香港中文大學理學院
FACULTY OF SCIENCE
THE CHINESE UNIVERSITY OF HONG KONG

SCIENCE FACULTY
RESEARCH DAY 2024
RESEARCH IMPACT DEVELOPMENT

30 APRIL 2024 (TUE) 9:30 - 11:40 AM

LT4, LEE SHAU KEE BUILDING, THE CHINESE UNIVERSITY OF HONG KONG

Science *Empowers* Your Dreams

Learn Science to *Better* the World

PROGRAMME

9:30 - 9:45 am	**Welcoming Remarks** ***Professor Chunshan SONG*** Dean of Science
9:45 - 10:10 am	Sharing Lecture: **From RAE2020 to RAE2026 and Beyond** ***Professor Liwen JIANG*** Associate Dean (Research), Faculty of Science
10:10 - 11:10 am	**Sharing from FoS Impact Case Authors** ***Professor Hon Ming LAM*** School of Life Sciences ***Professor Zhifeng HUANG*** Department of Chemistry ***Professor Ronald Lok Ming LUI*** Department of Mathematics ***Professor Ming Chung CHU*** Department of Physics ***Professor Hoi Ying WONG*** Department of Statistics ***Professor Francis Chi Yung TAM*** Earth and Environmental Sciences Programme ***Moderator: Professor Liwen JIANG***
11:10 - 11:30 am	**Discussion Forum** ***Professor Chunshan SONG and FOS speakers*** ***Moderator: Professor Liwen JIANG***
11:30 - 11:40 am	**Closing Remarks** ***Professor Chunshan SONG*** Dean of Science

Message from the Dean of Science

Welcome to the Science Faculty Research Day 2024 at The Chinese University of Hong Kong (CUHK). Each year, the Faculty hosts a Research Day where researchers convene to exchange ideas and experiences, fostering advancement in research and collaboration within and beyond the Faculty and CUHK. Research is critically important for cultivating creative minds and nurturing next generation of leaders and problem solvers at CUHK Faculty of Science in addition to contributing science and technology development and addressing global challenges. This year's theme, "Research Impact Development" is centred around the preparation of Research Assessment Exercise (RAE) at the Science Faculty. Recently, our Faculty Delegation visited The University of Manchester and University of Warwick for RAE and gained valuable insights on Research Excellence Framework (REF) best practices in March 2024. We are pleased to have Prof. Liwen JIANG, Associate Dean (Research) and Team Leader of the Faculty UK Delegation, to deliver a Sharing Lecture for the Research Day this year.

Prof. Jiang will first provide an overview of research-related matters within the Faculty, with a particular focus on RAE Visit and development. He will also share insights into his roles as Associate Dean (Research), Chair of Faculty Science Panel, Faculty Hong Kong PhD Fellowship Scheme (HKPFS) Selection Panel, and Faculty Director of Impact. It will be invaluable to hear his perspective on the research development in the Faculty. The second part would be his sharing on Faculty Impact Case Development and Research Assessment Exercise.

Since 2019, RAE has incorporated new assessment elements to emphasise research impact, encouraging studies with broader social relevance and notable economic and societal benefits. Research impact showcases how universities transfer their research into innovative solutions, ultimately bringing substantial benefits to society and effecting tangible changes in people's lives. In addition to Prof. Jiang's sharing, we have invited six active researchers and authors of impact case studies from the Faculty to share their experiences in preparing impact cases for RAE 2020 and 2026. These authors include Prof. Hon Ming LAM in life sciences, Prof. Zhifeng HUANG in chemistry, Prof. Ronald Lok Ming LUI in mathematics, Prof. Ming Chung CHU in physics, Prof. Hoi Ying WONG in statistics, and Prof. Francis Chi Yung TAM in earth and environmental sciences.

We believe the sharing, presentations and discussion revolving around the theme of Research Assessment Exercise and Research Impact Development at the Science Faculty Research Day 2024 will facilitate high-quality and impactful research, and encourage researchers to strive for excellence through collaborative efforts, embodying the Faculty motto of "*Science empowers your dream. Learn Science to Better the World.*" I look forward to a stimulating day of learning, infused with lively discussion, and I hope that all participants will enjoy this Research Day 2024.

Prof. Chunshan SONG
Dean of Science and

Sharing Lecture:
From RAE 2020 to RAE 2026 and Beyond

Professor Liwen JIANG

- Associate Dean (Research) and Director of Impact, Faculty of Science
- Choh-Ming Li Professor of Life Sciences

As an Associate Dean (Research), I play multiple roles in coordinating the Research Development in the Faculty, including the Faculty Science Panel, Faculty Hong Kong PhD Fellowship Scheme (HKPFS) Selection Panel, and Faculty Director of Impact. The Faculty has also been working closely with the University and Units for the preparation and development of RAE 2020 and RAE 2026.

In this Sharing Lecture, I will share my observations and experiences as well as personal perspective in the Faculty's Research and RAE Development.

Professor Liwen JIANG's Introduction

Professor Liwen JIANG is currently Choh-Ming Li Professor of Life Sciences and Director of AoE Centre for Organelle Biogenesis and Function (COBF) , as well as Director of Centre for Cell and Developmental Biology (CCDB) at The Chinese University of Hong Kong (CUHK).

Professor Jiang is also currently Associate Dean (Research) of the Science Faculty and a member of the University Research Committee (RC) representing the Faculty.

Sharing from FOS Impact Case Authors

Professor Hon Ming LAM

Choh-Ming Li Professor of Life Sciences
School of Life Sciences

Professor Hon Ming LAM, MH, obtained his BSc and MPhil in Biology from The Chinese University of Hong Kong and his PhD degree in Molecular Biology & Biochemistry from Northwestern University. He is concurrently the Choh-Ming Li Professor of Life Sciences at The Chinese University of Hong Kong, Director of the State Key Laboratory of Agrobiotechnology (CUHK), RGC-AoE Centre for Genomic Studies on Plant-Environment Interaction for Sustainable Agriculture and Food Security, and Institute of Environment, Energy and Sustainability.

Professor Lam has achieved high-impact scientific breakthroughs and contribute significantly to soybean research. He has published over 230 publications in premier scientific journals including *Nature, Nature Genetics, Nature Communications, PNAS, Lancet*, etc.

Professor Lam successfully combined advanced technologies with traditional wisdom to breed four new stress-tolerant soybeans approved for field application in Northwest China. Besides, he is extending his research collaboration and initiated cultivation programmes for soybean improvements in South Africa and Pakistan.

Professor Zhifeng HUANG

Associate Professor
Department of Chemistry

Professor Zhifeng HUANG obtained his BSc and MSc in Chemistry from Xiamen University and his PhD in Science and Engineering of Materials from Arizona State University. He joined Hong Kong Baptist University as an Assistant Professor, later promoted to Associate Professor. In 2022, he joined CUHK Department of Chemistry as an Associate Professor.

Professor Huang is a member of The Hong Kong Young Academy of Sciences and Vice President of the Hong Kong Materials Research Society. He received various awards, including the Advanced Materials Award 2024. Professor Huang co-founded *Mat-A-Cell Ltd.*, a spin-off with Prof. Ken YUNG from The Education University of Hong Kong, aiming to commercialise a medical device for cell culture. Their invention won the 2019 TechConnect Innovation Award and Gold Medal at the 46th International Exhibition of Inventions of Geneva.

His research focuses on 3D nanostructures, studying chiral nano-inorganics, optical activity spectroscopies, and flexible/wearable energy generation.

Professor Ronald Lok Ming LUI

Professor
Department of Mathematics

Professor Ronald Lok Ming LUI is a Professor and Deputy Chairperson in the Department of Mathematics, CUHK. He is also serving as the Executive Director of the Centre for Mathematical Artificial Intelligence at CUHK. He got his PhD in Applied Mathematics at University of California, Los Angeles in 2008. He was a postdoctoral scholar at Harvard University before joining CUHK in 2010. Professor Lui was awarded Morningside Mathematics (Silver) Medal in 2016, the HKMS Young Scholars Award by the Hong Kong Mathematical Society in 2018, CUHK Vice-Chancellor's Exemplary Teaching Award in 2019.

His research mainly focuses on computational quasi-conformal geometry and its applications to medical imaging, computer vision and computer graphics.

Professor Ming Chung CHU

Choh-Ming Li Professor of Physics
Department of Physics

Professor Ming Chung CHU obtained his BSc and PhD degrees both at California Institute of Technology (Caltech). He held research positions at Massachusetts Institute of Technology and Caltech before joining The Chinese University of Hong Kong in 1995.

His current research interest includes astrophysics, cosmology, and particle physics.

Professor Hoi Ying WONG

Associate Dean (Student Affairs), Faculty of Science
Professor, Department of Statistics

Professor Hoi Ying WONG received his BSc in Mathematics from Hong Kong Baptist University before pursuing his PhD at the Hong Kong University of Science and Technology. He joined CUHK Department of Statistics as a lecturer in 2001 and was promoted to professor in 2013. He is currently an Outstanding Fellow of CUHK Faculty of Science.

Professor Wong's research interest focuses on mathematical finance and risk management. He has consulting experience with Hong Kong Monetary Authority, banks and FinTech firms. He is a founding co-director of the BSc in Quantitative Finance and Risk Management Science programme.

Professor Francis Chi Yung TAM

Associate Professor
Earth and Environmental Sciences Programme

Professor Francis Chi Yung TAM obtained his BSc and MPhil in Physics from CUHK, and PhD in Atmospheric and Oceanic Sciences from Princeton University.

A climate scientist by training, he has broad research interests: *El Niño*-Southern Oscillations, Indian Ocean Dipole dynamics, large-scale tropical air-sea interaction, multi-scale monsoon variability and predictability in Earth System Models, extreme events including heat waves, tropical cyclones, severe rainstorms, extreme sea level and their impacts on highly urbanised coastal cities from observations and model simulations, as well as regional climate projections.

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