Professor Dennis Lo Yuk-ming is the Dr. Li Ka Shing Professor of Medicine and Professor of Chemical Pathology at The Chinese University of Hong Kong. He is also the Associate Dean (Research) of the Faculty of Medicine and the Director of the Li Ka Shing Institute of Health Sciences at CUHK. Professor Dennis Lo's main research interest is the study of cell-free DNA and RNA molecules which exist in the plasma of human subjects. He discovered in 1997 that an unborn fetus will release its DNA into the plasma of a pregnant woman. This finding has opened up a new approach of non-invasive prenatal diagnosis. He has also applied a similar strategy to the detection of cancers which are common in Hong Kong, including nasopharyngeal cancer and liver cancer.

Professor Lo received his preclinical medical training from the University of Cambridge. He then moved to Oxford University where he pursued his clinical medical training. Following qualification, he further obtained his Doctor of Philosophy and Doctor of Medicine degrees from Oxford. Professor Lo began his academic career in Oxford as a Junior Research Fellow in Natural Sciences at Hertford College, followed by appointments to the University Lecturership in Clinical Biochemistry and a Fellowship at Green College. Professor Lo was an Honorary Consultant Chemical Pathologist at the John Radcliffe Hospital, the main teaching hospital of Oxford Medical School. He returned to Hong Kong in 1997 and joined the Faculty of Medicine of The Chinese University of Hong Kong. Professor Lo is a Fellow of the Royal College of Physicians (Edinburgh) and a Fellow of the Royal College of Pathologists (U.K.). He is a Past President of the Hong Kong Society of Clinical Chemistry and is a Member of the Hong Kong Research Grants Council.

Professor Lo has published over 230 scientific papers in international journals and his main scientific achievements include:

- 1997: First to discover the presence of cell-free fetal DNA in maternal plasma which has opened up a new field of research and has opened up new possibilities for non-invasive prenatal diagnosis.
- 1998: First development of a new non-invasive prenatal test of fetal RhD blood group status. This test is especially valuable for Caucisian subjects, in whom 15% of individuals are RhD-negative. From 2001, this test has already been used by many European centres. In a number of these centres, this test has already replaced over 90% of conventional invasive testing of fetal RhD status.
- 1998: First discovery of the presence of the DNA from a transplanted organ in the plasma of a recipient's plasma. This discovery has opened up the possibility of using plasma DNA to monitoring graft rejection following transplantation.

- 1999: First discovery of the presence of cancer-derived DNA methylation changes in plasma. This discovery has opened up a new class of tumour markers.
- 1999: First development of a rapid method for the analysis of DNA methylation. This method can be used for measuring this important molecular change which is associated with a number of diseases, including cancer.
- 1999: First demonstration that the quantitative measurement of Epstein-Barr virus (EBV) DNA in the plasma of patients suffering from nasopharyngeal cancer is a powerful diagnostic and prognostic marker. This result has been confirmed by many centres in the world.
- 2000: First demonstration that plasma DNA measurement can be used for the monitoring of patients suffering from trauma, stroke and cardiac disorders. This work has opened up the future use of plasma DNA analysis for emergency medicine.
- 2002: First use of DNA methylation differences between the mother and fetus to develop a new generation of molecular markers for prenatal diagnosis.
- 2003: During the SARS epidemic, Professor Lo's research team was the first group in Asia to publicly announce the complete sequence of the SARS-coronavirus. Professor Lo's group is also the first to report the molecular epidemiology tracing the transmission of the SARS-coronavirus from the Metropole Hotel, to the Prince of Wales Hospital, to Amoy Gardens, and finally to Taiwan. Professor Lo has also applied his expertise in plasma nucleic acid testing to develop a plasma RNA test for SARS.
- 2003: First discovery of the presence of placenta-derived RNA in the plasma of a pregnant woman. This finding has opened up hundreds of new markers for non-invasive prenatal diagnosis. This work was published in the prestigious journal, *Proceedings of the National Academy of Sciences (U.S.A.)*, and was highlighted on the cover of the journal.
- 2005: The first development of a universal DNA methylation for non-invasive prenatal diagnosis. This marker can be used irrespective of the gender and genetic makeup of the fetus.
- 2007: First report in *Nature Medicine* of a method for the prenatal diagnosis of Down syndrome by using fetal RNA in the plasma of a pregnant woman. The accuracy of this test is over 90% and is the most accurate single marker for Down syndrome described to date.

His outstanding work in research also has brought him numerous awards and honours such as:

- Cheung Kong Achievement Award (Class 2)
- International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) - Abbott Award for Outstanding Contribution to Molecular Diagnostics
- U.S. National Academy of Clinical Biochemistry Distinguished Scientist Award
- Medical Research Fellowship, Croucher Foundation
- State Natural Science Award (Class 2), People's Republic of China
- Avadesh Saran Memorial Oration Award, 9th Asian Pacific Congress of Clinical Biochemistry
- Honoree, Outstanding Young Persons of the World Junior Chamber International
- Awardee, Outstanding Young Person Selection (Hong Kong)
- Professors' Prize, Association of Professors of Academic Departments of Chemical Pathology
- Leader of the Year Award, Technology Category organised by SingTao Daily, Hong Kong iMail and CNBC