



School of Life Sciences 生命科學學院
The Chinese University of Hong Kong

Jointly organized by
New Asia College, CUHK
School of Life Sciences, CUHK

第六屆 新亞書院 合辦
生命科學學院

任國榮先生 生命科學講座

Yen Kwo Yung Lecture in Life Sciences

由任國榮先生紀念基金永久贊助
Endowed by The Mr. Yen Kwo Yung Memorial Fund

主講
Speaker

盧煜明教授, SBS, JP
Professor LO Yuk Ming, Dennis, SBS, JP

香港中文大學醫學院副院長 (研究)
香港中文大學化學病理學系系主任
香港中文大學李嘉誠醫學講座教授

Associate Dean (Research), Faculty of Medicine, CUHK
Chairman, Department of Chemical Pathology, CUHK
Li Ka Shing Professor of Medicine, CUHK

第六屆

新亞書院
生命科學學院

合辦



生命科學學院

Jointly organized by

New Asia College, CUHK
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任國榮先生 生命科學網上講座

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網上報名及詳情

Online registration & details

Professor LO Yuk Ming, Dennis, SBS, JP

Associate Dean (Research), Faculty of Medicine, CUHK
Chairman, Department of Chemical Pathology, CUHK
Li Ka Shing Professor of Medicine, CUHK



第一講
1st Lecture

粵語主講 / in Cantonese

從學生到醫生科學家

My Journey from a Student to a Clinician-Scientist



本講座與香港科學館合辦
This talk is co-organized with Hong Kong Science Museum

主持 / 農業生物技術國家重點實驗室(香港中文大學)主任
林漢明教授

日期 / 2022年3月26日(星期六)

時間 / 下午2時30分至下午4時正

Moderator / Professor LAM Hon Ming
Director, State Key Laboratory of
Agrobiotechnology (CUHK)

Date / 26 March 2022 (Saturday)

Time / 2:30 p.m. - 4:00 p.m.

形式 Platform / Zoom Webinar

第二講
2nd Lecture

英語主講 / in English

由科學發現至臨床影響

Translating Scientific Discoveries into Clinical Impact

主持 / 香港中文大學新亞書院院長陳新安教授

日期 / 2022年3月30日(星期三)

時間 / 晚上6時30分至晚上8時正

Moderator / Professor CHAN Sun On
Head, New Asia College, CUHK

Date / 30 March 2022 (Wednesday)

Time / 6:30 p.m. - 8:00 p.m.

形式 Platform / Zoom Webinar

第三講
3rd Lecture

英語主講 / in English

血液循環DNA:大小和形狀

Circulating DNA in Blood: Coming in All Sizes and Shapes

主持 / 香港中文大學生命科學學院院長黃錦波教授

日期 / 2022年4月6日(星期三)

時間 / 下午2時正至下午3時30分

Moderator / Professor WONG Kam Bo
Director, School of Life Sciences, CUHK

Date / 6 April 2022 (Wednesday)

Time / 2:00 p.m. - 3:30 p.m.

形式 Platform / Zoom Webinar

查詢 39431361 / 39437603

Enquiries puishan_tse@cuhk.edu.hk / edithmok@cuhk.edu.hk

Biography of Professor Dennis Lo Yuk Ming

Professor Dennis Lo is the Li Ka Shing Professor of Medicine of The Chinese University of Hong Kong (CUHK). 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. Professor Lo has won numerous awards, including the 2016 Future Science Prize in Life Science, the 2014 King Faisal International Prize in Medicine, the 2019 Fudan-Zhongzhi Science Award, The 2021 Breakthrough Prize in Life Sciences and the 2021 Royal Medal.

盧煜明教授

盧煜明教授現任香港中文大學醫學院李嘉誠醫學講座教授。盧教授的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，盧教授成為第一位科學家發表有關於孕婦血漿內發現胎兒游離 DNA 之研究，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 年復旦一中植科學獎、2021 年科學突破獎 – 生命科學獎及皇家獎章。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，以及港科院創院院士。

Abstract of the Lectures

First Lecture:

My Journey from a Student to a Clinician-Scientist

Moderator: Professor Lam Hon Ming, Director, State Key Laboratory of Agrobiotechnology (CUHK)

Professor Lo has developed “non-invasive prenatal testing” to early diagnose genetic disease in foetus, which is to the benefit of numerous pregnant women. In the lecture, Professor Lo will walk us through his journey beginning as a secondary school student from St. Joseph’s College, Hong Kong, to becoming a medical student in the University Cambridge, and then at the University of Oxford. He will also share how the help from mentors and chance occurrences along the way would alter the course of his study and research. Building on his experiences, step-by-step, speaker has eventually realised his goal of developing “non-invasive prenatal testing”. It is hoped that this lecture will inspire our students to consider scientific research as one of their career choices.

Second Lecture:

Translating Scientific Discoveries into Clinical Impact

Moderator: Professor Chan Sun On, Head, New Asia College, CUHK

In this talk, I would discuss how I discovered the presence of cell-free fetal DNA in maternal blood in 1997. I would then discuss how one translated such a scientific discovery into a clinical test that is now used worldwide. I would discuss the challenges that one faced in such a journey. I would then talk about how a non-invasive fetal test would then inspire me to develop a multi-cancer early detection test. Finally, I would discuss the synergy between scientific research and entrepreneurship.

Third Lecture:

Circulating DNA in Blood: Coming in All Sizes and Shapes

Moderator: Professor Wong Kam Bo, Director, School of Life Sciences, CUHK

Circulating cell-free DNA in plasma has enabled the development of non-invasive prenatal testing, cancer liquid biopsy and non-invasive post-transplantation monitoring. Circulating DNA consists of fragments of DNA. The study of the details of the fragmentation process is now referred to as ‘fragmentomics’. In this talk, I shall discuss the journey through which my laboratory has contributed to unravelling some of the key understanding in the field of fragmentomics and how one could translate these into a new generation of clinical tests.

講座大綱

第一講

從學生到醫生科學家

主持: 農業生物技術國家重點實驗室(香港中文大學)主任林漢明教授

盧教授開創「無創產前診斷」以及早診斷胎兒是否患有遺傳病，惠及無數孕婦。在講座中，盧教授將概括他由香港聖若瑟書院的中學生，到成為劍橋大學和牛津大學醫科生的經過，並分享導師們的幫助及發展機遇如何改變他學習和研究的方向。通過各種歷練，講者逐步實現了開發「無創產前診斷」的目標。本講座希望能啟發學生考慮科學研究為他們其中一個職業選擇。

第二講

由科學發現至臨床影響

主持: 香港中文大學新亞書院院長陳新安教授

這是一個回顧盧教授研究生涯的講座。由 1997 年盧教授發現了母體血液中存在無細胞胎兒 DNA，然後如何將這個科學發現轉化為廣泛使用的臨床測試，和當中研究路上所面臨的挑戰。亦會分享無創性產前測試如何激發我開發多種癌症早期檢測。最後，盧教授將討論科學研究和創業之間的協同作用。

第三講

血液循環 DNA 大小和形狀

主持: 香港中文大學生命科學學院院長黃錦波教授

透過分析血漿內無細胞狀態的 DNA，使無創性產前診斷、癌症液體活檢和器官移植後無創性監測的發展成為可能。游離 DNA 由 DNA 片段所組成。而當中對片段化過程的研究被稱為“片段組學”。在本次演講中，將會討論盧教授的研究團隊於片段組學領域中如何解開當中的一些關鍵，以及如何將這些理解轉化為新一代臨床測試。

新亞書院簡介

Introduction of New Asia College

新亞書院創立於1949年，由已故國學大師錢穆先生及一群來自內地之學者，在極艱難窮困的環境中創辦，其宗旨是保存及發揚中國文化，為社會培育優秀人才。

作為中國文化理想的荷負者，新亞書院多年來積極推動各項學術文化活動，讓中國文化得以承傳。每年舉辦之文化講座、研修班及培訓班概列如下：

• 學術文化講座

1. 錢賓四先生學術文化講座

創立於1978年，旨在發揚學術風氣及培養文化風格。此講座獲海內外學術界重視，先後蒞臨之講者共二十多位，包括創辦人錢賓四先生、英國劍橋大學李約瑟教授、美國哈佛大學歷史及哲學講座教授杜維明教授等。

2. 余英時先生歷史講座

由新亞書院及崇基學院於2007年創立，中大歷史系為協辦單位，旨在促進學術文化交流及推動歷史研究。

3. 新亞當代中國講座

創立於2012年，旨在激發本院師生及社會人士對當代中國國情的認識，以至對當前面對之挑戰作深入探討。

4. 新亞儒學講座

創立於2013年，目的在於弘揚儒學，同時探討儒家思想對個人、社會以至中國未來發展的意義。

5. 任國榮先生生命科學講座

創立於2015年，由新亞書院及生命科學學院合辦，旨在令社會大眾及學生加深對生命科學的認識、意義，以及生命科學在現今社會的價值及應用。

6. 新亞書院文化講座

創立於1950年，由多位書院老師擔任講者，當中包括錢穆、唐君毅與張丕介等從內地來的著名學者，以鼓勵大眾認識中國文化與世界學術，以及關心人類前途。新亞書院與新亞校友會於2014年正式復辦此講座，每年舉辦三至四場講座。

• 研修班 / 培訓班

1. 中華傳統文化研修班

自2000年起，新亞書院與中華傳統文化研修會、中國教育學會高中教育專業委員會及台灣素書樓文教基金每年於暑假期間舉辦，旨在促進兩岸四地中學老師對中華傳統文化的認識，並冀學員在參與培訓班後，回到自己所屬的教學單位，把所見所學推廣給同儕及學生。

2. 中華美德教育行動師資培訓班

為弘揚中華美德，提升青少年道德素養，新亞書院與北京東方道德研究所於2002年起合辦此培訓班。參加的學員來自內地各個省市學校的校長及老師。

除了期盼學生能認識國家歷史文化、掌握當代中國發展情況，我們同時希望學生具備國際視野，以肩負起弘揚中國文化的使命。因此，書院致力為學生提供多元化的學習機會，包括舉辦「新亞青年學人計劃」、「湖南大學暑期交流計劃」及「暑期北京普通話課程」等，致力培育他們成為學德俱備、關心國家及勇於承擔的優秀人才。

另一方面，新亞學生團體積極推廣中國文化，如歷史悠久的「新亞國樂會」及「新亞國術會」便一直致力發揚中國音樂及弘揚國術；本院學生亦透過成立及參與社會服務團，積極投入社會服務，以服務社會為職志，當中包括「新亞書院學生社會服務團」、「新亞書院我愛香港社會服務團」及「新亞書院扶輪青年服務團」等。此外，我們以資助及獎學金的形式鼓勵及支持學生探求中國文化，讓新亞精神能夠薪火相傳下去。

如您想了解更多我們在中國文化推廣方面的工作，請瀏覽新亞書院的網頁 www.na.cuhk.edu.hk。若您希望定時收到我們的最新消息及活動預告，歡迎將聯絡資料電郵至 nac@cuhk.edu.hk。



Introduction of School of Life Sciences

The School of Life Sciences was established in 2010 under the Faculty of Science by merging the Departments of Biochemistry and Biology, which are among the oldest departments in CUHK. Our School offers six major programmes: Biochemistry, Biology, Cell & Molecular Biology, Environmental Science, Food & Nutritional Science, and Molecular Biotechnology, which have trained over 8500 alumni over the years. Our curriculum is designed to meet the diverse interests of life science students. The students will receive training in fundamental knowledge in life sciences in their junior years, before they specialize into one of the six programmes in their senior years.

In addition to quality teaching, we also strive for excellence in research. For example, three research projects “Plant and Agricultural Biotechnology”, “Centre for Organelle Biogenesis and Function” and “Center for Genomic Studies on Plant-Environment Interaction for Sustainable Agriculture and Food Security” led by our school have been selected by the University Grants Committee as one of the Areas-of-Excellence in Hong Kong. We believe that the best way to train future generation of scientists is to inspire the students and give them the opportunities to take part in cutting-edge research themselves. To this end, we have the SMART (Young Scientist Mentorship And Research Training) and DREAM (Dedicated Research Exchange And Mentorship) programs to allow motivated students to engage in research in local and overseas laboratories. To equip our students with a global perspective and enhance their learning experience in a world-renowned university, we have introduced a Berkeley Biosciences Study Abroad (BBSA) Programme, which enables our students to spend a semester in UC Berkeley.

Six Programmes under the School of Life Sciences:

Biochemistry, Biology, Cell and Molecular Biology, Environmental Science, Food and Nutritional Sciences, Molecular Biotechnology

Other Research Centres/Units under the School of Life Sciences:

UGC-AoE Centre for Plant and Agricultural Biotechnology

RGC-AoE Centre for Organelle Biogenesis and Function

Centre for Cell and Developmental Biology

Centre for Novel Biomaterials

Centre for Protein Science and Crystallography

Food Research Centre

Shiu-Ying Hu Herbarium

Simon F S Li Marine Science Laboratory

Six Programmes offered by the School of Life Sciences:

BIOCHEMISTRY is a branch of science that investigates the chemical compounds and processes occurring in living organisms at molecular level. The knowledge procured from the study in biochemistry has found extensive applications in medicine and biotechnology that drastically revolutionize our daily life.

BIOLOGY is a broad field embracing many different disciplines, which include the study of living organisms from virus to human. Fundamental to the study of life is unfolding biological organization at its many levels, from molecular architecture to ecosystem structure. During past few decades, new discoveries in biology have brought significant impact on the way we live. Armed with exciting new research methods and information from genomics of human and other living organisms, biologists are beginning to unravel some of life's most engaging mysteries.

CELL AND MOLECULAR BIOLOGY is the foundation of contemporary life sciences and represents the frontiers of modern biology and biomedicine. With the completion of genome projects in human and an increasing number of different organisms, the focus of modern biology is quickly shifting to functional genomics which aims at understanding the functions of genes at molecular, cellular and organism levels.

ENVIRONMENTAL SCIENCE is an integrated and multidisciplinary science using the basic knowledge and skills of applied biochemistry, biology and chemistry to study and resolve environmental problems. We foster our students with training in ecology, environmental chemistry, instrumentation, toxicology, pollution control, conservation, and environmental impact assessment.

FOOD AND NUTRITIONAL SCIENCES are intended for students who are interested in modern food and nutritional sciences, and their diverse applications such as food safety and toxicology, food microbiology, food preservation, food product development, food analysis, quality assurance, nutrient metabolism, diet therapy, dietetics, community nutrition and food policy.

MOLECULAR BIOTECHNOLOGY is a revolutionary area of scientific discipline that involves the application of gene and protein technology. This state-of-the-art technology has exerted remarkable contributions to agriculture, health, environmental, bioenergy, and other bio-industrial areas. Molecular biotechnology is one of the major driving forces shaping the development of human society in the 21st century.

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生命科學學院