

## **Professor Yi GUAN**

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### **管軼教授**

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Director of the State Key Laboratory of Emerging Infectious Diseases, HKU

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Director of Joint Institute of Virology (STU-HKU) Director of Guangdong-Hong Kong Joint Laboratory of Emerging Infectious Diseases

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Professor Yi Guan is the Director of the State Key Laboratory of Emerging Infectious Diseases, The University of Hong Kong. His research focuses on the ecology, evolution and pathogenesis of influenza and other emerging respiratory viruses. Over the past decade, his research team has made ground-breaking and distinguished contributions to research in virology and to the control of emerging infectious diseases in China and the world. His contribution to the field is reflected in his publication record of over 350 peer-reviewed articles with over 57,000 citations, more than 20 patents and an h-index of 112.

Beginning in 2000, Prof. Guan initiated and organized a systematic influenza surveillance network, in human, swine, poultry and migratory bird populations, in Southern China. Through this surveillance over 100,000 samples from poultry are collected each year, representing the single largest continuous and systematic sampling of these disease reservoirs. Along with providing the majority of World Health Organization recommended H5N1 and H9N2 pre-pandemic vaccine strains, the information from this surveillance program has provided the most comprehensive understanding of the ecology, evolution and dissemination of avian influenza viruses influenza viruses with pandemic potential worldwide.

In particular, his research on influenza has 1) identified all the major precursors and transmission pathways of the H5N1 influenza viruses that currently circulate in Southeast Asia, Europe and Africa; 2) initiated the systematic study of H9N2 viruses, which, along with H5 viruses, are now regarded as the most likely novel influenza subtypes to cause a pandemic; 3) defined the critical role of domestic ducks in harboring and spreading influenza viruses; 4) made major contributions in recognizing the emergence, evolutionary history and development of the 2009 H1N1 pandemic virus; and 5) revealed the genesis, infection source, evolutionary pathway and possible transmission route of the recently emerged H7N9 and H10N8 influenza virus.

He also initiated the SARS etiological investigation in Guangdong that resulted in the Department of Microbiology at HKU being the first research team to identify this emerging coronavirus and was the first to identify the virus in wild animal markets Guangdong showing this to be the interface for zoonotic transmission to humans. He subsequently organized and led the nationally coordinated

investigation in China to determine the zoonotic source of SARS coronavirus, and advised the Chinese Government on control measures to successfully avert a second SARS outbreak in early 2004 in Guangdong.

His contributions on MERS have revealed the prevalence and evolution of the MERS coronavirus in its animal reservoir, which led to the human outbreaks in Korea and Saudi Arabia; and this work has identified a new coronavirus species co-circulating with the MERS coronavirus in camels. Recently during the COVID-19 outbreak, his team has found pangolin to be one of the hosts for SARS-like coronaviruses and international trading/smuggling could be a way for virus emergence from the zoonotic source.

Professor Yi Guan has consistently been ranked as a highly cited researcher (2014-2020) and has been ranked 11th in the world in the field of microbiology (Thomson 2014). His annual personal ranking has been 5th and 4th in the world, respectively, in the field of avian influenza and H1N1 influenza research, 2005 and 2009 (Thomson Institute of Scientific Information ISI Ranking). He has obtained substantial grant funding from the NIH of the USA, the Wellcome Trust fund and the WHO as well as from local government sources and private foundations. “Time” magazine of the USA has twice featured him, first as one of 18 “Global Health Heroes” and later as an “Asian Hero”.

於崇光基金教授席（病毒學）

香港大學李嘉誠醫學院公共衛生學院新發病毒性疾病學講座教授

香港大學李嘉誠醫學院公共衛生學院組長（流感及重點傳染病）

香港大學新發傳染性疾病國家重點實驗室主任

世界衛生組織（世衛）H5 參比實驗室聯席主任

汕頭大學·香港大學聯合病毒學研究所所長

粵港新發傳染病聯合實驗室主任

教育部病毒學與新發傳染病國際合作聯合實驗室主任

管軼教授為香港大學新發傳染性疾病國家重點實驗室主任。其研究集中在流感和其他新發呼吸道病毒的生態、演化和發病機制。管軼教授的研究團隊在過去十年中為病毒學研究和中國乃至全世界控制新發傳染病方面作出了傑出貢獻，已發表同行評審論文 350 餘篇，擁有專利 20 餘項，被引用次數超過 5.7 萬次，H 指數高達 112。

管教授在流感方面的研究已 1) 確定了現時在東南亞、歐洲和非洲地區傳播的 H5N1 流感病毒的所有主要前體和傳播途徑，提供了世衛組織提出的大多數大流行前期 H5N1 疫苗株；2) 開展了 H9N2 病毒的系統研究，該病毒與 H5 病毒被視為最可能導致流行病的新流感亞型；3) 確定了家鴨在攜帶和傳播流感病毒中的關鍵作用；4) 為識別 2009 年 H1N1 流行性病毒的出現、演化史和發展作出了重要貢獻；5) 揭示了近期出現的 H7N9 流感病毒的發生、傳染源、演化過程和可能的傳播途徑。

管教授在 SARS 方面的工作，成功確定了 SARS 冠狀病毒及其活禽畜市場的傳染源，幫助內地政府成功避免了 2004 年年初 SARS 的再次爆發。

管教授榮獲 2021 年度約翰·狄克斯加拿大蓋爾德納全球衛生獎，是港大醫學院首次獲頒這項殊榮的傑出學者。獎項表彰他在深入瞭解亞洲各地新發傳染病，尤其是人畜流感及嚴重急性呼吸系統綜合症（SARS）的爆發源頭、疫情防控措施和策略等方面的重大貢獻。管教授近期被評為高引用頻次研究學者（2014 - 2020），在微生物學領域，2014 年全世界排名第 11 位；在禽流感及 H1N1 流感研究領域，2005 年及 2009 年個人排名分別列全世界第 5 及第 4 位（湯姆遜科學信息研究所 ISI 排名）。他從美國國立衛生研究院、威康信託基金會、世衛組織及本地政府和私人基金會獲得了大量資助。美國《時代》雜誌曾兩次報導管教授，稱其為 18 名「全球衛生英雄」之一和「亞洲英雄」。