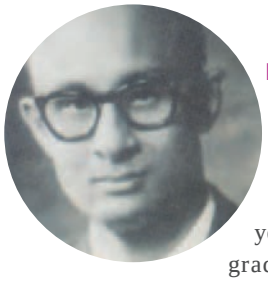
THEY MADE A DIFFERENCE

Since its founding in 1905, the NUS medical school has seen countless faculty members and students passing through its portals to go on professional journeys that often paralleled the progress of Singapore as well as the School. Dr Khor Ing Wei tells of 11 such people.

In 1910, the first seven medical students graduated with a Licentiate in Medicine and Surgery (LMS). More than two decades later, in 1937, Singapore was a city buffeted by many different forces. Communist and anti-Japanese groups were gaining ground among the Chinese population. At the same time, Singapore was a Crown Colony, ruled by a British governor. Likewise, all heads of department at the School, then known as the King Edward VII College of Medicine (KECOM), were British.



That year, **Emeritus Professor Kanagaratnam Shanmugaratnam** enrolled in KECOM. It would take 10 years for him to graduate with an LMS, because his studies were interrupted by World War II and the Japanese occupation of Singapore. After specialist training in the UK, he returned to KECOM (renamed the Faculty of Medicine at the University of Malaya), rising to head the Department of Pathology in 1957, and Dean of Medicine later. During his career, Emeritus Prof Shanmugaratnam made considerable contributions to histopathology, tumour classification and cancer epidemiology, including establishing the Singapore Cancer Registry to track local cancer trends.

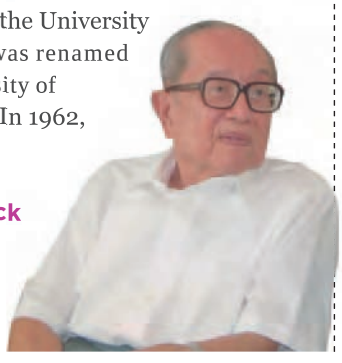
Professor Khoo Oon Teik also enrolled in KECOM in 1937 and graduated in 1947. In 1969, he established the first kidney dialysis unit in Singapore in an attic at the Singapore General Hospital. In the same year, he founded the National Kidney Foundation, a charitable organisation that provides subsidised care to kidney patients and dispenses free health screening and public health education on kidney disease. The agonising death of Prof Khoo's own brother from kidney disease in the 1950s further motivated him in his work.

Another alumnus who was affected by World War II was **Dr Oon Chiew Seng**, who interrupted her studies to evacuate with her family to Bombay, India. There, she continued her education until she returned to Singapore and obtained her LMS in 1948. Dr Oon was a trailblazer in many ways: she was among the first women in the region to become a Member of the Royal College of Obstetricians and Gynaecologists, and the first gynaecologist to open a private clinic in Singapore (in 1959). Upon retiring from private practice, Dr Oon founded Apex Harmony Lodge, the first Singaporean nursing home for dementia patients.

Professor Lim Kok Ann might have been a contemporary of the above alumni, but he brought his own stamp of scientific curiosity, integrity and a touch of vim to his twin passions: microbiology research and chess. Prof Lim helped to initiate oral polio vaccination of Singaporean children, and was the first to isolate the virus responsible for the 1957 Asian influenza epidemic. Later, he devised a new strategy for diagnosing enterovirus infections that was more efficient than the standard test method of the day. Prof Lim headed the Microbiology department for almost 30 years, and was Dean of Medicine from 1965–1972. He also served as Secretary-General of the World Chess Federation from 1982–1988.

After World War II, Singapore experienced many economic, social and political changes, including food shortages and public protests. Becoming increasingly disillusioned with British rule, Singaporeans supported a merger with Malaya.

In 1961, the University of Malaya was renamed the University of Singapore. In 1962, **Emeritus Professor Wong Hock Boon** became the first Professor of Paediatrics. Emeritus Prof Wong was simultaneously a towering figure in Singapore medicine and a well-loved teacher and mentor. At a time when breastfeeding rates were declining, he promoted it to prevent childhood malnutrition and diarrhoea. Emeritus Prof Wong characterised inherited anaemias, introduced rice water for oral rehydration in serious childhood gut infections, and performed seminal research in enzyme deficiencies, which helped to reduce the rate of severe jaundice in newborns.



The late 1960s and the 1970s was a time of social and political upheaval in the West, with Woodstock and anti-Vietnam War protests in the USA and student-led protests in Europe. Singapore was changing, too, becoming an independent country in 1965.

In the late 1960s, **Professor Chao Tzee Cheng**'s introduction of forensic pathology techniques revolutionised criminal justice work in the region. After obtaining qualifications in clinical pathology and medical jurisprudence, Prof Chao was appointed forensic pathologist at the Ministry of Health in 1969. Over the course of a long and distinguished career, he influenced the outcomes of many important court cases in Singapore, Malaysia, Hong Kong and even West Africa. These cases included the notorious Adrian Lim cult murders and the Scripps body parts murders in Singapore, as well as the trial of Hugh Ashley Johnston in Malaysia.

In 1971, **Emeritus Professor S S Ratnam** performed the first sex reassignment surgery in Singapore. More than two decades later, the legal definition of marriage in Singapore was expanded to include transsexual people and their spouses of the opposite sex. Emeritus Prof Ratnam was also instrumental in

achieving many pioneering events in assisted reproduction, including the world's first live birth after microinjection, and the first infant born via human ampullary coculture. On the Asian stage, he was involved in work on the first test-tube baby (1983), the first Gamete Intrafallopian Transfer (GIFT) baby (1986), and first live birth from a frozen embryo (1987).

The first Singaporean to have a disease named after him in Western medical literature, **Dr Tay Chong Hai** came across a rare syndrome in 1969 that was associated with intellectual impairment, decreased fertility with short stature, ichthyosis and brittle hair. The condition is now documented worldwide as Tay's Syndrome (also known as IBIDS Syndrome, or trichothiodystrophy). Early in 1972, he sounded an alert on the outbreak of foot-and-mouth disease in East Malaysia, Taiwan and Singapore. In 1999, Dr Tay reported another rarity, a condition described by him as eosinophilic arthritis, affecting mainly the knees, ankles and shoulders, with eosinophilia being the only extra-articular manifestation. A pioneer in rheumatology in Singapore and founder chairman of the Singapore National Arthritis Foundation, his investigation of traditional Chinese medicine highlighted the problems of high levels of arsenic, lead and mercury that are sometimes present in herbal medicine. Dr Tay also drew attention to the problem of adulterated Chinese medicines and warned against the misuse of cortisone.

Since 1982, the School has been renamed twice more, first to the Faculty of Medicine, then to the Yong Loo Lin School of Medicine in 2005. What has not changed is the enormous impact that the achievements of the celebrated old guard have had on present-day clinicians and researchers. The high level of innovation in clinical practice and research at the School is a window into our future in the next 110 years.

Professor Prabhakaran Krishnan, pioneering transplant surgeon and educator, is the Director of the Paediatric Organ Transplant Programme at the National University Hospital. Besides the first kidney transplant using a kidney from a related living donor in 1989, he also performed the first paediatric liver transplant in Singapore, and the first combined liver and kidney transplant in Southeast Asia. Prof Prabhakaran believes in passing on his knowledge by training surgeons in developing Asian countries in complex paediatric surgeries, and by helping other countries set up liver transplant programmes.

Another outstanding clinician researcher is infectious diseases specialist **Professor Leo Yee Sin**. She proved her mettle during one of the worst health crises to hit Singapore in recent years: the 2003 Severe Acute Respiratory Syndrome (SARS) virus outbreak. She also worked to fight Chikungunya and pandemic influenza virus outbreaks during the late 1990s and 2000s. While heading the Institute of Infectious Diseases and Epidemiology at Tan Tock Seng Hospital, Prof Leo is also involved in research in dengue, influenza, HIV and emerging infections.

Singapore's evolution from developing to developed country has led to changes in the disease landscape. Cancer is now the No.1 killer in the country, making the research of clinician-scientists such as **Associate Professor Allen Yeoh Eng Juh** vitally important. His work involves developing more cost-effective treatment strategies for children with acute lymphoblastic leukaemia (ALL) and evaluating genes expressed by leukaemia cells to accurately diagnose and classify childhood ALL.

Although certainly not exhaustive, this list of notable NUS Medicine men and women exemplifies the clinical acumen, scientific innovation and heart that the School strives to cultivate in its students. Their dedication to advancing medicine in Singapore and beyond paves the way for even greater progress in the future. ✚

Source: *Evidence+ issue 10 / July 2015, a quarterly publication of the National University Health System.*