Hong Kong
Genome Institute
香港基因組中心



Forging Ahead as One for Better Health

齊心同進 躍變健康未來

2022-2023 ANNUAL REPORT 年報

In its second year of full operations, the Hong Kong Genome Institute (HKGI) continues to ascend to new heights in its bid to advance genomic medicine in Hong Kong. With the unwavering support of stakeholders near and far, HKGI has been expanding networks and collaborating closely with all towards a shared vision: availing genomic medicine to all for better health and well-being. To this end, the tagline for this year, "**Forging Ahead as One for Better Health**", denotes a vivid reflection of a spirit of unity, bearing witness to the remarkable milestones HKGI has achieved.

Echoing the tagline, the cover design features a vibrant representation of HKGI's corporate strategies and values. Using the motif of a puzzle, it depicts key components coming together, just as HKGI and its stakeholders are all united to work in concert to create a healthier future for all through the widespread application of genomic medicine.

The lively illustrations are coloured in HKGI's corporate hues and symbolise the Institute's various strategic foci and core values: integrating genomic medicine into clinical care, bringing patients *good health and new life* (green); advancing genomic research, inspiring breakthroughs for *hope and happiness* (blue); nurturing talent with *passion and dedication* (red); and enhancing public genomic literacy with *versatility and energy* (yellow). Altogether, these pieces join up with the DNA strand in the centre that signifies HKGI's foundational tenet of *professionalism and reliability* (dark green).

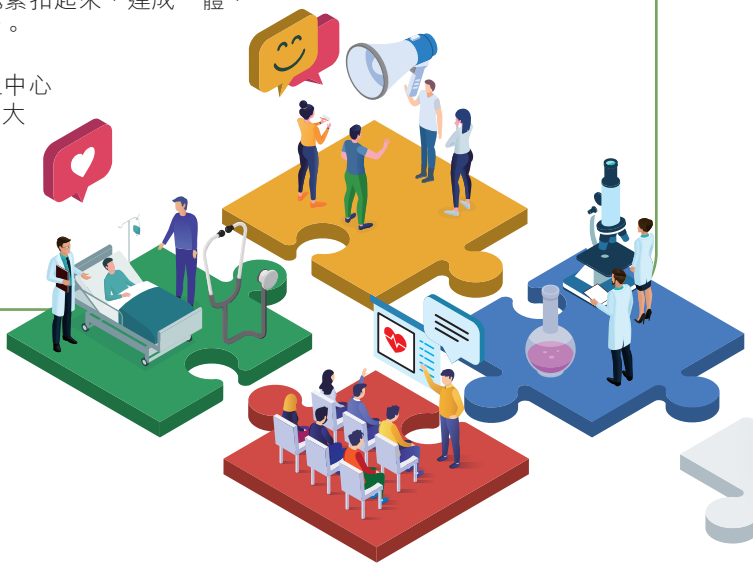
With support from all fronts, HKGI and genomic medicine will continue to progress and thrive, as represented by the upward momentum of the jigsaw puzzle.

香港基因組中心(基因組中心)全面運作已踏入第二年，團隊上下一心，繼續為本港基因組醫學發展開創新篇。在社會各界鼎力支持下，基因組中心積極拓展網絡，與海內外持份者緊密合作，並肩實踐「普及基因組醫學，共享健康福樂」的共同願景。本年度年報以**「齊心同進，躍變健康未來」**為主題，正展現了基因組中心與各界團結一致、群策群力的精神，並凸顯了團隊於過去一年所取得的非凡成就。

年報的封面設計別出心裁，與主題相互呼應，清晰勾畫出基因組中心的機構策略和價值——以拼圖為喻，各個關鍵元素環環相扣，象徵基因組中心與各方持份者同心協力，多管齊下加快基因組醫學的臨床應用，與大眾同創健康未來。

封面上的圖案和用色，與基因組中心標誌上的色系一脈相承，各有寄寓，生動地呈現機構的策略重點和核心價值：綠色朝氣滿盈，寓意融合基因組醫學與臨床護理，讓病人樂享*健康與新生*；藍色明亮開闊，代表促進基因組科學研究，以創新帶來*希望與快樂*；紅色鮮明有力，強調培育人才的*熱誠與專注*；黃色親切活潑，帶出加強公眾認識基因組醫學所需的*多元與活力*。這些拼圖由封面中央的DNA長鏈方塊緊扣起來，連成一體，以沉穩的深綠色象徵基因組中心的*專業與可靠*。

整幅圖案呈現出冉冉上升的景象，寓意基因組中心的工作，以及香港基因組醫學的發展，在各方大力支持下，定必日新又新，繼續邁步向前。



OUR YEAR AT A GLANCE
年 度 大 事 速 覽

First in Greater China
大中華地區首間機構

Installation of market-leading sequencer NovaSeq X Plus System
採用市場最先進基因組測序儀器 NovaSeq X Plus System

First in Hong Kong
香港首間實驗室

Genomic laboratory offering end-to-end whole genome sequencing services
提供整套全基因組測序服務



Long-Read Sequencing
長序列測序技術

Deployed this cutting-edge technology, the "Method of the Year 2022" named by *Nature Methods*
採用被權威學術期刊*Nature Methods*譽為「2022年度前沿科技」的嶄新技術

Research Collaborations
科研合作

Collaborated with CUHK, HKU and PolyU on multiple fronts to create impactful findings and publications
與中大、港大及理大展開不同研究項目，發表具影響力的成果和報告

Genomic Medicine Symposium
基因組醫學會議

Organised this international event with the Hong Kong Academy of Medicine for local and overseas experts to exchange insights
夥拍香港醫學專科學院舉辦國際會議，匯聚本地和海外專家分享真知灼見

>18,000

Hong Kong Genome Project participants
香港基因組計劃參加者

>1,400TB

Genomic data processed, equivalent to more than 700 iPad (2TB)
已處理的基因組資料，
容量相當於超過700部iPad (2TB)

HK$6,000,000

Disbursed to set up scholarship, research and training grants for genomic medicine
設立獎助學金，推動基因組醫學研究及培訓



Gold Award
金獎

Privacy-Friendly Awards 2023
私隱之友嘉許獎 2023

Platinum Award
鉑金獎

Annual Report Competition
國際年報大獎
LACP Vision Awards 2022

Contents
目錄

Corporate Profile
企業概況

2 About Hong Kong Genome Institute
關於香港基因組中心

6 The Board
董事局

30 Management Team
管理團隊

32 Corporate Information
公司資料

Management Reports
管理層報告

33 Chairperson's Statement
主席報告

42 Chief Executive Officer's Report
行政總裁報告

52 **Milestones of the Year**
年度回顧

68 **Our Partnering Centres**
我們的夥伴中心

Forging Ahead as One for Better Health
齊心同進　躍變健康未來

104 Integrate Genomic Medicine into Clinical Care
融合基因組醫學與臨床護理

115 Advance Research in Genomic Science
促進基因組科學研究

123 Nurture Talents in Genomic Medicine
培育基因組醫學人才

131 Enhance Public Genomic Literacy and Engagement
加強公眾對基因組學的認識和參與

142 Operate with Excellence
卓越營運

Corporate Governance
企業管治

149 Principles and Practices
原則與實務

152 Governance Structure
管治架構

164 **Financial Report**
財務報告



About Hong Kong Genome Institute
關於香港基因組中心

Corporate Introduction

The Hong Kong Genome Institute (HKGI), established and wholly owned by the Government of the Hong Kong Special Administrative Region (HKSAR Government), commenced full operations in 2021. With the vision "**to avail genomic medicine to all for better health and well-being**" and supported by the Health Bureau, HKGI works in close collaboration with the Department of Health, Hospital Authority, medical schools of local universities and various stakeholders to accelerate the development of genomic medicine in Hong Kong along four strategic foci: integrating genomics into medicine, advancing research, nurturing talents and enhancing public genomic literacy.

As the first step towards achieving its vision, HKGI launched the Hong Kong Genome Project (HKGP) in 2021 focusing on diseases and research cohorts that would benefit from whole genome sequencing. They include undiagnosed diseases, hereditary cancers and cases related to genomics and precision health. Being the city's first large-scale genome sequencing project, HKGP serves as a catalyst to benefit patients and their families with more precise diagnosis and personalised treatment through whole genome sequencing. It also aims to establish a genome database of the local population, testing infrastructure and talent pool to address the healthcare needs of Hong Kong in the long run.

HKGI has set up Partnering Centres at the Hong Kong Children's Hospital, Prince of Wales Hospital and Queen Mary Hospital to help recruit eligible participants for HKGP with informed consent, while also keeping other stakeholders closely engaged. Once available, the results of sequencing analysis will be fed back to respective clinical leads and patients to aid diagnoses and clinical services.

機構簡介

香港基因組中心(基因組中心)由香港特別行政區政府(特區政府)成立及全資擁有，於2021年正式全面運作。基因組中心致力促進本港基因組醫學發展，在醫務衞生局支持下，與衞生署、醫院管理局、大學醫學院及各方持份者緊密合作，透過聚焦四大策略重點，包括加快融合基因組醫學與臨床應用、促進科學研究、培育人才及加強公眾對基因組學的認識，實現「**普及基因組醫學，共享健康福樂**」的願景。

基因組中心於2021年正式開展香港基因組計劃(基因組計劃)，主要涵蓋三個可受惠於全基因組測序技術的疾病及研究群組，包括未能確診病症、與遺傳有關的癌症，以及與基因組學及精準醫學有關的個案。基因組計劃是本港首個大型基因組測序計劃，扮演着催化劑的角色，以全基因組測序讓病人及其家屬受惠於更準確診斷及個人化治療，並透過建立本地人口的基因組數據庫、測試設施及人才庫，應對香港長遠醫療需要，與大眾同創健康未來。

基因組中心已於香港兒童醫院、威爾斯親王醫院及瑪麗醫院設立夥伴中心，並積極與其他持份者緊密合作，透過轉介，招募合資格參加者，經他們知情同意後參與基因組計劃；而相關測序分析的結果，將回饋予有關醫護人員及病人作診斷及臨床治療之用。



Vision, Mission and Core Values

Vision

To avail genomic medicine to all for better health and well-being.

Mission

To accelerate the integration of genomics into medicine by driving clinical application, advancing research, nurturing talents and enhancing genomic literacy.

Core Values

The core values of HKGI are embedded in its logo, which has a five-colour double helix structure with dark green as the primary logo colour, signifying the fundamental HKGI spirit of **professionalism and reliability**, as well as the lines in green, red, blue, and yellow, which apart from being the colour codes representing ATCG (A – Adenine, T – Thymine, C – Cytosine, and G – Guanine), the four different bases of DNA nucleotides, also symbolise the HKGI values of **"health and new life"**, **"passion and dedication"**, **"hope and happiness"**, and **"versatility and energy"** respectively.

願景、使命及核心價值

願景

普及基因組醫學，共享健康福樂。

— *實現基因組醫學的廣泛應用，為大眾帶來健康、幸福和快樂。*

使命

銳意推動基因組醫學的臨床應用、科學研究、人才培育及公眾教育，加快基因組學與醫學的融合。

— *多管齊下，加快融合基因組學與臨床應用。*

核心價值

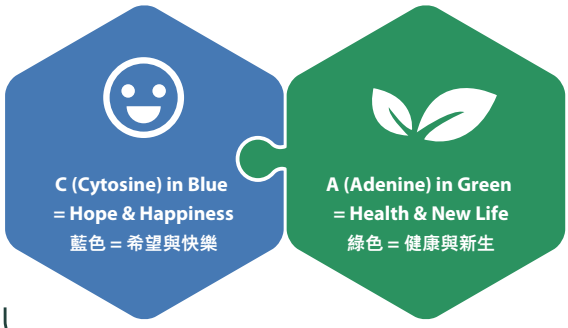
基因組中心的標誌設計與其核心價值相互呼應。標誌以深綠色為主調，象徵**專業與可靠**，是團隊所秉持的基本精神。標誌上雙螺旋結構的DNA長鏈，由五色線條組成，在深綠色以外，其餘綠、紅、藍、黃四色均各有所喻，不但代表ATCG (A – Adenine, T – Thymine, C – Cytosine, and G – Guanine)四種DNA代碼，也分別代表基因組中心堅守的四大核心價值及理念，包括**健康與新生**、**熱誠與專注**、**希望與快樂**，及**多元與活力**。

About Hong Kong Genome Institute
關於香港基因組中心

Core values upheld by HKGI
基因組中心秉持的核心價值



Hong Kong Genome Institute
香港基因組中心



Benefits brought to stakeholders
為持份者帶來的裨益



Professionalism and Reliability

To provide whole genome sequencing, laboratory, genetic counselling, genetic education, bioinformatics, research facilitation and related services with professionalism and reliability, observing relevant professional guidelines, ethical codes, standardised protocols as well as principles of data privacy and security.

專業與可靠

以專業及可靠的精神，為持份者提供全基因組測序及其他相關服務，包括實驗室、遺傳輔導及教育、生物信息學及研究等範疇，並遵守相關專業指引、道德守則、數據私隱和安全的標準規程及原則。



Passion and Dedication

To achieve HKGI's vision and mission with passion and dedication, working wholeheartedly, thinking positively and taking the initiative to go the extra mile to serve patients and the wider community in a better way.

熱誠與專注

以熱誠和專注的態度實現基因組中心的願景和使命，全情投入，樂觀積極，加倍努力，致力為病人和社會大眾帶來更大裨益。



Versatility and Energy

To adopt a multi-disciplinary approach for engaging professionals from various disciplines to promote the development of genomic medicine with vibrant means, energetic efforts and teamwork, embracing the spirit of openness, mutual respect, and acceptance of different ideas.

多元與活力

採取多元及跨專業的方針，廣泛接觸及聯繫不同界別的專家，以充沛的活力及團隊精神攜手推動基因組醫學的發展，並秉持開放的態度，互相尊重，廣納不同意見。



Hope and Happiness

To bring hope and happiness to patients and their families by fostering the integration of genomic medicine into clinical care to improve genomic diagnosis, personalised treatment and prevention of diseases.

希望與快樂

促進基因組醫學與臨床護理的融合，以優化基因組診斷、個人化治療和疾病防控，為病人及其家屬帶來希望和快樂。



Health and New Life

To promote health and better quality of life amongst patients and the people of Hong Kong by facilitating the advancement of knowledge and technology in genomic medicine through vigorous research as well as the translation of research breakthroughs into clinical practice.

健康與新生

透過推動研究及將其相關成果轉化為臨床應用，促進基因組醫學的知識和技術發展，藉此提升病人及市民大眾的健康和生活質素。

The Board
董事局



Mr Philip TSAI Wing-chung, BBS, JP
蔡永忠先生, BBS, JP

Chairperson
主席

Mr Tsai is a former Chairman of Deloitte China and has more than 35 years of experience in planning and managing audits for Hong Kong based operations of multi-national groups, as well as local and overseas listed clients in a wide range of industries. As a Fellow of the Hong Kong Institute of Certified Public Accountants (the "HKICPA"), the Association of Chartered Certified Accountants and the Institute of Chartered Accountants of England and Wales (the "ICAEW"), Mr Tsai is actively involved in the development of the CPA profession and also contributes his efforts in various government, community and social services organisations.

蔡先生為德勤前中國主席，擁有逾35年的工作經驗，為跨國集團在港業務以及各行各業本土和海外上市客戶實施審計規劃與審計管理。他亦為香港會計師公會、英國特許公認會計師公會、以及英格蘭與威爾士特許會計師公會資深會員。他積極參與註冊會計師行業的發展，為政府、社區和社會服務機構盡心盡力。

Mr Tsai is a Past President of the HKICPA, a Council Member of the ICAEW, a Member of the Hospital Authority, the Chairman of the Hospital Governing Committee of the Queen Mary Hospital and Tsan Yuk Hospital, the Chairman of the Supplementary Medical Professions Council of the Health Bureau (formerly the Food and Health Bureau), a Member of the Audit and Risk Committee of the Mandatory Provident Fund Schemes Authority, an Advisor of The Ombudsman, Hong Kong, a Member of the Registration Committee of the Chinese Gold and Silver Exchange, a Member of the Independent Commission on Remuneration for Members of the Executive Council and the Legislature, and Officials under the Political Appointment System of the HKSAR Government.

蔡先生亦是香港會計師公會前會長、英格蘭與威爾士特許會計師公會理事會成員、醫院管理局大會成員、瑪麗醫院／贊育醫院醫院管治委員會主席、醫務衞生局（前食物及衞生局）輔助醫療業管理局主席、強制性公積金計劃管理局審核及風險委員會委員、申訴專員顧問、香港金銀業貿易場註冊委員會成員及香港特別行政區行政會議成員、立法會議員及政治委任制度官員薪津獨立委員會成員。

Moreover, Mr Tsai is a Member of the University Grants Committee, an Adjunct Professor of the City University of Hong Kong, the Chairman of the Student Residence Management Board of the Hong Kong Baptist University, the Deputy Chairman of the Alumni Committee of the Hong Kong Baptist University Foundation, a Trustee of the Staff Superannuation Scheme of The Chinese University of Hong Kong and a Member of the Institutional Advancement and Outreach Committee of the University Council of The Hong Kong University of Science and Technology.

他同時擔任大學教育資助委員會成員、香港城市大學兼任教授、香港浸會大學學生舍堂管理委員會主席、香港浸會大學基金校友委員會副主席、香港中文大學教職員公積金計劃信託人及香港科技大學大學拓展委員會成員。

Mr Tsai is also the Chairperson of Hong Kong Red Cross.

蔡先生亦為現任香港紅十字會主席。



Professor Raymond LIANG Hin-suen, SBS, JP
梁憲孫教授, SBS, JP

Deputy Chairperson
副主席

Professor Liang is a Specialist in Haematology and Haematological Oncology. He is currently Head of Department of Medicine, Director of Comprehensive Oncology Centre and Assistant Medical Superintendent of Hong Kong Sanatorium and Hospital. He is also Emeritus Professor of The University of Hong Kong (HKU) and Honorary Professor of both HKU and The Chinese University of Hong Kong.

梁教授是一位血液及血液腫瘤科專科醫生，現為養和醫院副院長、內科部主管及綜合腫瘤科中心主任、香港大學(港大)榮休教授和榮譽講座教授，以及香港中文大學榮譽講座教授。

Professor Liang was a member of the Hospital Authority Board. Furthermore, he was the Ex-Dean of Li Ka Shing Faculty of Medicine, HKU, and the Past President of the Hong Kong Academy of Medicine.

他亦為前醫院管理局委員、港大醫學院前院長和香港醫學專科學院前主席。

Professor Liang was one of the founders of Hong Kong Blood Cancer Foundation and Hong Kong Marrow Match Foundation. The latter was responsible for establishing the first all Chinese Unrelated Marrow Donor Registry, serving Chinese patients in need of bone marrow transplantation in Hong Kong, Macau, Taiwan and Mainland China, as well as Chinese patients around the world.

梁教授為香港血癌基金和香港骨髓捐贈基金的創會成員之一，後者更成立了全球首個以華人為主的香港骨髓捐贈基金資料庫，為華裔血病患者尋找適合的無血緣骨髓。

The Board
董事局



Dr LO Su-vui
羅思偉醫生

Non-official Director
非官方董事

Dr Lo joined Hong Kong Genome Institute (HKGI) as the Chief Executive Officer in March 2021. As the CEO, Dr Lo leads HKGI in formulating its strategic direction and development plan. He also provides leadership to the team in launching the Hong Kong Genome Project, the city's first-ever large-scale whole genome sequencing initiative. With the aspiration to benefit the wider community, Dr Lo drives the team to be the change agent in fostering clinical application of genomic medicine and its long-term development in Hong Kong.

羅醫生於2021年3月出任香港基因組中心行政總裁，負責領導基因組中心制訂發展策略，帶領團隊發揮推動者的角色，推行本港首個大規模的基因組測序計劃(「香港基因組計劃」)，以促進基因組醫學在香港的臨床應用及長遠發展，實現為社會大眾帶來裨益的願景。

Dr Lo is a seasoned professional in public health and administrative medicine, bringing with him a wealth of knowledge in public healthcare system, service provision and relevant policies. He also has a strong blend of experience in corporate affairs, strategic planning, talent development, research and so on. Prior to his current role, Dr Lo had served in the Hospital Authority (HA) for over 20 years during which he had held various senior management positions, including Director of Strategy and Planning in the HA Head Office and Cluster Chief Executive of the New Territories East Cluster.

羅醫生為資深公共衞生及行政醫學專家，對本地醫療體系、公共服務及相關政策認識深厚，在機構事務、發展規劃、人才培育及調查研究等範疇，均具豐富經驗。出任現職前，羅醫生於醫院管理局(醫管局)服務逾20年，曾擔任不同管理職位，其中包括醫管局總辦事處策略發展總監及新界東醫院聯網總監。

In addition to his extensive experience with the HA, Dr Lo also held a number of senior positions both locally and overseas. These included being the Head of Research Office in the former Food and Health Bureau (currently the Health Bureau) of the HKSAR Government, and the Director of Purchasing (Specialist Care Services) with the Cardiff Health Authority of the National Health Service in the United Kingdom.

羅醫生亦先後於本地及海外擔任不同要職，包括香港特區政府前食物及衞生局(現為醫務衞生局)研究部主管及英國國民保健服務卡迪夫衞生局採購總監(專科照護服務)。

Professionally, Dr Lo is a practitioner in Public Health and Administrative Medicine. He had served as a Part I and II examiner of the Faculty of Public Health, and a censor and examiner of the Royal Australasian College of Medical Administrators.

羅醫生持有公共衞生及行政醫學專業資格，並曾於澳洲皇家醫務行政學院公共衞生學院擔任考核員(甲部及乙部)、審查員及考試委員。



Dr Derrick AU Kit-sing
區結成醫生

Non-official Director
非官方董事

Dr Au is Clinical Professional Consultant (Honorary) and Honorary Advisor of the Centre for Bioethics at The Chinese University of Hong Kong. He received medical education at Brown University in the US and postgraduate training in geriatric medicine in Hong Kong. Dr Au has served in clinical service in geriatrics and rehabilitation before taking up various management positions in the Hospital Authority, including Director of Quality & Safety.

Dr Au is also a writer and columnist with publications on bioethics, professional ethics, and history of medicine.

(Appointment completed on 4 November 2022)

區醫生為香港中文大學榮譽臨床專業顧問及生命倫理學中心榮譽顧問，他亦是專科醫生、前醫療管理人。區醫生畢業於美國布朗大學醫學院，回港後服務公營醫療，曾任九龍醫院行政總監、醫院管理局質素及安全總監等職務。

區醫生工餘從事寫作，出版專欄散文集及人文專著十餘種，主題包括生命倫理、專業倫理、文學及中西醫學史。

（任期至2022年11月4日）

The Board
董事局



Mr Ray CHAN Chin-ching
陳展程先生

Non-official Director
非官方董事

Mr Chan is the Chief Executive Officer and co-founder of 9GAG, a global multi-platform community for viral content and interests. Founded in 2008, 9GAG's mission is to make the world happier.

陳先生為9GAG的行政總裁及共同創辦人。他於2008年成立了國際跨平台創意社群9GAG，以「令世界更快樂」為目標，讓用戶能輕易分享新穎有趣的內容和認識志同道合的朋友。

9GAG has a global audience of 200 million, including 56 million followers on Instagram, 42 million followers on Facebook, and 16 million followers on Twitter.

9GAG的每月觀眾逾2億人，包括逾5,600萬Instagram粉絲、逾4,200萬Facebook粉絲和逾1,600萬Twitter粉絲。

Mr Chan graduated from The University of Hong Kong with a degree in Law.

陳先生畢業於香港大學法律系。



Professor CHAN Wai-yee
陳偉儀教授

Non-official Director
非官方董事

Professor Chan is the Pro-Vice-Chancellor/Vice President and Li Ka Shing Professor of Biomedical Sciences at The Chinese University of Hong Kong (CUHK). He obtained his BSc (Hon. 1st Class) in Chemistry from CUHK in 1974 and PhD in Biochemistry from the University of Florida in 1977.

In June 2009, Professor Chan established CUHK's School of Biomedical Sciences and served as the Founding Director and Chair Professor of Biomedical Sciences. He was appointed Pro-Vice-Chancellor/Vice President of CUHK in August 2018.

Professor Chan is very active in the scientific community, both locally and internationally. He has served as President of the Association of Chinese Geneticists in America and a Member of the Development Committee of the Society for the Study of Reproduction in the US. Besides being a Director of the Board of the Hong Kong Genome Institute, he is also the President of Hong Kong Institution of Science, Council Member of the Shaw Prize Foundation, a Member of the Hospital Authority, and a Specialist for the Hong Kong Council for Accreditation of Academic and Vocational Qualifications.

陳教授為香港中文大學(中大)副校長及李嘉誠生物醫學講座教授。他於1974年在中大化學系一級榮譽畢業，並於1977年在美國佛羅里達大學取得哲學博士。

陳教授於2009年6月創立了中大生物醫學學院，擔任首任院長及生物醫學講座教授，並於2018年8月起出任中大副校長。

陳教授積極參與香港及海外多個專業組織的工作，曾任美洲華人遺傳學會主席及美國生殖學會發展委員會委員。除擔任香港基因組中心董事局成員外，他亦是香港科學會主席、邵逸夫獎理事會成員、醫院管理局非官方成員、香港學術及職業資歷評審局專家等。

The Board
董事局



Ms Ivy CHEUNG Wing-han
張穎嫻女士

Non-official Director
非官方董事

Ms Cheung is the Senior Partner of KPMG Hong Kong. She was the Past President of the Hong Kong Institute of Certified Public Accountants. She currently serves as member of various public service committees, including the Standing Committee on Civil Service Salaries and Conditions of Service, the Standing Commission on Company Law Reform, the Consumer Council Audit Committee and the Transport Advisory Committee. Apart from being a member of the Advisory Committee, the Honorary Advisory Panel and the Inspection Committee of the Accounting and Financial Reporting Council, she is the Director of Hong Kong Cyberport Management Company Limited and Insurance Authority.

Ms Cheung had served as Member of the Air Transport Licensing Authority, the Financial Reporting Review Panel, the Independent Commission on Remuneration for Members of the District Councils of the HKSAR, the Non-local Higher and Professional Education Appeal Board, the Occupational Retirement Schemes Appeal Board, the Securities and Futures Appeals Tribunal and the Standing Committee on Disciplined Services Salaries and Conditions of the Service.

張女士為畢馬威香港區首席合夥人。她是香港會計師公會前會長，目前於多個公共服務委員會擔任委員，其中包括公務員薪俸及服務條件常務委員會、公司法改革常務委員會、消費者委員會審核小組和交通諮詢委員會。張女士亦為會計及財務匯報局諮詢委員會、名譽顧問團及查察委員會成員。她也是香港數碼港管理有限公司及保險業監管局之董事局成員。

張女士以往曾擔任空運牌照局、財務匯報檢討委員團、香港特別行政區區議會議員薪津獨立委員會、非本地高等及專業教育上訴委員會、職業退休計劃上訴委員會、證券及期貨事務上訴審裁處及紀律人員薪俸及服務條件常務委員會委員。



Dr CHUNG Kin-lai
鍾健禮醫生

Non-official Director
非官方董事

Dr Chung is currently the Cluster Chief Executive of New Territories East Cluster of the Hospital Authority (HA). He oversees hospitals and institutions that provide public health care services to residents of Shatin, Tai Po and North District. The cluster also provides tertiary and quaternary services to the entire population of Hong Kong.

鍾醫生現任醫院管理局(醫管局)新界東醫院聯網總監，負責管理為沙田、大埔及北區居民提供公營醫療服務的醫院及醫療機構。另外，新界東聯網亦為全港提供第三層和第四層醫療服務。

Prior to his current appointment, Dr Chung is the Director of Quality and Safety of HA. Under his leadership, the Quality and Safety Division oversees the quality standards, patient safety, clinical incident management, patient relations management, healthcare technology assessment, disasters response and infection control for the public hospitals under HA.

出任現職前，鍾醫生擔任醫管局質素及安全總監，督導該局轄下公立醫院的質素及標準、病人安全、醫療事故管理、病人關係管理、醫療科技評估、災難應變以及感染控制等工作。

Dr Chung is a Specialist in Emergency Medicine. He was the Hospital Chief Executive of North District Hospital from 2016 to 2018, Chief Manager at HA Head Office from 2012 to 2016 and the Hospital Chief Executive of Castle Peak Hospital from 2008 to 2012.

鍾醫生為急症專科醫生，他曾於2016至2018年出任北區醫院的醫院行政總監；2012至2016年任醫管局總辦事處的總行政經理；及於2008至2012年出任青山醫院的醫院行政總監。

(Appointment completed on 28 February 2023)

（任期至2023年2月28日）

The Board
董事局



Professor Nancy IP Yuk-yu, SBS, BBS, MH, JP
葉玉如教授, SBS, BBS, MH, JP

Non-official Director
非官方董事

Professor Ip is currently the President, the Morningside Professor of Life Science and the Director of the State Key Laboratory of Molecular Neuroscience at The Hong Kong University of Science and Technology (HKUST). She received her PhD degree in Pharmacology from Harvard University, after which she held the position of Senior Staff Scientist at Regeneron Pharmaceuticals Inc. in New York. Since joining HKUST in 1993, she has served as the Vice-President for Research and Development, Dean of Science, Director of the Biotechnology Research Institute, and Head of the Department of Biochemistry.

Professor Ip is world-renowned for her significant contributions to the field of neuroscience. Her outstanding research has resulted in more than 328 scientific papers and 70 patents. She has been elected to the Chinese Academy of Sciences, the US National Academy of Sciences, the American Academy of Arts and Sciences, the Hong Kong Academy of Sciences, and received numerous awards and honours including the National Natural Science Awards, the L'OREAL-UNESCO for Women in Science Award and the 10 Science Stars of China by *Nature*. She currently serves as a Member of the Leadership Group of the Davos Alzheimer's Collaborative, and was also an elected Councillor for the Society for Neuroscience and the Senior Editor of the *Journal of Neuroscience*.

(Appointment completed on 4 November 2022)

葉教授現任香港科技大學(科大)校長、晨興生命科學教授，以及分子神經科學國家重點實驗室主任。她在美國哈佛大學獲藥理學博士學位，其後在紐約Regeneron製藥公司擔任高級科學家，並於1993年起受聘於科大，先後出任副校長(研究及發展)、理學院院長、生物技術研究所所長及生物化學系主任。

葉教授是國際知名的神經生物學家，她的研究成果獲得了科學界的廣泛認同，在頂尖國際學術期刊發表了逾328篇論文和綜述，並擁有超過70項國際科技發明專利權。葉教授還當選中國科學院院士、美國國家科學院外籍院士、美國人文與科學院外籍院士、香港科學院創院院士；並獲頒多個國內外重要學術獎項，包括國家自然科學獎、歐萊雅聯合國教科文組織「世界傑出女科學家成就獎」及被《自然》科學雜誌選為中國科學之星。她目前擔任世界經濟論壇「達沃斯 • 阿爾茨海默症協作組織」領導小組成員；亦曾擔任美國神經科學學會理事會成員及《神經科學雜誌》資深編輯。

(任期至2022年11月4日)



Professor LAU Chak-sing, BBS, JP
劉澤星教授, BBS, JP

Non-official Director
非官方董事

Professor Lau is the Dean of Medicine and Chair and Daniel CK Yu Professor in Rheumatology and Clinical Immunology of the Li Ka Shing Faculty of Medicine at the University of Hong Kong (HKUMed).

Professor Lau graduated with MBChB from the University of Dundee in 1985. In 1992, he joined HKUMed as Lecturer in Medicine and successfully rose through the ranks to his current position as Chair and Daniel CK Yu Professor in Rheumatology and Clinical Immunology.

Professor Lau has been a major player in rheumatology in Hong Kong and beyond. Locally, he was President of the Hong Kong Society of Rheumatology (1997-2001) and Founding Chairman of the Hong Kong Arthritis & Rheumatism Foundation (2001). He was also the President of the Hong Kong Academy of Medicine (2016-2020), a statutory body for medical and dental specialist training in Hong Kong which is also a key advisory body to the HKSAR Government on health-related policies. In addition, Professor Lau sits on numerous strategic committees/working groups of the Health Bureau, Hospital Authority and Department of Health.

Regionally, Professor Lau was President of the Asia Pacific League of Rheumatology Associations (APLAR) between 2006 and 2008 and co-founder of the Asia Pacific Lupus Collaboration－a multi-national, multi-centre research collaboration.

Beyond the Asia Pacific region, he was a Member of the Outcomes in Rheumatology (1999-2002), European Alliance of Associations for Rheumatology (EULAR) Task Force on Rheumatoid Arthritis Treatment Recommendations (2019) and EULAR Scientific Committee (2019-2023). Furthermore, he was selected as an Honorary Member of EULAR in 2022, and a member of the Academia Europaea in 2023.

劉教授為香港大學李嘉誠醫學院（港大醫學院）院長、講座教授暨於崇光基金教授（風濕及臨床免疫學）。

劉教授於1985年畢業於英國鄧迪大學內外全科醫學士課程，其後於1992年加入港大醫學院擔任內科學系講師，並晉升至風濕及臨床免疫學主任、講座教授暨於崇光基金教授（風濕及臨床免疫學）。

劉教授是本港以至海外的風濕病學權威，由1997至2001年擔任香港風濕病學學會主席，並於2001年成為香港風濕病基金會創會主席。他亦由2016至2020年擔任香港醫學專科學院主席。該機構是本港醫學及牙醫專科培訓的法定機構，也是香港特別行政區政府在衞生政策上的重要諮詢機構。劉教授同時為醫務衞生局、醫院管理局及衞生署多個策略委員會及工作小組的成員。

在亞太地區，劉教授於2006至2008年間擔任亞太風濕病學協會聯盟主席；並為亞太狼瘡合作組織的共同創辦人，致力促進多地域、多中心的研究合作。

在亞太地區以外，劉教授亦擔任多個專業組織的成員，包括Outcomes in Rheumatology成員（1999至2002年）、歐洲風濕病學協會聯盟（EULAR）類風濕性關節炎治療建議工作小組成員（2019年）及該聯盟科學委員會顧問成員（2019至2023年），並於2022年獲選為該聯盟的榮譽會員。2023年，劉教授獲選歐洲科學院院士。

The Board
董事局



Dr Shawn LEUNG Shui-on
梁瑞安博士

Non-official Director
非官方董事

Dr Leung is the founder, Chairman and Chief Executive Officer of SinoMab BioScience Limited. Currently, he is also a Member of the Biotech Advisory Panel of The Stock Exchange of Hong Kong Limited.

Dr Leung has over 30 years of experience in the field of molecular immunology and therapeutic monoclonal antibodies. He was the first scientist who successfully developed humanised anti-CD22 antibody and introduced the concept of "Functional Humanisation". Dr Leung currently also serves as an Adjunct Professor at The Hong Kong University of Science and Technology, the Army Medical University (formerly known as the Third Military Medical University) and the Air Force Medical University (formerly known as the Fourth Military Medical University) in Mainland China. He held positions as the Executive Director of a leading US antibody-drug conjugate company, the Managing Director of The Hong Kong Institute of Biotechnology Limited, as well as the Adjunct Professor at Fudan University and The Chinese University of Hong Kong (CUHK).

Dr Leung obtained his BSc and MPhil in biochemistry, as well as EMBA from CUHK. He earned his D.Phil. in molecular biology from the University of Oxford in the UK in May 1989. He was also a postdoctoral fellow at Yale University in the US from July 1989 to June 1991.

梁博士為中國抗體製藥有限公司創辦人、主席兼首席執行官，現時亦為香港聯合交易所有限公司生物科技諮詢小組的成員。

梁博士在分子免疫學及治療單克隆抗體領域擁有逾30年經驗，為首位成功開發人源化抗CD22單抗及提出「功能人源化」概念的科學家。梁博士現時為香港科技大學、中國人民解放軍陸軍軍醫大學（前稱中國人民解放軍第三軍醫大學）及中國人民解放軍空軍軍醫大學（前稱中國人民解放軍第四軍醫大學）客座教授。他亦曾任美國免疫醫學公司行政總監、香港生物科技研究院院長，以及復旦大學和香港中文大學（中大）客座教授。

梁博士於中大取得生物化學學士及碩士學位，以及行政工商管理碩士學位。他於1989年5月在英國牛津大學取得分子生物學博士學位後，在1989年7月至1991年6月在美國耶魯大學從事博士後研究。



Dr Isabella LIU Fang-chun
劉芳君博士

Non-official Director
非官方董事

Dr Liu is the Head of Baker McKenzie's Asia Pacific Intellectual Property (IP) and Technology Group. She advises clients on matters relating to the creation, exploitation and protection of IP rights. She is also responsible for the local IP Group's China and Hong Kong patent prosecution matters. Previously, Dr Liu was the Head of the Firm's Asia Pacific Healthcare and Life Sciences Industry Group for three years, leading a team of legal experts in this field across multiple practices in the region.

劉博士是貝克・麥堅時律師事務所亞太智慧財產權和科技業務部的負責人，為客戶提供有關智慧財產權的創建、運用和保護的諮詢服務，並負責在華智慧財產權的專利起訴事務。她的執業領域主要涉及廣泛的知識產權問題，包括專利和商標起訴、智慧財產權許可、技術轉讓、品牌收購以及智慧財產權的行政和民事執法。劉博士也曾擔任事務所亞太醫療保健產業組的負責人三年，領導跨法律專業的團隊在該領域發展，也為醫療保健行業的客戶提供與該行業有關監管問題的建議。

Dr Liu is ranked as a leading lawyer in her field by top legal directories such as *Chambers Asia Pacific* for the Life Sciences category and *IAM Patent*. She has been complimented by clients that she possesses "a superb ability to understand the most complex technologies" and was noted for "advis[ing] in a way that is very commercial and strategic."

在頂級法律目錄（例如《錢伯斯亞太》和《IAMPatent》）中，劉博士被評為該領域的領先律師。客戶稱讚她擁有「理解複雜技術的精湛能力」，並因「以商業化和戰略性的方式提供諮詢」而聞名。

The Board
董事局



Professor Dennis LO Yuk-ming, SBS, JP
盧煜明教授, SBS, JP

Non-official Director
非官方董事

Professor Lo is the Li Ka Shing Professor of Medicine of The Chinese University of Hong Kong. His research interests focus on the biology and diagnostic applications of cell-free nucleic acids in plasma. In particular, he discovered the presence of cell-free fetal DNA in maternal plasma in 1997 and has since then been pioneering non-invasive prenatal diagnosis using this technology. This technology has been adopted globally and has created a paradigm in prenatal medicine. He has also made many innovations using circulating nucleic acids for cancer detection, including the screening of early stage nasopharyngeal cancer.

In recognition of his research, Professor Lo has been elected as Fellow of the Royal Society, Foreign Associate of the US National Academy of Sciences, Fellow of The World Academy of Sciences (TWAS) and Founding Member of the Academy of Sciences of Hong Kong. He has won numerous awards, including the 2014 King Faisal International Prize in Medicine, the 2016 Future Science Prize in Life Science, the 2019 Fudan-Zhongzhi Science Award, the 2021 Breakthrough Prize in Life Sciences, the 2021 Royal Medal, the 2021 ESHG Mendel Award, the 2022 ISPD Pioneer Award and the 2022 Lasker~DeBakey Clinical Medical Research Award.

盧教授現任香港中文大學醫學院李嘉誠醫學講座教授，其重點研究集中於血漿內游離DNA的生物學及診斷應用。於1997年，盧教授成為第一位發表有關孕婦血漿內發現胎兒游離DNA之研究的科學家，自此他一直處於這個嶄新研究領域的最前線。有關技術已被全球廣泛應用，並成為了產前胎兒醫學的範例。盧教授亦利用血漿游離核酸就癌症檢測作出了開創性的貢獻，特別是對於鼻咽癌的早期發現和監察有重大裨益。

盧教授的研究成果對全球醫學及科學界影響深遠，屢獲國際殊榮，當中包括2014年費薩爾國王國際醫學獎、2016年未來科學大獎生命科學獎、2019年復旦－中植科學獎、2021年科學突破獎－生命科學獎、皇家獎章、歐洲人類遺傳學會孟德爾獎、2022年國際產前診斷學會先鋒獎及拉斯克獎－臨床醫學研究。盧教授亦被選為英國皇家學會院士、美國國家科學院外籍院士，以及香港科學院創院院士。



Professor Alfonso NGAN Hing-wan
顏慶雲教授

Non-official Director
非官方董事

Professor Ngan is currently Kingboard Professor in Materials Engineering and Chair Professor of Materials Science and Engineering at The University of Hong Kong (HKU). He previously held administrative positions including Senior Advisor in the President's Office, Acting Pro-Vice Chancellor (Research), Head of Department of Mechanical Engineering and Associate Dean of Engineering. He obtained his BSc(Eng) degree from HKU in 1989, and PhD from the University of Birmingham in the UK in 1992. After a year of postdoctoral training at the University of Oxford, he joined HKU in 1993, and was promoted through the ranks to Chair Professorship in 2011.

顏教授現為香港大學(港大)建滔材料工程教授及材料科學與工程講座教授。他曾擔任的行政職務包括校長辦公室高級顧問、署理副校長(研究)、機械工程系系主任和工程學院副院長。他於1989年獲港大學士學位、1992年獲英國伯明翰大學博士學位，並在牛津大學從事博士後工作，於1993年加入港大，2011年晉升為講座教授。

Professor Ngan's interests include novel stimuli-responsive materials, material defects and their modelling, and nanomechanics including applications to biological systems. His research-related honours include the Rosenhain Medal from the Institute of Materials, Minerals and Mining in the UK, DSc from the University of Birmingham, Croucher Senior Research Fellowship, International Fellow of the Royal Academy of Engineering (FREng), Fellow of the Hong Kong Academy of Engineering Sciences (FHKEng), and Guanghua Engineering Science and Technology Prize. He is currently Senior Vice President of the Hong Kong Academy of Engineering Sciences, a Trustee of the Croucher Foundation, and is serving on a number of advisory/management boards in the HKSAR Government.

顏教授的研究興趣涵蓋新型刺激響應材料、材料缺陷及其機理，以及納米力學，包括在生物系統中的應用。其研究相關的榮譽包括英國材料、礦物和採礦學會Rosenhain獎章、伯明翰大學理學博士(D.Sc.)、Croucher高級研究員、英國皇家工程院外籍院士(FREng)、香港工程科學院院士(FHKEng)、光華工程科學技術獎等。他目前是香港工程科學院高級副院長及裘槎基金會董事局成員，並在香港特別行政區政府的數個顧問和管理委員會擔任委員。

The Board
董事局



Mr Tim PANG Hung-cheong
彭鴻昌先生

Non-official Director
非官方董事

Mr Pang is a registered social worker dedicated to protecting and advocating patients' rights. He works as Community Organizer in Society for Community Organization. He has been a Member of the Hospital Authority (HA) Review Steering Committee, a Member of the Patient Focus Group of the Hospital Accreditation Project under HA, a Member of the Working Group on Implementation of Modified Referral System for Physiotherapy Services under the Physiotherapists Board, and a Member of the Committee on Promoting Acceptance of People Living with HIV/AIDS under Hong Kong Advisory Council on AIDS.

Mr Pang is now a Member of the Working Group on Oral Health and Dental Care, and a Member of the Working Group on Electronic Health Record Partnership of the Steering Committee on eHealth.

彭先生是一名註冊社工，於香港社區組織協會擔任社區組織幹事，一直致力維護及倡議病人權益。他曾任醫院管理局(醫管局)檢討督導委員會委員、醫管局轄下醫院認證計劃病人焦點小組成員、物理治療師管理委員會轄下實施物理治療服務更新轉介系統的工作小組成員，及香港愛滋病顧問局轄下接納愛滋病者促進委員會委員。

彭先生現為口腔健康及牙科護理工作小組成員，以及醫健通督導委員會轄下電子健康紀錄協作工作小組成員。



Mr Stephen WONG Kai-yi
黃繼兒先生

Non-official Director
非官方董事

Mr Wong is currently a practising barrister, an arbitrator of Shanghai Arbitration Commission and a qualified dispute resolver of Academy of Experts (London). He had graduated from The University of Hong Kong before he was awarded with a Government Legal Scholarship to further his studies and professional training in the United Kingdom. Mr Wong obtained his Master in Laws (Intellectual Property, Marine Business and Insurance, Civil Litigation) from the London School of Economics and Political Science, as well as the qualification of a practising solicitor from the Supreme Court of England and Wales.

黃先生現為香港執業大律師、上海仲裁委仲裁員，以及倫敦專家學院紛爭調解員。於香港大學畢業後，黃先生獲政府法律獎學金往英國深造和接受專業訓練，並考獲倫敦政經學院法學(知識產權、海商、海險、民事訴訟)碩士學位及英國最高法院執業律師資格。

Upon his return to Hong Kong, Mr Wong joined the then Attorney General's Chambers as a Crown Counsel, and assumed various posts including Assistant Director of Public Prosecutions, Head of China Law and Basic Law, Deputy Solicitor-General, Secretary-General of the Law Reform Commission and Privacy Commissioner. Since 2020, he has been a Barrister-at-Law in private practice, focusing on International Public Law, Data and Information Law, Innovation, Communications and Technology, Civil and Commercial Law, Company, Trust and Economic Criminal Law by providing professional legal advice and court advocacy services to local, mainland and overseas public, private and multi-national organisations, as well as small and medium-sized enterprises.

1986年回港後，黃先生加入當時的律政司署擔任檢察官，亦曾任助理刑事檢控專員、內地法律及基本法主管、副律政專員、法改會秘書長、私隱專員等。2020年開始私人執業至今，主要範疇包括國際公法、數據及信息法、創科、民商法、公司、信託及經濟刑法，為本地、內地及海外公營、私營、跨國機構和中小企提供專業法律意見和法庭訟辯服務。

Current community services Mr Wong undertakes include Member of the HKSAR Election Committee (Legal), Director of China Law Society, Expert Member of Shenzhen Municipal Law Compliance Commission, Expert Member of FinTech Committee of Asian Financial Cooperation Association, Adjunct Law Professor of Beijing Normal University, Chairman of the Independent Vetting Committee of Hong Kong Institute of Big Data, Executive Committee Member of Hong Kong International Law Association and Honorary Adviser of Hong Kong Institute of Bankers.

黃先生現任的公職包括香港特區選舉委員會(法律界)選委、中國法學會理事、深圳市依法治市合規專家委、亞洲金融合作協會金融科技專家委、北京師範大學特邀法學教授、香港大數據治理公會獨立審批委主席、香港國際法會執委、香港銀行學會榮譽顧問等。

Mr Wong's publications include two works on Hong Kong Privacy Law (one published in English and the other in Chinese), and chapters on data-related issues in international medical and health journals.

黃先生的著作包括兩本有關香港私隱法的書籍(一本以英文出版，另一本以中文出版)，以及在國際醫護刊物發表與數據有關的文章。

The Board
董事局



Dr Michael WONG Lap-gate
黃立己醫生

Non-official Director
非官方董事

Dr Wong is currently the Director of Quality and Safety of the Hospital Authority (HA). Under his leadership, the Quality and Safety Division oversees the quality standards, patient safety, clinical incident management, patient relations management, healthcare technology assessment, disasters response and infection control for the public hospitals under HA.

Dr Wong is a specialist in haematology & haematological oncology, and has also attained fellowship qualification in pathology. Prior to his current appointment, he has been the Chief Manager (Cluster Performance) in Head Office, Chief Manager of Kowloon West Cluster, Deputy Hospital Chief Executive of the North Lantau Hospital and Deputy Hospital Chief Executive (Operation) of Princess Margaret Hospital.

黃醫生現任醫院管理局(醫管局)質素及安全總監，督導該局轄下公立醫院的質素及標準、病人安全、醫療事故管理、病人關係管理、醫療科技評估、災難應變以及感染控制等工作。

黃醫生是血液及血液腫瘤科專科醫生，並獲得病理科院士資格。他在出任現職前，曾出任總辦事處總行政經理(聯網運作)、九龍西醫院聯網總行政經理、北大嶼山醫院副行政總監及瑪嘉烈醫院副行政總監(運作)。



Professor WONG Yung Hou
王殷厚教授

Non-official Director
非官方董事

Professor Wong is the Dean of Science and Chair Professor of Life Science at The Hong Kong University of Science and Technology (HKUST). He also serves as the Director of the Molecular Neuroscience Center, and as an Associate Director of the Biotechnology Research Institute and the Center for Aging Science at HKUST.

王教授是香港科技大學(科大)的理學院院長兼生命科學講座教授。他同時擔任科大分子神經科學中心主任，以及生物技術研究所副所長和老齡科學研究中心的副主任。

Professor Wong obtained his PhD in Pharmacology from the University of Cambridge and conducted postdoctoral training at the University of California San Francisco. Since joining HKUST, his research has been focused on the delineation of the mechanisms of cell signalling, particularly those involving drug receptors. Professor Wong has integrated his scientific endeavours into drug discovery and development in collaboration with pharmaceutical companies.

王教授在劍橋大學獲得藥理學博士學位，並在加州大學三藩市分校進行博士後培訓。自加入科大以來，其研究主要專注於細胞信號傳導機制的描述，尤其是涉及藥物受體的信號傳導機制。王教授將其科研成果融入到與製藥公司合作的藥物開發中。

As an accomplished researcher, he has published over 220 scientific articles and received a number of awards, including the Croucher Senior Research Fellowship and the Medal of Honor. Over the years, Professor Wong had served as a member of the Medical Council of Hong Kong, the Consumer Council of Hong Kong, and the Research Grants Council of Hong Kong (Biology and Medicine Panel).

作為一名卓有成就的研究人員，王教授發表了220多篇科學文章，並獲得了多項獎項，包括裘槎高級研究獎和榮譽勳章。多年來，王教授曾擔任香港醫務委員會、香港消費者委員會和香港研究資助局(生物及醫學委員會)的成員。

He is currently serving on the Sir Edward Youde Memorial Fund Council and the Advisory Board of Hong Kong Life Sciences Society. Professor Wong is also a consultant for The Hong Kong Science and Technology Parks Corporation, multinational companies, and local secondary schools to promote biotechnology.

王教授目前服務於尤德爵士紀念基金理事會和香港生命科學學會顧問委員會，亦為香港科技園公司、跨國公司及本地中學推廣生物科技的顧問。

The Board
董事局



Professor YIP Shea-ping
葉社平教授

Non-official Director
非官方董事

Professor Yip has been the Head of the Department of Health Technology and Informatics at The Hong Kong Polytechnic University since 2016. He is also the Chair Professor of Diagnostic Science and Molecular Genetics. He is a medical laboratory technologist and a human geneticist by training. He obtained his PhD in human genetics from University College London in 1997.

After working for 10 years in the Pathology Department of United Christian Hospital in Hong Kong, Professor Yip joined the then Hong Kong Polytechnic in 1990 and has since been dedicated to the medical laboratory science education. His research interests focus on the genetics and genomics of complex diseases such as shortsightedness. He is also interested in molecular diagnostics and keen to transfer developed novel technologies to relevant healthcare and testing industries for widespread frontline use.

Currently, Professor Yip is a member of the Research Council, and a member of Supplementary Medical Professions Council under the Health Bureau of the Government of the Hong Kong Special Administrative Region. He is also one of the founders and council members of the Hong Kong Society for Molecular Diagnostic Sciences.

葉教授自2016年起出任香港理工大學(理大)醫療科技及資訊學系系主任，他亦是理大診斷科學及分子遺傳學講座教授。葉教授是專業醫務化驗師和人類遺傳學家。他於1997年在倫敦大學學院取得人類遺傳學哲學博士學位。

葉教授曾在香港基督教聯合醫院病理科工作10年，其後於1990年加入理大前身香港理工學院，一直致力於醫療化驗科學的教育工作。葉教授的研究涵蓋複雜疾病所涉及的遺傳學和基因組學，例如近視的成因。葉教授對分子診斷的研究亦深感興趣，熱衷於將嶄新研發的技術轉移到相關醫療護理領域和測試行業，並進行產業測試，冀能於前線廣泛應用。

葉教授現為香港特區政府醫務衞生局研究局成員和輔助醫療業管理局成員。他亦是香港分子生物診斷學會創辦人之一及其會董會成員。



Professor YIU Siu-ming
姚兆明教授

Non-official Director
非官方董事

Professor Yiu is currently a professor and the Deputy Head at the Department of Computer Science of The University of Hong Kong (HKU). He is also the Director of the Department's FinTech and Blockchain Laboratory and the Deputy Executive Director of HKU-Standard Chartered Hong Kong FinTech Academy. He was selected three times by Clarivate Analytics as one of the Highly Cited Researchers in the world in 2016, 2017 and 2019, and one of the top 1% researchers in HKU for 11 consecutive years (2011-2021).

Professor Yiu's research areas include bioinformatics, cybersecurity, privacy technology, and FinTech. In the areas of bioinformatics, he served as the conference chair in Hong Kong for RECOMB 2017, one of the flagship conferences in the field and as the area programme chair for other prestigious bioinformatics conferences such as ISMB. In addition to academic research, Professor Yiu has been a consultant to various companies in the areas of cybersecurity and data privacy.

姚教授現任香港大學(港大)計算機科學系教授、副系主任及金融科技區塊鏈實驗室主任，同時為港大－渣打香港150週年慈善基金金融科技學院副行政總監。他曾於2016、2017和2019年獲Clarivate Analytics評為全球最廣獲徵引的研究人員之一，亦是港大連續11年(2011-2021年)排名前1%的研究人員之一。

姚教授的研究領域包括生物信息學、安全和密碼學以及金融科技。在生物信息學方面，他曾主持著名旗艦會議RECOMB 2017。除科研外，姚教授亦為不同企業擔任金融技術和網絡安全領域的顧問。

The Board
董事局



Dr Libby LEE Ha-yun, JP
李夏茵醫生, JP

Official Director
官方董事

Dr Lee is the Under Secretary for Health. Her major duties include assisting the Secretary for Health in the setting of public health policy objectives and priorities, handling Legislative Council business and strengthening the working relationship with Legislative Council, as well as engaging and liaising with all stakeholders to explain and solicit support for government policies and decisions.

Dr Lee was the Commissioner for Primary Healthcare of the Health Bureau. She joined the executive team of the Hospital Authority in 2008 and was promoted to Director of Strategy and Planning in 2016. Dr Lee has served on various professional bodies including as Council Member for the Hong Kong College of Community Medicine and the Hong Kong College of Anaesthesiologists.

Dr Lee holds a medical degree and a master's degree in public health from The University of Hong Kong as well as a number of professional qualifications. She is trained as an anaesthesiologist and a practitioner in administrative medicine.

李醫生為醫務衞生局副局長，主要職責包括協助醫務衞生局局長訂定公共衞生政策的目標和優次；處理立法會事務和加強與立法會的工作關係；以及與各持份者溝通聯繫，以解釋政府的政策和決定，並爭取他們的支持。

李醫生曾任醫務衞生局基層醫療健康專員。她於2008年加入醫院管理局行政管理團隊，2016年晉升為策略發展總監。她曾為多個專業組織服務，如擔任香港社會醫學學院及香港麻醉科醫學院委員會成員。

李醫生畢業於香港大學醫學院，亦為香港大學公共衞生碩士，同時擁有多項專業資歷，包括香港麻醉科醫學院及香港社會醫學學院（行政醫學）專業資格。



Mr Kevin CHOI, JP
蔡傑銘先生, JP

Official Director
官方董事

Mr Choi served as the Deputy Secretary for Health from 2020 to 2023, and was responsible for formulation of policies on medical services and healthcare system and infrastructure, including matters relating to public health, prevention of communicable diseases, operation and development of public and private hospitals, healthcare financing (including Voluntary Health Insurance Scheme), research and health data as well as genomic medicine development.

Prior to the above appointment, Mr Choi was the Deputy Secretary for Transport and Housing (Transport) from 2017 to 2020, and the Deputy Director-General of Civil Aviation from 2016 to 2017.

(Appointment completed on 5 February 2023)

蔡先生於2020至2023年出任醫務衞生局副秘書長，負責制定醫療服務與醫療衞生系統及基建的政策，涵蓋公共衞生、預防傳染病、公營及私營醫院服務和發展、醫療融資（包括自願醫保計劃）、研究及醫療衞生數據、以及基因組醫學發展等。

出任上述職位前，蔡先生曾於2017至2020年出任運輸及房屋局副秘書長（運輸）；2016至2017年出任民航處副處長。

（任期至2023年2月5日）

The Board
董事局



Mr Sam HUI Chark-shum, JP
許澤森先生, JP

Official Director
官方董事

Mr Hui is currently the Deputy Secretary for Health, responsible for formulation of policies on medical services and healthcare system and infrastructure, including matters relating to public health, prevention of communicable diseases, operation and development of public and private hospitals, healthcare financing (including Voluntary Health Insurance Scheme), research and health data as well as genomic medicine development.

Prior to this appointment, Mr Hui was the Deputy Representative of the Hong Kong Economic and Trade Office in Brussels from 2016 to 2020, and the Deputy Secretary for Financial Services and the Treasury (Financial Services) from 2020 to 2023.

許先生現為醫務衞生局副秘書長，負責制定醫療服務與醫療衞生系統及基建的政策，涵蓋公共衞生、預防傳染病、公營及私營醫院服務和發展、醫療融資（包括自願醫保計劃）、研究及醫療衞生數據、以及基因組醫學發展等。

出任現職前，許先生曾於2016至2020年出任香港駐布魯塞爾經濟貿易辦事處副代表；2020至2023年出任財經事務及庫務局副秘書長（財經事務）。



Dr Teresa LI Mun-pik, JP
李敏碧醫生, JP

Official Director
官方董事

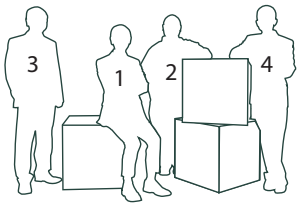
Dr Li is a specialist in Public Health Medicine and currently the Deputy Director of Health. She oversees areas related to health services and administration including elderly health, family and student health, specialised services, administration and policy, finance, health administration and planning, and health information and technology.

李醫生是公共衞生醫學專科醫生，現任衞生署副署長，專責管理與衞生服務及行政相關的範疇，當中包括長者健康服務、家庭及學生健康服務、專科服務、行政及政策、財務、衞生行政及策劃，以及衞生資訊與科技的工作。

Management Team
管理團隊



1 Dr LO Su-vui 羅思偉醫生
2 Dr Brian CHUNG Hon-yin 鍾侃言醫生
3 Mr Richard TSE Kin-pang 謝建朋先生
4 Professor Ken SUNG Wing-kin 宋永健教授



Dr LO Su-vui 羅思偉醫生

Chief Executive Officer 行政總裁

MB Bch (Wales), FHKCCM, FHKAM (Community Medicine), FFPHM, MRCP (UK), FRACMA

英國威爾斯大學內外全科醫學士、香港社會醫學學院院士、香港醫學專科學院院士(社會醫學)、
英國皇家內科醫學院公共衞生醫學科院士、英國皇家內科醫學院院士、澳洲皇家醫務行政學院院士

Dr Lo leads the Hong Kong Genome Institute in its formulation of strategies and development plans. With the aspiration to benefit the wider community, Dr Lo drives the team to propel clinical application of genomic medicine and its long-term development in Hong Kong.

Dr Lo is a seasoned professional in public health and administrative medicine. Having held a number of senior positions both locally and overseas, Dr Lo brings with him a strong blend of experience in corporate affairs, strategic planning, talent development, research and so on. Prior to his current role, Dr Lo had served in the Hospital Authority (HA) for over 20 years during which he had held various senior management positions, including Director of Strategy and Planning in the HA Head Office and Cluster Chief Executive of the New Territories East Cluster.

羅醫生領導香港基因組中心制訂發展策略，帶領團隊推動基因組醫學在香港的臨床應用及長遠發展，實現為社會大眾帶來裨益的願景。

羅醫生為資深公共衞生及行政醫學專業人員，先後於本地及海外擔任不同要職，在機構事務、發展規劃、人才培育及調查研究等範疇均具豐富經驗。出任現職前，羅醫生於醫院管理局(醫管局)服務逾20年，曾擔任不同管理要職，包括醫管局總辦事處策略發展總監及新界東醫院聯網總監。

Dr Brian CHUNG Hon-yin 鍾侃言醫生

Chief Scientific Officer 首席科學總監

MBBS (Hons, HKU), MSc (Genomics and Bioinformatics, CUHK), MD (HKU), DCH (Ireland), MRCPCH (UK), FHKAM (Paediatrics), FRCPCH (UK), FCCMG (Clinical Genetics, Canada)

香港大學內外全科醫學士(榮譽畢業)、香港中文大學基因組學及生物信息學碩士、香港大學醫學博士、愛爾蘭皇家醫學院兒科文憑、英國皇家兒科醫學院院員、香港醫學專科學院院士(兒科)、英國皇家兒科醫學院榮授院士、加拿大醫學遺傳學專科學院院士

Dr Chung manages the scientific and clinical matters of the Hong Kong Genome Institute. He supervises the genomic laboratory and works closely with Partnering Centres to promote genomic medicine.

鍾醫生管理香港基因組中心的科學及醫學事務，監督基因組實驗室的運作，並與夥伴中心緊密合作，推動基因組醫學的發展。

Dr Chung was trained in Hong Kong and Canada, specialising in Paediatrics and Clinical Genetics. He was a founding fellow of the subspecialty of Genetics & Genomics (Paediatrics) of Hong Kong Academy of Medicine (HKAM) and was also actively involved in the drafting of respective postgraduate curriculum. With his excellence in research and teaching, Dr Chung has received a number of awards and honours over the years. He is active in international collaborations and is currently the President of the Asia Pacific Society of Human Genetics.

鍾醫生在香港及加拿大完成專科訓練，專注於兒科及臨床遺傳學科，曾協助香港醫學專科學院成立遺傳學及基因組學專科(兒科)，及草擬相關研究生課程。他在研究及教學方面亦屢獲殊榮，並活躍於業界事務，現為亞太人類遺傳學會主席。

Mr Richard TSE Kin-pang 謝建朋先生

Chief Administrative Officer 首席行政總監

FCPA, FCA (Aus), FCG, HKFCG 香港會計師公會資深會員、澳洲資深特許會計師、特許秘書及公司治理師

Mr Tse oversees corporate services and external affairs of the Hong Kong Genome Institute to enhance its corporate governance and operational efficiency, while raising public awareness on genomic medicine.

謝先生負責管理香港基因組中心的行政及對外事務，並專責持續優化企業管治及營運效益，深化市民大眾對基因組醫學的認識。

Mr Tse has extensive experience in administration and finance, spanning financial and operations management, corporate services and governance. He held various senior management positions in established public bodies and multi-national corporations, including the Chief Financial Officer of the West Kowloon Cultural District Authority. Mr Tse is also active in professional and community services. Currently, he serves as a member of Branding and Communication Committee of the Hong Kong Institute of Certified Public Accountants.

謝先生為資深行政及財務專業人員，在財務及營運管理、機構事務和公司管治等方面擁有豐富經驗。他曾於多間大型公營機構及跨國企業出任管理要職，包括西九文化區管理局首席財務總監。謝先生亦積極參與專業和社會服務，現為香港會計師公會推廣及傳訊委員會成員。

Professor Ken SUNG Wing-kin 宋永健教授

Honorary Chief Bioinformatics Officer 榮譽生物信息總監

Ph.D. (Computer Science, HKU) 香港大學計算機科學博士

Professor Sung oversees the bioinformatics analysis and data management for Hong Kong Genome Institute to support clinical use. He also supervises the design and implementation of the data platform of Hong Kong Genome Project to facilitate research, while ensuring data privacy and security.

宋教授負責香港基因組中心的生物信息分析及數據管理，支援臨床應用，並帶領團隊設計及推行香港基因組計劃專用的數據平台，確保數據安全，促進相關研究發展。

Professor Sung is an expert in the field of bioinformatics. He was a Professor in the Department of Computer Science at the National University of Singapore and was a senior group leader at the Genome Institute of Singapore. He is also a Global Stem Professor in the Department of Chemical Pathology, The Chinese University of Hong Kong. His recent research focuses on understanding the relationship between mutations (in particular, structural variations) and diseases.

宋教授為生物信息學領域專家，曾出任新加坡國立大學計算機科學系教授，及新加坡基因組研究院高級組長。他亦為香港中文大學化學病理學系「傑出創科學人計劃」教授，新近研究以了解基因突變(特別是結構變異)與疾病之間的關係為重點。

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主要往來銀行

中國銀行（香港）有限公司

法律顧問

何韋律師行

公司秘書

何韋律師行

Chairperson's Statement
主席報告



Chairperson's Statement
主席報告

It is a great honour for me to present to you the 2022-23 Annual Report of the Hong Kong Genome Institute (HKGI). Following a successful first year of full operations, we are ready to celebrate another year of outstanding achievements in our quest to advance the development of genomic medicine in Hong Kong, all thanks to the tremendous support of our patients, partners and stakeholders.

Genomic medicine is at the frontier of science. It is an inter-disciplinary specialty that informs, personalises and improves healthcare with reference to an individual's unique genomic information. By understanding a person's complete set of DNA, i.e. genome, and how it can affect one's health, scientists and clinicians will be able to make more precise diagnoses and provide more tailor-made treatments and prevention plans to patients. Instead of a one-size-fits-all approach, the clinical application of genomic medicine opens up new therapeutic possibilities and offers hope to many. This vast potential of genomic medicine in transforming healthcare services has continued to inspire and guide us in all aspects of work throughout the year.

我非常榮幸，在此與大家分享香港基因組中心（基因組中心）2022-23年報。繼首年運作奠下穩固根基後，團隊在病人、合作夥伴及各界持份者鼎力支持下，於過去一年繼續承先啟後，就推動本港基因組醫學發展取得了豐碩成果。

基因組醫學立足科學前沿，是一門跨學科專業，藉着剖析每人身體內獨一無二的基因組訊息，深入了解病症，從而優化醫療診斷及實現個人化治療。透過了解一個人的整套DNA排序（即基因組），以及它如何影響個人健康，科學家和醫生便可為病人作出更精準的診斷，亦可為他們度身制訂治療及預防疾病的方案。有別於一體適用（以劃一通用方案治療疾病）的做法，基因組醫學在臨床應用方面更能對症下藥，開拓更多可能，為患者帶來希望。基因組醫學深具潛力，足以革新醫療服務，我們在推展各項工作時亦深受啟發，精益求精。





Delivering on the HKGI Vision with Robust Corporate Governance

First and foremost, being a government-owned organisation charged with the vision to "avail genomic medicine to all for better health and well-being", maintaining robust corporate governance has never been more important to HKGI. In this regard, we take much pride in HKGI's strong commitment to uphold rigorous standards of corporate governance, staying true to our purposes and delivering on our vision.

During the year, observing stringent governing principles, we signed an updated Memorandum of Administrative Arrangements with the HKSAR Government to reinforce each other's roles and responsibilities regarding HKGI's development and operations. Visits and meetings involving senior government officials, including the Secretary for Health, the Permanent Secretary for Health and the Under Secretary for Health, were also hosted to update the Bureau on HKGI's latest accomplishments and work progress, ensuring HKGI's efforts aligned with the government's policy priorities in promoting public health.

穩健管治　實踐願景

作為特區政府成立及全資擁有的機構，基因組中心肩負着「普及基因組醫學，共享健康福樂」的重大使命。為此，維持穩健的企業管治一直是我們的核心要務。過去一年，團隊繼續克盡己職，致力維持最高水平的企業管治，為實現願景竭盡所能。

年內，基因組中心秉持嚴謹管治方針，與特區政府簽訂了更新版的《行政安排備忘錄》，進一步確立雙方在基因組中心的發展及營運方面所擔當的角色和職責。此外，我們亦舉辦了多場參觀活動和會議，接待到訪的政府高層官員，其中包括醫務衞生局局長、常任秘書長及副局長，向他們匯報基因組中心的工作進度及成果，確保機構的工作重點配合政府推動公共衞生的政策優次。

Chairperson's Statement
主席報告

HKGI had made impressive strides during the year in fostering the integration of genomics into medicine. Topping the list must be the fruitful completion of the HKGP pilot phase and the commencement of the main phase, which marked a milestone in the development of genomic medicine in Hong Kong.

基因組中心在加快融合基因組醫學與臨床應用方面，工作成果顯著。年內眾多成就中，讓我們最引以為傲的，必定是成功完成基因組計劃的先導階段，並順利展開主階段，為香港基因組醫學發展寫下了重要一頁。



At the board level, with the unwavering support of the HKSAR Government, the HKGI Board and committees comprise an exceptional roll call of world-leading biomedical scientists, clinical professionals, data scientists, bioinformaticians, legal experts, patient representatives, accountants and public educationalists. To further the diversity and address HKGI's operational needs, four new members specialising in data privacy, molecular neuroscience, medical laboratory science as well as administrative medicine were appointed to the Board by the government. Board members, together with existing and newly appointed experts and industry veterans across the six committees, continued to monitor and advise HKGI on a wide range of topics regarding corporate development and implementation of the Hong Kong Genome Project (HKGP).

Over the past year, more than 15 Board and committee meetings were held to lead HKGI on strategic development, scientific and ethical matters, data security and management, financial and administrative planning, audit and risk control, as well as communication and education. The remarkable time and effort members contributed can hardly be replicated anywhere and at our pace. Their strong commitment ensured HKGI's work progressed well and fitted for purposes.

就董事局的運作而言，有賴特區政府全力支持，基因組中心的董事局及各委員會雲集了各界翹楚，成員包括國際知名生物醫學科學家、臨床醫療專家、數據科學家、生物信息學家、律師、病人組織代表、會計師及公共傳訊專家等。為了使董事局的組成更多元化，進一步配合基因組中心營運所需，特區政府於年內亦為董事局委任了四名新成員，包括來自數據私隱、分子神經科學、醫療化驗科學及行政醫學的專家。董事局及六個委員會將持續監察基因組中心的運作，就機構發展和推行香港基因組計劃（基因組計劃）等議題給予寶貴意見和指導。

過去一年，董事局及各委員會召開了超過15次會議，就策略發展、科學及倫理事務、數據安全與管理、財務及行政策劃、審計與風險管理，以及傳訊教育等不同範疇建言獻策。

Leading Hong Kong into the Era of Genomic Medicine

Buttressed by sound and solid corporate governance, HKGI had made impressive strides during the year in fostering the integration of genomics into medicine. Topping the list must be the fruitful completion of the HKGP pilot phase and the commencement of the main phase, which marked a milestone in the development of genomic medicine in Hong Kong.

HKGP is the first-of-its-kind whole genome sequencing initiative in Hong Kong set up with bold ambitions. Launching the Project requires a holistic approach, long-term effort and close work with stakeholders. To start with, the pilot phase was rolled out with a focus on undiagnosed diseases and hereditary cancers. Despite the challenges, the HKGI team completed it with flying colours – achieved the target of recruiting 5,000 participants by mid-2022; established essential infrastructure, protocols, talent pool and much more, all from scratch; and raised awareness among patients, biomedical professionals and the public with impressive patient outcomes.

Following the successful completion of the pilot phase, the main phase was kick-started smoothly in July 2022 with scopes expanded to cover cases related to genomics and precision health, thus including more common disorders such as diabetes, heart and renal diseases. This turned a new page in healthcare services in Hong Kong by allowing wider clinical applications of genomic medicine for more patients.

These were all accomplished through partnership and collaborations – with devoted colleagues from the Department of Health, Hospital Authority, Partnering Centres and the medical schools of the two top-notch universities in Hong Kong. There is no doubt that, by sharing the same HKGI vision, these esteemed partners of ours will continue to play a vital role in the main phase, bringing hope and life-changing impact to even more people who need them the most.

引領香港　邁步基因組醫學新時代

在健全穩固的企業管治下，基因組中心在加快融合基因組醫學與臨床應用方面，工作成果顯著。年內眾多成就中，讓我們最引以為傲的，必定是成功完成基因組計劃的先導階段，並順利展開主階段，為香港基因組醫學發展寫下了重要一頁。

基因組計劃是本港首個全基因組測序項目，關係到醫療服務長遠發展及大眾健康；要取得成功，必須思慮周全，與持份者緊密合作，篤力前行。我們深感任重道遠，制訂了周詳策略，於先導階段先聚焦未能確診病症和與遺傳有關的癌症。團隊一切從零開始，即使過程挑戰重重，同事們仍然堅持不懈並取得驕人成績：達成了於2022年年中招募5,000名參加者的目標，並建立了發展基因組醫學所需的基礎設施、規程及人才庫等，透過臨床應用和實例印證治療成效，大大提升了病人、生物醫學專業人員及公眾對基因組醫學的了解和認同。

先導階段圓滿結束後，團隊隨即於2022年7月順利開展主階段，擴大計劃範圍至與基因組學和精準醫學相關的個案，以此涵蓋更多常見疾病如糖尿病、心臟病和腎病。我們積極透過普及基因組醫學的臨床應用，惠及更多病人，為本港醫療服務開創新篇。

基因組中心能夠取得上述佳績，社會各方的支持和通力合作是成功關鍵，當中不可或缺的包括衞生署、醫院管理局、夥伴中心，以及本港兩所頂尖大學醫學院。各合作夥伴均充滿熱誠幹勁，與基因組中心信念一致，將繼續於計劃主階段擔當重要角色，與我們一起為更多病人和家屬燃點希望，為他們的生命帶來改變。

Chairperson's Statement
主席報告

Collaboration as the Key to Success

The collaborative spirit did not stop at the implementation of the Project. In 2022-23, partnership with professional bodies was our calling card to take the development of genomic medicine in Hong Kong to the next level, especially in terms of advancing research and nurturing talent.

Highlights of the year include the close ties fostered with the Hong Kong Academy of Medicine (HKAM), and the Hong Kong College of Physicians (HKCP). Notable collaborations with HKAM include the hosting of the Genomic Medicine Symposium which brought together international and local experts to exchange views on research, training and applications of genomic medicine, and the launch of the "HKAM-HKGI Research Excellence Grants in Genomic Medicine" that aimed to attract more young clinicians to take part in genetics and genomics research. To further deepen HKGI's efforts in driving genomic research and talent development, the "HKCP-HKGI Overseas Training Scholarship and Training Grant for Excellence in Genomic Medicine" was rolled out with HKCP to support the continuous development and education of medical professionals.

協同創效　成功關鍵

我們重視連繫各界，協作共贏的精神，不止體現於推行基因組計劃上。在2022-23年度，基因組中心積極與不同專業團體建立合作關係，攜手並進，尤其在促進科研和培育人才方面，繼續引領本港基因組醫學發展更上層樓。

就此而言，我們非常榮幸於年內與香港醫學專科學院（醫專），以及香港內科醫學院建立了緊密聯繫。重點項目包括與醫專合辦了「基因組醫學研討會」，匯聚了國際及本地專家，就基因組醫學的研究、培訓及臨床應用等多方面交流意見。此外，我們亦與醫專合作設立了「基因組醫學卓越研究獎」，藉此吸引更多年青醫生參與遺傳學和基因組學的研究。為了進一步推動基因組研究及培育相關專業人才，我們與香港內科醫學院共同推出「基因組醫學卓越海外培訓獎學金及助學金」，鼓勵醫療專業人員在相關範疇持續發展及進修。





Inspiring the Next Generation

While promoting genomic medicine among the biomedical sectors formed a crucial part of HKGI's work over the past year, inspiring our next generation also carried weight. The team's effort to collaborate and nurture young talent was amplified by the strengthened relationship with the medical schools. Academic scholarship and prizes were set up with the Faculty of Medicine of The Chinese University of Hong Kong (CUHK) to inspire study and career in genetics and genomics. Similar initiatives will also be launched with The University of Hong Kong (HKU) in the coming year.

We understand our success tomorrow starts with the talent of today and, in doing so, sustainable and concerted efforts are mandatory. To achieve greatness, developing young talent and healthcare professionals alike through ongoing partnership and engagement will for sure stay on top of HKGI's agenda.

培育人才　啟發後學

除了廣泛接觸業界，我們同樣重視啟發年輕一代。在過去一年，團隊透過加強與大學醫學院合作，積極培育年青人才，包括與香港中文大學(中大)醫學院設立獎學金，鼓勵學生修讀和研究遺傳學及基因組學，並投身相關領域。未來一年，基因組中心亦將與香港大學(港大)推出類似項目。

我們深明人才是成功的必要元素，需要全面和長遠規劃。為此，我們將繼續與不同夥伴合作，凝聚力量，以培育年青人才和醫療專業人員為團隊的重點工作。

Chairperson's Statement
主席報告

Venturing to the Next Milestones

2022-23 is only the second year of full operations for HKGI. Although still at its inception stage, especially during the time when our city was hard hit by the pandemic, by embracing the ethos of collaboration we see our efforts coming to fruition. With the solid foundation laid down and the synergies created, we steer active patient engagement, lead novel discoveries and case applications that showcase the significance of genomic medicine, and inspire talent of today and tomorrow with the changes this new sphere of specialty brings to people's lives.

We could not have achieved all these remarkable milestones without the unstinting support of our stakeholders, including first and foremost, the patients and their families. I am grateful for their valuable trust in HKGI along the way to bring genomic medicine closer to everyone in Hong Kong.

團結一致　再創高峰

2022-23年度是基因組中心全面投入運作的第二年，機構仍處於起步階段，加上期間香港新冠疫情嚴峻，工作難免受影響。儘管如此，團隊以堅定剛毅的精神，將困難和挑戰化為亮麗成果。憑着堅實基礎和協同效益，我們成功帶動病人積極參與計劃，引領醫學新知，以臨床應用展現基因組醫學的巨大潛力，透過這門嶄新的專業改變生命，吸納人才，啟迪未來。

基因組中心能夠創下一個又一個里程碑，實有賴各界持份者傾力支持，尤其是病人及家屬。我衷心感謝他們對基因組中心的信任，助我們將基因組醫學的好處，帶給更多香港市民。



My sincere gratitude goes to colleagues from the Health Bureau, Department of Health, Hospital Authority, Partnering Centres, the medical schools of CUHK and HKU, healthcare professionals and researchers, for their unwavering support and incredible efforts, for sharing our vision and passion along this exciting journey to make genomic medicine a reality for Hong Kong.

I would also like to express my gratefulness to the professional bodies with whom we have the privilege to partner, and to promote genomic medicine across the professional and the wider communities.

My heartfelt thanks must also go to our committed Board and committee members for their staunch support and wise counsel. The management team and all HKGI staff members deserve endless gratitude for their dedicated professionalism, perseverance and unfailing teamwork.

By forging ahead as one, let us work together to leverage the benefits of genomic medicine, improve the well-being of the people of Hong Kong, make genomic discoveries, promote genomic diversity and enrich genomic medicine for the rest of the world.

Determination and purpose are key. With shared goals, passionate teams and willing partners, I have full confidence that we will be able to ascend to new heights in the years to come.



Philip TSAI Wing-chung, BBS, JP
Chairperson

我亦在此向醫務衞生局、衞生署、醫院管理局、夥伴中心、中大及港大醫學院、醫療專業人員及研究員致以由衷謝意。感謝大家全力支持、不懈努力，懷抱共同願景和熱誠，在這段令人振奮的旅途上與我們並肩前行，致力讓基因組醫學扎根香港，普及發展。

過去一年能夠與眾多專業團體合作，我們深感榮幸，感謝大家與我們攜手推廣基因組醫學，加深不同專業和市民大眾對這個嶄新領域的認識。

我亦在此向董事局及各委員會成員送上摯誠謝意，感謝大家寶貴的指導和支持。我同樣衷心感謝基因組中心的管理團隊和全體同事，在工作上展現專業、堅毅和團結，表現卓越。

展望未來，讓我們齊心同進，奮力前行，發揮基因組醫學的潛力，讓香港市民共享健康快樂，為基因組學研究帶來突破，推動基因組學多樣化，並為全球基因組醫學發展作出貢獻。

目標明確，堅定不移是邁向成功的不二法門。我深信，憑藉大家同心同德，精誠團結，基因組中心定能繼往開來，再創高峰。



主席
蔡永忠, BBS, JP

Chief Executive Officer's Report
行政總裁報告



This is our second Annual Report ever since HKGI came into full operations two years ago. It gives me immense pleasure to present this Report, sharing with you the breakthroughs we made for the year 2022-23 in accelerating genomic medicine in Hong Kong.

We made many noteworthy achievements this year as a result of tremendous support from our stakeholders, including brave patients and their family members, the Health Bureau, Partnering Centres and many others who have helped us on our vital journey. Together, we shape the future in the spirit of collaboration, just as the theme of this Annual Report underlines – Forging Ahead as One for Better Health.

Transforming Healthcare Services with Genomic Medicine

In 2022-23, we successfully completed the pilot phase of the Hong Kong Genome Project (HKGP) which covered specific themes, undiagnosed diseases and hereditary cancers. We have embarked upon a new challenge since July 2022, moving on to the main phase where the scope is significantly expanded to patient cases related to genomics and precision health.

The addition of this new theme allows us to utilise the power of whole genome sequencing (WGS) by extending the coverage of HKGP to a lot more patients with common diseases, including the likes of leukaemia, epilepsy, brain cancer, congenital heart diseases and many others that could benefit from WGS, shining a light upon patients and families who are suffering from the long search of answers for diagnoses and treatment plans.

To this end, I am incredibly proud to report that, with concerted efforts, we have already supported more than 18,000 participants to date through HKGP since the Project was launched two years ago. This represents a quantum leap in our pursuit of the HKGI vision – availing genomic medicine to all for better health and well-being.

這是香港基因組中心(基因組中心)兩年前全面投入運作後的第二份年報，我很榮幸與大家分享團隊於2022-23年度全力推動香港基因組醫學發展的卓越成就。

過去一年，團隊各方面的工作均取得重大成果。這全賴各界持份者鼎力支持，尤其是勇敢堅毅的病人和家屬、醫務衞生局、夥伴中心，以及與我們信念一致，攜手互勉的業界同仁。大家秉承同心協力的精神，一如本年報的主題——齊心同進，躍變健康未來。

革新醫療　創新里程

首先，我們於2022-23年度成功完成了香港基因組計劃(基因組計劃)的先導階段，涵蓋未能確診病症，以及與遺傳有關的癌症兩個特定主題。於2022年7月，我們順利開展了基因組計劃的主階段，將涵蓋範疇大幅擴展至與基因組學及精準醫學相關的個案。

團隊亦為迎接新挑戰準備就緒，透過為基因組計劃加入新主題，納入更多常見疾病如白血病、癲癇症、腦癌、先天性心臟病，以及其他可受惠於全基因組測序的病患，從而更有效發揮全基因組測序的臨床效益。而最重要的是，讓經年累月尋找病因和治療方法的病人及家屬，看到一線曙光。

基因組計劃推行兩年以來，在各方群策群力下，我們已成功招募逾18,000名參加者，就實現基因組中心「普及基因組醫學，共享健康福樂」的願景邁進了一大步。進度如此理想，我們深受鼓舞。

Chief Executive Officer's Report
行政總裁報告

The Lab That Saves Lives

Augmenting our skills and services is the HKGI Genomic Laboratory. During the year, a number of enhancements had been made to further gear up HKGI's capacity and capability in conducting WGS. With much effort, the laboratory is by far known to be the first and only one in Hong Kong that offers end-to-end WGS services, from sample handling and sequencing to analysis and issuing of reports.

A tremendous resource, the laboratory is also equipped with the most advanced sequencer. It is in fact the first laboratory in the Greater China region to install the NovaSeq X Plus System, the most powerful, state-of-the-art equipment that can sequence 128 samples of DNA within 48 hours, 2.5 times faster than existing models.

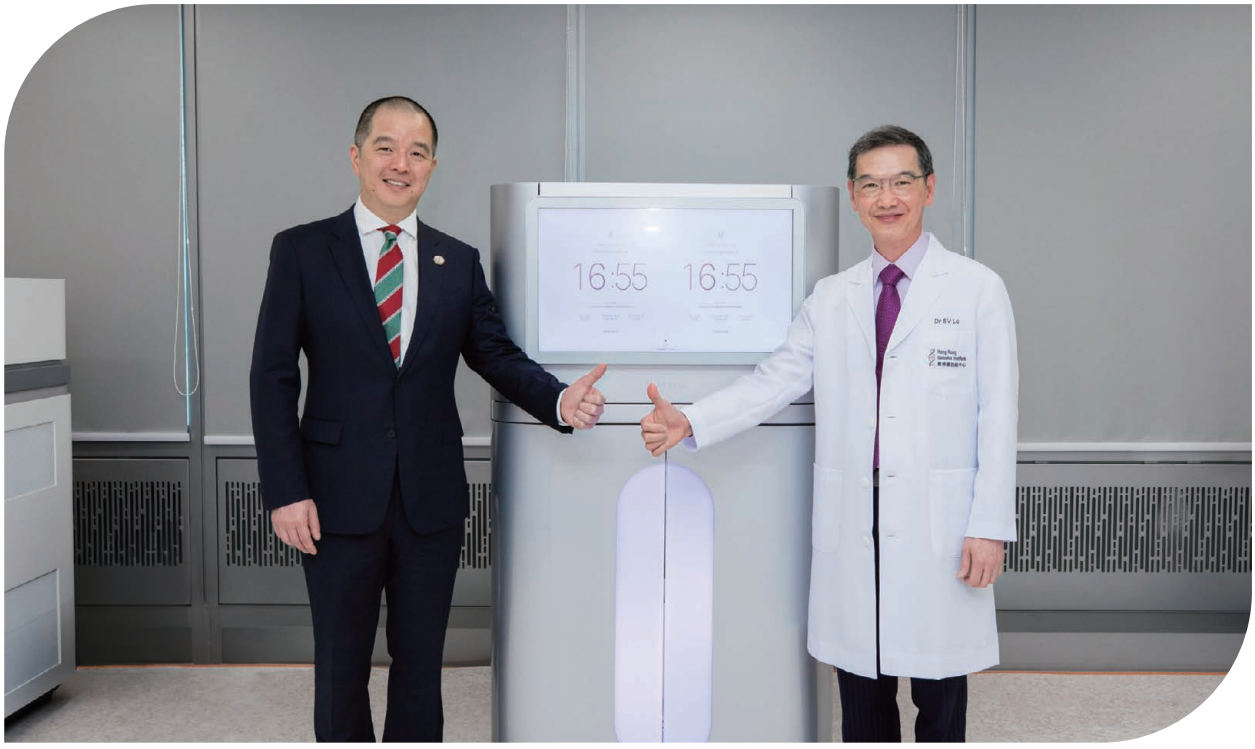
A laboratory is more than just machines – scientists, lab managers, technicians and research assistants all offer dynamic and unique roles within a unidirectional workflow system, meaning procedures are performed in a one-way manner without overlapping, thereby reducing the risk of sample contamination. This robust system guarantees all WGS are conducted with the utmost accuracy and efficiency.

精密測序　護眾弘康

基因組實驗室是團隊實踐願景，落實工作的重要支柱。年內，我們全方位優化實驗室設備和管理，提升了基因組中心進行全基因組測序的能力和質量。在團隊努力不懈下，我們的實驗室已成為全港首間及目前唯一可提供整套全基因組測序服務的實驗室，從處理樣本、進行測序、分析數據以至撰寫報告等程序，均有覆蓋。

此外，實驗室亦配備了市場上性能最強、最先進的測序儀器NovaSeq X Plus System，可於48小時內為128個樣本進行測序，效能較一般標準型號高出2.5倍，是大中華地區首間安裝了如此頂尖設備的實驗室。

要實驗室發揮最高效能，除了硬件設備，更需要一支專業能幹的團隊。因此，基因組中心雲集了科學家、實驗室管理員、技術人員及研究助理等專才。同事們各司其職，為實驗室的運作制訂了穩健可靠的單向工作流程，讓所有程序不會重疊，減低樣本受污染的風險，確保所有全基因組測序均以最嚴謹、精準和高效的方式進行。



We commenced the main phase of the Hong Kong Genome Project in July 2022, expanding the scopes significantly to cases related to genomics and precision health. This allows us to cover more common diseases and offer hope to many who have been in search of diagnoses and treatment plans for years.

我們於2022年7月順利開展了基因組計劃的主階段，將計劃涵蓋的範疇大幅擴展至與基因組學及精準醫學相關個案，藉此納入更多常見疾病，為多年來尋找病因和治療方法的病人及家屬帶來希望。



Research Flourishes from Strong Foundations

With a resilient base, research efforts can blossom, and this year, there is no shortage of landmark achievements. For starters, we are relentless in publishing academic papers, showcasing HKGI's expertise while also contributing to the local and international scientific and medical communities.

During the year, we published several impactful research papers in eminent journals, sharing Hong Kong's experience, insights, discoveries, and breakthroughs in launching HKGP and in applying genetics and genomics to clinical applications. Some of these world-leading journals included the *Rare Disease and Orphan Drugs Journal, Journal of Translational Genetics and Genomics, Nature Communications* and *Genetics in Medicine*. Among them featured the release of HKGI's breakthrough innovation INSurVeyor, the bioinformatics tool developed in-house by the HKGI team with the ability to significantly increase the accuracy of calling structural variations that involve nucleotide insertions in our genome when compared to existing methods.

Our collaborations with Partnering Centres, CUHK and HKU on research for different disease cohorts have continued apace. For instance, a collaborative research project on paediatric leukaemia is underway among HKGI, CUHK and the Prince of Wales Hospital. The findings of this project will help identify the genetic pathway of the disease and facilitate tailor-made case management plans for patients, serving as a leading example for functional genomic research in paediatric leukaemia.

穩固根基　促進科研

有了穩固的根基，科學研究方可茁壯成長。過去一年，我們憑藉首年運作所奠下的基石，於多項研究取得標誌性成果。團隊就不同議題和醫學案例發表學術論文，透過分享經驗和知識，為本地及全球科學和醫學界作出貢獻。

年內，我們在國際權威學術期刊發表了具影響力的研究論文，就推行基因組計劃，以及推動遺傳學和基因組學的臨床應用，總結經驗，闡述見解，分享嶄新發現。這些著名期刊包括*Rare Disease and Orphan Drugs Journal*、*Journal of Translational Genetics and Genomics*、*Nature Communications*和*Genetics in Medicine*等。其中，團隊發表了自行開發的生物信息學工具INSurVeyor。在偵測基因組中特定結構變異時，相較於其他現行方法，此工具能夠顯著提高準確度。

在推動研究方面，我們於年內繼續與夥伴中心、中大及港大緊密合作，就不同疾病進行研究，其中包括與中大及威爾斯親王醫院正在進行的兒童白血病項目。相關研究結果將有助辨識白血病的遺傳路徑，從而為病人量身訂制個人化治療方案，有望在兒童白血病的功能基因組研究方面成為領先範例。

Chief Executive Officer's Report
行政總裁報告

The Pursuit of Top Talent

One can have all the equipment and tools in the world, but will yield no results without the talent to drive research over the line and save lives. That is why talent development, especially engaging colleagues in the biomedical sector, has always stayed on top of our agenda.

Embracing the ethos of collaboration, we have been proactive in joining hands with well-accredited professional bodies to raise awareness among clinicians and healthcare professionals alike on the potential and benefits of genomic medicine. One of the signature events held during the year is the half-day conference "Embracing the Era of Genomic Medicine: Research, Training and Clinical Applications" we co-organised with the Hong Kong Academy of Medicine (HKAM). The event brought together renowned international and local experts to offer insights on genomic medicine, including speakers who flew in from the United Kingdom, Australia, and Singapore. Officiated by the Under Secretary for Health, the event was attended by around 170 participants, and was well received by attendees from physicians and allied healthcare professionals to university students. With HKAM as our close ally, we also launched the "HKAM-HKGI Research Excellence Grants in Genomic Medicine" together to attract young clinicians to take part in genetics and genomics research.

多管齊下　吸納人才

人才是發展基因組醫學的關鍵，欠缺人才的話，即使擁有世上最先進設備，亦無法推動科研和應用，更遑論救治病人。因此，我們一直視培育人才為首要工作，特別致力接觸生物醫學界同儕，加深他們對基因組醫學的認識和肯定。

我們秉持協作共贏的精神，積極與廣受認可的專業團體合作，於年內舉辦了多項活動，讓醫生和不同專職醫護人員更了解基因組醫學的發展潛力和臨床效用。其中的年度盛事包括夥拍香港醫學專科學院（醫專），合辦了「基因組醫學新時代：研究、培訓與臨床應用」專題會議，邀得醫務衞生局副局長出席致辭，並匯聚了本地及來自英國、澳洲和新加坡的著名專家學者分享真知灼見。會議反應熱烈，吸引了約170名醫生、醫療專業人員及大學生等參加。作為醫專緊密合作的夥伴，我們於年內亦攜手推出「基因組醫學卓越研究獎」，藉此吸引年青醫生參與遺傳學及基因組學的研究工作。





Another example of our talent development effort included the collaboration with the Hong Kong College of Physicians (HKCP) for the launch of the "HKCP-HKGI Overseas Training Scholarship and Training Grant for Excellence in Genomic Medicine". Under this initiative, financial assistance and placement opportunities will be provided to genetics and genomics professionals working in public healthcare institutions to support their continuous professional development.

除此之外，我們與香港內科醫學院合作設立「基因組醫學卓越海外培訓獎學金及助學金」，為於公營醫療機構工作的遺傳學和基因組學同儕提供資助及實習機會，支持他們持續進修和發展專業。

The rapid development of genomic medicine has given rise to various new professions in the field, including genetic counsellors who have a crucial role to play in bridging the communications between clinicians, laboratory technicians and patients. In this regard, during the year, one of HKGI's most notable achievements was the official formation of the Hong Kong Genetic Counselling Practice Consortium, promoting the growth of the genetic counselling profession in Hong Kong. It has been a short year, but we have already formulated the scope of practice and code of ethics tailored for Hong Kong concerning the latest international standards and development. I must truly commend all those involved in this significant endeavour.

隨着基因組醫學發展一日千里，各種新興專業相繼蓬勃發展，當中包括遺傳輔導員，他們是醫生、實驗室技術人員和病人之間溝通的重要橋樑。為了推動相關專業發展，我們牽頭成立了「香港遺傳輔導專業發展聯席」。在短短一年間，聯席參照了國際最新標準和發展趨勢，並按本地所需，制訂了遺傳輔導員實務規範及專業倫理守則。這項工作意義重大，我謹向所有參與其中並貢獻良多的業界資深人士表達深深謝意。

Chief Executive Officer's Report
行政總裁報告



Nurturing Talent for Tomorrow

As the Chinese saying goes, it takes ten years to grow a tree, but a hundred years to educate a person. Nurturing talent is indeed a long-term goal that requires continuous efforts. Therefore, apart from focusing on the professional and biomedical sectors, we also place a considerable amount of time and effort into engaging with young talent and university students with visits, lectures, career talks, and internships.

During the year, talks and visits were hosted for undergraduates, post-doctoral students, and researchers from different tertiary institutions, offering invaluable opportunities for the younger generation to gain a better understanding of the latest developments and applications of genomic medicine in Hong Kong, as well as our exciting and meaningful work.

Internships were also arranged for over 15 students from a wide range of disciplines recruited from world-leading local and international academic institutes such as CUHK, HKU and Imperial College London. Tailored to their background and interests, the interns worked alongside our subject experts in the Scientific, Bioinformatics and Administration branches. They assisted in daily operations, partook in research projects and received mentorship from our colleagues.

These endeavours encouraged our best and brightest to explore the dynamic prospects and career opportunities that genomic medicine has to offer. It was extremely gratifying to see that they all found the eye-opening experience at HKGI fruitful and inspiring.

育樹成林　共創明天

古語有云：「十年樹木，百年樹人」。培育人才是長遠目標，必須仔細規劃，持之以恆，方見成效。有見及此，除了生物醫學界的專業人員外，我們亦投入了大量時間和資源，廣泛接觸年青人和大學生，透過舉辦各項參觀活動、講座、職業分享會和實習等，致力加深他們對基因組醫學的認識，啟發興趣。

年內，我們為大學本科生、博士後學生及多間大專院校的研究人員舉辦了講座和參觀，為年青一代提供寶貴機會，讓他們更了解香港基因組醫學的最新發展及應用，以及認識基因組中心富有意義的工作。

在過去一年，我們為超過15位主修不同科目的學生提供了實習機會，他們均來自本地及國際著名學府，例如中大、港大及倫敦帝國學院。我們按照每位同學的背景及興趣作適當安排，讓他們與團隊內的科學、生物信息學及行政管理專家共事，並在我們悉心指導下參與基因組中心的日常運作和研究項目。

透過以上一系列培育人才的工作，我們成功啟發年輕精英學子，鼓勵他們探索更多有關基因組醫學的發展前景和就業機會。同學們於實習期間均主動學習，拓闊視野，收穫甚豐，令我們深感欣慰。

Engagement Without Borders

As the advocate of a new sphere of contemporary medicine and scientific research, we have consistently sought to engage on local and international levels. Over the past twelve months, we launched a number of initiatives to proactively reach out to our stakeholders.

Locally, for example, we participated in the city-wide educational event "HKSciFest 2023" organised by the Hong Kong Science Museum to bring genomic medicine closer to the general public. We rolled out a series of thematic videos featuring the Secretary for Health and world-renowned experts from the HKGI Board, introducing genomic medicine and how it would reshape healthcare services to benefit everyone. We also enhanced HKGI's online presence and maintained close contact with the mass media to publicise HKGI's stories and achievements.

協作交流　無分國界

作為推動嶄新醫學發展和科學研究的機構，我們一直致力建立本地及國際網絡，促進交流協作。過去一年，團隊繼續主動出擊，透過各項工作積極接觸各界持份者。

在本地方面，我們參加了香港科學館舉辦的科普教育活動「香港科學節2023」，向市民大眾介紹基因組醫學。我們亦製作了一系列專題短片，邀請了醫務衞生局局長和基因組中心董事局的國際知名專家，深入淺出地簡介基因組醫學，以及如何透過這個領域革新醫療服務，惠及全港市民。此外，我們進一步加強了基因組中心的網上宣傳工作，並與新聞媒體保持緊密聯繫，讓社會各界認識基因組中心的最新發展和成就。



Chief Executive Officer's Report
行政總裁報告

Our engagement efforts have gone beyond borders. During the year, benefiting from Hong Kong's unique advantages in the Greater Bay Area, we had built closer ties with biomedical experts and researchers from cities such as Shenzhen, Macao and Guangzhou. Through seminars and conferences, we achieved fruitful exchanges of knowledge and insights on the latest genomic technologies and practice of genomic medicine.

我們加強對外聯繫交流，無遠弗屆。年內，憑藉香港在大灣區的獨特優勢，我們與深圳、澳門和廣州的生物醫學專家與研究人員建立了緊密聯繫，透過研討會和會議，相互就基因組醫學的最新技術及實踐交流知識，分享見解。

On top of all these, we have continued to expand our collaborations with overseas counterparts. We hosted visits and exchange sessions for various stakeholders throughout the year, including the Consuls-Generals of the United Kingdom, Qatar, Kazakhstan, Malaysia and Türkiye. Our colleagues from the Scientific and Bioinformatics branches also attended over 30 meetings and lectures with international collaborators to share our experience in implementing HKGP and promoting genomic medicine in Hong Kong. These meetings allowed us to engage in meaningful dialogues and cultivate further collaborations with global experts.

與此同時，團隊亦繼續透過舉辦參觀和分享會等活動，深化與海外同儕的合作，例如接待英國、卡塔爾、哈薩克斯坦、馬來西亞和土耳其領事和相關人員，交流各地基因組醫學的最新發展。年內，我們科學及生物信息學部門的同事亦參與了超過30場會議與講座，與國際機構分享我們在香港推行基因組計劃和發展基因組醫學的經驗。這些會議讓我們有機會與海外專家交流討論，分享寶貴經驗，並進一步建立合作關係。



It All Starts with the Team

We are blessed to have the ungrudging support from all fronts – the Health Bureau, Department of Health, Hospital Authority, Partnering Centres and the medical schools of CUHK and HKU; our patients and partners, especially HKAM and HKCP; countless experts, researchers, healthcare professionals and individuals. They have been reliable companions along our journey to advance genomic medicine in Hong Kong.

My deepest thanks must go to the HKGI Board and committee members for their continuous guidance and support. I am also much thankful to our management team and colleagues. From modest beginnings, we have now expanded to a family of more than 80 professional staff. This team represents the coming together of a once-in-a-generation group of talent who offer dedication, professionalism, and passion.

Let's continue to give our very best to create life-changing impact and inspire future generations with genomic medicine. By forging ahead as one, I have every confidence that we will bring about exciting breakthroughs, building a future of better health for all.



Dr LO Su-vui
Chief Executive Officer

千里之行　同心齊進

回顧過去一年，我們非常榮幸獲各方持份者傾力支持，當中包括醫務衞生局、衞生署、醫院管理局、夥伴中心、中大及港大的醫學院、病人、醫專與香港內科醫學院等合作夥伴；還有一眾專家學者、研究人員、醫療專業人員及社會各界人士。每一位都是我們在推動香港基因組醫學發展旅途上可靠的同伴，我由衷感謝大家的無限支持。

我亦在此衷心感謝基因組中心董事局及各委員會成員的寶貴支持和指導，並感謝管理團隊和全體同事的辛勤付出。基因組中心從零開始，短短兩年間已發展為擁有超過80名專業人員的團隊，薈萃了不同領域人才。每位同事均充滿熱誠幹勁，堅守專業精神，全心全意為香港的基因組醫學發展作出貢獻，實是難能可貴。

基因組中心定必繼續全力以赴，透過基因組醫學改變生命、啟發下一代。我深信，只要大家團結一心，並肩前行，我們定能帶來振奮人心的突破，與廣大市民齊創美好未來，共享健康福樂。



行政總裁
羅思偉醫生

Milestones of the Year
年度回顧





Robust corporate governance forged by diversity and experience
雲集頂尖專家　鞏固企業管治

Strengthened relationship and communications with the government and industry ensures the Hong Kong Genome Institute (HKGI) achieves utmost effectiveness, relevance and impact.

與特區政府和業界保持緊密聯繫，確保基因組中心高效運作，有效發揮影響力。



Hosted a visit and laboratory tour for the Secretary for Health, Under Secretary for Health and other senior officials from the Health Bureau in August 2022, during which HKGI's latest initiatives and achievements in promoting clinical application of genomic medicine and nurturing talent were highlighted. An updated Memorandum of Administrative Arrangements was also signed during the occasion to underscore the HKSAR Government's unwavering support for HKGI.

於2022年8月接待醫務衞生局局長、副局長及高級官員到訪基因組中心及參觀實驗室，介紹中心在推動基因組醫學臨床應用和培育人才方面的最新措施和成就，並簽訂經更新的《行政安排備忘錄》，充分展現特區政府對基因組中心的支持不懈。



Organised a visit for the Permanent Secretary for Health, Deputy Secretary for Health as well as other senior officials from the Health Bureau in May 2023. The visit provided an opportunity for HKGI to regularly update the Bureau on the latest operational development of HKGI and progress of HKGP.

於2023年5月接待醫務衞生局常任秘書長、副秘書長及高級官員到訪，藉此向局方恆常匯報基因組中心的運作及基因組計劃的最新進展。



Four new members with diverse background were appointed to the HKGI Board by the HKSAR Government. Along with the reappointments of the existing members, the moves further strengthened HKGI's corporate governance, ensuring the Institute is constantly guided by a strong team of world-class scientists, clinical and industry experts, patient representatives and top professionals, as well as persistently adhering to the highest standards.

特區政府委任四名擁有不同專業背景的新成員加入基因組中心董事局，連同獲再次委任的成員，進一步鞏固基因組中心的企業管治，確保機構時刻恪守最高標準，並在世界頂尖科學家、醫生、業界專家、病人代表及專業人士組成的團隊引領下邁步向前。

Harnessing the power of teamwork for genomics-related clinical applications
齊心群策群力　促進融合應用

Expanded collaborations with the healthcare community to accelerate the integration of genomics into medicine.

加強與醫護界合作，促進融合基因組醫學與臨床護理。



With the successful completion of HKGP pilot phase and launch of main phase, the collection of the HKGP publicity materials including booklets, leaflets, souvenirs and videos was updated to provide participants and prospects with latest information regarding the objectives and scopes of the Project.

隨着基因組計劃先導階段圓滿結束，主階段繼而推行，基因組中心的一系列宣傳品，包括小冊子、宣傳單張、紀念品和簡介影片，內容均作出修訂，讓參加者和準參加者獲得有關基因組計劃目標和服務範圍的最新資訊。



Enhanced the equipment and operations of HKGI's genomic laboratory, reinforcing its unique position as the first and only laboratory in Hong Kong that is capable of providing end-to-end whole genome sequencing services, covering patient recruitment, sample processing, data analysis, communication and delivery of research reports.

提升基因組實驗室設備和運作，鞏固其作為本港首間及現時唯一可提供整套全基因組測序服務（包括病人招募、樣本處理、數據分析、信息傳遞，以及提交研究報告）之實驗室的優勢。



Co-organised the Genomic Medicine Symposium "Embracing the Era of Genomic Medicine: Research, Training and Clinical Applications" with the Hong Kong Academy of Medicine in May 2023. The event, being officiated by the Under Secretary for Health, brought together an esteemed group of global and local experts to discuss cases and offer insights into genomic medicine and attracted close to 170 participants.

於2023年5月與香港醫學專科學院合辦「基因組醫學新時代：研究、培訓與臨床應用」研討會，由醫務衞生局副局長作為主禮嘉賓，匯聚了國際及本地知名專家，就基因組醫學的研究、培訓和臨床應用等方面，分享相關案例及見解，吸引了接近170人參加。



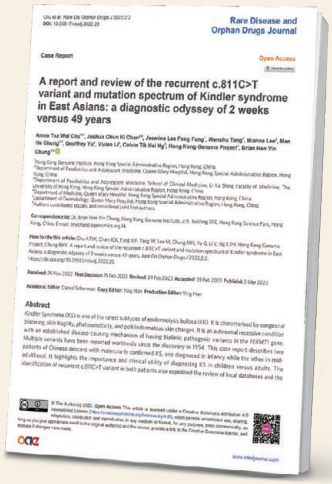
Set up the Hong Kong Genetic Counselling Practice Consortium to foster the growth of the genetic counselling profession in Hong Kong. It nurtures genetic counsellors, develops scope of practice and code of ethics for the profession, as well as addresses the needs and challenges of this burgeoning field.

成立「香港遺傳輔導專業發展聯席」，為遺傳輔導專業培育人才、擬訂專業實務範圍及倫理守則，協助這新興行業面對挑戰和應付所需。

Global genomics advancement catalysed by local research and knowledge
分享研究成果　推動專業發展

Published papers and launched new initiatives both locally and internationally to advance genomic research and knowledge sharing.

在本地和國際期刊發表論文及推出新項目，促進基因組學研究和知識共享。


Rare Disease and Orphan Drugs Journal

Case Report

Open Access

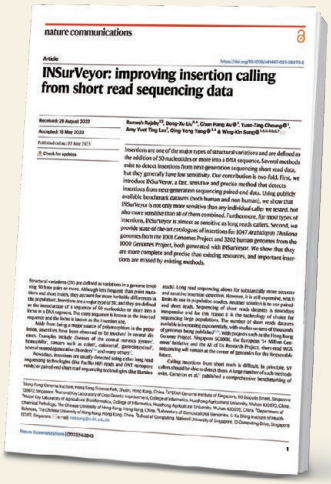
A report and review of the recurrent c.811C>T variant and mutation spectrum of Kindler syndrome in East Asians: a diagnostic odyssey of 2 weeks versus 49 years


Journal of Translational Genetics and Genomics

Original Article

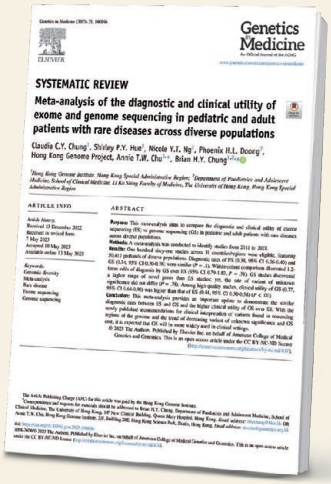
Open Access

Marketing and publicity strategies for launching the pilot phase of the Hong Kong Genome Project


nature communications

Article

INSurVeyor: improving insertion calling from short read sequencing data

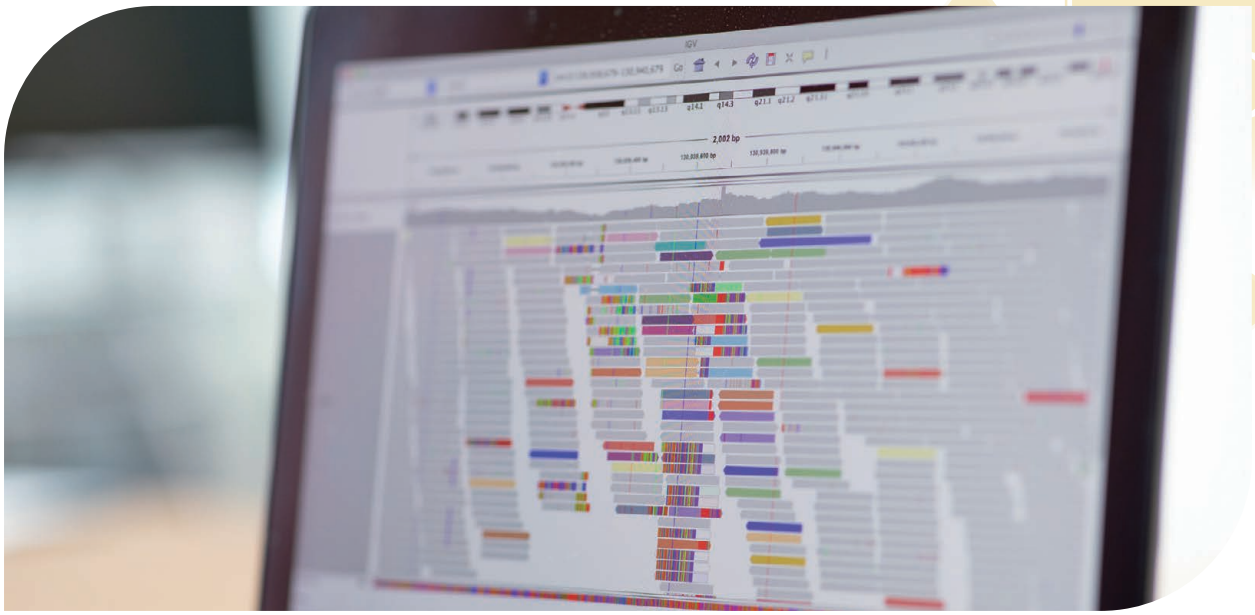

Genetics Medicine

SYSTEMATIC REVIEW

Meta-analysis of the diagnostic and clinical utility of exome and genome sequencing in pediatric and adult patients with rare diseases across diverse populations

Continued to share Hong Kong's experience, insights, and findings in genomic research with the global medical and healthcare community. HKGI has published an array of research papers covering various topics in leading journals since its inception.

致力與全球醫療界分享本港在基因組學研究方面的經驗、觀點和結果。自成立以來，基因組中心也一直在不同權威期刊發表各種題材的研究論文。



Developed a highly sensitive and precise bioinformatic tool "INSurVeyor" for detecting insertions in genomic data. Its integration with the HKGI Bioinformatics Pipeline can improve the accuracy of variant calling, leading to more reliable clinical diagnoses and treatment decisions.

研發出生物信息學工具INSurVeyor，以偵測基因組數據中涉及的結構變異。INSurVeyor結合基因組中心的生物信息管理流程，可提高辨認基因變異的準確程度，以便作出更可靠的臨床診斷和治療方案。



Established the "HKAM-HKGI Research Excellence Grants in Genomic Medicine" with the Hong Kong Academy of Medicine to nurture talent through motivating and supporting local researchers to conduct genomic research. HKGI also signed an agreement with the College of Physicians for provision of similar scholarship and training grants.

與香港醫學專科學院合作設立「基因組醫學卓越研究獎」，鼓勵和支持本地研究人員進行基因組研究，藉以培育人才。基因組中心亦與香港內科醫學院簽訂設立獎學金和助學金的協議。

Industry-academia collaboration key to building generational talent
攜手緊密合作　積極培育棟樑

Inspired, informed and attracted talent to genetics and genomics, as well as promoted genomic literacy among professionals by engaging the broader healthcare community.

啟發和吸引人才加入遺傳學及基因組學領域；積極加深醫療專業人員對基因組學的認識。



Organised visits, meetings, talks and seminars for healthcare professionals, including clinicians, nurses, allied health professionals, genetic counsellors and bioinformaticians, to inspire and encourage their participation in genetics and genomics.

為醫生、護士、專職醫護人員、遺傳輔導員及生物信息學家等舉辦參觀活動、會議、講座及座談會，啟發和鼓勵他們加入遺傳學和基因組學的領域。



Committed to developing the next generation of genomic talent, HKGI arranged visits and summer internships for secondary students and university students across various disciplines, enabling them to gain valuable hands-on experience and learn about HKGI's work and career opportunities.

為中學生及不同學科的大學生舉辦參觀活動和提供暑期實習，讓他們認識基因組中心的工作及了解職業發展機會，獲得寶貴經驗，藉此培育新一代基因組學人才。



Launched academic scholarship with the Faculty of Medicine of The Chinese University of Hong Kong to arouse interest in genetics and genomics among undergraduate and postgraduate students. Four prizes in Genomic Medicine are offered to outstanding students each year. Similar scholarship awards will also be set up with the Faculty of Medicine of The University of Hong Kong.

與香港中文大學醫學院合作設立獎學金，每年設有四個名額予成績優異的學生，目的是激發大學生及研究生對遺傳學和基因組學的興趣。基因組中心亦將與香港大學醫學院設立同類型獎學金。

Gathering leading minds to chart the future of genomics and genomic medicine
匯聚業界精英　啟迪未來發展

Constantly exchanged ideas, insights and intelligence with local and global experts to chart the collective growth of the genomics field.

與本地及海外專家定期作出學術、意見和知識交流，合力推動基因組學的發展。



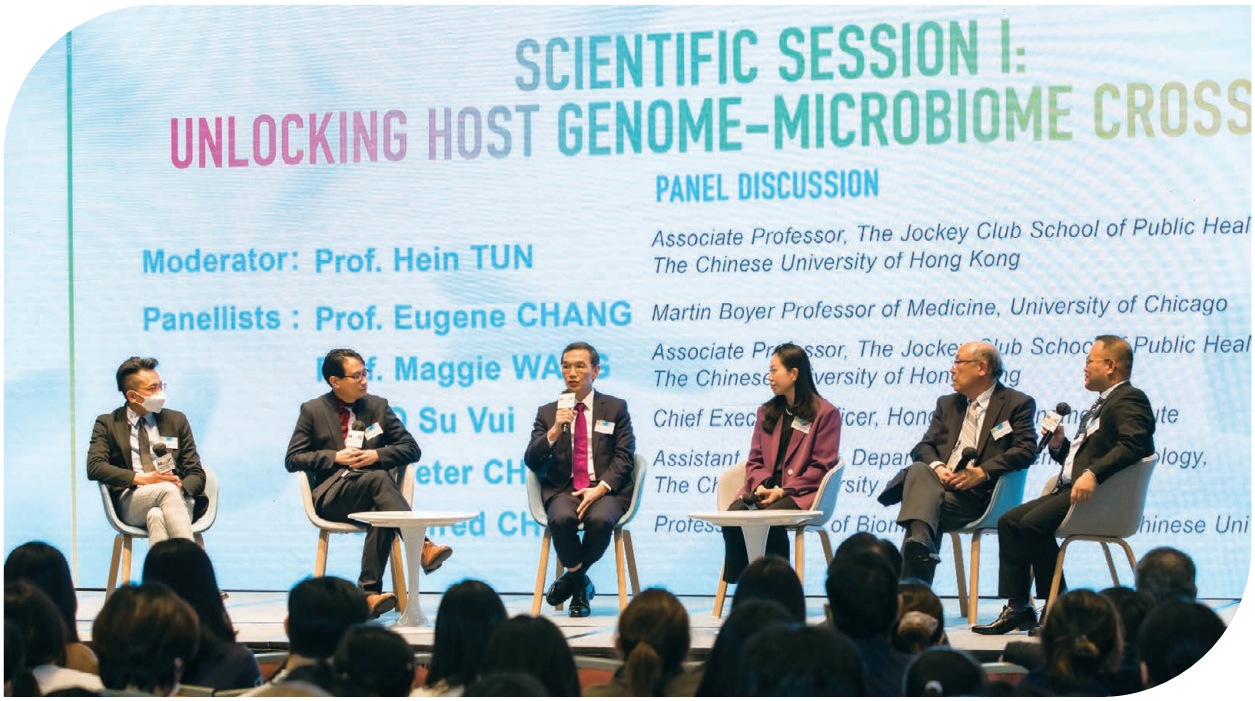
Selected by the American Society of Human Genetics to produce a HKGI feature video for the "Thought Leadership Film Series" to be premiered at its Annual Meeting. The video featured the Secretary for Health, Professor Lo Chung-mau, and HKGI senior management to showcase HKGI's accomplishments to clinical geneticists, scientists, researchers and medical professionals around the globe.

基因組中心獲美國人類遺傳學協會邀請參與拍攝「領袖影片系列」，影片並於該協會的周年大會上首播。醫務衞生局局長盧寵茂教授及基因組中心管理人員一同參與拍攝，向全球遺傳學家、科學家、研究員及醫療專業人員展示基因組中心的成就。



Co-hosted a session titled "What's Next in the Biotech and Genomics Revolution?" at the Asia Summit on Global Health 2022 with the Hong Kong Trade Development Council. During the session, HKGI executives discussed megatrends and potential applications in the field with international experts, while also sharing HKGI's pioneering work.

在香港貿易發展局主辦的「亞洲醫療健康高峰論壇2022」中，合辦一個以「生物科技及基因組學的革新與前景」為主題的環節。基因組中心管理層與其他國際專家討論基因組學大趨勢及潛在應用，同時分享基因組中心在推動基因組醫學方面的先導工作。



Joined the panel discussion on "Unlocking Host Genome-Microbiome Cross Talks" at the Microbiome Summit 2023 to share the importance of genomic and precision medicine.

參加微生態峰會2023其中一個題為「Unlocking Host Genome-Microbiome Cross Talks」的專題小組討論，闡述基因組學及精準醫學的重要性。

Gathering leading minds to chart the future of genomics and genomic medicine
匯聚業界精英　啟迪未來發展



Hosted a visit for PHG Foundation with latest updates on HKGI, HKGP and collaboration with Partnering Centres (PCs). Multi-disciplinary team meetings and visits to PCs were also arranged during the visit for knowledge exchange.

接待PHG Foundation的到訪，並向其簡介基因組中心、基因組計劃及與各夥伴中心合作的最新進展，同時安排出席跨專業團隊會議及參觀夥伴中心，以作知識交流。



Implemented a variety of media engagements to raise public awareness of HKGI, HKGP, and genomic medicine, as well as enhance genomic literacy, including an interview of Chief Executive Officer, Dr Lo Su-vui, with Hang Seng University and an interview of Chief Scientific Officer, Dr Brian Chung, with Radio Television Hong Kong. A media briefing was also organised to promote genomic knowledge and share updates of HKGI and HKGP with the public.

透過多項媒體活動，提升公眾對基因組中心、基因組計劃及基因組醫學的認識，包括基因組中心行政總裁羅思偉醫生與香港恒生大學的訪問，以及首席科學總監鍾侃言醫生與香港電台的訪問。基因組中心亦舉辦傳媒簡報會，介紹中心及基因組計劃的最新發展，藉此向市民推廣關於基因組學的知識。



Invited four Board Directors to produce thematic videos to share their ground-breaking research, highlight the milestone development of genomic medicine, and how it would reshape future healthcare and benefit everyone in the society. The world-renowned scientists and clinical experts featured included Professor Raymond Liang, Professor Nancy Ip, Professor Lau Chak-sing and Professor Dennis Lo.

邀請四位董事局成員參與拍攝主題影片，分享他們的創新研究、闡述基因組醫學發展的重要里程，以及基因組醫學如何改革醫療護理系統，惠及社會大眾。受訪者均為世界知名科學家和醫療專家，包括梁憲孫教授、葉玉如教授、劉澤星教授及盧煜明教授。



Participated in HKSciFest 2023 and set up a virtual exhibition booth named "ATCG Genomics" on its event website to introduce to visitors HKGI's work and a wide range of HKGI publications and videos, inspiring them to explore more about genetics and genomics. Other public events HKGI took part in included InnoCarnival 2022 and Career Expo 2022.

在香港科學節2023活動網站設立以「探索基因組學」為主題的網上虛擬展覽攤位，簡介基因組中心的工作，展示一系列刊物和影片，啟發公眾進一步探索遺傳學和基因組學。基因組中心亦積極參與其他活動，包括創新科技嘉年華2022及香港創科職業博覽2022。

Operational excellence comes when teams work together
團隊上下同心　締造卓越成就

Designed training and team-building activities to foster staff development, bonding and sense of belonging.

舉辦培訓及團隊活動，以促進員工發展，培養團隊精神和歸屬感。



Arranged a series of training on different topics, such as health privacy, to further the professional development of all staff to ensure they are informed and equipped to uphold the latest pertinent rules, regulations and best practices.

安排一系列的培訓，涵蓋不同主題，如醫療私隱等，以提升員工的專業發展，確保他們了解並恪守各種最新規定和行業的最佳實務守則。



Organised a staff forum, Christmas party, and Chinese New Year lion dance to bring the HKGI team together, foster bonding and boost their sense of belonging to promote an inclusive, supportive and collaborative work environment.

舉辦員工大會、聖誕聯歡會、農曆新年舞獅活動等，提升基因組中心團隊凝聚力及歸屬感，藉此建立互相包容、互助互勉的工作環境。

Our Partnering Centres
我們的夥伴中心




威爾斯親王醫院
PRINCE OF WALES HOSPITAL

Hong Kong Genome Project
Partnering Centre

Hong Kong Children's Hospital

香港基因組計劃夥伴中心

香港兒童醫院





Dr Luk Ho-ming 陸浩明醫生
Consultant, Clinical Genetics Service Unit
Hong Kong Children's Hospital
香港兒童醫院醫學遺傳科顧問醫生

HKGP has the potential of creating a far-reaching impact. We are truly grateful and much honoured to be part of it. Aside from helping patients, HKGP has sparked significant interest among the medical community, inspiring research and development that will change the lives of many others in the years to come.

香港基因組計劃深具潛力，影響深遠，我們非常榮幸能夠參與其中。這個計劃除了惠及病人，亦成功引起醫學界對基因組醫學的廣泛關注和興趣，有助啟發科研，推動醫學發展，為更多病人的生命帶來改變。

HKGP represents the determination to 'pursue' and 'create'. On the one hand, the Project brings hope to us, not just to patients but also to medical professionals like us. It empowers us to pursue more precise diagnoses and personalised treatment. On the other hand, HKGP creates numerous opportunities and clinical applications that will lead us to a better future.

香港基因組計劃代表着銳意『追求』和『創造』的決心。這個計劃不僅為病人帶來希望，亦為我們一眾專業醫護人員帶來盼望，實現我們對精準診斷及個人化治療的追求。基因組計劃同時為我們創造不同機遇，加快推進臨床應用，引領我們邁向更美好未來。



Dr Shirley Cheng 鄭斯穎醫生
Consultant, Clinical Genetics Service Unit
Hong Kong Children's Hospital
香港兒童醫院醫學遺傳科顧問醫生

Among the three Partnering Centres set up for implementing Hong Kong Genome Project (HKGP), the Hong Kong Children's Hospital (HKCH) has the most children and family cases given its unique position as a tertiary referral centre specialising in complex, serious and uncommon paediatric cases that require multi-disciplinary care.

In alignment with the project team's composition of other Partnering Centres, the HKGP team at HKCH comprises clinical geneticists, genetic counsellors, bioinformaticians, phlebotomists, research assistants and administrative staff – all are dedicated and passionate professionals who are determined to spread the knowledge and applications of genomic medicine; and most important of all, its vast potential in bringing to sick children and their families more precise diagnoses and tailor-made medical care. The hope and possibilities that HKGP brings about to them carry much weight along their often decade-long patient journey.

Offering Hope Through Dark Times

Representing the HKCH Project team, **Dr Luk Ho-ming** (Consultant, Clinical Genetics Service Unit), and **Dr Shirley Cheng** (Consultant, Clinical Genetics Service Unit), shared their rewarding experiences of working closely with HKGI over the past two years in launching and expanding HKGP. It is heartening that "hope" is the word that comes up the most.

香港基因組中心(基因組中心)與三間夥伴中心緊密合作，推行香港基因組計劃(基因組計劃)，當中以香港兒童醫院(兒童醫院)所處理的兒童和家庭個案最多。這是由於兒童醫院定位獨特，是本港第三層專科轉介中心，負責集中處理嚴重、複雜、不常見及需要跨專科護理的兒科病症。

就團隊的設定而言，一如其他夥伴中心，兒童醫院的基因組計劃團隊同樣由不同專業的成員組成，包括臨床遺傳學家、遺傳輔導員、生物信息學家、抽血員、研究助理及行政人員等。他們充滿熱誠和幹勁，致力推廣和分享基因組醫學的知識及實踐經驗；最重要的是，透過推行基因組計劃，讓病人和家屬受惠於基因組醫學的巨大潛力，為他們作出更準確診斷及個人化臨床護理。事實上，對病人和家屬來說，基因組計劃帶來的希望和可能，在漫長的求醫歷程中，甚具意義。

走過黑暗　重燃希望

代表兒童醫院基因組計劃團隊的**陸浩明醫生**(醫學遺傳科顧問醫生)及**鄭斯穎醫生**(醫學遺傳科顧問醫生)分享了過去兩年與基因組中心緊密合作，共同推展基因組計劃的寶貴經驗。他們在分享中提及最多的，便是「希望」二字，讓人滿心振奮。





As introduced by Dr Luk, among the three themes covered by HKGP – undiagnosed diseases, hereditary cancers and cases related to genomics and precision health – rare diseases account for about 90% of the HKGP cases they have recruited so far. "With the high prevalence rate of undiagnosed diseases in children, it is always heartbreaking to see how the loving parents have spent a considerable amount of time, often years, to discover what is happening to their children. The launch of HKGP and the aspiration to make whole genome sequencing (WGS) analysis more readily and widely available really mean a lot to them," said Dr Luk.

"Many families have endured drawn-out diagnostic odysseys looking for a cause to their children's disease. HKGP marks a turning point in their quest for answers," said Dr Cheng, "That is why the families referred to us are always highly motivated to join HKGP. On the one hand, they are eager and hope that the Project would provide answers that they have been desperately seeking for years. This is as HKGP's tagline says – to see the unseen (causes of diseases)."

"On the other hand, they also wish that their samples and case details could contribute to the greater good – the accumulation of knowledge, experience and genomic data to help others alike," Dr Cheng added.

基因組計劃涵蓋三個範疇，包括未能確診病症、與遺傳有關的癌症，以及與基因組學及精準醫學相關的個案。陸醫生表示，兒童醫院所招募的個案中，約九成為罕見病：「不少未能確診病症均是於兒童期發病的。家長們愛兒心切，經年累月，鍥而不捨地為孩子尋找病因。我們看着，亦感傷心難過。可想而知，不論是基因組計劃的順利推行，還是全基因組測序技術的普及應用，這其中的願景和盼望，對這些家長來說，意義重大。」

鄭醫生解釋道：「不少家庭經歷了漫長的過程，父母精疲力竭為孩子尋找患病原因；基因組計劃的出現，便成了他們求醫問診的轉捩點。因此，轉介到我們團隊的病人和家屬，均非常支持基因組計劃，踴躍參與。他們熱切期望透過這個計劃，找到多年來遍尋不獲的答案，得以『看見病因』— 這也是基因組計劃的宗旨。」

鄭醫生續指：「另一方面，計劃的參加者大多心懷大愛，希望以自身案例和樣本貢獻社會，透過積累知識，總結經驗及豐富基因組數據庫，幫助更多同路人。」

Positive Signs in the Heat of Battles

Two years in since HKGP was first rolled out, both Dr Luk and Dr Cheng agreed that the feedback and results of the Project have been very encouraging. Thanks to the diligent work of HKGI's scientists and bioinformaticians on WGS and data analysis, as well as inputs from relevant partners and subject experts, according to Dr Luk, a very good number of undiagnosed cases came back with positive findings, meaning important clues for making diagnoses have been found.

"Positive reports are good because they identify causes of diseases that patients could have spent their entire lives looking for," Dr Luk said, "When diseases are finally given names, patients can better communicate with doctors, identify treatment and follow-up plans, and possibly even decide which patient group to join for peer support. These reports were extremely helpful in disease and lifestyle management, illuminating what needed attention and follow-up."

歷盡艱辛　扭轉乾坤

基因組計劃推行了兩年，陸醫生和鄭醫生均認為計劃進度良好，成果令人鼓舞。陸醫生表示，有賴基因組中心的科學家和生物信息學家努力不懈進行全基因組測序及數據分析的工作，加上合作夥伴和不同專家的指導和分享，不少未能確診的個案均取得重大進展，成功找到有助診斷的重要線索。

陸醫生續指：「載有發現的測序報告至關重要，有助確立病因，找出病人或需窮畢生之力追尋的答案。在完成診斷，確認病症後，病人便可更有效地與醫生溝通，並選擇適合自己的治療方案及病友組織，以獲取所需支援。這些報告亦會涵蓋注意和跟進事項，對管理病患和日常生活幫助極大。」





One such HKGP case example was a rare case of Duchenne muscular dystrophy (DMD), a condition that causes skeletal and heart muscle weakness that quickly gets worse with time. All the patient's symptoms pointed to a hereditary disease, yet no definite diagnosis could be made at first. The family underwent numerous tests in Hong Kong, the Mainland and abroad, all to no avail. Without a clue of what the disorder was and how it was caused, the family was desperate. The mother of the patient was also concerned if she should have more children.

"Finally, through conducting WGS and in-depth data analysis, the HKGI team discovered a very complex genomic rearrangement involving the DMD gene. The diagnosis was finally made. The family was relieved as they found the right direction for taking care of the patient. They had a better understanding of what lay ahead for the family and how they could get prepared," explained Dr Cheng, "For the mother, she also got to learn more about the risk of her next child having the same disease, and would be able to make well-informed family planning and reproduction decision. To us, this case demonstrated we are making a real difference in people's lives."

兒童醫院計劃團隊所處理的個案中，包括名為「杜興氏肌肉萎縮症Duchenne muscular dystrophy」（DMD）的罕見病例。此病症會令患者肌肉萎縮，心肌變弱，並於短時間內迅速惡化。計劃團隊接觸該患者之初，其症狀均指向某一遺傳病，唯始終未有全面數據作出確切診斷。其時，患者和家人已在香港、內地以至海外進行過各式各樣的醫學檢查，但對患者所患何病，仍然茫無頭緒。面對未明病症和病因，他們一家人均十分沮喪，其母親對應否再次生育亦甚感擔心懊惱。

鄭醫生分享道：「最後，全賴基因組中心的團隊為個案進行全基因組測序和深入的數據分析，發現了一個異常複雜並涉及DMD疾病的基因變異，因而成功作出診斷。找到治療方向後，患者和家人均如釋重負，他們對將來要面對的事情，以及如何作好準備有了更深入的認識。至於患者的母親，她亦從中了解到下一名孩子患上相同疾病的風險，為她的家庭計劃及生育決定提供了重要參考。這個病例肯定了大家付出的努力，亦見證了我們如何改變生命，為病人和家屬帶來希望。」

Searching for the Answers is Never in Vain

Even negative reports of no findings can be helpful to patients and their families, as they help rule out potential genetic linkage to the diseases, and inform parents about the risk of recurrence and their reproductive options. The relief of guilt is, among all, one of the most valuable outcomes.

"Some parents have blamed themselves or been blamed by others for their children's unfortunate conditions. These analysis and research reports have the potential to offer them clarity, relief and peace of mind. To many of them, a proper closure for the guilt they have been shouldering over the years weighs a lot to them as well. It helps them reset directions and priorities in life," remarked Dr Cheng.

Dr Luk added that clinical geneticists are not the most frontline role in case management and thus, in general, they do not often receive thank-you letters from patients. However, at the HKGP clinic, participants of the Project would leave notes thanking him, Dr Cheng and the Project team for giving them hope and closure. "They know HKGP is a research-based project, not a regular clinical service, but they are very willing to take part in it despite the risk of non-discovery. As a matter of fact, many patients and their families reach out to us proactively, wishing to contribute their cases to help others. This is all very impressive to us," Dr Luk shared.

追尋答案　永不言休

事實上，即使測序報告中沒有與病患相關的發現，這些報告對病人及家屬來說，仍然別具意義。它們有助釐清病人所患的疾病與遺傳無關，讓父母了解到相關疾病的發病風險，以及在生育方面的選擇；最重要的是，緩解他們的自責和內疚。

鄭醫生說：「不少父母會因為孩子不幸患病而自責不已，又或被旁人責怪。這些分析和研究報告可以讓他們更清晰了解孩子的情況，安心釋懷，為尋找病因的漫長過程畫上句號。對很多家長來說，事情確切完結，有助他們解開多年心結，重新出發，找回生活的重心。」

陸醫生補充，臨床遺傳學家在病人個案管理中並非擔當前線角色，較少收到病人來信致謝。不過，在基因組計劃的門診部，病人和家屬均會留言致謝，感謝他和鄭醫生，以及整個計劃團隊為他們帶來希望，讓他們卸下內心重擔。陸醫生說：「病人和家屬明白基因組計劃是一個研究項目，並非常規的臨床服務，亦明白無功而還的可能。即便如此，他們仍然踴躍參與，很多病人及家屬更是主動聯絡我們，希望參加計劃，以他們的親身經歷啟發和幫助更多病友。凡此種種，均讓我們深受感動。」





Patient-first Support from HKGI

As HKGP is the first large-scale WGS initiative launched in Hong Kong, to ensure a smooth roll-out, the HKGI team spared no effort in producing a series of interactive and easy-to-understand information package and animated videos to support patient engagement and operations at each Partnering Centre.

As Dr Luk and Dr Cheng commemorated, HKGI's all-round support and comprehensive set of Project materials have been instrumental in facilitating patient recruitment and case management.

"During pre-test counselling, we will show both the adult and children's versions of the videos to patients and their family members, so that they could all understand the objectives and details of HKGP," said Dr Cheng. "These materials, all very well designed, effectively translate abstract concepts into layman languages and graphics, assisting participants to learn about genomics and WGS, and how they may benefit from them. Our genetic counsellors always make use of these printed materials and videos to address questions participants have while obtaining informed consent from them."

In addition to patient materials, support from HKGI also covers training and infrastructure setup. "HKGI's alignment of practice training sessions have likewise smoothed out the issues the Project team has in daily operations. The user-friendly Clinical Frontend platform has also made patient registrations simple. Any questions or special requirements from us are promptly addressed by the HKGI team. These have all greatly enhanced our efficiency, allowing us to focus on patients' needs and care," added Dr Luk.

病人為先　全力支援

基因組計劃是本港首個大型全基因組測序計劃，為確保計劃能順利推行，基因組中心的團隊製作了一系列顯淺易明的資料冊和動畫影片，透過互動解說，支援夥伴中心招募病人，便利日常運作。

陸醫生和鄭醫生不約而同表示，基因組中心的全方位支援和一應俱全的計劃資訊，對招募病人和管理個案幫助極大。

鄭醫生續稱：「計劃團隊會在病人及家屬參加基因組計劃前進行遺傳輔導，播放專為成人及兒童參加者而設的互動短片，讓他們清楚了解這個計劃的目的和詳情。這些資料冊由基因組中心的同事精心設計，以深入淺出的語言和圖像，清晰闡述各種抽象概念，讓參加者認識甚麼是基因組學和全基因組測序，以及他們可如何受惠。我們的遺傳輔導員每每透過這些刊物和短片，順利解答參加者的疑問，並取得他們參與計劃的知情同意。」

基因組中心提供的支援，除了製作招募病人的資料冊，亦包括培訓計劃團隊和設立基礎設備。陸醫生補充：「基因組中心舉辦的實務培訓，令我們日常運作加倍順暢。他們設立的臨床資訊管理平台亦簡單易用，令計劃團隊為病人進行登記時更為便利。此外，每當我們提出疑問或特別要求時，基因組中心的同事均會迅速回應，大大提高了我們的工作效率，讓我們能夠專注照顧病人。」

Playing a Major Role in Raising Awareness

Aside from helping patients find answers and closure, HKGP has boosted genomic awareness among healthcare professionals. "Clinical genetics services have been practised in Hong Kong for over three decades. With the rapid scientific and medical development in the field, there is a need for us to catch up with the latest knowledge, technology and applications. HKGP has sparked significant interest and awareness among the medical community, inspiring research and development that are going to change the lives of many others in the years to come," Dr Luk commented.

Echoing Dr Luk, Dr Cheng spoke highly of the multi-disciplinary team (MDT) meetings that HKGI hosts. "It is an occasion where colleagues across different disciplines and specialties gather to discuss the HKGP cases. Apart from the clinicians and teams involved in the cases, other HKCH colleagues who are interested in HKGP, genetics and genomics are also welcome to sit in the meetings to learn and explore the subjects. These MDT meetings have served as an excellent platform for education and training, fostering better understanding and awareness of genomic medicine among medical professionals."

Apart from enhancing awareness in the healthcare sector, patients and their families, and the general public as a whole, have also become more knowledgeable about WGS and genomics. "HKGP has already exceeded what it set out to do. In the past, people had zero or very limited knowledge and appreciation of genomic medicine. Now, more colleagues and patients of ours are aware of its potential applications and benefits. As a clinical geneticist myself, I am glad to see that HKGP not only helps patients look for causes and cures, but also significantly elevates awareness and development of the field," said Dr Luk.

肩負重任　加強教育

基因組計劃除了幫助病人和家屬尋找病因，解開心結外，亦加深了醫療專業人員對基因組醫學的認識。陸醫生指出：「醫學遺傳服務在香港已經有超過30年歷史。這門專科在科學和醫學方面的發展一日千里，我們必須與時並進，汲取新知，實踐應用。就此而言，基因組計劃已成功引起醫學界對相關專科的關注和興趣，有助啟發科研，推動醫學發展，為更多病人的生命帶來改變。」

鄭醫生的看法與陸醫生不謀而合，並高度評價由基因組中心主持的跨專業團隊會議。她說：「這個會議集合了來自不同專科的專家和同事，就基因組計劃的個案互相交流討論。除了負責相關個案的醫學專家和團隊，亦歡迎其他對基因組計劃、遺傳學及基因組學感興趣的同事列席參與，一起認識和探索相關議題。跨專業團隊會議為教育和培訓提供了一個絕佳的平台，有助加深醫療專業人員對基因組醫學的了解和認識。」

除了醫療界別，基因組計劃亦提升了病人和家屬，以至社會大眾對全基因組測序技術及基因組學的認識。陸醫生表示：「基因組計劃的進展已超乎預期。市民過往對基因組醫學近乎一無所知，又或知之甚少；今天，我們見到很多同事和病人，對基因組醫學的應用和效益已有一定認識。身為臨床遺傳學家，我很高興見證基因組計劃的成果，它不但為病人找到病因和治療方向，亦深化了各界對基因組醫學的認識，促進這門專科的發展。」



The Mission to Pursue and Create

Reflecting on the past two years of implementing HKGP, Dr Cheng said that the Project's significance lies in these two words: "Pursuit" and "Creation". "HKGP represents the determination to *pursue* and *create*. On the one hand, the Project brings hope to us, not just to patients but also to medical professionals like us. It empowers us to pursue more accurate diagnoses and personalised treatment. On the other hand, HKGP creates numerous opportunities and clinical applications that will lead us to a better future."

Dr Luk is honoured to be a part of this forward-thinking project, and said it is a privilege to work with colleagues to promote the development of genetics and genomics. "HKGP has the potential of creating a far-reaching impact. Aside from helping patients, the samples and research findings will continue to produce results and contribute to the well-being of all for decades to come."

In a world where the healthcare burden of societies is growing, genomic medicine has the capacity to facilitate a sustainable healthcare system by offering relief to make healthcare more precise and personalised. "We are truly grateful that HKGP is taking place in Hong Kong," Dr Luk added.

追求創造　開拓未來

回想這兩年推展基因組計劃的點滴，鄭醫生認為基因組計劃的精髓在於「追求」和「創造」。她說：「基因組計劃代表着銳意*追求*和*創造*的決心。這個計劃不僅為病人帶來希望，亦為我們一眾專業醫護人員帶來盼望，實現我們對精準診斷及個人化治療的追求。基因組計劃同時為我們創造不同機遇，推動臨床應用，引領我們邁向更美好未來。」

陸醫生分享時亦表示，能夠參與這個甚具前瞻性的計劃，他感到與有榮焉，非常榮幸與同儕並肩合作，推動遺傳學和基因組學的發展。他說：「基因組計劃深具潛力，影響深遠，除了惠及病人，相關的樣本和研究結果，將繼續在未來為人類的福祉作出貢獻。」

隨着各地社會的醫療負擔日益沉重，基因組醫學可透過提供更精準和更個人化的護理，紓緩有關壓力，並構建可持續發展的醫療體系。陸醫生補充：「我們感恩基因組計劃在香港順利推行，為本地基因組醫學發展開創嶄新里程。」

Hong Kong Genome Project Partnering Centre
Prince of Wales Hospital

香港基因組計劃夥伴中心
威爾斯親王醫院





HKGP provides an excellent platform for our colleagues and students to acquire hands-on experience in applying genomic medicine to routine clinical care. The Project inspires a new generation of genomic champions and empowers them with the latest knowledge and skills required to turn therapeutic possibilities into reality.

基因組計劃為同事和學生提供一個極佳的平台，讓他們將基因組醫學應用到日常臨床護理，積累前線經驗。這個計劃亦為新一代的基因組學人才帶來啟發，助他們掌握最新的知識和技術，裝備自己，實踐各種治療。

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Research collaborations between CUHK, PWH and HKGI kick into high gear with the launch of HKGP. The synergy created will propel research and development in genetics and genomics forward, bringing to us new perspectives, discoveries and knowledge that lead to improved diagnostic methods and treatment outcomes for patients.

隨着基因組計劃的展開，基因組中心與中文大學及威爾斯親王醫院的研究合作更加緊密，產生的協同效益將促進遺傳學及基因組學的研究和發展，為我們帶來更多新觀點、新發現和新知識，引領我們尋找更精準的診斷方法，為病人提供更適切的治療方案。



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Since the launch of the pilot phase of the Hong Kong Genome Project (HKGP) in mid-2021, Hong Kong Genome Institute (HKGI) has been working in close collaboration with its Partnering Centres to recruit patients and accelerate the integration of genomic medicine into clinical care. Among these indispensable Partnering Centres is the one set up at the Prince of Wales Hospital (PWH), which is operated by a committed team of experts and medical professionals from PWH and The Chinese University of Hong Kong (CUHK).

With PWH being an established regional acute hospital in Hong Kong under the Hospital Authority (HA), and CUHK as a top-notch university with a thriving track record of scientific and medical research, the HKGP Project team has set out bold ambitions – sparking synergistic effects in genetics and genomics services, research, and talent cultivation. As shared by **Dr Josephine Chong**, Associate Professor of Practice in Medical Genetics, Faculty of Medicine of CUHK, and **Dr Jacky Lam**, Assistant Dean (Research), Faculty of Medicine of CUHK, the results speak for themselves: an uptake in patients, more young talent joining the field, and well-informed choices for people who need them the most.

香港基因組中心（基因組中心）於2021年年中開展了香港基因組計劃（基因組計劃）的先導階段，一直以來與各夥伴中心緊密合作招募病人，致力加快融合基因組醫學與臨床護理。夥伴中心對推行基因組計劃角色關鍵，不可或缺，其中包括威爾斯親王醫院（威院）的計劃團隊。他們由來自威院和香港中文大學（中大）的專家和醫療專業人員組成，充滿熱誠，負責夥伴中心的運作。

威院是醫院管理局（醫管局）轄下具規模的區域性急症醫院，中大則是在科學及醫學研究屢獲殊榮的頂尖學府；雙方攜手合作，為推行基因組計劃訂下宏大目標，冀推動遺傳學和基因組學服務，促進研究及人才培育，加快各方相互配合，創造協同效益。中大醫學院遺傳醫學專業應用副教授**莊淑貞醫生**，以及中大醫學院助理院長（研究）**林偉棋醫生**不約而同地表示，基因組計劃的成果有目共睹：參加人數不斷增加、吸引了更多年輕專才投身這個領域，亦協助了病人和家屬作出知情決定。

Strategic Planning and Synergy Help Navigate Complexity

Given that HKGP is the first large-scale whole genome sequencing (WGS) project in Hong Kong, being one of the key players in the field supporting its implementation, the Project team put in much effort in mapping out the strategy for patient recruitment.

Dr Lam explained, "At the international level, applications of WGS in paediatric cases are relatively mature. Literature and case references are available. Therefore, while we see patients with undiagnosed diseases, hereditary cancers and cases related to genomics and precision health as set out under HKGP, we strategically focus on adult cases under the guidance of Professor Dennis Lo, our principal investigator in this Partnering Centre. These include areas in neurology, oncology, other subspecialties of internal medicine (e.g. endocrinology, nephrology, etc.) and some surgical conditions (e.g. vascular surgery) since these are the areas that both CUHK and PWH excel in."

群策群力　拆解難題

由於基因組計劃是本港首個大型全基因組測序計劃，計劃團隊作為協助推行此計劃的重要一員，在制訂招募病人的策略上倍加用心。

林醫生解釋：「在國際上，全基因組測序應用於兒科病例的做法相對成熟，亦不乏文獻和案例參考。因此，我們在夥伴中心首席研究員盧煜明教授指導下，按照基因組計劃所訂的疾病及研究群組，為患上未能確診病症、遺傳性癌症，以及與基因組學及精準醫學有關的個案診症時，會策略性地集中研究成年人的個案。我們專注的領域主要是中大及威院均十分擅長的腦神經科、腫瘤科、其他內科的附屬專科（例如內分泌科和腎病科等），以及部分外科手術（例如血管外科）等。」





"Our goal is to identify more patients who could benefit from whole genome sequencing, expand the applications to more specialties, and subsequently to routine clinical services. Riding on HKGP, we could contribute to scientific and medical research, inspiring life-changing breakthroughs. This is also consistent with HKGP's goal to make genomic medicine widely available to all for better health," added Dr Lam, "With this strategy in mind, our Project team comprises specialists primarily from paediatrics, neurology, and oncology, as well as genetic counsellors, bioinformaticians and research assistants."

Dr Chong offered further insights into the Project team's daily operations and the well-thought-out patient recruitment process. "Patients are taken in through referrals from PWH clinics or the hospital's referring network. As we engage with patients, we are always guided by PWH's slogan: *We care. We serve.*"

林醫生補充：「我們的目標是識別更多可以受惠於全基因組測序的病人，將相關技術應用到更多專科病症，期望日後可擴展至常規臨床服務。藉着基因組計劃，我們可以在科學及醫學研究上作出貢獻、創造突破，改變生命。這個目標亦與基因組計劃的宗旨一脈相承，透過推動基因組醫學的廣泛應用，為市民大眾帶來健康快樂。因此，我們的計劃團隊主要由兒科、腦神經科和腫瘤科的專家，以及遺傳輔導員、生物信息學家及研究助理組成，共同朝着這個目標進發。」

莊醫生進一步介紹夥伴中心的日常運作和招募病人的流程，處處盡顯計劃團隊思慮周全。她表示：「病人是經威院同事或醫院網絡轉介到計劃團隊。我們跟進個案時，亦時刻緊守威院『關懷以誠、服務至上』的宗旨，盡心盡力照顧病人。」

Patients can easily see and experience this spirit as they walk into the HKGP clinic, which is a newly renovated area with well-lit, spacious and enclosed consultation rooms equipped with full-range patient support.

"The HKGP clinic is located on the third floor of the Li Ka Shing Specialist Outpatient Clinics (North Wing). It is adjacent to the Adult Genetics Clinic, which is the first HA-funded regular genetic service for adult patients. We hope that the proximity will encourage more eligible participants to join HKGP. Patients and their family members seeking genetic services can simply walk next door to receive genetic counselling, provide informed consent, and register for HKGP. This design creates a synergistic effect among different services the hospital provides. It is also in line with our HKGP patient recruitment strategy. We are really thankful for the great support from HA and PWH."

病人甫步入基因組計劃門診部，便可即時感受到計劃團隊的專業和無微不至。新近裝修的門診部光線充足，地方寬敞，並設有獨立的診症室，確保病人得到全面的照顧。

莊醫生說：「基因組計劃的門診部位於威院李嘉誠專科診所北翼三樓，毗鄰成人醫學遺傳科診所，是醫管局首間專為成年病人提供常設醫學遺傳服務的診所。兩間診所位置相鄰，我們希望藉此鼓勵更多合資格的病人參加基因組計劃。有需要的病人及家屬，只需走到隔壁房間，便可接受遺傳輔導，了解計劃詳情，給予知情同意並完成登記程序。這個設計有助醫院內不同服務產生協同效益，亦配合基因組計劃招募病人的策略。有此成效，我們衷心感謝醫管局和威院的鼎力支持。」



Overcoming Challenges of Awareness and Recruitment

Putting a novel project into action was not without its challenges. "One of the key hurdles involved engaging frontline clinical colleagues and sharing with them how the advanced technology of WGS can help patients and improve clinical care," Dr Lam said, "Promoting genomic literacy and understanding among medical colleagues and healthcare professionals is of paramount importance to facilitate the implementation of HKGP. It is only with their support and acknowledgement that they could elucidate the benefits to patients and further refer them to HKGP.

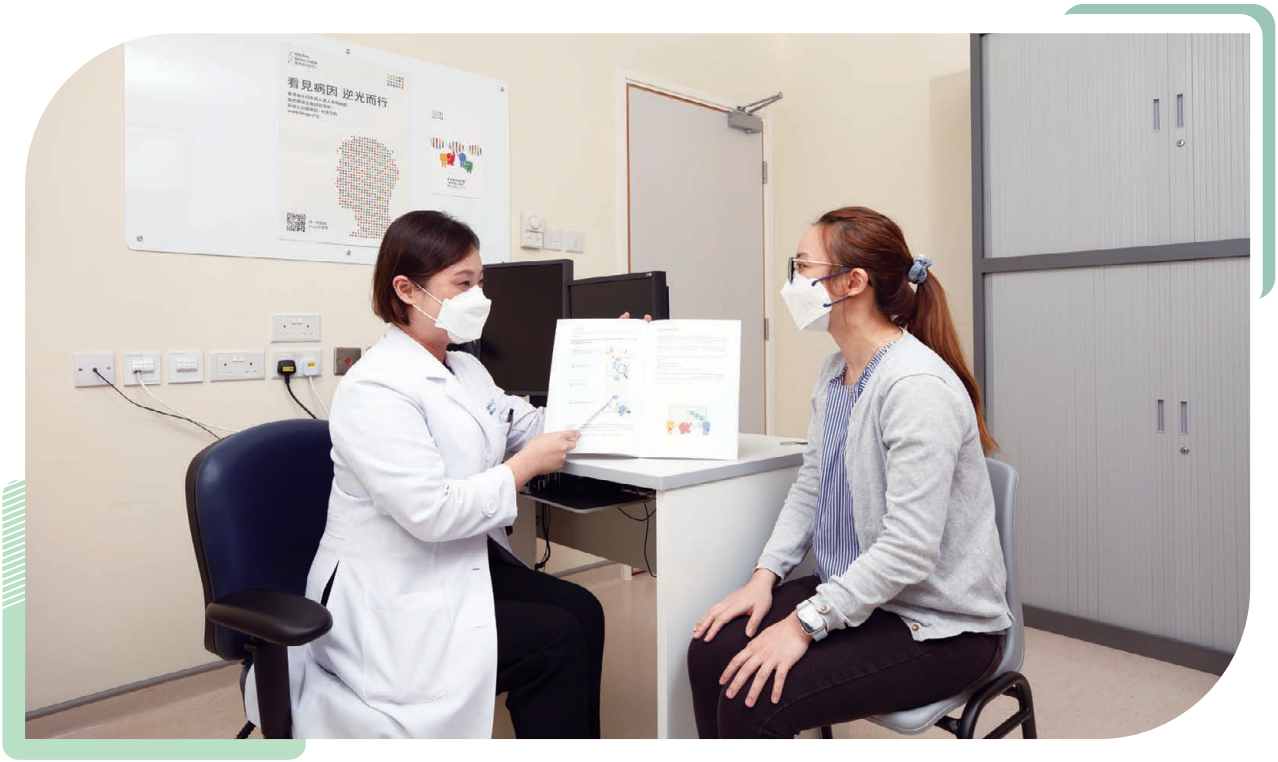
"It was both effective and practical for HKGI to roll out the Project in phases. Starting with the pilot phase and highly selective disease groups at the very beginning allowed us to *start with small* – we had clear foci and attainable targets. This has enabled us to lay down a strong foundation for the good progress we are making today," Dr Lam added.

深化認識　彼此同行

要推行一個全新的計劃，實非易事。林醫生表示：「我們面對的其中一個主要挑戰是深化前線醫護同事的參與，加強大家對全基因組測序的認識，了解此先進的技術可如何惠及病人和改善臨床護理。在醫護同事和醫療專業人員間推廣基因組學，對推行基因組計劃十分重要。唯有透過同儕們的支持和肯定，才能夠有效地向病人作解說，傳遞基因組計劃的好處，從而吸引更多病人參與計劃。」

林醫生補充：「基因組中心分階段推行基因組計劃是有效而務實的做法。計劃以先導階段作為起點，選擇特定疾病組別集中處理，令我們可以集中資源，專注重點項目，訂立可行目標，為今天的成果奠定穩固基礎。」





Genetic Counselling as the Key to Engage Patients

Apart from medical professionals, engaging with patients and their families is another critical factor determining the success of the Project implementation. To this end, the involvement of genetic counsellors has been critical. They translate complex genetic information into layman content for patients, bridging the communications between clinicians, laboratory technicians and patients. They patiently explain all aspects of HKGP to potential participants and actively address their questions and concerns throughout the whole engagement process, before and after conducting WGS.

Being a seasoned professional in this field, Dr Chong considered the training, resources, and support provided by HKGI to PWH's genetic counsellors to be indispensable. "The regular meetups, sharing and training sessions hosted by HKGI have been of great help to our genetic counsellors, equipping them with the knowledge and skills to help patients and their family members make informed decisions every step of the way." Dr Chong remarked.

遺傳輔導　啟發病人

基因組計劃得以順利推展，除了有賴醫療專業人員的努力，病人及家屬的積極參與也是重要原因。其中，遺傳輔導員扮演着非常重要的角色。他們是醫護人員、實驗室技術員以及病人之間互相溝通的橋樑，以深入淺出的方式，向病人講解複雜的遺傳學資訊。他們全程參與整個過程，為基因組計劃的準參加者細心講解計劃的各項細節，積極解答問題，助他們消除疑慮。

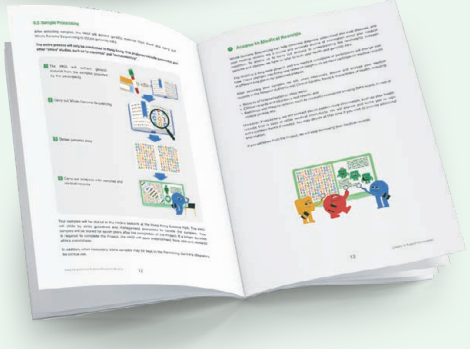
莊醫生是遺傳輔導領域的資深人員，具有豐富經驗。她認為基因組中心在培訓、資源和專業支援等方面，均為威院的遺傳輔導員提供了不可或缺的支持。她表示：「基因組中心定期安排會議、分享會和培訓課程，助我們的遺傳輔導員掌握所需的知識和技能，協助病人及家屬在參與計劃的過程中作出知情的決定。」

"HKGI has also produced a series of patient materials for adult and children participants – the animations and introductory videos, the leaflets and booklets filled with colourful and interesting graphics, all of these provide our genetic counsellors with the essential tools to provide vital information to patients in an engaging and easy-to-understand format. Thanks to the all-round support from HKGI, we have had patients willing to join HKGP, not only for their health conditions but also to help others. This is truly encouraging to us," added Dr Chong.

莊醫生補充：「基因組中心亦分別為成人和兒童參加者製作了一系列病人資訊，如動畫和簡介計劃的短片，以及設計精美、圖文並茂的單張和小冊子等，為遺傳輔導員提供了重要工具，以顯淺易明的方法向病人講解關鍵資訊。在基因組中心的全方位支援下，病人均樂於參加計劃。除了自身的病患，他們更希望能夠幫助他人，令我們相當鼓舞。」











Talent Development Top of the Agenda

Nurturing talent for genomic science, whether they are current healthcare professionals or university students planning for future careers, is a major goal shared by HKGI, CUHK and PWH. Both Dr Chong and Dr Lam were delighted to see the ripple effect that HKGP has created in raising awareness and interest in genomic medicine among these targeted groups.

"Being inspired by the cases recruited for HKGP, there are more and more collaborations between different specialties, such as neurologists, cardiologists, nephrologists, endocrinologists, oncologists and surgeons. We also see more specialists attending the HKGP multi-disciplinary team meetings with the aim to understand more about the Project and potential applications of WGS. This is the positive sign that the Project team has been hoping for," said Dr Lam.

It is equally encouraging to see that HKGP has also instilled interest in students majoring in medicine and other related subjects. "Many students come here for attachments, and they always conclude their visits with amazement and the urge to explore more. There was once a student who was impressed by how genome sequencing and genetic counselling could help patients. She said the patient engagement experience 'gave warmth' to textbook knowledge and sparked her interest in genomic medicine. She was impressed that the use of advanced technology could be translated into clinical services and make real, tangible difference in people's lives," Dr Chong shared.

Many medical students were also astonished to learn the fact that one person could have more than one genetic disease in rare situations. This journey of discovery for students has opened their eyes to genetics and genomics, motivating them to think beyond conventional wisdom and prevailing norms. "This has encouraged students to explore other possibilities to explain a disease when symptoms don't match with the existing diagnosis. This is a crucial perspective when they become doctors one day," Dr Chong remarked.

To encourage students to further explore the subject, Dr Lam also ran a summer internship programme that took students through the research laboratory at CUHK and the HKGP clinic at PWH, allowing them to get a taste of how research can be extended from bench to bedside, supplementing their clinical training and inspiring them to pursue careers in the field.

培育人才　重中之重

培育基因組科學人才，是基因組中心、中大及威院的共同目標。莊醫生及林醫生喜見基因組計劃帶來的漣漪效應，成功提高了現職醫療專業人員，以及大學生對基因組醫學的認識和興趣。

林醫生表示：「在基因組計劃個案的推動下，不同專科之間的合作愈來愈多，例如腦神經科、心臟科、腎病科、內分泌科、腫瘤科及外科等。我們樂見大家反應正面，愈來愈多來自不同專科的同事出席基因組計劃的跨專業團隊會議，加深了解計劃內容和全基因組測序的應用。」

此外，基因組計劃亦吸引了醫科生及主修其他相關學科的學生，對基因組醫學產生濃厚興趣，計劃團隊對此亦深感鼓舞。莊醫生分享：「不少學生前來實習和參觀後，均驚嘆基因組醫學的發展，渴望探索更多。曾經有學生告訴我們，基因組測序及遺傳輔導為病人帶來的裨益，讓她印象深刻難忘。在這裏與病人交流的經驗，為她在教科書上學到的知識增添溫度和人情味，並燃起她對基因組醫學的興趣，令她深切體會到如何透過將先進科技應用於臨床服務，為病人的生命帶來切實改變。」

在這裏學習的過程中，很多醫科生均深受啟發，例如了解到在罕有的情況下，同一位病人可罹患多於一種遺傳病。種種新知擴闊了學生在遺傳學和基因組學方面的視野，激發他們跳出傳統觀念和固有規範。莊醫生表示：「當病人的症狀與當下的診斷不相符，學生會積極探究其他可能性以解釋病情。這種求真精神，對他們將來成為醫生至為重要。」

為鼓勵學生更深入探索有關課題，林醫生特意舉辦了暑期實習計劃，帶領學生到中大的研究實驗室和威院的基因組計劃門診部，讓他們把研究結果從實驗室帶來病房，豐富他們臨床實踐的經驗，以鼓勵他們日後投身這門專業。

Research Efforts Augmented Through Synergistic Effects

HKGP has also catalysed research collaborations between HKGI, CUHK and PWH. As CUHK's teaching hospital, PWH's comprehensive patient services are frequently augmented by the university's cutting-edge research and the expertise of its scientists. A number of research collaborations are being carried out, covering a wide range of topics such as undiagnosed diseases for children, and cases related to neurology and aortic dissection.

In particular, with reference to the extended scope of the main phase of HKGP, a collaborative research project under the theme of "Genomics and Precision Health" on paediatric leukaemia is underway. In this project, CUHK clinicians and scientists work closely with the HKGI team to develop a new therapeutic strategy for patients informed by genome sequencing and multi-omics analyses. The findings of this project will help identify the genetic pathway of the disease, facilitating the formulation of more tailor-made treatment options and case management plans for the patients. There is great excitement about this project as it will be at the forefront of functional genomic research in paediatric leukaemia.

"The synergistic effects created will propel research and development in genetics and genomics forward. They will bring us new perspectives, discoveries and knowledge, allowing us to answer an even broader range of medical questions; and most important of all, inspiring us on improved diagnostic methods and treatment outcomes for patients," said Dr Lam.

協同效應　成績斐然

基因組計劃亦促成了基因組中心、中大及威院之間的研究合作。威院作為中大的教學醫院，秉承了大學的頂尖研究成果，以及來自眾多科學家的專業知識，持續提升為病人提供的服務。在基因組計劃下，多個研究合作項目經已展開，涵蓋的範疇廣泛，包括涉及兒童相關的未能確診病症，以及與腦神經及主動脈撕裂相關的個案。

其中，隨着基因組計劃於主階段把覆蓋範疇擴展至與基因組學及精準醫學有關的疾病群組，中大的醫生和科學家與基因組中心團隊，遂就兒童白血病展開了緊密的研究合作。雙方透過基因組測序及多組學分析，為病人制訂嶄新的治療方案，研究結果將有助找出疾病的遺傳路徑、協助醫生為病人制訂個人化的治療方案和個案管理。就兒童白血病相關的功能性基因組研究而言，這個項目走在業界前沿，極具前瞻性，大家均對研究結果翹首以待。

林醫生表示：「這個項目所產生的協同效益將推動遺傳學和基因組學的研究和發展，為我們帶來新觀點、新發現和新知識，助我們解開更多醫學難題，為持續改進診斷和治療方法帶來啟發。」





Long-Term Vision Comes into View

As the first-of-its-kind genome sequencing project, Dr Chong believed that HKGP had already made an impressive head start. It has demonstrated how various stakeholders unite and come together for a shared cause. "Over the last two years, through implementing HKGP, the Project team has helped raise the awareness of genomic medicine among patients, healthcare professionals and researchers through our networks at CUHK and PWH. We are hopeful that WGS will become more widely adopted, paving the way for building a genome database of the local population to benefit more patients in need."

"HKGP is like a wound-up engine that is now running on turbo. With the Project being a catalyst for accelerating the development of genomic medicine in Hong Kong, there is no doubt that by working closely together, we will be able to bring more precise and personalised healthcare services to patients and the society as a whole," Dr Chong added.

長遠目標　齊心實踐

作為全港首個同類型項目，莊醫生認為基因組計劃起步順利，進度良好，並已取得卓越成果，充分展現各方持份者通力合作，並肩同行，實現共同願景的決心。她總結道：「過去兩年，在推行基因組計劃的過程中，計劃團隊透過中大和威院的網絡，提高了病人、醫療專業人員及研究人員對基因組醫學的認識。我們期望全基因組測序技術得以普及，為建立本地人口的基因組數據庫奠定基礎，惠及更多有需要的病人。」

莊醫生補充：「基因組計劃就像一副已發動運轉，準備就緒的引擎，是加快本港基因組醫學發展的催化劑。我們深信，只要大家同心協力，定必能為病人和社會大眾帶來更精準和個人化的醫療服務。」

Hong Kong Genome Project Partnering Centre
Queen Mary Hospital

香港基因組計劃夥伴中心
瑪麗醫院

HKU Med LKS Faculty of Medicine The University of Hong Kong 香港大學李嘉誠醫學院

Hong Kong Genome Institute 香港基因組中心

瑪麗醫院 QUEEN MARY HOSPITAL





Dr Theresa Li 李德麗醫生
Cluster Chief Executive (Hong Kong West)
Hospital Authority
醫院管理局港島西醫院聯網總監

HKGP has been an excellent start, helping us set a solid foundation for the long-term development of genomic medicine in Hong Kong. It has encouraged us to rethink clinical applications, review project management and reconsider how we can do better in each step in serving the public.

基因組計劃是一個極佳契機，為香港基因組醫學的長遠發展奠定了穩固的基礎，引領我們重新檢視臨床應用和項目管理，反思如何精益求精，更好地服務市民。

Genomic medicine holds the key to a healthier future. I'm glad that the HKSAR Government had the foresight to establish HKGI with the mission to mainstream it into routine clinical care. Through HKGP, we have significantly increased our ability to treat diseases, offering better diagnosis and treatment to our patients.

基因組醫學是開啟健康未來的鑰匙。我們樂見香港特區政府高瞻遠矚，成立了香港基因組中心，致力融合基因組醫學與常規臨床護理。基因組計劃大大提升了我們治理疾病的能力，助我們為病人提供更精準診斷和適切治療。



Professor Lau Chak-sing 劉澤星教授
Dean of the Li Ka Shing Faculty of Medicine
The University of Hong Kong
香港大學李嘉誠醫學院院長

The Partnering Centres of Hong Kong Genome Institute (HKGI) are instrumental in recruiting patients for the Hong Kong Genome Project (HKGP). At Queen Mary Hospital (QMH), the Partnering Centre has been nothing short of inspirational for the team's stellar support and advancement of the HKGI vision – availing genomic medicine to all for better health and well-being.

Some of the most influential experts in this effort have been **Dr Theresa Li**, Cluster Chief Executive (Hong Kong West), Hospital Chief Executive of Queen Mary Hospital and Tsan Yuk Hospital of the Hospital Authority (HA); and **Professor Lau Chak-sing**, Dean of the Li Ka Shing Faculty of Medicine of The University of Hong Kong (HKU). Rounds of applause must also go to the entire HKGP team composed of healthcare professionals from QMH and HKU. It has been their dedication and professionalism that makes the successful implementation of HKGP possible, paving the way for the development of genomic medicine in Hong Kong.

香港基因組中心(基因組中心)的夥伴中心，在為香港基因組計劃(基因組計劃)招募病人方面，擔當着關鍵角色。瑪麗醫院作為夥伴中心之一，計劃團隊群策群力，堪稱楷模，與基因組中心共同朝着「普及基因組醫學，共享健康福樂」的願景前進。

在計劃團隊中，最具影響力的專家包括醫院管理局(醫管局)港島西醫院聯網總監、瑪麗醫院及贊育醫院行政總監**李德麗醫生**、以及香港大學(港大)李嘉誠醫學院院長**劉澤星教授**。李醫生和劉教授帶領着由瑪麗醫院及港大醫療專業人員組成的計劃團隊，憑着熱誠和幹勁，順利推行基因組計劃，為本港基因組醫學的發展鋪就了一條康莊大道。





Living up to the "Patient-first" Motto

QMH chose its S1 – the first floor of Block S that houses specialist outpatient clinics and a pharmacy – as the place to set up the HKGP clinic. According to Dr Li, lots of thought had been put into this patient-centric operational design, "This is a well-thought-out setup to provide patients and their families with the greatest convenience as they are enrolled to participate in the Project. The pharmacy is just next door. This allows HKGP participants to take this spot as their last stop for clinical consultation, instead of going from one block to another for HKGP appointments and collection of medications."

The HKGP clinic is designed with two individual consultation rooms, providing patients and their families with a private and comfortable environment for discussing their cases and worries with the Project team. "The whole HKGP patient engagement process is truly a reflection of our patient-first motto," added Dr Li.

"Serving the public has always been our priority," Professor Lau remarked, echoing Dr Li while recounting the genesis of the participation of HKU and QMH in HKGP. "We know that genetic variations can cause diseases, and that a better understanding of genomics can lead to improved diagnosis, personalised treatment, and advanced research. HKGP provides an excellent opportunity to achieve this. We are excited to collaborate with HKGI in conducting this first-ever city-wide genome project and developing a genome database of the local population, contributing to improving the health and well-being of all in Hong Kong," he said.

堅守信念　病人為先

瑪麗醫院的基因組計劃門診部設於S座一樓(S1)，同層設有專科門診和藥房。李醫生表示，門診部的選址和設計均經過計劃團隊反覆思量，處處以病人為先。她解釋：「整個設計充滿巧思，所有細節均以方便參加計劃的病人和家屬為原則。我們的基因組計劃門診部毗鄰藥房，參加者完成臨床檢查和諮詢後，可以在同一樓層辦妥各項手續，無需為應診和領取藥物於不同大樓往來奔走。」

除了選址用心，基因組計劃的門診部亦設有兩間獨立診症室，為病人和家屬提供舒適的環境和私人空間，方便他們與計劃團隊討論病情。李醫生補充：「整套流程設計考慮周全，充分體現了我們以病人為先的精神。」

談及服務病人，劉教授與李醫生秉持同一信念，強調服務市民的重要。回想起港大和瑪麗醫院參與基因組計劃的初心，劉教授表示：「我們明白基因變異引致疾病，而深化對基因組學的認識，將有助我們作出更精準診斷及個人化治療，並進行更深入的研究。基因組計劃正是絕佳時機，讓我們實踐這個目標。我們非常高興與基因組中心攜手合作，推展本港首個大型基因組計劃，建立本地人口基因組數據庫，為香港市民帶來健康快樂。」

Amidst Opportunities, Come Challenges

Implementing a new project, let alone one in such a ground-breaking field, is never easy. Promoting HKGP to clinicians, nurses and healthcare professionals, familiarising them with the Project's significance, protocols and logistics, and navigating the complexities of this new frontier all took time. As a strategic start, the QMH-HKU Project team focused on diseases known to be associated with genetic variations, such as epilepsy and other neurological conditions, as well as renal diseases to build a solid foundation. With accumulated experience, the team gradually expanded recruitment to a broader range of patients, maximising the impact of HKGP.

"We worked closely with HKGI to roll out the pilot phase of HKGP in the second half of 2021. Like the launch of any other new initiatives, we took the time to observe, review and refine the operational model and scopes. In July 2022, we decided to take on a more proactive approach to patient recruitment by setting up an outreach team. The 'mobile team' – that is what we call it," said Dr Li.

把握機會　迎難而上

推行新計劃從來不易，尤其是基因組醫學這個嶄新領域，難度更是倍增。計劃團隊需要向醫生、護士、醫療專業人員等推廣基因組計劃，讓大家了解其重要性、規程和後勤流程，亦要應對當中各項挑戰。工作任重道遠，並非朝夕可達。因此，計劃團隊制定了執行策略，先專注已知與基因變異有關的疾病，例如癲癇症、腦神經系統疾病和腎病。在建立了穩固基礎及積累經驗後，團隊再逐步招募患有不同疾病的病人，藉此令基因組計劃發揮最大效用。

李醫生表示：「我們與基因組中心緊密合作，於2021年下半年展開了基因組計劃的先導階段。與推行其他新項目一樣，我們一邊推展計劃，一邊觀察檢討，逐步完善運作模式和服務範圍。到了2022年7月，我們更成立了外展隊，主動出擊招募病人。」





Recruitment Expands to Benefit More Patients

"We included a project coordinator, phlebotomist and genetic counsellors to engage specialised hospitals and specialist clinics in the Hong Kong West Cluster and their patients. As a result, we were able to recruit ophthalmology patients from the Grantham Hospital and paediatric patients from the Duchess of Kent Children's Hospital at Sandy Bay, without requiring the patients to come to QMH," she added. To offer greater convenience for patients and their families, the mobile team operates on Saturdays, when the specialist clinics are closed, and the space is available.

In setting up the mobile team, HKGI provided various essential support to get things started, including the setup of the participant registration systems, workflow and provision of training. "This is all done with altruism and public interest in mind. The mobile team is made possible by dedicated colleagues who are willing to go the extra mile to serve patients and ensure the success of HKGP," said Dr Li.

This hub-and-spoke model has proven to be effective. With strong dedication, the QMH-HKU team has expanded the HKGP coverage to include cardiology, immunology, neurology, and urology, with more specialties such as clinical oncology, orthopaedics & traumatology, and rheumatology to come.

擴展服務　惠澤病人

李醫生續指：「我們的外展隊由項目統籌員、抽血員和遺傳輔導員組成，負責走訪港島西聯網的專科醫院和專科門診，主動邀請合資格的病人參與基因組計劃。在外展隊的努力下，我們成功招募到不同個案，例如來自葛量洪醫院的眼科病人，以及大口環根德公爵夫人兒童醫院的兒科病人。外展隊會於星期六出勤，趁着專科門診休息的日子，善用騰空出來的診症室服務病人和家屬，方便他們無需舟車勞頓前往瑪麗醫院。」

李醫生表示，成立外展隊時，基因組中心提供了多方面的支援，包括設立參加者登記系統、擬訂工作流程及提供培訓，讓團隊順利開展工作。她說：「我們時刻緊守服務市民的宗旨。基因組計劃得以順利推行，實在有賴整個計劃團隊，包括外展隊成員熱誠投入，無私付出，全心全意服務病人。」

從基因組計劃的進度，可見這套「軸輻模式」(以瑪麗醫院為中心，再以外展隊覆蓋聯網內其他醫院的運作模式)行之有效。瑪麗醫院與港大的計劃團隊努力不懈，已把基因組計劃覆蓋的範疇擴展至心臟科、免疫科、腦神經科和泌尿科，日後更會進一步擴展至臨床腫瘤科、矯形及創傷外科，以及風濕科。



Talent Development Another Highlight

Aside from unlocking a new frontier, genomic medicine has also given rise to new professions, including genetic counsellors, who are the first to engage with patients and explain HKGP and genomic medicine to them. Training of genetic counsellors is of paramount importance. At the hospital, genetic counselling is primarily provided by its nursing staff. While HKGI has been providing numerous support in terms of training, including several alignment of practice sessions, the Hong Kong West Cluster had arranged for 36 nurses from the Central Nursing Department, who are in charge of HKGP's genetic counselling, to participate in a virtual overseas genetic programme hosted by Guy's and St Thomas' Hospital of the United Kingdom.

"We hope to cultivate a pool of genetic counsellors for them to support and learn from one another. As inspired by HKGP, arranging annual local and overseas training programmes has been our long-term goal for developing talent for this profession," Dr Li explained.

培育人才　發展專業

基因組醫學不但為醫學和科學開拓了嶄新領域，亦創造了各種新興專業，包括遺傳輔導員，負責於前線與病人溝通，講解基因組計劃及基因組醫學的資訊。在瑪麗醫院，遺傳輔導的工作主要由護士負責，有關培訓甚為重要。基因組中心在這方面亦提供了多項支援，包括舉辦實務討論和培訓課程，協助夥伴中心統一服務標準。除此之外，港島西醫院聯網亦安排了36名來自中央護理部並負責基因組計劃遺傳輔導工作的護士，參加由英國Guy's and St Thomas' Hospital舉辦的網上遺傳學課程，以增進同事的專業知識。

李醫生解釋：「我們希望為遺傳輔導員這個專業建立人才庫，讓他們互相扶持和學習。我們亦從基因組計劃中得到啟發，長遠目標是每年為同事安排本地和海外培訓課程，為這個專業培育更多人才。」

Inspiring New Approach to Healthcare and Research

"Genetic counselling is one example. If we are to promote and advance the clinical applications of genomic medicine, promoting public education and professional development among colleagues in the medical and healthcare sectors will be critical to the sustainable development of this new field," commented Professor Lau, who expressed appreciation for HKGI's endeavours to enhance genetic and genomic literacy across medical specialties.

He was delighted to see colleagues enthusiastic about taking part in HKGP, including at multi-disciplinary team (MDT) meetings. These are occasions where HKGI's clinicians, scientists and bioinformaticians discuss whole genome sequencing reports with clinicians, genetic counsellors, experts and researchers from QMH and HKU regarding clinical observations, potential diagnoses and treatment plans.

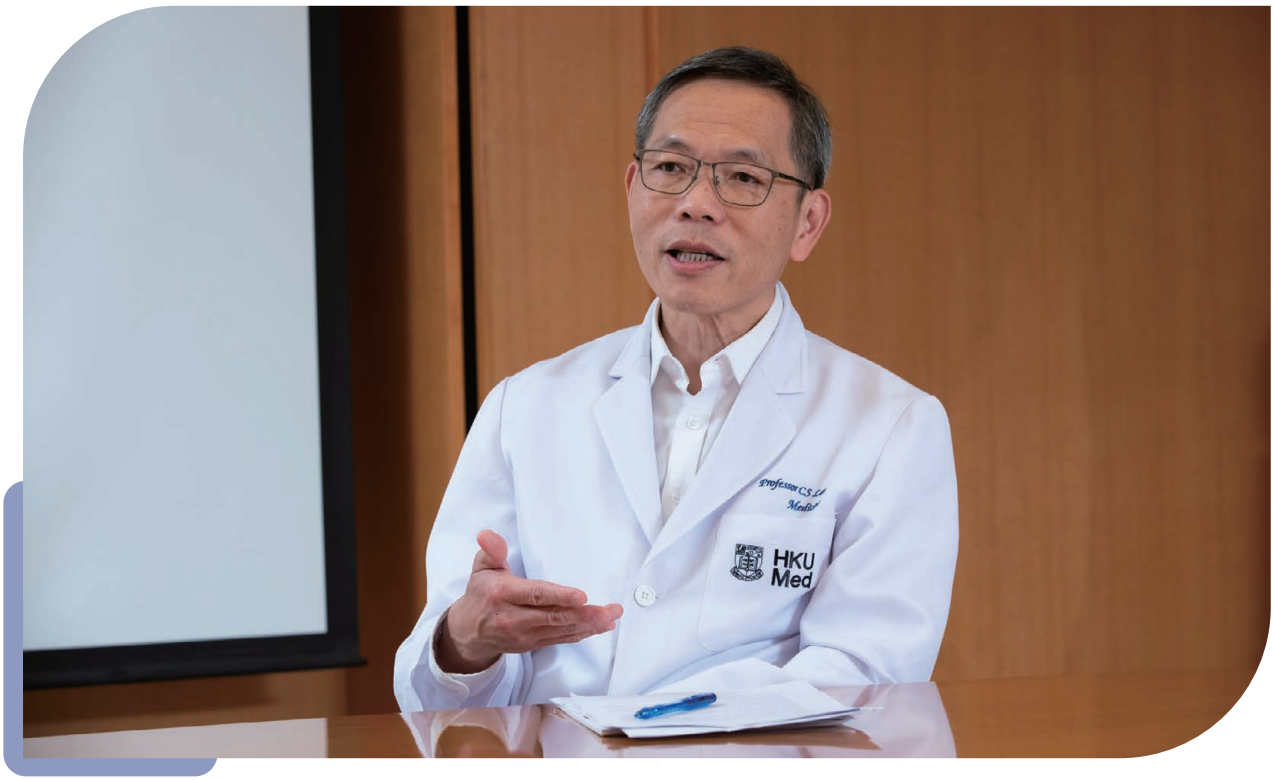
"HKGP has inspired a new approach to medicine and healthcare as well as complex disease research," said Professor Lau. "By consolidating the expertise of various specialties, joining discussions, and developing treatment plans together, we have achieved greater results. I have personally learnt a lot during these MDT meetings."

嶄新思維　醫研並重

對於基因組中心致力提升醫療專業人員對遺傳學及基因組學的認識，劉教授深表認同：「以遺傳輔導為例，若要促進基因組醫學的臨床應用，我們必須推動公眾教育和深化醫護人員的專業知識，方可確保這個領域持續發展。」

劉教授樂見同事積極參與基因組計劃，包括出席跨專業團隊會議。在會議中，基因組中心的醫生、科學家及生物信息學家，會與瑪麗醫院及港大的醫生、遺傳輔導員、專家和研究人員一起從臨床觀察、潛在診斷及治療方案等角度，討論全基因組測序報告，交流分享。

劉教授續說：「除了醫學與醫療服務，基因組計劃亦為複雜病患的研究注入嶄新思維。大家透過互相交流討論，整合不同專業意見，共同為病人制訂治療方案，成果令人滿意。個人而言，我亦在跨專業團隊會議中獲益良多。」



Professor Lau added that patients were appreciative of the Project team's great efforts in trying to help them identify the causes of their diseases and search for potential cures. "Even though some of them might not be able to get diagnoses due to various reasons, such as the limitations of modern science, we see patients feeling relieved as they found closure in their cases through HKGP."

劉教授補充，病人對計劃團隊竭力為他們尋找病因及治療方案，總是心懷感激。他說：「礙於現代科學仍有限制，又或其他原因，部份參加計劃的病人無法得到確切的診斷。儘管如此，透過基因組計劃，他們對自身的病情有了更深入的認識，得以解開心結，卸下心理包袱，意義同樣重大。」

The impact of HKGP has extended to hospital operations and research as well. "With many procedures already well-established," Dr Li said, "HKGP has encouraged us to rethink clinical applications, review project management and reconsider how we can do better in each step."

除了為病人的生命帶來改變，基因組計劃的影響力亦遍及醫院管理及科學研究。李醫生表示：「基因組計劃建構了一套有效順暢的流程和系統，引領我們重新檢視臨床應用和項目管理等工作，並思考如何在每個細節上精益求精。」

"Genomic research is an entirely new frontier that is quite different from our usual clinical research. It inspires us to rethink medical ethics," added Professor Lau, "The inspiring findings and discussions stemmed from HKGP cases also offer new perspectives for scientific research, encouraging even closer and more collaborations among HKGI, HKU and QMH."

劉教授亦表示：「基因組研究屬於嶄新領域，與一般臨床研究截然不同，促使我們反思不少醫學倫理議題。基因組計劃的各個案例，亦啟發我們反覆討論和探索，為科學研究開闢新路向，促進了基因組中心、港大與瑪麗醫院之間更頻繁密切合作。」

HKGP Making Strong Strides in Infancy

穩紮根基　續展新篇

While progress has been remarkable, Dr Li and Professor Lau both agreed that HKGP is only the beginning. "We successfully concluded the pilot phase of HKGP. The lessons we learnt demonstrated pathways to how we can help more patients and their families through HKGI's whole genome sequencing platform during the main phase and beyond," said Professor Lau.

基因組計劃進展理想，李醫生和劉教授均認為這是好的開始，為未來發展奠定基石。劉教授說：「隨着基因組計劃的先導階段圓滿結束，我們總結了許多寶貴經驗，了解到如何透過基因組中心的全基因組測序平台，在計劃的主階段及往後幫助更多病人及家屬。」

It is a sentiment Dr Li wholeheartedly concurred with. "HKGP has been an excellent start, helping us set a solid foundation for collaboration between HKGI, QMH and HKU in genomic medicine, and most important of all, for the long-term development of genomic medicine in this city," she remarked.

李醫生對此深表贊同，她說：「基因組計劃是一個極佳契機，不但促進了基因組中心、瑪麗醫院與港大在基因組醫學方面的緊密合作，更為基因組醫學在香港的長遠發展奠定了穩固的基礎。」

The participation of new talent bodes well for the future. Professor Lau noted that, despite the complexity of genomic medicine, more medical students have expressed an interest in the subject. "At HKU Faculty of Medicine, we have included genomic medicine and related subjects in our curriculum. This will help further inspire the students and drive the field's development."

隨着愈來愈多人才加入基因組醫學的行列，行業發展愈見蓬勃。劉教授表示，縱使基因組醫學是一門較為深奧繁複的學科，他很高興見到不少醫科生對此專業感興趣，他說：「港大醫學院已把基因組醫學及相關科目納入課程中，冀有助啟發學生，並推動香港基因組醫學的長遠發展。」

Dr Li also shared that several QMH specialists who took part in HKGP have now embarked on further studies in clinical genetics. "As more medical professionals become aware of genetics and genomics, they will be increasingly motivated to engage in further research. We are very pleased to see our colleagues embracing this up-and-coming healthcare profession."

李醫生亦分享了幾位瑪麗醫院專科醫生的故事，他們在參與基因組計劃後，便決定於臨床遺傳學方面繼續進修。她說：「隨着醫療專業人員對遺傳學及基因組學的認識日漸加深，他們更加積極參與相關研究。看到同事們對這個嶄新醫療領域的主動投入，我們感到非常鼓舞。」

Transforming Healthcare Services for the Better

After two years of running HKGP, Dr Li believes that the Project has highlighted "three P's": **Prevention** is better than cure; the bright prospects of **Precision Medicine Development**; and the importance of bringing **Personalised Treatment** down to individuals. She added that with Genomic Medicine, the healthcare service model in Hong Kong will see a revolutionary shift from "treatment-dominant" towards "prevention-oriented". There is an exciting future ahead.

"Genomic medicine holds the key to a healthier future. I'm glad that the HKSAR Government had the foresight to establish HKGI with the mission to mainstream it into routine clinical care," said Professor Lau. "Through HKGP, we have significantly increased our ability to treat diseases, offering more precise diagnosis and treatment to our patients. Data collected can shed light on the genomic make-up of the population, driving research for the well-being of all."

革新醫療　共享福樂

總結推行了兩年的基因組計劃，李醫生認為，計劃帶出了「3P」的重要：**Prevention**（預防勝於治療）、**Precision Medicine Development**（發展精準醫學），以及**Personalised Treatment**（普及個人化治療）。她說：「基因組醫學將為香港的醫療服務模式帶來突破性的轉變，由『治療為主』轉化為『預防為重』，確實令人期待。」

劉教授深有同感，他說：「基因組醫學是開啟健康未來的鑰匙。我們樂見香港特區政府高瞻遠矚，成立了香港基因組中心，致力融合基因組醫學與常規臨床護理。基因組計劃大大提升了我們治理疾病的能力，助我們為病人提供更精準診斷和適切治療。計劃收集所得的數據，亦有助我們了解本地人口基因組的組成，能夠促進科研發展，惠及社會大眾。」



Forging Ahead as One for Better Health
齊心同進 躍變健康未來





Integrate Genomic Medicine into Clinical Care
融合基因組醫學與臨床護理



Integrate Genomic Medicine into Clinical Care
融合基因組醫學與臨床護理

Having a vision is only one component of achieving HKGI's mission – to advance genomic medicine and foster its integration into clinical care. Implementation, or the ability to bring this mission to fruition, is equally important. The successful execution of the Hong Kong Genome Project (HKGP) pilot phase in 2022-23 led to many remarkable outcomes. These include ending the decades-long diagnostic odysseys for patients, motivating more medical professionals and researchers to embrace whole genome sequencing (WGS) and genomic medicine, and inspiring the next generation of medical students to venture into genomics-related fields.

HKGI could not have achieved this without the support from partners and supporters. Collaborative efforts with the three Partnering Centres (PCs), local and international universities, and key industry stakeholders elevated the impact of HKGI's work, broadening its presence and influence in the field of genomics while also expanding its research, knowledge exchange, and thought leadership. All this has laid a robust foundation for pushing forward HKGP's main phase and fulfilling HKGI's mission to catalyse the development of genomic medicine and its integration into clinical care, for better health and well-being for all.

基因組中心肩負推動及加快融合基因組醫學與臨床護理為使命。為此，團隊不但相當重視執行細節，更不斷精益求精，竭盡全力實現願景。基因組計劃先導階段於2022-23年度圓滿結束並取得豐碩成果，包括成功為長期未能找出病因的病人作出診斷、鼓勵更多醫療專業人員及研究人員投身全基因組測序和基因組醫學的範疇，以及啟發新一代醫科生探索基因組學的相關領域。

全賴一眾合作夥伴和支持者鼎力襄助，基因組中心於年內綻放異彩。在三個夥伴中心、多間本地和國際大學，以及業界翹楚全力支持下，團隊得以事半功倍，逐漸提升基因組學領域的知名度及影響力；在研究工作、知識交流和思想指導等方面取得非凡成就。這些努力為基因組中心奠定穩固的根基，以開展基因組計劃的主階段；同時加快基因組醫學發展、融合基因組醫學與臨床護理的步伐、實現「普及基因組醫學，共享健康福樂」的願景。



Integrate Genomic Medicine into Clinical Care
融合基因組醫學與臨床護理

Pilot Phase Enters Exciting New Era

HKGP's pilot phase continued apace in 2022-23, with the relentless dedication of the three PCs – Queen Mary Hospital (QMH), Prince of Wales Hospital, and the Hong Kong Children's Hospital – as well as other hospital networks. HKGP has already successfully recruited over 18,000 participants to date.

The preliminary analysis of certain cases yielded numerous promising results. A 71-year-old female patient and her 37-year-old daughter suffering from Fabry disease, an inherited metabolic disease that affects multiple organs such as the eyes, heart, kidneys, were finally able to identify the precise genetic cause of the disease in the family, ending a 22-year diagnostic odyssey. Diagnostic delays for Fabry disease are common because it is rare and early symptoms are non-specific. Hence, genetic counselling and subsequent cascade genetic testing of family members are crucial. With the confirmed genetic diagnosis, the asymptomatic daughter and other affected family members will be able to initiate preventive treatment as an early intervention.

Another 10-year-old patient, after enduring nine years of medical investigation and treatment, received a genetic diagnosis, identifying a variant in the *PAX2* gene that is the cause of her kidney disease. It enabled her clinician to develop a new, precision clinical management plan, with follow-ups to monitor her kidney function and vision. These compelling achievements have reinforced HKGI's and the PCs' resolve to unlock the full potential of genomic medicine and extend its benefits to a larger number of patients in Hong Kong.

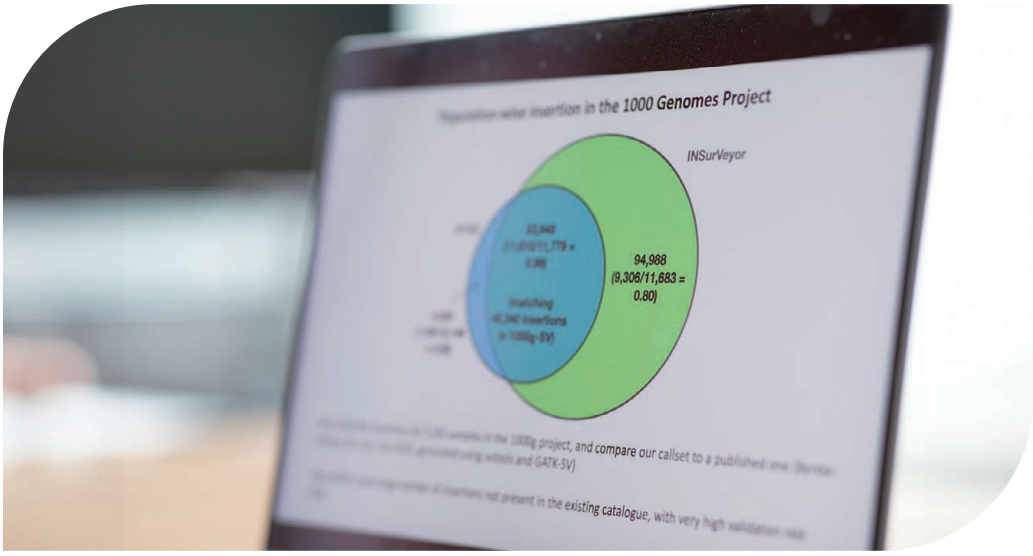
先導階段　成績斐然

在三個夥伴中心，即瑪麗醫院、威爾斯親王醫院及香港兒童醫院，以及其他醫院網絡的全力支持下，基因組計劃先導階段於2022-23年度成績突飛猛進，迄今已招募了超過18,000名參加者。

此外，部分個案的初步分析取得多個令人振奮的結果。一名71歲女病人及其37歲女兒經歷22年漫漫長路，終於獲診斷出其家族成員罹患法布瑞氏症的原因。法布瑞氏症是一種遺傳性的代謝疾病，影響患者眼睛、心臟及腎臟等多個器官。要及早診斷出法布瑞氏症殊不容易，因為該病症相當罕見，早期徵狀亦不明顯，故必須依靠家族成員進行遺傳輔導，以及接受各項不同基因檢測。在成功作出遺傳診斷後，該名沒有出現症狀的女兒及其他受影響的家庭成員便可及早作出預防性治療。

另一名年僅10歲的病人，9年以來一直不斷尋求醫學診查及治療，經基因診斷後，終於發現其腎病是*PAX2*基因出現變異所致。成功診斷病因，令醫護人員能夠為病人擬訂一套全新及精準的醫療管理計劃，進行各種跟進工作，以監察病人的腎功能和視力。這些成果實在令人鼓舞，堅定了基因組中心及夥伴中心的決心，務求全面發揮基因組醫學的潛力，讓更多香港市民受惠。





Expanded Capabilities Create Compelling Arsenal

To harness the power of WGS and genomics for improved genomic diagnosis and personalised treatment, HKGI significantly expanded its sequencing capabilities. The team established its laboratory facilities to be Hong Kong's first and only laboratory to offer end-to-end WGS. A state-of-the-art sequencing system, NovaSeq 6000, was procured in Q2 2022, followed by the addition of a second sequencing system with the latest technological advancement, NovaSeq X Plus, and the deployment of 16 additional servers in March 2023. These hardware enhancements boosted HKGI's weekly sequencing throughput to over 400 samples per week, enabling the processing of a higher volume of WGS samples collected from HKGP and expediting sequencing results.

The team also developed automation pipelines, streamlined the data processing flow, and improved the functionality of the Bioinformatics Platform's Clinical Frontend, which is used for registering patients, obtaining their consent, and collecting relevant clinical information and bio-samples. A sequencing workflow was also established, and existing staff were trained in Q2 2023 to ensure maximum operational effectiveness and provide a solid basis for continuous WGS process optimisation.

Analytical Abilities Tuned Up a Notch

HKGI's analytical capabilities were augmented with the successful implementation of small variant, copy number variation, and structural variation bioinformatics pipelines for secondary analyses. The development of INSurVeyor, upgrades to HKGI's Bioinformatics Platform and bioinformatics pipelines, coupled with the ongoing development of more sophisticated in-house variant analysis tools, have significantly bolstered HKGI's analytical prowess. These advancements will continue to play a crucial role in the development of more refined diagnoses and clinical treatment plans for individual patients.

整裝待發　展現實力

基因組中心大大提升了進行測序的能力，務求充分發揮全基因組測序及基因組學的力量，以便為病人提供更佳的基因組診斷和個人化治療。團隊所設立的實驗室，具備本港首個及唯一一個提供整套全基因組測序的實驗室。機構更於2022年第二季採購了頂尖的基因組測序儀器NovaSeq 6000，隨後2023年3月新增了另一套配備最先進科技的基因組測序系統NovaSeq X Plus，並增設了16台額外伺服器。這些硬件配置大幅提升基因組中心的工作效能，可在每周為超過400個樣本進行測序，更高效地處理基因組計劃收集所得的全基因組測序樣本，加快得到測序結果。

基因組中心的團隊亦研發了一套自動管理流程、簡化處理資料數據的過程，以及強化生物信息平台中臨床資訊管理平台的功能，藉以更便捷為病人登記，向他們徵詢知情同意，並記錄所收集的臨床資訊和生物樣本。團隊又制訂了一套測序流程，並於2023年第二季為現職員工進行培訓，以便充分發揮工作效率，為持續完善全基因組測序的工作打好基礎。

精準分析　更上層樓

基因組中心成功推行分析小變異、拷貝數目變異及結構性變異的生物信息管理流程，以進行二次分析，大大提高了團隊的分析能力。另一方面，團隊成功研發INSurVeyor更提升了生物信息平台及生物信息管理流程的功能，加上基因組中心不斷研發更先進的內部基因變異分析工具，令基因組中心的分析能力與日俱增。這些進展均有助團隊為個別病人作出更精準的診斷和臨床治療方案。

Integrate Genomic Medicine into Clinical Care
融合基因組醫學與臨床護理

Underlining the Crucial Role of Genetic Counselling

Genetic counsellors are key professionals who interact closely with patients, helping them comprehend complex genetic information and make informed decisions, while facilitating understanding between clinical geneticists and patients. Despite its importance, genetic counselling remains relatively underdeveloped in Hong Kong; and systematically developing the profession is essential for the future growth of HKGP and genomic medicine.

After laying the groundwork in 2021-22, HKGI successfully established the Hong Kong Genetic Counselling Practice Consortium in 2022-23. By bringing together experts and stakeholders in genetics and genomics and reviewing genetic counselling developments around the globe, the consortium formulated a scope of practice and code of ethics for genetic counselling practice in Hong Kong. Furthermore, the consortium developed a model of practice for genetic counselling and contributed to the creation and implementation of a genetic counselling accreditation system, with advice from experts in ethics and law, cancer genetics, public health and patient services, reproductive medicine, prenatal genetic counselling, and public administration.

Maintaining high standards of genetic counselling across practice environments, including clinical, laboratory, academic, policy, and industry settings, has been a firm focus. HKGI has evaluated the workflow, caseload, and duties of HKGP genetic counsellors at the three PCs. The team also conducted two rounds of genetic counselling practice alignment workshops to standardise patient recruitment and informed consent processes. Additionally, a list of genetic and genomic terms commonly used in the genetic counselling practice was compiled, in both Chinese and English, to facilitate effective professional communication.

Looking towards the future expansion of genetic counselling services, the team conducted a literature review of recent studies on genetics-related tele-medicine and tele-counselling, and consulted local and overseas entities to glean insights from their experience in implementing genetic tele-counselling services. A manuscript entitled "The Growing Needs of Genetic Counselling – Feasibility in Utilisation of Tele-genetic Counselling in Asia and Hong Kong" was submitted to *Frontiers in Genetics* for peer review and was accepted in July 2023.

遺傳輔導　任重道遠

遺傳輔導員與病人緊密聯繫，擔當着關鍵角色，除了協助病人了解內容複雜的遺傳學信息，以便他們作出知情決定，亦作為臨床遺傳學家與病人溝通的橋樑。遺傳輔導的工作十分重要，而香港在這方面的發展仍然處於起步階段。為了基因組計劃和基因組醫學未來的發展，基因組中心必須有序發展這門專業。

在2021-22年度穩扎根基後，基因組中心隨即於2022-23年度成立了「香港遺傳輔導專業發展聯席」，匯聚遺傳學和基因組學的專家和持份者，檢視全球在遺傳輔導方面的發展，並且為遺傳輔導在本港的實踐制訂實務範圍和倫理守則。此外，該聯席為遺傳輔導制訂了一套實踐模式，並在多名倫理和法律、癌症遺傳學、公共衞生及病人服務、生殖醫學、產前遺傳輔導及公共行政等領域的專家提供意見下，協助制訂和推行一套遺傳輔導的認證制度。

就遺傳輔導的應用實踐而言，基因組中心致力於各範疇保持高度專業，從臨床服務、實驗室事務和學術研究，以至政策倡議及業界合作，均堅持最高標準。團隊曾經檢視三間夥伴中心的基因組計劃工作流程、個案數量，及遺傳輔導員的職責範圍，團隊亦曾主辦兩輪遺傳輔導實踐工作坊，為招募病人及取得知情同意的過程制訂劃一標準。此外，基因組中心亦編制了中、英雙語的遺傳輔導常用遺傳學及基因組醫學辭彙，以便更有效地作出專業溝通。

展望未來，為進一步拓展遺傳輔導服務，團隊進行了一次文獻探討，鑽研與遺傳學相關的遙距醫療及遙距輔導的最新研究，並諮詢了本地及海外同儕的意見，了解他們提供遙距遺傳輔導服務的經驗。團隊向學術期刊*Frontiers in Genetics*呈交了一份題為"The Growing Needs of Genetic Counselling – Feasibility in Utilisation of Tele-genetic Counselling in Asia and Hong Kong"的文稿作同行評審，並於2023年7月獲接納刊登。

A Multi-Disciplinary Team Offers Diversified Services

HKGI also took steps to boost the impact of multi-disciplinary teams (MDT), which is one of the most distinctive features of HKGP. An MDT comprises experts from various disciplines, including clinicians, genetic counsellors, genome curators, laboratory professionals, bioinformaticians, scientists, and patient care staff. Together, they discuss and review WGS results, make diagnoses and clinical decisions, and refine personalised treatment plans for individual patients.

In 2022-23, nine MDT meetings between HKGI and the three PCs were held. Beyond pooling expertise to provide optimal patient care, MDT meetings have proven invaluable as educational opportunities for professionals across specialties to learn about genomics and its applications. Recognising the value of MDT meetings, HKGI has applied for the Continuing Medical Education (CME) Programme for doctors participating in the MDT meetings, an arrangement that was implemented from January 2023. The colleges available for registration include The Medical Council of Hong Kong, the Hong Kong College of Community Medicine, The Hong Kong College of Pathologists, The Hong Kong College of Obstetricians and Gynaecologists, Hong Kong College of Physicians, The College of Surgeons of Hong Kong, Hong Kong College of Paediatricians and The Hong Kong College of Anaesthesiologists.

專業團隊　服務多元

跨專業團隊是基因組計劃的一大特色，而基因組中心亦致力加強其影響力。跨專業團隊由醫生、遺傳輔導員、基因組數據分析員、實驗室專業人員、生物信息學家、科學家及病人護理人員等不同專才組成。他們聚首一堂，討論和檢視全基因組測序結果、進行診斷、作出臨床決定，以及為個別病人改善個人化的治療方案。

2022-23年度，基因組中心及三間夥伴中心舉行了九次跨專業團隊會議。有關會議除了讓各領域的專家聚首一堂，為病人提供最適切的護理，同時亦提供了非常寶貴的學習機會，讓不同專科的專業人士認識基因組學及其應用。有見跨專業團隊會議對推動專業發展甚具價值，基因組中心遂申請將有關會議納入延續醫學教育計劃，並成功取得認可。於2023年1月起，來自以下機構或專科學院的醫生，可於參與跨專業團隊會議後取得學分，包括香港醫務委員會、香港社會醫學學院、香港病理學專科學院、香港婦產科學院、香港內科醫學院、香港外科醫學院、香港兒科醫學院，以及香港麻醉科醫學院。



Integrate Genomic Medicine into Clinical Care
融合基因組醫學與臨床護理

Powering Up Personalised Prediction and Prevention of Disease Risk

HKGP's pilot phase has showcased the wide-ranging applicability of WGS, inspiring clinicians from different specialties to employ this cutting-edge technology for their patients' benefit. The project was also warmly received by patients, who eagerly participated in HKGP in the hope of finding answers, and contributing to improving personalised prediction and prevention of disease risk for themselves and other patients. The main phase has thus broadened its scope to include patient cases related to genomics and precision health, in addition to undiagnosed diseases and hereditary cancers that were included in the pilot phase.

Following consultation with interested clinicians and clinical research teams at the PCs, the main phase has introduced 15 new patient cohorts. With the approval of HKGI's Scientific Advisory Committee, these encompass haematological cancers (childhood and adult), childhood solid tumours, childhood neurodevelopmental disorders, paediatric-onset diabetes, young-onset diabetes, aortic dissections, ophthalmology, adult polycystic kidney disease, adult renal diseases, congenital heart diseases, osteoporosis, primary brain cancers, glaucoma screening, and spondyloarthropathy.

Expanding Referring Networks Unleashes the Potential of Partnership

To accommodate new patient cohorts and expand patient recruitment, additional recruitment channels have been added. Building on the success of QMH establishing its outreach team to recruit patients from the Hong Kong West Cluster, new referral networks were set up at the Alice Ho Miu Ling Nethersole Hospital to recruit patients from the New Territories East Cluster. To support these outreach efforts, the Clinical Frontend system was enhanced to facilitate patient recruitment at these satellite locations.

擴大範圍　惠澤病患

基因組計劃先導階段已展示了全基因組測序用途廣泛，啟發不同專科的醫生應用這種尖端科技，為病人帶來裨益。此外，病人對基因組計劃的反應相當正面；他們積極參與，希望能夠找到病因，得出更個人化的疾病預防方案，惠及自己及其他病人。有見及此，計劃主階段遂擴大範圍，除了在先導階段已經涵蓋的未能確診病症及遺傳有關的癌症外，亦把與基因組學及精準醫學有關的個案納入其中。

基因組中心與有意加入計劃的醫生，以及夥伴中心的臨床研究團隊磋商之後，決定在主階段新增加15個病人組別。經基因組中心科學諮詢委員會審批通過後，增加的病人組分別為：血液學癌症（兒童和成人）、兒童腫瘤、兒童神經發展障礙、小兒發病糖尿病、早發糖尿病、主動脈撕裂、眼科學、成人多囊腎病、成人腎臟疾病、先天性心臟病、骨質疏鬆症、原發性腦癌、青光眼篩查，以及脊椎關節炎。

協同創效　迅速增長

為了照顧新增的病人組別及招募更多參加者，基因組中心亦增加了招募渠道。借鑒瑪麗醫院在港島西醫院聯網設立外展隊伍的做法，團隊亦在雅麗氏何妙齡那打素醫院設立新的轉介網絡，以招募新界東醫院聯網的病人。為了支援這些外展隊伍，基因組中心已強化臨床資訊管理平台系統的功能，以協助在各個臨時地點進行招募病人的工作。

Critical Infrastructure in Place for Genomic Medicine

Recognising the pivotal role of robust scientific research in the effectiveness of WGS analyses and the future implementation of genomic medicine, HKGI initiated collaborative projects with relevant stakeholders. Preparations for in-depth studies and outcome evaluations of each patient cohort commenced during the year, including signing collaborative agreements with collaborators, and revising project proposals and Institutional Review Board (IRB) applications for the main phase. Views were also exchanged with collaborators on conducting further in-depth analysis of the WGS data collected for adult renal disease, aortic dissection, adult leukaemia, and childhood leukaemia.

This year, focus has been placed on advancing pharmacogenomics, the study of how genetic variations influence an individual's response to medications. This field is key to achieving personalised treatment and precision medicine. A pharmacogenomics review was completed to develop an analytical pipeline for pharmacogenomic profiling using WGS. Currently available pharmacogenetic testing in Hong Kong was explored and clinically actionable pharmacogenetic variants detected. The team further broadened the field's potential by collaborating with a paediatric leukaemia research group on genomics and drug profiling for childhood leukaemia. To raise awareness and foster knowledge exchange, the team delivered a scientific talk entitled "Whole Genome Sequencing in Pharmacogenomics – a Driver for Developing Personalised Medicine" at the Hong Kong Pharmacy Conference 2023.

重要基建　推動發展

基因組中心明白，嚴謹可靠的科學研究對全基因組測序分析的成效，以及日後推動基因組醫學的工作影響深遠，因此機構與多個持份者展開不同的合作項目。年內，基因組中心亦就深入研究各病人組別，以及評估有關研究結果展開籌備工作，包括與合作團體簽訂協議、修訂基因組計劃主階段建議項目，以及向研究倫理委員會提交申請。此外，基因組中心亦與合作團體交流意見，研究如何把收集所得的全基因組測序數據進行更深入的分析，用以診斷成人腎病、主動脈撕裂、成人白血病及兒童白血病等病症。

年內，機構重點推動藥理基因組學，研究基因變異如何影響病人對藥物的反應。藥理基因組學是實現個人化治療和精準醫療的關鍵；基因組中心進行了藥理基因組學檢討，以全基因組測序為基礎，制訂藥理基因組學分析管理流程。團隊亦有探討本港現時可進行的藥理基因組測試，以及偵測臨床上可操作的藥理基因組變異。另一方面，團隊與一個兒童白血病研究小組合作，就兒童白血病進行基因組學及藥物分析，進一步釋放藥理基因組學的潛力。基因組中心在2023年香港藥劑學術年會舉辦了一個題為「藥理基因組學中的全基因組測序——推動發展個人化醫療」的講座，加深公眾認識此課題，同時促進知識交流。



Integrate Genomic Medicine into Clinical Care
融合基因組醫學與臨床護理

Ascertaining the Highest Standards and Maximal Effectiveness

HKGI's commitment to the highest standards and effectiveness was recognised by authoritative third-party evaluation. The PHG Foundation of The University of Cambridge and The University of Hong Kong (HKU) were commissioned to conduct a three-phase evaluation study on the implementation of HKGP. During Phase 1, the evaluation found that, thanks to extensive planning and the tireless efforts of all parties involved, workflow was fully operational and successfully implemented. The evaluation also noted that HKGI was producing high-quality research publications and that, despite the significant operational challenges posed by the COVID-19 pandemic, patient recruitment continued unabated.

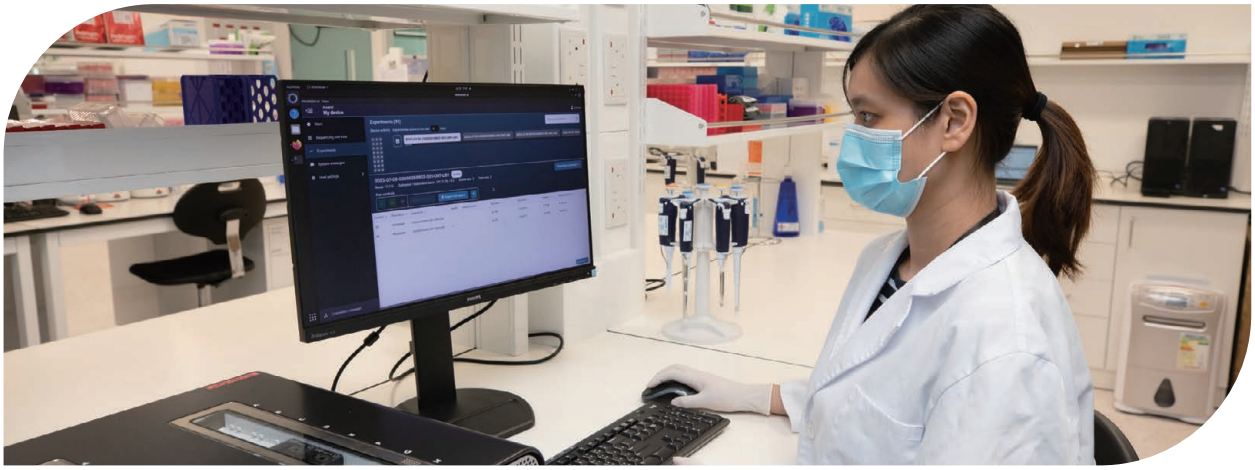
To ensure operations continue to adhere to the protocols approved by respective IRBs, an annual progress report detailing the implementation and enhancement of the patient recruitment process was submitted to and approved by the respective IRBs of PCs. A joint outcome evaluation on HKGP will be held with the HKU School of Public Health. Recruitment of patients and their family members at QMH for this exercise began in June 2023.

力臻完美　迎難而上

基因組中心力臻完美的決心獲得權威第三方肯定，政府委託香港大學(港大)與劍橋大學的PHG Foundation就基因組計劃的實施分三個階段進行評估研究。第一階段的評估研究結果顯示，憑藉各方精心策劃和努力不懈，基因組計劃的工作流程已經全面運作、成功推行。評估研究亦指出，基因組中心持續發表極具質素的研究刊物；儘管2019冠狀病毒疫情對招募病人的工作帶來巨大挑戰，基因組中心仍堅持迎難而上。

基因組中心擬備年度進度報告，詳細列出招募病人工作的進展和優化有關工作的措施，分別提交予相關夥伴中心的研究倫理委員會，並獲審閱通過，以確保各項運作持續達到相關委員會所訂立的守則。基因組中心將會與港大公共衞生學院合作，就基因組計劃的工作成果進行聯合評估，瑪麗醫院已於2023年6月起展開招募病人及其家屬參與有關評估。





Robust Data Security for Continued Reliability

Committed to maintaining the highest international standards of privacy and compliance, which are critical to the integrity of HKGI and its work, an independent service provider, Deloitte, was engaged for the second year to conduct an independent Privacy Impact Assessment and Privacy Compliance Assessment on the Bioinformatics Platform. The assessment included a comprehensive examination of the platform's key components and new features, including the clinical frontend, Lab Information Management System, data ingestion engine, and Bioinformatics Analysis Browser. HKGI's data privacy and security practices, including data collection, use, storage, sharing, and disposal, were also examined. All potential vulnerabilities discovered were also promptly and thoroughly addressed.

數據安全　穩健可靠

保障私穩和遵循法規是基因組中心的要務。為致力在這兩方面達到最高國際標準，機構連續第二年委託獨立的服務供應商德勤，進行獨立的私隱影響評估，以及生物信息平台私隱循規審核，內容包括全面檢視生物信息平台各個主要部分和新增功能，例如臨床資訊管理平台、實驗室資訊管理平台、數據接入引擎及生物信息分析瀏覽器。此外，審核工作亦涵蓋了基因組中心的數據私穩和保安，例如數據的收集、使用、儲存、共享和棄置等。接獲報告後，基因組中心迅速、徹底解決了審核工作發現的潛在問題。

Integrate Genomic Medicine into Clinical Care
融合基因組醫學與臨床護理

Looking Forward to Achieving More

Engagement with various stakeholders makes HKGI's mission and vision possible. With anticipation at a fever pitch and implementation of the HKGP main phase actively underway, HKGI will continue to work in close collaboration with stakeholders to ensure effective and successful execution. Further to this, HKGI will endeavour to keep Hong Kong at the forefront of WGS and genomics advancements. In this regard, the team will continually develop new sequencing capabilities meeting global trends, such as long-read sequencing and single-cell sequencing. The aim is not only to follow, but also lead the way.

In analysis, the team's ambitions are no different. HKGI will expand the capabilities of its Bioinformatics Platform to handle even larger volumes of sequencing samples and data. This will enable researchers to gain a more accurate and comprehensive understanding of the genome, facilitating the development of personalised therapies for diseases, and ultimately leading to improved patient outcomes and treatments.

HKGI is eagerly awaiting the next stages of development. Coming later in 2023, Phase 2 of the PHG-HKU evaluation study will focus on the assessment of the clinical outcomes of WGS testing and patients' experiences. This phase will also encompass a comparative analysis of key project components against international standards and practices. Subsequently, Phase 3 of the evaluation will be conducted in 2024 to provide an overall assessment of HKGP after three years of project implementation, and to offer recommendations for future directions. Together, efforts are bearing fruit, and the outcomes will benefit both patients and the medical community, and Hong Kong as a whole.

昂首闊步　再獻新猷

基因組中心與不同持份者緊密合作，努力實現使命與願景。基因組計劃主階段推行在即，機構翹首以待的同時，會繼續與各持份者並肩合作，以確保計劃順利執行。此外，基因組中心致力令香港躋身全基因組測序及基因組學領域的前列；為此，團隊會繼續配合全球發展趨勢，研發嶄新的測序技術，例如長序列測序技術及單細胞測序技術等。基因組中心不會止步於緊貼趨勢，更會勇於創新，引領業界攀上高峰。

一路走來，基因組中心的抱負始終如一。團隊將提升生物信息平台的處理能力，使之能夠處理更多的測序樣本和數據。此舉將有助研究人員更準確和全面認識基因組、協助制訂針對不同疾病的個人化治療方案，最終達致更佳的治療效果，改善病人的健康及生活質素。

基因組中心熱切期待未來的發展。港大與PHG Foundation進行的第二階段評估研究將於2023年稍後時間進行，集中評估全基因組測序的臨床結果和病人體驗，包括把計劃的關鍵組成部分與國際標準和做法進行對照分析。此後，第三階段的評估研究將於2024年進行，為實施三年的基因組計劃進行整體評估，以及為未來路向提出建議。在各方共同協力下，基因組中心的努力已經初見成果。這些工作定將為病人、醫護界以至香港整體社會帶來極大裨益。

Advance Research in Genomic Science

促進基因組科學研究



Advance Research in Genomic Science
促進基因組科學研究

Advancing genomic research and capitalising on local and international research collaborations are critical for Hong Kong's development of genomic and personalised medicine. Not only do these initiatives empower new genomic technologies and multi-omics studies, but they also maximise and diversify research outcomes, ensuring continuous research advancements, and ultimately unlock deeper insights into disease biology and biomedical science. This process will produce greater benefits for patients.

促進基因組研究並善用本地與國際間的研究合作，對香港發展基因組醫學和個人化治療有着舉足輕重的作用。相關項目不但加強了嶄新的基因組技術及多組學研究，更擴大了研究成果的多元化與影響力，不斷推進科研進步，從而加深團隊對疾病生物學和生物醫學的了解，惠及病人。

In 2022-23, HKGI expanded its ongoing research efforts and fostered new collaborations and disease-focused research networks. A stellar body of research papers published, in-house and collaborative inventions developed, along with direct interactions and engagement with local and global experts, have made significant achievements. These include catalysing genomic research and improved detection, diagnosis, and treatment, as well as better clinical management and outcomes for patients.

2022-23年度，基因組中心繼續擴闊研究工作的範圍與深度，同時建立新的合作關係及以特定疾病為主題的研究網絡。機構在年內發表了一系列研究論文、參與內部及與各方的項目開發，以及與本地和國際專家互動交流，取得顯著成效，當中包括加快基因組研究進度，提升疾病預防、診斷和治療成效，以及為病人提供更佳的臨床管理和治療效果。

Research Reaches New Heights

HKGI's commitment to advancing genomic science is evident through its diversity of research. During the year, several research papers were submitted and published under HKGI in eminent journals, sharing Hong Kong's experience, insights, discoveries, and breakthroughs with the international scientific and medical communities. This collective effort showcased HKGI's expertise and contribution to society.

研究工作　再創高峰

基因組中心致力推動基因組醫學的科研發展，從研究的多樣性中可見一斑。年內，團隊向著名學術期刊提交和發表不同主題研究論文，與國際科學及醫學界分享香港的經驗、見解、發現與突破。全憑團隊努力不懈，基因組中心得以展示專業知識及貢獻社會。

This year, HKGI continued to share its implementation experience of HKGP, publishing its marketing and publicity strategies for the pilot phase of HKGP in the *Journal of Translational Genetics and Genomics*. As HKGP progresses, a research paper was published in the *Rare Disease and Orphan Drugs Journal*, discussing findings on the utility of genetic testing in diagnosing Kindler syndrome, a rare genetic skin disorder, in East Asians. This ground-breaking work has resulted in improved clinical outcomes and management for patients suffering from this condition. Another study, published in the American College of Medical Genetics and Genomics' journal, *Genetics in Medicine*, demonstrated that genome sequencing outperformed exome sequencing in detecting genomic variations in both paediatric and adult rare disease patients.

本年度，基因組中心在*Journal of Translational Genetics and Genomics*發表了以《Marketing and publicity strategies for launching the pilot phase of the Hong Kong Genome Project》為題的論文，繼續與各界分享推行基因組計劃的經驗。隨着基因組計劃展開，機構亦在*Rare Disease and Orphan Drugs Journal*中發表了一篇研究論文，探討基因測序在診斷東亞人罕見遺傳性皮膚病金德勒氏綜合症的成效。這項突破性研究，有助改善病人的治療效果和臨床管理。此外，團隊在美國醫學遺傳學與基因組學院的期刊*Genetics in Medicine*中，刊登了另一項研究，指出在檢測兒科和成人罕見病患者的基因組變異方面，基因組測序的表現較外顯子組測序優勝，進一步確立基因組測序技術的潛力和效能。

HKGI's breakthrough innovation INSurVeyor, an in-house developed bioinformatics tool, also shined in the *Journal of Nature Communications* with its ability to double the accuracy of calling structural variations that involve nucleotide insertions in our genome when compared to existing methods.

In another paper under peer-review, HKGI unravelled the immunosuppressive role of tumour-associated macrophages using genomic and single-cell RNA-sequencing data from brain tumour samples, and developed a model that could be used to predict prognosis and immunotherapy response in brain tumour patients. In sync, HKGI shared the knowledge of designing and building the population-scale genomic laboratory in a manuscript submitted to the *Journal of Translational Genetics and Genomics*, highlighting the achievements in the laboratory including the establishment and validation of a robust WGS workflow, state-of-the-art DNA sequencing platforms (both short- and long-read sequencers) and latest single-cell genomic technologies, as well as the scaling-up of capacity and capability for advancing personalised genomic medicine in Hong Kong.

基因組中心於年內研發了突破性生物信息學工具INSurVeyor，相關論文刊登在*Journal of Nature Communications*。此工具用於辨識人類基因組中，涉及基因序列發生了插入的結構變異情況，其準確度較現行其他方法高出一倍。

此外，團隊在另一篇正接受同行評審的論文中，闡述了如何透過腦腫瘤樣本的基因組和單細胞RNA測序數據，發現腫瘤相關巨噬細胞的免疫抑制作用，並且建立了一個模型，用作預測腦腫瘤患者的預後和免疫治療反應。同時，基因組中心亦向*Journal of Translational Genetics and Genomics*投稿，分享如何設計及建立覆蓋全港人口規模的基因組實驗室，並重點介紹實驗室的成就，包括制訂及驗證全基因組測序工作流程、建立頂尖DNA測序平台（包括短序列及長序列測序儀）、發展最新的單細胞基因組技術，以及擴大實驗室的容量與測序能力，以促進本港的個人化基因組醫學發展。



Advance Research in Genomic Science
促進基因組科學研究

Enhancing Genomic Technologies

HKGI is constantly developing new genomic technologies to improve diagnostic, analysis, and gene discovery capabilities. In 2022-23, an in-house single-cell RNA-sequencing platform was created for characterising, annotating, and interpreting genes and variants. The tool empowers HKGI to gain a better understanding of cellular complexity and heterogeneity of tissues, and gene expression profiles at the individual cellular level. HKGI also developed a long-read sequencing workflow to enhance the WGS process. This addition enables HKGI to capture more complex genetic information, detect structural variations directly, and access previously inaccessible genomic regions for analysis and research.

Advances in bioinformatics were made with the development of INSurVeyor. This bioinformatics tool is capable of detecting insertions, a major type of structural variation, from short-read, paired-end WGS data, contributing to the understanding of disease mechanisms, genetic disorders, and population genetics. Recognising the value of INSurVeyor for next-generation genomics research, HKGI decided to make it open source, facilitating researcher collaboration and data sharing, and accelerating the pace of discovery and innovation in genomics.

發展技術　提升實力

基因組中心不斷開發嶄新的基因組技術，以提升診斷、分析及探索基因的能力。2022-23年度，機構建立了內部的單細胞RNA測序平台，以歸納、標註及詮釋基因和基因變異。透過這個平台，團隊能更了解細胞複雜性、組織異質性，以及個人細胞的基因表現圖譜。此外，團隊亦制訂了長序列測序技術工作流程，用以優化全基因組測序的過程，從而擷取更複雜的遺傳訊息和直接偵測結構變異，並深入以往未能觸及的基因組區域進行分析和研究。

隨着成功研發INSurVeyor，生物信息學方面亦見顯著進步。INSurVeyor能夠從短序列及雙端測序的全基因組測序數據中，偵測出屬一種因基因序列發生了插入的主要結構變異情況，從而有助了解疾病機制、遺傳病及族群遺傳學。基因組中心深明INSurVeyor對新一代基因組學研究的價值，因此決定開放其源碼，以促進研究合作和數據共享，加快基因組學的發現與創新突破。



Research Exchange Powers HKGI

HKGI has continued to expand its research collaboration with global counterparts to improve efficiency and productivity, galvanise efforts, and strengthen the global genomic community's capacity to address complex scientific issues. Throughout the year, HKGI initiated cross-institutional and cross-disciplinary discussions with clinicians and potential collaborators at prestigious local and Mainland academic institutions to maximise research effectiveness and facilitate the launch of research projects under "Genomics and Precision Health". These discussions identified specific disease themes to investigate, prioritised research questions, and made recommendations for the development of research protocols. Scientific talks and meetings were also held to explore ways of performing in-depth analyses of the WGS data collected.

As a result of these discussions, a series of research projects in collaboration with different Partnering Centres in leading hospitals will be carried out during HKGP's main phase. These include studies of Osteoporosis, Glaucoma screening, Familial hypercholesterolemia, Adult Renal Genetics, Oesophageal Cancer, Primary Brain, Congenital heart diseases, Paediatric-onset Diabetes, Adult Polycystic Kidney, Childhood Leukaemia, Aortic Dissection, and Young-onset Diabetes. In collaboration with renowned academic institutions in Hong Kong, several cross-institution projects were also identified, including studies of Short Stature, Spondyloarthropathy, Adult Leukaemia, Childhood cancer, and Ophthalmology.

Two HKGI's senior staff members also serve as co-investigators of a Strategic Topics Grant (STG) from the Research Grants Council to carry out collaborative projects in 2023-24. One main mission of the STG is to support collaborative research in genomics and prepare Hong Kong for emerging challenges and opportunities. On another occasion, two senior staff members from the Scientific Team served as guest editors for a special edition on Genomics and Public Health, *Journal of Translational Genetics and Genomics*. International and local researchers in the field are in the process of submitting high-quality papers for consideration.

積極交流　增加效益

基因組中心繼續與世界各地的同行緊密合作，以提高研究的效率和生產力，並透過凝聚全球基因組學業界的力量，加強應對複雜科學難題的能力。年內，機構與本地和內地知名學術機構的醫生及潛在合作夥伴，展開跨機構和跨專業的討論，以發揮研究的最大效益，同時推進「基因組學及精準醫學」主題下的臨床研究項目。相關討論旨在識別出特定疾病作為研究主題、將研究題目按重要性排列，以及為制訂研究規程作出建議。另外，機構亦舉辦了科學講座和會議，探討如何深入分析收集所得的全基因組測序數據。

經討論後，基因組中心將於基因組計劃主階段中，與主要醫院的夥伴中心合作進行一系列研究項目，範圍涵蓋骨質疏鬆症、青光眼篩查、家族性高膽固醇血症、成人遺傳性腎科、食道癌、原發性腦腫瘤、先天性心臟病、兒童糖尿病、成人多囊性腎病、兒童白血病、主動脈撕裂，以及年輕型糖尿病。基因組中心亦與本港知名學術機構合作，進行有關身材矮小症、脊椎關節病變、成人白血病、兒童癌症及眼科的跨機構研究項目。

基因組中心兩位資深成員會在2023-24年度開展「策略專題研究資助金」計劃的合作項目，並擔任聯合研究員。此項資助金計劃由研究資助局推出，其中一個主要目的是支援基因組學的合作研究項目，為香港應對新挑戰及機遇做好準備。另外，兩位科學團隊的資深成員更擔任*Journal of Translational Genetics and Genomics*基因組學和公共衛生特刊的客席編輯，協助審閱國際和本地研究人員提交的高質素論文。

Advance Research in Genomic Science
促進基因組科學研究

Bolstering Efforts in Mainland China and Greater Bay Area

Beneficial exchanges were also held with institutions in Mainland China, particularly those in the Greater Bay Area. These included presenting how HKGP is ushering Hong Kong's genomic medicine into a new era at the Second Greater Bay Area Rare Disease Gene Therapy Summit, the Guangzhou Rare Disease Gene Therapy Alliance Annual Meeting, and the Inaugural Ceremony of the Rare Disease Centre at the Third Affiliated Hospital of Sun Yat-Sen University, as well as imparting HKGI's insights on genomic research to faculty members and students of the Huazhong Agricultural University's College of Informatics and Macao Polytechnic University's Centre for Artificial Intelligence Driven Drug Discovery, respectively.

Aside from sharing HKGI's genomic research and experiences in implementing HKGP, these events provided an opportunity for HKGI to expand its research collaboration with other universities from the Mainland, particularly in cancer and other rare disease-related research, and helped strengthen HKGI's scientific network while encouraging the transfer of knowledge that benefits both HKGI and the broader scientific community.

連繫內地　知識相長

基因組中心與內地，尤其在大灣區的機構積極交流，獲益良多。透過參與多項活動，包括第二屆粵港澳大灣區罕見病基因治療高峰論壇暨廣州罕見病基因治療聯盟年會，以及中山大學附屬第三醫院罕見病中心成立大會。機構很榮幸可向內地同儕介紹基因組計劃，並如何引領香港基因組醫學邁進新時代。與此同時，基因組中心亦分別向華中農業大學信息學院，以及澳門理工大學人工智能藥物發現中心的教職員和學生，闡述對基因組研究的見解。

除了讓機構分享基因組研究及推行基因組計劃的經驗，這些交流活動更提供了難能可貴的機會，促成基因組中心與內地其他大學在研究方面的合作，尤其是癌症和其他罕見疾病相關的研究，有助擴闊網絡，亦促進基因組中心與科學界之間的知識交流，讓彼此一同成長。



The Importance of International Collaboration

International conferences and meetings, both at home and abroad, provide important opportunities for HKGI to engage in meaningful dialogue and cultivate collaboration with global experts. Throughout the year, HKGI actively took part in a considerable number of meetings, lectures, and talks with international collaborators. These included delivering a talk at the inaugural grand round of the renowned NORD Centre of Excellence for Rare Disorders at the Boston Children's Hospital, participating in a podcast of *Genetics in Medicine* to discuss the findings of HKGI's paper published in the journal, and sharing HKGI's experience in implementing Hong Kong's first large-scale WGS project at the American Society of Human Genetics' annual meeting. HKGI's presence was also extended to the prestigious international research-related activities in the Guy's and St Thomas' Hospital and the University of Cambridge in the United Kingdom; the Academy of Medicine of Malaysia; the Academy of Medicine of Singapore and the Nanyang Technological University's International AI in Medicine conference, as well as the 15th International Conference on Bioinformatics and Biomedical Technology in Xian, Mainland China.

On a signature event in Hong Kong, HKGI hosted a panel discussion at the Asia Summit on Global Health 2022 organised by the HKSAR Government and the Hong Kong Trade Development Council, in which HKGI's senior management exchanged insights on the clinical application of genomic medicine with luminaries from the U.S. National Institutes of Health, World Economic Forum, and Seoul National University, and discussed "What's Next in the Biotech and Genomics Revolution?".

國際網絡　至關重要

不論是在本地或海外舉行的國際會議，均為基因組中心提供寶貴機會，與來自世界各地的專家交流協作。年內，基因組中心積極參與了眾多會議、講座及演講，包括於著名的波士頓兒童醫院NORD Centre of Excellence for Rare Disorders的巡房環節中發表演說、參與*Genetics in Medicine*的網上節目，探討基因組中心在該期刊發布的論文研究結果，以及在美國人類遺傳學協會周年大會上分享於香港推行首個大型全基因組測序項目的經驗。此外，基因組中心的足跡更遍及英國Guy's and St Thomas' Hospital、劍橋大學、馬來西亞醫學專科學院與新加坡醫學專科學院的國際知名研究活動，更參加了新加坡南洋理工大學舉辦的「醫學人工智能國際會議」，以及在中國西安舉行的「第十五屆生物信息學和生物醫學技術國際會議」。

在特區政府及香港貿易發展局主辦的「亞洲醫療健康高峰論壇2022」中，基因組中心主持了其中一場小組研討會。中心的管理層與美國國家衛生研究院、世界經濟論壇及首爾國立大學的專家，就基因組醫學的臨床應用交換真知灼見，並圍繞「生物科技及基因組學的革新與前景」進行探討。

Advance Research in Genomic Science
促進基因組科學研究

Strengthening the Home Base

HKGI actively connects with local medical professionals to enhance their understanding of genomics and WGS, in addition to fostering collaboration. During the year, HKGI had the opportunity to share its expertise in genetic counselling with colleagues from the Hospital Authority, and deliver a presentation on "Hereditary Breast and Ovarian Cancer Syndrome: From a Genetic Counsellor's Perspectives?" to students of the Nethersole School of Nursing of The Chinese University of Hong Kong. There were also talks on the applications of WGS in paediatric patients, manoeuvring secondary findings in genomic studies, and enabling precision medicine with genomics. Furthermore, sharing sessions were held to explore the advances of genetics in neurological and neurodevelopmental disorders, sequencing technology and workflow, genetic counselling during the HKGP patient journey, WGS in pharmacogenomics, common ethical issues in paediatric genetic clinical research, and the predictive role of genes in children's health.

Looking Forward to Further Milestones

With stellar networks built and partnerships formed, HKGI will continue to collaborate and contribute internationally, including with other genomic projects, universities, and governments, to expand the applications and benefits of genomic medicine. HKGI will also continually introduce new genomic technologies to empower teams to derive greater insights into disease biology and biomedical science, facilitating multi-omics studies, and broadening the diversity of research outcomes.

In addition to sharing HKGI's research efforts and strengthening HKGI's position as a leading institution in the field, HKGI will continue to publish analyses and findings of HKGP samples in well-recognised international journals.

鞏固根源　凝聚精英

基因組中心積極聯繫本地的醫療專業人員，加深他們對基因組學及全基因組測序的認識，並建立緊密的合作關係。年內，機構有幸與醫院管理局的同事分享遺傳輔導的專業知識，並從遺傳輔導員的角度出發，向香港中文大學那打素護理學院的學生，講解遺傳性乳癌與卵巢癌的併發症狀。團隊亦舉辦了一系列講座，內容涵蓋全基因組測序在兒科病人的應用、善用基因組分析的次要發現，以及透過基因組學實現精準醫療。此外，中心安排了不同的分享會，探討遺傳學在神經系統及神經發育障礙方面的進展、測序技術與工作流程、遺傳輔導在基因組計劃中的角色、全基因組測序在藥理基因組學中扮演的角色、兒科遺傳性臨床研究中常見的倫理議題，以及基因在預測兒童健康方面的作用。

持續貢獻　創新里程

展望未來，基因組中心將繼續透過完善的夥伴和協作網絡，與其他基因組項目、大學和政府合作，擴大基因組醫學的應用和效益，為國際社會作出貢獻。機構亦會不斷引入嶄新的基因組技術，讓團隊更深入了解疾病生物學及生物醫學，務求促進多組學研究，以及拓展研究成果的多元性。

除了分享研究成果，以及加強基因組中心引領業界的角色，基因組中心會繼續在國際知名期刊中發表有關基因組計劃的樣本分析與研究結果。

Nurture Talents in Genomic Medicine

培育基因組醫學人才



Nurture Talents in Genomic Medicine
培育基因組醫學人才

A robust pipeline of talent in genetics and genomics is essential for the sustainable development of genomic medicine, research, and clinical applications in Hong Kong. Making genomic discoveries, developing technologies and translating research findings into clinical applications are all ambitious goals, achieved by bringing together diverse talent with their expertise and passion for science and healthcare. To this end, HKGI launched a multifaceted strategy developing the careers of a wide spectrum of professionals. These experts include scientists, clinical geneticists, genetic counsellors, and bioinformaticians, as well as genome curators, laboratory professionals, medical technologists, researchers, clinicians, nurses and many others.

豐富遺傳學和基因組學人才庫對持續發展本港基因組醫學、研究及臨床應用尤為重要。基因組中心矢志為基因組學帶來突破、發展技術，以及將研究成果轉化為臨床應用。機構深明需要來自不同專業範疇，以及對科學及醫療方面抱有熱誠的人才戮力同心，才能實現願景。有見及此，中心多管齊下，全面為各類專才，包括科學家、臨床遺傳學家、遺傳輔導員、生物信息學家，以及基因組數據分析員、實驗室專業人員、醫務化驗師、研究人員、醫生、護士等，開拓事業前景。

Working closely with accredited professional bodies, industry leaders and academia, HKGI made significant headway in 2022-23 in enriching Hong Kong's genomic talent pool. In addition to establishing the Hong Kong Genetic Counselling Practise Consortium, the team rolled out a number of initiatives nurturing talent, stimulating research, and developing career pathways that cater to the needs and interests of existing healthcare professionals, young talent and students.

在2022-23年度，基因組中心與認可的專業機構、業界領袖及學術界緊密合作，在豐富基因組學人才庫方面取得顯著成果。除了成立「香港遺傳輔導專業發展聯席」，機構亦推出了一系列培育人才、啟發科研，以及開拓職業路向的計劃，切合現時醫療專業人員、年輕人才及學生的需要和興趣。

Leaps and Bounds for Genetic Counselling

Genetic counselling plays a pivotal role in building the necessary infrastructure for translating complex genetic information into relevant colloquial information and bridging the information gap between clinicians, laboratory technicians and patients. It helps patients and their families reach well-informed decisions that are best for their health and well-being.

遺傳輔導　飛躍發展

遺傳輔導一直扮演着舉足輕重的角色，不但把複雜的遺傳訊息轉化成顯淺易懂的資訊，同時作為醫生、實驗室技術人員與病人之間的溝通橋樑，協助病人及家屬在充分知情的狀況下，作出對他們健康最有利的決定。

One of HKGI's most notable achievements during the year was the official formation of the Hong Kong Genetic Counselling Practice Consortium (Consortium), promoting the growth of the genetic counselling profession in Hong Kong. In just a year's time, the Consortium had formulated the scope of practice and code of ethics tailored for Hong Kong with reference to the latest international standards and development.

基因組中心年內最傑出的成就之一，是正式成立「香港遺傳輔導專業發展聯席」，促進本港遺傳輔導專業的發展。在短短一年間，聯席參照最新國際標準與發展趨勢，為本港量身制訂了實務範圍及倫理守則。

On the one hand, the Consortium defined key areas of practice from building rapport and obtaining informed consent from patients and their families, to discussing psychosocial impact, promoting adaptation and other relevant extended duties. On the other hand, the Consortium also established a set of guidelines that clarifies and guides the code of conduct of genetic counsellors so that the goals and values of the profession are best served. These had quickly become the authoritative voice for addressing the needs and challenges of this burgeoning field and fostering sustainable growth.

As the largest local employer and trainer for genetic counsellors in the city, HKGI was invited by the Hospital Authority to review the current landscape of genetic counselling practice in Hong Kong, and to share its views on relevant career pathways and development for the coming five to ten years. This is not only a strong testament to HKGI's efforts in promoting this emerging profession, but also a recognition for the Institute's indispensable role in building the essential protocol and platform for the advancement of genomic medicine in Hong Kong.

聯席一方面確立了主要的實務範圍，包括與病人及家屬建立互信，獲得他們的知情同意、探討社會心理影響、推廣如何將遺傳輔導結果融入病人及家屬的生活，以及履行其他相關職務。另一方面，聯席亦制訂了一系列指引，清晰闡述遺傳輔導員的行為守則，以便達到遺傳輔導的目標及發揮其價值。有關指引已成為具權威性的指標，切合遺傳輔導領域的需求和挑戰，促進此專業的可持續發展。

基因組中心作為本港最大的遺傳輔導員僱主及培訓機構，獲醫院管理局（醫管局）邀請，檢視遺傳輔導專業的現況，並就未來五至十年的行業前景與發展分享意見。這不僅充分印證了基因組中心全力以赴推廣遺傳輔導專業，更認可了機構在推動香港基因組醫學發展不遺餘力，制訂了必要規程及建構了交流平台。



Nurture Talents in Genomic Medicine
培育基因組醫學人才

Driving Professional Development Through Collaborations

To galvanise healthcare professionals, HKGI organised numerous trainings, seminars, sharing sessions and conferences for clinicians, nurses, genetic counsellors, bioinformaticians and medical practitioners alike throughout the year. These initiatives inspired and motivated many to participate in genetics and genomics, empowering them with the most up-to-date professional knowledge and skills through continuous education and learning.

The Genomic Medicine Symposium that HKGI co-organised with the Hong Kong Academy of Medicine (HKAM) in May 2023 was undoubtedly the flagship of the year. Themed "Embracing the Era of Genomic Medicine: Research, Training and Clinical Applications", this half-day conference brought together renowned international and local experts to offer insights on genomic medicine, including speakers who flew in from the United Kingdom (UK), Australia and Singapore. The event, officiated by the Under Secretary for Health, was very well received and was attended by around 170 participants with diverse backgrounds, spanning from physicians and allied healthcare professionals to university students.

Another highlight of the year would be the launch of the "HKAM-HKGI Research Excellence Grants in Genomic Medicine". Jointly rolled out by HKGI and HKAM in May 2023, the Grants aims to encourage and inspire research in genetics and genomics, and to fuel the talent pool for Hong Kong. Each awardee will be offered a research grant, together with invaluable research support from HKGI and HKAM, including access to HKGI's state-of-the-art laboratory facilities, networking opportunities and knowledge sharing. Through close collaboration with acclaimed professional bodies like HKAM, the Grants would not only serve as an honour recognising the awardees' research efforts, but also provide a valuable opportunity for awardees to enrich their professional development and broaden their horizons.

To further engage with medical professionals, HKGI joined hands with the Hong Kong College of Physicians (HKCP), one of the colleges under HKAM, to launch the "HKCP-HKGI Overseas Training Scholarship and Training Grant for Excellence in Genomic Medicine" in May 2023 as well to inspire and nurture talent in the field. The scheme was specially designed for HKCP genetics and genomics trainees and fellows working in public healthcare institutions to offer financial assistance and placement opportunities at HKGI to support professional training and development for advancing genomic medicine.

合作交流　加強培訓

基因組中心年內為醫生、護士、遺傳輔導員、生物信息學家及醫療人員等舉辦多個培訓、研討會、分享會和會議，啟發和鼓勵他們投身遺傳學及基因組學的領域。團隊致力推動持續教育與學習，務求讓醫療專業人員具備最新的專業知識和技能。

基因組中心與香港醫學專科學院（醫專）於2023年5月合辦年度盛事——基因組醫學專題研討會。為期半日的會議以「基因組醫學新時代：研究、培訓與臨床應用」為主題，匯聚了來自英國、澳洲和新加坡的知名國際及本地專家，分享對基因組醫學的真知灼見；更邀請了醫務衞生局副局長作主禮嘉賓，吸引了約170名來自不同界別的與會人士，包括醫生、醫護專業人員及大學生等，反應熱烈。

此外，基因組中心與醫專於2023年5月合作推出「基因組醫學卓越研究獎」，旨在鼓勵有志於遺傳學和基因組學發展的醫生進行相關研究，藉此推動科研，培育人才。除獎助金外，每位得獎者可獲由基因組中心和醫專提供的不同支援和寶貴資源，如基因組中心的實驗室設備及分析儀器、協作網絡和實務交流等。透過與醫專等知名專業機構合作，這個研究獎不僅是對得獎者的認同和肯定，亦是他們持續學習，擴闊視野的機會。

為進一步鼓勵醫學專才的參與，基因組中心與醫專轄下的香港內科醫學院合作，於2023年5月推出「基因組醫學卓越海外培訓獎學金及助學金」，旨在啟發和培育基因組醫學人才。這項計劃特別為香港內科醫學院的遺傳學和基因組學培訓學員，以及在公營醫療機構工作的院士而設。除獲批資助外，更會獲得在基因組中心實習的機會，加強專業培訓，藉此推動基因組醫學發展。

Inspiring the New Generation

Apart from the professional community, HKGI actively collaborates with local universities to engage, educate and pique the interest of the younger generation, and reinforce the talent for genomic medicine.

In partnership with the Faculty of Medicine of The Chinese University of Hong Kong (CUHK), HKGI offers academic scholarship prizes each year to outstanding undergraduate and postgraduate students and inspires them to pursue careers in genetics and genomics. The prizes are divided into two streams, namely the Best Pre-Clinical Medical Student Award and the Award for the Best Student of Master of Science in Genomics and Bioinformatics. The awards for the year 2022-23 were presented to selected students at "CUHK Teachers' and Students' Awards Presentation Ceremony" held in May 2023. HKGI is also working with The University of Hong Kong (HKU) to set up similar scholarship.

扶掖後進　啟迪人才

基因組中心不但與專業機構群策群力培育人才，亦透過與本地大學合作，積極與年輕一代聯繫，加強教育，激發他們對基因組醫學的興趣。

其中，基因組中心與香港中文大學（中大）醫學院緊密合作，每年為成績優異的本科生及研究生提供兩個類別的獎學金，分別是「最佳臨床前醫學生獎」及「最佳基因組學和生物信息學理學碩士生獎」，鼓勵他們加入遺傳學及基因組學的專業。在2022-23年度，這兩項獎學金已於2023年5月舉行的「香港中文大學傑出老師及獎學金頒獎典禮」上頒授予得獎者。此外，基因組中心正與香港大學（港大）設立相類似的獎學金計劃。



Nurture Talents in Genomic Medicine
培育基因組醫學人才

Apart from scholarships, HKGI also engages with young talent and university students through various formats such as visits, lectures, career talks and internship. During the year, a number of visits were hosted for undergraduate, post-doctoral students and researchers from tertiary institutions such as CUHK and HKU, all of which provided an excellent opportunity for the younger generation to gain a better understanding of the latest development and applications of genomic medicine in Hong Kong, and the exciting and meaningful work of HKGI.

In addition, lectures and career talks were organised to inspire and attract young talent. For example, a lecture on bioinformatics for genetic and genomic testing was delivered to students of HKU Master of Medical Sciences Programme, introducing to them the applications of bioinformatics in genomic medicine, as well as the skillset and expertise required to become professional bioinformaticians, encouraging them to explore the field's dynamic prospects and career opportunities.

除了提供獎學金，基因組中心亦透過不同途徑與年輕人才和大學生進行交流，例如舉辦參觀活動、座談會、職業講座及實習計劃等。年內，中心為中大及港大等高等院校的大學生、博士後研究生及研究人員安排了多個參觀活動，讓年輕一代有機會更深入了解本港基因組醫學的最新發展和應用情況，以及體會基因組中心別具意義的工作。

此外，基因組中心亦舉辦了各種座談會和職業講座，目的是扶掖後進，栽培新一代人才，例如為港大醫療科學碩士課程學生，舉辦有關基因測試及基因組測序的生物信息學講座，闡述如何把生物信息學應用在基因組醫學的領域上，並介紹成為生物信息學專才需具備的技能和專長，鼓勵學生探索行業前景和就業機會。



A Vital Career Gateway

Following the success of its first summer internship programme launched last year, HKGI continued running the programme with expanded scopes to provide students with hands-on experience and inspire them to pursue careers in the profession. During the year, over 15 student interns from a wide range of disciplines and majors were recruited from world-leading local and international academic institutes such as CUHK, HKU and Imperial College London. They were involved in a variety of functions as they worked alongside HKGI's subject experts in the Bioinformatics, Scientific and Administration branches.

Tailored to their background and interests, the student interns assisted in daily operations, attended regular team meetings, visited Partnering Centres, conducted self-paced learning including bioinformatics computational methods, conceived and carried out mini-research projects, partook in the team's research projects and received direct mentorship from colleagues. They also contributed novel research ideas and honed their self-directed learning skills and scientific inquisitiveness, which will all be useful in their future studies and career endeavours.

To further its effort in nurturing talent, HKGI launched a two-week attachment programme for secondary school students with a focus on scientific and bioinformatics training. During the attachment, the high school interns spent one week each with HKGI's Scientific Branch and Bioinformatics Branch. Lectures, visits to Partnering Centres and presentations were organised for them to gain exposure to genomic science. Through discussion and interaction with colleagues, they also got to better understand HKGI's vision, mission and values, as well as the significance of HKGP in catalysing the development of genomic medicine in Hong Kong.

投身業界　前景亮麗

繼去年首個暑期實習計劃圓滿成功，基因組中心本年度再次舉辦實習計劃，所涉及的範疇更為廣闊，讓學生有更多實踐機會，以鼓勵他們日後投身基因組醫學領域。中心於年內取錄了超過15名正在修讀不同學科及專業的學生，參加實習計劃。這些實習生均來自本地及國際知名學府，例如中大、港大及倫敦帝國學院。他們在基因組中心的生物信息學、科學及行政部門的不同崗位獲取寶貴經驗。

基因組中心因應實習生的背景和興趣，安排他們從事不同工作，例如協助日常運作、出席部門會議、參觀夥伴中心、自訂學習計劃，包括生物信息計算方法、構思及進行小型研究項目、參與團隊的研究項目，以及接受基因組中心同事的指導等。實習生亦提出新穎的研究構思、磨煉自學技能和科學探究精神，為日後的學習和職業路向奠定堅實基礎。

為進一步培育人才，基因組中心舉辦了為期兩周、專為中學生而設的實習計劃，主要提供科學和生物信息學的培訓。參加者不但在基因組中心的科學部門及生物信息學部門各實習一星期，更到訪夥伴中心和參與講座，從而加深對基因組科學的認識。透過討論交流，同學們不但更了解基因組中心的願景、使命和核心價值，亦明白到基因組計劃在推動本港基因組醫學發展方面，扮演着不可或缺的角色。

Nurture Talents in Genomic Medicine
培育基因組醫學人才

Looking Forward

Our efforts in talent attraction and nurturing have been met with positive outcomes. In addition to continuing support for healthcare professionals in continuous education and training, HKGI is looking into further collaborations with professional bodies and academic institutes to inspire more talent and arouse their interest in the field of genetics and genomics. In view of the favourable feedback received for the internship programmes, HKGI will also continue to expand the scopes and reach to bolster the talent pipeline in the field.

展望將來　培育棟樑

基因組中心在吸納和培育人才方面取得很多正面迴響。除了一直支持醫療專業人員持續進修及接受培訓，亦致力探討與其他專業團體和學術機構加強合作，以啟發更多人才、燃起他們對遺傳學和基因組學的熱誠和興趣。鑒於各項實習計劃反應踴躍，基因組中心將繼續舉辦更多涉及不同範疇的實習計劃，持續為這領域作育英才。



Enhance Public Genomic Literacy and Engagement

加強公眾對基因組學的認識和參與



Enhance Public Genomic Literacy and Engagement
加強公眾對基因組學的認識和參與

Enhancing public awareness, literacy, and engagement in genomics is one of HKGI's strategic foci. The goal is to foster understanding and appreciation of the potential and benefits of genomic medicine among various stakeholders, ranging from patients to medical professionals and the general public. This bears far-reaching implications as it will not only promote better informed decisions on health issues, but also reinforce public trust in the course of integrating genomics into routine clinical care, a crucial step to transform healthcare services to benefit the people of Hong Kong.

Throughout the year, HKGI devised a number of initiatives to engage and educate the public. In addition to the production of authoritative and user-friendly publications tailored for specific and general audiences, HKGI continued to expand its promotional efforts to meet the interests and needs of the wider community. New outreach events, and strategic use of multiple channels as well as digital marketing tools had been deployed to build and maintain connection with broader society. Continuous media engagement remained the key to amplifying the publicity effect.

Fresh Update of HKGP Materials for Public Engagement

Following the successful completion of the HKGP pilot phase and the launch of main phase in mid-2022, HKGI completed a full round of update of patient recruitment collaterals. Leaflets, booklets, souvenirs, and a series of recruitment videos tailored for adult and child participants were all refreshed to explain the details and significance of the main phase, covering the expanded scope of cases related to genomics and precision health, in addition to undiagnosed diseases and hereditary cancers covered in the pilot phase.

During the year, these user-friendly HKGP materials combining engaging text content, graphics and animations continued to receive very positive feedback from patients, healthcare professionals, members of the public as well as many other audiences, reaffirming HKGI's on-going efforts in enhancing public genomic literacy and engagement.

基因組中心的策略重點之一，是加強公眾對基因組學的認知、認識及參與，旨在讓不同持份者，包括病人、醫療專業人員及社會大眾更加了解和認識基因組醫學的潛力與效益。此策略重點意義深遠，不但可協助市民在健康問題上作周詳決定，亦可加強大眾對融合基因組醫學與臨床護理的信心，從而踏出革新醫療服務的重要一步，保障全港市民的健康和福祉。

本年度，基因組中心制訂了多項公眾參與及教育的項目，除了為特定群組與一般大眾讀者編製既權威又顯淺易明的刊物外，基因組中心亦繼續加強宣傳工作以符合公眾利益和需要。團隊不但舉辦外展活動，同時策略性地善用各種渠道及數碼營銷工具，與社會各界建立和保持緊密聯繫；而與媒體的持續互動也是提升宣傳效果的關鍵因素。

緊貼動向　鼓勵參與

基因組計劃先導階段於2022年年中圓滿結束，並隨即展開主階段。為此，基因組中心全面更新招募病人的宣傳刊物，由單張、小冊子、海報、紀念品，以至專為招募成人和兒童參加者而製作的影片，均載有新增的資訊，涵蓋先導階段的未能確診病症，以及與遺傳有關的癌症外，更加入了與基因組學和精準醫學有關的個案，以便向大眾闡釋基因組計劃主階段的詳情和重要性。

基因組計劃的資訊顯淺易明，結合文字、圖像和動畫的表達方式，於年內繼續獲得病人、醫療專業人員、大眾，以及其他受眾的正面評價，再次肯定基因組中心持之以恆的努力，不斷加強公眾對基因組學的認識和參與。



Corporate Collaterals to Inform, Inspire, and Involve

To update and inform various stakeholders of the milestones and accomplishments achieved in its inaugural year of full operations, HKGI published its first Annual Report in December 2022 under the theme of *"Laying the Foundation for Better Health with Genomic Medicine"*.

Given the novelty of genomic medicine, the Annual Report also featured *"Knowledge Corners"* in different sections. The bite-sized educational articles introduce interesting facts and key terms on genetics and genomics in layman language with eye-catching illustrations to arouse readers' interests and aid comprehension. These engaging contents seamlessly transformed the publication from a work progress report to one that served the dual purpose of public education.

For ease of public consumption and access, the bilingual Annual Report was produced in both e-book and printed formats. Apart from releasing it on HKGI's website, the hardcopies were also distributed to key stakeholders such as government bureaux, Department of Health, Hospital Authority, Partnering Centres, Legislative Council, public libraries, universities and professional bodies.

傳遞知識　啟發互動

基因組中心第一本年報以「固植根基　樂享健康」為主題，於2022年12月面世，向各界持份者展示及匯報全面運作首年所豎立的里程碑，以及年內取得的成就。

由於基因組醫學是一個嶄新領域，年報在不同章節均設有「趣味小知識」，刊載言簡意賅的教育性文章，提供趣味知識之餘，更淺白地講解有關遺傳學和基因組學的重要詞彙，加上精美插圖，成功引起讀者興趣，協助他們理解當中的概念。年報內容豐富生動，不但清晰報告基因組中心的工作進展，同時包含了公眾教育的元素，具有雙重功能。

為了方便公眾閱覽，中英對照的年報以電子書及印刷本兩種形式發布。除了把年報上載至基因組中心網站外，亦向各主要持份者，包括政府決策局、衞生署、醫院管理局、夥伴中心、立法會、公共圖書館、大學及專業團體派發印刷本。

Enhance Public Genomic Literacy and Engagement
加強公眾對基因組學的認識和參與

Leading Public Education with Expert Videos

Considering the complexity as well as the professionals involved in genomic medicine, since its inception, HKGI has put strategic emphasis on the use of videos and animations for public engagement and education. In less than two years of operations, HKGI has expanded its video trove to a total of 22 videos to date. With each video receiving tens to hundreds of thousands of views, they are proven to be one of the most effective tools for communicating HKGI's work to a wide range of audiences.

In 2022-23, one of the key additions to the list was the expert video series. HKGI had the great honour of inviting four of its Board Directors to produce four thematic videos to share their ground-breaking research, highlight the milestone development of genomic medicine, and explain how it would reshape future healthcare and benefit everyone in the society.

The world-renowned scientists and clinical experts featured included Professor Raymond Liang, Professor Nancy Ip, Professor Lau Chak-sing and Professor Dennis Lo, who shared valuable insights on a specific theme in each episode: *"How It All Started"* (background of developing genomic medicine in Hong Kong by Professor Liang); *"Building The Blocks"* (importance of establishing a genome database of the local population by Professor Ip); *"Availing It For The Greater Good"* (advocacy for wider clinical applications of genomic medicine by Professor Lau); and *"The Future Is Here"* (power of genomic medicine in transforming future healthcare by Professor Lo). These videos, since their launch, have been serving as the authoritative voices for promoting genomic literacy and HKGI's work to a wide spectrum of stakeholders.

專業見解　由淺入深

基因組醫學複雜精密，且涉及多個專業領域。自成立以來，基因組中心一直以短片及動畫為重點宣傳策略，推動公眾參與及教育。儘管基因組中心全面運作僅一年多，至今已製作了一共22部短片，每部短片的觀看次數達數萬至數十萬不等，印證短片及動畫是最為有效的宣傳方式之一，成功向廣大市民推廣基因組中心的工作。

在2022-23年度，基因組中心繼續製作宣傳短片及動畫，並推出學者專訪系列。機構非常榮幸邀得四位董事參與拍攝四部專題短片，向觀眾分享突破性研究工作、闡述基因組醫學發展的里程碑，以及基因組醫學如何改革醫療服務，惠及社會大眾。

學者專訪系列邀請了國際知名科學家及臨床專家，包括梁憲孫教授、葉玉如教授、劉澤星教授及盧煜明教授，在每集專訪就特定主題分享真知灼見：梁教授於「基因組醫學．緣起」說明香港發展基因組醫學的因由；葉教授在「基因組醫學．建立」講解建立本地人口基因組數據庫的重要性；劉教授於「基因組醫學．普及」提倡在臨床上更廣泛地應用基因組醫學，以及盧教授在「基因組醫學．未來」闡釋基因組醫學如何革新醫療系統。專訪系列有助加深各界持份者對基因組學的認識，以及推廣基因組中心的工作。

Premiering Corporate Video on International Stage

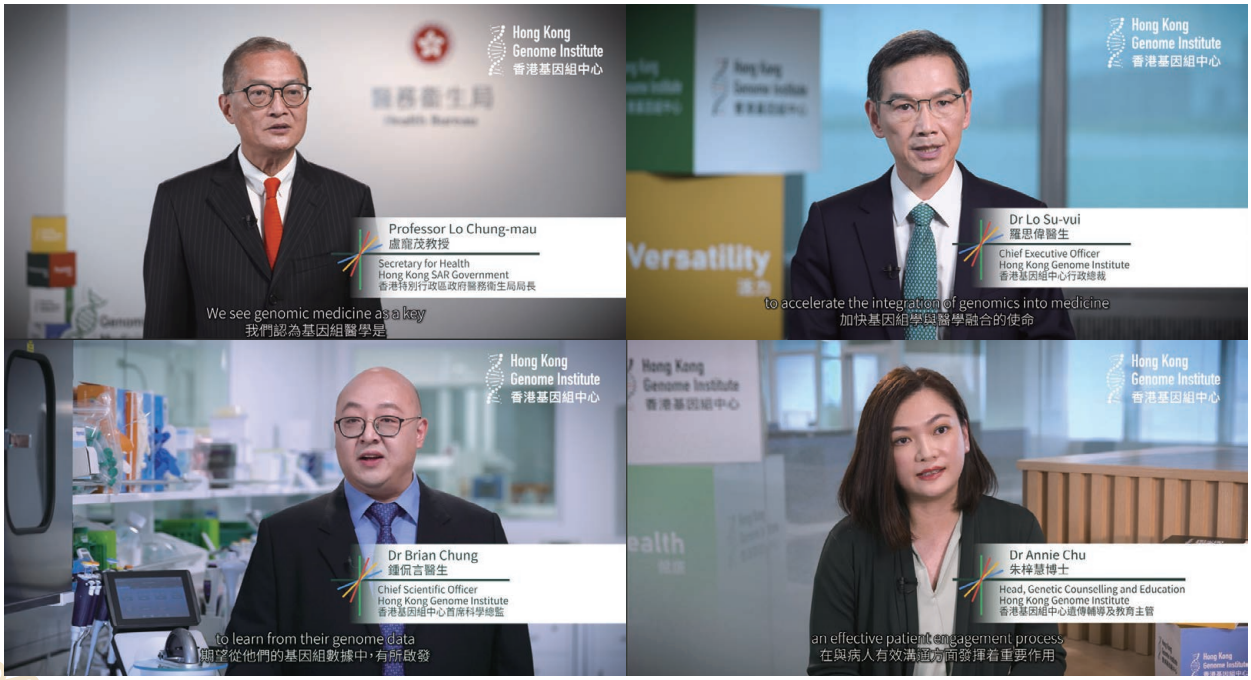
During the year, HKGI also collaborated with the American Society of Human Genetics (ASHG) to produce a HKGI feature video. ASHG, as the world's largest and most prestigious professional body in the field, selects from each region representative organisations to be featured in its "Thought Leadership Film Series" every year. For its 2022 edition, HKGI had the immense pleasure of being selected and had the feature video premiered at ASHG flagship event "Annual Meeting 2022" joined by clinical geneticists, scientists, researchers and medical professionals around the globe in October 2022.

The video highlighted HKGI's vision and achievements in launching HKGP, the first-of-its-kind initiative in Hong Kong. Apart from HKGI's senior executives, the Secretary for Health was also profiled in the video. Through ASHG's global platform, HKGI was able to showcase to fellow practitioners worldwide its strategic blueprint and remarkable milestones in promoting genomic medicine in Hong Kong, and to foreground HKGP to the international level.

卓越成果　邁向國際

基因組中心在年內與美國人類遺傳學協會(ASHG)合作，參與錄製該會的「領袖影片系列」。ASHG作為行業內全球最大及最知名的人類遺傳學專業組織，每年均會評選各地區具代表性的機構參與拍攝。基因組中心十分榮幸獲邀錄製2022年的「領袖影片系列」，有關短片更在ASHG於10月舉行的年度國際盛事「2022周年大會」中首播，與全球的臨床遺傳學家、科學家、研究人員及醫療專業人士分享基因組中心的工作。

影片聚焦於基因組中心的願景，以及本地首個同類型基因組計劃的成果；除了訪問基因組中心的管理人員外，亦邀請了醫務衞生局局長參與拍攝。透過ASHG的全球平台，基因組中心得以向世界各地的同業展示在香港推廣基因組醫學的策略藍圖，以及卓越出眾的里程碑，同時把基因組計劃提升至國際層面。



Enhance Public Genomic Literacy and Engagement
加強公眾對基因組學的認識和參與

Expanding Brand Exposure Through Digital Marketing

During the year, HKGI further enhanced its online presence and promotion to further its reach. Topping the list would be the launch of the HKGI YouTube channel in August 2022. Hosting close to two dozen videos and animations covering patient stories, and introduction of genomic medicine and HKGP details, the channel provides the public with convenient access to HKGI's rich library of educational content. Targeted online promotions were also run on YouTube to reach out to various stakeholders.

To expand brand exposure and maximise publicity effectiveness, HKGI ramped up its digital marketing strategy with effective use of search engine optimisation tools. These included strategic placements of online advertisements and promotional campaigns, as well as search-based keywords on Google with reference to latest digital trends and HKGI's operational needs.

HKGI spared no effort to engage with stakeholders throughout the year, even during the festive seasons. In addition to thematic greeting e-cards, keeping up with market trends, a series of Chinese New Year WhatsApp stickers featuring the Year of the Rabbit and HKGI's iconic DNA double helix was developed for the public to download and use, celebrating the occasion while promoting HKGI and genomics.

線上推廣　廣納受眾

年內，基因組中心透過增加使用網上平台，並加強網上宣傳工作，更廣泛接觸受眾群；機構於2022年8月推出YouTube頻道，上載了20多部短片和動畫，內容涵蓋病人故事、基因組醫學簡介及基因組計劃的詳情，公眾可隨時在頻道上閱覽基因組中心豐富的教育資訊。此外，機構亦在YouTube推出定向網上宣傳，接觸不同特定群組及持份者。

為提升基因組中心於網上的認知度，基因組中心採用SEO（搜尋引擎優化）工具，逐步加強數碼營銷策略，並同時參考最新數碼媒體應用趨勢、因應基因組中心的營運所需，策略性地在Google刊登廣告、舉辦網上宣傳活動，及運用搜索關鍵字等，以達致最佳的數碼營銷效果。

基因組中心在本年度盡力把握每個機會與持份者溝通接觸。除了發放特色主題的電子賀卡外，更因應潮流趨勢，以兔年及基因組中心具代表性的DNA雙螺旋為設計主題，推出農曆新年WhatsApp貼圖，供市民下載使用；在歡度佳節的同時，亦致力推廣基因組中心及基因組學。





Maintaining Close Rapport with the Media

In 2022-23, HKGI continued maintaining close contact with the media to publicise HKGI's latest developments and updates on HKGP to enhance public genomic literacy. Aside from issuing press releases and statements, two media briefings were held during the year, one in end-2022 and the other in the first half of 2023. The first focused on promoting HKGI's accomplishments and HKGP's developments, culminating in prominent coverage in tier-one print and online media. A remarkable story about HKGI using whole genome sequencing technology to identify a patient's rare skin disease, which doctors had been unable to diagnose for 49 years, was also widely reported.

連繫傳媒　接觸各界

在2022-23年度，基因組中心一如既往，繼續與傳媒緊密合作，宣傳基因組中心的最新發展，並提供基因組計劃的最新資訊，以加強公眾對基因組學的認識。除了發放新聞稿和新聞公告外，更在2022年年底和2023年上半年，分別舉辦了兩次傳媒簡報會。首次簡報會旨在展示基因組中心的建樹，以及匯報基因組計劃的發展，吸引了主流印刷和網上媒體出席採訪。其中最為人動容、獲傳媒廣泛報道的個案，是一位病人49年來遭某種皮膚病困擾，卻始終未能找到病因；最終透過基因組中心的全基因組測序技術，診斷出患有罕見皮膚病。

Enhance Public Genomic Literacy and Engagement
加強公眾對基因組學的認識和參與



The second media briefing focused on HKGI's collaboration with the Hong Kong Academy of Medicine (HKAM) in launching the "HKAM-HKGI Research Excellence Grants in Genomic Medicine", with a lab tour for members of the press. In addition to significant media coverage in print, a news segment was filmed and aired by TVB during its prime-time broadcast, highlighting HKGI's efforts in driving the development of genomic medicine in Hong Kong.

Throughout the year, media interviews were also arranged with different media outlets and organisations such as RTHK and the Hang Seng University of Hong Kong for HKGI's management team, including the Chief Executive Officer and Chief Scientific Officer, during which HKGI's achievements, potential and benefits of genomic medicine, and exciting career opportunities in the profession were publicised.

第二次傳媒簡報會旨在公布基因組中心與香港醫學專科學院攜手設立的「基因組醫學卓越研究獎」，並安排記者參觀基因組實驗室。簡報會除了獲得印刷媒體廣泛報道外，無綫電視更安排在現場採訪拍攝，並在黃金時段播出報道，讓更多市民了解到基因組中心，致力推動本港基因組醫學發展。

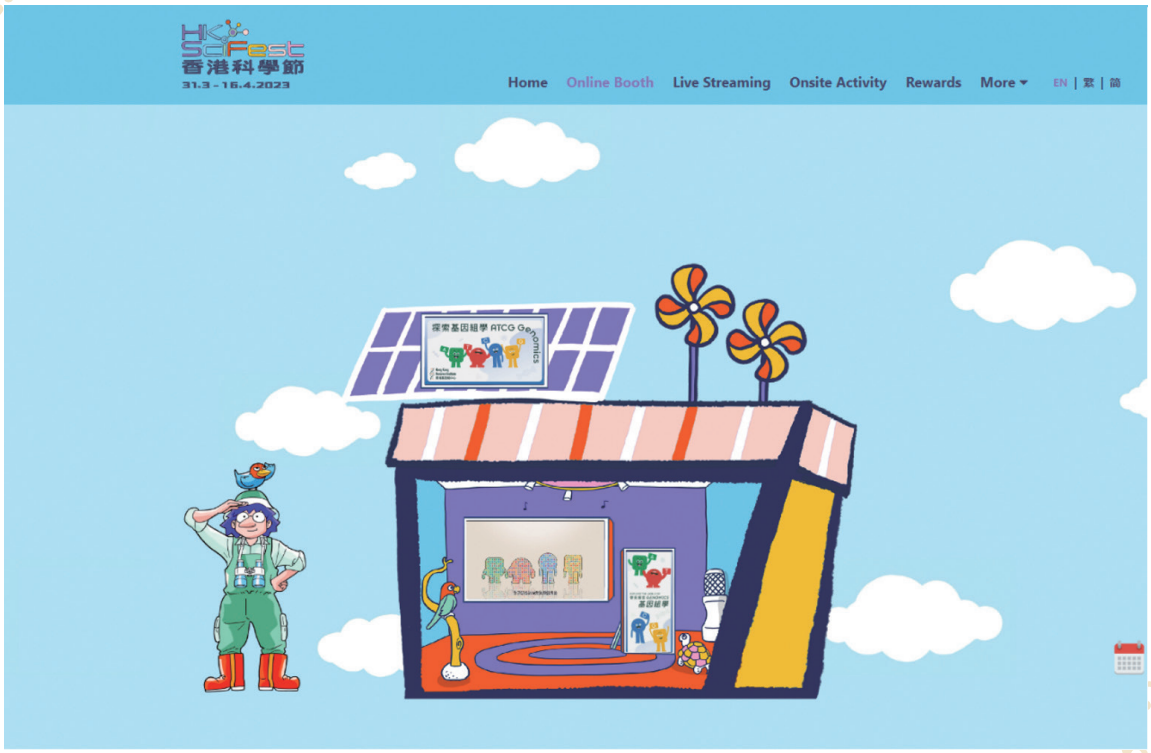
年內，基因組中心亦多次安排不同媒體和機構，如香港電台、香港恒生大學等，採訪基因組中心的管理層，包括行政總裁和首席科學總監，以闡述基因組中心的努力成果、基因組醫學的潛力和對市民的裨益，以及這門學科所提供的就業前景。

Bringing Genomic Medicine to the Public

HKGI participated in various public events during the year to proactively promote genomic medicine to the wider community. For instance, to engage with the younger generation, HKGI joined the InnoCarnival 2022 and Career Expo 2022 hosted in the Hong Kong Science Park. Moreover, HKGI took part in the HKSciFest 2023 organised by the Hong Kong Science Museum between March and April 2023 by setting up a virtual exhibition booth on the event website. Named "ATCG Genomics", the online booth introduced to visitors HKGI's work and a wide range of HKGI publications and videos, inspiring them to explore more about genetics and genomics. All these engagements allowed HKGI to directly promote understanding and awareness of genomic medicine, galvanise support, and spark interest among the targeted audiences.

公眾教育　推而廣之

為積極向市民推廣基因組醫學，基因組中心在年內參加了多項公眾活動，包括於香港科學園內舉辦的「創新科技嘉年華2022」及「香港創科職業博覽2022」，務求加深年輕一代對基因組醫學的了解。此外，基因組中心亦參與了香港科學館在2023年3月及4月期間舉辦的「香港科學節2023」，在主辦機構的活動網站設立了「探索基因組學」的虛擬展覽攤位，向到訪者介紹基因組中心的工作，以及展出一系列刊物和短片，啟發市民進一步探索遺傳學和基因組學。透過積極參與不同公眾活動，團隊可直接接觸廣大市民，加強他們對基因組醫學的認識和了解，對基因組中心工作更感興趣，爭取社會各界支持。



Enhance Public Genomic Literacy and Engagement
加強公眾對基因組學的認識和參與

Driving Exchanges with Local and Global Shakers

With genomic medicine advancing rapidly, engaging local and global experts for exchanges and collaborations is instrumental to its development.

Throughout the year, HKGI hosted a number of visits and exchange sessions for different stakeholders, including the Secretary for Health, field experts from local authorities and universities, and the Consuls-General of the United Kingdom, Qatar, Kazakhstan, Malaysia and Türkiye. The fruitful discussions at these meetings had resulted in meaningful follow-up dialogues and potential collaborations between HKGI and relevant counterparts.

HKGI's efforts in promoting genomic literacy among allied healthcare professionals were also witnessed in its active contributions to a variety of large-scale industry events. These included co-hosting with the Hong Kong Trade Development Council a thematic session titled *"What's Next in the Biotech and Genomics Revolution?"* at the Asia Summit on Global Health in November 2022. At the session, industry heavyweights from the United States, United Kingdom and South Korea were invited to discuss the megatrends and potential applications in the field. Another example of a key industry event HKGI participated in was the panel discussion of the scientific session *"Unlocking Host Genome – Microbiome Cross Talks"* at the Microbiome Summit held in January 2023.

跨越地域　積極交流

基因組醫學發展一日千里，要做到與時並進，必須與本地及國際專家交流合作。

年內，基因組中心多次邀請不同持份者，包括醫務衞生局局長，來自各間大學和本地團體的業界精英，英國、卡塔爾、哈薩克斯坦、馬來西亞和土耳其總領事等，參觀基因組中心並交流意見。透過與業界人士熱切討論，彼此收穫甚殷，並藉此建立了連繫，保持溝通交流，探討日後合作的機會。

基因組中心很榮幸為多個業界盛事獻出一分力，加強醫療專業人員對基因組學的認識，成效顯著有目共睹。團隊與香港貿易發展局合作，在2022年11月的「亞洲醫療健康高峰論壇」上，舉辦「生物科技及基因組學的革新與前景」專題討論，邀得美國、英國及南韓的業界翹楚出席，暢談基因組學的大趨勢及實際應用的潛力。此外，基因組中心亦參與了2023年1月的業界盛事微生物體高峰論壇，並出席科學環節"*Unlocking Host Genome－Microbiome Cross Talks*"的專家討論。



Moving into the Next Chapter

Public genomic literacy and engagement are paramount not only to HKGI in achieving its corporate vision and mission, but also to Hong Kong in its formation and transformation of public healthcare services.

While HKGI has already laid down a strong foundation in engaging and educating various stakeholders, it will continue to employ multi-pronged communication strategies. Content creation will remain as a key tactic. HKGI will keep developing engaging stories about HKGI and genomic medicine, and having them publicised through the effective use of online and offline channels to inspire and involve the broader community. Proactive media outreach and engagement events will continue to play a crucial role in the publicity plan. The hosting of a patient forum is also in the pipeline. Altogether, these will empower HKGI to foster closer ties with key stakeholders and cultivate greater understanding and support along its journey to promote genomic medicine to benefit all.

邁步向前　開展新篇

加強公眾對基因組學的認識和參與，對基因組中心實踐願景和使命至關重要，也是香港革新公共醫療服務的重要基石。

在教育及鼓勵各界持份者參與方面，基因組中心已奠定了穩固根基。展望未來，機構的宣傳策略會繼續多管齊下，一如既往，以傳遞資訊及知識為主，繼續講述以基因組中心及基因組醫學為題的故事，並透過線上線下的方式廣為發布，以啟發市民大眾、鼓勵各界積極參與。基因組中心會繼續主動聯繫廣大傳媒，參與各種活動，以進行推廣及宣傳；此外，團隊更密鑼緊鼓籌備病友共聚分享會，以病人角度了解基因組醫學。凡此種種，皆讓基因組中心與主要持份者建立起緊密的連繫，並加強公眾對基因組醫學的認識，從而得到各界支持，令基因組中心穩步向前，為社會帶來更大裨益。

Operate with Excellence
卓越營運



Operate with Excellence
卓越營運

As HKGI enters its second year and work expands in scale and scope, the comprehensive procedures, controls, and guidelines put in place from the beginning have continued to guide operations. These checks and balances enable high efficiency and strict quality control while allowing teams to remain laser-focused on driving change with genomic medicine. With this bedrock in place, the team can effectively build partnerships, meet rising public expectations, and maximise the impact of public resources entrusted to HKGI.

踏入第二年，基因組中心的規模及工作範疇不斷擴大。機構於成立之初已制訂了一系列程序、措施及政策。這些規程和措施，既確保質素和效率，亦讓團隊專心致志推動基因組醫學，引領醫療系統的革新。全賴有穩固的基石，團隊建立了緊密的夥伴關係，回應日高的公眾期望，更加善用寶貴的公共資源，達致最佳效益。

Staying Relevant on Staff Structure and Remuneration

During the financial year 2022-23, HKGI conducted its first review on staff number, structure, ranking and remuneration in accordance with the requirements under the Memorandum of Administrative Arrangements (MAA) signed with the HKSAR Government.

員工架構　嚴謹務實

在2022-23財政年度，基因組中心根據與特區政府簽署的行政安排備忘錄，對員工人數、架構、職級及薪酬水平進行首次檢討。

Pursuant to review objectives, HKGI projected the type and number of talent required for implementing its *Strategic Plan 2022-25* and identified the difficulties encountered in staff recruitment and retention. Under the guidance of the Finance and Administrative Committee (FAC), HKGI benchmarked its staff remuneration with that of comparable grades and ranks in the civil service. For posts without a comparable grade and rank in the civil service, HKGI referred to the relevant market terms and other indicators, mainly the practices of the Hospital Authority and the two local medical schools. Based on these benchmark exercises, HKGI developed a comprehensive salary point system and a salary review mechanism similar to that of the civil service and relevant subvented organisations. The review recommendations were endorsed by HKGI's Board of Directors in September 2022.

基因組中心根據既定的檢討目標，規劃執行《*2022-25年策略計劃*》所需的人才類別及數目，並識別出招聘和挽留人才所遇到的困難。中心在財務及行政委員會的指導下，把員工的薪酬水平與公務員相應職系和職級的薪酬作比較。至於未有相應職系和職級的職位，基因組中心則按相關的市場水平及指標，以及醫院管理局和兩家本地醫學院的做法作為參考。按照上述基準，基因組中心設立了與公務員和政府資助機構相若而全面的薪點制度及薪酬檢討機制。檢討建議於2022年9月獲基因組中心董事局通過。

In addition, the review concluded that HKGI's staff structure is in support of its mission, and appropriate for it to deliver the goals and strategies laid down in its *Strategic Plan 2022-25*. The review result further revealed that the remuneration package for HKGI's staff, including the top three tiers of staff, comprising Senior Managers, Branch Heads, and the Chief Executive Officer, was not higher than those for civil servants or the relevant subvented organisations of comparable ranks.

是次檢討亦確認了基因組中心的員工架構，有助同事履行使命，以及落實《*2022-25年策略計劃*》的目標和策略。檢討結果亦顯示基因組中心員工，包括最高三個職級（即高級經理、部門主管和行政總裁）的薪酬待遇，不會優於職級相若的公務員或政府資助機構的員工。

The review has provided valuable findings and useful insights to facilitate effective recruitment and retention of staff. HKGI will regularly review the number, structure, ranking and remuneration of its staff, under the guidance of the FAC and its Board of Directors.

檢討結果極具參考價值，對招聘和挽留人才甚有幫助。基因組中心在財務及行政委員會和董事局的指導下，會定期檢視員工的數目、架構、職級與薪酬。

Operate with Excellence
卓越營運



Scaling Up Capacity for HKGI and HKGP

With HKGP entering its main phase, newly acquired talent provided HKGI with additional capacity and expertise for success. At present, more than 80 staff members support HKGI's missions across the scientific, bioinformatics, and administration branches.

Recruitment efforts for interns were doubled down and more targeted. Following the success of its first summer internship programme in 2021-22, HKGI enhanced the programme to attract more local and international young talent especially for the scientific and bioinformatics teams through multiple channels. These included collaborations with the two top-notch medical schools in Hong Kong, and industry talent programme hosted by Hong Kong Science Park. All students and interns appreciated the opportunity to witness first-hand the transformative power of genomic research and clinical applications, and many expressed an interest in pursuing a related career after graduation.

提升能力　履行使命

隨着基因組計劃踏入主階段，新招募的專業人才加強了基因組中心的實力。目前，基因組中心的科學、生物信息學及行政部門共有逾80名員工，協助履行機構的使命。

年內，基因組中心加倍積極，招募合適的實習生。繼2021-22年度首個暑期實習計劃獲得成功後，基因組中心進一步優化該計劃，以及透過多個途徑，包括與本港兩家頂尖醫學院合作以及透過香港科學園舉辦的業界人才計劃，特別為科學和生物信息學團隊招攬更多本地與國際年輕人才。所有參與的學生和實習生十分珍惜這些機會，並在見證基因組研究及臨床應用的變革力量後，均表示有意於畢業後從事相關工作。

Empowering the Team with Continuous Learning

Ensuring the teams consistently uphold the highest standards and stay current with the latest knowledge is key to HKGI's success. To achieve this, HKGI organised a range of training workshops and sessions on a host of subjects throughout the year, such as cybersecurity, data privacy and records management. Industry experts and veterans were invited to deliver lectures and share case studies with colleagues, providing them with domain knowledge and best practices, as well as current rules and regulations to enhance their professional efficacy.

Forging a Strong Sense of Belonging

Staff well-being is of utmost importance to HKGI. Excellence comes when teams collaborate and colleagues feel fulfilled and belong. During the year, a variety of team-building events and activities were organised to foster a sense of belonging and connection among team members. These included a Christmas party, a Chinese New Year celebration and a staff forum with updates on HKGI's latest news and developments.

持續學習　精益求精

全賴各團隊一直恪守最高標準，並掌握最新的專業知識，基因組中心得以創下佳績。為提升員工的專業水平，基因組中心舉辦了多個培訓研討會和課程，涵蓋網絡安全、數據私隱和檔案管理等範圍。機構亦邀請了業界專家和資深行內人士舉辦講座，與同事分享各種案例；員工不但可從中學習專業知識及最佳實務守則，更可了解現時的規則和法規。

團隊精神　協力同心

基因組中心一直將員工福祉置於首位。透過團隊之間的通力合作，建立成就感與歸屬感，達到卓越成果。年內，機構舉辦了多個活動，包括聖誕聯歡會、農曆新年慶祝會，以及員工大會以分享基因組中心最新消息和發展，藉此建立團隊精神、培養歸屬感和加強團隊之間的連繫。



Operate with Excellence
卓越營運



Enhancing Security and Resilience

Data privacy and information technology (IT) security are critical to the work and the trust that patients and partners place in HKGI. The team has continuously monitored and upgraded IT infrastructure to strengthen system and data security.

Additionally, a secure and reliable network architecture now connects HKGI's on-site servers with its external data centre, where non-sensitive data is stored, to ensure maximum uptime for business-critical services with high-speed communication. Security mechanisms, such as firewalls and VPNs, were implemented to protect network connections and data from unauthorised access. In parallel, documentation for IT control and maintenance was updated to keep staff informed about the latest system enhancements.

Powering up Efficiency with Technology

Hybrid communication has become an essential component of collaboration across the world. To ensure that the HKGI team is supported with the tools and resources necessary for effective communication and collaboration, portable AV systems with high-quality cameras, microphones, and speakers were acquired, enabling teams to conduct online meetings with maximum convenience and effectiveness, improving overall productivity and efficiency as an organisation.

網絡安全　運作關鍵

數據私隱及資訊科技安全擔當着舉足輕重的角色，不但可確保機構運作暢順，更有助基因組中心獲取病人和合作夥伴的信任。有見及此，團隊持續監察並提升資訊科技基礎設施，以加強系統及資訊安全性。

此外，基因組中心擁有安全可靠的網絡架構，連接機構內部伺服器與用作儲存非敏感數據的遠端數據中心；同時依靠高速的通訊傳輸網絡，以確保關鍵業務正常運作。機構亦設置了防火牆與虛擬專用網路等安全機制，保護網絡連線，以及防止數據在未經授權下被存取。與此同時，基因組中心亦更新了管制及維持資訊科技系統的相關手冊，讓員工緊貼系統升級的最新情況。

善用科技　提高效率

採取靈活的混合通訊模式已成為與全球協作的重要元素。為確保團隊配備溝通與合作所需的工具及資源，基因組中心增設了高品質攝影機、麥克風，以及喇叭的便攜式影音系統，讓團隊以最便利和高效的方式進行網上會議，藉此提高機構的整體生產力與效率。

Safeguarding the Wellbeing of All

HKGI went to great lengths to ensure a neat and safe office environment. During the year, new water and temperature sensors in the HKGI office provided greater accuracy and reliability in maintaining the safe and proper operation of systems and equipment and allowing preventive measures to be taken. Water sensors, for example, detect water in places where it should not exist, such as near electrical equipment or in flood-prone areas, whereas temperature sensors protect against overheating of equipment. The data collected from sensors will also aid in trend analysis and identifying areas for improvement or optimisation.

Maximising Operations with Prudent Finance and Procurement

As a publicly funded organisation, HKGI maintains prudent and stringent financial controls to ensure the cost-efficiency of all expenditures. During the year, HKGI conducted nearly 90 quotation and tender exercises for the provision of hardware, software, and services to enhance operational excellence. These included equipment such as the additional sequencing platform and single-cell analysis system to improve the testing capacity and functionality of the HKGI laboratory, as well as an in-house genome database to bolster the performance of the bioinformatics platform. To ensure the fairness and integrity of procurement processes, all HKGI's approval authorities are governed by the Guidelines and Procedures on Procurement. Furthermore, HKGI's financial results are overseen by the FAC and the Audit and Risk Committee and continue to benefit from their expert guidance.

關懷同事　提升福祉

基因組中心竭盡所能，為團隊營造整潔又安全的工作環境。年內，為了保持系統和設備妥善地運行，機構在辦公室安裝了全新的防水與溫度感應器，此舉不但令維護工作更準確可靠，亦有利於採取預防措施。舉例而言，防水感應器設於一些電器附近或易受水浸影響的範圍，可探測到有否滲水問題；而溫度感應器則可防止設備過熱。感應器所收集的數據，亦有助進行分析，以識別出需要修繕的地方。

審慎理財　營運有道

作為公帑資助機構，基因組中心一直遵從審慎及嚴謹的財務管理守則，確保所有開支符合成本效益。年內，機構就採購硬件、軟件及服務展開了約90項報價及招標工作，以提升營運成效；新加添置的設備，包括測序平台及單細胞分析系統，用以加強基因組中心實驗室的測序能力與功能，並完善內部的基因組數據庫，從而強化生物信息平台的效能。為確保採購程序公平公正，基因組中心所有審批授權均須符合既定的採購指引及程序。此外，中心的財務狀況亦由財務及行政委員會，以及審計及風險管理委員會監督；專業的督導繼續令機構穩健營運。

Corporate Governance
企業管治



Principles and Practices
原則與實務

A robust corporate governance system centred around the Board of Directors has been put into place to govern the operations of HKGI and the implementation of HKGP, observing the core corporate governance principles of accountability, transparency, fairness, and responsibility.

我們已建立以董事局為中心的健全企業管治制度，以管理基因組中心的運作及基因組計劃的實施，並遵守問責、透明、公平及責任的核心企業管治原則。



Accountability

The Board of Directors of HKGI is accountable to various stakeholders, including the HKSAR Government, participants of HKGP, the general public, as well as a wide range of community groups. HKGI maintains close communication with the HKSAR Government. There are three public officers serving on its Board, namely, the Under Secretary for Health, the Deputy Secretary for Health, and the Deputy Director of Health. The Chairperson and the Chief Executive Officer (CEO) of HKGI regularly meet with government officials to discuss issues relating to the work of HKGI. As and when appropriate, the CEO and relevant staff members attend meetings of the Legislative Council (LegCo) together with government officials to brief LegCo Members on the operations, progress and plans of HKGI, and address queries as needed.

問責

基因組中心董事局對不同持份者負責，包括特區政府、基因組計劃參加者、公眾，以及不同社區組織。基因組中心與特區政府保持緊密溝通，共有三名公職人員參與董事局的工作，分別是醫務衞生局副局長、醫務衞生局副秘書長及衞生署副署長。基因組中心主席及行政總裁定期與政府官員會面，討論與基因組中心工作相關的事宜。此外，基因組中心行政總裁及機構相關人員，亦會適時與政府官員一同出席立法會會議，向立法會議員介紹基因組中心的運作、進度及工作計劃，並回應查詢。

In accordance with the Memorandum of Administrative Arrangements (MAA) signed with the HKSAR Government, HKGI shall furnish, as soon as practicable and in any case, not later than six months after the expiry of a financial year a report on the activities of HKGI, and not later than three months a copy of the statement of accounts of HKGI together with the auditor's report for that year to the Permanent Secretary for Health (PSH). In this respect, an annual report, with the approval of the Board of Directors, will be published for each financial year. HKGI is also required to submit an Annual Plan cum Draft Estimates of Income and Expenditure for the coming financial year to PSH in the first quarter of each year, outlining the work it will carry out to achieve its strategic goals during the year.

根據與特區政府簽署的行政安排備忘錄，基因組中心須在切實可行的情況下，不遲於財政年度屆滿後六個月，盡快向醫務衞生局常任秘書長提交有關基因組中心的活動報告；並在不遲於財政年度屆滿後三個月，提交基因組中心的賬目報表副本及年度核數師報告。經董事局批准後，基因組中心會在每個財政年度刊發年度報告。基因組中心亦須於每年第一季度向常任秘書長提交下一財政年度的年度計劃及收支預算草案，概述其在年內為實現策略目標而將開展的工作。

HKGI recognises the importance of risk management as a systematic tool for identifying, analysing, assessing, and treating all types of risks attached to its activities and resources. It has adopted an integrated Enterprise Risk Management framework to provide a holistic view of the enterprise risks facing the organisation.

基因組中心明白風險管理作為系統工具，在識別、分析、評估及處理與活動及資源相關的各類風險中的重要性，並已採用一套綜合企業風險管理框架，以全面了解機構面臨的企業風險。審計及風險管理委員會代表董事

Principles and Practices
原則與實務

Reporting to the Board, the Audit and Risk Committee receives and considers internal audit reports on key enterprise-wide risks and the related mitigation strategies. It also monitors HKGI's financial and administrative control processes to ensure the safeguarding of assets, resource optimisation and overall operational efficiency. This is achieved by reviewing HKGI's overall management and control framework, measures for mitigating significant risks in its key business processes, and external audit reports.

局接收及審議有關主要企業風險及相關緩解策略的內部審計報告，並通過仔細審核基因組中心整體管理及控制框架、降低主要業務流程中重大風險的措施的報告以及透過外部審計報告，監察基因組中心的財務及行政控制流程，確保資源運用得宜及保障營運效率。



Transparency

Adequate degree of transparency and disclosure of information about the organisation are important pillars of a good corporate governance system. HKGI has established various means and channels to enhance transparency, disclose information, and report progress of work to its stakeholders. The *HKGI Strategic Plan 2022-25 (Strategic Plan)*, as an overarching document for guiding all aspects of HKGI's development and planning in the specified three-year period, was approved by the Board of Directors at its meeting held in September 2021, and subsequently accepted by PSH for publication and promulgation to various stakeholders. The strategic priorities of HKGI's Annual Plans are guided by the strategic goals, directions, and strategies set out in the three-year *Strategic Plan* to channel resources to specific programmes for translating these strategies into actions.

透明

良好企業管治制度的重要支柱，包括高度透明及充分披露機構的資料。基因組中心已建立多種方式及渠道向持份者提高透明度、披露充足資料及報告工作進度。作為指導基因組中心未來三年各方面發展及規劃的總體文件，《*2022-25年策略計劃*》(*策略計劃*)已於2021年9月舉行的董事局會議上獲得通過，隨後獲醫務衞生局常任秘書長同意發表並頒布予各持份者。基因組中心年度計劃的策略優先事項以三年*策略計劃*所載的策略目標、方向及制訂的策略為指引，將資源用於具體項目，使有關策略轉化為行動。

For transparency and openness, the HKGI website provides up-to-date and comprehensive corporate information about HKGI in the form of texts, images and videos. HKGI also maintains close dialogue with the media and other key stakeholders, particularly patients and relevant professional bodies. It issues press releases and holds media briefings to inform the media and the public on all current issues and important matters relating to its work.

為保持透明及公開，基因組中心網站以文字、圖像及影片形式提供有關基因組中心最新及最全面的信息。基因組中心亦與傳媒及其他主要持份者，尤其是病人及相關專業團體保持緊密聯繫，並發布新聞稿及舉行傳媒簡報會，向傳媒及公眾通報所有當前議題及與其工作有關的重要事項。

The six functional committees submit progress reports to the Board of Directors on a regular basis, informing the Board of the major deliberations and decisions made by individual committees. The HKGI management also submits to the Board regular reports on the implementation progress of HKGP as well as the progress of relevant programmes and initiatives set out in the Annual Plans.

六個專責委員會定期向董事局提交進度報告，通報個別委員會的主要審議及決定。基因組中心管理層亦向董事局提交定期報告，匯報基因組計劃的進度和年度計劃中所載項目及措施的進展。

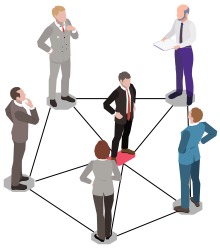


Fairness

HKGI embraces the principle of fairness and strives to treat all its stakeholders equally and ethically. It has involved the medical and legal experts as well as patient advocate serving on its Ethics Advisory Committee in the development and implementation of an ethically sound system for seeking patients' informed consent to participate in HKGP. Before the commencement of patient recruitment for HKGP in July 2021, HKGI successfully obtained ethical approval from the relevant Institutional Review Boards (IRBs) of its Partnering Centres (PCs). Following the launch of HKGP, progress reports are submitted to respective IRBs for ethical review on yearly basis. The first progress update on the implementation of HKGP was approved by the relevant IRBs in July, August and September 2022 respectively.

公平

基因組中心奉行公平原則，也致力以平等及合乎倫理的方式對待所有持份者。倫理諮詢委員會成員包括醫學及法律專家，以及病人代表，共同制訂和實施合乎倫理的健全制度，尋求病人知情同意參與基因組計劃。在基因組計劃於2021年7月開始招募病人前，基因組中心已成功從夥伴中心的相關倫理審查委員會獲得批准；而在基因組計劃推行後，基因組中心每年度亦向各夥伴中心的倫理審查委員會提交進度報告，以供審查。首份有關實施基因組計劃的進度報告分別在2022年7月、8月及9月獲相關倫理審查委員會批准。



Responsibility

The Board of Directors accepts full responsibility for the powers that it is given and the authority that it exercises. It is responsible for overseeing and monitoring the management of HKGI's operations, its activities and performance. In this respect, it acknowledges its responsibility for establishing and ensuring the effectiveness of HKGI's internal control system, which is designed to provide reasonable assurance regarding the achievement of the objectives in the categories of effectiveness and efficiency of operations; reliability of internal and external reporting; and compliance with applicable laws, regulations and internal policies/guidelines. This responsibility is delegated to the CEO of HKGI in daily operations.

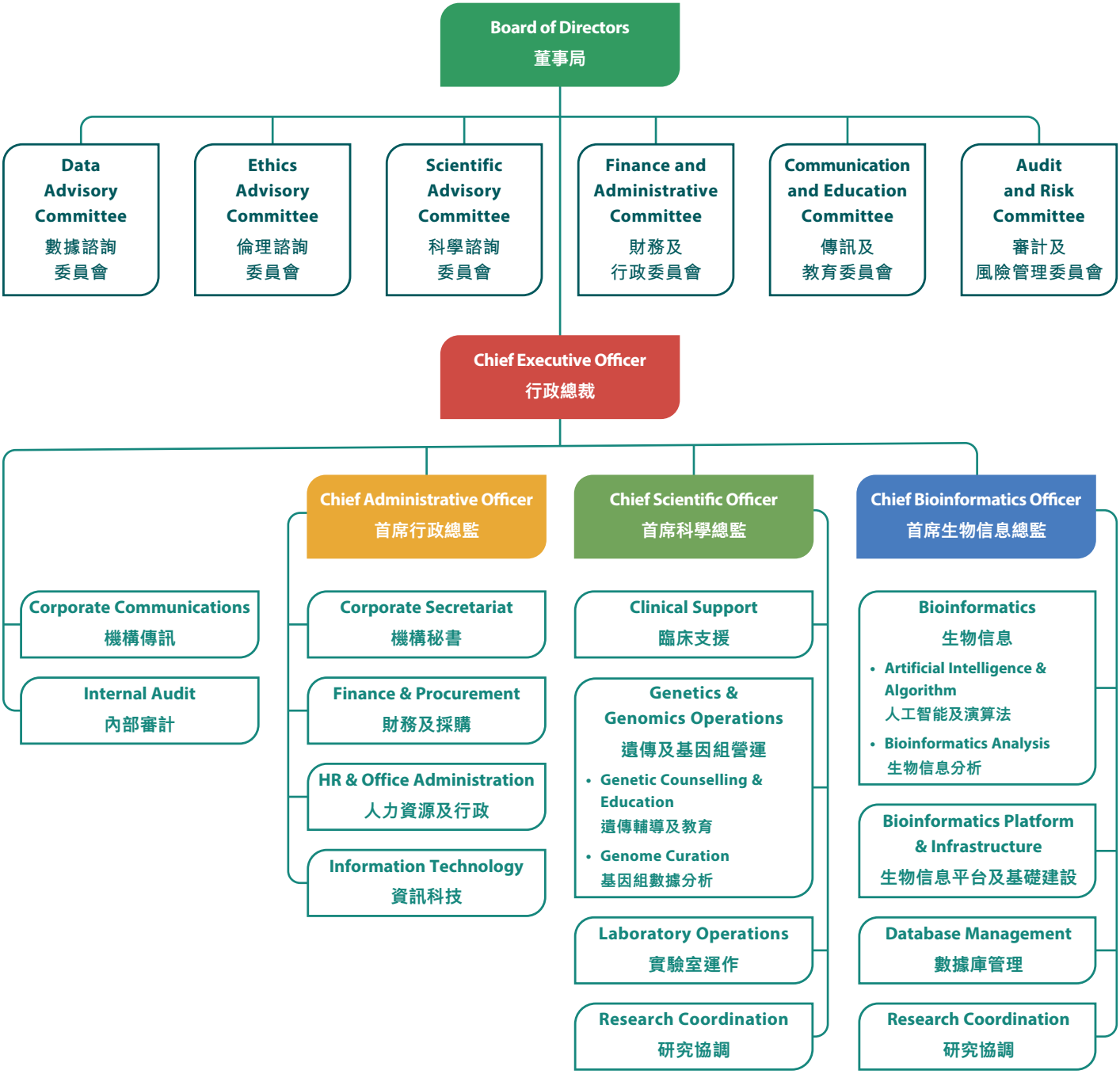
責任

董事局對其獲賦予的權力及行使的職權承擔全部責任。董事局負責監督及監察基因組中心的營運、活動及業績的管理。就此而言，董事局有責任建立及確保基因組中心的內部控制系統行之有效，確保合理地實現營運效能及效率的目標；內部及外部匯報的可靠性；並且遵守適用的法律、規例及內部政策／指引。相關的責任，在日常營運中會委派予基因組中心行政總裁。

Governance Structure
管治架構

HKGI has set up an effective corporate governance structure comprising the Board of Directors and six functional committees to provide policy directions and implementation guidance to the executive management.

基因組中心已建立有效的企業管治架構，由董事局及六個專責委員會組成，向管理團隊提供政策方向及實務指引。



Board

Board Functions

HKGI is a company limited by guarantee, established and wholly owned by the HKSAR Government to accelerate the development of genomic medicine in Hong Kong. It is accountable to the HKSAR Government through the Secretary for Health. According to Article 14 of the Articles of Association of HKGI incorporated under Companies Ordinance (Cap.622), the operations and affairs of the Institute are managed by the Board of Directors, who may exercise all the powers of the Institute. Therefore, the Board of Directors is the highest authority in the governance structure of HKGI.

Board Diversity

Membership of the HKGI Board of Directors comprises 17 non-public officers and three public officers, engaging experts from different sectors, such as biomedical scientists, medical ethicists, clinical professionals, data scientists, bioinformaticians, legal experts, accountants, and public educationalists etc. to promote the development of genomic medicine in Hong Kong.

董事局

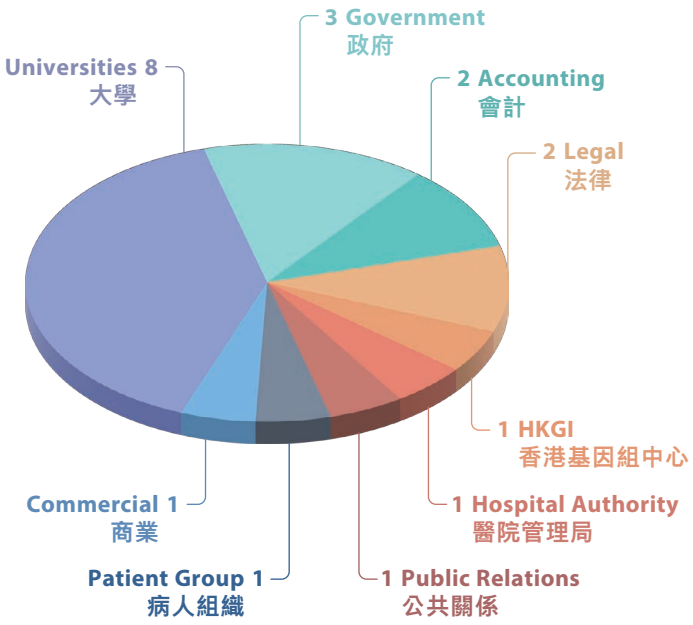
董事局職能

基因組中心是一家由特區政府成立並全資擁有的擔保有限公司，旨在促進香港基因組醫學的發展，透過醫務衞生局局長向香港特區政府負責。根據《公司條例》(第622章)註冊的基因組中心的《組織章程細則》第14條，基因組中心的運作及事務由董事局管理，董事局可對基因組中心行使所有權力。因此，董事局是基因組中心管治架構中的最高權力機構。

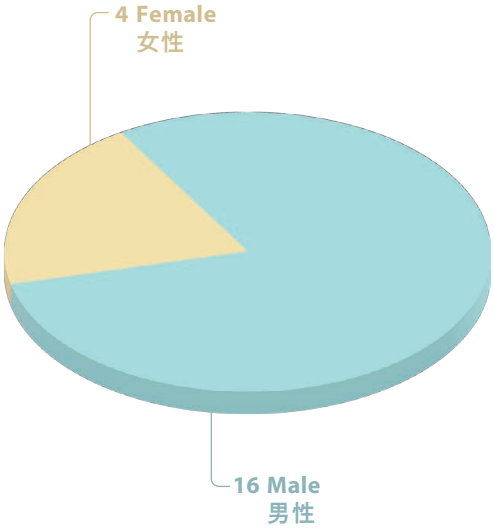
董事局多元化

基因組中心董事局成員由17名非官方董事及三名官方董事組成，當中包括來自不同領域的專家，例如生物醫學科學家、醫學倫理學家、臨床醫療專家、數據科學家、生物信息學家、律師、會計師及公共教育學家等，共同促進香港的基因組醫學發展。

PROFILE
背景



GENDER
性別



Governance Structure
管治架構

Board Meetings

The Board of Directors meets formally every three months and handles urgent matters via circulation between these meetings. In 2022-23, it considered an array of important matters in leading and managing HKGI, including implementation progress of HKGP, establishment of the Hong Kong Genetic Counselling Practice Consortium, the 2022-23 Audited Financial Statements and Financial Report of HKGI, half-yearly and annual reviews of the 2022-23 Annual Plan Programmes, Report of HKGI's Staff Structure and Remuneration Review, the 2021-22 Annual Report of HKGI, Collaboration Agreements with PCs on main phase of HKGP, the 2023-24 Annual Plan of HKGI, Draft Estimates of Income and Expenditure for 2023-24, forecast of agenda items for Board meetings in 2023-24, collaboration with the Hong Kong Academy of Medicine, Hong Kong College of Physicians, and medical faculties of local universities and progress reports of functional committees. The meeting attendance rate of individual Board members for the period from April 2022 to June 2023 is shown on page 155.

To address the needs, challenges, and aspirations of developing the genetic counselling profession in Hong Kong, HKGI set up the Hong Kong Genetic Counselling Practice Consortium in June 2022 to gather a representative group of experts and stakeholders in the fields of genetics and genomics to enhance the development of genetic counselling in Hong Kong. During 2022-23, the Consortium met two times to review the landscape of genetic counselling development around the globe and to formulate a scope of practice and code of ethics for genetic counselling practice in Hong Kong.

董事局會議

董事局每三個月舉行一次正式會議；而在舉行正式會議期間，會以書面傳閱方式處理緊急事宜。董事局在2022-23年度審議了多項有關領導及管理基因組中心的重大事宜，包括：基因組計劃的進度、設立「香港遺傳輔導專業發展聯席」、2022-23年度基因組中心經審計的財務報表和財務報告、2022-23年度計劃的半年及全年檢討、基因組中心員工架構及薪酬水平檢討報告、基因組中心2021-22年報、就基因組計劃主階段與夥伴中心擬訂的合作協議、基因組中心2023-24年度計劃、2023-24年度收支預算草案、2023-24年度董事局會議的待議事項、與香港醫學專科學院、香港內科醫學院及本港大學醫學院的合作，以及各專責委員會的進度報告等。在2022年4月至2023年6月期間，董事局成員於會議的出席率詳列於第155頁。

為應對社會需要及挑戰、以及實現在香港發展遺傳輔導專業的願景，基因組中心於2022年6月成立了「香港遺傳輔導專業發展聯席」，匯聚遺傳學及基因組學的專家和持份者，促進本地遺傳輔導專業的發展。在2022-23年度，聯席舉行了兩次會議，檢視全球遺傳輔導專業的發展概況，以及為本港的遺傳輔導專業擬訂實務範圍及倫理守則。



Attendance of Board Meetings 董事局會議出席率

Members 成員		Attendance Rate 出席率(%)
Chairperson 主席	Mr Philip TSAI Wing-chung 蔡永忠先生, BBS, JP	100
Deputy Chairperson 副主席	Professor Raymond LIANG Hin-suen 梁憲孫教授, SBS, JP	80
Non-official Directors 非官方董事	Dr LO Su-vui 羅思偉醫生	100
	Dr Derrick AU Kit-sing 區結成醫生 (Appointment completed on 4 November 2022 任期至2022年11月4日)	100
	Mr Ray CHAN Chin-ching 陳展程先生	100
	Professor CHAN Wai-yee 陳偉儀教授	80
	Ms Ivy CHEUNG Wing-han 張潁嫻女士	100
	Dr CHUNG Kin-lai 鍾健禮醫生 (Appointment completed on 28 February 2023 任期至2023年2月28日)	100
	Professor Nancy IP Yuk-yu 葉玉如教授, SBS, BBS, MH, JP (Appointment completed on 4 November 2022 任期至2022年11月4日)	50
	Professor LAU Chak-sing 劉澤星教授, BBS, JP	60
	Dr Shawn LEUNG Shui-on 梁瑞安博士	100
	Dr Isabella LIU Fang-chun 劉芳君博士	80
	Professor Dennis LO Yuk-ming 盧煜明教授, SBS, JP	80
	Professor Alfonso NGAN Hing-wan 顏慶雲教授	80
	Mr Tim PANG Hung-cheong 彭鴻昌先生	100
	Mr Stephen WONG Kai-yi 黃繼兒先生 (Appointment commenced on 5 November 2022 任期自2022年11月5日)	100
	Dr Michael WONG Lap-gate 黃立己醫生 (Appointment commenced on 1 March 2023 任期自2023年3月1日)	100
	Professor WONG Yung Hou 王殷厚教授 (Appointment commenced on 5 November 2022 任期自2022年11月5日)	100
	Professor YIP Shea-ping 葉社平教授 (Appointment commenced on 15 June 2023 任期自2023年6月15日)	N/A
	Professor YIU Siu-ming 姚兆明教授	80
Official Directors 官方董事	Dr CHUI Tak-yi 徐德義醫生, JP (Appointment completed on 30 June 2022 任期至2022年6月30日)	100
	Dr Libby LEE Ha-yun 李夏茵醫生, JP (Appointment commenced on 9 September 2022 任期自2022年9月9日)	100
	Ms Shirley KWAN Yu-pik 關如璧女士 (Appointment completed on 3 July 2022 任期至2022年7月3日)	100
	Mr Kevin CHOI 蔡傑銘先生, JP (Appointment completed on 5 February 2023 任期至2023年2月5日)	100
	Mr Sam HUI Chark-shum 許澤森先生, JP (Appointment commenced on 20 April 2023 任期自2023年4月20日)	100
	Dr Teresa LI Mun-pik 李敏碧醫生, JP	100

Governance Structure
管治架構

Committees

For optimal performance of its roles and exercise of powers, the Board of Directors of HKGI has formed six functional committees, namely, the Data Advisory Committee, Ethics Advisory Committee, Scientific Advisory Committee, Finance and Administrative Committee, Communication and Education Committee, and Audit and Risk Committee. The membership and focus of work of each Committee for the period from April 2022 to June 2023 are listed in the following section.

Data Advisory Committee

Membership

Convenor:	Professor YIU Siu-ming
Non-official Members:	Professor Andrew CHAN Man-lok
	Professor CHAN Ting-fung
	Dr Chris CHAN Tsun-leung
	Dr CHEUNG Ngai-tseung
	Dr Lucas HUI Chi-kwong
	Professor JIANG Pei-yong
	Professor Terrence LAU Chi-kong
	Dr Shawn LEUNG Shui-on
	Dr Isabella LIU Fang-chun
	Professor LUO Qiong[i]
	Professor Ian WONG Chi-kei
	Professor Angela WU Ruohao[ii]
	Professor YANG Wan-ling
Official Member:	Representative from the Health Bureau

Terms of Reference

1. To advise on the overall architecture for storing and accessing data for HKGP.
2. To review and approve protocols related to the data access and transfer of HKGP.
3. To advise on the set up and operation of the genome database.
4. To advise on data related issues surrounding genomic medicine, as requested by the Board.

Notes:

i. Appointment completed on 30 November 2022; ii. Appointment commenced on 1 December 2022.

委員會

為充分發揮最大作用及行使職權，基因組中心董事局成立了六個專責委員會，分別是數據諮詢委員會、倫理諮詢委員會、科學諮詢委員會、財務及行政委員會、傳訊及教育委員會以及審計及風險管理委員會。各委員會於2022年4月至2023年6月期間的成員及工作重點匯報如下：

數據諮詢委員會

成員

召集人：	姚兆明教授
非官方成員：	陳文樂教授
	陳廷峰教授
	陳俊良博士
	張毅翔醫生
	許志光博士
	江培勇教授
	劉智剛教授
	梁瑞安博士
	劉芳君博士
	羅　瓊教授[i]
	黃志基教授
	吳若昊教授[ii]
	楊萬嶺教授
官方成員：	醫務衞生局代表

職權範圍

1. 就基因組計劃整體的數據儲存及讀取權限提供意見。
2. 審視及批准與基因組計劃數據讀取及轉移有關的規程。
3. 就設立基因組數據庫及其運作提供意見。
4. 按董事局要求，就與基因組醫學數據相關的議題提供意見。

附註:

i. 任期至2022年11月30日；ii. 任期自2022年12月1日。

Focus of Work

During the period, the Data Advisory Committee conducted three meetings to discuss and advise on the strategies and implementation initiatives relating to the development of HKGI's bioinformatics platform services in support of HKGP. These included updates on the processing and analysis of HKGP samples; HKGI's cloud infrastructure standardisation initiatives over asset management, system maintenance and compliance; functions, architecture and features of the inhouse-developed Bioinformatics Analysis Browser for variant annotations and prioritisation; HKGI's data storage and protection arrangements for the bio-samples collected from HKGP participants; plan for developing a secure research environment to share HKGI's processed genomic data to worldwide genomic science researchers; good practices recommended and observations effectively remediated in the Privacy Impact / Compliance Assessment exercises; as well as HKGI's future planning on data processing, storage and management towards an era of platform-independence and vendor-neutrality.

工作重點

數據諮詢委員會於期間舉行了三次會議，就基因組中心開發生物信息平台以支援基因組計劃的策略及執行細節進行討論，並提出意見。其中包括處理和分析基因組計劃樣本的進展、基因組中心雲端基礎設施相關設備管理的標準化安排、系統維護和合規、用於序列變異的註釋，以及優先排序的生物信息學分析瀏覽器的功能、架構與特色；亦涵蓋基因組計劃參加者生物樣本的數據儲存及保障安排、開發安全研究平台的計劃，以便與全球科研人員分享由基因組中心處理的基因組數據、就私隱影響／合規評估建議良好做法和適當修正，以及就基因組中心未來在數據處理、儲存和管理方面的計劃作討論，讓系統達致平台獨立和供應商中立。

Governance Structure
管治架構

Ethics Advisory Committee

Membership

Convenor:	Dr Derrick AU Kit-sing
Non-official Members:	Dr Josephine CHONG Shuk-ching
	Dr Calvin HO Wai-loon
	Professor Stephen LAM Tak-sum
	Professor LEUNG Suet-yi
	Mr Tim PANG Hung-cheong
	Dr Mary TANG Hoi-yin
	Mr Stephen WONG Kai-yi
	Mr James YIP Shiu-kwong
Official Members:	Representative from the Health Bureau
	Representative from the Department of Health

Terms of Reference

1. To provide ethical oversight for HKGP.
2. To consider, review and approve the ethics protocol of HKGP with reference to local and international practices.
3. To advise on patient consent protocol and arrangement.
4. To identify, define, examine and respond to ethical issues in HKGP to ensure its delivery is in the interests of the participants and the public.
5. To advise the Board on ethical issues related to genomic medicine, as requested by the Board.

Focus of Work

During the period, the Ethics Advisory Committee (EAC) noted the key milestones and ethical considerations in relation to HKGP, including obtaining ethics approval from relevant IRBs, recruiting participants with the consent package endorsed by EAC, establishing operational workflow for handling withdrawal applications, and deliberating slight modification to the HKGP's Data Sharing Policy following the prevailing practice in clinical setting. The Committee also discussed HKGI's current evidence-based and age-dependent approach for reporting additional findings from WGS analysis. HKGI will draw up a list of Additional Findings exclusively for this Project based on the latest international research results, which includes 13 genes with strong evidence on definitive gene-disease association and medical actionability. Ethical issues related to this proactive approach in reporting additional findings to patients and their family members were discussed and endorsed by the EAC.

倫理諮詢委員會

成員

召集人：	區結成醫生
非官方成員：	莊淑貞醫生
	何維倫博士
	林德深教授
	梁雪兒教授
	彭鴻昌先生
	唐海燕醫生
	黃繼兒先生
	葉兆光先生
官方成員：	醫務衞生局代表
	衞生署代表

職權範圍

1. 監督實施基因組計劃的倫理問題。
2. 參考本地及國際慣例以考慮、審視及批准基因組計劃的倫理規程。
3. 就獲取病人知情同意的規程及相關安排提供意見。
4. 識別、界定、審查及回應實施基因組計劃所涉及的倫理問題，確保有關處理符合參加者及公眾的利益。
5. 按董事局要求，就基因組醫學的相關倫理問題提供意見。

工作重點

倫理諮詢委員會於年內審視了與基因組計劃相關的倫理及道德考慮，包括從相關研究倫理委員會獲得倫理許可、按照委員會審批的知情同意資料冊招募計劃參加者、擬訂退出基因組計劃的程序，以及根據臨床護理及研究的既定原則，審議基因組計劃數據共享政策的修訂。此外，委員會還討論了以循證及參加者年齡為基礎而釐訂的附帶發現及其報告方式。現時基因組中心根據國際最新研究結果訂立了計劃專屬的「附帶發現列表」，當中包括與遺傳疾病有密切關聯及有臨床管理效用證據的13個基因。就這積極主動的方式向病人及其家屬報告附帶發現結果，倫理諮詢委員會討論了其相關倫理道德問題，並進行審批。

Scientific Advisory Committee

Membership

Convenor:	Professor Dennis LO Yuk-ming, SBS, JP
Non-official Members:	Professor Godfrey CHAN Chi-fung
	Dr Gladys KWAN Wai-man[i]
	Professor LAU Chak-sing, BBS, JP
	Professor Danny LEUNG Chi-yeu
	Professor LEUNG Tak-yeung
	Dr Edmond MA Shiu-kwan
	Professor Tony MOK Shu-kam, BBS
	Professor SHAM Pak-chung, JP
	Dr Venus SIU Wing-sze[ii]
	Professor Michael YANG Mengsu
Official Members:	Representative from the Health Bureau
	Representative from the Department of Health

Terms of Reference

1. To consider, advise and approve the clinical, laboratory and research protocols of HKGP.
2. To advise the Board on the latest science and technologies relevant to the effective implementation of HKGP.
3. To determine the research priorities of the main phase of HKGP.
4. To advise the Board on the scientific issues in genetics and genomics, as requested by the Board, with a view to promoting genomic medicine in Hong Kong.

Focus of Work

During the period, the Scientific Advisory Committee (SAC) received reports on the implementation progress of the multi-disciplinary team (MDT) meetings and WGS reporting and advised on the launch of the main phase of HKGP with expansion of the patient cohorts of undiagnosed diseases and hereditary cancers, as well as incorporation of other disease cohorts under the new theme of "Genomics and Precision Health". The Committee also discussed HKGI's proposed three-tier data sharing policy and publication policy for different types of research studies, suggesting HKGI follow international standards to settle any disputes concerning the authorship of HKGP-related publications and inviting researchers to sign an undertaking to observe its publication policy before releasing data to them. During the year, the SAC was involved in providing input to the independent evaluation study of HKGP commissioned by the HKSAR Government and noted the positive results and conclusions of its Phase 1 evaluation completed in Q2 2023.

Notes:

i. Appointment completed on 28 February 2023; ii. Appointment commenced on 1 March 2023.

科學諮詢委員會

成員

召集人：	盧煜明教授, SBS, JP
非官方成員：	陳志峰教授
	關慧敏醫生[i]
	劉澤星教授, BBS, JP
	梁子宇教授
	梁德楊教授
	馬紹鈞醫生
	莫樹錦教授, BBS
	沈伯松教授, JP
	蕭詠詩醫生[ii]
	楊夢甦教授
官方成員：	醫務衞生局代表
	衞生署代表

職權範圍

1. 考慮、建議及批准基因組計劃的臨床、實驗室及研究規程。
2. 就有效實施基因組計劃所需的相關最新科技，向董事局提出建議。
3. 決定基因組計劃主階段的研究重點。
4. 按董事局要求，在遺傳學及基因組學方面的科學問題上提供意見，以促進基因組醫學在香港的發展。

工作重點

科學諮詢委員會於期間接收跨專業團隊會議及全基因組測序落實進展的進度報告，也就基因組計劃主階段實施提出建議，擴展了未能確診病症和與遺傳有關的癌症的病人群組，以及將其他疾病群組納入「基因組學及精準醫學」的新主題。此外，委員會亦討論了基因組中心提出的三層數據共享政策，以及各類研究的出版政策，同時建議基因組中心遵從國際標準，以解決中心刊物著作權的爭議；並在發布數據予研究人員前，邀請他們簽署承諾書，確保其遵守基因組中心的出版政策。年內，特區政府就基因組計劃委託進行一項獨立評估研究，科學諮詢委員會亦就此提供意見；委員會察悉，第一階段評估已於2023年第二季完成，獲得正面評價。

附註:

i. 任期至2023年2月28日；ii. 任期自2023年3月1日。

Governance Structure
管治架構

Finance and Administrative Committee

Membership

Convenor:	Ms Ivy CHEUNG Wing-han
Non-official Members:	Mr Andrew FUNG Hau-chung, BBS, JP
	Mr LAI Kam-tong
	Ms Adelaide YU Hoi-man
Official Member:	Representative from the Health Bureau

Terms of Reference

1. To advise on the overall policies and procedures relating to financial, human resources and administrative matters of the HKGI.
2. To review and oversee the annual plan, budget and financial statements of the HKGI.
3. To review and make recommendations on the HKGI's organisation structure and level of staff compensation and benefits.
4. To advise pertaining to administrative matters, including procurement, legal, insurance on the HKGI's corporate services.
5. To consider any other finance and administrative matters of the HKGI.

Focus of Work

The Finance and Administrative Committee (FAC) met every three months in 2022-23 to ensure proper stewardship and effective use of financial and manpower resources, and to review various finance and administration-related matters. The financial, human resources and administrative matters considered and endorsed by the Committee during the period included: Estimates of HKGI's Income and Expenditure for 2023-24; Quarterly HKGI Financial Reports; Quarterly Expenditure Summary for HKGP of the three PCs; the latest staff recruitment progress and organisation structure; Report of the Staff Structure and Remuneration Review and relevant implementation; HKGI's IT Policy Manual; Update of HKGI's "Guidelines and Procedures on Procurement"; and contract proposals for external sequencing services and bioinformatics infrastructure support.

財務及行政委員會

成員

召集人：	張穎嫻女士
非官方成員：	馮孝忠先生, BBS, JP
	黎鑑棠先生
	俞海珉女士
官方成員：	醫務衞生局代表

職權範圍

1. 就基因組中心有關財務、人力資源及行政事宜的整體政策及程序提供意見。
2. 檢視及監督基因組中心的年度計劃、預算及財務報表。
3. 檢視基因組中心的組織架構，以及員工薪酬和福利水平，並提出建議。
4. 就基因組中心企業服務相關的採購、法律及保險等涉及行政事宜提供意見。
5. 審視基因組中心任何其他財務及行政事宜。

工作重點

財務及行政委員會於2022-23年度每三個月舉行一次會議，以確保妥善管理及有效運用財務和人力資源，並審視各項與財務及行政相關的事宜。委員會年內審議並通過了多項財務、人力資源及行政事宜，包括：2023-24年度收支預算、季度財務報告、基因組計劃三間夥伴中心的季度開支摘要、員工招聘的最新情況及組織架構、員工架構及薪酬水平檢討和有關工作的進度報告。此外，委員會亦審視了基因組中心的資訊科技政策手冊、更新了基因組中心的「採購指引及程序」，以及處理外聘測序服務和生物信息基礎設施的合約事宜。

Communication and Education Committee

Membership

Convenor:	Mr Ray CHAN Chin-ching
Non-official Members:	Mr Stephen CHUNG Chun-kit
	Dr Wendy LAM Wing-tak
	Mr Tim PANG Hung-cheong
	Ms Leona WONG Nga-lai
Official Member:	Representative from the Health Bureau

Terms of Reference

1. To advise on the overall strategy and value proposition of HKGP relating to publicity and education matters of the HKGI.

2. To make recommendations to the Board of Directors' of HKGI of the appointment of the publicity and social media consultant(s).

3. To review and oversee the HKGI's branding, communications, publicity activities and key messages delivered to the public, including the awareness, clinical benefits and data privacy issues of HKGP.

4. To review and oversee a dedicated website and social media platforms with creative design in the promotion and public education on HKGP.

5. To consider any other publicity and education matters of HKGI.

Focus of Work

The Communication and Education Committee (CEC) held two meetings during the period to advise HKGI on its publicity and public education initiatives. The CEC reviewed and endorsed HKGI's 2023-24 Publicity Plan and received operational updates on HKGI's corporate communication projects. Major matters the Committee deliberated included the production of corporate publications such as HKGI's first Annual Report (2021-22), a series of expert videos featuring world-renowned biomedical scientists serving on the HKGI Board; launch of online promotion such as the creation of the HKGI YouTube Channel and search engine optimisation on Google using search-based keywords and other digital marketing tools; publicity for the visit of officials from the Health Bureau; and a number of engagement events and meetings targeting different key stakeholders including the media, general public, university students and professional bodies to promote the work of HKGI and HKGP as well as the significance of genomic medicine.

傳訊及教育委員會

成員

召集人：	陳展程先生
非官方成員：	鍾振傑先生
	藍詠德博士
	彭鴻昌先生
	黃雅麗女士
官方成員：	醫務衞生局代表

職權範圍

1. 就基因組計劃與基因組中心宣傳及教育事宜有關的整體策略及價值定位，提供意見。

2. 就聘任宣傳及社交媒體顧問，向基因組中心董事局提出建議。

3. 檢視及監察基因組中心的品牌推廣、傳訊、宣傳活動及向公眾傳遞的主要信息，包括基因組計劃的認知度、臨床效益及資料私隱事宜。

4. 檢視及監察基因組計劃的創意設計、網站及社交媒體平台，以進行宣傳及公眾教育。

5. 審視基因組中心任何其他宣傳及教育事宜。

工作重點

傳訊及教育委員會於期間舉行了兩次會議，就基因組中心的宣傳及公眾教育措施提供建議。委員會審閱並通過了基因組中心2023-24年度的宣傳計劃，亦聽取了基因組中心在機構傳訊方面的工作匯報。委員會曾討論的主要事項包括：製作機構刊物，如基因組中心首本年報（2021-22年度）、邀請身兼基因組中心董事局成員的國際知名生物醫學科學家，拍攝學者專訪影片系列、進行網上宣傳工作，包括設立基因組中心YouTube頻道，Google關鍵字搜索和其他數碼營銷工具、宣傳醫務衞生局官員到訪基因組中心，以及舉辦多項公眾活動和會議，供不同主要持份者，包括傳媒、公眾、大學生及專業團體參與，從而推廣基因組中心的工作和基因組計劃，以及基因組醫學的重要性。

Governance Structure
管治架構

Audit and Risk Committee

Membership

Convenor:	Dr Isabella LIU Fang-chun
Non-official Members:	Dr KAM Pok-man, BBS
	Mrs Lesley WONG CHUI Yue-chue, SBS, JP
Official Member:	Representative from the Health Bureau

Terms of Reference

1. To review and monitor the overall effectiveness of the HKGI's internal control procedures and risk management systems and make recommendations to the HKGI as and when necessary.

2. To make recommendations to the Board of the appointment, re-appointment and removal of the external auditor.

3. To review the findings of the external auditor and oversee the implementation of their recommendations.

4. To consider the findings of major investigations of internal control matters as delegated by the Board or on its own initiative.

5. To consider any other audit matters of the HKGI.

Focus of Work

During the period, the Audit and Risk Committee (ARC) conducted three regular meetings with some other major audit issues transacted by circulation. The ARC exercised active oversight of the internal audit function of HKGI, considered matters related to the audit of HKGI's financial statements, and oversaw the effectiveness of risk management and internal controls at HKGI. In regard to HKGI's internal audit function, the ARC considered and approved HKGI's internal audit plans for 2023-24 and received progress reports on audit results of HKGI's operations, including the audits on Information Technology General Security and Controls, Procurement, Fixed Assets Management, Financial and Risk Management of Communication and Education Projects, Laboratory Operations Controls as well as Office and Miscellaneous Expenses. Jointly with the FAC, the ARC reviewed and endorsed HKGI's audited financial statements and financial reports for 2022-23. For risk management, the ARC considered and approved HKGI's 2023-24 Enterprise Risk Management Plan. The ARC also oversaw the implementation of HKGI's Enterprise Risk Management system, focusing on the mitigation measures for further controlling HKGI's key risks.

審計及風險管理委員會

成員

召集人：	劉芳君博士
非官方成員：	甘博文博士, BBS
	黃徐玉娟女士, SBS, JP
官方成員：	醫務衞生局代表

職權範圍

1. 檢視及監察基因組中心內部控制程序及風險管理系統的整體成效，並在需要時向基因組中心提出建議。

2. 就外聘、重新外聘及解聘外聘核數師向董事局提出建議。

3. 檢閱外聘核數師提交的帳目，並監察其建議實施情況。

4. 按董事局授權或主動審議有關內部監控事宜的主要調查結果。

5. 審視基因組中心任何其他審計事宜。

工作重點

審計及風險管理委員會於期間舉行了三次定期會議，其他審計事務以書面傳閱方式處理。委員會積極監察基因組中心的內部審計職能，考慮與基因組中心財務報表審計有關的事宜，並監察基因組中心風險管理及內部監控的成效。就基因組中心內部審計職能而言，委員會審議及批准了基因組中心的2023-24年度內部審計計劃，並收閱有關基因組中心業務營運的審計結果進度報告，包括資訊科技的一般安全及監控、採購、固定資產管理、傳訊及教育項目的財務及風險管理、實驗室運作控制、以及辦公室和雜項開支。委員會與財務及行政委員會共同審視及批准由外聘核數師編製的基因組中心2022-23年度經審計財務報表及財務報告。就風險管理而言，委員會審議及通過基因組中心2023-24年度企業風險管理計劃。此外，委員會亦監察基因組中心實施企業風險管理制度，主要集中於進一步控制風險的緩解措施。

Executive Management

The executives are charged by the Board of Directors with the responsibility of managing and administering the day-to-day business and operations of HKGI. To ensure that the management can discharge duties in an effective and efficient manner, the Board of Directors has set out clear delegated authority, directions, policies, and guidelines for the executives. Regular reports on the progress of agreed performance targets were presented to the Board.

管理團隊

董事局委派主管級人員負責掌管和管理基因組中心的日常業務及營運。為確保管理層能夠有效且高效率履行職責，董事局已為行政人員制訂清晰的授權、策略方向、政策及指引。管理層會定期向董事局提交議定目標的進度報告。

Financial Report
財務報告



The Hong Kong Genome Institute (HKGI) is a company incorporated in Hong Kong limited by guarantee and wholly-owned by the HKSAR Government. HKGI entered into a Memorandum of Administrative Arrangements (MAA) with the HKSAR Government in May 2021. The MAA provides the framework for the relationship between the HKSAR Government and HKGI, and sets out the responsibilities of both parties.

香港基因組中心(基因組中心)為一家於香港註冊成立的擔保有限公司，由特區政府全資擁有。基因組中心於2021年5月與特區政府訂立《行政安排備忘錄》，為特區政府與基因組中心之間的關係提供框架，並載列雙方的職責。

The principal activity of HKGI is to implement the Hong Kong Genome Project (HKGP), which is a catalyst project to establish a genome database of the local population, a talent pool, as well as infrastructure and protocol for genetic and genomic testing. In February 2021, HKGI entered into Memorandum of Arrangements with each of the three Partnering Centres (PCs) operated by the Hospital Authority at the Hong Kong Children's Hospital, The Chinese University of Hong Kong at the Prince of Wales Hospital and The University of Hong Kong at the Queen Mary Hospital to provide HKGI with clinical support for the implementation of HKGP. During the financial year, HKGI has initiated a new Collaboration Agreement with each of the three PCs with funding allocation from the non-recurrent subvention for the implementation of the main phase of HKGP.

基因組中心的主要工作為推行香港基因組計劃(基因組計劃)，該計劃為建立本地人口的基因組數據庫、人才庫，以及基因組測序設施和規程的催化劑項目。於2021年2月，基因組中心與醫院管理局／香港兒童醫院、香港中文大學／威爾斯親王醫院及香港大學／瑪麗醫院的三家夥伴中心分別訂立《安排備忘錄》，為基因組中心推行基因組計劃提供臨床支援。於財政年度內，基因組中心已分別與三家夥伴中心擬定新的《合作協議》，並以非經常性補助撥款推行基因組計劃的主階段。

For the financial year 2022-23, the highlights were as follows:

2022-23財政年度概要如下：

(a) Recurrent subvention of HK$108,953,000 was received for the funding of personal emolument and other operating charges. In addition, HK$24,301,515 of the recurrent subvention for the PCs included in deferred income in previous years was recognised as income which corresponded with the related expenditure of the PCs during the financial year.

(a) 就支付人員薪酬及其他營運費用收取經常性補助108,953,000港元。此外，過往年度計入遞延收入的24,301,515港元的夥伴中心經常性補助於本年度確認為收入，與財政年度內的夥伴中心相關開支一致。

(b) Non-recurrent subvention of HK$85,545,569 was received for the bioinformatics services, sequencing services and PCs network, of which HK$47,205,726 was recognised as income during the financial year when the related non-recurrent expenditure was expensed. The balance of non-recurrent subvention was recorded as deferred income in the statement of financial position.

(b) 就生物信息學服務、測序服務及夥伴中心網絡收取非經常性補助85,545,569港元。其中47,205,726港元於本財政年度確認為收入，相關非經常性開支則入賬為支出。非經常性補助結餘金額於財務狀況表入賬為遞延收入。

(c) Capital subvention of HK$9,934,747 was received for the procurement of laboratory equipment and peripheral items in 2022, and HK$1,898,186 was recognised as income which represented the depreciation charge on those assets during the financial year. The balance of capital subvention was recorded as deferred income in the statement of financial position.

(c) 2022年就採購實驗室設備及周邊設備收取資本補助9,934,747港元，其中1,898,186港元已確認為收入，為該等資產於本財政年度的折舊費用。資本補助結餘金額於財務狀況表入賬為遞延收入。

(d) After netting off the expenditure items and depreciation charges, the surplus and total comprehensive income for the year ended 31 March 2023 was HK$22,607,019.

(e) As at 31 March 2023, the non-current assets of property, plant and equipment and right-of-use assets were HK$56,426,271 and HK$25,114,344 respectively. The net current assets included inventories of HK$12,637,823, bank balances of HK$42,256,054 and payables and accruals of HK$28,253,303. The accumulated fund was HK$80,918,567.

The financial statements of HKGI for the year ended 31 March 2023 had been prepared in accordance with Hong Kong Financial Reporting Standards issued by the Hong Kong Institute of Certified Public Accountants, accounting principles generally accepted in Hong Kong and the Companies Ordinance (Cap.622). They were approved by the Board of Directors of HKGI on 23 June 2023 and audited by the independent auditors, Ernst & Young with unqualified audit opinion. An extract of the Statement of Income and Expenditure and Other Comprehensive Income and the Statement of Financial Position are set out on pages 167 – 168.

(d) 經扣除開支項目及折舊費用後，截至2023年3月31日止年度的盈餘及全面收益總額為22,607,019港元。

(e) 於2023年3月31日，非流動資產內物業、廠房及設備和使用權資產分別為56,426,271港元及25,114,344港元。流動資產淨額包括存貨12,637,823港元、銀行結餘42,256,054港元，以及應付款項和應計費用28,253,303港元。累計資金為80,918,567港元。

基因組中心截至2023年3月31日止年度的財務報表乃根據香港會計師公會頒佈的香港財務報告準則、香港公認會計原則及《公司條例》(第622章)編製。該等財務報表已於2023年6月23日獲基因組中心董事局批准，並經由獨立核數師安永會計師事務所審核，及獲發無保留審計意見書。收支及其他全面收益表，以及財務狀況表的摘錄載於第167至168頁。

Note:

The financial information relating to the years ended 31 March 2023 and 31 March 2022 included on pages 167 – 168 to this annual report is not the Company's statutory annual financial statements for the years. Further information relating to those statutory financial statements required to be disclosed in accordance with section 436 of the Companies Ordinance (Cap.622) is as follows:

The Company has delivered those financial statements to the Registrar of Companies as required by section 662(3) of, and Part 3 of Schedule 6 to, the Companies Ordinance (Cap.622).

The Company's auditor, Ernst & Young, has reported on those financial statements. The auditor's reports were unqualified; did not include a reference to any matters to which the auditor drew attention by way of emphasis without qualifying its reports; and did not contain a statement under sections 406(2), 407(2) or (3) of the Companies Ordinance (Cap.622).

附註：

本年報第167至168頁所載有關截至2023年3月31日及2022年3月31日止年度的財務資料，並非本公司於該年度的法定財務報表。有關該等法定財務報表須根據《公司條例》(第622章)第436條作進一步披露的資料如下：

本公司已根據《公司條例》(第622章)第662(3)條及附表6第3部的規定，向公司註冊處處長遞交財務報表。

本公司的核數師安永會計師事務所已就財務報表作出匯報。該核數師報告並無保留意見；並不包括核數師在不作保留意見的情況下，以強調方式提述需予注意的任何事宜；亦無載有按《公司條例》(第622章)第406(2)、407(2)或(3)條所指的陳述。

Statement of Income and Expenditure and Other Comprehensive Income
收支及其他全面收益表

For the year ended 31 March 2023
截至2023年3月31日止年度

		2023 HK$ 港元	2022 HK$ 港元
INCOME	**收入**		
Recurrent subvention	經常性補助	**108,953,000**	109,866,000
Add: Release of deferred income	加：遞延收入撥回	**24,301,515**	9,512,853
		133,254,515	119,378,853
Non-recurrent subvention	非經常性補助	**47,205,726**	15,779,492
Capital subvention	資金補助	**1,898,186**	218,981
		182,358,427	135,377,326
Bank interest income	銀行利息收入	**797,340**	14,523
Other income, net	其他收入淨額	**7,108**	–
Total income	收入總額	**183,162,875**	135,391,849
EXPENDITURE	**開支**		
Recurrent expenditure	經常性開支		
Personal emoluments	人員薪酬	**(46,931,689)**	(37,352,792)
Partnering Centres expenses	夥伴中心開支	**(24,301,515)**	(9,512,853)
Other operating charges	其他營運費用	**(19,126,151)**	(18,539,292)
		(90,359,355)	(65,404,937)
Depreciation	折舊		
Property, plant and equipment	物業、廠房及設備	**(16,374,672)**	(5,588,535)
Right-of-use assets	使用權資產	**(7,694,470)**	(5,096,455)
Derecognition of lease liabilities	租賃負債終止確認	**–**	(587,599)
Modification of lease liabilities	租賃負債修訂	**(1,109,343)**	–
Finance cost on lease liabilities	租賃負債的融資成本	**(250,984)**	(598,692)
Non-recurrent expenditure	非經常性開支	**(44,767,032)**	(15,779,492)
Total expenditure	開支總額	**(160,555,856)**	(93,055,710)
SURPLUS AND TOTAL COMPREHENSIVE INCOME FOR THE YEAR	**年內盈餘及全面收益總額**	**22,607,019**	42,336,139

Statement of Financial Position
財務狀況表

As at 31 March 2023
於2023年3月31日

		2023 HK$ 港元	2022 HK$ 港元
NON-CURRENT ASSETS	**非流動資產**		
Property, plant and equipment	物業、廠房及設備	**56,426,271**	34,916,727
Right-of-use assets	使用權資產	**25,114,344**	14,071,944
Prepayments and deposits	預付款及按金	**13,247,873**	3,935,123
Total non-current assets	非流動資產總額	**94,788,488**	52,923,794
CURRENT ASSETS	**流動資產**		
Inventories	存貨	**12,637,823**	6,032,532
Prepayments, deposits and other receivables	預付款、按金及其他應收款項	**85,408,404**	72,823,421
Bank balances	銀行結餘	**42,256,054**	34,032,716
Total current assets	流動資產總額	**140,302,281**	112,888,669
CURRENT LIABILITIES	**流動負債**		
Other payables and accruals	其他應付款項及應計費用	**28,253,303**	9,750,287
Deferred income – Recurrent subvention	遞延收入－經常性補助	**41,185,632**	65,487,147
Deferred income – Non-recurrent subvention	遞延收入－非經常性補助	**48,426,499**	18,404,725
Deferred income – Capital subvention	遞延收入－資本補助	**1,987,784**	1,898,186
Lease liabilities	租賃負債	**2,334,707**	–
Total current liabilities	流動負債總額	**122,187,925**	95,540,345
NET CURRENT ASSETS	**流動資產淨額**	**18,114,356**	17,348,324
TOTAL ASSETS LESS CURRENT LIABILITIES	**資產總額減流動負債**	**112,902,844**	70,272,118
NON-CURRENT LIABILITIES	**非流動負債**		
Deferred income – Non-recurrent subvention	遞延收入－非經常性補助	**15,419,612**	–
Deferred income – Capital subvention	遞延收入－資本補助	**5,829,796**	7,817,580
Lease liabilities	租賃負債	**6,591,879**	–
Provision for reinstatement costs	修復成本撥備	**4,142,990**	4,142,990
Total non-current liabilities	非流動負債總額	**31,984,277**	11,960,570
Net assets	資產淨額	**80,918,567**	58,311,548
FUNDS	**資金**		
Accumulated fund	累計資金	**80,918,567**	58,311,548

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