For discussion
on 18 March 2025

Legislative Council
Panel on Commerce, Industry, Innovation and Technology

Re-structuring of the State Key Laboratories in Hong Kong

PURPOSE

This paper briefs Members on the progress in re-structuring the State Key Laboratories (SKLs) in Hong Kong.

BACKGROUND

2. The Mainland's SKL Scheme, launched in 1984, is managed by the Mainland's Ministry of Science and Technology (MOST). It serves as a major initiative in nurturing basic as well as applied technology research and development in Mainland. The Scheme carries high status as it signifies recognition from MOST for the research work of a specific laboratory in a specific area. SKLs are subject to periodic re-assessment. Those SKLs which do not pass the assessment will cease to carry the status of SKL.

3. Prior to 2007, the SKL status was only given to laboratories in the Mainland. Laboratories in Hong Kong could only be Partner SKLs. At that time, five laboratories in Hong Kong, all from local universities, had submitted application to MOST and were granted the status of Partner SKLs by pairing up with SKLs in Mainland.

4. In April 2007, MOST and the Innovation and Technology Commission (ITC) agreed that a formal mechanism should be established to process applications for setting up Partner SKLs in Hong Kong. ITC was assigned to coordinate the whole application process. From 2009 to 2013, MOST approved the setting up of a total of 11 Partner SKLs. MOST subsequently agreed in 2018 that the Partner SKLs no longer needed to pair up with SKLs in similar scientific research areas in the Mainland and could be re-named as SKLs. Since re-naming, there have been a total of 16 SKLs in Hong Kong (the full list at **Annex 1**).

5. Since 2011-12, ITC has been providing annual funding to SKLs[1] in Hong Kong through the Innovation and Technology Fund (ITF) as an additional source of funding, to enable them to strengthen their research capability, build up the necessary infrastructural support and map out a longer term development plan. The annual funding ceiling for each laboratory was initially set at $2 million, and increased to $20 million starting from the 2022-23 financial year after three adjustments. At the same time, SKLs[1] are required to submit annual reports to MOST, outlining the progress of the laboratory's research work, the situations of researchers, exchange and operation, significant events, and statistics on research outcomes, with copies sent to ITC. They shall also undergo periodic re-assessment. All 16 SKLs[1] were re-assessed in batches in 2016-2017 and 2022-2023. The re-assessment results agreed by MOST were ten rated as "outstanding" and six as "meritorious".

THE RE-STRUCTURING EXERCISE OF STATE KEY LABORATORIES IN HONG KONG

6. MOST launched the optimisation and re-structuring of SKLs in 2022, requiring the laboratories to solve scientific issues related to major needs of the country and broaden the understanding of natural boundary, as well as to clearly define their positioning. Subsequent to the re-structuring, relevant laboratories will be re-named from "國家重點實驗室" to "全國重點實驗室" (no change to the English title).

7. To align with the overall national development plan, ITC, after discussions with MOST, also initiated the re-structuring exercise of the SKLs in Hong Kong in late 2023. This allows the relevant universities to explore how to leverage on Hong Kong's geographical advantages by improving existing SKLs or setting up new ones to meet national needs. The goal of the exercise is to, without significantly changing the total number of SKLs, re-structure the laboratories through adjustments, optimization, integration, revocation or new establishments. Similar to the approach in the Mainland, the re-structured laboratories will be re-named to "全國重點實驗室".

8. At ITC's invitation, a total of 22 applications were submitted by universities, comprising proposals to re-structure and set up SKLs. With reference to the nominations from MOST, ITC invited experts from the Mainland to participate in the assessment process. According to the disciplines of the laboratories, four assessment panels (one Information and Engineering Panel, one Natural Science Panel and two Biological and Medical Panels) were set up to

[1] Or as Partner SKL before 2018.

conduct on-site inspections and evaluations of the 22 laboratories under application. The evaluation criteria include –

(a) Mission and Positioning: Clear positioning that aligns with the overall national development strategy and leverages on Hong Kong's international geographical advantages;

(b) Research Level and Impact: Characterised by internationally advanced research levels, with the capability to play a significant role in supporting major national needs, critical core technologies, and broadening the understanding of natural boundary, leading to strategic, critical, and original significant technological achievements;

(c) Talent and Team: Possess a high-level research team, and the Director of the laboratory being an influential scholar in the relevant field; and

(d) Operational Management and Support from the Host Universities: With an efficient and organised structure, sound operational management, apparatus and equipment that can meet research needs, and strong support from the host university.

9. To help the universities and the laboratories being evaluated better understand the objectives and arrangements of the re-structuring exercise, ITC organised a briefing session in early July 2024, during which participants were briefed on the background of the exercise and the evaluation process. Representative from MOST also explained the requirements for the re-structuring of the SKL regime.

RE-STRUCTURING RESULTS AND ENHANCEMENT MEASURES

10. The on-site inspections of the laboratories took place in mid-July 2024. Having fully considered the comments given by the four assessment panels, ITC has prepared a report on the re-structuring exercise and submitted it to MOST in the third quarter of 2024.

11. MOST approved the results of the SKL re-structuring exercise in early 2025. On the premise of not significantly changing the total number of SKLs, MOST approved the re-structuring of 12 existing SKLs and the setting up of three new SKLs (one of which will be co-established by two universities). A list of the 15 SKLs after the re-structuring exercise is at **Annex 2**. For those applications not approved, their main inadequacies include the relatively small size of the research team, a need for clearer goal and positioning, and the failure to identify a research focus due to scattered research directions.

12. ITC notified the universities of the results in writing in early February 2025, and appended the comments of the relevant assessment panels on their laboratories for the reference of the universities and laboratories, aiming to assist the laboratories in further enhancing their research capabilities and address their inadequacies. The approved SKLs are requested to revise their previously submitted re-structuring proposals with reference to the comments of the assessment panels, submit the updated proposals to ITC for scrutiny by early April 2025. These laboratories can operate under the new name of "全國重點實驗室" starting from 1 July 2025 upon ITC's acceptance of the updated proposals.

13. ITC will continue to provide an annual funding of $20 million for each SKL. Moreover, to signify the universities' support for the relevant laboratories, ITC requires universities to provide corresponding resources to the SKLs, including a commitment to make a contribution of no less than 20% of the funding from ITF for each laboratory annually (i.e. $4 million), of which up to a half (i.e. $2 million) can be in-kind support (excluding rent and project/manpower expenses already funded by the government or government subvented organisations).

14. Meanwhile, to ensure that the funding provided by ITF is used effectively, as well as to facilitate future monitoring and evaluation of the laboratories' performance, ITC will require each approved SKL to formulate a work plan for the next five years, milestones of their work as well as performance indicators, and, in addition to submitting annual reports to MOST, provide relevant materials on how the milestones and performance indicators have been accomplished for ITC's review.

ADVICE SOUGHT

15. Members are invited to note the above arrangement and latest development.

Innovation and Technology Bureau
Innovation and Technology Commission
March 2025

Annex 1

Existing State Key Laboratories (SKLs) in Hong Kong

	Hosting University	Name of SKL	Director	Year of Approval
1.	The University of Hong Kong	SKL of Emerging Infectious Diseases	Prof GUAN Yi Prof YUEN Kwok-yung	2005
2.	The University of Hong Kong	SKL of Brain and Cognitive Sciences	Prof Tatia LEE Mei-chun	2005
3.	The Chinese University of Hong Kong	SKL of Translational Oncology	Prof Dennis LO	2006
4.	City University of Hong Kong	SKL of Terahertz and Millimeter Waves	Prof CHAN Chi-hou	2008(Note)
5.	The Chinese University of Hong Kong	SKL of Agrobiotechnology	Prof Hon-Ming LAM	2008(Note)
6.	The Hong Kong Polytechnic University	SKL of Ultra-precision Machining Technology	Prof Benny CHEUNG	2009
7.	The Hong Kong University of Science and Technology	SKL of Molecular Neuroscience	Prof Nancy IP Yuk-yu	2009
8.	City University of Hong Kong	SKL of Marine Pollution	Prof Kenneth Mei Yee LEUNG	2009
9.	The Chinese University of Hong Kong	SKL of Research on Bioactivities and Clinical Applications of Medicinal Plants	Prof LEUNG Ping-chung	2009
10.	The University of Hong Kong	SKL of Liver Research	Prof Irene O.L. NG	2010
11.	The University of Hong Kong	SKL of Synthetic Chemistry	Prof CHE Chi-ming	2010
12.	The Hong Kong Polytechnic University	SKL of Chemical Biology and Drug Discovery	Prof WONG Kwok-yin	2010
13.	Hong Kong Baptist University	SKL of Environmental and Biological Analysis	Prof CAI Zongwei	2013
14.	The University of Hong Kong	SKL of Pharmaceutical Biotechnology	Prof XU Aimin	2013
15.	The Chinese University of Hong Kong	SKL of Digestive Disease	Prof YU Jun	2013
16.	The Hong Kong University of Science and Technology	SKL of Advanced Displays and Optoelectronics Technologies	Prof Kristiaan NEYTS Prof FAN Zhiyong	2013

(Note) Applications for setting up Partner SKLs lodged before 2007 and approved by MOST in 2008.

Annex 2

State Key Laboratories (SKLs) in Hong Kong after the Re-Structuring Exercise

	Hosting University	Name of SKL	Director
1.	The University of Hong Kong	SKL of Emerging Infectious Diseases	Prof GUAN Yi Prof YUEN Kwok-yung
2.	The Chinese University of Hong Kong	SKL of Translational Oncology	Prof Dennis LO
3.	City University of Hong Kong	SKL of Terahertz and Millimeter Waves	Prof CHAN Chi-hou
4.	The Chinese University of Hong Kong	SKL of Agrobiotechnology	Prof Hon-Ming LAM
5.	The Hong Kong Polytechnic University	SKL of Ultra-precision Machining Technology	Prof Benny CHEUNG
6.	The Hong Kong University of Science and Technology	SKL of Nervous System Disorders	Prof Nancy IP Yuk-yu
7.	City University of Hong Kong	SKL of Marine and Environmental Health	Prof Kenneth Mei Yee LEUNG
8.	The University of Hong Kong	SKL of Liver Research	Prof Irene O.L. NG
9.	The University of Hong Kong	SKL of Synthetic Chemistry	Prof CHE Chi-ming
10.	The University of Hong Kong	SKL of Pharmaceutical Biotechnology	Prof XU Aimin
11.	The Chinese University of Hong Kong	SKL of Digestive Disease	Prof YU Jun
12.	The Hong Kong University of Science and Technology	SKL of Displays and Opto-Electronics	Prof Kristiaan NEYTS Prof FAN Zhiyong
13.	The University of Hong Kong	SKL of Optical Quantum Materials	Prof ZHANG Xiang
14.	The Chinese University of Hong Kong	SKL of Quantum Information Technologies and Materials	Prof LIU Renbao
15.	The Hong Kong Polytechnic University, The Hong Kong University of Science and Technology	State Key Laboratory of Climate Resilience for Coastal Cities	Prof LI Xiangdong Prof Charles Wang Wai NG

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