Introduction of Professor Rocky S. Tuan
originally written by Professor Ho Che Wah

A world-renowned authority on biomedical sciences and Distinguished Professor of the University of Pittsburgh School of Medicine, Professor Rocky S. Tuan has for many years devoted himself to the study of musculoskeletal biology and tissue regeneration with an impressive record of accomplishments. Regenerative medicine is a branch of medicine that aims to contribute to society and human needs by restoring structure and function to organs or tissues torn by injury and trauma, degenerated as a consequence of diseases, or worn by ageing, also including those impacted in battlefield injuries. In a similar vein, university education can be viewed as a 'regenerative' process whereby young impressionable minds, through extensive learning and vigorous thinking, are recast into knowledgeable and ethical beings, poised to embrace future challenges and embark on a rich and rewarding life like a phoenix risen from fire. Today, at a time when The Chinese University of Hong Kong, in the run-up to its sixtieth anniversary, is entering into a critical phase of growth and development, Professor Tuan brings his enthusiasm for medical research and dedication to education to be installed as the eighth Vice-Chancellor and President.

Professor Tuan came from a grassroots family in Hong Kong. His father graduated from Anhui University in the Mainland and later from Whampoa Military Academy to join the army during the Sino-Japanese War. His mother worked as a military nurse in Huizhou, Guangdong, devoting herself to help the sick and the wounded. They met during the course of the war and after the end of the turmoil, came to settle in Hong Kong. Professor Tuan's family, like many of the refugee families of the time, lived from hand to mouth. While his parents had to work long hours to make a living, they attached great importance to their son's education. The talented and diligent young Rocky Tuan never failed his parents. He was admitted to St. Joseph's Anglo-Chinese School where he was an academic high achiever. He then entered Queen's College for his sixth form (matriculation) studies, after which he departed for the US to pursue higher education at Berea College in Kentucky, well-known for its liberal arts and work-study education programme. Throughout his undergraduate studies, he participated in the Berea College Labor Program to support himself. In 1977, Professor Tuan received his PhD in Life Sciences from The Rockefeller University in New York City. He is forever deeply grateful to his parents for their love and care, and feels greatly indebted to the early immigrants to Hong Kong, whose toil and sweat contributed to building the city we know today. For this reason, Professor Tuan, in his long and distinguished career, has always seriously contemplated on how he can contribute to his home town.

Professor Tuan's extensive research interests range from basic science and engineering to translational and clinical applications. He started his academic career in 1980 at the University of Pennsylvania in Philadelphia, and went on to become, in 1988, Director of the Orthopaedic Research and Professor and Vice-Chairman of the Department of Orthopaedic Surgery at Thomas Jefferson University (Jefferson), where he held a joint professorial appointment in the Department of Biochemistry and Molecular Biology. Later, Professor Tuan was appointed Academic Director of the MD/PhD programme at Jefferson and brought its orthopaedic research programme to among the top three in the US. In 1997, he established at Jefferson the first PhD programme in Cell and Tissue Engineering in the US, which aimed to train the next generation of cross-disciplinary biomedical scientists committed to tissue engineering and regeneration. In 2001, Professor Tuan was recruited to the National Institute of Arthritis, and Musculoskeletal and Skin Diseases of the National Institutes of Health to establish a new Cartilage Biology and Orthopaedics Branch to focus on musculoskeletal health. In 2009, he joined the University of Pittsburgh School of Medicine, where he served as the founding

director of the Center for Cellular and Molecular Engineering, and Professor and Executive Vice-President of the Department of Orthopaedic Surgery. Starting from 2010, he has served as Co-Director of the Armed Forces Institute of Regenerative Medicine, a US Department of Defense funded alliance of 40 US universities, with the mission of advancing regenerative therapies for battlefield injuries.

Professor Tuan is regarded in academia as one of the rare breed of scientists who have succeeded in bridging biology and engineering. By integrating 'smart' biotechnology with his stem cell research, he has successfully developed translational applications for the repair and regeneration of human tissues, as well as scientific investigations into disease pathogenesis. Professor Tuan is a highly respected scholar in his research fields, and his research has shed novel insights on regenerative medicine—how to harness the body's own regenerative power to make new cells and grow new skeletal tissues, for the purpose of restoring the quality of life and bringing hope to the incapacitated, particularly for wounded warriors to return to duty. Referring to his research achievements, Professor Tuan said with customary modesty, 'What I try to do is just to make people's lives easier and better. This is the greatest motivation behind my research work.'

Professor Tuan joined CUHK in 2016 as a Distinguished Visiting Professor and Founding Director of the University's Institute for Tissue Engineering and Regenerative Medicine. He is currently Lee Quo Wei and Lee Yick Hoi Lun Professor of Tissue Engineering and Regenerative Medicine. Professor Tuan is well acquainted with higher education and research environment in Hong Kong, having served as a member, then Chairman, of the Biology and Medicine Panel of the Research Grants Council from 2010 to 2016. He has therefore in-depth understanding of the biomedical research ecosystem in Hong Kong. He firmly believes that the future development of CUHK lies with cross-disciplinary education and research. 'Our students should not confine themselves to science, literature, or the arts alone. The ability to integrate different types and fields of knowledge is essential because, after all, the solutions to the problems and challenges we face in real life all require cross-disciplinary approaches. A major mission of mine is to fully develop in our students the skillset and mindset to meet the world's challenges after graduating from this University.' Given his dedication and widely acknowledged fame and success and his 'umbilical' link to Hong Kong, his Vice-Chancellorship at CUHK is a rewarding avenue for Professor Tuan to bring home his skills as an accomplished educator for the benefit of Hong Kong.

Professor Tuan's superb leadership skills can be glimpsed from the cross-disciplinary research projects in his charge and their resounding success in translating into cutting-edge technologies to repair bones and tissues. Looking back at his experience in leading large-scale research teams, Professor Tuan says: 'The rewards of my profession are naturally related to the achievements of the laboratory, not only in terms of research findings and discoveries, but also the career development of those who have trained with me. I have been fortunate in that I have had some absolutely wonderful students and fellows, many of whom have gone on to establish their own research and academic careers in universities and research institutes in the US and beyond. The fact that I have made a difference in the lives of these individuals is, in the final analysis, what has made it truly worthwhile.' Having taught in different universities in the US and groomed numerous young people over the years, Professor Tuan savours his teaching career. Upon his assumption of the office of Vice-Chancellor and President of CUHK, he had lost no time in approaching the students, meeting and talking with them at length, and urging them to prepare to navigate the challenging paths of life ahead with critical thinking and a respect for self and others.

Aside from being an accomplished scientist and team leader, Professor Tuan's favourite hobbies include music and movies, particularly those that inspire and shed light on life's values. He has been an avid music lover since childhood, equally fascinated by traditional and modern Chinese music, Western pop, folk music of the 1960s, rock and roll, classical music of the Baroque and Romantic periods, and operas. During his undergraduate studies at Berea College, he was actively involved in music performance, specifically choral and operatic activities, and distinguished himself with his sonorous baritone voice. Later, he was a member of renowned choral groups, including the New York Choral Society and the Mendelssohn Club of Philadelphia. During his postdoctoral research fellowship at the Harvard Medical School in Boston, he was selected as a member of the famed Tanglewood Festival Chorus, the official chorus of the Boston Symphony Orchestra, under the directorship of world-renowned conductors, including Seiji Ozawa and Colin Davis. Among Professor Tuan's most cherished memories were performances in venues including Symphony Hall in Boston, Carnegie Hall and Lincoln Center Avery Fisher Hall in New York, John F. Kennedy Center for the Performing Arts in Washington, D.C., and the Academy of Music in Philadelphia. He once reflected on his passion for music thus: 'I have done a lot of serious soul-searching into the reasons why I love music and performing music, and have worked so hard on it. I love ensemble work, and the moment of true union of minds, a fusion of the experience and hard work and musical expression of everyone, is the true spirit of music that I have been after. Achieving such moments depends absolutely on relentless practice and hard work, and does not necessarily always materialize, but when they do, it is pure ecstasy! Reaching and being immersed in that spiritual state is to me what musical performance is all about.'

Professor Tuan is at the same time a movie lover, and is particularly fond of the *Rocky* series. The words of the protagonist, Rocky Balboa, to his son always come to his mind:

> 'The world ain't all sunshine and rainbows. It's a very mean and nasty place and I don't care how tough you are, it will beat you to your knees and keep you there permanently if you let it. You, me, or nobody is gonna hit as hard as life. But it ain't about how hard you hit. It's about how hard you can get hit and keep moving forward. How much you can take and keep moving forward. That's how winning is done!'

Professor Tuan's Chinese name is 'Sung Chi', and has a literary name 'Le Ke', the Anglicized homonym of 'Rocky'. It may be one of the reasons why he is particularly impressed by the movie series!

In 2017, Professor Tuan was elected a Fellow of the National Academy of Inventors in recognition of his illustrious academic achievements and the social impact of his translational research. To date, Professor Tuan has close to 500 academic publications under his name. With his remarkable academic achievements and rich teaching and research experience, Professor Tuan takes the helm of CUHK today. He is committed to leading its staff and students on to meet the challenges ahead, and guiding the University to new heights while preserving its cherished traditions. In the four corners of the boxing ring and when the bell announces a new round, Rocky the boxer steps out to the centre with undaunted will, steady gaze and confident gait. The phoenix that stands for CUHK is now ready to soar, its songs reverberating in the full bloom of the Shatin campus, celebrating the turning of another glorious new leaf of the Chinese University. The chapter entitled 'Kai Chun Bian' in *Lu Shi Chun Qiu* contains these words: 'A noble and righteous ruler will not fail to attract to his presence the phoenix and the learned and virtuous.' Let us extend our warmest welcome to Professor Rocky S. Tuan, the eighth Vice-Chancellor and President of The Chinese University of Hong Kong.