

Gift of 500M from LKSF to Set Up Hong Kong's First Institute of Synthetic Biology in HKUST

Disruptive Era of Synthetic Biology Leading to Industrialization of Biology

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The Hong Kong University of Science and Technology (HKUST) received a HK\$500 million donation from Li Ka Shing Foundation (LKSF) yesterday for the establishment of Hong Kong's first institute of synthetic biology – a best-in-class research platform focuses on synthetic biological technologies.

The new academic and research building of the “Li Ka Shing Institute of Synthetic Biology” (The Institute) will provide the most advanced facilities, aiming to attract the world's top scholars in a move to steer Hong Kong into a global pioneer in synthetic bio-technologies.

Synthetic biology is at the heart of future economic development. Combining physics, computer science, mathematics, chemistry and engineering, synthetic biology uses big data from genetics and related fields to explore new ways of interactions between biological and non-biological disciplines. Through calculating, designing, coding and modifying microbial genomes, these genomes can be turned into smooth-operating machines that help resolve the conundrums and challenges in life sciences.

Why do we need synthetic biology?

The United Nations forecasts that the world's population will increase from 7.7 billion today to 8.1 billion in 2025. By 2050, it is estimated to reach 9.7 billion. From a growth perspective, this is equivalent to bringing the entire population of India and China as an addition to Earth. Considering the impact of such population surge on our limited resources and the environment, humans need to adopt a new way of life and use sustainable materials. The cross-disciplinary field of synthetic biology is set to be a core driving force of the future economy, it will appear in multiple aspects of our daily lives including medicine, plastics, materials, food and daily necessities. Hong Kong's science and technology research and education must join the forefront of this competition.

How does the institute operate?

Li Ka Shing Institute of Synthetic Biology is a special platform that emphasizes originality and application of foundation knowledge. Under this goal, the Institute will first develop scientific infrastructure and technologies to integrate genetic engineering with artificial intelligence and relevant analysis methodologies. Through professional autonomous mechanisms, the Institute will bring about discoveries ranging from biomolecules to cells as well as actual products, thereby promoting public health, environmental sustainability and foster social advancement and co-sharing. The vision of the Institute is to develop Hong Kong into a global hub of synthetic biology, transfer research results under new policies and new models of education and entrepreneurship. The Institute also seeks to create opportunities in new industries, nurture a new generation of talent in scientific innovation, and offer Hong Kong citizens more opportunities in participating or starting their own businesses.

Why at HKUST?

Established in 1991, HKUST, with a clear mission of nurturing talent, fostering research and innovation and contributing to the community, has made outstanding achievements over the past 28 years. The University expressed profound gratitude to Mr. Li for his contributions to Hong Kong as well as his trust in and support of HKUST. Utilizing its established research institutes and facilities, the University will staunchly support the venture into the field of synthetic biology, and actively communicate and collaborate with partners in Hong Kong and overseas in the hope to make impactful contribution. The Institute will fully complement HKUST's long-standing commitment to entrepreneurship, knowledge transfer as well as talent development, and enhance Hong Kong's overall competitiveness at the same time, contributing to the development of Hong Kong and the world.

Mr. Li Ka-Shing, Chairman of Li Ka Shing Foundation, is delighted that Hong Kong has started exploring the field of synthetic biology, "Since 2003, I have advocated repeatedly that HK must put resources behind science and technology-based manufacturing industries as it is a powerful geyser for upward mobility as well as a playground where entrepreneurship and innovation thrives. Just as synthetic chemistry and petroleum was central to the 20th Century, synthetic biology and DNA are the technology engines of this century, bringing disruption to traditional manufacturing and new opportunities in the industrialization of biology. It is fascinating, that a humble yeast is the superstar of the next industrial revolution. I am excited to work with HKUST, and I have faith in our next generation, together, we can contribute to the future wisely, and will stand in the forefront of this new frontier."

HKUST Council Chairman Mr. Andrew LIAO Cheung-Sing said he is deeply grateful to Mr. Li and his Foundation's generosity. "With Mr. Li's vision, as well as his benevolent support and trust in HKUST, a sturdy foundation has been laid for our collaboration. We look forward to seeing the fruit bore by the Hong Kong Institute of Synthetic Biology, and the transformational changes that it set to bring upon Hong Kong and our neighboring regions," he said.

HKUST President Prof. Wei SHYY added, "Mr. Li Ka-Shing and HKUST share a common commitment – the sheer devotion to science and Hong Kong. Thanks to Mr. Li Ka-Shing's support, we are able to establish Hong Kong's first synthetic biology research platform and get connected with the world. At this critical time, Mr. Li's immense encouragement to our youngsters through the creation of opportunities is in itself a vote of confidence to the future development of Hong Kong's science and technology-based industry."

[Download](#) attachment on more about synthetic biology and its potential markets

About The Hong Kong University of Science and Technology

The Hong Kong University of Science and Technology (HKUST) (www.ust.hk) is a world-class research university that focuses on science, technology and business as well as humanities and social science. HKUST offers an international campus, and a holistic and interdisciplinary pedagogy to nurture well-rounded graduates with global vision, a strong entrepreneurial spirit and innovative thinking. HKUST attained the highest proportion of internationally excellent research work in the Research Assessment Exercise 2014 of Hong Kong's University Grants Committee, and is ranked as the world's best young university in Times Higher Education's Young University Rankings 2019. Its graduates were ranked 16th worldwide and top in Greater China in Global University Employability Survey 2018.

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Mr. LI Ka-Shing, Chairman of Li Ka Shing Foundation (left) and Prof. Wei SHYY, President of HKUST, witness the signing of a Memorandum of Cooperation. They agree that promoting the development of synthetic biology will bring about more opportunities.

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