FACULTY OF SCIENCE
THE UNIVERSITY OF HONG KONG
香港大學理學院

DEAN (INTERIM)
Professor Vivian W W Yam

Press release For immediate release

Ten HKU young scientists awarded China's Excellent Young Scientists Fund 2022

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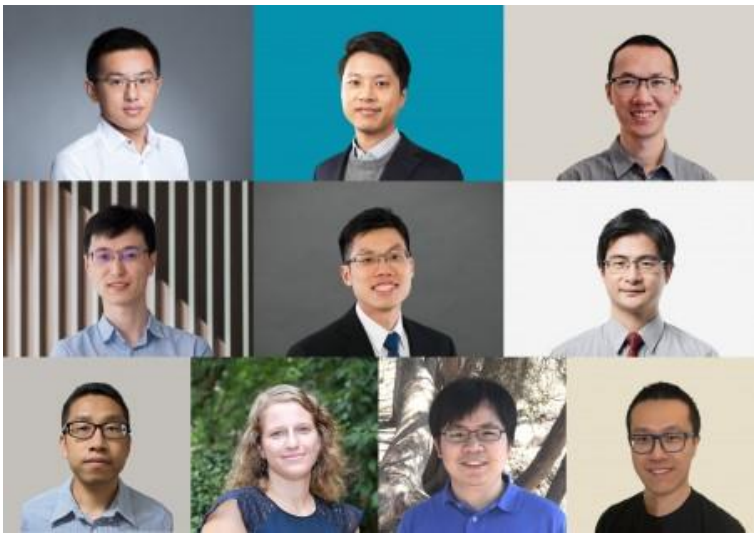

Young researchers at the University of Hong Kong (HKU) have achieved outstanding results in the Excellent Young Scientists Fund (Hong Kong and Macau) for 2022.

Ten HKU young scientists have been awarded the prestigious fund under the National Natural Science Foundation of China, an organisation managed by the Ministry of Science and Technology (MOST).
This has been the fourth consecutive year for HKU to be awarded the highest number of projects among its peer institutions, after the fund was extended to Hong Kong and Macau for applications by eight designated universities since 2019.

The Excellent Young Scientists Fund is granted annually to support young male scientists under age 38 and young female scientists under age 40 who have attained outstanding achievements in research, to further expand in areas of their own choice.

It is highly competitive, with only 25 projects in total funded across Hong Kong and Macau this year. Each project will receive funding of RMB2 million over a maximum period of three years, in the form of cross-border remittance to directly support the researchers' work in Hong Kong or Macau.

The ten HKU young scientists awarded:

Faculty of Science
Dr Hui Chun Yin
Associate Professor, Department of Mathematics
Dr Celia Marei Schunter
Assistant Professor, School of Biological Sciences

Dr Wang Chenjie
Assistant Professor, Department of Physics
Dr Yang Yi
Assistant Professor, Department of Physics

Faculty of Engineering
Dr Chow Chi Yung Philip
Assistant Professor, Department of Mechanical Engineering
Dr Wu Chenshu
Assistant Professor, Department of Computer Science

LKS Faculty of Medicine

Dr Huang Yuanhua
Assistant Professor, School of Biomedical Sciences
Dr Wan Yuk Fai Eric
Assistant Professor, Department of Family Medicine and Primary Care (joint appointment with Department of Pharmacology and Pharmacy)
Dr Wang Weiping
Assistant Professor, Department of Pharmacology and Pharmacy

Faculty of Social Sciences
Dr Ran Lishan
Associate Professor, Department of Geography

The award winning projects:

Dr Chow Chi Yung Philip
Assistant Professor, Department of Mechanical Engineering, Faculty of Engineering
Project Title: Mechanistic Research of Organic Solar Cells

Dr Chow focuses on the development of flexible, printed and eco-friendly solar panels based on organic molecules and polymers. Using advanced time-resolved spectroscopy methods, his work has led to key insights into the fundamental photoexcited state dynamics and charge generation processes in these materials. Recently, new molecular designs have enabled organic solar cells to achieve record efficiencies, but the underlying mechanism remains unclear. In this project, Dr Chow aims to reveal the precise mechanism that enables current state-of-the-art organic solar cell materials to achieve record efficiencies, and provide guidelines for future material and device development.

Dr Wu Chenshu
Assistant Professor, Department of Computer Science, Faculty of Engineering
Project Title: Smart Wireless Sensing and Tracking

Dr Wu's research emphasises on Artificial Intelligence of Things (AIoT) with a focus on smart wireless sensing and tracking. His research on wireless sensing translates commodity WiFi from a pure communication platform into a pervasive sensing infrastructure, enabling contactless and sensorless sensing

for real-world applications that revolutionize people's lives worldwide. Dr Wu aims to continue the study on ubiquitous sensing AI for innovative IoT applications, delivering omnipresent sensing intelligence for AIoT.

Dr Huang Yuanhua
Assistant Professor, School of Biomedical Sciences, LKS Faculty of Medicine
Project Title: Single-cell data science

Dr Huang's main research direction is single-cell data science in the field of bioinformatics, through the development of data science methods for effective analysis and knowledge discovery of single-cell omics data. He has developed a series of Bayesian models and machine learning approaches in this research direction and addressed several important problems for the analysis of single-cell genomic and transcriptomic data. Dr Huang's project intends to develop integrative and interpretable machine learning methods to tackle the challenges in single-cell data science, with a focus on analysing the dynamic changes of cells.

Dr Wan Yuk Fai Eric
Assistant Professor, Department of Family Medicine and Primary Care, LKS Faculty of Medicine (joint appointment with Department of Pharmacology and Pharmacy)
Project Title: Monitoring strategies for diabetic complications

Dr Wan's research area focuses on the health and health service research in patients with diabetes mellitus including the complex intervention and health management in public health system, epidemiology and pharmacoepidemiology using big data analysis. The findings in the proposal will provide empirical evidence on the optimal complication monitoring frequency for patients with diabetes mellitus, informing clinicians and the public on the best practice for the management of patients with diabetes mellitus to prevent complications and reduce medical costs.

Dr Wang Weiping
Assistant Professor, Department of Pharmacology and Pharmacy, LKS Faculty of Medicine
Project Title: Photoresponsive drug delivery systems

Dr Wang has long-term research interest in the fields of photopharmacology and nanomedicine. He has been striving to tackle photoresponsive drug delivery issues with innovative technologies and strategies. The proposed project aims to develop near-infrared light-responsive drug delivery systems and explore the usage of optical fibres for efficient light delivery into deep tumours. The study would provide important references for the development and translation of photoresponsive drug delivery systems.

Dr Hui Chun Yin
Associate Professor, Department of Mathematics, Faculty of Science
Project Title: Algebraic number theory and arithmetic geometry

Dr Hui studies arithmetic geometry and algebraic number theory from the perspective of Galois compatible systems. He plans to study Galois compatible systems arising from smooth protective varieties X over a characteristic p function field K, and regular algebraic cuspidal automorphic representations of GL_n(A_K) for number field K. For the former, Dr Hui proposes to investigate the Galois semisimplicity of Z_l-cohomology of X which has application to ultraproduct cohomology. For the latter, Dr Hui proposes to investigate the irreducibility conjecture for automorphic Galois representations when K is a totally real field

or CM field.

Dr Celia Marei Schunter
Assistant Professor, School of Biological Sciences, Faculty of Science
Project Title: Mechanistic responses in marine fish to environmental fluctuations

Dr Schunter's research focusses on the genetic and molecular response driving the species and population adjustments to environmental stressors, such as those predicted to occur by the end of the century, in marine animals. Her work has led to key insights into the interactions of the physical environment on marine populations and their adaptive capacity across different marine ecosystems. Building on her research on molecular mechanisms underlying the response in fish to future environmental conditions, Dr Schunter proposes a wholistic study to integrate environmental fluctuations into the equation.

Dr Wang Chenjie
Assistant Professor, Department of Physics, Faculty of Science
Project Title: Theory of correlated topological states

Dr Wang's research focuses on fundamental theories and transport properties of correlated topological states of matter. He will continue the study on theories of correlated topological phases and will seek applications to quantum critical phenomena.

Dr Yang Yi
Assistant Professor, Department of Physics, Faculty of Science
Project Title: Light-matter Interaction

Dr Yang's research will study the interaction between light and material electrons. In particular, Dr Yang's proposal will explore nonclassical electromagnetic responses at the extreme nanoscale by various experimental means with temporal and spatial resolutions. Dr Yang will also study the interaction between light and free electrons. Specifically, the proposal will investigate various optical environments to substantially enhance their coupling strength with free electrons. It will also study the interplay between free electrons and photonic topology.

Dr Ran Lishan
Associate Professor, Department of Geography, Faculty of Social Sciences
Project Title: Carbon cycle in inland waters

Dr Ran investigates the carbon cycling of inland waters and related greenhouse gas (GHG) emissions in major river basins of China, in relation to environmental factors and human activities. The project examines representative small inland water bodies in the semiarid Loess Plateau and the subtropical Dongjiang River Basin and seeks to decode the fluctuation of GHG emissions across the water-air interface and the interplay of environmental and human impacts over time.

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