

DEGREE OF DOCTOR OF SCIENCE, *honoris causa*

Professor Dennis Lo Yuk-ming, SBS, JP

Mr Pro-Chancellor,

DNA, or deoxyribonucleic acid, is often referred to as the molecule of life. It contains the genetic instructions for the development and functions of all living things. It is also the inspiration behind the brilliant scientific career for Professor Dennis Lo Yuk-ming.

Professor Dennis Lo is a renowned scientist in the area of Medicine. Professor Lo is currently the Director of the Li Ka Shing Institute of Health Sciences, the Li Ka Shing Professor of Medicine, and Professor of Chemical Pathology at The Chinese University of Hong Kong (CUHK). He is also the Associate Dean (Research) of the Faculty of Medicine at CUHK.

Dennis was educated at St Joseph's College, where he thrived on its emphasis on independent thinking, as well as a liberating education that focuses not so much on exam results but on the attainment of real knowledge and a solid grounding in language skills. He was particularly drawn to lectures in DNA, which his biology teacher taught to stimulate his students even though the level was beyond the exam syllabus. In particular, he was attracted to the imagery of Crick & Watson doing their research in the beautiful setting of Cambridge in their quest for solving the double helical structure of the DNA molecule. This imagery prompted his decision to read medicine at Emmanuel College of the University of Cambridge where he received his preclinical medical training and his BA degree in 1986.

He then moved to *the other place* and obtained his Bachelor of Medicine and Bachelor of Surgery at the University of Oxford in 1989. For most people, this should have been the start of a rewarding career in medicine. Not so for Dennis. His love for real knowledge led him down the path of academic research and he obtained his Doctor of Philosophy in 1994, and Doctor of Medicine in 2001, both from Oxford.

He started his academic career at Oxford as a Junior Research Fellow in Natural Sciences at Hertford College and was then appointed University Lecturer in Clinical Biochemistry and an Honorary Consultant in Chemical Pathologist at the John Radcliffe Hospital, the main teaching hospital of Oxford Medical School. He was also a Fellow at Green College. In 1997, he returned to Hong Kong and joined the Faculty of Medicine at The Chinese University of Hong Kong.

Professor Lo's main research interest focuses on the study of cell-free DNA molecules which exist in the plasma of human subjects. He discovered that an unborn fetus releases fetal DNA into the maternal plasma. This was a very surprising result as in many previous experiments with blood samples, the plasma had always been regarded as useless and was discarded. It was only through Dennis's playful spirit to take the road less travelled, to experiment with new technology, to try new ideas, those from outside his field, such as mathematics, that led to this seminal discovery which has laid the foundations for a revolution in non-invasive prenatal diagnostics based on maternal plasma DNA analysis. A revolution that has benefitted millions of would-be mothers world-wide. Moreover, Professor Lo has also charitably granted a free license for his diagnostic technique to high risk groups in Hong Kong, thus bringing the technology within reach to those who need it the most in Hong Kong.

Dennis lives by the motto: live each day as if it were your last. This motto keeps him directed towards his rich and productive life. Even when he is enjoying a Harry Potter movie with his wife Alice, he can simultaneously be inspired to invent a method for deciphering the entire genome of an unborn baby. And the same uncanny instinct to see insights led him to see the parallel between a rapidly developing fetus and the uncontrollable growth of a cancerous cell, thus opening the door to the area of cancer detection using some of the techniques he had developed in cracking the baby's genome. Professor Lo has since pioneered a number of approaches to cancer liquid biopsy, especially for the detection of nasopharyngeal carcinoma and genome-wide approaches for screening multiple types of cancer.

Professor Lo has authored or co-authored more than 400 publications in international journals, and holds numerous patents in molecular diagnostics. His outstanding achievements have earned him numerous prestigious prizes and research awards, including the 2005 State Natural Science Award from the State Council of China, the 2006 US National Academy of Clinical Biochemistry Distinguished Scientist

Award, the 2006 Croucher Senior Medical Research Fellowship, the 2007 Sigi Ziering Award from the American Association for Clinical Chemistry (AACC), the 2009 Fulbright Distinguished Scholar, the 2012 AACC-NACB Award for Outstanding Contributions to Clinical Chemistry in a Selected Area of Research, and the 2014 King Faisal International Prize for Medicine. In 2016, Professor Lo received the Future Science Prize-Life Science Prize, which is often referred to as the Chinese version of the Nobel Prize. In 2019, Professor Lo was honored with the Fudan-Zhongzhi Science Award, the Award is jointly founded by Fudan University and Zhongzhi Enterprise Group, and in September this year, Prof Lo has also been awarded the 2021 Breakthrough Prize in Life Sciences, an Honour Renowned as the “Oscars of Science”.

Professor Lo was awarded the Silver Bauhinia Star (SBS) in 2011 and JP in 2017 by the HKSAR Government. Professor Lo was elected as a Fellow of the Royal Society in 2011 and a Foreign Associate of the US National Academy of Sciences in 2013. He is also a Founding Member of the Academy of Sciences of Hong Kong. Professor Lo is an Honorary Professor at Nanjing Medical University, Honorary Professor at Sun Yat-sen University in China, and Trustee of the Croucher Foundation in Hong Kong.

Mr Pro-Chancellor, in recognition of Professor Lo’s pioneering contributions to non-invasive prenatal diagnostics, his ground-breaking work in clinical chemistry, and for his development of genome-wide approaches for effective early cancer detection, all outstanding work that has far-reaching impact on the global medical and scientific communities, may I invite our President to present Professor Dennis Lo Yuk-ming for the conferment of the degree of Doctor of Science, *honoris causa*.

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