



**Arup K. CHAKRABORTY教授**  
**Prof. Arup K. CHAKRABORTY**

工程學榮譽博士  
Doctor of Engineering *honoris causa*

The rapid development of science and technology offers ever-increasing opportunities for closer cooperation between different disciplines. Few scholars are more capable of using these opportunities to establish rewarding interdisciplinary partnerships than Prof. Arup K. CHAKRABORTY, whose contributions span the areas of medicine, science and engineering, and over the past decades have made him a distinguished scholar.

Prof. Chakraborty, the renowned Robert T. Haslam Professor of Chemical Engineering at Massachusetts Institute of Technology (MIT), who also holds appointments at MIT's Departments of Physics, and Chemistry, looks back on more than 30 years of research scholarship, of which he has worked on diverse aspects of immunology for 20 years. His research encompassing the physical and life sciences aims to understand the mechanistic underpinnings of how the adaptive immune system works, and then harness that knowledge to allow scientists to design better vaccines and therapies against health threats such as HIV to improve life for millions of people globally.

After completing his PhD in Chemical Engineering at the University of Delaware and postdoctoral studies at the University of Minnesota in 1988, Prof. Chakraborty joined the University of California, Berkeley where he rose through the ranks to become the Warren and Katherine Schlinger Distinguished Professor and Chair of Chemical Engineering. In 2005, he moved to MIT. In 2009, he participated in founding the Ragon Institute of MIT, Massachusetts General Hospital of Harvard Medical School, and three years later established MIT's interdisciplinary Institute for Medical Engineering and Science (IMES).

During his seven years as IMES' founding director, Prof. Chakraborty recruited and nurtured a truly international group of faculty, helping them to reach their full potential. He elevated the reputation of the institute to a global hub for research at the convergence of engineering, science and translational medicine. IMES is also the home of the renowned Harvard-MIT Program in Health Science and Technology.

As a scholar in immunology, he originally did not want to work on HIV as he regarded the field to be "overcrowded". However, the turning point came when he went on a visit to South Africa in 2008 with Bruce WALKER, director of the Ragon Institute. He saw the devastation HIV was wrecking in that part of the world. He is now using his computational approaches to seek better HIV vaccine targets to halt people's suffering.

Prof. Chakraborty's seminal contributions at the intersection of physical, life and engineering sciences have been recognized by many awards and honors that include

科學與技術發展一日千里，不同領域的合作契機因此不斷擴大，然而善於把握此等良機，開展跨學科協作之學者，Arup K. CHAKRABORTY教授實為當中表率。數十年來，Chakraborty教授的貢獻橫跨醫學、科學與工程學界別，是當之無愧的傑出學者。

Chakraborty教授現任麻省理工學院（MIT）羅伯特·哈斯蘭化學工程教授，同時身兼該校物理及化學系教職。在逾30年的學術生涯中，他花了足足20年專注探究免疫學的不同範疇。其研究範圍涵蓋物理科學及生命科學，旨在了解後天免疫系統的運作機制，並善用這方面的知識，助科學家改良疫苗及治療方法，對抗人類免疫力缺乏病毒（HIV）等威脅人類健康的頑疾，改善全球百萬計人民福祉。

Chakraborty教授是美國特拉維大學化學工程博士，1988年於明尼蘇達大學完成博士後研究，隨即加入加州大學柏克萊分校，並迅速晉升為「沃倫及凱瑟琳·施林格傑出教授」及化學工程講座教授。他於2005年轉職MIT；2009年參與創建哈佛醫學院轄下麻省總醫院的「拉貢醫學研究中心」，並在3年後為MIT成立「醫學工程及科學跨領域研究所」（IMES）。

在出任IMES創所所長的七年裡，Chakraborty教授為研究所延聘和培育了真正國際化的科研人才，幫助他們盡展所長。他成功將研究所發展為萃萃工程學、科學及轉化醫學的全球頂級研究中心，名聞遐邇的「哈佛-麻省理工衛生科學與技術課程」，亦以IMES為總部。

身為免疫學翹楚的Chakraborty教授，最初認為HIV研究已有「人滿之患」，因而並無鑽研之心，直至2008年聯同「拉貢醫學研究中心」總監Bruce WALKER到訪南非，親睹疫症在當地肆虐，才改變初衷。現時，他致力運用計算學方法尋求更有效的HIV疫苗，希望助病人擺脫苦難。

Chakraborty教授縱橫物理、生命科學及工程科學天地，創見不絕，影響深遠，獲得的榮譽和獎項不勝枚舉，包括美國國立衛生研究院「先鋒獎」、E.O.勞倫斯生命科學紀念獎、古根漢研究獎金、美

the NIH Director's Pioneer Award, the E.O. Lawrence Memorial Award for Life Sciences, the Guggenheim Fellowship, the Allan P. Colburn and Professional Progress Awards from the American Institute of Chemical Engineers, and the Camille Dreyfus Teacher-Scholar Award. He is a Fellow of the American Academy of Arts and Sciences and the American Association for the Advancement of Science. He also serves as a member on the Defense Science Board of the US Department of Defense. A dedicated teacher, he received four teaching awards at Berkeley and MIT.

In 2017, in recognition of his outstanding contributions to medicine and health, Prof. Chakraborty was elected a member of National Academy of Medicine, the highest honor in the field, making him one of 23 individuals in the US who have achieved the trifecta of being members of the National Academy of Medicine, the National Academy of Sciences (2016), and the National Academy of Engineering (2004).

Apart from his immense contributions to health research and setting up two institutes at MIT, Prof. Chakraborty has been a dedicated contributing scholar to HKUST ever since his first appointment as Visiting Professor at the HKUST Jockey Club Institute for Advanced Study in 2012. He devoted considerable effort to the formation of the Division of Biomedical Engineering that allows HKUST to promote interdisciplinary bioengineering research and address challenges in health research. His advice was also integral to setting up the Interdisciplinary Programs Office. Since the integration of the Division of Biomedical Engineering with the Department of Chemical and Biomolecular Engineering in 2017, he has served as an advisory committee member of the newly integrated Department of Chemical and Biological Engineering. He is concurrently an international advisory member of the School of Engineering.

Prof. Chakraborty also had a hand in establishing new, inspiring collaborative research programs and high-impact scientific initiatives, research directions and projects at HKUST in the field of computational immunology and vaccine design. These ongoing efforts have already led to well-recognized achievements, including a joint publication in the *Proceedings of the National Academy of Sciences of the United States of America*, that received significant international acclaim. His laboratory at MIT has also hosted graduate students and faculty members from HKUST.

Prof. Chakraborty's contributions to setting up important institutes, bringing together scientists from all backgrounds and parts of the world and establishing new high-impact scientific initiatives put him right at the forefront of scientific achievements.

國化學工程師學會「艾倫·科爾本獎」及「專業進步獎」，以及「卡米爾·德雷福斯優秀教師暨學者獎」。他現為美國人文與科學院院士及美國科學促進會會員，也是美國國防部國防科學委員會委員。他熱衷教學，在加大柏克萊分校及MIT先後四度榮獲教學獎項。

Chakraborty教授對醫學和促進人類健康的卓越貢獻有目共睹。2017年，他晉身象徵美國醫學界最高榮譽的國家醫學院院士，成為全美23位同時身兼國家醫學院、國家科學院（2016）及國家工程學院（2004）院士身份的巨擘之一。

除了對健康研究作出莫大貢獻及為MIT創建兩所研究所外，Chakraborty教授自2012年首獲任命為香港科技大學賽馬會高等研究院訪問教授以來，亦為科大作出許多建樹。他努力不懈，協助大學成立生物醫學工程學部，為科大開展跨學科的生物工程學研究奠下基礎，又為設立跨學科課程事務處提供寶貴意見。自生物醫學工程學部與化學及生物分子工程學系於2017年合併為化學及生物工程學系以來，Chakraborty教授一直擔任新學系的諮詢委員會委員。另外，他也是工學院的國際顧問諮詢委員會委員。

在科大，從成立嶄新的聯合研究課程，以至籌辦影響深遠的科學項目、確立研究方向及制定研究計劃，但凡涉及計算免疫學及疫苗設計，皆可見Chakraborty教授的身影。他長期耕耘，孕育了備受國際認可的成就，包括於《美國國家科學院院刊》發表廣獲好評的合著論文。不少科大畢業生和學者，亦曾到訪或以客席身份加入Chakraborty教授設於MIT的實驗室。

Chakraborty教授創建一流研究機構，薈萃不同界別的環球科研菁英，開展具影響力的嶄新科學活動，科學成就之高，毋庸置疑。