

Distinguished Science Alumni Awards 2004
Ahmad MATTAR
BSc(Hons) 1963
Politician, Public Servant, Community Leader

Dr Ahmad MATTAR was educated at Raffles Institution and the then University of Singapore where he entered the Faculty of Science in 1959 and obtained a Bachelor of Science (Honours) degree in Physics in 1963.

He then joined the teaching staff of the Department of Building Science at the University of Singapore and while a staff member he completed his PhD in 1977 with a thesis on the topic "A statistical study of traffic noise in private housing estates in Singapore." His work on traffic noise in Singapore was the first such large-scale study to have been done in Singapore, and its results formed the basis for later studies as well as for later legislation on traffic noise.

In 1972, he entered politics and successfully contested for a seat in Parliament, representing the constituency of Brickworks, and was to remain in Parliament until 1996.

During his long and distinguished political career, he has held many senior government positions, first as Parliamentary Secretary for Education and then as Minister for Social Affairs, and finally as Minister for the Environment. During his tenure as Minister for the Environment, Dr MATTAR made substantial contributions to the preservation and enhancement of the environment in Singapore.

He has also made significant contributions to the welfare of the Malay/Muslim community in Singapore.

In 1981, he led several Malay leaders in forming the Malay Children Steering Committee which was to be the precursor of MENDAKI, the Council for the Education of Muslim Children. When Yayasan MENDAKI was founded in 1982, he was its first President. MENDAKI was subsequently restructured in 1989 to become the Council for the Development of the Singapore Muslim Community, with Dr MATTAR as its first Chairman.

In 1996, he retired from Politics and went into the private sector, as Chairman of Mabetex Enviro-World Pte Ltd and also served on the National Council on the Environment, where he continued to serve environmental interests. He is currently the Chairman of IMC Technologies, a private educational institution, where he continues to make contributions to education in Singapore.

"Science has taught me to be methodical in my approach to things in life. Once you form the habit, it just becomes ingrained in your lifestyle."

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CHEN Hsiao Yun Louis

BSc 1964

Scholar, Education Leader, Medallist

Louis H.Y. CHEN obtained his BSc in Mathematics from the University of Singapore (now National University of Singapore) in 1964 and his MS and PhD in Statistics from Stanford University in 1969 and 1971, respectively. He returned to his *alma mater* in 1972 as a Lecturer after a short stint at Simon Fraser University in Canada. He was promoted to Senior Lecturer in 1977, Associate Professor in 1981 and Professor in 1989.

During his 30 years with the University, Louis has held important positions in the Department of Mathematics and the Department of Statistics and Applied Probability and a member of numerous university boards. He was Head of the Department of Mathematics from July 1996 to June 2000 and Head of the Department of Statistics and Applied Probability from July 2002 to June 2004. In July 2000, he became the founding Director of the Institute for Mathematical Sciences, which he has built up into one of the finest in the world within a short span of four years.

In public service in Singapore, Louis served as Member of the Education Service Commission (1990--98). Internationally, Louis served as the President of the Bernoulli Society for Mathematical Statistics and Probability (1997--99) as well as a Council Member of the International Statistical Institute (1997--99). He received one of the highest honours when he became President of the Institute of Mathematical Statistics in July 2004. By becoming President, he has joined the ranks of the Institute's past presidents who are among the world's finest researchers in probability and statistics. As President of the Institute he serves as an *ex officio* member of the corporation of the US National Institute for Statistical Sciences.

Over the past 30 years, Louis has carried out research work in three areas of probability theory and statistics, namely Stein's method, Martingale theory, Poincaré-type inequalities, and in biomolecular sequence analysis in computational biology. In his seminal work on Poisson approximation in 1975, he developed a method of approximating the probabilities of occurrences of dependent rare events. This method, which is now commonly known as the **Chen-Stein** or **Stein-Chen** method, has found wide ranging applications in many fields and will have lasting impact in science and technology. It has developed into one of the most important areas of discrete probability.

For his service to NUS, he was awarded the Public Administration Medal (Silver) in 2002. For his contributions to the advancement of science, he was elected Fellow of the Third World Academy of Sciences in 2000. He also won the Excellence for Singapore Award in 1997, and the National Science and Technology Award in 1991.

"I have been a member of the Faculty of Science for over thirty years, serving it in various capacities and benefiting from it in many ways, and I find my experience most fulfilling and gratifying."

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KIANG Ai Kim

DipScience 1938

Scholar, Teacher, Public Servant

Emeritus Professor Kiang Ai Kim is well-known as the most senior Professor of Chemistry in Singapore and this region. Born in Singapore on 8 November 1915, Professor Kiang graduated from Raffles College with a First Class Diploma in Science in 1938. He then became the first Singaporean scientist to join the Department of Chemistry of Raffles College, and played a crucial role in re-establishing the Department immediately after the Second World War.

He obtained from the University of London the external degrees of BSc in 1939 and BSc Special in Chemistry in 1948. In 1949, he was awarded the Queen's Fellowship for postgraduate study at Cambridge University. After obtaining his PhD in 1952, he was appointed a lecturer in the University of Malaya, Singapore. In 1960, he became the first Singaporean to be the Professor and Head of the Department of Chemistry. Professor Kiang was very much an integral part of the University throughout his years of service. With great enthusiasm and drive, he threw himself whole-heartedly into building up the Department into one of the best not only in the University, but also in the region.

The 10-storey Science Tower built at the Bukit Timah campus to accommodate the Department of Chemistry stands as a constant reminder of Professor Kiang's devotion to the cause of scientific education in Singapore.

From 1968 to 1971, Professor Kiang served as Dean of the Faculty of Science in the University of Singapore. His able leadership of the Faculty ensured its smooth and steady development. He also served as the Master of Raffles Hall from 1959 to 1960 and is fondly remembered by the former resident students as their mentor and friend. In recognition of his distinguished scholarship and outstanding service to the University for more than 30 years, he was conferred the title of Emeritus Professor when he retired in 1971.

In 1975, Professor Kiang was invited to head the Department of Chemistry at Nanyang University. He gave much support and encouragement to the staff and students and helped bring about a smooth merger of the two Departments of Chemistry when the National University of Singapore was formed in 1980. He finally retired from academic life in 1980 at the age of 65.

By dint of hard work and determination, and endowed with a brilliant mind, Emeritus Professor Kiang Ai Kim has made his mark in Singapore and in the scientific world. He has given unreservedly of himself in 33 years of devoted service to Raffles College and later to the University. It is appropriate that the Distinguished Science Alumni Award be bestowed on Emeritus Professor Kiang Ai Kim. His very person and extensive contributions will continue to be a source of inspiration to many generations of future scholars and leaders of Singapore.

"The basic laws of nature's forces are instant, but the changes in the lives and environments of man are inevitable. Happy is the man who can adapt to the changes."

2000: Kiang Ai Kim Scholarship Fund , a scholarship fund established by alumni and friends for outstanding yet needy students in Prof Kiang's name upon his 85th birthday.

2000: Happy Birthday, Professor Kiang! A Special Article in *NUS ChemConnections*, issue 3/2000, pp 2-5.

2005: NUS Distinguished Alumni Service Award, NUS Centennial Alumni Awards.

2009: In Memoriam: Emeritus Professor Kiang Ai Kim, A tribute to his life, written by friend and colleague Dr Lawrence Chia.

2010: Remembering Emeritus Professor Kiang Ai Kim, This video was created and played during a reunion of 1959-1964 Science alumni. It was part of an effort by Prof Kiang's former students to help raise more funds for the Kiang Ai Kim Scholarship Fund.

Distinguished Science Alumni Awards 2004
KOH Kok Hong Joseph
BSc(Hons) 1972
Ambassador, Naturalist, Singapore 'Spiderman'

Mr Joseph KOH Kok Hong was born in Singapore on 31 December 1948. After graduating from the then University of Singapore with first class honours in zoology, Mr KOH joined the Singapore Civil Service in 1972. For a man trained as a scientist, Mr KOH has since evolved substantially, becoming a senior mandarin in the civil service but keeping his zoological roots through his continued exploits in spider biology.

Mr KOH has worked in various capacities in the Ministry of Finance, the Ministry of Home Affairs, the Ministry of Defence and the Ministry of Foreign Affairs. His portfolios have been very varied, from administrator to foreign affairs analyses, national security as well as MINDEF and national intelligence. His repertoire of professional skills, including the unusual knack of being highly observant and diplomatic, has meant that he has served in many sensitive positions in his years of public service. Some important (and more public) milestones: he was appointed as the Minister-counsellor in the Singapore Embassy in Washington D.C. between 1993 and 1994. He was subsequently appointed Deputy Secretary of the Ministry of Foreign Affairs in 1995. In 1996, he assumed the important post of Singapore's Trade Representative in Taipei in July 1996, a post he held until September 2002. In November 2002, Mr Joseph K H KOH became Singapore's High Commissioner to Australia, a post he retains.

He has authored a highly acclaimed book on Singapore spiders and has also written several scientific papers on these animals. In the arachnological (spider) community, Mr Koh is a highly respected member, whose views on spider science is regularly sought, and is one whom the scientific community here and internationally has the highest regard. Moreover, his love for nature has been transmitted to all the ministry staff he has worked with. One of them, Ms Ria Tan, who is now a Raffles Museum Honorary fellow, is now a strong advocate for nature conservation and nature protection, and helps the museum run its various outreach and education programs. Many government officers Mr Koh has worked with over the years have become firm supporters of conservation and nature lovers as a result of his 'pervasive' influence. Biodiversity has greatly benefited from his work.

The balance Mr KOH has struck between international diplomacy (his career) and his research on spiders (his passion) is testimonial to his broad based abilities. During his tenure in diplomacy, he has regularly maintained his strong links with the Department of Biological Sciences and the Raffles Museum, and has been instrumental in encouraging and strengthening the biodiversity research ties of NUS with other countries. NUS' particularly strong biodiversity research links with Taiwan and Australia is testimonial to his influence. He has helped the museum obtain numerous contacts, books and material which is invaluable, using his diplomatic connections to facilitate. In addition, he has 'bequeathed' his substantial holdings of spider specimens and literature to the museum when he retires, so that this natural heritage will be kept for future generations. Through all this, we have been most grateful for his generosity. He is a loyal alumnus through and through!

Overall, Mr Koh has a special blend of science and career success that must make NUS proud. He has managed to bridge academia and the real world in a way few have been able to accomplish.

Distinguished Science Alumni Awards 2004

Tan Sri Musa bin MOHAMAD

BPharm 1964

Minister, Vice-Chancellor, Founder

Tan Sri Musa bin MOHAMAD graduated with a Bachelor of Pharmacy degree from the University of Singapore in 1964. He was awarded the Chalmers Medal by the University Senate for best all round performance in the final year. He joined the Ministry of Health Malaysia as a house pharmacist in 1964 and continued to serve the Ministry as a Superintending Pharmaceutical Chemist till 1970 when he enrolled in the MSc (Pharmaceutical Technology) course at Chelsea College, University of London. He graduated with a MSc degree with a Mark of Distinction in 1972 and was awarded the Abbot's Prize for best student. On his return, he rejoined the Ministry of Health before he was called upon to serve as Foundation Dean of the Pharmacy School by University of Science Malaysia in 1975.

Tan Sri Musa has the distinction of being the first non-politician to be made a Minister of Education in Malaysia. His appointment by the Prime Minister through the Upper House was believed to be in recognition of his contributions to University of Science Malaysia (USM) as its third Vice-Chancellor from 1982 till he retired in 1995. Tan Sri Musa was Vice-Chancellor at a very young age of 39, which makes him the youngest academic in Malaysia ever appointed a Vice Chancellor, a feat not repeated by any other to this day.

As a Minister of Education spanning the period 1999 to 2004, he has relentlessly pursued the concept of equity in education through the provision of equal opportunities for quality education to all Malaysians, irrespective of race, religion, sex and geographical location.

As English is the major language of science, he introduced English as the medium of instruction for science and science related subjects including Mathematics in schools and universities in place of the national language. He also built several new polytechnics and introduced the concept of University Colleges of Science and Technology modelled along the German Fachhochschulen in order to enable more students to take up engineering and technical education with greater emphasis on the acquisition of skills. Five such University Colleges were built during his tenure.

In short Tan Sri Musa's concern for quality education, for democratisation of university education, for innovation and for research and development, particularly in science and technology, has been his forte and was carried through to his tenure as a Minister.

Tan Sri Musa's contributions to the nation, to academe, to the development of science and technology in Malaysia and to his profession as a pharmacist, have not gone unnoticed. He was awarded the top federal award by the King which carries the title Tan Sri, the top Perak State award carrying the title Dato' Seri and Dato' and the title Datuk by the State of Penang. He was awarded Honorary Doctorates of Science by USM and the University College of Science and Technology and the Honorary Doctorate of Philosophy (Technology Management) by the University College Tun Hussein Onn. He was also made Fellow of the Malaysian Academy of Sciences and the Malaysian Pharmaceutical Society.