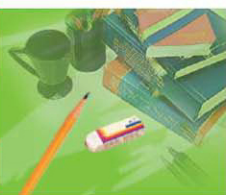


Education



Out of the Box

Tony Chan Fan-cheong is president of the Hong Kong University of Science and Technology. He has spent his life pursuing his dreams relating to teaching and research, and has unique views on education, scientific and technological development, and nurturing the young.



are determined to make their mark in the profession.

A few years ago, I was invited to be an officiating guest by St Paul's Convent School, and I was amazed by a mini two-seater aeroplane constructed by their students (St Paul's is an all-girls school), a product of the school's initiative to encourage STEM education to their students.

One of the students who built the plane was later admitted to HKUST's department of mechanical and aerospace engineering, and eventually the plane they built was certified to fly around the world too.

Last year, HKUST engineering graduate Samantha Kong made headlines by publishing a book to counter our society's stereotypes. In *Engineering is NO Safety Net Major*, she detailed a lot of successful stories from her peers, showing that engineering too, could be glamorous.

Today, Kong is pursuing her doctorate at the University of Bristol, and I see a great future ahead.

And while engineering may not have the sexy outlook of the "meal ticket" majors in terms of career prospects, there are plenty of ways where engineers can



Engineering is for everyone

CAME ACROSS a story recently on how a female engineering student made her way up at MIT. She successfully developed a wheelchair that can ride on rough terrain, and now has founded a company to commercialize the invention.

This story reminds me of two things: a similar project by HKUST students that won a prize recently, and the dearth of female engineering students.

Last year, an electronic wheelchair invented by a group of HKUST students came in second in the Cybathlon – the world's first "Bionic Olympics" – in Zurich. Half of the team were female students, and they are working toward commercialization as well.

In Hong Kong, there are two stereotypes about engineering as a major. The first is that it is a male-dominated, "get your hands dirty" subject; the second is that it is merely a "safety net major" for those who could not make it to the "meal ticket" majors.

I cannot disagree more. Here in Hong Kong, I have encountered quite a number of female engineers who

make meaningful and long-lasting contributions. Our engineering professor Chau Ying recently introduced a program called SIGHT – in which she and our undergraduates develop new solutions for developing countries, such as an early detection program for diabetes for patients in Indonesia.

One of Chau's doctoral students is developing an ultrasound-mediated transcleral delivery technology to help people with cornea diseases.

The field of engineering is much broader than what was once perceived. Today, it includes computer science, big data and design, biomedical engineering, chemical engineering, in addition to traditional civil engineering, mechanical engineering and electrical engineering.

But long-held stereotypes are deterring new students, especially women, from entering the course, and I have always tried to preach to our students that engineering is indeed for everyone.

Gender imbalance in engineering is a dire problem facing many countries in the world today. A recent

study by the National Science Foundation in the US found that only 12.9 percent of their engineers are female, and the figure is even lower in the UK at 8 percent, according to a similar study by the Royal Academy of Engineering.

Engineering at tech giants Apple and Google is also dominated by men. Only 23 percent and 19 percent respectively of their workforces are women.

A report by the Hong Kong Census and Statistics Department found that among all university applicants who applied for engineering last year, only 30 percent were women.

An engineering education is made for everyone and not just men. To all aspiring Hong Kong youth about to enter university soon, my message is simple: the major you choose is not going to be the most important factor determining your success.

Do what you love to do, and do what you are passionate about, instead of what you should do. As long as you have the heart to make a contribution to society, you will always find a way.