Nancy HOPKINS教授
Prof. Nancy HOPKINS

理學榮譽博士
Doctor of Science *honoris causa*

A global authority on tumor virus research and vertebrate development who is renowned for unlocking many of life's secrets, Prof. Nancy HOPKINS' influence and problem-solving expertise extends far beyond the purely scientific. Over the past three decades, she has also made incalculable contributions to addressing gender inequality in academia. In strongly advocating better resources and recognition for herself and her colleagues, Prof. Hopkins has ultimately succeeded in measurably brightening future prospects for female scientists everywhere.

Currently Amgen, Inc. Professor of Biology Emerita at Massachusetts Institute of Technology (MIT), Prof. Hopkins was born in New York in 1943 to a family whose members included chemists, engineers, and scientists. Initially thinking of becoming an architect, she was inspired to start pursuing a scientific future after attending a lecture on DNA given by Nobel Prize-winning geneticist, James WATSON, at Harvard University's Radcliffe College.

Convinced that DNA and genetic coding held the key to life and could help cure many diseases, Prof. Hopkins was invited to begin researching accessible bacteriophage genes in Watson's laboratory. Although very few women at that time were afforded any scientific credibility, Watson encouraged his protégé to push the academic envelope.

After earning her Bachelor's degree in Biology from Harvard in 1964, Prof. Hopkins moved to Harvard Graduate School and received a PhD for her research into controlling gene expression in the lambda phage seven years later.

Remembering how frightened she had felt when her mother had been afflicted with skin cancer during her childhood, Prof. Hopkins was inspired to begin post-doctoral research into the genetics of tumor viruses. She was subsequently invited to join MIT's new Center for Cancer Research as a faculty member in 1973.

The next 15 years saw Prof. Hopkins' and her fellow researchers publish over 40 papers on the mechanisms of RNA tumor viruses' host ranges and leukemogenesis. As such viruses were then considered a likely precursor of several different types of human cancers, her work proved pivotal in enabling the identification of various cancer-causing genes.

Nancy HOPKINS教授是研究腫瘤病毒及脊椎動物發育的國際權威，她不僅為人類解開了無數生命謎團，其影響力以及解難技巧更超越科學層面。30年來，她致力改善學術界性別不平等的現象，成功為自己與同袍爭取更多資源和認同，為各地女性科學家開拓更廣闊及更光明的前景，建樹良多。

Hopkins教授在1943年於紐約出生，現為麻省理工學院安進生物學榮休教授。其家族人才輩出，不乏化學家、工程師及科學家等專才。Hopkins教授最初一心成為建築師，但諾貝爾獎得主、遺傳學家James WATSON於哈佛大學拉德克利夫學院一次有關DNA的演，讓她深受啟發，自此踏上科研之路。

她堅信DNA及遺傳編碼能解開生命的奧秘，並有助治療多種疾病，遂應邀加入Watson的實驗室，開展噬菌體基因研究。當年在科學界擁有公信力的女性雖然寥寥無幾，但Watson卻鼓勵這位門生突破學術界框框，力創新天。

Hopkins教授於1964年在哈佛大學修畢生物學本科課程後，繼續於哈佛研究院深造，就控制lambda噬菌體的基因表達開展研究，並於七年後獲頒博士學位。

幼年目睹母親遭受皮膚癌折磨的恐懼，深印在Hopkins教授的腦海，驅使她開展有關腫瘤病毒遺傳的博士後研究。1973年，她獲麻省理工邀請，以教員身份加入該校新設的癌症研究中心。

在接下來的15年，以Hopkins教授為首的團隊，合共發表了逾40篇有關多種RNA腫瘤病毒宿主範圍及白血病形成機制的論文。當時科學界認為這些病毒很可能是某幾種人類癌症的癌前病變元兇，她的研究對辨識各種致癌基因至為關鍵。

Despite having established herself as a leader in the area of tumor virus research, Prof. Hopkins next took the bold step of branching out into studying the then largely unexplored field of the genetics of early vertebrate development. Prof. Hopkins eventually chose zebrafish as her vertebrate model. She and her team developed a method for rapid gene cloning in the fish and went on to make major strides forward in identifying the genes essential for early zebrafish development, including some that predisposed the fish to cancer. In the 1990s, she and her researchers further demonstrated fish tumors' similarity to human cancers. Their findings continue to be a touchstone for those searching for cancer-causing genes and ways to inhibit tumor growth to this day.

In the mid-1990s, Prof. Hopkins began working to raise awareness of gender inequality in academic circles. The study that she and her female counterparts led revealed that MIT had only 15 tenured women science professors against 197 tenured men, and that the allocation of essential resources was heavily skewed to male scientists. Published in 1999, the full report is widely credited with paving the way for fairer hiring policies and the increased recruitment of women faculty to high-level administrative positions at leading academic institutions across the US.

Frequently invited to deliver keynote speeches about her achievements in molecular biology and championing female equality all over the world, Prof. Hopkins continues to inspire enquiring minds everywhere she travels. In 2012, she visited HKUST and gave two talks about her academic career in which she shared unique insights into the future of cancer research and women in science.

Prof. Hopkins' long and distinguished career has seen her receive numerous awards from her academic peers. In addition to being a Fellow of the American Academy of Arts and Sciences, she is a member of the US' National Academy of Medicine and the National Academy of Sciences. Other coveted honors she has received include honorary doctorates from Trinity College Dublin (2014) and Rockefeller University (2019), the Harvard Centennial Medal (2014), and the Helen Dean King Award (2017).

Chancellor, on behalf of the Council of the Hong Kong University of Science and Technology, I have the high honor of presenting to you, Prof. Nancy Hopkins, Amgen, Inc. Professor of Biology Emerita at Massachusetts Institute of Technology, for the award of Doctor of Science *honoris causa*.

Hopkins教授成功於腫瘤病毒研究方面建立領導地位後，腳步並未放緩，反而勇闖當時甚少人鑽研的另一領域——脊椎動物早期發育的遺傳機制。她最終選定斑馬魚為研究對象，與科研人員合力研發了一套用於此物種的快速基因複製方法，讓團隊在鑑定斑馬魚發育基因方面取得重大進展，當中包括一些可能導致斑馬魚癌變的遺傳因子。到了90年代，其團隊進一步證實魚類腫瘤與人類癌症的近似之處。時至今日，這些發現對致力鑑別致癌基因及研究抑制腫瘤生長的科學家而言，依然是重要的研究指標。

90年代中期，Hopkins教授開始推動學術界性別平等。她當時聯同其他女同袍進行研究，結果顯示麻省理工內擁有終身教席的女性理學教授僅有15人，遠遜於男性的197人，而在重要資源分配上，亦嚴重側重於男性科學家。該份研究的詳細報告於1999年發表，美國其他頂級學府隨後訂立更公平的招聘政策，也促使更多女性教員出任高層行政職位，影響力舉世公認。

Hopkins教授經常應邀到世界不同地方演講，分享她在分子生物學和倡導兩性平等上取得的成就，她所到之處為無數求知若渴的人帶來啟迪，使他們獲益匪淺。2012年，她親臨科大發表兩場演講，暢談其學術事業，並分享她對癌症研究前景及女性投身科學事業的真知灼見。

在其長久且非凡的科研生涯中，Hopkins教授屢獲同儕讚譽，奪獎無數。她除身兼美國藝術與科學院、美國國家醫學院及美國國家科學院院士，也是都柏林聖三一學院榮譽博士(2014)、洛克菲勒大學榮譽博士(2019)，以及「哈佛百年獎章」(2014)和「海倫鄧肯獎」(2017)得主。

大學校監，本人謹代表香港科技大學校董會，恭請閣下頒授理學榮譽博士學位予麻省理工學院安進生物學榮休教授Nancy Hopkins教授。