們周遭的世界！

理解本講座的内容只需要具備基本的代數計算知識。要了解有關我最近和過去的科普講座的更多信息，請訪問以下鏈接：

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How to Make the Universe in Computers

從電腦觀宇宙

*Professor CHAN Tsang Keung
Department of Physics
The Chinese University of Hong Kong*

How did the universe form? And why do we exist in this universe? These questions have challenged many brilliant philosophers and scientists, but they were hampered by the limits of their computing power. Nowadays, we have powerful supercomputers that can perform one quintillion calculations per second, i.e. the entire human population would need 20 years of non-stop calculations. Using this supercomputing power, astrophysicists recreate the universe, galaxies, stars, and planets through computer simulations. By comparing these simulations with observations, we reveal the deepest secrets of the universe, including invisible dark matter, the origin of the universe, and the creation of Earth and life. Join me in exploring these synthetic worlds that shed light on the truth.

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Cantonese
Suitable Level:	S. 4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026
Equipment:	PowerPoint projector, microphone

Professor CHAN Tsang Keung (陳增強) is an Assistant Professor in the Department of Physics at the Chinese University of Hong Kong. He received his B.Sc. and M.Phil. in Physics from the Chinese University of Hong Kong and Ph.D. in Physics from the University of California at San Diego. His research interest is computer simulation for solving astrophysical problems, including cosmology, galaxy, and star formation. He is developing modern numerical simulation codes, e.g. incorporating energetic particles and radiation. Through these simulations, he aims to address the prominent astrophysical problems, including how galaxies and stars form and evolve, and decrypting the nature of dark matter.

More is Different - How Complexity Shapes Our World 多即不同－複雜性如何塑造我們的世界

Dr. DUNG On Yu Peter
Department of Physics
The Chinese University of Hong Kong

A single ant may seem far less intelligent than a cat. But an ant *colony* can build complex nest shapes and survive in severe environments without central control. This is an example of “collective intelligence”, where the whole can solve more complex problems than the individual parts. This idea is captured by a 1977 Nobel Physics Prize winner Philip W. Anderson’s famous phrase “More is different”. Similarly, human brains - consists of interacting neurons forming consciousness-, a classroom of students engaged in discussions, crowds, cities, even economies and cultures are also *complex* systems. In these systems, the whole behaves differently because of the interactions between the parts. By studying complexity, we can better understand pressing issues related to education, health, culture, and sustainability. In this talk, we will explore some properties of complex systems with examples from non-living and living systems, and our society. We will also learn about the (cutting-edge) methods to study these systems and tackle complex issues. Finally, we will discuss the importance of systems thinking and inter-/trans-disciplinary collaborations in today’s interconnected, complex world.

一隻螞蟻可能看起來遠不如一隻貓聰明，但螞蟻群卻能夠在沒有中央控制的情況下建造複雜的巢穴，並在惡劣的環境中生存。這是「集體智慧」(collective intelligence)的一個例子，在這種情況下，整體能夠解決比單獨的個體更複雜的問題。1977年諾貝爾物理學獎得主菲利普·W·安德森(Philip W. Anderson)的名言“多即不同”(More is different)正是對此的生動描述。同樣，人類大腦(由相互作用的神經元組成，從而形成意識)、一個學生參與討論的教室、人群、城市，甚至經濟和文化，都是複雜系統。在這些系統中，由於部分之間的相互作用，整體的行為與個體的行為截然不同。透過研究複雜性，我們可以更好地理解與教育、健康、文化和可持續發展相關的緊迫問題。在本次講座中，我們將透過非生命系統、生物系統以及社會中的實例，探索複雜系統的一些特徵。此外，此演講將介紹研究這些系統和解決複雜問題的(前沿)方法。最後，我們將討論系統性思維和跨學科合作在當今互聯互通、複雜世界中的重要性。

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	60 minutes
Audience Size:	20 or above
Speaker Availability:	May – July 2026
Equipment:	PowerPoint projector, microphone

Dr. DUNG On Yu Peter is a lecturer in the Department of Physics at the Chinese University of Hong Kong (CUHK). He received his B.Sc. degree in Physics from CUHK and Ph.D. degree in fluid physics, studying bubbles and turbulence, from University of Twente in the Netherlands. He conducted postdoctoral research on bubbles related to hydrogen energy. Peter's interests extend beyond natural science. His research interest lies on complex (adaptive) systems, fluid dynamics and turbulence, physics in social systems, interdisciplinary and transdisciplinary collaborations with the humanities and social sciences, as well as tackling "wicked problems" such as energy transition and health. He is also interested in bridging physics with other disciplines and connecting methodologies, ranging from qualitative to quantitative approaches.

Planet Hunter 行星獵人

Dr. LEUNG Po Kin
Department of Physics
The Chinese University of Hong Kong

With the development of astronomical observation techniques, we have now discovered about 6000 exoplanets. Among these, some are even located in the habitable zone where temperatures are suitable for the potential existence of liquid water on their surfaces. The distances to all these planets are at least multiple light-years from Earth. How do astronomers come to know of their existence and even probe their characteristics? Let us discuss the main methods and results of these studies, as well as the significance of these findings for humanity.

隨着天文觀測技術的發展，至今我們已發現約 6000 顆系外行星。其中一些更位於溫度適中的適居帶，表示液態水有可能存在於行星表面。試想這些和地球相距最少以光年計算的行星，究竟天文學家如何得知它們的存在，甚至探測它們的特性？讓我們討論一下這些研究的主要方法和結果、以及研究成果對人類的意義。

Presentation Mode:	Face to Face
Language of Talk:	Cantonese
Suitable Level:	S.1 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026
Equipment:	PowerPoint projector, microphone

Dr. LEUNG Po Kin got his Bachelor's and Master's degrees from the Department of Physics at The Chinese University of Hong Kong, and his Ph.D. degree in Astronomy from University of Illinois at Urbana-Champaign. He joined University of California as a researcher afterwards. Currently, Dr. Leung is a Senior Lecturer in the Department of Physics at The Chinese University of Hong Kong.

梁寶建博士畢業於香港中文大學物理系，其後在美國伊利諾伊大學香檳分校取得天文學哲學博士學位。隨後他曾在加州大學作研究員，現為香港中文大學物理系高級講師。

The Dark Side of the Universe 宇宙的陰暗面 - 暗物質和暗能量

Dr. LEUNG Po Kin
Department of Physics
The Chinese University of Hong Kong

Dark matter and dark energy appear in sci-fi movies and books from time to time. As the story goes, they often possess peculiar properties. Turns out they are real as far as we know, and the real universe is stranger than fiction. In this talk, we will learn about the natures of dark matter and dark energy, why we need them in our theories, and how they are essential to our very existence.

暗物質和暗能量經常在科學電影和書籍中出現。在故事中，它們往往擁有奇怪的突性。原來它們都真實存在，而且現實比虛構更離奇。在本次演講中，我們將了解暗物質和暗能量的本質，為什麼我們的科學理論需要考慮它們，以及它們對我們的存在有何重要性。

Presentation Mode:	Face to Face
Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026
Equipment:	PowerPoint projector, microphone

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The Haunted Universe: Ghostly Signals from Zombie Stars 幽靈宇宙 – 來自殭屍星的鬼魅訊號

Dr. LEUNG Po Kin
Department of Physics
The Chinese University of Hong Kong

This lecture will take you on a mysterious journey through the cosmos, unveiling the secrets of pulsars. These enigmatic celestial objects, may as well be thought of as "zombies" in the universe, send us rhythmic and mysterious electromagnetic signals in a unique way. From the discovery of pulsars to their characteristics, observation techniques, and the latest groundbreaking advancements in research, the lecture will present these ghostly bodies in an accessible manner. Let us embark on this cosmic adventure filled with wonder and the unknown together!

本次講座將帶您踏上一場神秘的宇宙探索之旅，揭開脈衝星的奧秘。這些神秘的天體有如宇宙中的「殭屍」，以獨特的方式向我們發送規律的神秘電磁波訊號。從脈衝星的偶然發現，到它們的特徵、觀測技術，再到當前前沿研究的突破性進展，講座將用淺顯易懂的方式介紹這些幽靈般天體。讓我們一起來感受這場充滿未知與驚奇的宇宙冒險吧！

Presentation Mode:	Face to Face
Language of Talk:	Cantonese
Suitable Level:	S.1 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026
Equipment:	PowerPoint projector, microphone

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The Sun in a Bottle 瓶子中的太陽

Dr. LEUNG Po Kin
Department of Physics
The Chinese University of Hong Kong

The continuous life on Earth and the ongoing flow of the atmosphere and oceans depend on the light and heat provided by the Sun. This star converts hydrogen atoms into helium through highly efficient nuclear fusion, generating energy continuously for 4.6 billion years, and it will continue to burn for another 5 billion years! How does the Sun manage to burn stably for such a long time? How do scientists understand the Sun's internal structure? Can we use similar methods to create a tiny Sun on Earth and provide an endless source of energy for humanity? Let us uncover the mysteries of nuclear energy together.

地球上生命的生生不息，大氣和海洋的持續流動，都有賴太陽提供的光和熱。我們這顆恆星以高效率的核融合轉化氫原子為氦，四十六億年來不停地產生能量，往後還會繼續燃燒五十億年！究竟太陽如何能穩定地長期燃燒？科學家怎樣得知太陽的內部構造？我們又是否可以運用相似的方法在地球上造一個小太陽，為人類提供源源不絕的能源？讓我們一起揭開核能的奧秘。

Presentation Mode:	Face to Face
Language of Talk:	Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026
Equipment:	PowerPoint projector, microphone

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The Swan Song of Star

星之挽歌

Dr. LEUNG Po Kin
Department of Physics
The Chinese University of Hong Kong

To us, the Sun seems to be always there shining upon the Earth, and will always be there in the future. We seldom think that the Sun or other stars have birth and death. Nevertheless, the death of some stars is one of the most spectacular phenomena in the universe, and the process is highly related to the existence of humans. Let us spend some time discussing the final fate of stars and how it is related to us.

對我們來說，太陽好像一直都在照耀着地球，而在遙遠的將來都會繼續存在。我們很少想到太陽和其他恆星都有出生和死亡。但原來一些恆星的死亡是宇宙其中一個最壯觀的現象，而且更和我們的存在息息相關。讓我們花些時間來討論恆星的結局和它與我們的關係。

Presentation Mode:	Face to Face
Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026
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Rise of the Giant Telescopes in China: What Are They Looking For?**中國巨鏡的崛起**

*Professor LI Hua Bai
Department of Physics
The Chinese University of Hong Kong*

China has entered the era of giant telescopes, constructing some of the world's most ambitious astronomical facilities. This talk will explore the cutting-edge technology and monumental engineering behind these new instruments, including the Five-hundred-meter Aperture Spherical radio Telescope (FAST), the world's largest single dish, and the upcoming 110-m Qitai Radio Telescope (QTT), the largest fully steerable dish. But what fundamental questions are they designed to answer? We will delve into their scientific missions: from the search for pulsars and interstellar molecules that could reveal the secrets of cosmic evolution, to the hunt for signs of extraterrestrial intelligence.

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Mandarin
Suitable Level:	S.1 or above
Talk Duration:	45 - 60 minutes
Audience Size:	20 or above
Speaker Availability:	January - July 2026
Equipment:	PowerPoint projector, microphone

Professor LI Hua Bai received the Ph.D. degree in astrophysics from Northwestern University in 2006. Afterwards, he had worked in the Harvard-Smithsonian Center for Astrophysics and Max Planck Institute for Astronomy. In Aug. 2013, he started his professorship in the Department of Physics, The Chinese University of Hong Kong. His research group study how magnetic fields and turbulence regulate star formation; they use various novel methods in observations, numerical simulations and instrumentation.

Gravitational Wave Astronomy 重力波天文學

Dr. LIN Lap Ming
Department of Physics
The Chinese University of Hong Kong

愛因斯坦在 1915 年發表廣義相對論來取代牛頓的引力理論，使我們對引力現象有全新的認識，亦有不可思議的預測，例如黑洞和重力波的存在。在一百年後的 2015 年科學家首次探測到由兩個黑洞合併所產生的重力波更是科學史上的重要里程碑。這講座旨在淺談重力波的特性與及科學家如何嘗試捕捉不同天文現象釋放的重力波來了解這個宇宙。

Presentation Mode:	Face to Face / Online
Language of Talk:	Cantonese
Suitable Level:	S.4 or above
Talk Duration:	60 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – December 2025, February - July 2026
Equipment:	PowerPoint projector, microphone

練立明博士畢業於香港中文大學物理系，其後在美國聖路易斯華盛頓大學取得物理學哲學博士學位。畢業後，他在巴黎天文台擔任研究員，現為香港中文大學物理系高級講師。其研究興趣包括理論天文物理及廣義相對論。

The Story of Hydrogen Fuel 氫能的故事

Dr. TONG Shiu Sing
Department of Physics
The Chinese University of Hong Kong

This talk will provide an accessible exploration of hydrogen energy and its prospects. Key topics include: (1) the physics and chemistry behind hydrogen energy and why its use does not pollute the local environment; (2) large-scale hydrogen production from fossil fuels and the carbon emissions it cause; (3) challenges of producing hydrogen through water electrolysis using renewable energy — the most environmentally friendly method; (4) why batteries face difficulties in powering heavy-duty vehicles, and the advantages of hydrogen energy in such applications; (5) the operating principles of hydrogen fuel cells and their benefits for heavy machinery and transport; (6) the use of town gas in Hong Kong, and its relationship with Hong Kong's strengths in developing hydrogen energy. (7) Finally, we will examine recent global developments in hydrogen energy and its prospects. Demonstrations on hydrogen gas explosion and a model hydrogen vehicle are included.

Presentation Mode:	Face to Face
Language of Talk:	Cantonese
Suitable Level:	S.1-S3 / S.4 or above
Talk Duration:	60 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026 (Afternoon only)
Equipment:	PowerPoint projector, microphone

Dr. TONG Shiu Sing is currently Principal Lecturer in the Department of Physics at The Chinese University of Hong Kong, and also serves as Associate Director of the Centre for Promoting Science Education, Faculty of Science. Dr. Tong has received the Vice-Chancellor Exemplary Teaching Award, the Exemplary Teaching Award in General Education, and the Science Faculty Exemplary Teaching Award three times at CUHK.

Dr. Tong has been actively promoting science education, collaborating with the Education Bureau and other organizations to promote physics and science through everyday life scenarios and innovative experiments. He has provided new teaching materials and teacher training and has authored multiple sets of textbooks.

Dr. Tong is passionate about science popularization, frequently explaining interesting scientific phenomena in newspapers, on television, and on social media. In particular, the TV program “Sidewalk Scientists” (學是學非) is very popular. He also serves as a judge for major innovation and technology competitions, hosts large-scale science demonstration events, and conducts STEAM activities in schools—earning widespread recognition from the public, especially among young people.

Exploring the World of Biomolecules with Computer Simulations 以計算機模擬探索生物分子的世界

Professor WANG Yi
Department of Physics
The Chinese University of Hong Kong

Scientists routinely utilize microscopes to explore the world of biomolecules, because the sizes of proteins, nucleic acids and other biomolecules are typically on the nanometer scale. Nowadays, we can also use computers to model and simulate these biomolecules, and the advance in GPU technology, initially designed for computer games, has made it widely applicable in scientific computing. Let us get a taste of how the advance in computer hardware and software has helped scientists to explore the world of biomolecules.

科學家經常使用顯微鏡來探索生物分子的世界。這是因為諸如蛋白質、核酸之類的生物分子的大小通常僅為數個納米。不過，今天我們亦可以使用電腦來模擬這些生物分子的結構和功能。近年來 GPU 技術的進步更使得為電子遊戲而研發的新一代顯卡也可被使用在科學計算中。讓我們一起來了解一下這些計算機軟硬件的進步是如何幫助科學家探索生物分子的世界。

Presentation Mode:	Face to Face / Online
Language of Talk:	English
Suitable Level:	S.1 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026 (Afternoon only)
Equipment:	PowerPoint projector, microphone

Professor Wang Yi graduated from Zhejiang University and subsequently obtained her PhD degree in Biophysics and Computational Biology from the University of Illinois, Urbana-Champaign. She subsequently worked as a postdoc at University of California, San Diego and is now a professor at CUHK.

王一博士畢業於浙江大學，其後在美國伊利諾伊大學香檳分校取得生物物理學博士學位。隨後她曾在加州大學作博士后研究員，現為香港中文大學物理系教授。

How Order Emerges in Life? 生命怎樣產生有序性？

*Professor WU Yilin
Department of Physics
The Chinese University of Hong Kong*

Self-organization is a hallmark of living systems and it confers important biological functions, ranging from subcellular organelle biogenesis to embryo development, and to coordinated organ activities. Emergence of spatiotemporal order in living systems often requires intricate chemical signaling between cells that coordinates or synchronizes cellular behavior, gene expression and differentiation. By contrast, here I will highlight the essential roles of physical mechanisms and mechanical forces in driving biological self-organization. Understanding the physical principles of biological self-organization will help to elucidate the origin of life and may inspire the engineering of life-like materials.

自組織是生命系統的標誌性特徵。它和生命系統的關鍵功能密切相關，例如亞細胞結構的形成，胚胎發育和器官活動。生命系統中時空有序性的出現通常依賴複雜的化學訊號傳導來調控細胞行為、基因表現和分化。與此相反，在這裡我將強調物理機制和力學因素在推動生物自組織的重要作用。認識生物自組織的物理原理將有助於理解生命的起源，並可能啟發類生命材料的工程設計。

Presentation Mode:	Face to Face
Language of Talk:	English / Mandarin
Suitable Level:	S.1 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 - July 2026 (Afternoon only)
Equipment:	PowerPoint projector, microphone

吳藝林教授 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，隨後到美國哈佛大學作博士後研究，2012 年加入香港中文大學大學物理系。其研究興趣是生命物質的物理。

Secret of Splashing 液滴飛濺的秘密

Professor XU Lei
Department of Physics
The Chinese University of Hong Kong

當快速移動的液滴撞擊到光滑的表面，會在表面展開出一層液體薄膜，在這個不斷向外擴展的液體薄膜的邊緣會飛濺出小液滴。但是人們對於這個普遍存在的現象一直缺乏最基本的認知。我們藉助高速成像手段，揭示出濺射現象的發生，是由在不斷擴展的液滴前緣的底部被束縛的極薄的空氣層所引起。由於此空氣層的厚度甚至小於空氣分子的平均自由程，內部的空氣流將以近乎與聲速的高速傳遞著動量，從而產生比通常情況下強達十倍以上的作用力。強大的作用力下形成的「強風」在液面激發出 KH 不穩定性 (Kelvin-Helmholtz instabilities) 並有效的導致液滴四處飛濺。我們提出的這個模型得到實驗的定量驗證，使得人們對於液滴在光滑表面的飛濺這一自然界普遍存在的現象有了更本質的認識。

Presentation Mode:	Face to Face / Online
Language of Talk:	English / Mandarin
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 – July 2026
Equipment:	PowerPoint projector, microphone

Professor XU Lei is a Professor in the Department of Physics. He received his PhD degree in Physics Department from The University of Chicago in 2006 and B.Sc. degree from The University of Science and Technology of China in 2000. His research focuses on the everyday life phenomena such as invisible hydrodynamic metamaterials, drop splashing, paint drying, freezing and melting.

The Odyssey of Spacetime in Einstein's Theory of Special Relativity 愛因斯坦狹義相對論中的時空之旅

*Dr. YIP Long Sang Kenny
Department of Physics
The Chinese University of Hong Kong*

“In science classes, we learn that light, and electromagnetic waves in general, do not require a medium for propagation. This principle is verified by interferometry experiments, where information about the any potential medium can be extracted from the interference pattern of light. Based on this understanding, Einstein postulated that the speed of light is constant for all observers, regardless of their motion. This revolutionary idea led to many counterintuitive consequences. A clock moving close to the speed of light ticks more slowly. A fast-moving ruler appears shorter.

In this talk, I will introduce the relevant interferometry experiment and explain the concepts of time dilation and length contraction in the theory of special relativity.”

Presentation Mode:	Face to Face
Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	January – July 2026
Equipment:	PowerPoint projector, microphone

Dr. YIP Long Sang Kenny (葉朗生) is a lecturer at the Chinese University of Hong Kong. He received his B.Sc. in Physics in 2016 from the Chinese University of Hong Kong, and Ph.D. in Physics at University of Toronto in 2023. His Ph.D. work at Toronto introduced a frequency-dependent effective inertia-spring tensor model to describe the interactions in locally resonant phononic crystals. Kenny has a keen interest in quantum and condensed matter physics. His current research is primarily focused on phononic crystals, effective Hamiltonians, and resummed perturbation series.

From Big Data to Smart Data 大數據的智能演繹

Professor CHAN Kin Wai
Department of Statistics and Data Science
The Chinese University of Hong Kong

Everyone can do data analysis in this era of data-driven society. However, not everyone can extract the correct science from data. In this talk, we will present some simple, yet not trivial, rules that guide us to convert big data to "smart data". We will also discuss the curses and blessings of computer-intensive big data analysis. Topics covered in this talk may include differential privacy, prediction interval, and Monte Carlo simulation.

Presentation Mode:	Face to face / Online
Language of Talk:	Cantonese supplemented with English
Suitable Level:	S.4 or above
Talk Duration:	60 minutes
Audience Size:	20 or above
Speaker Availability:	February – June 2026
Equipment:	PowerPoint projector, microphone

Professor CHAN Kin Wai (陳健威) is an Associate Professor in the Department of Statistics, The Chinese University of Hong Kong. He received his B.Sc. degree in Risk Management Science from The Chinese University of Hong Kong and Ph.D. degree in Statistics from Harvard University. His research interest is statistical inference for dependent data and incomplete data. He is particularly keen on developing elegant statistical theories and creating new methodologies that strike a nice balance between statistical and computational properties.

Application of Statistics in Business**統計在商業之應用***Dr. HO Kwok Wah**Department of Statistics and Data Science**The Chinese University of Hong Kong*

In this era of big data, statistical knowledge is becoming more and more important for companies in different industries. In this talk, I am going to explain two applications of statistics in business. The first one is about how basic statistical theories help insurance companies to determine the premiums of their insurance products. The second one is about how banks can use statistical methods to assess the qualities of potential borrowers so as to make better lending decisions.

Presentation Mode:	Face to Face / Online
Language of Talk:	Cantonese
Suitable Level:	S.5 or above
Talk Duration:	40 minutes
Audience Size:	20 - 50
Speaker Availability:	October 2025 – November 2025 (Thursday and Friday only) January 2026 – April 2026 (Monday and Tuesday only)
Equipment:	PowerPoint projector, microphone

Dr. HO Kwok Wah (何國華) holds B.B.A., B.Sc., M.Phil. and Ph.D. degrees from The Hong Kong University of Science and Technology. Dr. Ho is currently a Lecturer in the Department of Statistics at The Chinese University of Hong Kong. His research interests cover MCMC algorithms, Bayesian statistics, financial time series and credit risk models.

From Stands to Statistics: Uncover the Secrets in Sports Data
從看台到統計：揭開體育數據中的祕密

Dr. HO Kwok Wah
Department of Statistics and Data Science
The Chinese University of Hong Kong

Analyzing sports data can be a fun and enlightening way for sports fans to have even more enjoyment of the games they love. By applying various statistical techniques, we can uncover hidden patterns and factors that lead to a better understanding of player and team characteristics and performance. Through discussing a few interesting studies on data about basketball, swimming, and tennis competitions, I aim to demonstrate how accessible and rewarding sports data analysis can be. Hopefully, this talk can arouse the interest of students in statistics and its applications in the sports domain.

Presentation Mode:	Face to Face / Online
Language of Talk:	Cantonese
Suitable Level:	S.5 or above
Talk Duration:	40 minutes
Audience Size:	20 - 50
Speaker Availability:	October 2025 – November 2025 (Thursday and Friday only) January 2026 – April 2026 (Monday and Tuesday only)
Equipment:	PowerPoint projector, microphone

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**You May Also Like ... (this talk) -
How Can Recommender Systems Read Your Mind?**
你可能也喜歡 ... (這講座) - 推薦系統如何比你更懂你?

Professor SIT Tony
Department of Statistics and Data Science
The Chinese University of Hong Kong

How does YouTube know what video you might want to watch next? How does Amazon pick a book title for you? Do you feel sometimes that these e-commerce platforms know you better than anyone else? Is it magic? In fact, machine-learning-based recommendation models are oftentimes developed to determine how similar individual items are to other things you like and then serve up specific recommendations. In this talk, we shall discuss different paradigms of recommender systems. We shall also investigate further how they work, describe their theoretical foundation, and discuss their strengths and weaknesses.

Presentation Mode:	Face to Face / Online
Language of Talk:	English
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	November 2025 – April 2026 (Afternoon only)
Equipment:	PowerPoint projector, microphone

Professor SIT Tony is an Associate Professor in the Department of Statistics, The Chinese University of Hong Kong. His research interests include censored quantile regression, stochastic processes, and statistical finance. Recently, he is also interested in network modelling and climate risk management.

How to Win at Monopoly 富翁攻略

*Dr. WRIGHT John Alexander
Department of Statistics and Data Science
The Chinese University of Hong Kong*

Depending on how you play it, Monopoly can be a pleasant way to while away the hours with friends or a lesson in cut-throat capitalism as you force your opponents into bankruptcy. Either way, a beautiful mathematical object called a Markov Chain can help you win. In this talk, we will see how these chains appear in countless areas of daily life, from search engines to soccer, from finance to board games and how Statistics can help us use them to our advantage.

大富翁是一個老少咸宜的遊戲，你既可以享受與友同樂的悠閒輕鬆，亦可以體會把對手催逼至破產的緊張刺激。無論那種方式，美麗的馬科夫鏈可以幫助你輕鬆贏得遊戲。在這次講座中，我們將了解到這些鏈是如何存在於日常生活中，從搜索引擎到足球、從金融到棋牌遊戲……以及統計數據如何幫助我們利用馬科夫鏈來發揮優勢。

Presentation Mode:	Face to Face / Online
Language of Talk:	English
Suitable Level:	S.1 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2025 - July 2026
Equipment:	PowerPoint projector, microphone

Dr. John Alexander WRIGHT (衛約翰) is a Senior Lecturer in the Department of Statistics, The Chinese University of Hong Kong. He received his B.A. in Mathematical Sciences from The University of Oxford, his M.A.St. from The University of Cambridge and his Ph.D. in Mathematics from The University of Hong Kong. His research interests lie in applied probability, especially financial mathematics. With over a decade of teaching under his belt, as well as several public outreach events for STEM subjects, he is an experienced educator who is keen to promote statistics to a wider audience.

Are You Rational? 理智與方程

Dr. WRIGHT John Alexander
Department of Statistics and Data Science
The Chinese University of Hong Kong

Can we model how people make every-day decisions? Well, we have been trying since the 1700s and the research continues today. In this interactive lecture, we will test the rationality of your decision making and see how the surprising results matter to technologies like AI and Machine Learning.

人類能模擬日常生活的決策嗎？用數學來模擬人們如何做出理性決策的研究最早可追溯到1700年，時至今天人們仍然繼續這項研究。在這個互動講座中，我們將看到這些想法如何應用於科技中，例如人工智能和機器學習。在講座的尾聲，你會知道你在做抉擇時的理性程度。

Presentation Mode:	Face to Face / Online
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How to Find Your Mr/Mrs Right 眾裏尋他/她千百度

Dr. WRIGHT John Alexander
Department of Statistics and Data Science
The Chinese University of Hong Kong

Your perfect match is out there somewhere – how to find them? As ever, maths and statistics hold the key. In this interactive talk, we will discover how machine learning, Nobel prize winners and secretaries can improve Cupid's aim. We guarantee you will leave with a better chance of finding “The One”!

你的最佳伴侶就在世界的某個角落—如何找到他們呢？一如既往，數學和統計學掌握着問題的關鍵。在這個互動演講中，我們會探索機器學習、諾貝爾獎獲得者以及秘書是怎樣提高愛神之箭的命中率。我們保證，在你離開的時候會更有把握尋找到那個獨一無二的人！

Presentation Mode:	Face to Face / Online
Language of Talk:	English
Suitable Level:	S.1 or above
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