

Background

MGI is a leading provider of life digital equipment and systems, with a diverse production line, strong manufacturing capabilities, and extensive experience in industrial transformation. As Hong Kong promotes industry-university research cooperation, MGI is committed to supporting scholars in accelerating scientific research and industrial development. The Hong Kong Branch of the Southern Marine Science and Engineering Guangdong Laboratory (Guangzhou) (hereinafter HKB) is an international research organization that gathers marine researchers from around the world and is committed to promoting industry-university research cooperation in the marine science. To further promote collaboration between BGI Intelligent Manufacturing and Hong Kong scholars, we organize the Marine Science and Technology Innovation and Industry Cooperation Forum. This forum provides a platform for us to exchange knowledge and ideas, and showcase MGI's technology and research achievements in the marine science and technology.

Introduction

- 14:00-14:15** **Opening remarks by HKB representative**
Prof. Pei-yuan Qian
 Chair Professor, HKUST; GML HKB Director
- 14:15-14:30** **Introduction to the MGI platform**
Dr. Hui Jiang
 COO, MGI

Sharing of Technology Applications and Research Achievements

- 14:30-15:00** **The Origin of the Deep-sea Fishes: Their Adaptation and Invasion to Hadal Zone**



Shunping He

Prof. Institute of Hydrobiology Chinese Academy of Sciences

Personal Profile

Professor He is a distinguished recipient of the Science Fund for Distinguished Young Scholars and a member of the Hundred Talents Program of the Chinese Academy of Sciences. He has led and participated in several significant projects, including the EU project and the Key Program of the National Natural Science Foundation of China. Additionally, Professor He spearheaded the proposal for the "Fish10K (The 10,000 Fish Genomes Project)". His research has been published in over 300 renowned journals, including Cell, Nature, Molecular Biology and Evolution, and others.

Abstract

- Distribution and characteristics of deep-sea fish
- Morphological and genomic characteristics were compared between deep-sea fish and shallow-water fish
- The relationship between the origin and evolution of deep-sea fish and the geological structure changes of the ocean bottom

- 15:00-15:30** **Genomics Basis of Polar Adaptation and Population Evolution of Antarctic Krill**
(Invited)



Changwei Shao

Prof. Yellow Sea Fisheries Research Institute

Personal Profile

Professor Shao specializes in fish germplasm resources and genetic breeding. As a distinguished leader of the National High-level Talents Special Support Program and a recipient of the young top talent award, Professor Shao spearheaded the construction of China's largest and led the completion of the largest animal genome reference sequence to date—the Antarctic krill genome. His research has been published in over 50 prestigious journals, including Cell, Nature Genetics, Genome Research, and many others.

Abstract

- Introduction to the Antarctic Krill Genome Map: The largest animal genome map to date
- Overview of the molecular mechanisms underlying polar day and night adaptation in Antarctic krill
- Genetic connectivity among Antarctic krill populations around the continent
- Historical overview of the formation and accumulation of Antarctic krill resources

- 15:30-16:00** **Introduction and Application of Stereo-seq in Biological Studies**



Xiaodong Fang

BGI-Research Senior Scientist

Personal Profile

Dr. Fang is the vice dean of BGI-Research in Shenzhen. He is mainly engaged in the collection, analysis and mining in large-scale genomics data, and operation and management of large-scale genomics research center. He has published tens of papers in top journals including Nature and Science.

Abstract

- Stereo-seq Introduction
- Overview of Stereo-seq's experimental and bioinformatic process
- Stereo-seq's technological advances and applications

- 16:00-16:30** **Application of Microfluidic Technology in Deep-Sea Microbiology**



Sheng Yi (Sally) Wu

Associate Research Scientist BGI-Sanya

Personal Profile

Sally Wu specializes in protein engineering and biosensor development, with her research published in reputable journals such as PLoS Biology, ACS Sensors, and Communications Biology. As the leader of the enzyme engineering team at BGI-Sanya, her team aims to enhance the efficacy of targeted enzymes through rational designs, site saturation, and directed evolution. This will help expand their applications in industrial settings and reduce costs associated with synthetic biology.

Abstract

- Introduction to the advancements in marine microbial metagenomics research
- Advantages of constructing a library of extremophile strains based on microfluidic technology
- High-throughput microfluidic technology for microbial activity screening strategies

Q & A

- 16:30-17:00** Q&A



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