Can We Turn Carbon Dioxide into Fuels?
二氧化碳轉化成燃料？

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

Global warming is one of the greatest environment issues faced by the mankind. Carbon dioxide, the major greenhouse gas, is being released at an alarming rate by burning fossil fuels. Various methods have been proposed to reduce the concentration of carbon dioxide in the atmosphere, for example, capture and underground storage of carbon dioxide. A more attractive approach is to turn carbon dioxide into useful chemicals such as fuels. This lecture covers basic chemistry of carbon dioxide and its impact to the environment. Furthermore, this lecture discusses the possibility of solving global warming by converting carbon dioxide. Students will be able to appreciate the importance of chemical knowledge in the sustainable development of our society.

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 2022 and January, April - July 2023
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. His research interests focus on 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系學士學位及博士學位。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。他的研究興趣集中在先進材料於環境領域的應用。

Pure Water vs. Clean Water
純水與淨水

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

Today over 1 billion of people live in areas seriously deficient of fresh water and the water usage rates continue to grow. In this talk, I will briefly introduce the concepts about the solution chemistry. I will also talk about the differences between pure water and clean water, the procedures of water purification and seawater desalination. Through understanding the origin of our fresh water, it is hoped that students will raise their awareness on our living environment and treasure the valuable water resources that we have.

Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2022 – July 2023
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。

When Chemistry meets Medicine: A Story of Chemical Coatings in Orthopedic Applications

「化」「骨」療法：化學塗層的骨科醫學應用

Professor NGAI To
Department of Chemistry
The Chinese University of Hong Kong

Trauma-, sports- and aged-related musculoskeletal injuries impose huge medical and socioeconomic burdens to our patients, families and society. The needs for medical device and implants are increasing, especially in our aging society and society with rapid development of traffics and sports. However, most of the current commercially available medical devices and implants for orthopaedic applications are made of permanent metals such as stainless steel and titanium that are too rigid for achieving biological fixation and subsequent tissue healing. This talk will highlight how chemists synergize with clinical scientists to develop innovative biodegradable metallic implants with chemical coatings for orthopedic applications.

Language of Talk:	English / Cantonese / Mandarin
Suitable Level:	S.4 or above
Talk Duration:	45 – 60 minutes
Audience Size:	30 or above
Speaker Availability:	October 2022 - April 2023
Equipment:	PowerPoint with projector, microphone

Professor NGAI To (魏濤) is the Assistant Dean (Research) of the Faculty of Science at The Chinese University of Hong Kong (CUHK), and Fellow of the Royal Society of Chemistry (FRSC). He received his B.Sc. in Chemistry at CUHK in 1999. In 2003, he obtained the Ph.D. at the same university, where he worked on light scattering and polymer interaction in solution. He awarded Croucher Fellowship and moved to BASF (Ludwigshafen, Germany) in 2003 as the Postdoctoral Fellow for two years, working on colloids and surface chemistry. After a short postdoctoral training in the Chemistry Department at the University of Minnesota in 2005, he joined the Chemistry Department at CUHK in 2006 as a Research Assistant Professor. He has been appointed as an Assistant Professor in 2008, and promoted to Associate Professor in 2012. In 2017, he was promoted to Professor. His current research interests center around the colloids, surface chemistry, polymers and soft matter.

The Future of Plastic
塑膠的未來

Professor NGAI To
Department of Chemistry
The Chinese University of Hong Kong

We use plastic-based products in various fields, such as food packaging, electronics, light-weight electric vehicles, construction, and many other fields. Despite these benefits, the use of plastics is also causing major environmental challenges. Every year, about 16 billion disposable coffee cups are consumed and half a billion plastic straws are discarded every day worldwide. Most plastics are not degradable and common scheme of recycling has been largely ineffective. Most single-use plastics go directly into waste and then are dumped to landfill and into oceans, which has caused significant harm to environment and marine life. In this lecture, I will discuss how important plastic materials are produced and their desirable properties. In addition, the challenges of recycling the plastics we use today and the current development of the use of bio-based and/or biodegradable polymers will be highlighted.

Language of Talk:	English / Cantonese / Mandarin
Suitable Level:	S.4 or above
Talk Duration:	45 – 60 minutes
Audience Size:	30 or above
Speaker Availability:	October 2022 - April 2023
Equipment:	PowerPoint with projector, microphone

Professor NGAI To (魏濤) is the Assistant Dean (Research) of the Faculty of Science at The Chinese University of Hong Kong (CUHK), and Fellow of the Royal Society of Chemistry (FRSC). He received his B.Sc. in Chemistry at CUHK in 1999. In 2003, he obtained the Ph.D. at the same university, where he worked on light scattering and polymer interaction in solution. He awarded Croucher Fellowship and moved to BASF (Ludwigshafen, Germany) in 2003 as the Postdoctoral Fellow for two years, working on colloids and surface chemistry. After a short postdoctoral training in the Chemistry Department at the University of Minnesota in 2005, he joined the Chemistry Department at CUHK in 2006 as a Research Assistant Professor. He has been appointed as an Assistant Professor in 2008, and promoted to Associate Professor in 2012. In 2017, he was promoted to Professor. His current research interests center around the colloids, surface chemistry, polymers and soft matter.

Nano and Medicine
白色強人與納米

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 worldsidein 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.

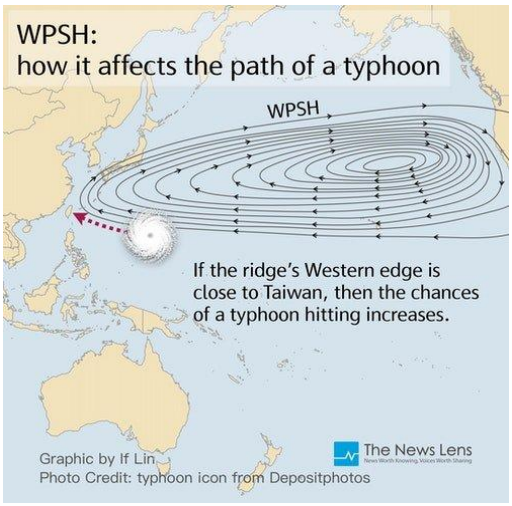
Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2022 to July 2023
Equipment:	PowerPoint projector, microphone

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.

Basic Weather Systems and Forecast
基本天氣系統和預測

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

Without going in depth with the relevant physics, the talk allows the general public to learn more about some basic knowledge in understanding different weather systems, how they affect our livelihood and most importantly what tools we have in order to avoid loss in human lives and properties. The first half of the talk introduces weather systems such as fronts and tropical cyclones. The latter half includes the limitations of our current tools (i.e. butterfly effect) and how we cope with such limitations in our weather forecast.



Western pacific subtropical high (WPSH) steers tropical cyclones into different directions

Language of Talk:	English / Cantonese
Suitable Level:	S.1 or above
Talk Duration:	30 - 45 minutes
Audience Size:	20 or above
Speaker Availability:	November 2022 – July 2023
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 and its Forecasting
極端天氣及其預報

Dr. LI Kwan Kit Ronald
Earth and Environmental Sciences Programme
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.

Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	January 2023 to July 2023
Equipment:	PowerPoint projector, microphone

Dr. LI Kwan Kit Ronald is an Assistant Lecturer in the Earth and Environmental Sciences Programme, 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.

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.

Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2022 – July 2023
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 Associate Professor in the School of Life Sciences. He awarded the Exemplary Teaching Award of CUHK in 2009 and 2013. His current research interest focuses on mouse genetics, developmental biology and organogenesis.

The Evolution of Flight in Dinosaurs
恐龍展翅飛行的演化歷程

Prof. PITTMAN Michael David
School of Life Sciences
The Chinese University of Hong Kong

For over 150 years, birds, bats and pterosaurs were the only vertebrate animals known to use flapping flight. In this talk, Dr. Michael Pittman will share recent research by his team that shows that some bird-like feathered dinosaurs were also flapping flyers. Dr. Pittman will discuss what these new findings mean for our understanding of flight evolution during the age of dinosaurs.

在過去150年間，在脊椎動物中只有雀鳥、蝙蝠及翼龍被認為能夠使用撲翼方法飛行。在本之講座中，文嘉棋博士將會分享他的研究團隊的最新發現，顯示出部份與鳥類相似並有羽毛的恐龍也有撲翼飛行的能力。文博士將會討論這些新發現能如何協助我們進一步了解在恐龍時代飛行能力的進化過程。

Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	50 or above
Speaker Availability:	October 2022 to July 2023
Equipment:	PowerPoint projector, microphone

Prof. PITTMAN Michael David (文嘉棋) is an Assistant Professor in the School of Life Sciences at The Chinese University of Hong Kong. He earned a BSc in Geology, MSc in Geoscience (Palaeobiology) and PhD in Palaeobiology from University College London. His research interest in dinosaur palaeobiology covers anatomy, systematics, biomechanics, ecology and macroevolution. It is focused on the dinosaur to bird transition, including flight origins which also extends to other vertebrates. He is interested in exceptionally preserved fossils which he studies using multiple methods including laser-stimulated fluorescence. He is a Senior Fellow of the Higher Education Authority and the creator of the free online course Dinosaur Ecosystems.

文嘉棋博士是香港中文大學生命科學學院的助理教授。他在倫敦大學學院取得地質學學士、古生物學碩士及古生物學博士學位。他對於恐龍的研究興趣包括結構學、系統學、生物力學、生態學及宏觀進化。這些研究集於恐龍進化為鳥類中間的過渡時期，包括脊椎動物飛行的起源。他對於保存異常良好的化石最感興趣，並利用鐳射激光技術對這些化石進行分析。他是 Higher Education Authority (HEA) 的高級研究員及免費網上課程《恐龍的生態系統》的創建人。

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.

Language of Talk:	English / Cantonese
Suitable Level:	S.3 or above
Talk Duration:	50 minutes
Audience Size:	20 or above
Speaker Availability:	December 2022 to July 2023
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. 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.

Language of Talk:	English / Cantonese
Suitable Level:	S.3 or above
Talk Duration:	50 minutes
Audience Size:	20 or above
Speaker Availability:	December 2022 to July 2023
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. 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.

Coral Restoration 101: Why are coral reefs important and what's being done to protect them
珊瑚修復101：珊瑚礁的重要性和現正實行的保護行動

Prof. CHUI Pui Yi
School of Life Sciences
The Chinese University of Hong Kong

Under the waves, thousands of sea creatures can be found living in the cities made up of corals. But what do you know about corals? Why are corals so precious to marine life? And what are the consequences if we continue to treat corals so carelessly? Home to eighty-four species of hard corals, Hong Kong's coral diversity is considered quite rich by international standards. Yet there are pressures from urban development, land reclamation, increase eutrophication from sewage etc. Tolo Harbour and Channel in North-eastern Hong Kong, which used to support high coverage of corals until the 1980s, were severely affected by extensive pollution impacts. Recent surveys showed that, fifteen years after the progressive improvement of water quality inside Tolo Harbour and Channel, coral recovery is very slow. During the seminar, Prof Chui will guide you on a journey into this magnificent parallel world in Hong Kong. Drawing on her latest research, she will also share with you the coral restoration work that is happening in Tolo Harbour and Channel, and what we have learned so far.

Language of Talk:	Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	April 2023
Equipment:	PowerPoint projector, microphone

Professor CHUI Pui Yi, Apple (崔佩怡) is a Research Assistant Professor in the School of Life Sciences, The Chinese University of Hong Kong. She received her M.Phil. and Ph.D. degrees in Environmental Science and Biology programs from The Chinese University of Hong Kong. Her research addresses two main questions: How will projected future climate change affect corals that are currently present in marginal coral environments like Hong Kong? And can we enhance the resilience of corals and use them for restoration? Apart from research, Dr. Chui has been actively engaged in public outreach and education activities on marine and coral conservation in Hong Kong. In 2019, she officially launched an outreach programme Coral Academy (www.coralacademy.hk), to raise student and public awareness and inspire action in marine conservation. Dr. Chui is a PEW marine fellow and a recipient of the GGEF Women Eco Game Changer Awards - Eco star of China in 2019.

From STEM to STEAM: the journal of my soybean research
從 STEM 到 STEAM: 我的大豆科研之旅

Professor LAM Hon Ming
School of Life Sciences
The Chinese University of Hong Kong

Scientific laboratories and agricultural fields appear to be two different worlds. However, scientists are trying hard to bring scientific knowledge to agriculture. The purpose is to protect global food security by combating the environmental challenges due to climate change, limitation of fresh water, and reduction and deterioration of arable lands. Soybean is an environment-friendly crop which was originated in China over 3000 years ago. After its introduction to the USA in the 18th Century, it has developed into an important cash crop worldwide due to its high nutritional and health values. Moreover, due to the nitrogen fixing ability of soybean, it has become an essential component of sustainable agriculture. Cultivation of soybean could replenish the soil with organic nitrogen. The reduction of nitrogen fertilizer consumption will lessen water and air pollution and hence alleviate the risk on environmental and human health. Researchers in The Chinese University of Hong Kong are using the state-of-the-art genomic technology to obtain information of important soybean genes, with the aim to develop stress tolerant soybeans for sustainable cultivation in her "home", China. Meanwhile, taking a further step to transfer the knowledge and research outputs to regions facing similar challenges, such as South Africa, could better contribute to the global sustainable agriculture and food security.

科學實驗室和農田看似是兩個不同的世界，但是，科學家正在努力將科學知識帶進農業，目標是抗衡因氣候改變、淡水資源短缺和可耕地減少和退化所引致的環境挑戰，以保障全球糧食安全。大豆是對環境有利的作物，在中國源遠流長，有超過三千年的栽種歷史。由於它具有豐富的營養及健康價值，自從十八世紀引入美國後，逐漸成為一種全球重要的經濟作物。此外，由於大豆擁有固氮能力，使它在可持續農業中扮演一個重要角色，種植大豆可以補充土壤中的有機氮。通過減少氮肥使用，可以降低水和空氣中的污染，從而緩解環境和人類健康的風險。香港中文大學的科研人員，利用先進的基因組技術，尋找重要大豆基因訊息，期望能有助推動及強化大豆在它的故鄉中國的可持續種植，並期望於不久將來，把研究成果帶到世界各處面臨同樣挑戰的國家，如南非等，為達致全球可持續農業發展及糧食供應出一分力。

Language of Talk:	English / Cantonese / Mandarin
Suitable Level:	S.1 or above
Talk Duration:	1 hour
Audience Size:	20 or above
Speaker Availability:	January – April 2023 (Afternoon only)
Equipment:	PowerPoint projector, microphone

Grown up in a grass-root family in Hong Kong, Professor LAM Hon Ming obtained his B.Sc. and M.Phil. degrees at The Chinese University of Hong Kong. He then pursued further studies in the Unites States where he obtained his Ph.D. degree. After receiving further scientific training in the States, Professor Lam decided to return and contribute to his alma mater with his passion for research and teaching in 1997. He is now the Director of AoE Center for Genomic Studies on Plant-Environment Interaction for Sustainable Agriculture and Food Security, the Director of the State Key Laboratory of Agrobiotechnology (CUHK), and the Director of the Molecular Biotechnology Programme at The Chinese University of Hong Kong.

Professor Lam is a plant molecular and genomic biologist working on soybean research for more than 2 decades. Through identification and characterization of key genes from elite germplasms that may enhance adaption to biotic and abiotic stresses, Professor Lam envisions to integrate the state-of-the-art technology from academics and the traditional wisdom from breeders for a climate-smart sustainable agriculture. In 2010, he led a large-scale soybean genomic project to complete a whole genome sequence analysis of wild and cultivated soybeans, accomplishing a better understanding on the effect of human selection on the soybean genomes and providing important information and data to soybean research and breeding. The research findings were published as a cover story in the world's renowned scientific journal *Nature Genetics*. In 2013, Professor Lam published a comprehensive review in the renowned medical journal *Lancet* to provide insights on the summary of food supply and food safety issues in China. In 2014, his team successfully identified and cloned a salt tolerance gene from wild soybean, which paved the way to improving agriculture on marginal lands. The research findings were published in an important international scientific journal *Nature Communications*. In 2016, he joined an international research team to publish a perspective paper to the scientific journal *Nature Plants,* discussing on the importance of grain legumes in food and nutritional security. In 2019, his team published the world's first reference genome for wild soybean in *Nature Communications*. His research journey has also extended from laboratory to field. In 2016 and 2017, in collaboration with scientists in Gansu Province, they successfully developed and released three new stress tolerance soybean cultivars that are now used by Gansu farmers.

林漢明教授自幼成長在香港的草根階層家庭，獲香港中文大學頒授學士及碩士學位後，林教授赴美深造，並完成博士學位。在美國接受連串的科研培訓後，他於 1997 年重回母校繼續他所熱中的科研與教學。林教授現任香港研究資助局卓越學科領域植物與環境互作基因組研究中心主任、農業生物技術國家重點實驗室（香港中文大學）主任及中大分子生物技術學課程主任。

林教授是植物分子生物學家，並已從事大豆研究超過20年。他矢志在優質種質資源中鑒定及發掘可增強作物在生物與非生物逆境中生存能力的關鍵基因，以結合學術界的高端科技與傳統育種家的智慧來發展氣候智能的可持續農業。2010 年，林教授領導一項大型的大豆基因組研究項目，透過大規模基因組測序，了解野生及栽培大豆基因組中因人工篩選下所發生的變化，為世界大豆科學研究及育種提供重要的訊息和數據，科研成果成為著名國際科學期刊 *Nature Genetics* 的封面故事。2013 年，林教授在國際知名的醫學期刊 *Lancet* 中發表綜述，探討及總結中國所面對的糧食及食品安全問題。2014 年，林教授團隊成功在野生大豆內獲得耐鹽基因，將可以有助中國邊緣土地上的農業運作，研究成果發表在重要國際科學期刊 *Nature Communications*。2016年，他參與了一個國際科研隊伍，在科學期刊 *Nature Plants* 上發表一篇前瞻論文，討論豆科作物對食物及營養安全的重要性。2019年，他的團隊完成了世界第一個野生大豆參照基因組，並在 *Nature Communications* 上發表。他的研究之旅亦從實驗室走進農田，在2016和2017年，通過與甘肅科學家合作，他們成功研發及分享三種新的耐逆大豆，供甘肅農民使用。

Life underwater: Diversity & Ecology of Marine Invertebrates in Hong Kong
水下生命：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

Hong Kong harbors rich marine biodiversity, with over 6,000 species recorded in spite of the relatively small area and short coastline. Majority of the species are invertebrates (>80%) and they contain so many beautiful animals that are fascinating and exhibit interesting lifestyle and behaviors. Over the years, my team has attempted to study the ecology and diversity of HK marine invertebrate, with emphasize on mangrove and coral reef associated crustaceans in order to understand their ecology and to identify the biodiversity hotspot for future conservation management. In this talk, I will share some of the recent findings on HK marine biodiversity with you and how engagement of citizen can facilitate long term biodiversity discovery and education that will achieve a win-win relationship. I hope this will convince you that the beauty and value of HK underwater life and engage everyone into the effort for marine conservation sooner but not later.

Language of Talk:	English / Cantonese
Suitable Level:	S.1 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2022 - July 2023
Equipment:	PowerPoint projector, microphone

Professor TSANG Ling Ming is an Assistant 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 interest is biodiversity, ecology and 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 habitat and regions. He hopes this information can help scientists to design appropriate conservation strategies to strike a balance between development and environmental quality.

Appreciation of Euler's formula V-E+F=2
欣賞尤拉公式 V-E+F=2

Dr. CHAN Kai Leung
Department of Mathematics
The Chinese University of Hong Kong

Euler's formula V-E+F=2 is well known to secondary students as it is included in the junior secondary mathematics curriculum. Unfortunately, for many students and teachers, it is nothing but only a counting exercise for finding the number of vertices, edges and faces of a convex polyhedron. If so, what is the significance of Euler's formula? In this talk, we will have a journey from graph theory to topology and appreciate the importance and beauty of Euler's formula.

Language of talk:	Cantonese
Suitable Level:	S.4 or above
Talk Duration:	1 hour
Audience Size:	20 or above
Speaker Availability:	January - July 2023
Equipment:	PowerPoint projector, microphone

Dr. CHAN Kai Leung (陳啟良) obtained his B.Sc., MPhil and PhD degree from the Chinese University of Hong Kong (CUHK). His research interest includes symplectic geometry, toric geometry, mirror symmetry and SYZ mirror symmetry conjecture.

Dr. Chan is currently serving as a Lecturer in the Department of Mathematics at the Chinese University of Hong Kong. He is a fellow of the Centre for Promoting Science Education of the Faculty of Science. He is the course advisor of Mathematics and Maths Plus of the Diploma Yi Jin. He is also one of the lecturers for the Enrichment Programme for Young Mathematics Talents (EPYMT) organized by the Department of Mathematics.

Primes, Number Theory and Algebra
質數、數論與代數

Dr. Charles C. C. LI
Department of Mathematics
The Chinese University of Hong Kong

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 pursuits 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:

1) How do the primes help in the searching of extra-terrestrials?
2) Why do some cicadas emerge above ground every 13 or 17 years?
3) How are primes used in sending secret information over the internet?
4) Why are they related to a notorious Intel Pentium processor bug that triggered the company to recall all the processors?
5) How prime can be used to create an algebraic structure like real numbers which has addition, multiplication and division?
6) What is modular arithmetic? How it leads to an algebraic structure called "Group"? How this new algebraic structure is related to cryptography?

In this talk, we will discuss theory of primes, its roles number theory and application to algebra.

Language of talk:	Cantonese
Suitable Level:	S.1 or above
Talk Duration:	1 hour
Audience Size:	20 or above
Speaker Availability:	January - July 2023 (Afternoon only)
Equipment:	PowerPoint with projector, microphone

Dr. LI Chun Che Charles (李俊捷) 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 The Chinese University of Hong Kong in 2007. His current research interest includes number theory, automorphic forms and representation theory.

Geometry and Medical Imaging
幾何與醫學圖像

Professor LUI Lok Ming Ronald
Department of Mathematics
The Chinese University of Hong Kong

Geometry is an important topic in mathematics. It has recently attracted much attention and found successful applications in various fields. Applications have been found in medical image analysis, image processing and computer graphics. In particular, in the medical field, neuroscientists often need to locate structural differences between healthy and unhealthy brain structures and hence to detect systematic patterns of alterations in brain diseases. Geometry is able to accurately locate shape abnormality and systematically analyze the complicated anatomical structure for disease analysis. Using it, tools for disease diagnosis, such as Alzheimer's disease, can be developed. In this talk, I will give an overview on the recent advances of computational geometry and its medical applications.

Language of Talk:	English / Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	50
Speaker Availability:	May 2023
Equipment:	PowerPoint projector, microphone

Ronald Lok Ming Lui is a Professor in the Mathematics Department of The Chinese University of Hong Kong (CUHK). He is also serving as the Executive Director of the Center for Mathematical Artificial Intelligence (CMAI), under Department of Mathematics and Institute of Mathematical Sciences at CUHK. Ronald got his PhD in Applied Mathematics at UCLA Math department in June, 2008, under the supervision of Prof. Tony F. Chan. Before joining CUHK, he worked as a Postdoctoral Scholar for 2 years at Harvard Mathematics Department, hosted by Prof. Shing-Tung Yau. The main focus of Ronald's research has been on computational quasi-conformal geometry and their applications to medical imaging, computer vision and computer graphics. The main goal is to develop mathematical theories, models and algorithms to effectively study geometric structures, using quasi-conformal Teichmuller theory as a tool. Over the years, Ronald has been developing computational algorithms for quasiconformal geometry, understanding their theoretical aspects and applying them to real-world applications, including medical imaging, computer visions and 3D geometry processing. He was awarded the Morningside Mathematics (Silver) Medal during the International Congress of Chinese Mathematicians in 2016. In 2018, he was awarded the HKMS Young Scholars Award by the Hong Kong Mathematical Society. In 2019, he was awarded the Vice-Chancellor's Exemplary Teaching Award.

Mathematics of the unknown and the unknowable

Prof. Michael MCBREEN
Department of Mathematics
The Chinese University of Hong Kong

We like to think of mathematics as the art of knowing things exactly. But just as often, mathematics is about what we cannot know – about coming to terms with the limits of knowledge, or slithering our way around them. I'll tell the story of a few surprising such unknowns, starting in ancient Greece and ending in our present day. Along the way we will explore hyperbolic space, follow the centuries-long quest to find solutions to polynomial equations, and learn what it means to say a problem is insoluble or undecidable.

Language of talk:	English
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2022 - July 2023 (Morning only)
Equipment:	PowerPoint with projector, microphone

Professor Michael MCBREEN studied Mathematics as an undergraduate at McGill University, and obtained his Ph.D. from Princeton University. His work lies in the field of representation theory and mathematical physics. Professor Mcbreen is an Assistant Professor of Department of Mathematics at The Chinese University of Hong Kong.

All you need is "Computational Literacy"!
新時代你需要配備的是"計算素養"！

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

In today's world, computational literacy is an indispensable tool in every field of study that uses computers and computational technologies to solve real-life problems and scenarios. Using the mathematical thinking processes, we introduce the idea of computational literacy based on a four-step process: define the questions, reduce them to computational form, compute answers using computing software, and interpret the results. Numerous examples and interactive sites will be mentioned and discussed on in this talk.

Understanding the content of this talk only requires understanding simple algebra calculations. To know more about my latest and past popular science talks, please visit the link:

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

在當今世界，計算素養是使用電腦和計算技術解決現實生活中的問題和場景。是各個研究領域不可或缺的工具。利用數學思維，我們引入了基於四步過程的計算素養的概念: 定義問題，將其簡化為計算形式，使用計算軟體計算答案，並解釋結果。本演講中也會介紹和討論許多生動例子和互動網站。
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：

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

Language of Talk:	English / Cantonese
Suitable Level:	S.3 or above
Talk Duration:	40 - 50 minutes
Audience Size:	20 - 100
Speaker Availability:	• Every Friday, October - December 2022 • Morning or Afternoon, every Monday and Friday, January - April 2023 • Morning or Afternoon, May– June 2023
Equipment:	Computer & Projector (pdf)

Dr. Jeff C. F. Wong (黃澤富) holds a B.Sc. in Mathematics and a M.Sc. in Geodesy from the University of New Brunswick in Canada and Ph.D. degree in Mathematics from the Chinese University of Hong Kong. His research interests include: Artificial Intelligence, Educational

Data Mining, Machine Learning and Quantitative Social Network Analysis. He is currently a Senior Lecturer in the Department of Mathematics at the Chinese University of Hong Kong.

Should you bet on it? Mathematics of gambling
該不該下注？博彩中的數學

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

Everyone told us that gambling was wrong. People realize that even though the chance of winning is very slim, the truth is – people still like gambling and betting that something will happen. Is it just a game to play to have fun? How likely is a David versus Goliath scenario in gambling? In this talk, we will discuss different games, e.g., dice, slots, blackjack and lottery and study the odds of winning them. Specifically, from the mathematical perspectives, we will discuss the pros and cons of a host-gambler relationship, e.g., winner-takes-all vs gambling away all your money.

Understanding the content of this talk only requires understanding simple algebra calculations. To know more about my latest and past popular science talks, please visit the link:

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

每個人都告訴我們要遠離賭博。人們意識到，儘管獲勝的機會非常渺茫，但事實是--人們仍然喜歡賭博，並總是在押注未來將會發生什麼。難道這只是玩個遊戲來消遣嗎？在賭博中，大衛與歌利亞現象發生的可能性究竟有多大（聖經中牧童大衛，靈活運用戰略打敗大巨人歌利亞的故事）？在這次演講中，我們將討論不同的遊戲，例如骰子，老虎機，21 點和彩票，並研究遊戲中的概率問題。從數學的角度，我們將討論莊家-賭徒間的關係，例如，贏家通吃 vs 賭博讓人傾家蕩產的問題。
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：
https://www.math.cuhk.edu.hk/~jwong/pst.html

Language of Talk:	English / Cantonese
Suitable Level:	S.3 or above
Talk Duration:	40 - 50 minutes
Audience Size:	20 - 100
Speaker Availability:	• Every Friday, October - December 2022 • Morning or Afternoon, every Monday and Friday, January - April 2023 • Morning or Afternoon, May– June 2023
Equipment:	Computer & Projector (pdf)

Dr. Jeff C. F. Wong (黃澤富) holds a B.Sc. in Mathematics and a M.Sc. in Geodesy from the University of New Brunswick in Canada and Ph.D. degree in Mathematics from the Chinese University of Hong Kong. His research interests include: Artificial Intelligence, Educational Data Mining, Machine Learning and Quantitative Social Network Analysis. He is currently a Senior Lecturer in the Department of Mathematics at the Chinese University of Hong Kong.

Understanding the apportionment paradox makes you happy!
讓人快樂的分攤悖論！

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

One of the most common applications in mathematics is division. For example, using the method of divide-and-choose, two persons share a candy bar or a birthday cake equally. It can be used to divide up an estate, a jewellery collection or a piece of land among heirs, to name just a few examples. In this talk, we will discuss various methods of apportionments and their paradoxes, where the word apportion is defined as "to divide and distribute in shares according to a plan". Basic math, e.g., the rounding functions, the arithmetic, geometric and harmonic means, and systematic algorithms, will help us solve the apportionment paradox, e.g., having a better understanding of the "unfairness of wanting to be fair" choices when many options exist.

Understanding the content of this talk only requires understanding simple algebra calculations. To know more about my latest and past popular science talks, please visit the link:

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

數學中最常見的應用之一是除法。例如，使用分而選之的方法，兩個人平均分享一塊糖果或一個生日蛋糕。它可以用來在繼承人之間遺產的分配，例如珠寶收藏或一塊土地的分配。在這次演講中，我們將討論各種分配方法及其相關的分配悖論，其中"分配"一詞被定義為"根據計畫按比例進行分派"。基礎數學中，例如舍入函數，算術，幾何和諧均值以及系統演算法，將說明我們解決分配悖論，例如，當存在許多種選項時，更好地理解何謂"希望公平的不公平"。
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：

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

Language of Talk:	English / Cantonese
Suitable Level:	S.3 or above
Talk Duration:	40 - 50 minutes
Audience Size:	20 - 100
Speaker Availability:	• Every Friday, October - December 2022 • Morning or Afternoon, every Monday and Friday, January - April 2023 • Morning or Afternoon, May– June 2023
Equipment:	Computer & Projector (pdf)

Dr. Jeff C. F. Wong (黃澤富) holds a B.Sc. in Mathematics and a M.Sc. in Geodesy from the University of New Brunswick in Canada and Ph.D. degree in Mathematics from the Chinese University of Hong Kong. His research interests include: Artificial Intelligence, Educational Data Mining, Machine Learning and Quantitative Social Network Analysis. He is currently a Senior Lecturer in the Department of Mathematics at the Chinese University of Hong Kong.

The Birth of Stars
恆星生成

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

Over the course of the last century, astronomers have been able to decipher the evolution and death of stars through the study of stellar evolution. Contrary to this, we do not yet have a comprehensive understanding of the process by which stars were born. Star formation is a process which enhances the density from ~1 H atom/cc in galactic spiral arms to ~ 10^24 H atom/cc in stars. There seems to be no doubt that gravity has played a role in density enhancement, but if gravity is the only factor at play, the Milky Way should have many more stars than it does. A review of the modern picture of star formation will be presented, with particular emphasis on CUHK's contribution.

Language of Talk:	English
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2022 to July 2023 (Friday only)
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.

Move in a Bacterial Way
微生物的運動

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

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

Language of Talk:	Cantonese / Putonghua
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2022 to July 2023
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质的物理。

Beyond beautiful - messages from deep space revealed by the James Webb Space Telescope
超越美麗的外表 – 韋伯太空望遠鏡靚照中隱含的深空信息

Professor YAN Renbin
Department of Physics
The Chinese University of Hong Kong

After many years of delays and cost overruns, the most expensive telescope in the world, the James Webb Space Telescope finally proved itself to be a truly great scientific and technological triumph. Recently, NASA, European Space Agency, and Canadian Space Agency jointly released many breathtaking photos of deep space taken by the James Webb Space Telescope, now at a distance of 1.5 million kilometres away from the Earth, peeking into the deep and mysterious Universe. Besides the astounding beauty of these images, what is much more exciting to us are the secrets they revealed about the baby Universe, the birth and death of stars and galaxies, and the atmospheric compositions of planets around other stars. In this talk, I will explain why astronomers are so thrilled to see those splendid images and what they tell us about the Universe.

Language of Talk:	English
Suitable Level:	S.3 or above
Talk Duration:	45 minutes
Audience Size:	20 - 100
Speaker Availability:	November to December 2022
Equipment:	PowerPoint projector, microphone

Professor YAN Renbin (嚴人斌) is an Associate Professor in the Department of Physics at the Chinese University of Hong Kong. He received his B.Sc. degree in Physics from Peking University and Ph.D. degree in Astrophysics from the University of California at Berkeley. He has led a few large international astronomy projects obtaining spectra for large samples of stars and galaxies to help us understand the interstellar medium of galaxies and how galaxies evolve. Currently, he is building the next generation spectroscopy instruments for an ambitious project to map the gas and dust in our own Milky Way and nearby galaxies.

When Einstein meets supercomputing
當愛因斯坦遇上超級電腦

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。但是，由於廣義相對論涉及的數學方程非常複雜，要解讀實驗裝置接收的重力波信號，科學家需要借助超級電腦以數值模擬方法來對廣義相對論中的數學方程求解。這講座旨在淺談當中的基本概念和介紹中文大學在這方面的研究。

Language of Talk:	Cantonese
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October - December 2022 and March - July 2023
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 Secret of Splashing
液滴飛濺的秘密

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

"Liquid drops always splash when they impact smooth surfaces with high enough speeds. This common phenomenon is crucial in many important fields such as agriculture, printing, surface coating, and spray cooling. However, despite extensive studies over one century, the origin of splashing remains a big mystery. Combining experiment with model, we show that the air trapped under the liquid drop forms a special flow within a nanoscale gap. This airflow in the Knudsen regime produces a stress 10 times stronger than the common airflow and generates small Kelvin–Helmholtz instabilities that trigger splash. Our model agrees quantitatively with the experimental verifications and brings a fundamental understanding to the general phenomenon of drop splashing on smooth surfaces [1, 2, 3]."

References

[1] Y. Liu, P. Tan and L. Xu, Proc. Natl. Acad. Sci. USA (PNAS) 112, 3280-3284, 2015.
[2] L. Xu, W. Zhang and S. Nagel, Phys. Rev. Lett. 94, 184505, 2005

Language of Talk:	English
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2022 to July 2023 (Afternoon only)
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 the everyday life phenomena such as drop splashing, paint drying, freezing and melting.

From Big Data to Smart Data
大數據的智能演繹

Professor CHAN Kin Wai
Department of Statistics
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 include differential privacy, missing data handling and Markov chain Monte Carlo.

Language of Talk:	Cantonese supplement with English
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	• Tuesday, Thursday and Friday, October - December 2022 • Monday, Tuesday, Wednesday and Friday, January - April 2023
Equipment:	PowerPoint projector, microphone

Professor CHAN Kin Wai (陳健威) is an Assistant 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.

Exploring the meaning of y=f(x): from correlation to causality
探索 y=f(x)之迷：從相關性到因果性

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

Suppose a dataset contains two variables x and y. For example, x can be the vaccination rate of a city and y can be the corresponding number of deaths. Finding the relationship between them can be as simple as finding the best fitted line y=f(x). This mathematical relationship does not clearly quantify the exact statistical relationship between x and y. Does y=f(x) mean "x causes y" or simply "x is correlated to y"? In this talk, I will present a rigorous statistical framework for defining correlation and causality between x and y.

Language of Talk:	Cantonese supplement with English
Suitable Level:	S.4 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	• Tuesday, Thursday and Friday, October - December 2022 • Monday, Tuesday, Wednesday and Friday, January - April 2023
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Application of Statistics in Business
統計在商業之應用

Dr. HO Kwok Wah
Department of Statistics
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.

Language of Talk:	Cantonese
Suitable Level:	S.5 or above
Talk Duration:	30-45 minutes
Audience Size:	20-50
Speaker Availability:	October 2022 – July 2023
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.

You may also like … (this talk) - How can recommender systems read your mind?
你或許還會喜歡 …（這講座）– 推薦系統是如何讀懂你

Professor SIT Tony
Department of Statistics
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.

Language of Talk:	English
Suitable Level:	S.4 or above (Preferably M1/M2 students)
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	April 2023 (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. John Alexander WRIGHT
Department of Statistics
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。

Language of Talk:	English
Suitable Level:	S.1 or above
Talk Duration:	45 minutes
Audience Size:	20 or above
Speaker Availability:	October 2022 - July 2023 (Tuesday to Friday Afternoon only)
Equipment:	PowerPoint projector, microphone

Dr. John Alexander WRIGHT (衛約翰) is a 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 nearly 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.

How to find your Mr/Mrs Right
眾裏尋他/她千百度

Dr. John Alexander WRIGHT
Department of Statistics
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！

Language of Talk:	English
Suitable Level:	S.1 or above
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