

## ECA Awardees

Dr Venus Hiu Ling LO Dr Xin HUANG Prof Kin-wai CHAN Prof Jacque Pak-kan IP Prof Changhong ZHAO Dr Yi JIANG Dr Chau-ming SO Dr Man-chung YUE City University of Hong Kong Hong Kong Baptist University The Chinese University of Hong Kong The Chinese University of Hong Kong The Chinese University of Hong Kong The Hong Kong Polytechnic University The Hong Kong Polytechnic University





# ECA Awardees

Prof Ivan Chi-ho IP

Dr Ke WANG

Dr Junzhi LIU

Dr Laura Anne MEEK

Dr Yung-wa SIN

The Hong Kong University of Science and Technology The Hong Kong University of Science and Technology The University of Hong Kong The University of Hong Kong The University of Hong Kong







#### Dr Venus Hiu Ling LO Department of Management Sciences City University of Hong Kong

<u>Project Title:</u> Multi-Stage Assortment Optimization for an Omnichannel Retailer











Dr Venus Hiu-ling LO

- Image: Weight of the second second
- Assistant Professor in the Department of Management Sciences at CityU
- Interests in the field of revenue management, with a focus on assortment optimization in multichannel and multi-stage settings.
- Her recent work focuses on developing algorithms and insights for complex models that account for the interactions between a retailer's online retail channel and physical stores.
- Image: Second studiesImage: Second studiesImage
- us Her work has been presented at international conferences such as INFORMS and POMS.









### **Dr Xin HUANG** Department of Computer Science Hong Kong Baptist University

<u>Project Title:</u> Efficient Community Search on Large Directed Graphs



黃欣博士









#### PhD from the Chinese University of Hong Kong

- Assistant Professor in the Computer Science at HKBU
- Interests in developing innovative technologies and theories of data science, especially on largescale graph data management and mining.
- This project investigates new problems regarding community search over large directed graphs. It aims at developing novel community models and techniques for efficiently finding querybased dense communities.









## **Prof Kin-wai CHAN** Department of Statistics The Chinese University of Hong Kong

<u>Project Title:</u> Multiple Incompatibility Problems in Multiple Imputation Procedures











Prof Kin-wai CHAN

- Solution PhD from Harvard University
- Assistant Professor in the Department of Statistics at CUHK
- Interests in statistical inference for dependent data and incomplete data. His research topics include covariance matrix estimation, change point detection, multi-phase inference and data privacy.
- CM This project aims at developing a unified procedure for handling various incompatible problems. It is particularly important for this age of data science as it enables division of labor, protection of privacy and knowledge fusion.
- I Awards and Honours:
  - 8 Faculty Exemplary Teaching Award (2019)







## **Prof Jacque Pak-kan IP** School of Biomedical Sciences The Chinese University of Hong Kong

**Project Title:** 

Investigating the roles of input-specific cooperative synaptic plasticity in visual cortical plasticity: implications for amblyopia





ECA Awardee



Prof Jacque Pak-kan IP

- PhD from The Hong Kong University of Science and Technology
- Assistant Professor in the School of Biomedical Sciences at CUHK
- Devoted his research to investigate the mechanisms of synaptic plasticity, and will continue to expand his research focus on how such mechanistic defects result in autism-related disorders.
- Image: Comparison of the project will provide critical information for understanding the roles of synaptic plasticity in<br/>the brains in the context of health and disease.
- Awards and Honours:
  - 8 Croucher Studentship
  - 8 Sir Edward Youde Memorial fellowship
  - 8 IBRO Rita Levi-Montalcini Research fellowship
  - 8 Human Frontier Science Program Long-Term fellowship









## **Prof Changhong ZHAO** Department of Information Engineering The Chinese University of Hong Kong

**Project Title:** 

Optimizing Multiphase Power Flow via Exact Convex Relaxation and Distributed Feedback Design



趙常宏教授









Prof Changhong ZHAO

- PhD from California Institute of Technology
- Assistant Professor of Information Engineering at CUHK
- Interests in control and optimization of network systems such as power grid.
- CM This project aims to develop a fast and scalable method to solve the fundamental and challenging optimal power flow (OPF) problem for operating a power network integrated with a large number of distributed energy resources.

#### Awards and Honours:

- 8 Best PhD thesis awards at both department and division levels from California Institute of Technology
- 8 Led multiple research projects at the U.S. National Renewable Energy Laboratory on smart grid control









#### **Dr Yi JIANG** Department of Civil and Environmental Engineering **The Hong Kong Polytechnic University**

<u>Project Title:</u> Advanced Nanocomposite Membranes Synthesized by An Aerosol-assisted Fabrication Approach for Water and Wastewater Treatment









- Image: Second Second
- Assistant Professor in the Department of Civil and Environmental Engineering at PolyU
- Major research interests and areas are environmental applications and implications of nanotechnology, aerosol technology and advanced water treatment.
- This project plans to develop a novel aerosol-assisted fabrication approach for synthesizing a new paradigm of nanocomposite water treatment membranes with high and uniform surface coverage of engineered functional nanomaterials.
- Awards and Honours:
  - 8 Excellence in Review award from the journal Environmental Science & Technology
  - 8 CH2M/AEESP Outstanding Doctoral Dissertation Award from the Association of Environmental Engineering and Science Professors
  - 8 Graduate Student Award from the American Chemical Society
  - 8 Doctoral Research Award from Washington University in St. Louis.









# Dr Chau-ming SO

Department of Applied Biology and Chemical Technology The Hong Kong Polytechnic University

**Project Title:** 

A Rational Design of Heterocyclic-based Ligands and Application in Carbon–Carbon and Carbon–Heteroatom Bond Forming Coupling Reactions







ECA Awardee



Dr Chau-ming SO

- PhD from the Hong Kong Polytechnic University
- Assistant Professor in the Department of Applied Biology and Chemical Technology at PolyU
- Interests in developing new ligands and exploring their application in carbon-carbon and carbon-heteroatom bond formation reactions.
- CS This project will establish a facile approach for synthesizing phosphine ligands, constructing the ligand library, and developing a methodology to address currently problematic coupling reactions and unexplored substrates transformations.
- Awards and Honours:
  - 8 Hong Kong Young Scientist Award
  - 8 Eli Lilly Asia Outstanding Graduate Thesis Award (1<sup>st</sup> Place Award)
  - 8 Higher Education Outstanding Scientific Research Output Awards (Science and Technology) Secondclass Award in Natural Science, Ministry of Education, PR China









## **Dr Man-chung YUE** Department of Applied Mathematics The Hong Kong Polytechnic University

<u>Project Title:</u> Distributional Robustification with Fisher-Rao Ambiguity Sets











#### Image: Orgon with the contract of the contract

- Assistant Professor in the Department of Applied Mathematics at PolyU
- Interests in continuous optimization and its applications in machine learning, data science, signal processing and operations research.
- This project proposes and studies a new methodology for decision making under uncertainty. The project is expected to make a positive impact to the application domains.
- G He settles an open question in the theory of interior-point methods. It is recently published in the journal Mathematics of Operations Research.







### **Prof Ivan Chi-ho IP** Department of Mathematics The Hong Kong University of Science and Technology

<u>Project Title:</u> The Theory of Positive Representations and its Applications



葉智皓教授









Prof Ivan Chi-ho IP

#### **GS** PhD from Yale University

- Assistant Professor in the Department of Mathematics at HKUST
- Interests in intersection of representation theory, quantum geometry and mathematical physics.
- Image: Second stateImage: Second
- Awards and Honours:
  - 8 International Mathematical Olympiad Medalist for the Hong Kong team (2002)
  - 8 International Consortium of Chinese Mathematicians Distinguished Paper Award (2018)









# Dr Ke WANG

#### Department of Mathematics The Hong Kong University of Science and Technology

<u>Project Title:</u> Low-rank perturbations of large random matrices











- Image: Construction of the second s
- Assistant Professor of Mathematics at HKUST
- Interests in probabilistic combinatorics and random matrix theory and made significant contributions to the understanding of the theory and applications of random matrices and random graphs.
- This project elucidates the asymptotic statistical behavior of the extreme eigenvalues and eigenvectors of a large random matrix perturbed by a low-rank error. It find numerous applications in computer science, finance, statistics, signal processing, and wireless communication.











### **Dr Junzhi LIU** Department of Chemistry The University of Hong Kong

<u>Project Title:</u> Exploring solution-phase synthetic approaches to nonalternant ring topologies in graphene nanostructures



劉俊治博士











- PhD from the Max Planck Institute for Polymer Research
- Assistant Professor at HKU
- Interests in bottom-up organic synthesis of topological carbon nanostructures and their applications in organic electronics.
- Published more than 40 peer-reviewed papers in high-impact chemistry journals, including Science (1 paper), J. Am. Chem. Soc. (14 papers), Angew. Chem. Int. Ed. (7 papers), Adv. Mater. (1 paper), Chem. Sci. (1 paper), etc.
- CM This project will provide a route for accessing novel properties of graphene nanostructures containing non-alternant topologies, such as curvatures, large open-shell biradical characters, increased chemical activities and new electronic functionalities (for applications in organic field effect transistors, nonlinear optics or spintronics).
- Awards and Honours:
  - "Marie-Curie" fellowship (2011-2014)
  - 8 Chinese Government Award for Outstanding Self-financed Students Abroad (2015)
  - International Union of Pure and Applied Chemistry (IUPAC) International Award for Young Chemists Honorable Mention Award (2017)









### **Dr Laura Anne MEEK** Centre for the Humanities and Medicine The University of Hong Kong

<u>Project Title:</u> Fakes, Poisons, and Medicines: Reconfiguring Pharmaceuticals in Tanzania











Dr Laura Anne MEEK

#### Market PhD from the University of California, Davis

- Assistant Professor in the Centre for the Humanities and Medicine at HKU
- Interests in biomedical globalization, bodily epistemologies, and the politics of healing in East Africa.
- CM This project will address critically important issues regarding pharmaceutical use in Tanzania, where 30-60% of drugs are counterfeit. Understanding how people respond to such uncertain conditions will help policymakers and medical practitioners concerned about pharmaceutical use in and beyond Tanzania.









### Dr Yung-wa SIN School of Biological Sciences The University of Hong Kong

**Project Title:** 

Genetic Basis of Plumage Coloration in the Seasonally and Sexually Dichromatic American Goldfinch and the Evolution of Plumage Patterns









Dr Yung-wa SIN

- PhD from the University of Oxford
- Assistant Professor in the School of Biological Sciences at HKU
- Interests in molecular ecology, evolutionary biology and behavioural genomics.
- Research topics include mate choice, animal behaviour, animal coloration, host-pathogen coevolution, gene family evolution, genotype-phenotype association, phylogenomics, and conservation genomics.
- Solution This project investigate the genes and regulatory elements responsible for plumage color patterning, and sexual and seasonal dichromatism.
- Awards and Honours:
  - 8 Croucher Scholarship



