

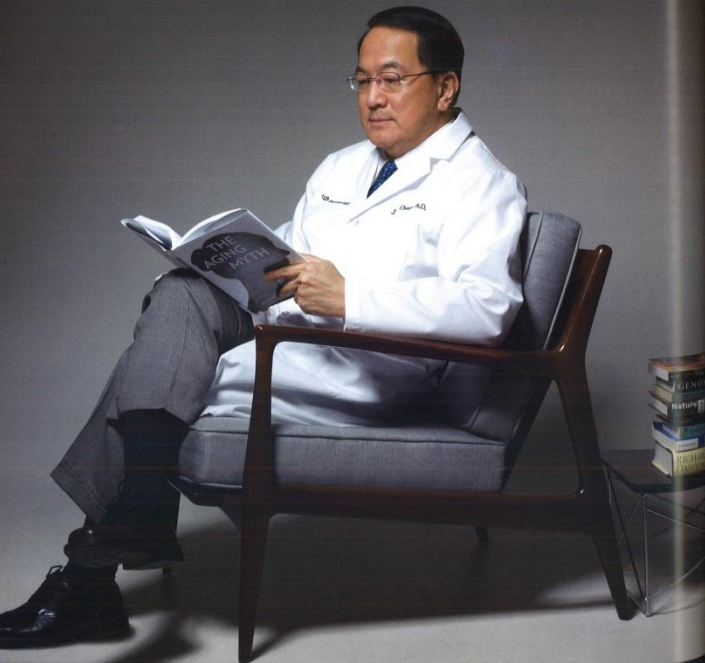
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NU SKIN SPECIAL

SEEKING YOUTH IN SCIENCE

Joseph Chang fulfils his childhood dream in his capacity as chief scientific officer and executive vice-president of product development at Utah-based Nu Skin Enterprises.



As a child, Joseph Chang looked at his own parents and observed how they aged differently - and wondered about the dissimilarity. The interest stems not just from a curiosity, but a desire to help people combat the ravages of time.

"I imagined participating in an effort to improve people's lives by developing products that help to keep folks healthy and active throughout their lifespan," recalls Chang. "I sensed that getting into science, especially medical science, would allow me to gain a better understanding of the ageing process, leading to a more effective approach to innovative products that can address ageing. That belief remains to this day and spurs me to new heights of innovation to achieve my goal of helping people to live longer and better."

Chang carried this fervent desire from childhood to adulthood, and went on to earn his doctorate in pharmacology from the University of London, before doing his post-doctoral research in 1981 at the Johns Hopkins University School of Public Hygiene and Public Health (now known as John Hopkins Bloomberg School of Public Health), where he subsequently became a faculty member.

This would set him on a winding path of discovery: He was recruited by pharmaceutical company Wyeth to create an R&D team, and developed several drugs for arthritis, asthma and organ rejection.

After 11 years at Wyeth, he was approached by a group of venture capitalists to form a start-up company with several Harvard professors, which gave him the opportunity to create a company from the ground up.

Enriched by this experience, he set up Pharmanex with another former pharmaceutical scientist, to focus on developing nutritional supplements from natural ingredients, especially those used in traditional Chinese medicine.

"After starting this company, we attracted a lot of attention from bigger companies, which culminated in the sale of Pharmanex to Nu Skin," Chang recounts.

"As you can see, my scientific career is a series of accidents!"

Chang is now chief scientific officer and executive vice-president of product development at Nu Skin Enterprises, a 30-year-old billion-dollar company said to be the first to develop a gene-based anti-ageing approach and adopt a pharmaceutical approach to supplement development. His current role allows Chang to continue his lifelong work on anti-ageing technology.

At the Nu Skin Innovation Center in Utah - a US\$100-million (S\$126-million) world-class research and development laboratory launched in October 2013 - he sets the direction for the research of new products and the selection of new approaches to develop innovative anti-ageing products.

The 300,000 sq ft facility boasts five research laboratories and a state-of-the-art data centre, among which 22,000 sq ft is dedicated to Nu Skin's Center for Anti-ageing Research, where 70,000 testing procedures are conducted annually.

Chang shares: "Nu Skin's scientific approach to anti-ageing looks at the level of genetic expression of ageing and is supported by our partnerships with some of the best minds in anti-ageing science, such as our colleagues at Lifegen Technologies. Identifying functional Youth Gene Clusters, and understanding how ingredients can target and 'reset' those genes to a more youthful profile helps us develop next-generation skincare and nutritional products."

A core technology that he is constantly working on advancing is ageLOC. "This is what I would call an enabling technology," explains Chang. "It is equivalent to an operating system (used by our scientists to investigate sources of ageing) that goes beyond signs and symptoms to the very source of ageing. Since science is a dynamic process, each new scientific finding may have relevance for ageLOC technology, thus allowing us to improve the technology."

To date, Nu Skin has launched a series of ageLOC products, including the

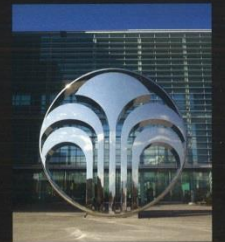
ageLOC^R nutritional supplement, ageLOC Galvanic Body Spa, as well as the ageLOC Transformation daily skincare system. In 2013, the ageLOC Weight Management Program was also introduced. Chang's team is also working towards something that he has known from young: that each person is different and requires unique products to suit their specific type of ageing.

He says: "We are beginning to understand that each person ages differently and soon, we will be able to personalise our anti-ageing products rather than have a 'one-size-fits-all' product."

Indeed, if we dress ourselves in bespoke suits and shoes, shouldn't anti-ageing solutions that help us look and feel good inside out be bespoke as well? ☺

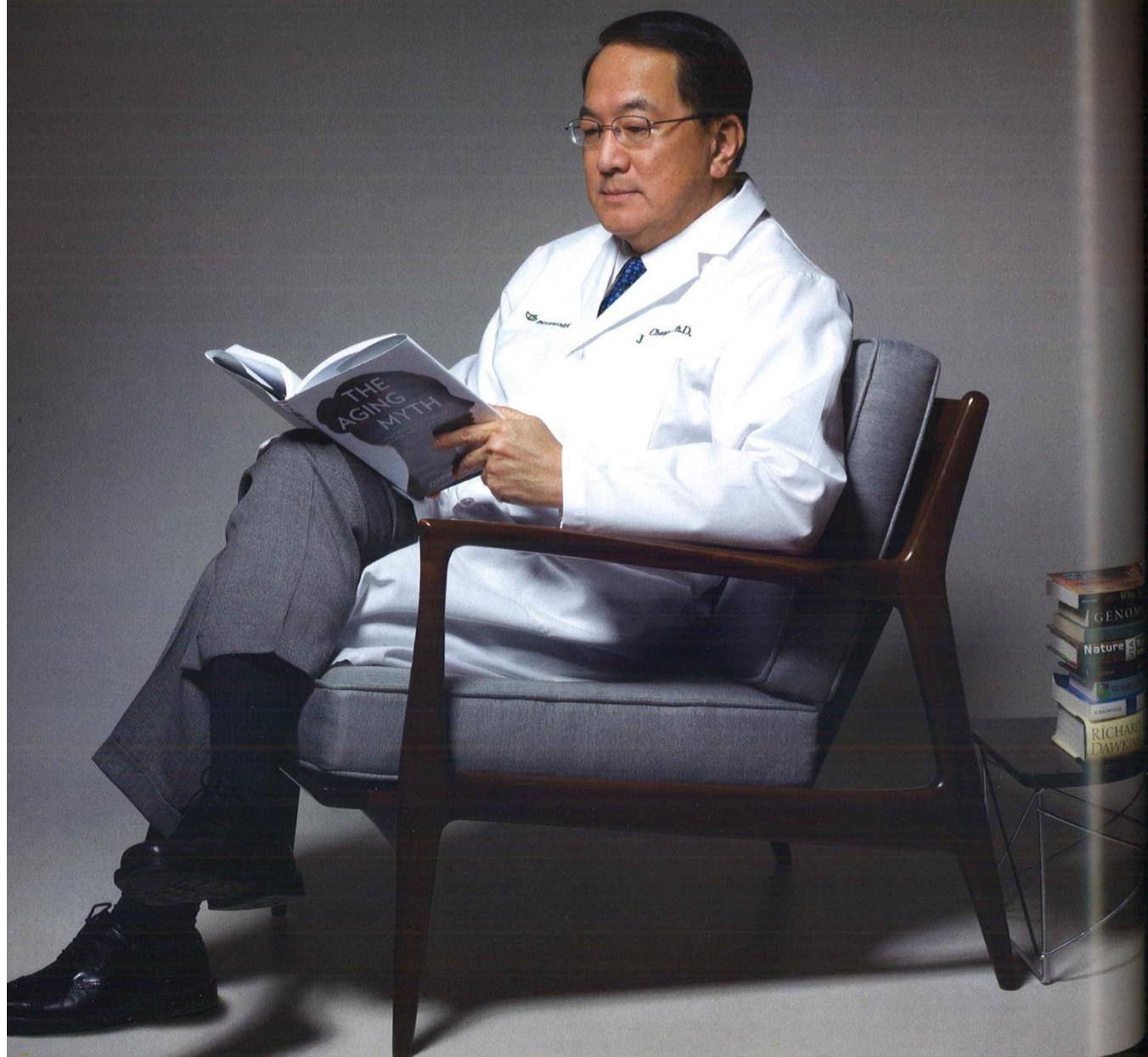
Opposite: The man behind Nu Skin's science, the much-decorated Joseph Chang, was recently honoured as the Most Innovative Person of the Year at the 2012 Golden Bridge Business and Innovation Awards.

Below: Last year, Nu Skin invested in a US\$100-million (S\$126-million) Innovation Center in Utah to advance its pharmaceutical research-and-development efforts.



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